FILED
March 28, 2023
INDIANA UTILITY
REGULATORY COMMISSION

STATE OF INDIANA

INDIANA UTILITY REGULATORY COMMISSION

VERIFIED PETITION OF INDIANA MICHIGAN POWER COMPANY (I&M) FOR APPROVAL OF (1) ISSUANCE TO I&M OF CERTIFICATES OF PUBLIC CONVENIENCE AND NECESSITY UNDER IND. CODE § 8-1-8.5-2 FOR THE ACQUISITION AND DEVELOPMENT THROUGH PURCHASE SALE AGREEMENTS (PSA) OF TWO SOLAR POWER GENERATING FACILITIES TO BE KNOWN AS LAKE TROUT, AND MAYAPPLE (CLEAN ENERGY PSA PROJECTS); (2) TO THE EXTENT NECESSARY, ISSUANCE OF AN ORDER PURSUANT TO IND. CODE § 8-1-2.5-5 DECLINING TO EXERCISE JURISDICTION UNDER. IND. CODE § 8-1-8.5-5(e) (3) APPROVAL OF EACH PSA PROJECT AS A CLEAN ENERGY PROJECT UNDER IND. CODE § 8-1-8.8-11; (4) APPROVAL OF TWO SOLAR RENEWABLE ENERGY PURCHASE AGREEMENTS FOR PROJECTS TO BE KNOWN AS ELKHART COUNTY AND SCULPIN (CLEAN ENERGY PPA PROJECTS) AS CLEAN ENERGY PROJECTS UNDER IND. CODE § 8-1-8.8-11; (5) ASSOCIATED TIMELY COST RECOVERY UNDER IND. CODE § 8-1-8.8-11 FOR ALL PSA AND PPA PROJECTS; AND (6) OTHER ACCOUNTING AND RATEMAKING AUTHORITY.	)	**CAUSE NO. 45868**

SUBMISSION OF DIRECT TESTIMONY OF
MARK A. BECKER

Applicant, Indiana Michigan Power Company (I&M), by counsel, respectfully submits the direct testimony and attachments of Mark A. Becker in this Cause.

Respectfully submitted,

_____

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CERTIFICATE OF SERVICE

The undersigned hereby certifies that a copy of the foregoing was served this 28th day of March, 2023, by email transmission, hand delivery or United States Mail, first class, postage prepaid to:

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INDIANA MICHIGAN POWER COMPANY

PRE-FILED VERIFIED DIRECT TESTIMONY

OF

MARK A. BECKER

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DIRECT TESTIMONY OF MARK A. BECKER
ON BEHALF OF
INDIANA MICHIGAN POWER COMPANY

I. Introduction of Witness

Q1. Please state your name and business address.

My name is Mark A. Becker, and my business address is 212 East Sixth Street, Tulsa, Oklahoma.

Q2. By whom are you employed and in what capacity?

I am employed by American Electric Power Service Corporation (AEPSC) in the Integrated Resource Planning and Strategy group as a Managing Director of Resource Planning and Operational Analysis.

Q3. What are your responsibilities as Managing Director of Resource Planning and Operational Analysis?

I am responsible for the coordination and performance of long-term generation resource planning studies for Indiana Michigan Power Company (I&M or the Company) and the other regulated operating companies within American Electric Power Company, Inc. (AEP).

Q4. Please briefly describe your educational background and business experience.

I received a Bachelor of Science degree in Electrical Engineering from the University of Arkansas in 1983. I have approximately 40 years of experience working for investor-owned and municipal electric utilities and energy trading companies. The majority of my experience, approximately 35 years, has been related to performing a utility's resource planning and operational analysis functions using the proprietary long-term resource optimization software models known as Strategist® and PLEXOS®. The PLEXOS® studies include the development of Integrated Resource Plans.

Q5. Have you previously testified before any regulatory commissions?

Yes. I have provided testimony in regulatory proceedings on behalf of AEP regulated operating companies in Michigan, Arkansas, Texas, Louisiana, Oklahoma and Kentucky.

Q6. Are you sponsoring any attachments in this proceeding?

Yes, I am sponsoring the following attachments:

- Attachment MAB-1 IRP Report and Appendix 1
- Attachment MAB-2 IRP Appendix 2
- Attachment MAB-3 and 3C IRP Appendix 3 (public and confidential versions)
- Attachment MAB-4 IRP Appendix 4
- Attachment MAB-5 and 5C Economic Analysis Results Summary (public and confidential versions)

Q7. Are you sponsoring any workpapers?

Yes, I am sponsoring workpaper WP-MAB-1C (Confidential) – Confidential Attachment 5 Workpaper.

Q8. Were these attachments and workpaper prepared or assembled by you or under your direction?

Yes.

II. Purpose of Testimony

Q9. What is the purpose of your testimony in this proceeding?

The purpose of my testimony is to provide an overview of I&M's 2021 Integrated Resource Plan (IRP), the price evaluation of projects from I&M's 2022 All-Source Request for Proposals (RFP), how the generation resources requested

for approval by the Company are consistent with I&M's 2021 IRP, and the IRP resource alternatives consistency with Ind. Code 8-1-8.5.4. These activities led to the execution of Renewable Energy Purchase Agreements (Clean Energy PPA Projects) for two solar facilities and purchase sale agreements (Clean Energy PSA Projects) for two solar facilities (collectively, the Clean Energy Projects). Specifically, I will address the following aspects of the IRP and Clean Energy Projects:

- Provide a brief discussion of the IRP process and results;
- Explain I&M's need for additional capacity;
- Describe the results of the Economic Analysis that provided the price evaluation ranking of the RFP proposals;
- Describe the consistency between the IRP Preferred Plan and the Clean Energy Projects; and
- Describe the Company's consideration of IRP resource alternatives consistent with Ind. Code 8-1-8.5-4.

III. IRP Process

Q10. What is the purpose of I&M's 2021 IRP?

The purpose of the I&M 2021 IRP is to develop a set of supply- and demand-side resources that guides how I&M generates and supplies electricity to serve its customers' needs. The IRP is developed based on the best information available at the time of the modeling. The 2021 IRP includes a near-term plan, representing the resource changes during the period 2022 – 2028, and a long-term-indicative plan, representing resource changes during the period 2029 – 2041. Relative to the long-term indicative plan, the near-term plan has more certainty with respect to new resource availability, costs and performance, existing resource availability and overall Company load obligations. The IRP

also provides a forum for I&M's customers and stakeholders to learn about and provide input to I&M's resource planning process.

Q11. Please discuss I&M's experience with conducting IRPs.

I&M has been conducting IRPs and submitting them in its Indiana jurisdiction for over twenty years. I&M conducted an IRP every two years through 2015, after which I&M and other Indiana utilities began conducting an IRP every three years.

Q12. Does I&M prepare its IRP on a Total Company basis?

Yes. I&M is a vertically integrated utility with a fully integrated system operated within the PJM Interconnection, LLC (PJM) Regional Transmission Organization (RTO) that serves all of I&M's retail and wholesale customers. I&M's IRPs over the last 20 years, including the 2021 IRP, have been conducted on a Total Company basis. That is, I&M's IRPs address resource planning for all three of I&M's jurisdictions – Indiana, Michigan, and FERC (wholesale).

Q13. How did the Company perform the 2021 IRP?

In this IRP, I&M engaged Siemens PTI to provide its own unique expertise and perspective, facilitate the Stakeholder engagement process, and support the modeling and development of the IRP report. The Integrated Resource Planning and Strategy group assisted the Company in overseeing the entire IRP process, provided Siemens PTI the necessary Company inputs to use in their modeling, and reviewed Siemens PTI results to ultimately determine a Preferred Portfolio and develop a Short-Term Action Plan that summarizes certain resource actions I&M expects to take prior to completion of its next IRP. Engaging Siemens PTI provided I&M with independent expertise and perspective in the development of the IRP. I&M also conducted an extensive and transparent stakeholder participation process, that allowed stakeholders an opportunity to participate and provide feedback continuously throughout the IRP process, this is discussed in more detail in Section 4 of the IRP Report (Attachment MAB-1).

Q14. What experience does Siemens PTI have in performing IRP modeling?

Siemens PTI is an independent consulting organization within the larger Siemens company. Siemens PTI has extensive experience in the development of IRPs for a variety of electric utilities across the country, including utilities in Indiana and Michigan.

Q15. Please briefly describe the process used to guide the 2021 IRP development.

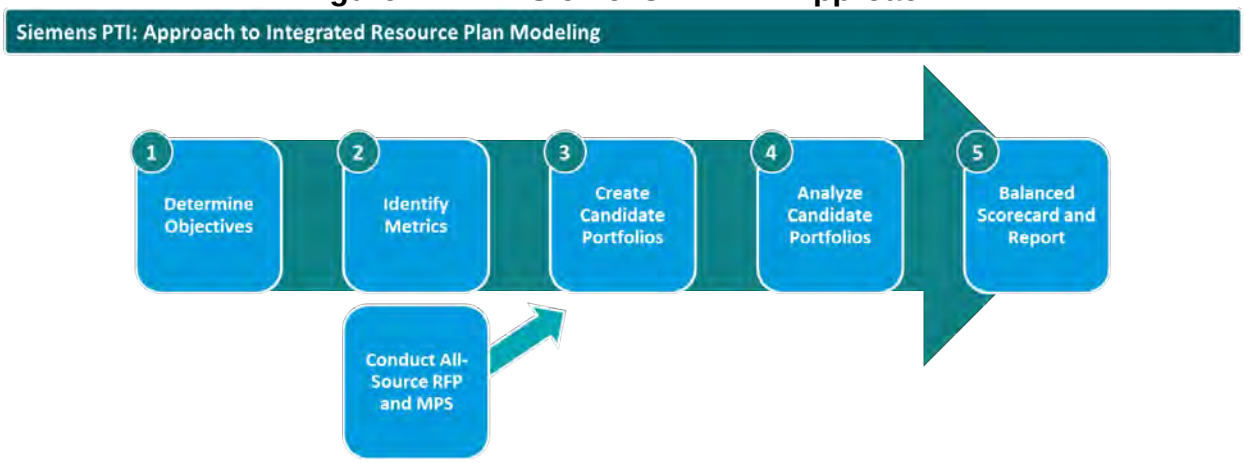
The 2021 IRP followed the 5-step structured and holistic approach described below to identify the Preferred Portfolio that best meets I&M's defined objectives over a wide range of potential future conditions. Several of the resource alternative assumptions made in the IRP process were informed through the inclusion of the 2020 Renewable RFP, an All-Source Informational RFP to capture market-based pricing, and the integration of a Market Potential Study (MPS) to inform cost and performance characteristics for demand-side resources. This structured approach provided a comprehensive decision support tool to aid I&M in developing a near-term plan, 2022 – 2028, and a long-term-indicative plan, 2029 – 2041, based on the current generation portfolio, expected load growth, and the anticipated retirement of generation over the next twenty years.

Q16. What are the 5-steps in the Siemens PTI IRP process?

The 5-step structured approach to identify the Preferred Portfolio is: 1) Determine Objectives; 2) Identify Metrics; 3) Create Candidate Portfolios; 4) Analyze Candidate Portfolios; and 5) Balanced Scorecard and Reporting. The approach utilizes a phase gate process that allows the utility and Stakeholders to breakdown the overall IRP planning process into defined sequential steps to focus on key aspects of the process that ultimately build on one another to provide comprehensive IRP results. The 5-step process was first introduced to

Stakeholders during the initial Stakeholder meeting and is provided in Figure MAB-1 below.

Figure MAB-1: Siemens PTI IRP Approach



A detailed description of the IRP methodology and process used in the 2021 IRP can be found in Section 2 of the IRP Report (Attachment MAB-1).

Q17. Did I&M review Siemens PTI's IRP methodology and process?

Yes. Prior to the IRP process beginning, I&M performed a thorough review of Siemens PTI's methodology and 5-step process for performing an IRP.

Q18. Please describe your role in developing the 2021 IRP.

As part of the Integrated Resource Planning and Strategy group, I was involved in the pre-planning stages of the IRP, selection of Siemens PTI, through the end of the process where the Preferred Portfolio and Short-Term Action Plan were developed by the Company and the IRP Report was produced. During that time, I performed an accuracy and reasonableness review of model inputs that were provided to Siemens PTI by the Company, as well as outputs produced by Siemens PTI to ensure that they met the Company's IRP objectives.

Q19. Is I&M's 2021 IRP available to the public?

Yes. The IRP Report is available on I&M's website:

Integrated Resource Plan (indianamichiganpower.com)

In particular, the following documents are available:

- IRP Public Summary
- IRP Report
- Volume 2 Appendix
- Volume 3 Appendix (public redacted)
- Volume 4 Appendix

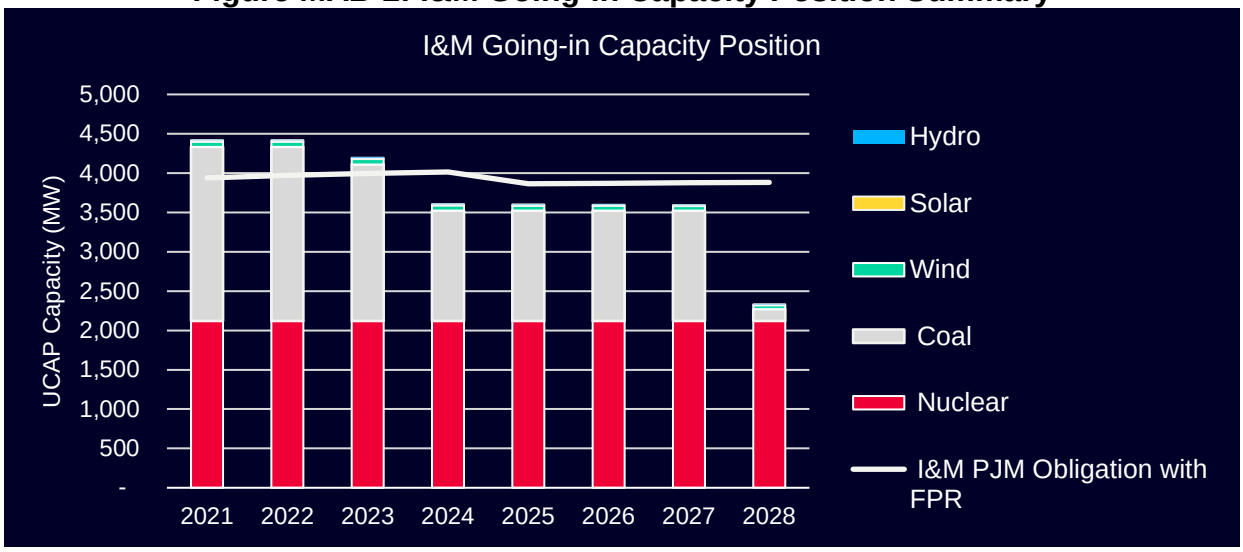
The Company also included six confidential exhibits with its IRP Report to comply with the Indiana IRP filing requirements. The confidential exhibits are contained in Attachment MAB-3C IRP Appendix Volume 3. A redacted, public version of Appendix Volume 3 is available on I&M's website and included with my testimony as Attachment MAB-3. The IRP Report and appendices can be found in Attachment MAB-1 through Attachment MAB-4. The Company's 2021 IRP Report and Appendix Vol 1 can also be found on the IURC website.[1]

Q20. Did the 2021 IRP indicate that I&M has a need for additional capacity?

Yes. As shown in Figure MAB-2, the 2021 IRP projected I&M to have a clear and significant need for new capacity resulting from the retirement of Rockport Unit 1 and Unit 2 by 2028. Beginning in 2024, I&M's projected capacity shortfall is in excess of 300 MW as a result of Rockport Unit 2 no longer being an available capacity resource. By 2028, the capacity shortfall increases to approximately 1,500 MW due to the retirement of Rockport Unit 1. I&M will continue to monitor its capacity position as part of the PJM planning process.

[1] https://www.in.gov/iurc/files/2021-I-and-M-IRP-Report-Revised.pdf

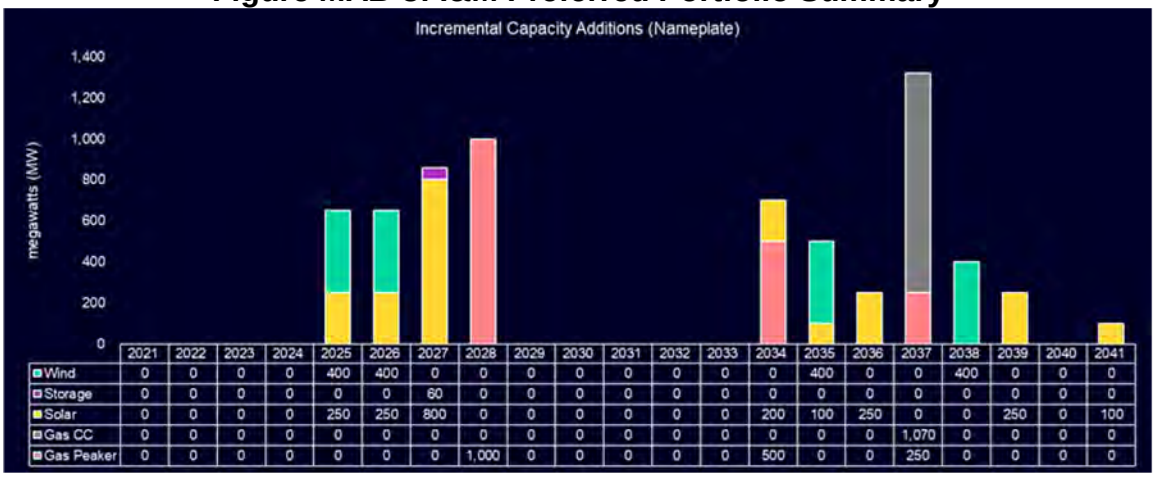
Figure MAB-2: I&M Going-in Capacity Position Summary



Q21. Please describe the Company's Preferred Portfolio that resulted from the 2021 IRP, in particular the renewable resources added during the near-term planning period of 2022 through 2028.

The Company's Preferred Portfolio addresses the near-term need largely through the addition of renewable resources. In 2024, the Preferred Portfolio adds 314 MW of short-term purchases to meet I&M's projected capacity need. The Preferred Portfolio added 800 MW of nameplate Wind capacity and 500 MW of nameplate standalone solar capacity by 2026. In 2027, 500 MW of additional nameplate standalone solar capacity is added, along with 300 MW of nameplate solar coupled with 60 MW of nameplate storage. In 2028, 1,000 MW of simple-cycle combustion turbine capacity is added. Figure MAB-3 provides a graphical representation of the Preferred Portfolio as submitted to the IURC on January 31, 2022.

Figure MAB-3: I&M Preferred Portfolio Summary



	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041
Wind	0	0	0	0	400	400	0	0	0	0	0	0	0	0	400	0	0	400	0	0	0
Storage	0	0	0	0	0	0	60	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Solar	0	0	0	0	250	250	800	0	0	0	0	0	0	200	100	250	0	0	250	0	100
Gas CC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1,070	0	0	0	0
Gas Peaker	0	0	0	0	0	0	0	1,000	0	0	0	0	0	500	0	0	250	0	0	0	0

Please see Company witness Lucas' testimony for more discussion of the Company's Preferred Portfolio.

Q22. Subsequent to the Company's IRP submission to the IURC on January 31, 2022, did the Company become aware of modeling errors?

Yes. As part of the 2021 IRP Michigan filing (Case No. U-21189), two intervening parties found errors in the Company's IRP modeling.

Q23. Would these modeling errors impact the Company's Preferred Portfolio?

No. The Company has determined through various reconciliation processes that these errors do not materially impact the development of the IRP and the resources selected as part of the Preferred Portfolio. The Preferred Portfolio remains the most reasonable and prudent means for meeting I&M customers' energy and capacity needs.

Q24. Has I&M made any changes to the IRP since the submission to the IURC on January 31,2022?

Yes. Attachment MAB-2, IRP Volume 2 has been updated to correct pages 1405 and 1406. After submitting the IRP to the IURC, I&M became aware that Volume 2, pages 1405 and 1406 were the incorrect peak load forecast pages.

The correct forecast, used in the IRP modeling, is now reflected in Attachment MAB-2 IRP Appendix Volume 2, 1405 and 1406.

IV. RFP Process

Q25. What purpose does the IRP have in the RFP process?

The IRP includes a near-term plan “resource plan”, representing the resource changes during the period 2022 through 2028. This near-term resource plan provides a guideline for the type, timing, and capacity of resources to be solicited through the RFP process that could potentially be added to I&M’s system to meet the capacity needs of 2022 through 2028.

Q26. What types, timing and capacities of resources did the 2022 All-Source RFP solicit?

The 2022 All-Source RFP sought approximately 800 MW nameplate rated wind generation resources, approximately 500 MW nameplate rated solar generation resources, and Supplemental Capacity Resources (e.g. Standalone Storage, Emerging Technologies, Thermal, and Other Capacity Resources) to meet overall capacity need. As an alternate proposal for a standalone solar or wind energy resource, Bidders could include a proposal for a solar or wind energy resource with a co-located energy storage system (Storage Option). The RFP was designed to acquire capacity for PJM's 2025/2026 and 2026/2027 Planning Years, consistent with the IRP. Company witnesses Gaul and Koujak provide additional information about the RFP resources solicited.

Q27. Is it reasonable for the RFP process to produce a mix of resources that differs from the resources identified in the IRP?

Yes. I&M’s IRP process is an important planning tool, based on the best information known at the time it is prepared. Market conditions, technology, regulations and therefore, Company needs change over time. While the IRP is used to identify a preferred mix of resources for the RFP solicitation, the RFP

results ultimately reflect the resources, and associated economics, available in the market and takes into account current market conditions (e.g. high inflation, supply-chain challenges, import tariffs, interconnection issues, etc.).

Q28. Please describe the amount of capacity and the types of proposals submitted in response to the RFP.

In total, 32 proposals from 12 unique bidders were received, including solar, wind, solar plus storage, and wind/solar plus storage. Company witness Gaul provides additional information about the proposals received in response to the RFP process.

Q29. As part of the RFP proposal evaluation process, was an initial Eligibility and Threshold (E&T) Review conducted to determine if each proposal received conformed to the RFP requirements?

Yes. The Independent Monitor conducted the E&T Review on behalf of the Company to ensure all proposals conformed to the RFP requirements and that bidders were provided a reasonable opportunity to provide all necessary information for further evaluation.

Q30. As part of the RFP proposal evaluation process, did the Company perform an Economic Analysis of those proposals passing the initial E&T Review?

Yes. All of the proposals passing the initial E&T Review were subjected to an Economic Analysis to be utilized as one factor in determining the final ranking of the proposals. Company witness Gaul provides additional information about the Economic and Non-Price Analysis process in his direct testimony.

V. Economic Analysis

Q31. Please describe the Economic Analysis process.

During the Economic Analysis, the Company determined three key price evaluation metrics for each of the proposals:

- Levelized Adjusted Cost of Energy (LACOE);
- Levelized Adjusted Cost of Capacity (LACOC); and
- Value to Cost Ratio.

All of these metrics are based on determining the total cost of the proposals (e.g. Bid price, operations and maintenance costs, tax expenses, fuel costs, transmission interconnection costs, etc.). The Value to Cost Ratio metric is also based on the total value of the proposals which considers the proposal's expected PJM market energy and capacity revenues and any renewable energy certificate (REC) revenues. Below is a brief description of the calculation of each metric:

- The LACOE is calculated by dividing the present value of the proposal's total cost, including the cost of any transmission congestion and losses, by the present value of the proposal's expected lifetime energy output.
- The LACOC is calculated by dividing the present value of the proposal's total cost, including the cost of any transmission congestion and losses, by the present value of the proposal's installed capacity rating.
- The Value to Cost Ratio is calculated by dividing the present value of the proposal's total value by the present value of the proposal's total cost. The Value to Cost ratio is a tool used to evaluate proposals against each other that may have differing energy and capacity characteristics, such as wind, solar and thermal resources. The Value to Cost ratio was used to

rank proposals relative to one another and to assign a Price Score to each proposal.

Additional information on the Economic Analysis can be found in Section 9.2 of the RFP document (Attachment TGB-1) and in the direct testimony of witness Koujak.

Q32. Did the Independent Monitor agree that the use of the LACOE, LACOC and Value to Cost Ratio meet industry standards for the economic evaluation of proposals?

Yes. The Independent Monitors' report, sponsored by Company witness Koujak, stated:

> "After the proposals were screened, bids were then evaluated against economic evaluation criteria and non-price evaluation criteria. For the purposes of the economic evaluation criteria, I&M proposed capturing the overall cost of the proposed projects on a unitized and levelized per megawatt-hour (MWh), per megawatt (MW), and value to cost (revenue) basis to facilitate a cross-proposal comparison. The industry standard is to adopt an impact on revenue requirements basis to assess and determine the relative value to customers across the range of options presented. I&M's economic evaluation in this procurement process met this industry standard."[2]

Q33. Please provide a summary of the LACOE, LACOC and Value to Cost Ratios developed for the Economic Analysis.

Please see Attachment MAB-5 and 5C and WP-MAB-1C for a summary of the LACOE, LACOC and Value to Cost Ratios developed for the Economic Analysis.

Q34. What occurred once the LACOE, LACOC and Value to Cost Ratios were developed?

The Total Score for a proposal was based on 60 possible price points and 40 possible non-price points, as described in Company witness Gaul's testimony.

[2] Independent Monitor's Report on the Solicitation Process and Results, Attachment DDK-1, page 9.

The Value to Cost ratio was used to develop a Price Score for each proposal based on the 60 possible price points. The Price Score for each proposal was then provided to Company witness Gaul to combine with the proposal's Non-Price Score to create the Total Score for the proposal. Please see Attachment MAB-5 and 5C for a summary of the Price Scores for the proposals.

VI. Clean Energy Projects Consistency with 2021 I&M IRP

Q35. Is the amount of solar capacity being acquired through the Clean Energy Projects consistent with the amount of solar added in the Preferred Portfolio?

Yes. The approximate 750 MW (ICAP) of Clean Energy Projects requested for approval in this proceeding is consistent with the renewable capacity resources identified in the IRP in 2025 through 2027. Specifically, during this period the Preferred Portfolio contains 2,100 MW (ICAP) of solar and wind resources combined.

Q36. Is it reasonable to compare the portfolio of Clean Energy Projects to a portfolio of IRP solar resources?

Yes. It is reasonable to compare portfolios of solar resources due to I&M's need for a portfolio of resources to meet its significant capacity deficit. In addition, each individual resource has its own unique operational, siting and cost characteristics making comparisons of individual resource options uninformative.

Q37. Since no wind capacity was short-listed through the RFP process, is the additional 250 MW of Clean Energy Project solar capacity a reasonable substitute for the wind capacity found in the Preferred Portfolio?

Yes. The Preferred Portfolio added 800 MW of wind capacity by 2026 with an initial PJM capacity value of approximately 100 MW. The additional 250 MW of Clean Energy Project solar capacity added by 2026, when compared to the

Preferred Portfolio, will have an initial PJM capacity value of approximately 100 MW when it comes on-line.

Q38. Are the Clean Energy Projects' operational characteristics consistent with the solar resources selected in the 2021 I&M IRP?

Yes. The IRP solar resources had an assumed capacity factor of approximately 22.4%, which is representative of a single axis tracking solar resource located in Ft. Wayne, Indiana. The Clean Energy Projects have a slightly higher initial average capacity factor of approximately 23% and after taking degradation into account the average levelized capacity factor remains at 21.6%. Therefore, the proposed projects' operational characteristics are reasonably consistent with the IRP solar resources.

Q39. How do the Clean Energy Projects' Levelized Cost of Energy (LCOE) compare to the LCOEs of the IRP solar resources selected in the 2021 I&M IRP?

Figure MAB-4(Confidential) provides a comparison of the LCOEs for the Clean Energy Projects to the LCOEs of the solar alternatives assumed in the IRP. The Clean Energy Project LCOEs were developed using the cost-of-service model described in Company witness Williamson's testimony. The IRP Tier 1 Solar pricing is based on the lowest bid received for solar resources from the All-Source Informational RFP conducted during the IRP effort and the 2020 Renewable RFP solar proposals. The IRP Tier 2 Solar pricing is based on the average of higher solar bids received as part of the All-Source RFP and the 2020 Renewable RFP solar proposals. In making that comparison, the LCOEs for those resources would be blended to create an LCOE for the respective 750 MW blocks of IRP solar and Clean Energy Project solar. Confidential Figure MAB-4 shows how the blended LCOEs for IRP solar and Clean Energy Project solar would compare. As can be seen in Figure MAB-4 (Confidential), the LCOE for the blended IRP solar resources is approximately $80/MWh. The LCOE for

the blended Clean Energy Projects is approximately [redacted], or within approximately [redacted] of the LCOE for the blended IRP solar.

Confidential Figure MAB-4 LCOE Comparison of Clean Energy Projects to 2021 IRP Solar Resource Assumptions

Q40. What conclusions can be drawn from Figure MAB-4 (Confidential)?

As can be seen in Figure MAB-4 (Confidential), the LCOEs for the respective blended IRP and Clean Energy Projects are very similar. This indicates that a block of 750 MW of solar composed of the Clean Energy Projects, or assumed IRP solar resources are consistent from a cost perspective.

VII. Consideration of Resource Alternatives

Q41. Ind. Code 8-1-8.5-4 provides that in acting upon a petition under this statute, the Commission shall take into account the utility's other resource options. Did I&M consider other resource options?

Yes. The Company considered a number of options in the IRP process including conventional thermal generation, renewable energy, energy storage, several types of demand-side management including demand response, load management, conservation, conservation voltage reduction and cogeneration. These matters are discussed in Section 7.6 through 7.9 of the IRP Report (Attachment MAB-1).

Q42. Do you have any other comment on the resource options listed in Ind. Code 8-1-8.5-4?

Yes. As an initial matter, I would note that the Clean Energy Projects presented in this case address the Company's need for capacity. Furthermore, given the significant amount of capacity needed once the Rockport units retire, joint ownership of resources is not a practical option.

That being said, through the development of the Preferred Portfolio, the IRP modeling allowed I&M to purchase up to 30% of its annual energy requirements from the PJM market. The 30% import limit was introduced to reduce the risk to I&M customers of over-reliance on market energy imports. Market risk minimization is discussed in further detail in Section 9.9 of the 2021 IRP Report.

I would add that refurbishment or repowering of the Rockport facility is not a feasible option. In order to be compliant with the Fifth Joint Modification of the New Source Review (NSR) Consent Decree, Rockport Unit 1 is assumed to operate through its committed retirement date of December 31, 2028, and then retire. In complying with the NSR Consent Decree, refurbishment or repowering of Rockport Unit 1 infeasible. As part of the Settlement Agreement in IURC Cause No. 45546, Rockport Unit 2 was assumed to be used as a capacity

resource for I&M through the 2023/2024 Planning Year, allowing I&M to use up to 650 MW for its capacity obligation. Also, as part of the Settlement Agreement, beginning with the 2024/2025 Planning Year and through the remainder of its operating life 100 percent of Rockport Unit 2 will be treated as a merchant generating unit and participate in the PJM markets as an RPM-only resource. Compliance with the Settlement Agreement made refurbishment or repowering of Rockport Unit 2 infeasible.

Finally, the statutory reference to a utility's ability to exchange power and interact with other utilities in the region predates the development of PJM and I&M's membership in PJM. The current PJM market is effectively utilizing the existing capacity resources in the region in meeting the overall energy requirements of the region, including I&M. However, I&M's membership in PJM does not eliminate its need to meet the capacity requirements of its customers, including adding new capacity resources to address potential load growth and the retirement of the Rockport facilities.

Q43. Has the Company considered the State Utility Forecasting Group (SUFG) Electricity Projections?

Yes. The Company reviewed the SUFG's most recent Indiana Electric Projections report from 2021.[3] In the Resource Needs section of the report (page 1-6), the SUFG indicates that the state does not need additional resources until 2026. Although new resources are not needed to meet the reserve margin requirement, the Aurora model used by the SUFG to conduct this analysis finds it economic to add some resources prior to 2026. The forecast indicates a need for a mix of natural gas-fired combustion turbines and combined-cycle capacity, with wind and solar capacity. The solar and natural gas combined-cycle resources are added first. The timing of the Clean Energy Projects is consistent with the SUFG's projections for solar additions. As

[3] https://www.purdue.edu/discoverypark/sufg/resources/publications.php

Discussed by Company witness Lucas, the Company's IRP also aligns with the Indiana 21st Century Task Force Report.

VIII. Conclusions

Q44. Please summarize your conclusions and recommendation.

The Clean Energy Projects are consistent with the 2021 IRP Preferred Portfolio from the type of capacity needed as well as from a price and operational perspective. These Clean Energy Projects are necessary for I&M to meet its capacity requirements in an affordable, reliable and sustainable manner.

Q45. Does this conclude your pre-filed direct testimony?

Yes.

VERIFICATION

I, Mark A. Becker, Managing Director of Resource Planning and Operational Analysis at American Electric Power Service Corporation, affirm under penalties of perjury that the foregoing representations are true and correct to the best of my knowledge, information, and belief.

Date 3/23/23

Mark A. Becker

INTEGRATED RESOURCE PLANNING REPORT

to the:

Indiana Utility Regulatory Commission

Submitted Pursuant to:

Commission Rule 170 IAC 4-7

January 31, 2022

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Executive Summary

Overview

This 2021 Integrated Resource Plan (IRP, Plan, or Report) is submitted by Indiana Michigan Power Company (I&M or Company) based upon the best information available at the time of preparation. The purpose of the IRP is to develop a set of supply- and demand-side resources that guides how I&M generates and supplies electricity in a way that balances affordability, sustainability, and reliability.

This Plan is not a firm commitment to specific resource additions or other courses of action over the period of the plan, as the future is uncertain. The Plan provides the basis for a short-term course of action and strives to maintain optionality in meeting I&M's resource obligations in order for the Company to take advantage of market opportunities and technological advancements. Accordingly, this IRP includes a near-term plan, 2022 – 2028, and a long-term-indicative plan, 2029 – 2041, based on a number of assumptions that are subject to change as new information becomes available or as circumstances warrant. The near-term plan has the least uncertainty and the Company's Short-Term Action Plan described herein includes action items for the 2022 to 2024 period.

I&M[1] is on the brink of a major generation transformation as Rockport Unit 1 and Unit 2 will retire by the end of 2028. These coal-fired resources represent nearly one-half of the Company's generation fleet and the retirement of these units provides a significant opportunity for I&M to transition to more renewable resources, further diversify I&M's generation portfolio, and reduce its carbon emissions. At the core of this transformation must be affordability, sustainability, and reliability. To assess this, during the IRP development I&M established a Balanced Scorecard that evaluated a wide range of potential portfolios against metrics that included: affordability, rate stability, sustainability impact, market risk minimization, reliability, and resource diversity. Additionally, I&M's Preferred Portfolio was developed with the understanding that significant resource decisions will need to be made in the future regarding the possibility to extend the operating life of the Cook Nuclear Plant.

Background

An IRP explains how a utility company plans to meet the projected capacity (*i.e.,* peak demand) and energy requirements of its customers. I&M is required to provide an IRP that encompasses a 20-year forecast planning period (in this filing, 2022-2041). This IRP uses the Company's current long-term assumptions for:

- customer load requirements – peak demand and hourly energy
- commodity prices – coal, natural gas, capacity, and emission prices
- existing planned supply-side resource retirement options
- supply-side alternative costs and performance characteristics – including fossil fuel, renewable generation, and storage resources

[1] I&M is part of American Electric Power (AEP), and AEP has set carbon emission reduction goals to achieve 80% reduction by 2030 from a 2000 baseline and net zero emissions by 2050. See AEPs-Climate-Impact-Analysis-2021.pdf (aepsustainability.com).

- transmission planning
- energy efficiency and demand-side management program costs and impacts

In addition, I&M considered the effect of environmental rules and guidelines including the potential cost associated with some form of future regulation of carbon emissions, during the planning period, while recognizing there is uncertainty as to the timing and form future carbon regulation may take.

To meet its customers' future capacity and energy requirements, I&M made certain assumptions regarding the continued operation of its existing fleet of generation resources for this IRP's Reference portfolio. Section 8.3 describes the sensitivities to those assumptions. Specifically, the two units at the DC Cook Nuclear Plant (Cook) are assumed to operate through the remainder of their current license periods (Unit 1 – 2034 and Unit 2 – 2037), although as the Company gets closer to the end of the license lives it does expect to explore future life-extension opportunities in greater detail. Rockport Unit 1 is assumed to operate through its committed retirement date of December 31, 2028, and Rockport Unit 2 is assumed to provide capacity through May 31, 2024.[2] The Company also assumes the continued operation of its owned run of river hydroelectric and solar plants. Generation resources purchased under long-term contracts are assumed to continue through the end date of the respective contracts.

Importantly, I&M operates within the PJM Interconnection, L.L.C. (PJM) Regional Transmission Organization (RTO), while most Indiana and Michigan utilities operate in the Midcontinent Independent System Operator, Inc. (MISO) RTO. As expected, each RTO has its own capacity planning process that results in different resource planning criteria and assumptions. For purposes of this IRP, the Company adheres to PJM capacity requirements.

In this IRP, the Company continues to model portfolios that not only add resources to meet its PJM capacity obligation, but also provide zero variable cost energy to enhance rate stability, reduce emissions and further diversify its generation portfolio.

I&M has analyzed various portfolios that would provide adequate supply and demand-side resources to meet its projected peak load obligations, and reduce or minimize costs to its customers, including energy costs, for the next twenty years. Following are the key components and inputs of I&M's 2021 IRP process:

Key Changes from 2018-2019 IRP

This IRP includes the following changes from the Company's last IRP:

- Updated Load Forecast
- Conducted All-Source Informational and Renewable Requests for Proposals (RFPs) to inform resource costs and performance
- Incorporated EIA resource characteristics for other supply-side resources
- Inclusion of T&D avoided costs with DSM resources

[2] Consistent with the Settlement Agreement approved in Cause No. 45546.

- Incorporated the 2021 Market Potential Study results that included an expanded approach in the MPS development stage leading to improved modeling for energy efficiency, demand response and distributed energy resources
- Engaged an outside party, Siemens PTI, to provide their own unique expertise and perspective, facilitate the Stakeholder engagement process, and support the modeling and development of the IRP report
- Incorporated recommendations from the Indiana Utility Regulatory Commission (IURC) Staff Director's February 12, 2021, Final Report on 2018 Integrated Resource Plans (Director's Report) and other reports and input from the Director and staff of both the IURC and the Michigan Public Service Commission on opportunities for continued improvement in the IRP process

IRP Process

The I&M 2021 IRP followed a 5-step structured and holistic approach to identify the Preferred Portfolio that best meets I&M's defined objectives over a wide range of potential future conditions. This included an All-Source Informational RFP to provide market-based pricing and a Market Potential Study (MPS) to inform the IRP process. This structured approach provided a comprehensive decision support tool to aid I&M in developing a long-term plan based on the current generation portfolio and the anticipated retirements of generation over the next twenty years. This long-term plan evaluates the need for additional resources and provides a resource portfolio that balances I&M's objectives.

The IRP process complies with regulations and reliability requirements, while also quantifying risks introduced by the market and regulatory environments, the risk of over-reliance on imports and/or exports, and the risk of supply disruptions. The process considered numerous new resource options across multiple portfolios and evaluated these portfolios across a wide range of metrics.

The steps followed in the development of the Preferred Portfolio are the following:

- **Determine Objectives and Key Metrics** – Portfolios are evaluated in terms of Affordability, Sustainability and Reliability. Balanced Scorecard metrics are then identified and used to measure and evaluate performance of the portfolios against the objectives. The Balanced Scorecard metrics the Company used in this process, with stakeholder input, included: affordability, rate stability, sustainability impact, market risk minimization, reliability, and resource diversity.
- **Create and Analyze Candidate Portfolios** – Computer program optimization modeling is used to identify an optimized, lowest cost portfolio based on a given set of inputs that constitute a future state of the electric system. These conditions are a unique combination of Scenarios and Sensitivities used to inform Candidate Portfolio development. This is followed by probabilistic analysis of each of the portfolios to determine its cost and performance metrics under hundreds of future state combinations of selected inputs including, for example, load, fuel, and new resource capital costs.
- **Balanced Scorecard and Report** – Detailed portfolio results are presented through a Balanced Scorecard that measures the objectives through a process that considers attributes in

accordance with Stakeholder feedback, economic and load growth projections, as well as I&M input. From this final scorecard, I&M selects a Preferred Portfolio that best balances all of the metrics while also consider underlying risk. The result is the selection of a Preferred Portfolio.

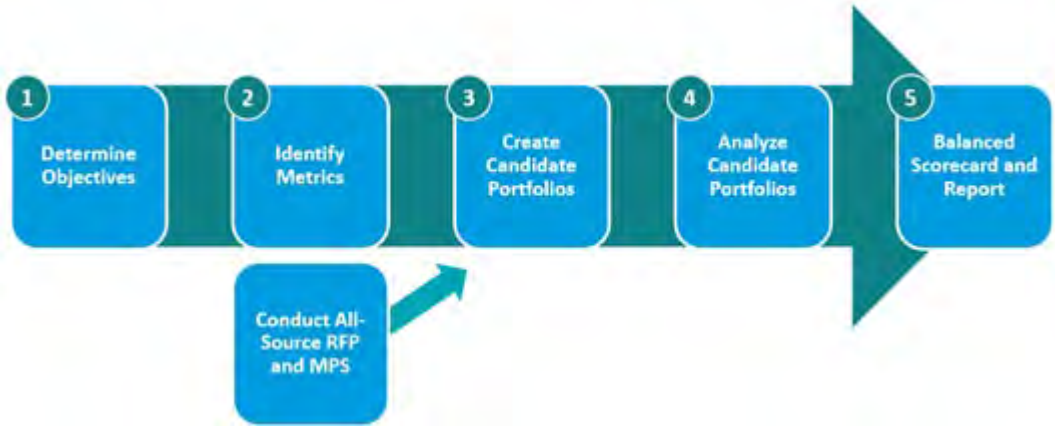


Figure 1. IRP Process

The electric utility industry is changing rapidly and is subject to a significant number of external factors that are largely outside its control and for which there are inherent limitations in modeling such factors and their potential risks. For example, during 2021 the industry experienced significant increases in fuel costs as well as supply chain and labor constraints that have impacted business operations and costs, and for which the future is uncertain. In addition, there remains a lot to be learned about the timing and impacts that growth in renewable resources, customer-owned generation, including implementation of the Federal Energy Regulatory Commission (FERC) Order 2222, and electrification of vehicles and the greater economy will have on load and resource requirements. Also, the focus of resource planning is shifting from the historical vertical approach to an integrated process that better coordinates and aligns the planning of generation, transmission, and distribution. As future IRPs are conducted, the Company expects continuous improvement in incorporating these dynamic and uncertain factors into the IRP process.

Stakeholder Participation Process

For this IRP, I&M considered multiple sources of feedback, including comments in the Director's Report, Stakeholder feedback, internal suggestions, as well as recommendations from the Siemens PTI consulting team. The Company engaged an experienced outside consultant, Siemens PTI, to bring their own experience, expertise, and collaboration tools to the stakeholder process. Both Siemens PTI and I&M promoted Stakeholder engagement during Stakeholder meetings despite the fact that all Stakeholder meetings had to be held virtually during this process due to the COVID pandemic. The goal was a Stakeholder engagement process focused on promoting transparency in the IRP process, encouraging questions and feedback along the way, and converting feedback to actionable suggestions to incorporate into the IRP process.

IRP Stakeholders included, but were not limited to, I&M residential, commercial, and industrial customers, regulators, customer advocacy groups, environmental advocacy groups, fuel suppliers and advocacy groups, state agencies, and elected officials.

At the core of the process was a series of five Stakeholder Meeting Workshops.

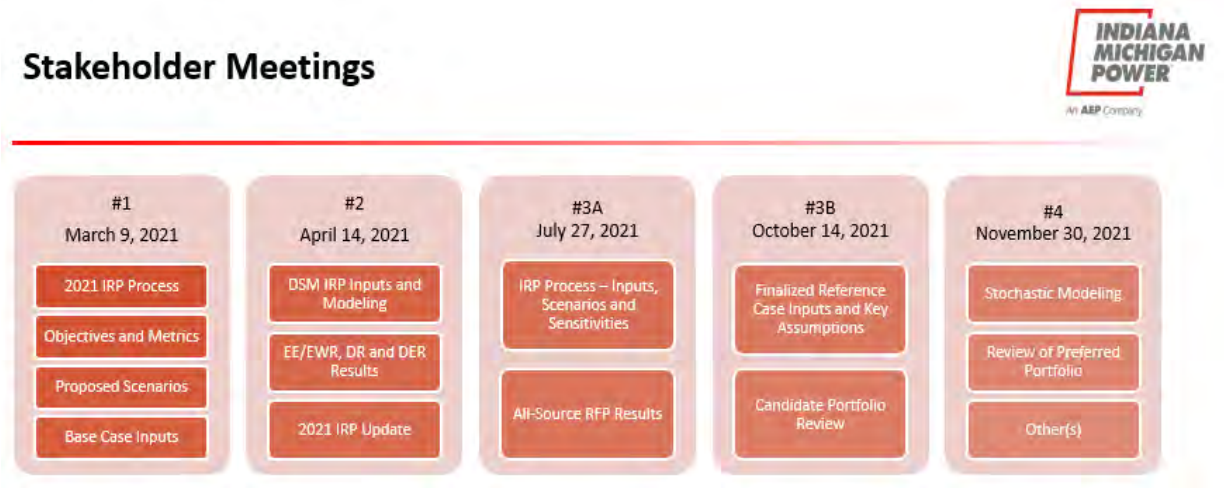


Figure 2. Topic Covered in Stakeholder Meetings

Each Stakeholder Meeting Workshop followed the same format.

- Introduction by I&M management
- Review of guidelines for the meeting and opportunities for Stakeholder engagement
- Focus Topics (different for each Stakeholder Meeting)
- Plans for Stakeholder Meetings and Data Provisioning
- Questions and Feedback at the end of each focus topic area
- Concluding remarks by I&M management

I&M and Siemens PTI worked diligently to have an open forum for Stakeholders to voice questions/concerns and make suggestions on the IRP analysis. During each Workshop, all participants could use the GoToWebinar tool to submit written questions or feedback. All written questions and feedback were recorded in the GoToWebinar tool. The results of these Question and Feedback sessions are included within each sessions' meeting minutes.

In addition to the core Stakeholder Meetings, a separate engagement process was developed for those "Technical Stakeholders" who desired to examine in more detail the underlying analysis performed during the IRP process. A process was designed to empower the Technical Stakeholders to participate in the technical analysis portion of this process by providing access and training on the modeling tool. The goal was to enhance collaboration and feedback beneficial to these Stakeholders.

Feedback was also received, and questions were answered via e-mail and with phone calls/meetings in between each session per request to ensure Stakeholder feedback was considered and incorporated in the development of the plan.

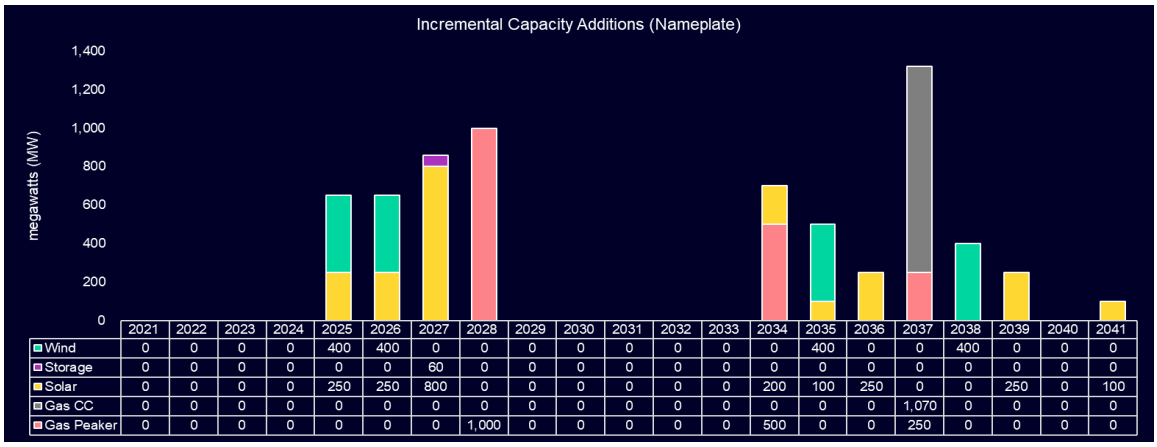
It is important to note that all feedback and suggestions were reviewed by both the IRP working team as well as I&M management. Throughout the process, I&M worked to consider all and include many of the suggestions into the IRP process. The final meeting was a preview of the Preferred Portfolio and a discussion of the completed analysis.

Summary of I&M's Resource Plan

I&M has prepared the Preferred Portfolio with a near-term plan, 2022 - 2028 and a long-term-indicative plan, 2029 – 2041. The near-term plan includes the resource additions that will be necessary for the Company to make from 2022 through 2028 and is inclusive of the Company's Short-Term Action Plan. The long-term-indicative plan includes the resource decisions that the Company will need to make from 2029 through the end of the planning period in 2041. The Company now has clarity regarding the Rockport Unit 1 retirement and the treatment of Rockport Unit 2 and the need for replacement capacity prior to 2028. Resource decisions beyond 2028 will ultimately be determined based on future decisions regarding the potential license extensions of the Cook Nuclear Plant, as well as other factors that will change over this time period. Because decisions have not been made regarding the license extensions and cost estimates have not been completed regarding the cost to extend the license, the Preferred Portfolio assumes Cook Unit 1 and 2 operations continue through 2034 and 2037, respectively.

With this significant decision regarding the potential license extensions at the Cook plant still uncertain, the Company was very intentional and thoughtful to structure the near-term plans in a manner that maintains optionality regarding the future decisions at the Cook Nuclear Plant. A significant consideration that the Company evaluated in the development of the Preferred Portfolio was the amount of energy being exported and potential future market risks. To maintain optionality regarding the future operations of the Cook Nuclear Plant, which is a significant emission-free energy producer, it was important for the Company to balance the need for near-term renewables and gas capacity additions with the energy position of the Company, while ensuring reliability. The resource additions included in the Company's Preferred Portfolio allow the Company to effectively begin its generation transition plan, replace the Rockport capacity, and maintain the option to extend the Cook Nuclear Plant Operating License. The Company's Preferred Portfolio achieves these three goals and performs well in the Balanced Scorecard against other Candidate Portfolios.

In addition to the existing resources, nameplate capacities of new supply-side resources in the Preferred Portfolio are shown in Figure 3 and include 1,600 MW of wind resources selected through 2038, 1,900 MW of stand-alone solar resources selected through 2041, the selection of hybrid paired solar + storage resources in 2027 of 60 MW storage / 300 MW Solar in 2027, 1,070 MW of Gas CC selected in 2037, and 1,750 MW of Gas CT resources through 2040.



	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041
Wind	0	0	0	0	400	400	0	0	0	0	0	0	0	0	400	0	0	400	0	0	0
Storage	0	0	0	0	0	0	60	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Solar	0	0	0	0	250	250	800	0	0	0	0	0	0	200	100	250	0	0	250	0	100
Gas CC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1,070	0	0	0	0
Gas Peaker	0	0	0	0	0	0	0	1,000	0	0	0	0	0	500	0	0	250	0	0	0	0

Figure 3. Incremental Capacity Additions (UCAP)

Figure 4 illustrates I&M's UCAP capacity position for the Preferred Portfolio and the PJM capacity obligation. The near-term plan includes both supply-side and demand-side resource additions in the Preferred Portfolio to meet the Company's near-term capacity needs. Resource additions through 2028 are sufficient from a capacity and energy needs perspective, with the exception of a short-term capacity deficit relative to the PJM minimum reserve requirement in PJM Planning Year 2024/2025. This deficit is currently expected to be approximately 314 MW, and will be filled with short-term PJM capacity purchases, as Rockport Unit 2 is transitioned out of the Company's regulated fleet and the Company transitions to a portfolio with more renewable resources. Short-term capacity needs are subject to further adjustments prior to the PJM Delivery Year based on evolving load forecasts and unit performance.

In the long-term plan between 2029 and 2041, utilizing an assumption for IRP modeling purposes that Cook Unit 1 and 2 will only operate until the end of the current license periods, the Preferred Portfolio includes an additional 800 MW of wind resources, 900 MW of solar, 1,070 MW of gas combined cycle, and 750 MW of gas peaking capacity. These resource additions will be modeled in future IRPs and updated as decisions are made regarding the Cook license extensions. The entire capacity plan is shown below:

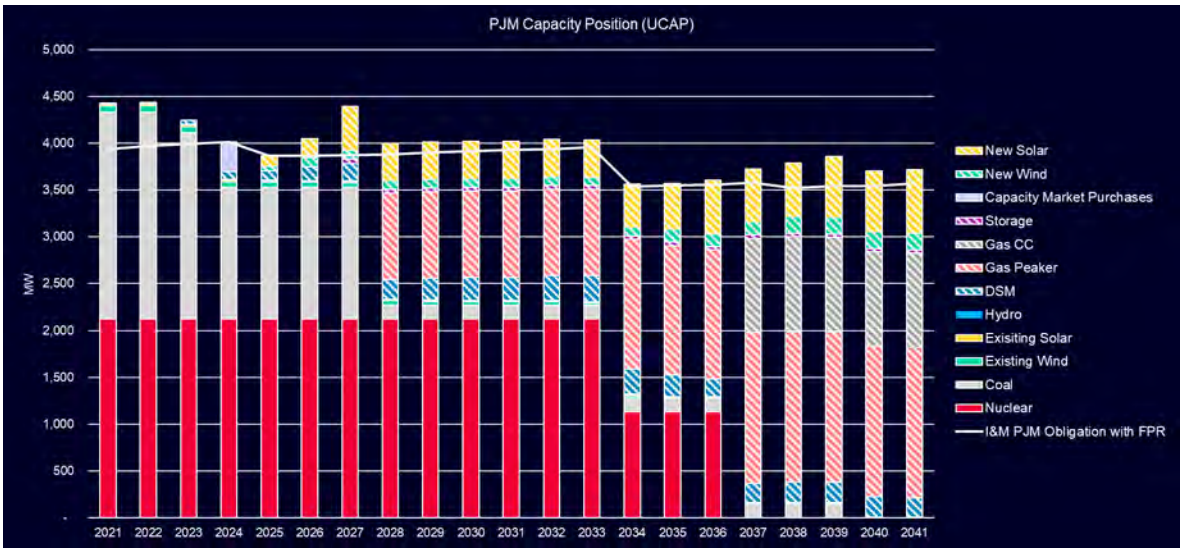


Figure 4. I&M's Preferred Portfolio - PJM Capacity Position (UCAP)

I&M conducted an expanded MPS that evaluated for a 20-year time horizon (2023-2042) the energy efficiency, demand response, and distributed energy resources potential separately for I&M's Indiana and Michigan jurisdictions. The MPS used the most granular load shape information available to improve the value realized from these measures. Energy Efficiency measure potential was developed using I&M's hourly load shape forecast data through an apportioning process based on the evaluation of which measures best aligned to load shapes according to I&M's customer segmentation and use profiles. This expanded approach in the MPS development stage helped improve energy efficiency measure attributes for the time-based value of these resources, thereby improving the level of energy efficiency benefits to be realized during the IRP modelling and optimization process.

Informed by the MPS, a diverse mix of energy efficiency bundles was selected across three vintages that peak at 247 MW in 2033. Furthermore, the Preferred Portfolio includes incremental resources of 121 MW of demand response, 71 MW of distributed energy resources and 116 MW of conservation voltage reduction, based on the Company's MPS and internal analysis.

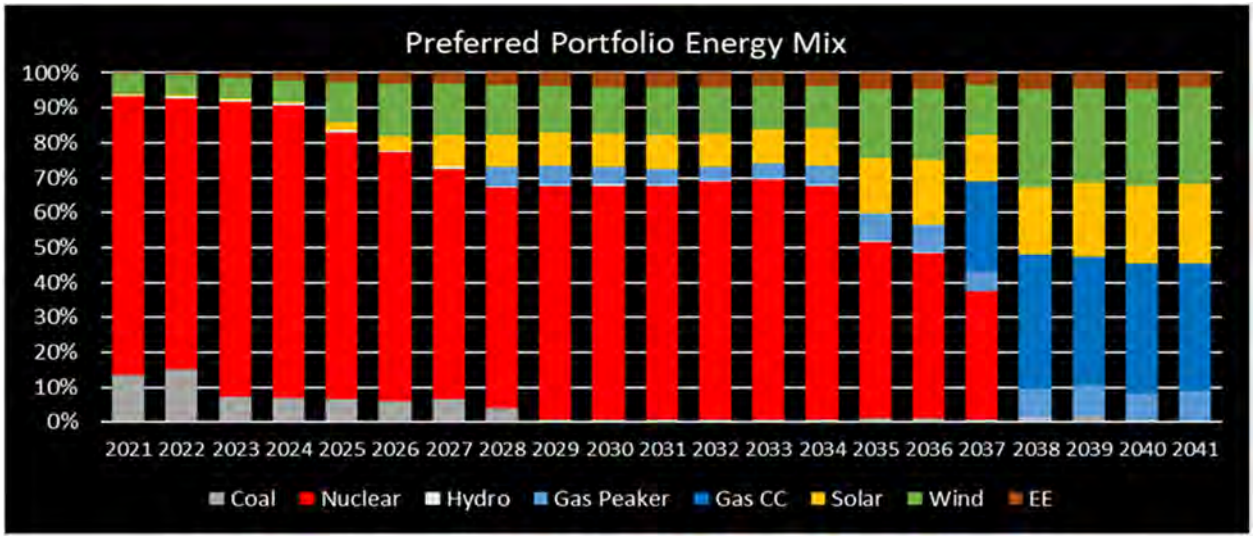


Figure 5: Preferred Portfolio Energy Mix

The forecasted energy mix by resource type contribution in the Preferred Portfolio over the planning period is illustrated in Figure 5. From an energy perspective, the Preferred Portfolio resources include the addition of renewable resources that produce higher levels of energy relative to their accredited capacity and DSM resources that serve to mitigate future risks related to fuel price uncertainty and potential sustainability related costs. Additionally, these resources include incremental dispatchable generating resources (CT) to support resource adequacy and reliability during the periods when renewable resources are not providing energy to meet the Company's load obligation.

I&M's Short-Term Action Plan

The I&M IRP is regularly reviewed as new information becomes available. I&M intends to pursue the following activities for the IRP Short-Term Action Plan:

1. Continue the planning and regulatory actions necessary to implement additional cost-effective DSM programs in Indiana and Michigan consistent with this IRP that identified the potential for increased levels of cost-effective EE.
2. Obtain the capacity needed for the PJM Planning Year 2024/2025 deficit (currently estimated to be about 314 MW in this IRP).
3. Issue an All-Source RFP in the first quarter of 2022 to seek resources to satisfy the 2025 and 2026 needs (in-service by the end of 2024 and 2025), which the Preferred Portfolio identified as 800 MW of wind and 500 MW of solar.
4. Issue an All-Source RFP in 2023 or 2024 to satisfy identified needs, targeting 2027 and 2028 renewables, storage, and gas additions (in-service by the end of 2026 and 2027), totaling 800MW of solar, 60 MW of storage as a hybrid resource, and 1,000 MW of gas peaking.
5. Initiate efforts to evaluate Cook relicensing costs.
6. Adjust this action plan and future IRPs to reflect changing circumstances, as necessary.

Conclusion

This IRP incorporated an extensive and thorough process that engaged Stakeholders through five public Stakeholder meetings and tested several Scenarios and many different Portfolios to arrive at a Preferred Portfolio.

The Preferred Portfolio performs well across a range of metrics that were used in the Balanced Scorecard. The Preferred Portfolio is the best performing portfolio across multiple measures on the Balanced Scorecard and provides several additional benefits to I&M customers and Stakeholders, including the following:

Affordability and Rate Stability:

- The Preferred Portfolio is among the lowest reasonable cost portfolios measured on both a 20-year and 10-year cost to serve load metric. The only comparable portfolios are the Cook 2050+ life extension portfolios, which do not include consideration of the capital investments required to extend the life of those facilities (will be evaluated further in future IRPs).
- The Preferred Portfolio has one of the lowest absolute values for the 95th percentile value of NPV cost to serve load. All portfolios share a similar upside risk. This translates into having one of the lowest risk of increases in cost across the portfolios.
- Resource type additions in the Preferred Portfolio are similar through 2028 to the portfolios that modeled Cook license extensions (Cook 2050+), resulting in a “no regrets” position for the next several years.
- The Preferred Portfolio includes dispatchable resources that can enhance opportunities for wholesale sales without overexposure to market risks.
- The Preferred Portfolio takes advantage of existing tax incentives for new wind, solar and hybrid solar resources.
- The Preferred Portfolio requires the lowest capital requirements during the near-term planning period, which also lowers the risk associated with the availability of acquiring the necessary resources.

Market Risk

- The Preferred Portfolio mitigates overreliance on market purchases and sales for capacity and energy throughout the forecast horizon.
- The Preferred Portfolio requires short-term PJM capacity purchases for capacity in 2024 to replace Rockport Unit 2 capacity.
- Market purchases and sales of energy are reasonable and there is less reliance on the spot energy market, with the Preferred Portfolio averaging 7.2% for purchases and 19.8% for sales over the forecast horizon.
- The Preferred Portfolio results in small amounts of surplus capacity over the forecast period
- The Preferred Portfolio avoids reliance on any single resource or fuel type, with potentially over 60 unique resources and eight unique fuel types.

Sustainability:

- The Preferred Portfolio leads to a lower carbon future, achieving 76% reduction by 2041, when including CO_2 emissions for short-term and spot market purchases, from 2005 levels that did not include CO_2 emissions assumptions from short-term and spot market purchases. Excluding short-term and spot market purchase emissions estimates, the Preferred Portfolio realizes CO_2 emissions reductions of 82% by 2041.
- The Preferred Portfolio includes a substantial amount of renewable resources as it continues to transform its fleet.
- The Preferred Portfolio maintains the optionality for the Cook License Extensions which maintains the opportunity to extend the operations of a significant emission-free resource.
- The Preferred Portfolio provides potential opportunities for natural gas conversion to hydrogen fuel later in the planning period.
- The Preferred Portfolio significantly reduces the reliance on coal fired generation by 2029.

Reliability and Resource Diversity:

- The Preferred Portfolio includes additions that when added to the Company's current resources, provides a more diversified portfolio of supply-side and demand-side resources that will allow the Company to optimize the use of each resource type to ensure the reliable supply of electricity while also maintaining PJM capacity requirements and supporting resource adequacy.
- The Combustion Turbine (CT) resources provide flexible, fast ramping capabilities and can help mitigate risks associated with intermittent renewable resource additions.
- The Preferred Portfolio manages the reliance on market purchases and sales for capacity and energy purposes. In addition, it avoids reliance on any single resource or fuel type, with potentially over 60 unique resources and eight unique fuel types.

In conjunction with the Company's Short-Term Action Plan, the Preferred Portfolio offers I&M significant flexibility should future conditions differ considerably from the assumptions underpinning the Preferred Portfolio.

1 Introduction

1.1 Overview

This Report presents the 2021 Integrated Resource Plan (IRP or Plan) for Indiana Michigan Power Company (I&M or Company) including descriptions of assumptions, study parameters, and methodologies. The 2021 IRP process for the Company resulted in an integration of supply- and demand-side resources.

The goal of this IRP process is to develop a near-term plan (including a Short-Term Action Plan) and a long-term-indicative plan identifying the amount, timing and type of resources required to supply capacity and energy as part of the Company's obligation to ensure a reliable and economical power supply to its Indiana and Michigan customers.

In addition to developing plans for achieving reliability/reserve margin requirements as set forth by PJM and meeting I&M's obligation to ensure reliable and economical power supply to its customers, resource planning also impacts I&M's capital expenditure requirements, regulatory planning, environmental compliance, and other planning processes.

This Report covers the processes, assumptions, results, and recommendations required to develop the Company's IRP. It uses the best available information at the time of preparation, but changes that may affect its results can, and do, occur without notice. Therefore, commitments to specific resources and actions remain subject to further review and consideration.

1.2 Introduction to I&M

I&M is a multi-jurisdictional company serving both retail and wholesale customers located in the states of Indiana and Michigan (see Figure 6). Currently, I&M serves approximately 471,000 and 130,000 retail customers in the states of Indiana and Michigan, respectively. The peak load requirement of I&M's total retail and wholesale customers is seasonal in nature, with distinctive peaks occurring in the summer and winter seasons. I&M's all-time highest recorded peak demand was 4,837MW, which occurred in July 2011; and the highest recorded winter peak was 3,952MW, which occurred in January 2015. The most recent (summer 2020 and winter 2020/21) actual I&M summer and winter peak demands at the time this process began were 3,970MW and 3,365MW, occurring on July 19, 2020, and February 17, 2021, respectively.

Figure 6: I&M Service Territory and Generating Locations

2 I&M's IRP Process

2.1 Overview of the IRP Process

The purpose of the IRP is to develop a set of supply- and demand-side resources ("Preferred Portfolio") that guides how I&M generates and supplies electricity in a way that balances affordability, sustainability, and reliability.

The I&M 2021 IRP followed a 5-step structured and holistic approach to identify the Preferred Portfolio that best meets I&M's defined objectives over a wide range of potential future conditions and included a Renewable RFP and an All-Source Informational RFP to include market-based pricing and a Market Potential Study (MPS) to inform the IRP process. This structured approach provided a comprehensive decision support tool to aid I&M in developing a near-term plan, 2022 - 2028 and a long-term-indicative plan, 2029 – 2041, based on the current generation portfolio and the anticipated retirements of generation over the next twenty years. This long-term plan evaluates the need for additional resources and provides a resource portfolio that balances I&M's objectives.

The IRP process, and associated modeling, complies with regulations and reliability requirements, while also quantifying risks introduced by the market and regulatory environments, the risk of over-reliance on imports and/or exports, and the risk of supply disruptions. The process considered an array of new resource options, including an updated Market Potential Study that included energy efficiency, demand-side management and distributed energy resources, renewable energy, battery storage and hybrid resources, such as paired storage and solar, gas resources, advanced technologies such as small modular reactors, etc.

The steps followed in the development of the Preferred Portfolio are illustrated in Figure 7 and are described in more detail in the following sections.

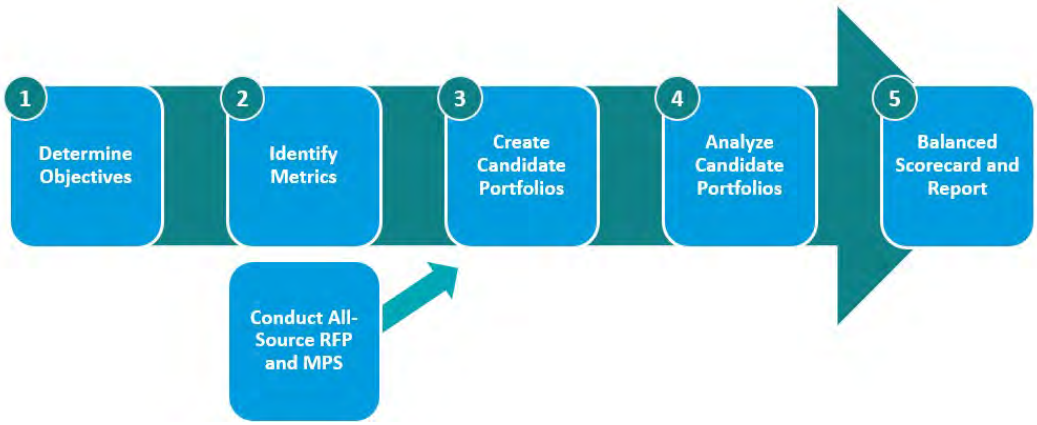


Figure 7. I&M IRP Process

Step 1: Determine Objectives: The initial step in the IRP Process is to determine the objectives that will be used to evaluate the various Candidate Portfolios. Candidate Portfolios are evaluated in terms of Affordability, Sustainability and Reliability.

Step 2: Identify Metrics: The second step in the IRP process is to assign metrics to the IRP objectives identified in Step 1. The metrics are used to measure and evaluate performance of the portfolios in the probabilistic simulations conducted in Step 4 of the IRP process.

Step 3: Create Candidate Portfolios: The third step in the IRP process is to create a set of optimized portfolios under a set of inputs that are informed by conditions. These conditions are a unique combination of Scenarios and Sensitivities used to inform Candidate Portfolio development.

Step 4: Analyze Candidate Portfolios: The fourth step in the IRP process is to conduct portfolio analysis to determine cost and performance metrics for each portfolio. As part of the current I&M IRP, the primary tool for portfolio analysis was a probabilistic (stochastics) analysis.

Step 5: Balanced Scorecard and Report: In the final step of the IRP Process, detailed portfolio results are presented through a Balanced Scorecard. The Balanced Scorecard incorporates each of the objectives and measures through a process that considers attributes in accordance with Stakeholder needs, economic and load growth projections, as well as I&M input. The result of Step 5 is the selection of a Preferred Portfolio.

2.2 Conduct a Renewable RFP and an All-Source Informational RFP

This IRP was informed by two RFP efforts.

In November 2020, I&M issued a Renewable RFP for 450 MW of solar and wind energy resources with optional battery energy storage systems, including both purchase and sale agreements and purchase power agreements. This RFP was solicited with an expectation of transacting although the Company chose not to proceed with responses received at that time.

Additionally, an All-Source Informational RFP was issued at the onset of the IRP process to obtain market information and near-term indicative pricing for a wide range of technologies.

The All-Source Informational RFP requested power supply and demand-side proposals for capacity and energy to meet the need of its customers. Understanding that the Informational RFP did not request firm pricing proposals with the intent to transact, the purpose of the Informational RFP was to identify viable resources in the marketplace available to I&M to meet the needs of its customers and gain better information on indicative pricing at the time the proposals were submitted.

I&M requested information from the marketplace for the following resource types:

- Dispatchable resources including Stand-alone Battery Energy Storage System
- Utility scale renewable resources, either stand-alone or paired with storage
- Load Modifying Resources
- Demand Response
- Distributed Generation

The Company evaluated the responses from the All-Source Information RFP to determine the project viability, reasonableness of proposed pricing, and other operating characteristics to determine an appropriate proxy to be used in the IRP process. The average delivered cost by resource informed

the modeling and portfolio options. A summary of the All-Source Informational RFP and the Renewable RFP results were presented in Stakeholder Meeting #3A.

2.3 Develop a Market Potential Study

A Market Potential Study was conducted by GDS Associates and Brightline to evaluate the potential for future energy efficiency[3] (EE), demand response[4] (DR) and distributed energy resources (DER) resources in the 2021 I&M IRP and to support the IRP and DSM Planning for I&M. The Market Potential Study performed the following to develop inputs into the IRP Process and is further discussed in Section 7.7.1:

- An update of program costs and savings potential specific to each of I&M's service area in Indiana and Michigan over a 20-year time horizon (2023-2042).
- Primary market research, industry best-practice research, codes and standards research and a comprehensive review of current programs, historical savings, and projected energy savings opportunities, to develop estimates of technical, economic, and achievable potential.
- Separate estimates of energy efficiency, demand response, and distributed energy resources potential were developed by I&M jurisdiction.

2.4 Objectives, Metrics and Scorecard Development

The IRP process is structured to enable a systematic and holistic planning analysis to identify the Preferred Portfolio that best meets all its objectives and design requirements over a wide range of market futures. The IRP Process is a time-tested five-step process, which results in a reliable and efficient approach to identifying future resource needs to meet the energy and capacity needs for I&M customers.

Beyond identifying a Preferred Portfolio, the IRP process aims to comply with all environmental regulations and reliability requirements enforced by various Local, State and Federal organizations. In doing so, the process is meant to identify portfolio vulnerabilities to market and regulatory risks and the risks of supply disruptions. As part of the IRP, I&M considered maintaining flexibility to respond to market changes as well as results from subsequent RFPs from the market. As such, the evaluation can be viewed as considering both existing and new resource options, including a diversified portfolio of supply - and demand- side options.

The resulting least cost portfolios developed by the resource optimization reflect a combination of market, regulatory and technology specified conditions. While least cost is an important objective, and a driver of the optimization routine, it is not the only objective that is important to this process. I&M has many important objectives including considerations for affordability, sustainability, market risk minimization, reliability, and resource diversity.

[3] Also referred to as energy waste reduction or EWR in Michigan.

[4] Also referred to as load management in Michigan.

The 2021 IRP is designed to evaluate ongoing changes and uncertainties in the market. As a result, I&M's IRP objectives are based on the need for a resource strategy that provides support for a series of near-term resource decisions while providing important directional insight into the long-term resources needs and key considerations to maximize the long-term potential value to its customers and communities. To that end, I&M identified six objectives for the Preferred Portfolio in the 2021 IRP that align with customer and corporate priorities, including customer affordability, rate stability, market risk minimization, sustainability impact, reliability, and resource diversity. As objectives are identified, it is important to keep in mind that tradeoffs must be considered. Table 1 provides more detail on these IRP objectives.

Table 1. I&M IRP Objectives

Objective Category	Objective	Objective Description
Affordability	Affordability	Meet energy and demand requirements of customers at an affordable cost that minimizes cost to serve load. Provide all customers with an affordable supply of energy.
	Rate Stability	Meet energy and demand requirements of customers with rate stability by providing a predictable, balanced, and diverse mix of energy resources designed to ensure costs do not vary greatly across alternative future market conditions or supply disruptions.
	Market Risk Minimization	Avoid overreliance on spot market for energy and capacity purchases and sales, which could introduce excess risk for customers.
Sustainability	Sustainability	Ability to produce energy in a way that proactively reduces pollution and impact on surrounding neighborhoods and ecosystem. Provide environmentally responsible power, leading to a low carbon future.
Reliability and Resource Diversification	Reliability	Ability to effectively produce and deliver the energy required by customers with minimal interruptions and consistent quality while maintaining compliance with PJM capacity obligations.
	Resource Diversity	Mitigate the risk of overreliance on one type of resource. Operational flexibility to back up the resource for resource types that could become operationally or economically eclipsed.

2.5 Scorecard Metrics

In order to allow the analysis to compare portfolio performance across diverse scenarios and identify a Preferred Portfolio, metrics related to each of the objectives were defined and used to evaluate different portfolios and planning strategies in the IRP process. These metrics provide objective assessments of critical factors of each of the portfolios under different market conditions. An initial list of metrics was established early in the process and were reviewed in Stakeholder Meetings #1, #2, and #3B. Due to Stakeholder feedback received, three additional metrics were added including a Capital Investment Through 2028 metric, a 5-year Net Rate Increase CAGR metric and the Average # of Unique Generators. Additionally, the Market Risk Minimization metrics were modified from end of plan year values to average values over the planning period. The metric values for each

portfolio were finalized in Step 4: Analyze Candidate Portfolios and result from the probabilistic (stochastic) analysis.

Table 2 below lists the metrics used in the evaluation of portfolios.

Table 2. IRP Objectives and Metrics

Objective Category	Objective	Metric
Affordability	Affordability	20-Year NPV Cost to Serve Load
		10-Year NPV Cost to Serve Load
	Rate Stability	95th percentile value of NPV Cost to Serve Load
		Difference Between Mean and 95th Percentile
		5 Year Net Rate Increase CAGR (2025-2029)
		Capital Investment Through 2028
	Market Risk Minimization	Avg. Purchases as a % of Load (2022-2041)
		Avg. Sales as a % of Load (2022-2041)
Sustainability	Sustainability	% Reduction of CO_2 (2005-2041)
Reliability and Resource Diversification	Reliability	Surplus Reserve Margin above FPR Requirement
	Resource Diversity	Average # of Unique Generators
		Average # of Unique Fuel Types

2.5.1 Affordability

As part of the Step 4 probabilistic modeling approach, each portfolio was subjected to 200 iterations of AURORA simulations which varied key drivers (e.g., coal prices, natural gas prices, carbon emission prices, peak and average load, and capital costs for a range of technologies). The affordability objective metrics used are the mean value of the 20-year Net Present Value Cost to Serve Load (NPVCTSL) and the 10-year NPVCTSL, expressed in million dollars. The NPVCTSL is a measure of all supply and demand-side related costs and revenues for each asset (capital cost, O&M, fuel, transmission costs, power and capacity purchases and sales) associated with the portfolio of assets over time. These costs are adjusted through a discount rate to ensure future costs are reflected in present year dollars, commonly known as a time value of money adjustment. In this way, very different portfolios can be compared on a common metric or value over a long-time frame.

2.5.2 Rate Stability

The rate stability objective metrics used are the 95th Percentile NPV of the Cost to Serve Load, Difference Between Mean and 95th Percentile, a 5-year Compound Annual Growth Rate (CAGR) of the Net Retail Rate Impact (“5-year CAGR metric”) and the Capital Investment Through 2028. The rate impact metrics were expanded based on stakeholder feedback. Specifically, the Capital Investments Through 2028 and 5-year Net Rate Increase CAGR were included because of feedback from stakeholders received during the public stakeholder sessions. As part of the probabilistic modeling approach performed in Step 4, once each portfolio was subjected to 200 iterations of AURORA simulations, a distribution was created of the NPV Cost to Serve Load portfolio costs. The 95th percentile (approximately two standard deviations above the mean value) is a commonly used benchmark to demonstrate the upper threshold of cost risk under widely varying market

circumstances. The Difference Between Mean and 95th Percentile metric provides insight to the upside risk of the portfolio. The 5-year CAGR metric provides near-term insight to customer affordability and rate impacts of the resource additions in each Candidate Portfolio. I&M prepared a traditional, non-levelized calculation of the annual cost of service and the change in revenue requirements for the period of 2025-2029 when new near-term resources are added. Furthermore, the 5-year CAGR metric assumed the installed costs of all resource additions are capitalized and realization of federal tax benefits, except for energy efficiency resources that are reflected in cost of service or operations and maintenance expense. Finally, the Capital Investment Through 2028 metric identifies the near term investments needed for each portfolio.

2.5.3 Market Risk Minimization

The Market Risk Minimization objective metrics include a calculation of average annual energy sales and average annual energy purchases, each divided by the average annual load, and expressed as a percentage over the 20-year time horizon. The metric is meant to capture a measure of reliance on market sales and/or purchases by the resulting portfolios.

2.5.4 Sustainability Impact

The sustainability impact objective metric estimated direct GHG emissions of each generation type, measured in tons of carbon dioxide (CO_2). In addition to direct emissions from each asset, and to account for CO_2 emission from purchases imported from the market, I&M used the capacity expansion developed in the Reference Portfolio for PJM to estimate the carbon content of the market on an annual basis. The metric evaluates the reduction of direct CO_2 emissions plus estimated emissions from imports relative to 2005 levels that did not include emissions assumptions from short-term and spot market purchases.

Additionally, the Company included a table of estimated Lifecycle CO_2 emissions for all portfolios in Exhibit C-26.

2.5.5 Reliability

The reliability objective metric is the Surplus Reserve Margin above the PJM Forecast Pool Requirement (FPR). As base load units are retired and new technologies are being deployed, there is more of a reliance on intermittent resources (i.e., renewable energy) to provide energy and capacity needs. Portfolios balanced the addition of intermittent resources and their associated Effective Load Carrying Capability (ELCC) capacity contribution, as informed by PJM, to I&M's overall capacity obligation. Resource adequacy was inherently evaluated as part of this metric through the use of PJM's guidance on ELCC capacity contribution for intermittent resources along with Unforced Capacity (UCAP) ratings of flexible resources to meet capacity requirements.

2.5.6 Resource Diversity

For the resource diversity objective, the Company developed several portfolios that included a wide range of resource types and fuel sources. Resource diversity helps minimize risk to customers by providing a mix of resources to minimize the dependence on any one resource type to meet capacity and energy needs. As such, the metrics used to evaluate the resource diversity objective include

Number of Unique Generators in 2041 (a metric recommended by Stakeholders) and Number of Unique Fuel Types in 2041.

3 Reference Scenario and Alternative Scenarios Overview

3.1 Overview

After determining the objectives and metrics, the next step in Siemens PTI's five-step IRP process is to define the Reference Scenario and various alternative inputs for consideration in the alternative scenarios used during the selection of a Preferred Portfolio. For the 2021 IRP, a Reference Scenario and two alternative scenarios to inform portfolio development were identified following Stakeholder Meeting #1.

3.2 The Reference Scenario

The Reference Scenario is the most expected future scenario using base forecast assumptions. The existing generation fleet within the "Region" is largely unchanged apart from new units planned with firm certainty or under construction.

In the Reference Scenario, major drivers include:

- AEP's Long-term energy and demand forecast
- Coal prices remain relatively flat over the forecast horizon in constant dollars consistent with EIA reference
- Natural gas prices move upward in real dollars consistent with EIA reference
- Capital costs for new resources are downward sloping for fossil and wind resources and decline significantly for solar and storage resources
- Carbon regulations limiting CO_2 emissions will commence in 2028 and remain in effect throughout the forecast horizon

3.3 Alternative Scenarios

Alternative scenarios were identified to test resource selections against varying future market conditions. For this IRP, two alternative scenarios were ultimately discussed with Stakeholders and determined to proceed in the analysis, including the Rapid Technology Advancement (RTA) scenario and the Enhanced Regulation (ER) scenario. These Scenarios were also informed by the Michigan IRP Planning Parameters.[5]

3.3.1 Rapid Technology Advancement

The Rapid Technology Advancement scenario assumes increased technological advancements, favorable regulation and overall economies of scale that favorably impact renewable resource cost. The scenario assumes resulting technology costs for supply-side renewable and demand-side resources that are 35% lower for wind, solar, storage, energy efficiency and demand response technology costs compared to the Reference Scenario.

[5] https://www.michigan.gov/documents/mpsc/11-21-2017_MIRPP_Final_606706_7.pdf

In the Rapid Technology Advancement scenario, major drivers include:

- Technology cost reductions for DSM, renewables, and storage result in lower costs.
- Technological advancement and economies of scale contribute to greater potential for energy efficiency and demand response.
- Carbon regulations limiting CO_2 emissions commence in 2028 and remain in effect throughout the forecast horizon.
- Thermal generation retirements are driven by unit age-limits and announced retirements, consistent with Reference scenario.
- Fundamental drivers (load, commodity prices,) remain consistent with the Reference scenario.

3.3.2 Enhanced Regulation

The Enhanced Regulation scenario assumes increased environmental regulations covering natural gas, coal, and CO_2. Illustrative examples include a potential fracking ban and increases of carbon reduction targets.

In the Enhanced Regulation scenario, major drivers include:

- Natural gas, coal prices and CO_2 prices are increased to reflect enhanced regulation
- Technology costs for thermal and renewable units remain consistent with the Reference scenario.
- Thermal generation retirements are driven by unit age-limits and announced retirements, consistent with Reference scenario.
- Carbon regulations limiting CO_2 emissions will commence in 2025 and remain in effect throughout the forecast horizon.
- A summary of the relative outlooks for key market drivers across the Reference and Alternative Scenarios considered are presented in Table 3 below.

Table 3. Directional Relationship of Key Inputs Across Scenarios

Scenario	Load	Gas Price	Coal Price	CO2	Renewable and Storage Costs	EE / DR Cost
Reference	Base	Base	Base	Base	Base	Base
Rapid Technology Advancement	Base	Base	Base	Base	Low	Low
Enhanced Regulation	Base	High	High	High	Base	Base

3.4 Portfolio Development

Siemens PTI's five-step IRP process discussed in Section 2, aims to address the gap between resource needs and current resources within the construct of the previously identified Scenarios and is a combination of expert judgement coupled with robust industry leading tools. As such, optimization techniques, expert judgement, practical considerations, and Stakeholder input were used to identify a series of Candidate Portfolios ("Candidate Portfolios") to inform I&M and Stakeholders of the type, timing and amount of supply and demand-side resources.

3.4.1 Long Term Capacity Expansion (LTCE) Assessments

Given the various assets and resources that can satisfy this expected gap, a process, supported by robust modeling and tools are needed to sort through the diverse mix of potential resource combinations and return an optimum solution. AURORA is the primary modeling application used by Siemens PTI for identifying and analyzing portfolios that address the gap between resource needs and current available resources. The model uses hourly chronological dispatch over a 20-year period which helps to better evaluate intermittent and storage resources.

The long-term capacity expansion functionality within AURORA was used to develop least cost optimized portfolios based on the given sets of market input assumptions and portfolio requirements. The LTCE function drives build, retirement and purchase decisions for the resulting portfolios.

3.4.2 Resource Models – AURORA

AURORA was used as the primary tool to develop two models for use, including: 1) I&M's Fundamental Forecast, and 2) Siemens Portfolio Construction and Risk Assessment. AURORA is an industry standard chronological unit commitment and dispatch model with extensive presence throughout the electric power industry. The model uses a state of the art, mixed integer programing approach ("MIP") to capture details of power plant and transmission network operations while observing real world constraints, such as emission reduction targets, transmission and plant operation limitations, renewable energy availability and mandatory portfolio targets. It is widely used by electric utilities, consulting agencies, and other Stakeholders to forecast generator performance and economics, develop IRPs, forecast power market prices, and assess detailed impact of regulations and market changes affecting the electric power industry. Key inputs to the model include load forecasts, power plant costs and operating characteristics (e.g., heat rates), fuel costs, fixed and variable operating costs, outage rates, emission rates as well as capital costs. The model assesses the potential performance, fixed and variable O&M costs, and capital costs of prospective and existing generation technologies and resources, and makes resource addition and retirement decisions for economic, system reliability, and policy compliance reasons on a utility system, regional and nationwide scale. Outputs of the model include plant generation, gross margin, emissions, and a variety of other metrics.

Siemens PTI has used AURORA for well over 15 years as its primary model for asset valuation, power market forecast, and IRPs. The model is equipped to analyze portfolio risks by assessing portfolio performance across 200 different future market outlooks. Siemens PTI has developed a sophisticated stochastic framework to ensure that these future market outlooks reflect both relevant historic volatility in key market drivers and cross relationships between different market drivers. Siemens PTI has also developed modules to simulate the different operating characteristics of ISO/RTO regions across the country. For this reason, it is one of the most comprehensive, reliable, and flexible tools in the market for conducting IRPs. Siemens PTI has successfully conducted numerous IRPs for many utilities across the country, including several utilities in IN and MI. AURORA has gained wide acceptance among electric utility executives, Stakeholder groups, and regulatory commissions.

3.4.3 Portfolio Construction

Reference and Candidate Portfolios were developed utilizing AURORA's LTCE modeling for the Reference Scenario, Rapid Technology Advancement Scenario, and the Enhanced Regulation Scenario by optimizing resources based on lowest cost, within the model parameters.

In addition to the Reference Portfolio, additional portfolios were identified to specifically test alternative resource strategies. These included defined portfolios in the Company settlement agreements along with portfolios identified by I&M to evaluate resource selections related to different future assumptions pertaining to the Cook nuclear unit life extension as well as evaluating solutions with high amounts of renewable resources. Table 4 summarizes the portfolios evaluated in Step 3 of Siemens PTI's five-step process to identify Candidate Portfolios to analyze in Step 4.

Table 4. Reference and Candidate Portfolios

Scenario Name	Portfolio Name	Description
Reference	Reference Case (Original)	Rockport Unit 1 (2028) Rockport Unit 2 (2024) and Cook (2034, 2037)
Reference	Rockport 1 2024	Rockport Unit 1 Early Retirement (2024)
Reference	Rockport 1 2025	Rockport Unit 1 Early Retirement (2025)
Reference	Rockport 1 2026	Rockport Unit 1 Early Retirement (2026)
Reference	Cook 2050+	Cook Unit 1 and Unit 2 License Extensions (beyond 2034 and 2037)
Reference	Cook 2050+ and No Gas	Cook Unit 1 and Unit 2 License Extensions and No Conventional Gas
Reference	Expanded Build Limits	Expanded Cumulative Build Limits on Renewable Energy and Storage
Reference	Reference' ("Prime")	Reference Case (Original) with an Import and Export Limit at ~30% of I&M Load
Rapid Technology Advancement	Rapid Technology Advancement	35% Reduction in Renewable, Storage and EE Costs
Enhanced Regulation	Enhanced Regulation	Increased Environmental Regulations Leading to High Gas, Coal and CO_2 Prices
Reference	Rockport 1 2024 N2G	Rockport Unit 1 Early Retirement (2024) Replacing SEA with Net to Gross EE Bundle Savings
Reference	Rockport 1 2026 N2G	Rockport Unit 1 Early Retirement (2026) Replacing SEA with Net to Gross EE Bundle Savings
Rapid Technology Advancement	Rapid Technology Advancement N2G	Rapid Technology Advancement (RTA) Replacing SEA with Net to Gross EE Bundle Savings
Reference	Reference with No Renewable Limits	Removed cumulative Build Limits on Renewable Energy and Storage

These portfolios were evaluated in the Step 4: Candidate Portfolio analysis to inform the identification of the Preferred Portfolio. Figure 8 illustrates the portfolio screening process defined as part of the analysis.

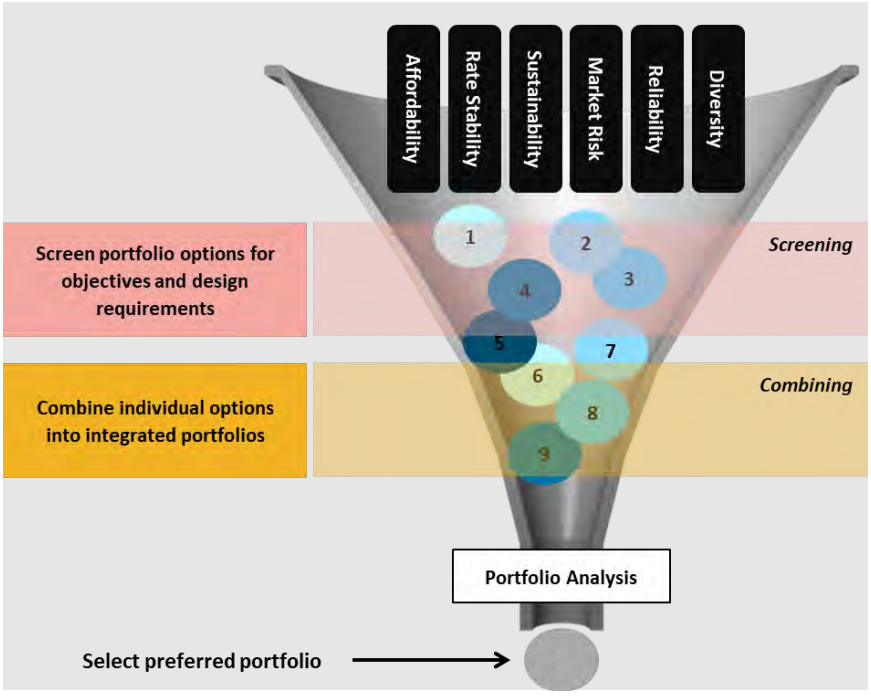


Figure 8. Structured Portfolio Selection Process

3.5 Portfolio Performance (Probabilistic / Stochastic Modeling)

Step 4 of Siemens PTI's five-step process included probabilistic modeling for each Candidate Portfolio to assess how well each portfolio performs under a range of market, technology, and regulatory uncertainties. Probabilistic modeling incorporates several market variables and probability distributions into the analysis. The approach allows for the evaluation of a portfolio's performance over a wide range of market conditions. The portfolio results of the probabilistic modeling inform the metrics used on the Balanced Scorecard, and thus each metric is a representation of over 200 unique AURORA results.

Probabilistic modeling begins with the development of 200 sets of future pathways for coal prices, natural gas prices, carbon prices, peak and average load and capital costs for a range of technologies. Each of these stochastic variables is propagated to the end of the study period, typically over 2,000 times. A stratified sampling in the runs is taken, which allows the sample set to be reduced to 200 iterations. These 200 iterations of each stochastic variable are then loaded as inputs to the AURORA dispatch model. These inputs thus allow for the testing of each portfolios' performance across a wide range of market conditions.

All portfolios identified above were subjected to each of the 200 iterations using AURORA in dispatch mode, whereby the I&M portfolio of resources is held constant while the buildout in the surrounding PJM region could change within the AURORA model under each set of market conditions.

3.6 Balanced Scorecard

The stochastic analysis (based on the probabilistic modeling) of each of the portfolios was summarized through the Balanced Scorecard. The Balanced Scorecard compares the performance of each Candidate Portfolio against the Objectives and Metrics defined in the initial steps of the IRP planning process described in Section 2.5, providing insights to the differences between Candidate Portfolios.

There were several steps in the process of creating the Balanced Scorecard results:

- The first step was to develop the input distribution for each of the major market and regulatory drivers. Siemens PTI developed this process internally and it includes average and peak load growth and shape, natural gas prices, coal prices, carbon prices and technology capital costs. The approach for developing the input distributions included considering historic volatility of each factor and was further informed by EIA and subject matter experts.
- The second step was to run a probabilistic model (Monte Carlo) which selected 200 possible future states over the 20-year study planning period.
- Each Candidate Portfolio was then run through a simulated dispatch for the 200 possible future states using the AURORA production cost model. The process assumes I&M's Candidate Portfolio remains constant but allows for builds and retirements throughout the region (PJM) to occur based on economic criteria. As a result, I&M generation, costs, emissions, revenues, and all other metrics are tracked across all 200 iterations and presented as a distribution.
- From the simulated dispatch set of results described above, metrics described in Section 2.5 were calculated for each portfolio.
- Finally, these metrics were populated into the Balanced Scorecard and served as the basis for evaluation. The results of the analysis for the Candidate Portfolios are discussed in Section 8 Portfolio Development and Evaluation.

3.7 Identification of the Preferred Portfolio

The identification of the Preferred Portfolio is informed from the results of the Candidate Portfolios and how they met multiple objectives in the Step 4 analysis. The Preferred Portfolio is a product of complex analysis, expert opinion and a balanced assessment of computer results and is discussed in Section 9.

4 Public Stakeholder Participation Process

4.1 Public Participation Process

For this IRP, I&M conducted an extensive and thorough Public Participation Process. I&M considered multiple sources of feedback, including comments in the Director's Report, Stakeholder feedback, internal suggestions, as well as recommendations from the Siemens PTI consulting team. Care was taken to promote Stakeholder engagement even though all Stakeholder meetings were held virtually during this process due to the COVID-19 pandemic. The goal was a Stakeholder engagement process focused on promoting transparency in the IRP process, encouraging questions and feedback along the way, and converting feedback to actionable suggestions to incorporate into the IRP process.

As a result, Stakeholders have had the opportunity to provide feedback on virtually all areas of the IRP, including but not limited to the following:

- Establishing objectives of the IRP.
- Identification of metrics to be used in evaluating objectives.
- Review of inputs and key assumptions.
- Identification of alternative scenarios and sensitivities to generate a diverse range of potential Candidate Portfolios.
- Analysis of the Candidate Portfolios through the Stochastic Modeling process.
- Creation of the Preferred Portfolio.

I&M's objectives for Stakeholder engagement included:

- **Listen:** Understand concerns and objectives by providing a forum for Stakeholder feedback at key points in the Integrated Resource Plan process to inform I&M's decision making.
- **Inform:** Increase Stakeholder understanding of the Integrated Resource Plan process, key assumptions, and the challenges facing I&M and the electric utility industry through discussion, answering, and asking questions and being transparent in the process.
- **Consider:** Review all Stakeholder input and carefully consider this feedback at key points in the Integrated Resource Plan process to inform I&M's decision making.

IRP Stakeholders included, but were not limited to, I&M residential, commercial, and industrial customers, regulators, customer advocacy groups, environmental advocacy groups, fuel suppliers and advocacy groups and elected officials.

At the core of the process was a series of five public Stakeholder Meeting Workshops. Figure 9 below lists the topics covered in each stakeholder meeting.

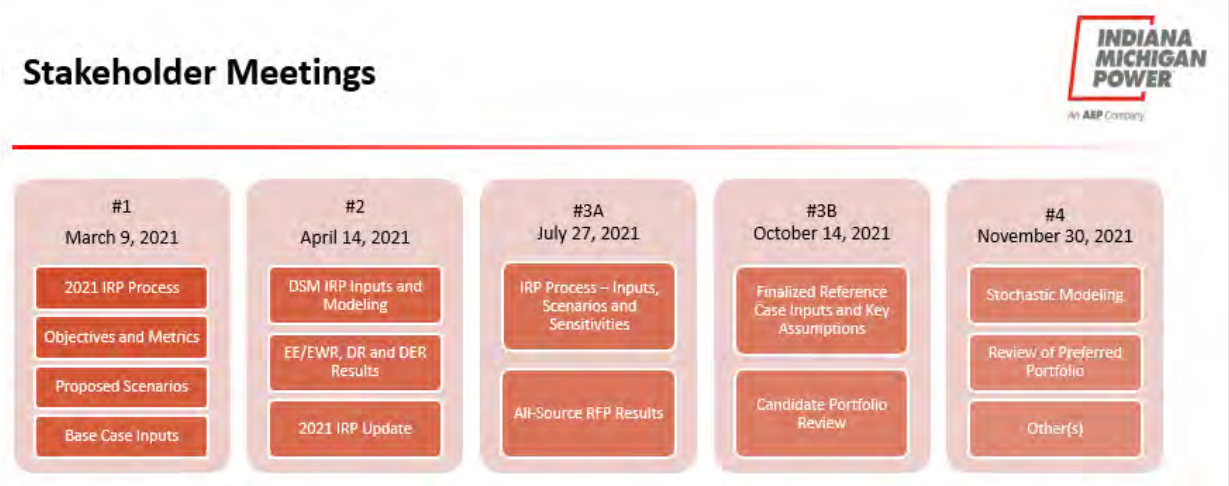


Figure 9. 2021 Stakeholder Meeting Workshops

Meeting materials of each Stakeholder meeting can be found in IRP Appendix Volume 4 and at https://www.indianamichiganpower.com/community/projects/irp/. All Stakeholder meetings were held via webinar utilizing the GoToWebinar meeting tool.

Concurrent with the Stakeholder meetings described above, the Company managed an IRP website where Stakeholders had an opportunity to submit questions and provide feedback directly for further consideration throughout the process. This provided Stakeholders an ongoing and continuous opportunity to engage with I&M during the IRP process. A summary of the Stakeholder meetings described above are found in Appendix Volume 4, including the presentations, meeting minutes and a full list of the written Stakeholder questions responded to by the Company. In total, I&M answered more than 275 questions from stakeholders during the IRP stakeholder process.

The IRP Stakeholder meetings had a robust attendance with an average of more than 75 participants attending each of the five Stakeholder Meetings. Highlights of each Stakeholder meeting are summarized below in Section 4.2.

Each Stakeholder meeting followed the same format.

- Introduction by I&M management
- Review of guidelines for the meeting and opportunities for Stakeholder engagement
- Focus Topics (different for each Stakeholder Meeting)
- Plans for Stakeholder Meetings and Data Provisioning
- Questions and Feedback at the end of each focus topic area
- Concluding remarks by I&M management

I&M worked diligently to have an open forum for Stakeholders to voice questions/concerns and make suggestions on the IRP analysis. Each I&M Stakeholder meeting was opened by a member of the I&M senior management team. I&M senior management, I&M subject matter experts, and expert consultants actively participated in each meeting to help address Stakeholder questions/concerns.

During each Workshop, all participants could use the GoToWebinar tool to submit written questions or feedback. All written questions and feedback submitted by the participants were saved in the GoToWebinar tool. Participants were also able to ask questions or give feedback orally. The results of these question and feedback sessions are included in each Stakeholder Meeting minutes.

It is important to note that all feedback and suggestions were reviewed by both the IRP working team as well as I&M management. Throughout the process, I&M worked to include many of the suggestions into the IRP process, analysis and results.

4.2 IRP Stakeholder Meeting Discussions

Each IRP Stakeholder Meeting coincided with the ongoing five-step IRP process described in Section 2. This intentional coordination was to ensure Stakeholders were informed of the available information at each step.

In the first Stakeholder meeting, I&M presented the IRP process to be followed for the development of the 2021 Integrated Resource Plan. During this meeting, the framework for the creation of Scenarios and Sensitivities was presented, along with the identified IRP Objectives and the proposed metrics. Stakeholders were encouraged to provide feedback related to scenario conditions or potential additional sensitivities that would allow a broad and diverse review of potential Candidate Portfolios. Additionally, Stakeholders were introduced to the Balanced Scorecard method planned for use to evaluate portfolio results. Through the GoToWebinar tool, we received questions and feedback during each topic session, which allowed the meeting facilitators to address questions during the Questions and Feedback sessions that followed each major section of the agenda. The Company received feedback in several areas related to the Balanced Scorecard, proposed Scenarios, and Metrics that influenced the refinement of decisions at this junction in the IRP process. The feedback received during this discussion focused on using a Balanced Scorecard approach, the method for which the Company would assess emissions, the proposed High Market variant Scenario and the proposed diversity metric.

A thorough discussion was held during the meeting related to the number of Scenarios evaluated in this IRP, resulting in a recommendation to not include High Market variant Scenario in order to eliminate confusion when comparing results and with the understanding that Step 4 in the IRP process will utilize probabilistic analysis that will provide the opportunity to consider a variation of load futures, including a high load future much like that intended for the High Market variant Scenario. Additionally, there was Stakeholder feedback related to the proposed Diversity metric, with suggestions for additional metrics.

With the feedback and engagement received from Stakeholder meeting 1, the Company continued its evaluation of the proposed Scenarios, Sensitivities, and the associated Metrics to ensure the IRP Process would address the IRP Objectives and comply with all regulatory requirements. The feedback during this meeting was also considered throughout the entire course of this IRP, with a consistent reference back to the interest expressed in both the Scenarios and the associated Metrics. As will be discussed later in this report, the Company updated its analysis to include two additional metrics: 1) a diversity metric that incorporated feedback from the Stakeholders, and 2) an additional Rate Impact metric.

Stakeholder Meeting 2 was focused on Energy Efficiency and Demand Side resources. In this meeting, the Company, along with the GDS Team and Siemens PTI, presented its plan to utilize the information from the 2021 Market Potential Study, including the methods being considered for modeling DSM resources and the development of EE Bundles to support an efficient IRP modeling approach for these resources.

The feedback received from this meeting related to assessment and selection of the EE bundling method used in this IRP resulted in further coordination and review with the GDS Team. The original proposal for using a Value-Based Approach was replaced with a method preferred by Stakeholders to group measures into sector-level portfolios for inclusion in the IRP modeling.

The Company also spent considerable time assessing its approach toward the modeling of EE resources. This effort included the Company reaching out to several peer Utilities to understand their approach to capturing EE benefits in the forecasted load obligations. This effort provided an understanding of alternative methods in use and their perspectives on the subject. In summary, the Company found that while methods varied among peer Utilities, the net adjustment to the total EE impact were statistically equivalent. These results were presented in Stakeholder Meeting 3a.

Stakeholder Meeting 3 was originally intended to discuss the key IRP inputs as well as Candidate Portfolios identified to analyze for the purpose of informing the Company for the identification of its Preferred Portfolio. With the work related to modifying the IRP assumptions and inclusion of additional portfolios to model related to the settlement agreement in Cause No. 45546, the Company adjusted the original plan and divided this meeting into two meetings. Meeting 3a focused on key model inputs and the Reference Scenario development. Stakeholders were also presented with the results of the All-Source Informational RFP and the Renewable RFP that informed the IRP. Stakeholders provided input into portfolio development, which helped to provide a wide range of portfolios, including an all-renewables portfolio by 2050, and alternative retirement and use scenarios for the Rockport Units 1.

EE modeling was further discussed during Stakeholder meeting 3a. As part of the settlement agreement in Cause No. 45546, further discussions were held with several Stakeholders related to the IRP assumptions related to Rockport Unit 2 and the development of additional Sensitivities to evaluate the effect of applying a Net to Gross (NTG) Energy Efficiency adjustment to the EE bundle potential savings. This required an update to the modeling to reflect new assumptions for this IRP. The Company discussed with and presented to Stakehlders the additional portfolio analysis and associated EE modeling inputs over the course of the two additional meetings.

Stakeholder Meeting 3b presented the Candidate Portfolios being analyzed. The Company received feedback from various stakeholders on several topics related to the modeling inputs and dynamics. Several questions related to the Candidate Portfolio modeling results and the associated analysis were further reviewed following the meeting. This included feedback related to the proposed Rate Impact metric and energy balance and exports.

Following this meeting, the Company concluded its development of an additional method to analyze rate impacts on a non-levelized basis (note this topic was also raised during the 1st Stakeholder meeting.) This was a new approach to traditional methods for evaluating rate impacts in the IRP. Additionally, the Company, along with Siemens PTI, further evaluated feedback received after the meeting related to the energy exports seen in the various Candidate Portfolios.

Stakeholder Meeting 4 was held in late November to review the results of the Candidate Portfolio analysis and the Company's Preferred Portfolio. In this meeting, the Company discussed the Candidate Portfolio Balanced Scorecard metrics and how the stochastic results informed the development of the Preferred Portfolio. The Company presented its Preferred Portfolio with specific actions in its near-term plan to meet its overall objectives, and explained how the Preferred Portfolio retains long-term optionality around the Cook Plant extension until the necessary re-licensing studies are performed. See Section 9 to this Report for a more detailed explanation of the presented Preferred Portfolio.

4.3 Additional Stakeholder Engagement

4.3.1 All-Source Informational RFP review

As part of I&M's efforts to conduct an All-Source Informational RFP, a meeting was facilitated by Siemens PTI on the process for this effort. The Stakeholders were presented the draft documents associated with the RFP prior to the release of the final response documents to solicit Stakeholder feedback. The purpose of the All-Source Informational RFP was to provide current, market-based cost and performance data inputs to the IRP process. This Stakeholder meeting was conducted on

April 9, 2021. The summary of this review was presented to Stakeholders in Stakeholder Meeting 3a.

4.3.2 Technical Stakeholders

In addition to the core Stakeholder Meetings, a separate engagement process was developed for the "Technical Stakeholders" who desired to examine in more detail the underlying analysis performed during the IRP process. The following three-stage process was designed to empower the Technical Stakeholders to participate in the technical analysis portion of this process resulting in enhanced collaboration and feedback beneficial to all Stakeholders.

Stage 1: Preparation for use of the AURORA Tool: Late June – Early September

Objective: Technical Stakeholders to be equipped with the AURORA application and complete any training required to be productive with the application.

During Stage 1 Technical Stakeholders were asked to:

- Install the AURORA Software
- Attend the AURORA Technical Conference (June 24)
- Utilize any training resources available to prepare for use of the AURORA application

To begin the process with the Technical Stakeholders, I&M and Siemens PTI hosted the "AURORA Technical Conference" on June 24, 2021. The purpose of this session was to provide a technical overview of the AURORA production cost modeling tool. Presentations were made by Deborah Austin-Smith, Director of Customer Service at Energy Exemplar (the owner of the AURORA application) and Mike Korschek of Siemens PTI. An agenda and presentation outlining the topics discussed are included in the Appendix F

Stage 2: Production of I&M IRP Inputs and Key Assumptions – November

Objective*: *Facilitate the review of the data and assumptions used within the AURORA tool. The assumptions and input data will be provided in Excel format and would be made available for download from a secure site maintained by Siemens PTI.

Three separate parties requested access to the IRP Inputs and Key Assumptions workbook. These parties completed the execution of a Non-Disclosure Agreement and were granted access to the data in November. In addition, a meeting was held on December 9, 2021, with Technical Stakeholders who had executed a Non-Disclosure Agreement to review the IRP Inputs and Key Assumptions and answer any questions.

Stage 3: Production of Reference Scenario AURORA database –February 2022

Objective: To provide the ability to verify model inputs and assumptions, re-produce the dispatch simulation results for the Reference Scenario and provide the ability for the Technical Stakeholder to analyze alternative dispatch simulation scenarios and sensitivities.

Siemens anticipates posting the I&M AURORA model on the secure website in late February 2022.

4.3.3 Additional Stakeholder Input

In this IRP, the Company also incorporated several terms associated with the Settlement Agreement approved in IURC Cause No. 45546. This included an adjustment to key inputs related to the modeling of Rockport Unit 2 and the inclusion of additional modeling portfolios to evaluate the effects of utilizing an alternative Energy Efficiency adjustment factor as well as a specific review meeting with the primary Stakeholder requesting the additional portfolios modeled.

Additionally, the Company managed an IRP website where Stakeholders had an opportunity to submit questions directly for further consideration throughout the process. A summary of the Stakeholder Meetings described above are found in Appendix Volume 4, including the presentations, meeting minutes and a full list of the written Stakeholder questions responded to by the Company.

5 Load Forecast and Forecasting Methodology

5.1 Summary of I&M Load Forecast

The I&M load forecast was developed by AEP's Economic Forecasting organization and completed in June 2021.[6] The final load forecast is the culmination of a series of underlying forecasts that build on each other. In other words, the economic forecast provided by Moody's Analytics is used to develop the customer forecast which is then used to develop the sales forecast which is ultimately used to develop the peak load and internal energy requirements forecast.

Over the next 20-year period (2022-2041),[7] I&M's service territory is expected to see population and non-farm employment growth of 0.0% and 0.4% per year, respectively. Not surprisingly, I&M is projected to see customer count growth at a similar rate of 0.1% per year. Over the same forecast period, I&M's retail sales are projected to grow at 0.3% per year with stronger growth expected from the industrial class (+0.46% per year) while the residential class experiences 0.3% CAGR and the commercial class remains relatively flat over the forecast horizon. Finally, I&M's internal energy and peak demand are expected to decrease at an average rate of 0.5% and 0.3% per year, respectively, through 2041.

5.2 Forecast Assumptions

5.2.1 Economic Assumptions

The load forecasts for I&M and the other operating companies in the AEP System incorporate a forecast of U.S. and regional economic growth provided by Moody's Analytics. The load forecasts utilized Moody's Analytics economic forecast issued in January 2021. Moody's Analytics projects moderate growth in the U.S. economy during the 2022-2041 forecast period, characterized by a 2.1% annual rise in real Gross Domestic Product (GDP), and moderate inflation, with the implicit GDP price deflator expected to rise by 2.1% per year. Industrial output, as measured by the Federal Reserve Board's (FRB) index of industrial production, is expected to grow at 1.5% per year during the same period. Moody's projects regional employment growth of 0.4% per year during the forecast period and real regional income per-capita annual growth of 1.7% for the I&M service area.

5.2.2 Price Assumptions

The Company utilizes an internally developed service area electricity price forecast. This forecast incorporates information from the Company's financial plan for the near term and the U.S.

[6] The load forecasts (as well as the historical loads) presented in this report reflect the traditional concept of internal load, i.e., the load that is directly connected to the utility's transmission and distribution system and that is provided with bundled generation and transmission service by the utility. Such load serves as the starting point for the load forecasts used for generation planning. Internal load is a subset of connected load, which also includes directly connected load for which the utility serves only as a transmission provider. Connected load serves as the starting point for the load forecasts used for transmission planning.

[7] 20-year period begins with 2022, while 2021 is six months actual and six months forecasts.

Department of Energy (DOE) Energy Information Administration (EIA) outlook for the East North Central Census Region for the longer term. These price forecasts are incorporated into the Company's energy sales models, where appropriate.

5.2.3 Specific Large Customer Assumptions

I&M's customer service engineers frequently are in touch with industrial and commercial customers about their needs and activities. From these discussions, expected load additions or deletions are relayed to the Company.

5.2.4 Weather Assumptions

Where appropriate, the Company includes weather as an explanatory variable in its energy sales models. These models reflect historical weather for the model estimation period and normal weather for the forecast period.

5.2.5 Energy Efficiency (EE) and Demand Side Management (DSM) Assumptions

The Company's long term load forecast models account for trends in EE both in implicit historical data as well as the forecasted trends in appliance saturations resulting from various legislated appliance efficiency standards (Energy Policy Act of 2005 [EPAct], Energy Independence and Security Act [EISA] of 2007, etc.) modeled by EIA. In addition to general trends in appliance efficiencies, the Company also administers and implements multiple DSM programs that the Commissions approve as part of its DSM portfolio. The load forecast utilizes the most current DSM programs, which either have been previously approved by or are pending before the Commission at the time the load forecast is created to adjust for the impact of these programs. For this IRP, DSM programs through 2022 have been embedded into the load forecast.

5.3 Overview of Forecast Methodology

I&M's load forecasts are based mostly on econometric, statistically adjusted end-use and analyses of time-series data. This is helpful when analyzing future scenarios and developing confidence bands in addition to objective model verification by using standard statistical criteria.

I&M utilizes two sets of econometric models: 1) a set of monthly short-term models which extends for approximately 24 months and 2) a set of monthly long-term models which extends for approximately 30 years. The forecast methodology leverages the relative analytical strengths of both the short- and long-term methods to produce a reasonable and reliable forecast that is used for various planning purposes.

For the first full year of the forecast, the forecast values are generally governed by the short-term models. The short-term models are regression models with time series errors which analyze the latest sales and weather data to better capture the monthly variation in energy sales for short-term applications like capital budgeting and resource allocation. While these models produce extremely accurate forecasts in the short run, without logical ties to economic factors, they are less capable of

capturing structural trends in electricity consumption that are more important for longer-term resource planning applications.

The long-term models are econometric, and statistically adjusted end-use models which are specifically equipped to account for structural changes in the economy as well as changes in customer consumption due to increased energy efficiency. The long-term forecast models incorporate regional economic forecast data for income, employment, households, output, and population.

The short-term and long-term forecasts are then blended to ensure a smooth transition from the short-term to the long-term forecast horizon for each major revenue class. There are some instances when the short-term and long-term forecasts diverge, especially when the long-term models are incorporating a structural shift in the underlying economy that is expected to occur within the first 24 months of the forecast horizon. In these instances, professional judgment is used to ensure that the final forecast that will be used in the peak models is reasonable. The class level sales are then summed and adjusted for losses to produce monthly net internal energy sales for the system. The demand forecast model utilizes a series of algorithms to allocate the monthly net internal energy to hourly demand. The inputs into forecasting hourly demand are internal energy, weather, 24-hour load profiles and calendar information.

A flow chart depicting the sequence of models used in projecting I&M's electric load requirements as well as the major inputs and assumptions that are used in the development of the load forecast is shown in Figure 10.

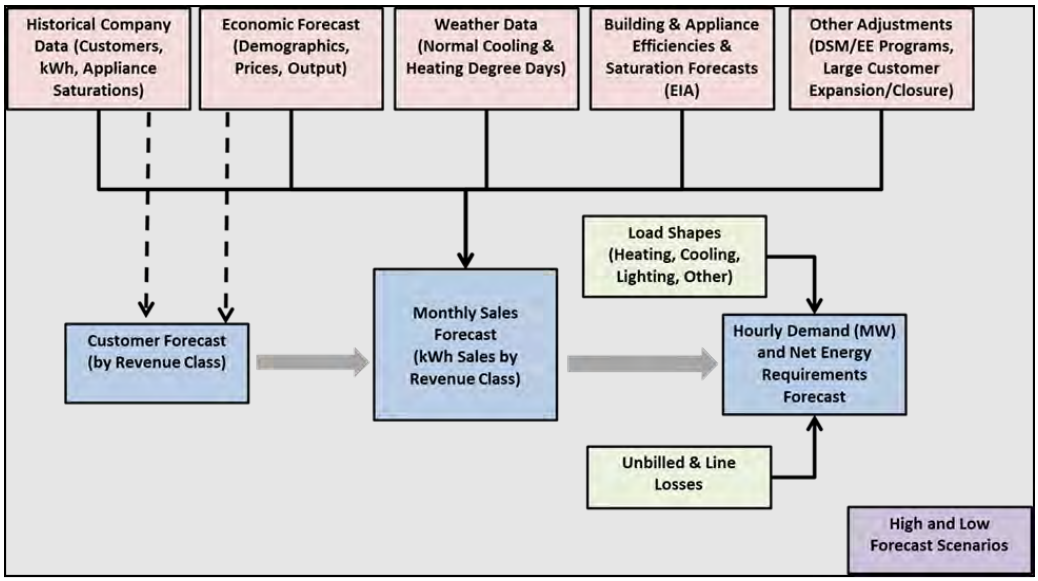


Figure 10. I&M Internal Energy Requirements and

5.4 Detailed Explanation of Load Forecast

5.4.1 General

This section provides a more detailed description of the short-term and long-term models employed in producing the forecasts of I&M's energy consumption, by customer class. Conceptually, the difference between short- and long-term energy consumption relates to changes in the stock of electricity-using equipment and economic influences, rather than the passage of time. In the short term, electric energy consumption is considered to be a function of an essentially fixed stock of equipment. For residential and commercial customers, the most significant factor influencing the short term is weather. For industrial customers, economic forces that determine inventory levels and factory orders also influence short-term utilization rates. The short-term models recognize these relationships and use weather and recent load growth trends as the primary variables in forecasting monthly energy sales.

Over time, demographic and economic factors such as population, employment, income, and technology influence the nature of the stock of electricity-using equipment, both in size and composition. Long-term forecasting models recognize the importance of these variables and include all or most of them in the formulation of long-term energy forecasts.

5.4.2 Relative Energy Prices Impact on Electricity Consumption.

One important difference between the short-term and long-term forecasting models is their treatment of energy prices, which are only included in long-term forecasts. This approach makes sense because although consumers may suffer sticker shock from energy price fluctuations, there is little they can do to affect them in the short-term. They already own a refrigerator, furnace or industrial equipment that may not be the most energy-efficient model available. In the long term, however, these constraints are lessened as durable equipment is replaced and as price expectations come to fully reflect price changes.

5.4.3 Customer Forecast Models

The Company also utilizes both short-term and long-term models to develop the final customer count forecast. The short-term customer forecast models are time series models with intervention (when needed) using Autoregressive Integrated Moving Average (ARIMA) methods of estimation. These models typically extend for 24 months into the forecast horizon.

The long-term residential customer forecasting models are also monthly but extend for over 30 years. The explanatory jurisdictional economic and demographic variables may include gross regional product, employment, population, real personal income and households used in various combinations. In addition to the economic explanatory variables, the long-term customer models employ a lagged dependent variable to capture the adjustment of customer growth to changes in the

economy. There are also binary variables to capture monthly variations in customers, unusual data points and special occurrences.

The short-term and long-term customer forecasts are blended as was described earlier to arrive at the final customer forecast that will be used as a primary input into both short-term and long-term usage forecast models.

5.4.4 Short-term Forecasting Models

The goal of I&M's short-term forecasting models is to produce an accurate load forecast for the first full year into the future. To that end, the short-term forecasting models generally employ a combination of monthly and seasonal binaries, time trends, and monthly heating cooling degree-days in their formulation. The heating and cooling degree-days are measured at weather stations in the Company's service area. The forecasts relied on ARIMA models.

The estimation period for the short-term models was January 2011 through January 2021. There are models for residential, commercial, industrial, other retail, and wholesale sectors. The industrial models are comprised of 20 (10 in each jurisdiction) large industrial models and models for the remainder of the industrial sector. The wholesale forecast is developed using models for Auburn, Indiana Municipal Power Association, Wabash Valley Power Association, and Dowagiac.

Off-system sales and/or sales of opportunity are not relevant to the net energy requirements forecast as they are not requirements load or relevant to determining capacity and energy requirements in the IRP process.

5.4.5 Long-term Forecasting Models

The goal of the long-term forecasting models is to produce a reasonable load outlook for up to and beyond 30 years in the future. Given that goal, the long-term forecasting models employ a full range of structural economic and demographic variables, electricity and natural gas prices, weather as measured by annual heating and cooling degree-days, and binary variables to produce load forecasts conditioned on the outlook for the U.S. economy, for the I&M service-area economy, and for relative energy prices.

Most of the explanatory variables enter the long-term forecasting models in a straightforward, untransformed manner. In the case of energy prices, however, it is assumed, consistent with economic theory, that the consumption of electricity responds to changes in the price of electricity or substitute fuels with a lag, rather than instantaneously. This lag occurs for reasons having to do with the technical feasibility of quickly changing the level of electricity use even after its relative price has changed, or with the widely accepted belief that consumers make their consumption decisions on the basis of expected prices, which may be perceived as functions of both past and current prices.

There are several techniques, including the use of lagged price or a moving average of price that can be used to introduce the concept of lagged response to price change into an econometric model.

Each of these techniques incorporates price information from previous periods to estimate demand in the current period.

The general estimation period for the long-term load forecasting models was 1995-2020, with some variation in the estimation period for the various models. The long-term energy sales forecast is developed by blending of the short-term forecast with the long-term forecast. The energy sales forecast is developed by making a billed/unbilled adjustment to derive billed and accrued values, which are consistent with monthly generation.

5.4.6 Supporting Model

In order to produce forecasts of certain independent variables used in the internal energy requirements forecasting models, several supporting models are used, including natural gas price models for I&M's Indiana and Michigan service areas. These models are discussed below.

5.4.6.1 Consumed Natural Gas Pricing Model

The forecast price of natural gas used in the Company's energy models comes from a model of natural gas prices for three primary consuming sectors: residential, commercial, and industrial. In the natural gas price models, sectoral prices are related to East North Central Census region's sectorial prices, with the forecast being obtained from EIA's "2021 Annual Energy Outlook." The natural gas price model is based upon 1980-2020 historical data.

5.4.6.2 Residential Energy Sales

Residential energy sales for I&M are forecasted using two models, the first of which projects the number of residential customers, and the second of which projects kWh usage per customer. The residential energy sales forecast is calculated as the product of the corresponding customer and usage forecasts.

The residential usage model is estimated using a Statistically Adjusted End-Use model (SAE), which was developed by Itron, a consulting firm with expertise in energy modeling. This model assumes that use will fall into one of three categories: heat, cool, and other. The SAE model constructs variables to be used in an econometric equation where residential usage is a function of Xheat, Xcool, and Xother variables.

The Xheat variable is derived by multiplying a heating index variable by a heating use variable. The heating index incorporates information about heating equipment saturation; heating equipment efficiency standards and trends; and thermal integrity and size of homes. The heating use variable is derived from information related to billing days, heating degree-days, household size, personal income, gas prices, and electricity prices.

The Xcool variable is derived by multiplying a cooling index variable by a cooling use variable. The cooling index incorporates information about cooling equipment saturation; cooling equipment efficiency standards and trends; and thermal integrity and size of homes. The cooling use variable

is derived from information related to billing days, cooling degree-days, household size, personal income, gas prices and electricity prices.

The Xother variable estimates the non-weather sensitive sales and is similar to the Xheat and Xcool variables. This variable incorporates information on appliance and equipment saturation levels; average number of days in the billing cycle each month; average household size; real personal income; gas prices and electricity prices.

The appliance saturations are based on historical trends from I&M's residential customer survey. The saturation forecasts are based on EIA forecasts and analysis by Itron. The efficiency trends are based on DOE forecasts and Itron analysis. The thermal integrity and size of homes are for the East North Central Census Region and are based on DOE and Itron data.

The number of billing days is from internal data. Economic and demographic forecasts are from Moody's Analytics and the electricity price forecast is developed internally.

The SAE residential model is estimated using linear regression models. These monthly models are typically for the period January 1998 through January 2021, with some variation on the estimation period for the individual models. It is important to note, as will be discussed later, that this modeling *has* incorporated the reductive effects of the EPAct, EISA, American Recovery and Reinvestment Act of 2009 (ARRA) and Energy Improvement and Extension Act of 2008 (EIEA2008) on the residential (and commercial) energy usage based on analysis by the EIA regarding appliance efficiency trends.

The long-term residential energy sales forecast is derived by multiplying the "blended" customer forecast by the usage forecast from the SAE model.

Separate residential SAE models are estimated for the Company's Indiana and Michigan jurisdictions.

5.4.6.3 Commercial Energy Sales

Long-term commercial energy sales are forecast using SAE models. These models are similar to the residential SAE models. These models utilize efficiencies, square footage and equipment saturations for the East North Central Region, along with electric prices, economic drivers from Moody's Analytics, heating and cooling degree-days, and billing cycle days. As with the residential models, there are Xheat, Xcool and Xother variables derived within the model framework. The commercial SAE models are estimated similarly to the residential SAE models.

5.4.6.4 Industrial Energy Sales

The Company uses some combination of the following economic and pricing explanatory variables: service area gross regional product manufacturing, service area manufacturing employment, FRB industrial production indexes, and service area industrial electricity prices. In addition, binary variables for months and special occurrences are incorporated into the models. Based on information

from customer service engineers, there may be load added or subtracted from the model results to reflect plant openings, closures or load adjustments. Separate models are estimated for the Company's Indiana and Michigan jurisdictions. The last actual data point for the industrial energy sales models is January 2021.

5.4.6.5 All Other Energy Sales

The forecast of public-street and highway lighting relates energy sales to either service area employment or service area population and binary variables.

Wholesale energy sales are modeled relating energy sales to economic variables such as service area gross regional product, industrial production indexes, energy prices, heating and cooling degree-days and binary variables. Binary variables are necessary to account for discrete changes in energy sales that result from events such as the addition or deletion of new customers.

5.4.7 Internal Energy Forecast

5.4.7.1 Blending Short and Long-Term Sales

Forecast values for 2021 and 2022 are taken from the short-term process. Forecast values for 2021 are obtained by blending the results from the short-term and long-term models. The blending process combines the results of the short-term and long-term models by assigning weights to each result and systematically changing the weights so that by July 2023 the entire forecast is from the long-term models. The goal of the blending process is to leverage the relative strengths of the short-term and long-term models to produce the most reliable forecast possible. However, at times the short-term models may not capture structural changes in the economy as well as the long-term models, which may result in the long-term forecast being used for the entire forecast horizon.

5.4.7.2 Large Customer Changes

The Company's customer service engineers frequently are in touch with large commercial and industrial customers about their needs for electric service. These customers relay information about load additions and reductions. This information will be compared with the load forecast to determine if the industrial or commercial models are adequately reflecting these changes. If the changes are different from the model results, then add factors may be used to reflect those large changes that are different from the forecast models' output.

5.4.7.3 Losses and Unaccounted-For Energy

Energy is lost in the transmission and distribution of the product. This loss of energy from the source of production to consumption at the premise is measured as the average ratio of all Federal Energy Regulatory Commission (FERC) revenue class energy sales measured at the premise meter to the net internal energy requirements metered at the source. In modeling, Company loss study results are applied to the final blended sales forecast by revenue class and summed to arrive at the final internal energy requirements forecast.

5.4.8 Forecast Methodology for Seasonal Peak Internal Demand

The demand forecast model is a series of algorithms for allocating the monthly internal energy sales forecast to hourly demands. The inputs into forecasting hourly demand are blended revenue class sales, energy loss multipliers, weather, 24-hour load profiles and calendar information.

The weather profiles are developed from representative weather stations in the service area. Twelve monthly profiles of average daily temperature that best represent the cooling and heating degree-days of the specific geography are taken from the last 30 years of historical values. The consistency of these profiles ensures the appropriate diversity of the company loads.

The 24-hour load profiles are developed from historical hourly Company or jurisdictional load and end-use or revenue class hourly load profiles. The load profiles were developed from segregating, indexing and averaging hourly profiles by season, day types (weekend, midweek and Monday/Friday) and average daily temperature ranges.

In the end, the profiles are benchmarked to the aggregate energy and seasonal peaks through the adjustments to the hourly load duration curves of the annual 8,760 hourly values. These 8,760 hourly values per year are the forecast load of I&M and the individual companies of AEP that can be aggregated by hour to represent load across the spectrum from end-use or revenue classes to total AEP-East, AEP-West, or total AEP System. Net internal energy requirements are the sum of these hourly values to a total company energy need basis. Company peak demand is the maximum of the hourly values from a stated period (month, season, or year).

5.5 Load Forecast Results and Issues

All tables referenced in this section can be found in the Appendix of this Report in Exhibit A. The load forecast includes the forecast impact of customers opting for alternative generation suppliers. This is consistent with the Company's requirement to include such customers' load in its capacity planning in PJM.

5.5.1 Load Forecast

Exhibit A-1 presents I&M's annual internal energy requirements, disaggregated by major category (residential, commercial, industrial, other internal sales and losses) on an actual basis for the years 20011-2020, 2021 data are six months actual, and six months forecast and on a forecast basis for the years 2022-2041. The exhibit also shows annual growth rates for both the historical and forecast periods. Corresponding information for the Company's Indiana and Michigan service areas are given in Exhibits A-2A and A-2B. Figure 11 provides a graphical depiction of weather normal and forecast Company residential, commercial, and industrial sales for 2002 through 2041.

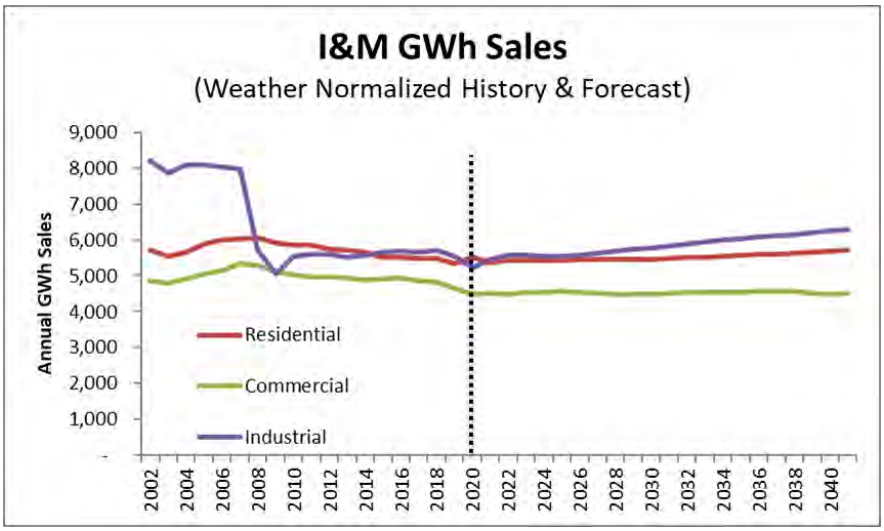


Figure 11. I&M GWh Retail Sales

5.5.2 Peak Demand and Load Factor

Exhibit A-3 provides I&M's seasonal peak demands, annual peak demand, internal energy requirements and annual load factor on an actual basis for the years 2011-2020, 2021 data are six months actual, and six months forecast and on a forecast basis for the year 2022-2041. The table also shows annual growth rates for both the historical and forecast periods.

Figure 11 presents actual, weather normal and forecast I&M peak demand for the period 2000 through 2041. Figure 12depicts the Company's annual peak demand, which occurs in the summer season.

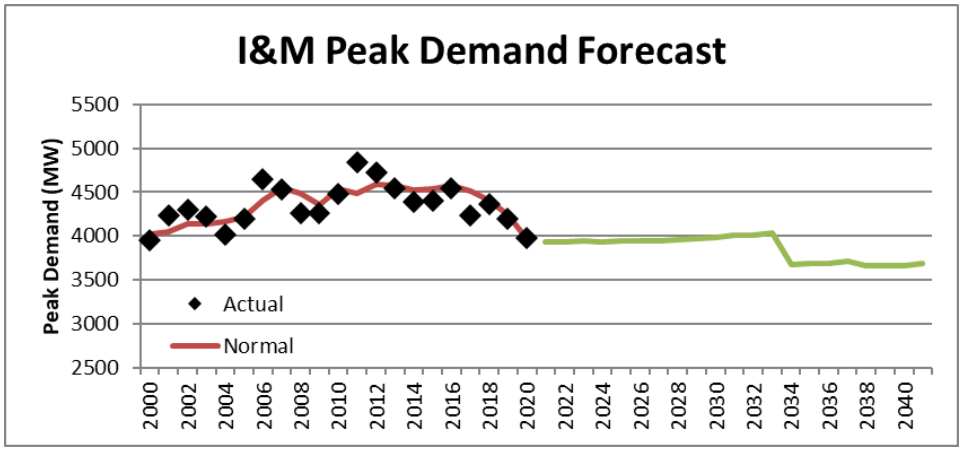


Figure 12. I&M Peak Demand Forecast

5.5.3 Performance of Past Forecasts

The performance of the Company's past load forecasts is reflected in Exhibit A-5, which displays, in graphical form, annual internal energy requirements and summer peak demands experienced since

2000, along with the corresponding forecasts made in 2007, 2009, 2011, 2013, 2015, 2019 and 2021 (the current forecast). This exhibit reflects the uncertainty inherent in the forecasting process and demonstrates the changing perceptions of the future.

5.5.4 Historical and Projected Load Profiles

Exhibits A-6 through A-9 display various historical and forecasted load profiles pertinent to the planning process. Exhibit A-6 shows profiles of monthly peak internal demands for I&M on an actual basis for the years 2005, 2015 and 2020, and as forecasted for 2030 and 2040. Exhibit A-7 shows, for the winter-peak month and summer-peak month for the years 2015 and 2020, respectively, I&M's average daily internal load shape for each day of the week, along with the peak-day load shape. Exhibit A-8 displays, for the forecast years 2022 and 2032, I&M's daily internal load shapes for a simulated week in the winter-peak month (January) and summer-peak month (August). In both cases, a weekday is assumed to represent the day of the monthly (and seasonal) peak. Such load shapes were developed for use in integrated resource planning analyses.

The Company maintains an on-going load research program consisting of samples of each major rate class in each jurisdiction. Exhibit A-9 displays I&M's Indiana jurisdiction residential, commercial, and industrial customer class summer and winter 2020 load shape information derived from these samples.

5.5.5 Weather Normalization

The load forecast presented in this report assumes normal weather. To the extent that weather is included as an explanatory variable in various short- and long-term models, the weather drivers are assumed to be normal for the forecast period.

Exhibit A-10 compares the recorded (i.e., actual) and weather-normalized summer and winter peak internal demands and annual internal energy requirements for I&M for the last ten years, 2011-2020.

Peak normalization is a fundamental process of evaluating annual or monthly peaks over time, without the impact of "abnormal" weather events and load curtailment events. The limited number of true annual or monthly peaks over time makes it difficult to use traditional regression analysis. So, a regression model is used to determine statistical relationships among a set of daily observations that are similar to annual/monthly peaks and weather conditions. Any load curtailment or significant outage events are added back to the daily observations. The peak normalization demand model is replicated numerous times in a Monte Carlo (stochastic) simulation model. This approach derives probability distributions for both the dependent variable (peak) and independent variables (weather). Multiple estimates for peak are obtained over time that ultimately produces a weather normalized peak.

Similarly, for each year, the weather-normalized internal energy requirements were determined by applying, to each month of the year, an adjustment related to heating or cooling degree-days, as appropriate, to each sector of the recorded internal energy requirements. The adjustment for each

sector was obtained as the product of (1) the difference between the service area's expected (or "normal") heating or cooling-degree-days for the month and the actual heating or cooling degree-days for that month and (2) a weather-sensitivity factor (in MWh per heating or cooling degree-day), which was estimated by regressing over the past years monthly sectoral energy requirements against heating or cooling degree-days for the month. The normalized monthly energy requirements thus determined for each sector were then added for all sectors across all twelve months to obtain the net total weather-normalized energy requirements for the year.

5.5.6 Data Sources

The data used in developing the I&M load forecast come from both internal and external sources. The external sources are varied and include state and federal agencies, as well as Moody's Analytics. Exhibit A-11 identifies the data series and associated sources, along with notes on adjustments made to the data before incorporation into the load forecast.

5.6 Load Forecast Trends & Issues

5.6.1 Changing Usage Patterns

Over the past decade, there has been a significant change in the trend for electricity usage from prior decades. Figure 13 presents I&M's historical and forecasted residential and commercial usage per customer between 1991 and 2030. During the first decade shown (1991-2000), residential usage per customer grew at an average rate of 0.5% per year, while the commercial usage also grew by 0.5% per year. Over the next decade (2001-2010), growth in residential usage growth was at 0.5% per year while the commercial class usage decreased by 0.6% per year. In the next decade shown (2011-2020) residential usage declined at a rate of 1.0% per year while the commercial usage decreases by an average of 1.6% per year. The COVID-19 Pandemic had a significant impact on residential and commercial usage. With more people at home, residential usage increased by 1.6% in 2020. Meanwhile, with the economy shutdown, commercial usage declined by 5.2% in 2020. Efficiency gains are expected to continue over the next ten year (2021-2030), residential is projected to decline slightly and commercial is forecast to decline by 0.3% per year.

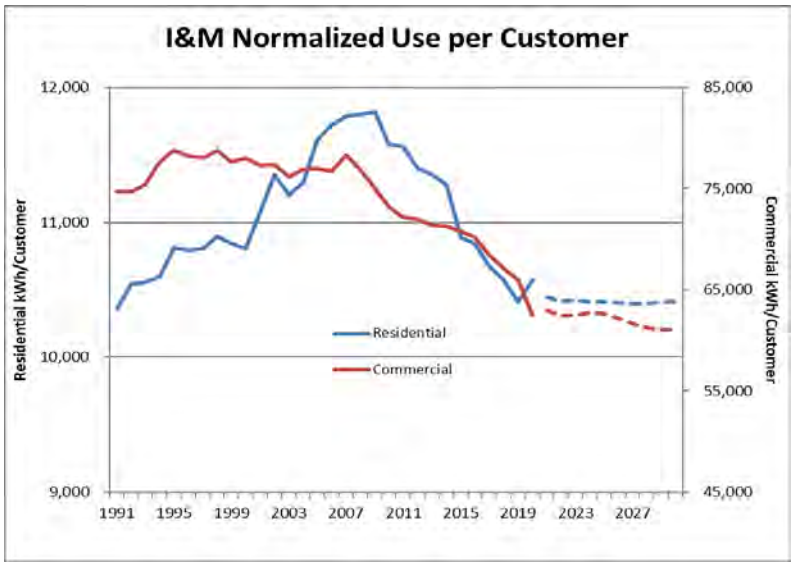


Figure 13. I&M Normalized Use per Customer (kWh)

The SAE models are designed to account for changes in the saturations and efficiencies of the various end-use appliances. Every 3-4 years, the Company conducts a Residential Appliance Saturation Survey to monitor the saturation and age of the various appliances in the residential home. This information is then matched up with the saturation and efficiency projections from the EIA which includes the projected impacts from various enacted federal policies mentioned earlier.

The result of this is a base load forecast that already includes some significant reductions in usage as a result of projected EE. For example, Figure 14 shows the assumed cooling efficiencies embedded in the statistically adjusted end-use models for cooling loads. It shows that the average Seasonal Energy Efficiency Ratio (SEER) for central air conditioning is projected to increase from 11.9 in 2010 to nearly 14.8 by 2040. The chart shows a similar trend in projected cooling efficiencies for heat pump cooling as well as room air conditioning units. Figure 15 shows similar improvements in the efficiencies of lighting and refrigerators over the same period. There are not much additional efficiency gains expected from lighting for residential customers, as consumers have adopted the newer technologies and moved away from incandescent lighting.

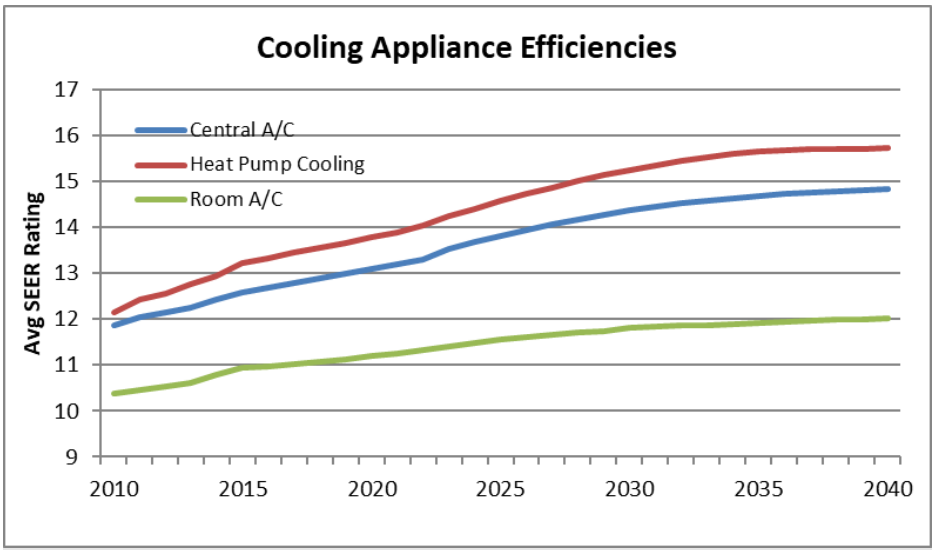


Figure 14. Projected Changes in Cooling Efficiencies, 2010-2040

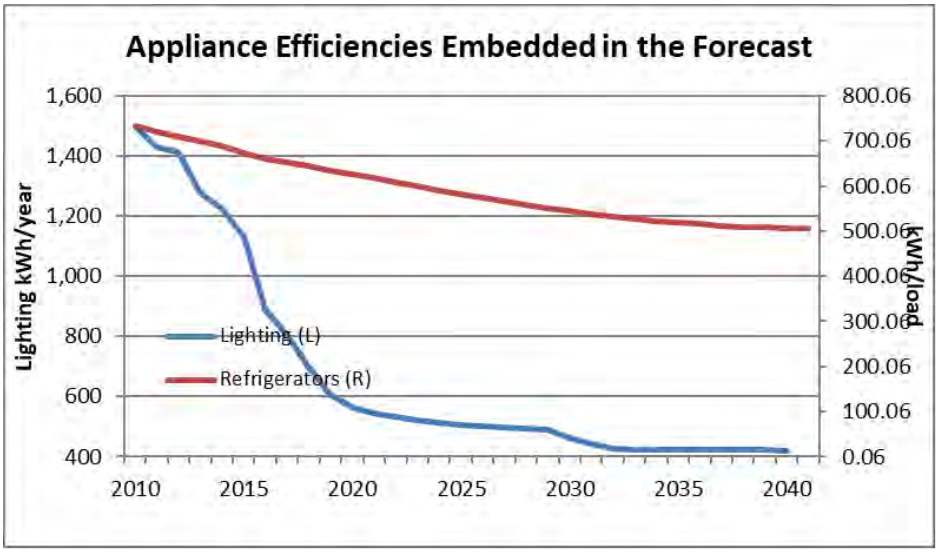


Figure 15. Projected Changes in Lighting & Clothes Washer Efficiencies, 2010-2040

Figure 16 shows the impact of appliance, equipment, and lighting efficiencies on the Company's weather normal residential usage per customer. This graph provides weather normalized residential energy per customer and an estimate of the effects of efficiencies on usage. In addition, historical and forecast I&M residential customers are provided.

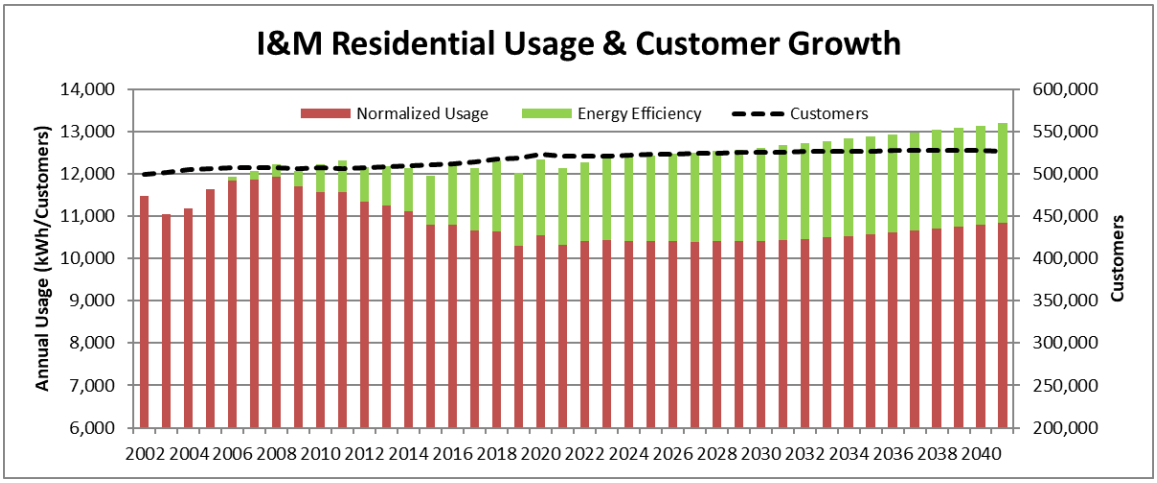


Figure 16. Residential Usage & Customer Growth

5.6.2 Demand-Side Management (DSM) Impacts on the Load Forecast

The end-use load forecasting models account for changing trends and saturations of energy efficient technologies throughout the forecast horizon. In addition, the Company is also actively engaged in implementing various commission approved DSM and EE programs which would further accelerate the adoption of energy efficient technology within its service territory. Itron's SAE model relies on the EIA) Annual Energy Outlook (AEO) to account for future appliance efficiencies. EIA AEO documentation[8] specifically states its forecast data (used by Itron in the SAE) "accounts for the effects of utility-level energy efficiency programs designed to stimulate investment in more efficient equipment for space heating, air conditioning, lighting, and other select appliances". As a result, the Company applies a Supplemental Efficiency Adjustment (SEA) to prevent double counting the impacts from the Company-sponsored energy efficiency programs in the load forecast.

For the near-term horizon (through 2022), the load forecast applies energy and demand savings impact assumptions from the current DSM programs. For the years beyond 2022, the IRP model selected optimal levels of incremental economic EE, which may differ from the levels currently being implemented, based on projections of future market conditions, the future expected costs of available supply resources, and the level of available incremental EE. Since the initial base load forecast accounts for the evolution of market and industry efficiency standards, the energy savings for each specific EE program are adjusted over the expected life of the program. Exhibit A-17 details the impacts of the approved EE programs included in the load forecast, which represent the cumulative adjusted value of EE program impacts throughout the forecast period that were applied to the load forecast. While the IRP optimization process selects the optimal incremental economic EE, the

8 Assumptions to the Annual Energy Outlook 2021: Residential Demand Module, section labeled Energy Efficiency Rebates on pg. 6 of 12 https://www.eia.gov/outlooks/aeo/assumptions/pdf/residential.pdf

resulting total annual IRP EE program savings contains both the ongoing impacts from current programs and the optimized levels of EE from the IRP process.

Exhibit A-12 provides the DSM/EE impacts incorporated in I&M's load forecast provided in this Report. Annual energy and seasonal peak demand impacts are provided for the Company and its Indiana and Michigan jurisdictions.

5.6.3 Interruptible Load

The Company has two customers with interruptible provisions in their contracts. These customers have a combined interruptible contract capacity of 15MW. However, these customers are expected to have only 14MW available for interruption for winter and summer peaks. An additional 135 customers have 248MW available for interruption in emergency situations in DR agreements. The load forecast does not reflect any load reductions for these customers. Rather, the interruptible load is seen as a resource when the Company's load is peaking. As such, estimates for DR resource impacts are reflected by I&M in determination of PJM-required resource adequacy (i.e., I&M's projected capacity position).

5.6.4 Blended Load Forecast

As noted above, at times the short-term models may not capture structural changes in the economy as well as the long-term models, which may result in the long-term forecast being used for the entire forecast horizon. Exhibit A-13 provides an indication of which retail models are blended and which strictly use the long-term model results. In addition, all of the wholesale forecasts utilize the long-term model results.

In general, forecast values for the years 2021 and 2022 were typically taken from the short-term process. Forecast values for 2023 are obtained by blending the results from the short-term and long-term models. The blending process combines the results of the short-term and long-term models by assigning weights to each result and systematically changing the weights so that by July of 2023 the entire forecast is from the long-term models. This blending allows for a smooth transition between the two separate processes, minimizing the impact of any differences in the results. Figure 17 illustrates a hypothetical example of the blending process (details of this illustration are shown in Exhibit A-14). However, in the final review of the blended forecast, there may be instances where the short-term and long-term forecasts diverge especially when the long-term forecast incorporates a structural shift in the economy that is not included in the short-term models. In these instances, professional judgment is used to develop the most reasonable forecast.

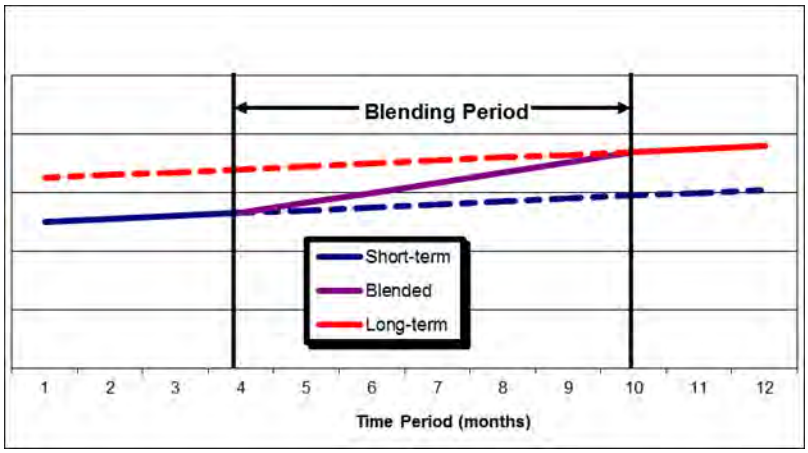


Figure 17. Load Forecast Blending Illustration

5.6.5 Large Customer Changes

The Company's customer service engineers are in continual contact with the Company's large commercial and industrial customers about their needs for electric service. These customers will relay information about load additions and reductions. This information will be compared with the load forecast to determine if the industrial or commercial models are adequately reflecting these changes. If the changes are different from the model results, then additional factors may be used to reflect those large changes that differ from the forecast models' output.

5.6.6 Wholesale Customer Contracts

Company representatives are in continual contact with wholesale customer representatives about their contractual needs. The forecast included in this IRP does not assume the automatic renewal of expiring wholesale contracts. This assumption results in significant load drops in the 2030s.

5.7 Load Forecast Model Documentation

Displays of model equations, including the results of various statistical tests, along with data sets, are provided in the Appendices Volume 1-Exhibit F, Volume 2, and Volume 3-Exhibits C, D and E.

5.8 Changes in Forecasting Methodology

Opportunities to enhance forecasting methods are explored by I&M and AEP on a continuing basis. The forecasts reported herein do not reflect any significant methodological changes since the last IRP filing.

5.9 Load-Related Customer Surveys

A residential customer survey was last conducted in the fall of 2018 in which data on end-use appliance penetration and end-use saturation rates were obtained. Beginning in 1980, in intervals of approximately three years, the Company has regularly surveyed residential customers to monitor

customers' demographic characteristics, appliance ownership, penetration of new energy use products and services, and conservation efforts.

The Company has not conducted its own industrial and/or commercial customer end-use surveys because of the significant cost considerations involved. The Company relies on the EIA for this information which is collected in their Commercial Buildings Energy Consumption Survey (CBECS) and Manufacturing Energy Consumption Survey (MECS). I&M also monitors its industrial and commercial (and residential) customer end-use consumption patterns through its ongoing load research program.

5.10 Load Research Class Interval Usage Estimation Methodology

AEP is a participating member of the Association of Edison Illuminating Companies (AEIC) Load Research Committee, was a significant contributor to the AEIC Load Research Manual, and uses the procedures set forth in that manual as a guide for load research practices. AEP maintains an on-going load research program in each retail rate jurisdiction which enables class hourly usage estimates to be derived from actually metered period data for each rate class for each hour of each day. The use of actual period metered data results in the effective capture of weather events and economic factors in the representation of historical usage.

For each rate class in which customer maximum demand is normally less than 1MW, a statistical random sample is designed and selected to provide at least 10% precision at the 90% confidence level at times of company monthly peak demand. In the sample design process, billing usage for each customer in the class is utilized in conjunction with any available class interval data to determine the optimal stratified sample design using Model Based Statistical Sampling. Model Based Allocation is used to determine the necessary number of sample customers in each stratum. All active customers with the requisite data available in the rate class population are included in the sample selection process, which uses a random systematic process to select primary sample points and backup sample points for each primary point.

For selected sample sites that reside within an Advanced Metering Infrastructure (AMI) area, the interval data is extracted from the Meter Data Management System (MDM) and stored in Hadoop or imported into the ITRON MV90 System. For selected sample sites that reside outside of an AMI area, each location undergoes field review and subsequent installation of an interval data recorder. The recorder is normally set to record usage in 15- minute intervals. For rate classes in which customer maximum demand is normally 1MW or greater, each customer in the class is interval metered, and these are referred to as 100% sampled classes. The interval data is retrieved at least monthly, validated through use of the ITRON MV90 System or the MDM, edited or estimated as necessary, and stored for analytical purposes. The status of each sample point undergoes on-going review and backup sample points replace primary sample points as facilities close, change significant parameters such as rate class, or become unable to provide required information due to safety considerations. This on-going sample maintenance process ensures reasonable sample

results are continuously available, and samples are periodically refreshed through a completely new sample design and selection process to capture new building stock and when necessary to capture rate class structure changes.

Prior to analysis, as an additional verification that all interval data is correct, interval data for each customer is summed on a billing month basis and the resulting total energy and maximum demand are compared to billing quantities. Any significant discrepancies between the interval data and the billing quantities are further investigated and corrected, as needed. Rate class analysis is then performed through the Load Research Analysis System. The sample interval data is post-stratified and weighted to represent the sampled class populations, and total class hourly load estimates are developed. The analysis provides hourly load estimates at both the stratum and class levels, and standard summary statistics, including non-coincident peaks, coincident peaks, coincidence factors, and load factors, at the class, stratum, and sample point levels.

The resulting class hourly load estimates are examined through various graphical approaches, the summary statistics are reviewed for consistency across time, and the monthly sample class energy results are compared against billed and booked billed and accrued values. Any anomalies are investigated, and a rate class analysis may be re-worked if the investigation shows that is necessary. When analysis and review of all rate classes is completed, losses are applied to the hourly rate class estimates, the class values are aggregated, and the resulting total estimate is compared to the company hourly load derived from the system interchange and generation metering. Any significant differences between the customer level load research derived numbers and the system level numbers are investigated, and class results may be re-analyzed, if necessary.

Rate classes are often comprised of combinations of commercial and industrial customers. Separate commercial and industrial hourly load estimates are developed after rate class analysis is completed. Monthly billing usage for each commercial and industrial customer is acquired from the customer information system and is imported into the Load Research Analysis System, along with the sample point interval data available from the rate class random and 100% samples. The sample interval data is post-stratified and weighted to represent the commercial and industrial class populations, and total class hourly load estimates are developed. Losses are then applied to the resulting commercial and industrial class estimates, the values are combined with the residential class hourly load estimates from the rate class analysis, the class values are aggregated, and the resulting total estimate is compared to the company hourly load derived from the system interchange and generation metering. Any significant differences between the load research derived numbers and the system level numbers are investigated, and class results may be re-analyzed, if necessary. Final residential, commercial, and industrial class hourly load estimates are provided to the forecasting organization for use in the long-term forecasting and planning process.

5.11 Customer Self-Generation

I&M customers that install renewable energy resource self-generation facilities are typically served through either I&M's Net Metering Service Rider (Rider NMS) or Cogeneration and/or Small Production Service (Tariff COGEN/SPP).

Through November 2020, 818 customers have installed net metering and or co-generation qualifying customer-generation facilities which are interconnected and/or net metered with a total nameplate capacity of approximately 17.966 MW.

In comparison to I&M's total system load, current levels customer self-generation (net metering and co-generation) are not overly impactful.

Since the prior IRP, the number of connected qualifying customer-generation facilities in the I&M service territory has grown by 174%, yet the total nameplate capacity has only grown by 138%. This indicates more customers are installing self-generation over the past few years, but the average nameplate size of systems is decreasing.

The Company's load forecast considers these historical trends and assumes a continuation of this trend in customer self-generation load.

In 2020, the Company undertook a market potential study (MPS) that assessed, in part, the future potential for Distributed Energy Resources to be connected to I&M's energy delivery system. This review was performed by an MPS industry consultant and culminated in a forecast for customer-owned solar and Combined Heat and Power (CHP). For both resource types, the MPS found customer ownership and operation of these systems not economic at current cost levels seen in these industries.

This IRP uses the MPS potential for customer-owned generation as DER since this potential above the historical trend is not included as part of the load forecast.

5.12 Load Forecast Scenarios

The base case load forecast is the expected path for load growth that the Company uses for planning. There are a number of known and unknown potentials that could drive load growth different from the base case. While potential scenarios could be quantified at varying levels of assumptions and preciseness, the Company has chosen to frame the possible outcomes around the base case. The Company recognizes the potential desire for a more exact quantification of outcomes, but the reality is if all possible outcomes were known with a degree of certainty, then they would become part of the base case.

Forecast sensitivity scenarios have been established which are tied to respective high and low economic growth cases. The high and low economic growth scenarios are consistent with scenarios laid out in the EIA's 2021 Annual Outlook. While other factors may affect load growth, this analysis

only considered high and low economic growth. The economy is seen as a crucial factor affecting future load growth.

The low-case, base-case and high-case forecasts of summer and winter peak demands and total internal energy requirements for I&M are tabulated in Exhibit A-15.

For I&M, the low-case and high-case energy and peak demand forecasts for the last forecast year, 2041, represent deviations of about 14.0% below and 17.1% above, respectively, the base-case forecast.

During the load forecasting process, the Company developed various other scenarios. Figure 18 provides a graphical depiction of the scenarios developed in conjunction with the load provided in this report.

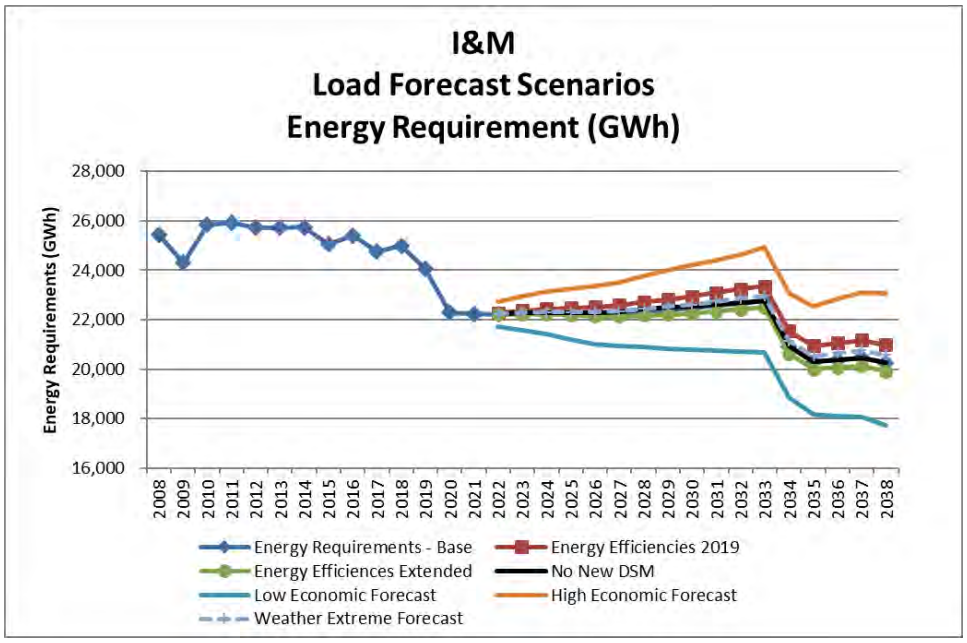


Figure 18. Load Forecast Scenarios

The no new DSM scenario extracts the DSM included in the load forecast and provides what load would be without the increased DSM activity. The energy efficiencies 2021 scenario keeps energy efficiencies at 2021 levels for the residential and commercial equipment. Both of these scenarios result in a load forecast greater than the base forecast.

The energy efficiencies extended scenario has energy efficiencies developing at a faster pace than is represented in the base forecast. This scenario is based on analysis developed by the Energy Information Administration. This forecast is lower than the base forecast due to enhanced energy efficiency for residential and commercial equipment.

The weather extreme forecast assumes increased average daily temperatures for both the winter and summer seasons which results in diminished heating degree-days in the winter and increased cooling degree days in the summer. This analysis is based on a potential impact of climate change developed by Purdue University. The extreme weather scenario was developed in response to inquiries in one of the Company's Stakeholder meetings. This scenario results in increased load in the summer and diminished load in the winter, with the net result being higher energy requirements forecast. Exhibit A-16 provides graphical displays of the range of forecasts of summer and winter peak demand for I&M along with the impacts of the weather scenario for each season.

All of these alternative scenarios fall within the boundary of the Company's high and low economic scenario forecasts. The Company's expectations are that any reasonable scenario developed will fall within this range of forecasts.

Although the Company does not explicitly adjust the load forecast for increased adoption of electric vehicles, it does continually monitor the adoption rate and will address the issue as it becomes more significant. The Company has developed high, low and base scenarios on adoption in the service area through 2030. These scenarios are presented graphically in Figure 19.

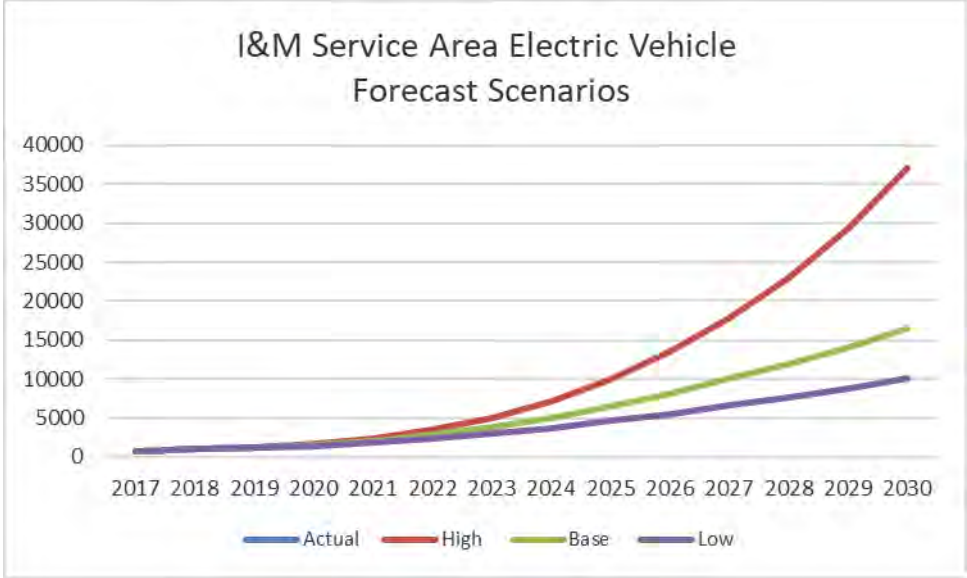


Figure 19. Electric Vehicle Scenarios

The EV scenarios were initially developed in 2018 using a consensus approach from various external sources. These sources included Bloomberg New Energy Finance (BNEF), British Petroleum (BP), ExxonMobil, Organization of Petroleum Exporting Countries (OPEC), International Energy Agency (IEA), and the US Energy Information Administration (EIA). While most of these sources provided macro level forecasts for global or US EV adoption, I&M evaluated the projected growth rates in EV adoption from the various sources to develop its base, high, and low growth scenarios.

To calibrate the EV forecast for the I&M service territory, the Company applied the projected growth rates to the actual EV registration data for the I&M service territory. As of the third quarter of 2021, there are just over 3,800 electric vehicles registered in I&M's Indiana and Michigan service territories.

5.13 Other Considerations Based on Prior Feedback

5.13.1.1 High-Low Economic Scenarios

The Director's Report asked for additional narrative to the high-low economic scenarios. The Company develops a model of aggregate load for Company to evaluate the sensitivity to the spread of the EIA forecast of GDP. Regional economic variables are used in the aggregate model and the spread for these drivers are determined by high-low economic growth provided in EIA's 2021 Energy Outlook. The purpose of the aggregate model to develop a reasonable spread that are applied to the forecast of energy requirements and seasonal peak demand. The high-low scenarios have a larger range than the 2018 IRP, which reflects an increased uncertainty.

Changes in Forecast Methodology

Feedback was provided about the changes load forecast methodology. While the Company did not have any significant changes in load forecast methodology since the last IRP, the Company has explored and plans to implement changes in future IRPs to the residential and commercial sales model to have DSM as an explanatory variable to incorporate DSM effects in the load forecast.

Forecast Blending

Comments were noted about the blending process and the Company often using the long-term forecast. The blending process is an integral part of the Company's forecast process. It entails not only evaluating the annual load growth, but also the monthly variation within each year's forecast. The Company's forecast process evaluates the pros and cons of both the short- and long-term forecasts before determining what they believe is the optimal forecast for the Company for each sector. While the Company has selected the long-term forecast in most instances, the forecast was enriched with the evaluation process and the consideration of the short-term forecast. Furthermore, the Company finds particular value in this process for evaluating monthly forecasts and enhancing monthly forecasting accuracy.

Electric Vehicles

The Director's Report inquired about electric vehicles and the ramifications on system load and load shapes. As discussed in earlier, the Company has been monitoring the adoption of electric vehicles in its service area. While the Company has not explicitly included enhance adoption electric vehicles in the load forecast, it has included its latest forecast of electric vehicles and high-low scenario in the scenario section above.

Customer Surveys.

The Director's Report inquired about customer surveys. The Company continues to do residential surveys every three years or so. The Company has conducted a survey in the fall of 2021. The

results from these surveys are being evaluated and are used to enhance the Company's residential energy forecasts. The Company currently does not have plans to do surveys of commercial and industrial customers. These customers are more heterogeneous than the residential sector, which makes it more challenging to conduct a survey that is representative of the Commercial and Industrial class customers in the I&M service territory. The Company believes that the costs of these surveys would outweigh the benefits derived from them so it relies on EIA surveys for the Commercial and Industrial classes at a census region level.

Advanced Metering Infrastructure (AMI)

The Director's Report also discussed the importance of AMI to enhancing the load forecast. The Company initiated a full deployment of AMI in 2021 by completing the AMI network infrastructure and beginning AMI meter deployments. As of the end of 2021, I&M has installed approximately 97,000 AMI meters across its service area, including approximately 67,000 in Indiana and approximately 30,000 in Michigan. The Company plans to install approximately 240,000 AMI meters in Indiana and 104,000 in Michigan in 2022. The full deployment of AMI meters across all of I&M's service area is expected to be complete by 2024.

As the Company gets access to interval data provided by the AMI technology, it will become an integral part of the load forecasting process, as well as our continued efforts to better integrate the planning of generation, transmission and distribution resources and investments. This information will enhance the Company's understanding of customer usage patterns, especially regarding emerging technologies (e.g. electric vehicles, distributed energy resources, etc.), and be a key input to the load forecast. It also will allow the Company to improve its evaluation of the impacts of DSM/EE on hourly loads. Based on the current deployment schedule, the Company would expect to be able to use this data to inform the load forecast that will be used in I&M's next IRP cycle.

Load Shapes

The Company currently relies on its load research data for hourly load shapes by customer class. These load shapes are updated each year and allows the Company to keep track of changes in usage patterns by class. Implementation across the Company of AMI will enhance the Company's understanding of load shapes at the class and sub-class level. The Company currently identifies customers by North American Industrial Classification System (NAICS). Full implementation of AMI would allow the Company to analyze load shapes at a more granular NAICS code level, as needed. AMI will also allow for the Company to develop load shapes for other things such electric vehicles and DSM/EE impacts.

6 Resource Evaluation

6.1 Current Resources

An important step of the IRP process is the demonstration of the capacity resource requirements. This aspect of the traditional “needs” assessment must consider projections of:

- existing capacity resources—current levels and anticipated changes
- anticipated changes in capability due to efficiency and/or environmental considerations
- changes resulting from decisions surrounding unit disposition evaluations
- regional and sub-regional capacity and transmission constraints/limitations
- load and peak demand
- current DR/EE
- PJM capacity reserve margin and reliability criteria

6.2 All-Source Informational RFP

An All-Source Informational RFP was issued at the onset of the IRP process to obtain market information to near term indicative pricing for a wide range of technologies.

I&M issued an All-Source Informational RFP seeking power supply and demand-side proposals for capacity and energy to meet the needs of its customers. The purpose of the RFP was to identify viable resources available to I&M in the marketplace to meet the needs of its customers. I&M used aggregated data from the RFP responses to inform the IRP process.

I&M requested information from the marketplace for the following types of products:

- Commercial structure: Purchase Power Agreement (PPA) or Build-Own-Transfer
- Project development status: New or existing
- Resource type:
    - Dispatchable including Stand-alone Battery Energy Storage System (BESS),
    - Utility scale renewable resources, either stand-alone or paired with storage to support PJM Planning Years beginning 2025/26
    - Load Modifying Resources
    - Demand Response
    - Distributed Generation
    - Qualifying Facility (QF)

In connection with this All-Source Informational RFP, I&M retained the services of an independent third-party consultant, Siemens PTI, to manage the entire RFP process and work with I&M to perform the quantitative and qualitative evaluation of all proposals.

All respondents were directed to interface with Siemens PTI for all communications including questions, RFP clarifications issues, and RFP proposal submittal until late in the evaluation process.

Proposals were initially reviewed for completeness by Siemens PTI. Respondents were contacted for additional data or clarifications by Siemens PTI via designated Siemens PTI email address, imallsourcerfp.us@siemens.com. Each complete proposal was evaluated based on the energy settlement location, interconnection/development status, proposed price, and project risk factors.

6.3 Renewables RFP

In addition to the All-Source Informational RFP conducted as part of this IRP, the Company also issued an RFP in November 2020 requesting proposals for Solar and Wind resources which were due in January 2021. Responses from this RFP effort were combined with the responses from the All-Source Informational RFP to inform the IRP renewable costs.

6.4 Existing Generating Resources and PJM Capacity Planning Requirements

I&M operates in the PJM Interconnection, L.L.C. (PJM) and in ReliabilityFirst Corporation, a Regional Entity of the North American Electric Reliability Corporation (NERC). I&M participates in the PJM energy market. Based on offers placed into this market, the generation resources within the entire PJM RTO are economically dispatched for energy to serve the total PJM load, including I&M's internal load. Separately, PJM has a mandatory capacity market. PJM allows an entity to either participate in a capacity auction (in which PJM functions to procure the capacity) or utilize the Fixed Resource Requirement (FRR) option in which the entity supplies its own capacity resource either through constructing the necessary capacity or through bilateral contracts with existing resources. PJM requires all FRR entities to make mandatory commitments to meet their capacity reserve requirements by supplying PJM with an FRR plan three years in advance of the Planning Year. The same three year forward concept holds for entities using the RPM auction process. The Reliability Assurance Agreement (RAA) sets forth the rules of participation in the PJM Capacity Market and also establishes capacity obligations of PJM Load Serving Entities (LSEs).

Currently, I&M, along with other operating companies of AEP in PJM, collectively participate as a PJM FRR entity and are committed to the FRR option through PJM Planning Year (PY) 2022/23. FRR election decisions and FRR Plans for PJM PY 2023/24 were submitted to PJM November 1, 2021. The underlying minimum reserve margin criterion to be utilized in the determination of I&M's capacity need is based on the PJM Installed Reserve Margin (IRM) of 14.4 percent.[9] The ultimate reserve margin is determined from the PJM Forecast Pool Requirement (FPR), which considers the IRM and PJM's Pool-Wide Average Equivalent Demand Forced Outage Rate (EFORd).[10] The PJM FPR is 8.63% for the 2023/2024 PJM PY, and increases to 8.65% for the remainder of the planning

9 Per Section 2.1.1 of PJM Manual 18: PJM Capacity Market (Effective: August 1, 2021). PJM Planning Parameters are updated each year prior to the upcoming Base Residual Auction. These values can be obtained from http://pjm.com/markets-and-operations/rpm.aspx. This IRP uses the PJM Planning Parameters, which reflect PJM's Capacity Performance proposal, as currently interpreted by I&M.

10 Per Section 2.1.4 of PJM Manual 18: PJM Capacity Market (Effective: August 1, 2021).
FPR = (1 + IRM) * (1 – EFORD). Reserve Margin = FPR – 1.

period. As discussed earlier, the Company included the Reserve Margin metric in the Balanced Scorecard to ensure the Candidate Portfolios are meeting this requirement.

Table 5 identifies the current generating resources included in the Company's plan. Future plans surrounding these assets must consider each unit's useful service life. Unit retirements are incorporated in I&M's plans based upon each unit's in-service date along with the anticipated service life. Retirement dates are periodically reviewed and adjusted with respect to a unit's ability to maintain safe, reliable, and economic operation, as well as external factors such as environmental regulations.

Table 5. I&M Generation Assets as of December 2020

Unit Name	Location	Fuel Type	C.O.D. [1]	PJM Nameplate Capacity (MW)	PJM Unforced Capacity (MW)	
Cook 1	Bridgman, MI	Nuclear	1975	1,084	986	
Cook 2	Bridgman, MI	Nuclear	1978	1,204	1,125	
Rockport 1	Rockport, IN	Coal	1984	1,122	1,072	(A)
Rockport 2	Rockport, IN	Coal	1989	1,105	1,051	(A)
Berrien Springs 1-12	Berrien Springs, MI	Water	1908	7	3	
Buchanan 1-10	Buchanan, MI	Water	1919	4	1	
Constantine 1-4	Constantine, MI	Water	1921	1	0.2	
Elkhart 1-3	Elkhart, IN	Water	1913	2	2	
Mottville 1-4	White Pigeon, MI	Water	1923	1.7	0.5	
Twin Branch 1-8	Mishawaka, IN	Water	1904	5	3	
Fowler Ridge 1	Benton County, IN	Wind	2008	100	13	(B)
Fowler Ridge 2	Benton County, IN	Wind	2009	50	7	(B)
Headwaters	Randolph County, IN	Wind	2014	200	26	(B)
Wildcat	Madison County, IN	Wind	2014	100	13	(B)
Deer Creek	Grant County, IN	Solar	2015	3	1	
Olive	St. Joseph County, IN	Solar	2016	5	3	
St. Joseph Solar	St. Joseph County, IN	Solar	2021	20	6	
Twin Branch Solar	St. Joseph County, IN	Solar	2016	3	1	
Watervliet	Berrien County, MI	Solar	2016	5	2	
Clifty Creek 1-6	Madison, IN	Coal	1956	102	82	(C)
Kyger Creek 1-5	Cheshire, OH	Coal	1955	85	68	(C)
				5,209	4,464	

(1) Commercial operation date.
(A) Represents I&M's share of these units (85%)
(B) Represents capacity from Power Purchase Agreements (PPAs)
(C) Represents I&M's share of the OVEC capacity under the ICPA

Furthermore, in September 2021, the Company received the necessary approval from FERC to authorize the acquisition of Rockport Unit 2. Additionally, the Company entered into a Settlement Agreement[11] with Stakeholders related to the Operation of Rockport Unit 2. In summary and in part, Rockport Unit 2 will be used as transitional capacity resource for I&M through the 2023/2024 Planning Year, allowing I&M to use up to 650MW for its capacity obligation. Also as part of the Settlement Agreement, beginning with the 2024/2025 PJM Planning Year and through the remainder of its operating life, 100% of Rockport Unit 2 will be treated as a merchant generating unit and participate in the PJM markets as an RPM-only resource.

[11] IURC Cause No. 45546

Figure 20 below depicts I&M's current generation resources, their nameplate ratings and current age.

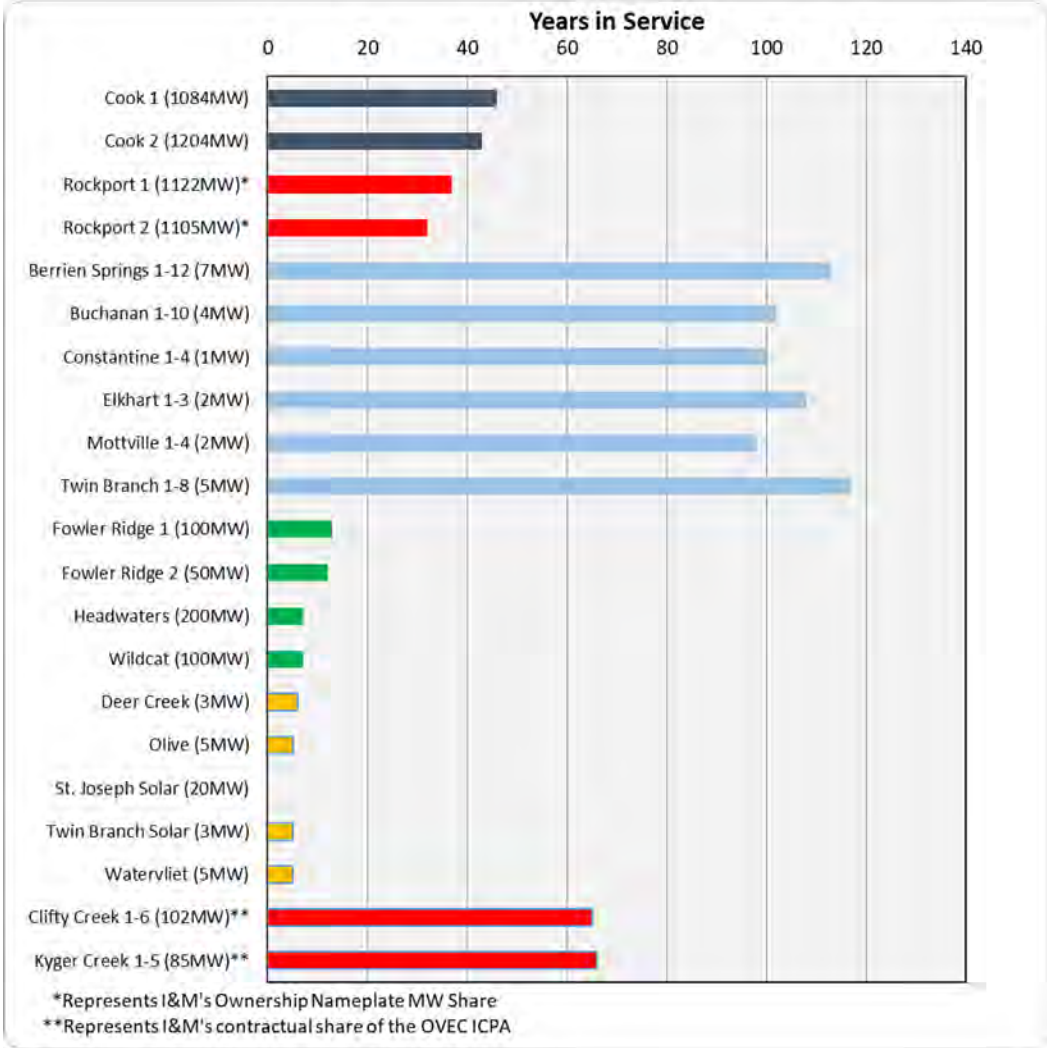


Figure 20. Current Resource Fleet (Owned & Contracted) with years in Service, as of April 1, 2021

I&M currently utilizes several capacity entitlements to meet the minimum PJM reserve margin requirement, including generation from Company owned assets, and power purchase agreements.

6.4.1 PJM Capacity Performance Rule Implications

On June 9, 2015, FERC issued an order largely accepting PJM's proposal to establish a new "Capacity Performance" product. The resulting PJM rule requires future capacity auctions to transition from current or "Base" capacity products to Capacity Performance products. Capacity Performance resources will be held to stricter requirements than current Base resources and will be

assessed heavy penalties for failing to deliver energy when called upon. The rulemaking was effective with the 2020/2021 PJM Planning Year.

For this IRP, the Company assumes it will continue as a Fixed Resource Requirement (FRR) entity within the PJM Capacity planning process which I&M has now notified PJM it will do. The Company also assumes, consistent with the Capacity Performance rule, that unit capabilities will be based on the current Unforced Capacity (UCAP) definition, which is Installed Capacity (ICAP) times 1 minus EFORd or ICAP X (1 – EFORd).

6.4.2 Fuel Inventory and Procurement Practices – Coal

I&M plans to have adequate fuel supplies at its coal generating units to meet full-load burn requirements in both the short-term and the long-term. American Electric Power Service Corporation (AEPSC), acting as agent for I&M, is responsible for the procurement and delivery of coal to I&M's coal generating station, as well as establishing coal inventory target level ranges and managing those levels. AEPSC's primary objective is to assure the availability of an adequate, reliable supply of coal at the lowest reasonable delivered cost. Deliveries are arranged so that sufficient coal is available at all times. The consistency and quality of the coal delivered to the generating station is also vitally important. The consistency of the sulfur content of the delivered coal is fundamental to I&M's achievement and compliance with the applicable environmental limitations.

6.4.3 Specific Units

I&M has one coal-fired generating station in Indiana. The Rockport Generating Station, located in Spencer County, consists of two 1,300-megawatt nameplate coal fired generating units. Sulfur dioxide (SO_2) emissions at Rockport are limited to 1.2 lb. SO_2/MMBtu and there is a SO_2 cap on emissions which began in 2016. Compliance with the emission limit is achieved by using a blend consisting primarily of low-sulfur bituminous and sub-bituminous coal. The coal supply for Rockport currently uses a blend of sub-bituminous Powder River Basin (PRB) coal from Wyoming and low-sulfur bituminous coal from Central Appalachian basin and/or Colorado basin sources. In order to comply with stricter EPA emissions standards, Dry Sorbent Injection (DSI) technology is being used at both Rockport units. The DSI technology did not change the coal blend at Rockport.

6.4.4 Procurement Process

Coal delivery requirements are determined by taking into account existing coal inventory, forecasted coal consumption, and adjustments for contingencies that necessitate an increase or decrease in coal inventory levels. I&M's total coal requirements are met using a portfolio of long-term arrangements and spot-market purchases that are primarily made through a competitive Request for Proposal process. Long-term contracts (>1 year) support a relatively stable and consistent supply of coal, but often do not provide the required flexibility to meet changes in demand for coal fired generation in a low gas price and/or low power demand scenario. Spot purchases are used to provide additional flexibility to accommodate changing demand. Occasionally, spot purchases may also be

made to test-burn any promising and potential new sources of coal in order to determine their acceptability as a fuel source in a given power plant's generating units.

6.4.5 Contract Descriptions

Rockport's PRB coal supply needs for 2021 and 2022 are being supplied primarily through two long-term supply agreement with Peabody COALSALES, LLC. Rockport's Central Appalachian coal supply needs for 2021 is being supplied under one long-term supply agreement with Blackhawk Coal Sales, LLC. As these agreements expire, additional coal supplies will be contracted to maintain a sufficient supply of coal.

6.4.6 Inventory

I&M coordinates to maintain an adequate coal supply to meet full-load burn requirements at the plant. However, in situations where coal supplies fall below prescribed minimum levels, programs have been developed to conserve coal supplies. In the event of a severe coal shortage, I&M would implement procedures for the orderly reduction of the consumption of electricity, in accordance with the Emergency Operating Plan.

6.4.7 Fuel Inventory and Procurement Practices – Uranium

Uranium inventory for nuclear power is different than traditional inventories such as coal. No uranium is stored or brought to the Donald C. Cook (DC Cook) nuclear power plant in the raw material form. Uranium in its raw material form (commonly referred to as Yellowcake of U3O8) undergoes multiple processes before arriving on-site as fully fabricated fuel assemblies.

I&M purchases the raw material as converted U3O8, formally known as Uranium Hexafluoride (UF6). The purchased UF6 is delivered from the vendor to the Enricher via a book transfer to I&M's account. After the UF6 has been enriched to I&M's specifications, the enriched material is then book transferred to the fabricator into I&M's account. The Fabricator then fabricates fuel assemblies per I&M's specifications, specifically designed for delivery to each unit. These final fabricated fuel assemblies are then transported to DC Cook marking the only point that material is in I&M's possession on site. These fuel assemblies are brought on site to be receipt inspected approximately a month prior to a unit's scheduled refueling outage (approximately every 18 months). There are a total of 193 fuel assemblies in each unit's core design. Every refueling outage DC Cook replaces a batch of fuel assemblies, which consists of approximately 80-88 new fuel assemblies. A batch will remain in the core for up to 54 months depending on the unit's generation schedule.

6.4.8 Specific Units

The DC Cook Nuclear Plant is located on 650 acres along Lake Michigan's eastern shoreline in Berrien County, Michigan. The plant is owned and operated by I&M. At full power, the two units can generate enough electricity for more than 1.5 million homes.

DC Cook Unit 1 initial criticality was in January 1975 and is currently licensed to run until October 2034. The Unit 1 core holds a total of 193 fabricated fuel assemblies. This unit has a nameplate rating of approximately 1,100 MW.

DC Cook Unit 2 initial criticality was in March 1978 and is currently licensed to run until December 2037. The Unit 2 core holds a total of 193 fabricated fuel assemblies. This unit has a nameplate rating of approximately 1,200 MW.

6.4.9 Procurement Process

In developing contracts and making purchases, I&M carefully plans the lead time required to perform each phase of the fuel process. The target date from which decisions are made is the date the fabricated fuel is needed at the DC Cook. Once the target date is established, it is then necessary to identify when the fabricator must have the enriched uranium. I&M continuously monitors the long term generation schedule to determine any impacts to fuel procurement activities. All material delivered during the procurement process is delivered on the contractually obligated date to the designated facility. This process reduces the overall cost of refueling the reactors.

6.4.10 Contract Descriptions

I&M's procurement needs are broken down into three main categories of contracts based on the procurement process (Raw Material or Uranium, Enrichment and Fabrication).

I&M has Master Services Agreements (MSA's) in place with multiple Uranium vendors from across the United States, Canada and Europe for the purchase of Uranium. These MSA's provide flexibility to purchase UF6 from multiple vendors from various parts of the world providing I&M a diverse level of supply and creates pricing competition. Per contractual terms, all material must meet the American Society for Testing and Materials (ASTM) "standard specifications for Uranium Hexafluoride for Enrichment for commercial natural UF6" as defined in the current specifications in effect. I&M currently has contracted material to provide DC Cook with the vast majority of raw material that will be needed based on the current generation forecast through 2025.

I&M currently has one long term contract for enrichment that will cover all needs for both Units at DC Cook that is extendable through the current end of the plant life. Per contractual terms, all enriched uranium shall conform to the definition of "enriched commercial grade UF6" per the latest ASTM "standard specification for Uranium Hexafluoride Enriched to Less Than 5%". This contract provides 100% of all the enrichment needs for DC Cook and is adjusted based on the generation forecast as it is updated.

I&M currently has one long term fabrication contract that will cover all needs for both Units at DC Cook through the current end of life of the plant. I&M fabricated fuel assemblies comply with the NRC license. This includes an approved Quality Assurance Program that requires the procurement of nuclear fuel from vendors with approved Quality Assurance programs which meet federal regulations. These Quality Assurance Programs are intended to control the design and manufacturing process to assure a product of the highest quality. This contract provides 100% of all final fabricated fuel assemblies needed to refuel the units on an approximately every 18 month basis and is adjusted based on the generation forecast as it is updated.

6.4.11 Excess Inventory

Excess inventory (or remaining account balances at the Enricher & Fabricator) fluctuates depending on the timing of the reload batch to be delivered. Small amounts of residual inventory balances do exist as a result of final detailed fuel cycle and fuel assembly design. I&M continually monitors the performance of any vendor who is under contract to assure fulfillment of contractual obligations. By

contracting with reliable and proven performers and continuously monitoring their performance, the Company can operate with confidence at a lower inventory level.

Operating at a relatively low inventory and utilizing the spot market allows I&M to take advantage of the secondary market and reduce fuel-carrying costs. I&M also optimizes the scheduling of purchases to coincide with material requirements and contract flexibility in order to hold a relatively low inventory.

6.4.12 Forecasted Fuel Prices

I&M-specific forecasted annual fuel prices, by unit, for the period 2021 through 2050 are displayed in Appendix Volume 3, Exhibit B (Confidential).

6.5 Environmental Issues and Implications

It should be noted that the following discussion of environmental regulations is based on the requirements currently in effect and those compliance options viewed as most likely to be implemented by the Company. Activity including but not limited to Presidential Executive Orders, litigation, petitions for review, and Federal Environmental Protection Agency (EPA) proposals may delay the implementation of these rules, or alter the requirements set forth by these regulations. While such activities have the potential to materially change the compliance options available to the Company in the future, all potential outcomes cannot be reasonably foreseen or estimated.

6.5.1 Clean Air Act Requirements

The Clean Air Act (CAA) establishes a comprehensive program to protect and improve the nation's air quality and control sources of air emissions. The states implement and administer many of these programs and could impose additional or more stringent requirements. The primary regulatory programs that continue to drive investments in AEP operating companies' existing generating units include: (a) periodic revisions to National Ambient Air Quality Standards (NAAQS) and the development of state implementation plans to achieve any more stringent standards, (b) implementation of the regional haze program by the states and the Federal EPA, (c) regulation of hazardous air pollutant emissions under the Mercury and Air Toxics Standard (MATS) rule, (d) implementation and review of Cross-State Air Pollution Rule (CSAPR), a federal implementation plan designed to eliminate significant contributions from sources in upwind states to non-attainment or maintenance areas in downwind states and (e) the Federal EPA's regulation of greenhouse gas emissions from fossil fueled electric generating units under Section 111 of the CAA.

Notable developments in significant CAA regulatory requirements affecting the Company's operations are discussed in the following sections.

6.5.2 National Ambient Air Quality Standards

The Federal EPA issued new, more stringent NAAQS for particulate matter (PM) in 2012 and ozone in 2015. After review, in December 2020, the Federal EPA announced it will retain both standards

without change. The existing standards for NOx and SO_2 were retained after review by the Federal EPA in 2018 and 2019, respectively. Implementation of all of these standards is underway.

The Federal EPA finalized non-attainment designations for the 2015 ozone standard in 2018. The Federal EPA confirmed that the CSAPR program satisfied all interstate transport obligations associated with the 2008 ozone standard, but that finding was reversed by the U.S. Court of Appeals for the D.C. Circuit. That court also remanded the 2015 secondary ozone standard and is reviewing Federal EPA's 2018 rule governing implementation of the 2015 ozone standard. The Federal EPA completed external review drafts of the integrated science assessment and policy assessment for the ozone standard in 2019. Any further changes will require additional rulemaking.

6.5.3 Cross-State Air Pollution Rule (CSAPR)

In 2011, the Federal EPA issued CSAPR as a replacement for the Clean Air Interstate Rule, a regional trading program designed to address interstate transport of emissions that contributed significantly to downwind non-attainment with the 1997 ozone and PM NAAQS. CSAPR relies on SO_2 and NOx allowances and individual state budgets to compel further emission reductions from electric utility generating units. Interstate trading of allowances is allowed on a restricted sub-regional basis.

Petitions to review the CSAPR were filed in the U.S. Court of Appeals for the District of Columbia Circuit. In 2015, the court found that the Federal EPA over-controlled the SO_2 and/or NOx budgets of 14 states. The court remanded the rule to the Federal EPA for revision consistent with the court's opinion while CSAPR remained in place.

In 2016, the Federal EPA issued a final rule, the CSAPR Update, to address the remand and to incorporate additional changes necessary to address the 2008 ozone standard. The CSAPR Update significantly reduced ozone season budgets in many states and discounted the value of banked CSAPR ozone season allowances beginning with the 2017 ozone season. The rule was challenged in the courts and in 2019, the U.S. Court of Appeals for the District of Columbia Circuit (D.C. Circuit) remanded the CSAPR Update to the Federal EPA because it determined the Federal EPA had not properly considered the attainment dates for downwind areas in establishing its partial remedy and should have considered whether there were available measures to control emissions from sources other than generating units. In early 2021, EPA finalized a Revised CSAPR Update Rule to address the Court's concerns. The proposal reduced the Ozone Season NOx budgets of 12 states beginning in 2021.

6.5.4 Mercury and Other Hazardous Air Pollutants (HAPs) Regulation

In 2012, the Federal EPA issued a rule addressing a broad range of Hazardous Air Pollutants (HAPs) from coal and oil-fired power plants. The rule established unit-specific emission rates for units burning coal on a 30-day rolling average basis for mercury, PM (as a surrogate for particles of non-mercury metals) and hydrogen chloride (as a surrogate for acid gases). In addition, the rule proposed

work practice standards, such as boiler tune-ups, for controlling emissions of organic HAPs and dioxin/furans. Compliance was required within three years. The Company obtained administrative extensions for up to one year at several units to facilitate the installation of controls or to avoid a serious reliability problem.

In 2014, the U.S. Court of Appeals for the District of Columbia Circuit denied all of the petitions for review of the 2012 final rule. Industry trade groups and several states filed petitions for further review in the U.S. Supreme Court.

In 2015, the U.S. Supreme Court reversed the decision of the U.S. Court of Appeals for the District of Columbia Circuit. The court remanded the MATS rule to the Federal EPA to consider costs in determining whether to regulate emissions of HAPs from power plants. In 2016, the Federal EPA issued a supplemental finding concluding that, after considering the costs of compliance, it was appropriate and necessary to regulate HAP emissions from coal and oil-fired units. Petitions for review of the Federal EPA's determination were filed in the U.S. Court of Appeals for the District of Columbia Circuit. In 2018, the Federal EPA released a revised finding that the costs of reducing HAP emissions to the level in the current rule exceed the benefits of those HAP emission reductions. The Federal EPA also determined that there are no significant changes in control technologies and the remaining risks associated with HAP emissions do not justify any more stringent standards. Therefore, the Federal EPA proposed to retain the current MATS standards without change. A final rule adopting the findings in the proposal was issued in April 2020. The rule has been challenged in the U.S. Court of Appeals for the District of Columbia Circuit.

I&M's Rockport Plant is located in Rockport, Indiana and consists of two similar coal fired generating units fired with pulverized coal. Units 1 and 2 at the Rockport Plant were placed in service in 1984 and 1989, respectively, and have been efficient and reliable performers for I&M and its customers. For over thirty years, the Rockport Plant has been a cornerstone of I&M's generation fleet and has achieved low emission rates of nitrogen oxides (NOx) and SO_2 by consuming predominantly low-sulfur coal from the Powder River Basin (PRB). Each unit is equipped with an Electrostatic Precipitator (ESP) for collection of particulate matter (PM, also referred to as fly ash); low-NOx burners (LNB) with overfire air (OFA) to minimize the formation of NOx during combustion; Activated Carbon Injection (ACI) for the capture of mercury emissions; and Dry Sorbent Injection (DSI) for the reduction of acid gases and sulfur dioxide (SO_2) removal. In addition, Selective Catalytic Reduction (SCR) technology has been installed on Rockport Unit 1 and Rockport Unit 2. These SCR installations will further reduce Rockport's NOx emissions.

Each unit at the Rockport Plant currently consumes a blend of approximately 87% PRB sub-bituminous coal and 13 percent eastern bituminous coal. This high percentage PRB blend results in lower emission rates of SO_2 and NOx relative to burning 100 percent eastern bituminous coal.

6.5.5 Climate Change, CO_2 Regulation and Energy Policy

In 2015, the Federal EPA published the final CO_2 emissions standards for new, modified and reconstructed fossil fuel-fired steam generating units and combustion turbines, and final guidelines for the development of state plans to regulate CO_2 emissions from existing sources, known as the Clean Power Plan (CPP).

The final rules were challenged in the courts. In 2016, the U.S. Supreme Court issued a stay on the final CPP, including all of the deadlines for submission of initial or final state plans, pending a final decision by the U.S. Court of Appeals for the District of Columbia Circuit and any petitions for review to the U.S. Supreme Court. In 2017, the President issued an Executive Order directing the Federal EPA to reconsider the CPP and the associated standards for new sources. The Federal EPA filed a motion to hold the challenges to the CPP in abeyance and issued a final rule repealing the CPP in 2019. The cases were then dismissed.

In 2019, the Federal EPA finalized the Affordable Clean Energy (ACE) rule replacing the CPP with new emission guidelines for regulating CO_2 from existing sources. The ACE rule required states to evaluate the applicability and effect of implementing specific heat rate improvement measures at coal-fired generating units, and to develop a standard of performance for each affected unit within their jurisdiction. State plans were due in July 2022; however, in January 2021, the U.S. Court of Appeals for the D.C. Circuit vacated the ACE rule and remanded it to the Federal EPA. It is too soon to predict how the Federal EPA will respond to the court's remand.

In 2018, the Federal EPA also proposed to revise the standards for new sources and determined that partial carbon capture and storage is not the best system of emission reduction because it is not available throughout the U.S. and is not cost-effective. That rule has not been finalized.

For purposes of this Integrated Resource Plan, as described later, I&M conducts analyses around carbon regulation by evaluating scenarios with costs associated with potential future carbon regulations.

6.5.6 New Source Review (NSR) Settlement

On October 9, 2007, AEP's eastern companies entered into a consent decree with the Department of Justice to settle all complaints filed against AEP's affiliates, including I&M. Under the original Consent Decree, I&M was required to retrofit SCR and FGD technology on Rockport Units 1 and 2 by December 31, 2017, and December 31, 2019, respectively.

On February 22, 2013, the parties filed a proposed Third Modification to the Consent Decree in the United States District Court for the Southern District of Ohio, Eastern Division. This modified Consent Decree authorized I&M to install dry sorbent injection (DSI) technology on both Rockport Units by April 16, 2015, and deferred the installation of higher efficiency FGD technology on these two units until December 31, 2025, and December 31, 2028. The installation of SCR technology on Rockport

Units 1 and 2 by December 31, 2017, and December 31, 2019, respectively, was still required under the modified Consent Decree.

The modified Consent Decree also established annual tonnage limits for SO_2 for the Rockport Plant. These annual station-wide caps are displayed in Table 6.

Table 6. Modified Consent Decree Annual SO_2 Cap for Rockport Plant

Calendar Year	Annual Tonnage Limitations for SO_2
2016	28,000
2017	28,000
2018	26,000
2019	26,000
2020 – 2025	22,000
2026 – 2028	18,000
2029, and each year thereafter	10,000

In 2019, the parties to the Consent Decree entered into a Fifth Joint Modification to authorize I&M to enhance the DSI systems and achieve the 10,000 ton per year cap on emissions at the Rockport Plant beginning in calendar year 2021. The parties also agreed to extend the date to complete the SCR installation at Rockport Unit 2 until June 1, 2020, to facilitate the DSI work to be completed during the same outage. Rockport Unit 1 will retire at the end of 2028, and the SO_2 emissions cap at Rockport Plant will decline to 5,000 tons per year. The Rockport Units will also achieve a 30-day rolling average SO_2 emissions rate of 0.15 lbs/MMBtu and a 30-day rolling average NOx emission rate of 0.090 lbs/MMBtu at the combined stack, beginning in calendar year 2021.

6.5.7 Coal Combustion Residual Rule

In 2015, the Federal EPA published a final rule to regulate the disposal and beneficial re-use of Coal Combustion Residuals (CCR), including fly ash and bottom ash generated at coal-fired electric generating units and FGD gypsum generated at some coal-fired plants. The rule applies to new and existing CCR landfills and CCR surface impoundments at operating electric utility or independent power production facilities. The rule imposes construction and operating obligations, including location restrictions, liner criteria, structural integrity requirements for impoundments, operating criteria, and additional groundwater monitoring requirements to be implemented on a schedule spanning an approximate four-year implementation period. In 2018, some AEP operating company facilities were required to begin monitoring programs to determine if unacceptable groundwater impacts will trigger future corrective measures. Based on additional groundwater data, further studies to design and assess appropriate corrective measures have been undertaken at two facilities.

In a challenge to the final 2015 rule, the parties initially agreed to settle some of the issues. In 2018, the U.S. Court of Appeals for the District of Columbia Circuit addressed or dismissed the remaining

issues in its decision vacating and remanding certain provisions of the 2015 rule. The provisions addressed by the court's decision, including changes to the provisions for unlined impoundments and legacy sites, will be the subject of further rulemaking consistent with the court's decision.

Prior to the court's decision, the Federal EPA issued the July 2018 rule that modifies certain compliance deadlines and other requirements in the 2015 rule. In December 2018, challengers filed a motion for partial stay or vacatur of the July 2018 rule. On the same day, the Federal EPA filed a motion for partial remand of the July 2018 rule. The court granted the Federal EPA's motion. During 2019 and 2020, Federal EPA proposed multiple rulemakings to address the court's decisions and Stakeholder concerns. In August 2019, the Federal EPA published a proposal to revise the beneficial use criteria and definition of CCR piles. In December 2019, the Federal EPA published proposed revisions to implement the court's decision regarding timing for closure of unlined surface impoundments and impoundments not meeting the required distance from an aquifer. The comment period closed in January 2020. The Federal EPA also published a proposed federal CCR permit program in February 2020, implementing the Water Infrastructure Improvements for the Nation Act, which will apply in states that do not have a federally approved state CCR program. In March 2020, the Federal EPA published a proposed rule that would allow a facility to make an alternative demonstration to continue operating unlined surface impoundments. In August 2020, the Federal EPA finalized its proposed revisions to the CCR rule to include a requirement that unlined CCR storage ponds cease operations and initiate closure by April 11, 2021. The revised rule provides two options that allow facilities to extend the date by which they must cease receipt of coal ash and close the ponds.

The first option provides an extension to cease receipt of CCR no later than October 15, 2023, for most units, and October 15, 2024, for a narrow subset of units; however, the Federal EPA's grant of such an extension will be based upon a satisfactory demonstration of the need for additional time to develop alternative ash disposal capacity and will be limited to the soonest timeframe technically feasible to cease receipt of CCR.

The second option is a retirement option, which provides a generating facility an extended operating time without developing alternative CCR disposal. Under the retirement option, a generating facility would have until October 17, 2023, to cease operation and to close CCR storage ponds 40 acres or less in size, or through October 17, 2028, for facilities with CCR storage ponds greater than 40 acres in size.

Under both the first and second options, each request must undergo formal review, including public comments, and be approved by the Federal EPA. AEP's applications are still pending before Federal EPA.

Because AEP operating companies currently use surface impoundments and landfills to manage CCR materials at generating facilities, significant costs will be incurred to upgrade or close and replace these existing facilities and conduct any required remedial actions. Closure and post-closure

costs have been included in Asset Retirement Obligation (ARO) in accordance with the requirements in the final rule. Additional ARO revisions will occur on a site-by-site basis if groundwater monitoring activities conclude that corrective actions are required to mitigate groundwater impacts, which could include costs to remove ash from some unlined units.

Other utilities and industrial sources have been engaged in litigation with environmental advocacy groups who claim that releases of contaminants from wells, CCR units, pipelines and other facilities to ground waters that have a hydrologic connection to a surface water body represent an "unpermitted discharge" under the Clean Water Act (CWA). Two cases have been accepted by the U.S. Supreme Court for further review of the scope of CWA jurisdiction. In April 2020, the Supreme Court issued an opinion remanding one of these cases to the Ninth Circuit Court of Appeals based on its determination that discharges from an injection well that make their way to the Pacific Ocean through groundwater may require a permit, if the distance traveled, the length of time to reach the ocean, and other factors make it "functionally equivalent" to a direct discharge from a point source. The second case was also remanded to the lower court.

Prior to the Supreme Court's decision, the Federal EPA opened a rulemaking docket to solicit information to determine whether it should provide additional clarification of the scope of CWA permitting requirements for discharges to ground water, and issued an interpretative statement considering comments received in the rulemaking docket and determined that "releases to groundwater are excluded from the scope of the National Pollutant Discharge Elimination System (NPDES) program, even where pollutants are conveyed to jurisdictional surface waters via groundwater." In December 2020, the Federal EPA issued draft guidance for public comment on applying the outcome of the Supreme Court's decision and consideration of functionally equivalent factors. The impact of these developments on CCR units will be determined by further EPA guidance, additional permitting decisions, and future action from the courts.

6.5.8 Solid Waste Disposal

Prior to 2010, Rockport Plant fly ash was produced and marketed for reuse in applications that included flowable fill, ready mix concrete, raw feed for cement manufacture, and structural fills. Fly ash sales ceased beginning in 2010 because the Activated Carbon Injection system (ACI) to control mercury was placed into service. Fly ash is disposed of at the on-site landfill permitted by the Indiana Department of Environmental Management (IDEM). The landfill is underlain with clay and a geosynthetic plastic liner, has a groundwater monitoring well system that is sampled to monitor for potential impacts to groundwater, and storm-water runoff collection and treatment system, with discharge regulated by an IDEM-issued National Pollutant Discharge Elimination System (NPDES) permit. Unused bottom ash is stored in a pond for future use, which is also regulated by an IDEM NPDES permit.

On December 19, 2014, the US EPA signed the final Coal Combustion Residuals (CCR) Rule which became effective on October 19, 2015. This rule impacts the bottom ash pond and landfill at the Rockport Plant.

Non-hazardous solid wastes generated at Rockport Plant, as well as the hydro facilities, are disposed at permitted municipal solid waste landfills. Typical solid wastes may include general trash, non-hazardous solvents, and hydraulic fluid, which may be recycled or properly disposed of using licensed vendors. These facilities recycle numerous non-hazardous and hazardous wastes, including everything from paper and cardboard to batteries and used mercury.

6.5.9 Hazardous Waste Disposal

Rockport is typically a small-quantity generator of hazardous waste, such as parts washer by-products, batteries, light bulbs, and paints. The plant recycles light bulbs and batteries. Rockport has significantly reduced the amount of solvents generated in the parts washers by purchasing its own equipment and processing its own non-hazardous solvents.

6.5.10 Clean Water Act Regulations

In 2014, the Federal EPA issued a final rule setting forth standards for existing power plants pursuant to section 316(b) of the Clean Water Act that is intended to reduce mortality of aquatic organisms impinged or entrained in the cooling water. The rule was upheld on review by the U.S. Court of Appeals for the Second Circuit. Compliance timeframes are established by the permit agency through each facility's NPDES permit as those permits are renewed and have been incorporated into permits at several AEP facilities. AEP facilities that have had their wastewater discharge permits renewed have been asked to monitor intake flows or to enhance monitoring practices to assure the current technology is being properly managed to ensure compliance with this rule.

In 2015, the Federal EPA issued a final rule revising effluent limitation guidelines (ELG) for generating facilities. The rule established limits on FGD wastewater, fly ash and bottom ash transport water and flue gas mercury control wastewater to be imposed as soon as possible after November 2018 and no later than December 2023. These requirements would be implemented through each facility's wastewater discharge permit. The rule was challenged in the U.S. Court of Appeals for the Fifth Circuit. In 2017, the Federal EPA announced its intent to reconsider and potentially revise the standards for FGD wastewater and bottom ash transport water. The Federal EPA postponed the compliance deadlines for those wastewater categories to be no earlier than 2020, to allow for reconsideration. In April 2019, the Fifth Circuit vacated the standards for landfill leachate and legacy wastewater and remanded them to the Federal EPA for reconsideration. Those standards have not been reissued. In November 2019, the Federal EPA proposed revisions to the standards for FGD wastewater and bottom ash transport water discharges from existing generation facilities. A final rule was published in the Federal Register on October 13, 2020, establishing additional options for reusing and discharging small volumes of bottom ash transport water, provides an exception for retiring units, and extends the compliance deadline to a date as soon as possible beginning one year after the rule is published but no later than December 2025. The Company has assessed technology additions and retrofits to comply with the rule and the impacts of the Federal EPA's recent actions on facilities' wastewater discharge permitting for FGD wastewater and bottom ash transport water.

Permit modifications for affected facilities were filed in January 2021 that reflect the outcome of that assessment.

In 2015, the Federal EPA and the U.S. Army Corps of Engineers jointly issued a final rule to clarify the scope of the regulatory definition of “waters of the United States” in light of recent U.S. Supreme Court cases. Various parties challenged the 2015 rule in different U.S. District Courts, which resulted in a patchwork of applicability of the 2015 rule and its predecessor. In December 2018, the Federal EPA and the U.S. Army Corps of Engineers proposed a replacement rule. In September 2019, the Federal EPA repealed the 2015 rule. The final replacement rule was published in the Federal Register in April 2020 and became effective in June 2020. The final rule limits the scope of CWA jurisdiction to four categories of waters, and clarifies exclusions for ground water, ephemeral streams, artificial ponds and waste treatment systems. Challenges to the final rule and requests for a preliminary injunction have been brought by states and other groups in multiple U.S. District Courts. At this time, none of the jurisdictions in which AEP operates are impacted by a stay. The Company is monitoring these various proceedings but is unable to predict the actions of the various courts.

In April 2020, the U.S. District Court for the District of Montana issued a decision vacating the U.S. Army Corps of Engineers’ (Corps) General Nationwide Permit 12 (NWP 12), which provides standard conditions governing linear utility projects in streams, wetlands and other waters of the United States having minimal adverse environmental impacts. The Court found that in reissuing NWP 12 in 2017, the Corps failed to comply with Section 7 of the Endangered Species Act (ESA), which requires the Corps to consult with the U.S. Fish and Wildlife Service regarding potential impacts on endangered species. The Court remanded the permit back to the Corps to complete its ESA consultation, and also enjoined the Corps from authorizing any dredge or fill activities under NWP 12 pending completion of the consultation process. The Department of Justice filed a motion to stay the injunction and tailor the remedy imposed by the Court. In May 2020, the Court revised its order lifting the injunction for non-oil and gas pipeline construction activities and routine maintenance, inspection and repair activities on existing NWP 12 projects. The Department of Justice appealed the Court’s decision to the Court of Appeals for the Ninth Circuit and moved for stay pending appeal, which was denied. In June 2020, the Department of Justice submitted an application to the U.S. Supreme Court requesting a stay of the District Court’s Order, and the Court granted the request with respect to all oil and gas pipelines except the Keystone Pipeline. The Company is monitoring the litigation and evaluating other permitting alternatives but is currently unable to predict the impact of future proceedings on current and planned projects.

In September 2020, the Corps issued for public comment the proposed renewal of all General Nationwide Permits. As part of that proposal the Corps has narrowed the focus of NWP 12 to only oil and natural gas pipeline activities. The Corps proposed two new Nationwide Permits governing electric utility line and telecommunications activities, and other utility lines (e.g., conveyance of potable water, sewage, other substances), respectively. In January 2021, the Corps issued 16 final Nationwide Permits, including NWP 12 and the two new utility line permits, NWP 57 and NWP 58. The Corps chose not to reissue or modify the remaining Nationwide Permits at this time. The 2017

versions of those permits remain in effect. Management is currently assessing impacts of the rulemaking on current and planned projects.

6.6 Demand-Side Programs

6.6.1 Background

Demand-Side programs, also known as Demand-side Management (DSM) collectively includes utility programs aimed at influencing both the level of, and timing of, customer use of grid supplied electricity. These types of programs are structured to counter the ongoing need for increased supply resources through customer energy conservation or direct intervention in how customers use electricity. Typically, customer influence is achieved through some form of monetary or product enticement either through utility rebates or electric bill credit payments. Several demand-side programs are available including Energy Efficiency (EE), Demand Reduction (DR), Conservation Voltage Reduction (CVR) and Distributed Generation (DG). Rate design can also influence customers' energy consumption behaviors.

Generally, EE programs pay rebates directly to customers that are designed to encourage either end-use conservation or energy use reduction through the installation of or upgrade to more efficient end-use technologies. Some EE programs do not pay a cash rebate but instead encourage customers to reduce their annual energy consumption, or better manage their cost of electricity. Other types of EE programs seek to influence the manufacture and supply of more efficient end-use technologies through upstream rebate payments to end-use technology providers that reduce the technology cost to end-use customers. EE programs provide both energy and demand savings. Energy savings are accounted for as an around-the-clock energy reduction impact while demand savings are accounted for in terms of their point-in-time, peak coincident use reduction on an hourly basis.

Generally, DR programs offer electric bill credits through tariff pricing mechanisms to elicit point-in-time energy use reductions (also known as demand, or coincident peak demand reductions). DR programs require specific action to monitor and control electricity use during periods of peak usage. Direct load control (DLC) programs allow utility control over customers' end use loads to achieve the specific peak period use reduction. Other types of DR programs allow customers to reduce use during peak periods on their own accord and pay bill credits based on the actual level of usage during peak period events. Demand response programs primarily provide peak coincident demand impacts but can provide energy impacts as well depending upon the extent of use reduction that occurs.

DG typically refers to small-scale customer-sited generation behind the customer meter. Common examples are Combined Heat and Power (CHP), residential and small commercial solar applications, and even wind. Currently, these sources represent a small component of demand-side resources, even with available federal tax credits and tariffs favorable to such applications. I&M's retail jurisdictions have "net metering" tariffs in place which currently allow excess generation to be credited to customers at the retail rate up to the amount of the customer's monthly bill.

CVR (a.k.a. Electric Energy Consumption Optimization (EECO) or Volt-VAR Optimization (VVO)) is a process by which the utility systematically reduces voltages in its distribution network through the installation and use of sensors and controllers on the grid, resulting in a proportional reduction of load on the network. This voltage reduction still maintains minimum levels needed by customers but elicits lower energy use from end-use customer appliances without any changes in behavior or changes to appliance efficiencies.

Rate design is expected to become an increasingly important element of future utility regulation and resource planning as the industry changes, particularly in the way electricity is supplied and used, as well as the times at which energy is produced and used. As an example, increasing levels of DERs, EVs, and overall electrification of the economy will have significant and uncertain impacts on electric demand, supply, and use. The full deployment of AMI technology will provide useful and necessary information to better evaluate and disaggregate loads and support future rate design changes. In general, the Company's approach to rate design changes is two-fold: 1) test rate design concepts with small scale or limited-scope offerings; and 2) include proposals in its base rate or other proceedings in order to allow other parties, commission staff, and commissions to evaluate the reasonableness of such proposals. As this area of the business evolves, I&M anticipates incorporating those learnings and developments in future IRPs.

6.6.2 Existing Demand-Side Programs

Included in the load forecast discussed in Section 5 of this Report are the demand and energy impacts associated with I&M's DSM programs approved in Indiana and Michigan prior to preparation of this IRP. A summary of these include:

- Energy Efficiency (EE): I&M currently has approved EE programs in place in its Indiana and Michigan service territories. These programs are forecasted to reduce peak demand in 2021 by approximately 2.5 MW and reduce energy consumption by approximately 13.3 GWh.
- Demand Reduction (DR): DR programs are accounted for as a load shape reduction from the load forecast used in the IRP. For the year 2023, I&M anticipates 204 MW of DR reduction. The majority of this DR is achieved through interruptible load agreements. A smaller portion is achieved through direct load control.
- Distributed Generation (DG): Through November 2020, the Company has 818 customers that have installed net metering and or co-generation qualifying customer-generation facilities which are interconnected and/or net metered with a total nameplate capacity of approximately 17.966 MW.
- CVR: I&M currently has 65 distribution circuits with CVR installed in its Indiana service territory and three distribution circuits in its Michigan jurisdiction.

6.7 AEP-PJM Transmission

6.7.1 General Description

The AEP eastern transmission system (Eastern Zone) consists of the transmission facilities of the eleven eastern AEP operating or Transmission companies including I&M, Appalachian Power Company (APCo), Ohio Power Company (OPCo), Kentucky Power Company (KPCo), Wheeling Power Company (WPCo), Kingsport Power Company (KgPCo), AEP Appalachian Transmission Company [APTC], AEP Indiana Michigan Transmission Company (IMTC), AEP Kentucky Transmission Company (KYTC), AEP Ohio Transmission Company (OHTC), and AEP West Virginia Transmission Company (WVTC). The Eastern Zone is composed of approximately 14,950 miles of circuitry operating at or above 100kV and includes over 2,120 miles of 765kV transmission lines overlaying 3,550 miles of 345kV lines and over 9,000 miles of 138kV circuitry. This expansive system allows the economical and reliable delivery of electric power approximately 21,610 MW of customer demand connected to the AEP eastern transmission system that takes transmission service under the PJM open access transmission tariff.

The transmission line circuit miles in I&M's Indiana service territory include approximately 610 miles of 765kV, 1,400 miles of 345kV, 1,560 miles of 138kV, 490 miles of 69kV, and 315 miles of 34.5kV lines. I&M's Michigan service territory includes approximately 16 miles of 765kV, 234 miles of 345kV, 240 miles of 138kV, 300 miles of 69kV, and 85 miles of 34.5kV lines.

The AEP eastern transmission system is part of the Eastern Interconnection, the most integrated transmission system in North America. The entire AEP eastern transmission system is located within the Reliability*First* Corporation (RFC) geographic area. On October 1, 2004, AEP's eastern zone joined the PJM Regional Transmission Organization (RTO) and now participates in PJM regional planning, operations and markets.

The AEP eastern transmission system can be influenced by both internal and external factors from its geographical location, expanse, and numerous interconnections. Facility outages, load changes, or generation re-dispatch on neighboring companies' systems, in combination with power transactions across the interconnected network, can affect power flows on AEP's transmission facilities. As a result, the AEP eastern transmission system is designed and operated to perform adequately even with the outage of its most critical transmission elements or the unavailability of generation. The eastern transmission system conforms to the NERC Reliability Standards and applicable RFC standards and performance criteria.

AEP's eastern transmission system assets are aging. Figure 21 below demonstrates the development of that Transmission Bulk Electric System. In order to maintain reliability, significant investments will be necessary over the next decade to address the aging infrastructure and assets. Despite the robust nature of the eastern transmission system, certain outages coupled with extreme weather conditions and/or power-transfer conditions can potentially stress the system beyond acceptable limits.

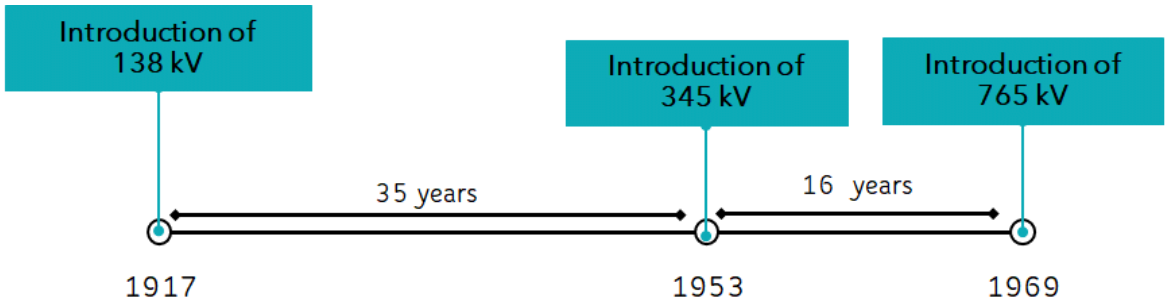


Figure 21. AEP Eastern Transmission System Development Milestones

Over the years, AEP, and more recently PJM, entered into numerous study agreements to assess the impact of the connection of potential generation to the eastern transmission system. AEP companies, in conjunction with PJM, have interconnection agreements in their service territories with several plant developers. Other generation additions are planned to be connected to the eastern transmission system over the next several years (including upgrades to existing facilities, once studied and approved through the PJM Generation Interconnection queue process[12]) and additional generation is under study for potential interconnection.

The integration of the generation now connected to the eastern transmission system required incremental transmission system upgrades, such as installation of larger capacity transformers and circuit breaker replacements. Other transmission system enhancements will be required to match general load growth and allow the connection of large load customers and any other generation facilities. In addition, transmission modifications may be required to address changes in power flow patterns and changes in local voltage profiles resulting from operation of the PJM and adjacent markets, such as MISO and NYISO.

6.7.2 Transmission Planning Process

AEP and PJM coordinate the planning of the transmission facilities in the AEP Eastern Zone through a “bottom up/top down” approach. AEP will continue to develop transmission expansion plans to meet the applicable reliability criteria in support of PJM’s transmission planning process. PJM will incorporate AEP’s expansion plans with those of other PJM member utilities and then collectively evaluate the expansion plans as part of its Regional Transmission Expansion Plan (RTEP) process. The PJM assessment will ensure consistent and coordinated expansion of the overall bulk transmission system within its footprint. In accordance with this process, AEP will continue to take the lead for the planning of its local transmission system under the provisions of Schedule 6 of the PJM Operating Agreement and Attachment M-3 of the PJM tariff. By way of the RTEP, PJM will ensure that transmission expansion is developed for the entire RTO footprint via a single regional

[12] PJM Generation Interconnection queue is located at: https://www.pjm.com/planning/services-requests/interconnection-queues.aspx

planning process that considers both regional and local needs and solutions, thus ensuring a consistent view of needs and expansion timing while minimizing expenditures. When regional system upgrade requirements are identified under the RTEP, PJM determines the individual member's responsibility as related to construction and costs to implement the expansion. This process identifies the most appropriate, reliable, and economical integrated transmission reinforcement plan for the entire region, while blending the local planning expertise of the transmission owners such as I&M with a regional view and formalized open Stakeholder input.

AEP's transmission planning criteria are consistent with North American Electric Reliability Corporation (NERC) and RFC reliability standards. The AEP planning criteria are filed with FERC annually as part of AEP's FERC Form 715 and these planning criteria are posted on the AEP website.[13] Using these criteria, limitations, constraints and future potential deficiencies on the AEP transmission system are identified. Remedies are identified and budgeted as appropriate to ensure that system enhancements will be timed to address anticipated deficiencies.

Similarly, AEP also identifies local needs and solutions through the Attachment M-3 planning process that drives Supplemental and asset management projects in the RTEP. All projects affecting the topology of the grid, whether PJM identified or Transmission Owner identified (TO Projects), are subject to the stakeholder process within PJM. While PJM does not formally "approve" TO Projects, these projects are submitted to PJM and reviewed with the Transmission Expansion Advisory Committee (TEAC) and Subregional RTEP Committee – Western on a periodic basis in accordance with the provisions in Attachment M-3 of the PJM Tariff. All TEAC and Subregional RTEP Committee-Western meetings are open and any transmission stakeholder can attend. TO Projects are subject to multiple rounds of review and detailed project information, including needs and alternative solutions. The Attachment M-3 process ensure stakeholders have an opportunity to review TO Projects and include the following meetings and posting requirements:

- Separate stakeholder meetings to discuss:
  - Criteria, assumptions and models used to plant TO Projects (Assumptions Meeting);
  - Needs underlying TO Projects (Needs Meeting); and,
  - Potential solutions to meet those needs (Solutions Meeting).
- Posting of criteria, assumptions, and models at least 20 calendar days prior to the Assumptions Meeting and accepting post-meeting comments for ten days after this meeting;
- Posting of criteria violations and drivers at least ten days in advance of the Needs Meeting and accepting post-meeting comments for ten days after this meeting;
- Posting of potential solutions and alternatives identified by PJM Transmission Owners or stakeholders at least ten days in advance of the Solutions Meeting and accepting post-meeting comments for ten days after this meeting; and,

13 https://www.aep.com/about/codeofconduct/OASIS/TransmissionStudies/

- Opportunity to submit final comments for PJM Transmission Owner review and consideration at least ten days before the Local Plan is integrated into the RTEP.

PJM also coordinates its regional expansion plan on behalf of the member utilities with neighboring utilities and/or RTOs, including the MISO, to ensure inter-regional reliability. The Joint Operating Agreement between PJM and the MISO provides for joint transmission planning.

6.7.3 System-Wide Reliability Measures

Transmission reliability studies are conducted routinely for seasonal, near-term, and long-term horizons to assess the anticipated performance of the transmission system. The reliability impact of resource adequacy (either supply or demand side) would be evaluated as an inherent part of these overall reliability assessments. If reliability studies indicate the potential for inadequate transmission reliability, transmission expansion alternatives and/or operational remedial measures would be identified.

6.7.4 Evaluation of Adequacy for Load Growth

As part of the on-going near-term/long-term planning process, AEP and PJM use the latest load forecasts along with information on system configuration, generation dispatch, and system transactions to develop models of the AEP transmission system. These models are the foundation for conducting performance appraisal studies based on established criteria to determine the potential for overloads, voltage problems, or other unacceptable operating problems under adverse system conditions. Whenever a potential problem is identified, PJM and AEP seek solutions to avoid the occurrence of the problem. Solutions may include operating procedures or capital transmission project reinforcements. Through this on-going process, AEP works diligently to maintain an adequate transmission system able to meet forecasted loads.

In addition, PJM performs a Load Deliverability assessment on an annual basis using a 90/10[14] load forecast for areas that may need to rely on external resources to meet their demands during an emergency condition.

6.7.5 Evaluation of Other Factors

As a member of PJM, and in compliance with FERC Orders 888 and 889, AEP is obligated to provide sufficient transmission capacity to support the wholesale electric energy market. In this regard, any committed generator interconnections and firm transmission services are taken into consideration under AEP's and PJM's planning processes. In addition to providing reliable electric service to AEP's retail and wholesale customers, PJM will continue to use any available transmission capacity in

14 90% probability that the actual peak load will be lower than the forecasted peak load and 10% probability that the actual peak load will be higher than the forecasted peak load.

AEP's eastern transmission system to support the power supply and transmission reliability needs of the entire PJM market.

A number of generation requests have been initiated in the PJM generator interconnection queue. AEP, through its membership in PJM, is obligated to evaluate the impact of these projects and construct the transmission interconnection facilities and system upgrades required to connect any projects that sign an interconnection agreement. The amount of this planned generation that will actually be connected to the transmission system is unknown at this time.

6.7.6 Transmission Expansion Plans

The transmission system expansion plans for the AEP eastern transmission system are developed and reviewed through the PJM Stakeholder process to meet projected future requirements. AEP and PJM use power flow analyses to simulate normal conditions, and credible contingency scenarios to determine the potential thermal and voltage impact on the transmission system in meeting the future requirements.

As discussed earlier, AEP, in coordination with PJM, will continue to develop transmission reinforcements to serve its own load areas to ensure compatibility, reliability and cost efficiency.

6.7.7 Transmission Project Descriptions

A list and discussion of transmission projects that have recently been completed, are presently underway or planned in the I&M service area can be found in Section 6.7.9 of this report. In addition, several other projects beyond the I&M service territory have also been completed or are underway across the AEP Eastern Zone. While they do not directly impact I&M, such additions contribute to the robust health and capacity of the overall transmission grid, which also benefit Indiana customers.

AEP's eastern transmission system is anticipated to continue to perform reliably for the upcoming peak load seasons. AEP will continue to assess the need to expand its system to ensure adequate reliability for I&M's customers in Indiana and Michigan. AEP anticipates that incremental transmission expansion will continue to provide for expected load growth.

6.7.8 FERC Form 715 Information

A discussion of the AEP Eastern Zone reliability criteria for transmission planning, as well as the assessment practice used, is provided in AEP's 2021 FERC Form 715 Annual Transmission Planning and Evaluation Report, which can be found in Appendix Volume 3, Exhibit A. That filing also provides pertinent information on power flow studies and an evaluation and continued adequacy assessment of AEP's eastern transmission system.

As the transmission planner for AEP and AEP eastern subsidiaries, including I&M, PJM performs all required studies to assess the robustness of the Bulk Electric System. All the models used for these studies are created by and maintained by PJM with input from all transmission owners, including AEP and its subsidiaries. Information about current cases, models, or results can be requested from

PJM directly. PJM is responsible for ensuring that AEP meets all NERC transmission planning requirements, including stability of the system.

Performance standards establish the basis for determining whether system response to credible events is acceptable. Depending on the nature of the study, one or more of the following performance standards will be assessed: thermal, voltage, relay, stability, and short circuit. In general, system response to events evolves over a period of several seconds or more. Steady state conditions can be simulated using a power flow computer program. A short circuit program can provide an estimate of the large magnitude currents, due to a disturbance, that must be detected by protective relays and interrupted by devices such as circuit breakers. A stability program simulates the power and voltage swings that occur as a result of a disturbance, which could lead to undesirable generator/relay tripping or cascading outages. Finally, a post contingency power flow study can be used to determine the voltages and line loading conditions following the removal of faulted facilities and any other facilities that trip as a result of the initial disturbance.

For the eastern AEP transmission system, thermal and voltage performance standards are usually the most constraining measures of reliable system performance.

Sufficient modeling of neighboring systems is essential in any study of the Bulk Electric System. Neighboring company information is obtained from the latest regional or interregional study group models, the RFC base cases, the Eastern Interconnection Reliability Assessment Group (ERAG) Multiregional Modeling Working Group (MMWG) power flow library, the PJM base cases, and neighboring companies themselves. In general, sufficient detail is obtained to adequately assess all events, outages, and changes in generation dispatch, which are contemplated in any given study.

6.7.9 Transmission Project Details

AEP's eastern transmission system is anticipated to continue to perform reliably for the upcoming peak load seasons. AEP will continue to assess the need to expand its system to ensure adequate reliability for I&M's customers.

A list with a brief description of scope of certain I&M transmission projects that have either recently been completed, are presently underway, or planned, is provided below. These projects contribute to the robust health and capacity of the overall transmission grid, which benefits all customers.

- **Central South Bend Reliability Project:** Transmission planning is proposing to construct 2.5 miles of 69 kV underground transmission line in South Bend to address rehab and operational needs. This enables the retirement of Colfax – Kankakee 34.5kV line and conversion of the South Bend – West Side 34.5kV Line and the South Bend – Colfax 34.5kV line to 69kV operation as majority of the lines are built to 69kV standards but operate at 34.5kV. Converting the system to 69kV will address the operational switching concerns. Colfax and Drewry's Station will be complete station rebuilds because of asset renewal, space limitation and operational needs. St Mary's Station has some rehab needs and will be upgraded to accept 69kV service.

  - 2021: $10.1 million
  - 2022: $5.8 million

- **College Corner 138kV Rebuild:** AEP has identified multiple asset renewal issues at the College Corner station including FK oil-type breakers. AEP is rebuilding College Corner in an adjacent location and replacing a breaker at the Richmond remote end station.
  - 2021: $4.1 million
- **Dragoon – Kline Improvements:** AEP transmission will expand the existing Dragoon station, upgrade all switches along the 34.5kV corridor going from Dragoon to Kline, upgrade Russ St. switch, and rebuild a quarter mile of the existing South Bend – Dragoon 34.5kV line. The 138kV hard tap will be eliminated and the 138kV yard will be reconfigured with an in and out configuration, install a 138kV bus tie circuit breaker, install a second 138/69/34.5 autotransformer, and replace four 34.5kV circuit breakers. Transmission will also upgrade risers at Kline and Virgil St. Stations.
  - 2021: $0.6 million
  - 2022: $3.6 million
  - 2023: $1 million
- **Eugene – Dequine – Meadow Lake Upgrades:** This project will reconductor 45 miles of 345kV line between Eugene and Dequine stations, and reconductor 14 miles of 345kV line between Dequine and Meadow Lake stations. Multiple overloads were identified by PJM during its 2015 and 2016 regional transmission expansion plan. This project would address all overloads identified by PJM.
  - 2021: $2 million
  - 2022: $0.8 million
- **SDI Service Enhancements:** This project is to construct a new 138 kV switching station between Grabill and South Hicksville, extend a greenfield 138 kV line (~3.5 miles) from this station to Butler-North Hicksville line, and construct a new greenfield 345/138 kV station near SDI South Butler and Wilmington. From this 345/138 kV station, a greenfield double circuit 138 kV line (~1.5 miles) will be extended to Auburn-Ferrous line near New Millennium. From New Millennium, a greenfield single circuit 138 kV will be extended to Butler-North Hicksville line and loop into the new 345/138 kV station, and a single 345kV line will be built toward the South Butler delivery point. Collingwood and Dunton Lake 345kV substations will be combined on the site of Dunton Lake and will support two feeds to South Butler station. This project will address the 300MW load loss criteria violation at South Butler station.
  - 2021: $7.1 million
- **Valley Area Reinforcements:** AEP is rebuilding the Valley – Glenwood Tap, Riverside – South Haven and Almena – Hartford line to 69kV standards and the Valley – Almena line will be rebuilt as a 138/69kV double circuit line. Almena station will need to have a 138kV high side installed to incorporate this new line. Hartford station will have a 138/69kV transformer added with high

and low side protection to provide another source for the network. In addition to this, work is being done at Hartford, Riverside and Hagar station to address aging infrastructure needs.

  - 2021: $2.1 million
  - 2022: $2.1 million

- **Southern Muncie:** AEP will be rebuilding the Hogan – 23rd street line as well as replacing significant assets in 23rd Street, Arnold Hogan, Medford and Blaine Street stations and will be installing the new Fuson station which will allow the retirement of Elmridge station.

  - 2021: $3.7 million
  - 2022: $0.2 million
  - 2023: $2.0 million
  - 2024: $1.0 million

- **Western Fort Wayne Improvement:** This project will address thermal and voltage T.O. violations by replacing aging infrastructure and upgrading facilities. A new Snapper Station will replace Churbusco and Carroll stations and Whitley will be rebuilt and converted to 69kV. The Wallen-Whitley 34.5kV circuit will be retired and replaced with 69kV service from Wallen-Snapper 69 kV (via Eel River), Snapper-Whitley 69 kV (via Union) and Whitley-Gateway 69 kV.

  - 2021: $0.9 million
  - 2022: $5.5 million
  - 2023: $1.2 million

- **Hartford City Area Improvements:** Network-wide overloads were identified in the Hartford City 69kV network. AEP is rebuilding the Hartford City – Armstrong line as Hartford City – Jay and building a new Armstrong Cork – Jay 2 line. In addition, AEP is rebuilding Bosman – Delaware as the 69kV Royerton – Strawboard. To accommodate this work, station work will be completed at Jay, Bosman, Strawboard, Hartford City, Royerton and Delaware stations.

  - 2021: $3.1 million
  - 2022: $3.1 million

- **Berrien Springs Area Improvements:** The introduction of a new 138kV source (Blossom Trail) near Eau Claire, MI will provide the opportunity to strengthen the grid and restore stability to the area. In addition, converting the line from Derby through Berrien to 69 kV will further strengthen this area. This project will replace several circuit breakers. The area improvements will transfer some load to a new station, Boxer.

  - 2021: $2.5 million
  - 2022: $1.0 million

- **Northern Muncie Area Improvements:** The Delaware 34.5kV station, the Delaware – Jay 20 mile 34.5kV line and the Delaware – Haymond 2.5 mile 34.5kV line have all been identified as rehab candidates. AEP is installing a new 138kV Perch station and retiring the 20-mile Delaware – Jay asset. AEP will also be rebuilding the Delaware – Haymond line as well as rebuilding the Delaware 34.5kV station as a ring bus to address the issues identified.

  - 2021: $4.0 million
  - 2022: $1.2 million
  - 2023: $0.4 million
- **Strawton Area Improvements:** AEP plans to upgrade the network to 69kV which will allow for retirement of a sizable portion of the remaining 34.5kV assets in the area.
  - 2021: $5.2 million
  - 2022: $1.3 million
- **Western Marion Area Improvements:** AEP has identified condition and performance issues spread throughout the Western Marion area. In order to address these issues, AEP will be rebuilding the Grant – Marion and Deer Creek – Marion lines, rebuilding the Deer Creek 34.5kV voltage class, retiring the Deer Creek – Miller Ave line and will be adding a 138kV cap bank at Grant to maintain voltage levels.
  - 2021: $0.6 million
  - 2022: $1.6 million
- **Hamilton Area Improvements:** Two-way service will be provided to Hamilton and customers by installing a new 69kV line to Butler in order to address Hamilton Station customer outages due to maintenance, storm outages, and fault load dropping on the radial line from Butler. Customers will be served from a new breaker-and-half Teutsch Station and the existing Butler Station will be retired, eliminating exposure to line faults. A new 69kV circuit breaker will replace the motor operated breaker switches (MOABs) at Hamilton.
  - 2021: $0.1 million
  - 2022: $1.3 million
  - 2023: $2.0 million
  - 2024: $0.1 million
- **Hillcrest – Adams 69kV Line Rebuild:** AEP has identified overload criteria violations and multiple condition and performance needs on Hillcrest-Adams 69kV. Ferguson station will be rebuilt on the nearby 138kV line as Baer to move it out of the FAA flight path. The Ferguson – Bluffton 69 kV Branch and Adams – Bluffton 69kV Line will be rebuilt and re-routed to accommodate Kinnerk station served out of Hillcrest station via 3.55 miles radial line and Uniondale (REMC) station served out of Kingsland station via 4.3 miles radial line. Oil filled circuit breakers at Kingsland Station, manufactured in 1969, will be replaced with new circuit breakers.
  - 2022: $0.3 million
  - 2023: $0.6 million
  - 2024: $2.4 million
  - 2025: $0.8 million
- **Robison Park – South Hicksville 69kV Line Rebuild:** AEP has identified condition and performance issues on the Robison Park-South Hicksville 69kV line and a thermal violation for N-1-1 type contingency will be mitigated by rebuilding 2.2 miles of the North Hicksville – Butler 69kV line and 33.22 miles of the South Hicksville – Robison Park Tie 69kV line.

  - 2021: $0.1 million
  - 2022: $0.3 million
  - 2023: $1.0 million
  - 2024: $2.5 million
- **Eastern Marion Improvements:** This project is rebuilding 17.67 miles of the Deer Creek – Hartford City 69 kV line, retiring the Deer Creek – Hummel Creek 34.5kV line, retiring the Jonesboro – Gas City 34.5kV line, retiring the Jonesboro Extension 34.5kV line, retiring the remaining Deer Creek – Alexandria 34.5 kV line (2.2 miles), retiring the de-energized Deer Creek Extension 34.5 kV line and upgrading Hummel Creek station to address equipment material condition, performance and risk issues in Marion, Indiana.
  - 2021: $3.4 million
  - 2022: $1.7 million
  - 2023: $2.8 million
  - 2024: $3.4 million
- **Arnold Hogan - Kenmore 34.5kV Rebuild:** AEP has identified condition and performance issues on the Arnold Hogan-Kenmore 34.5kV line. Rebuilding two miles of the Hogan – Kenmore 34.5kV line will address near overload conditions on the ~.4 mile 336 ACSR portion of the Hogan – Kenmore line that loads up to 98% of its 36MVA rating after the short circuit issue at Christy Woods is resolved. It will also allow AEP to retire several area cap banks in the future.
  - 2021: $7.7 million
- **Western South Bend Area Improvements:** Retiring and converting several lines from 34.5kV to 69kV operation will address aging structures with over 100 open conditions and an N-1-1 type contingency on the New Carlisle-Tulip Road 34.5kV branch. The project will also provide looped service at the 69kV bus such that with loss of the Olive transformer, service can be maintained to the NIPSCO and Harbison loads.
  - 2021: $3.8 million
  - 2022: $0.1 million
- **South Bend – Niles 69kV Line Rebuild:** Planning is proposing to rebuild the 1960's vintage wood cross arm construction along South Bend – Niles 69kV Line which will address the aging infrastructure, system needs as well as open condition concerns on the conductor and structures. The University Park Switch will be replaced as well as the customer metering to the City of Mishawaka. A bus tie breaker will be installed at Swanson Station and the cap switcher will be replaced.
  - 2021: $0.1 million
  - 2022: $0.7 million
  - 2023: $0.6 million
  - 2024: $1.0 million
- **Gateway Area Improvements:** This project will relieve overloads and voltage issues in the Gateway area. To do this, AEP proposes to rebuild the Columbia – Gateway 2 line and the

Columbia – Richland 69kV line as well as rebuilding Columbia station as a 138/69kV station with two transformers.

  - 2021: $1.7 million
  - 2022: $0.9 million

- **Rockport Station Rehab:** This project will replace the 765kV ELF breakers to address compressor failures, open/reclose failures and add a secondary station service source. This project will also expand the control house and replace the roof and HVAC system.

  - 2021: $0.1 million
  - 2022: $0.2 million
  - 2023: $2.7 million
  - 2024: $0.1 million

- **Eastern Melita Area Improvements:** AEP will build new 69kV lines from Melita to Anthony 69kV and a double circuit extension from Lincoln to connect to the Lincoln – Water Pollution 69kV line. A new single circuit 34.5kV Maumee Extension will connect Maumee Sw to the Lincoln – Water Pollution line. Anthony station will be rebuilt as a 69/12kV station, Melita will have a 69kV CB added, and Storm Water, Omnisource, Water Pollution and Lincoln will have minor work done to bring them to 69kV operation. Filtration Switch and the Skid station will be retired.

  - 2021: $0.1 million
  - 2022: $0.1 million
  - 2023: $1.7 million
  - 2024: $2.6 million
  - 2025: $1.7 million

- **Winchester Area Improvements – East:** This project will address planning criteria violations on the Winchester – Anchor Hocking 69kV line and 138/69/12kV Transformer #1 at Randolph station. Supplemental upgrades are also included to expand Randolph, Winchester, and Anchor Hocking stations to address asset performance, equipment condition, risk of failure, and operational flexibility.

  - 2021: $0.3 million
  - 2022: $0.6 million
  - 2023: $6.2 million
  - 2024: $0.2 million

- **Winchester Area Improvements – West:** This project will rebuild 19.1 miles of the Modoc – Winchester 69kV line and Buena Vista – Lynn 69kV lines to address equipment material condition, performance, and risk. The project includes upgrades to expand Modoc and Lynn stations, rebuild Huntsville Switch, and a new switch to serve the tie to Lobdell Station. Asset performance, equipment condition, risk of failure, and operational flexibility warrant the upgrades.

  - 2021: $0.9 million
  - 2022: $1.5 million

    - 2023: $0.2 million

- **Niles Area Reinforcements:** To address condition and performance issues as well as thermal and area voltage contingency issues AEP is proposing a large area solution that will rebuild and reinforce the 69kV sources in the Niles, MI area and install a new Boundary station to improve operational flexibility and reliability.
    - 2021: $1.3 million
    - 2022: $5.0 million
    - 2023: $8.1 million
    - 2024: $3.9 million
    - 2025: $0.2 million
- **Hartford Michigan Area Improvements:** To address condition and performance issues AEP will rebuild the Riverside – Hartford 138 kV line, the Hartford – Bangor 69kV line, and the Bangor – South Haven 69kV line all to current standards. The phase over phase switch at Phoenix Road Tap will also be rebuilt, the Drop in Control Module (DICM) will be expanded and a 69kv circuit breaker at Bangor will be installed for operating and auto-sectionalizing needs.
    - 2021: $2.8 million
    - 2022: $0.3 million
    - 2023: $3.4 million
    - 2024: $3.7 million
    - 2025: $0.2 million
- **I&M SCADA Upgrades:** Supervisory control and data acquisition is being installed at several stations to allow remote monitoring and operation of the system and increase reliability.
    - 2022: $7.9 million

6.8 Distribution Opportunities

6.8.1 Grid Modernization

On an ongoing basis, I&M engages in electric distribution grid planning to ensure safe, reliable and secure development and operation of the distribution energy delivery system. As part of Grid Modernization efforts, I&M is developing policies, procedures, and plans to build the existing energy delivery system into an “enabling platform” that can support Distributed Energy Resource (DER) integration and other new technologies in a safe, reliable, and secure fashion. This enabling platform will facilitate I&M customer owned DER and end-use technology integration for any customer that seeks to interconnect their resources into the distribution energy delivery system, as long as Company interconnection requirements are met and adhered to. To this extent, I&M distribution planning efforts include traditional activities, such as vegetation management, system coordination, system adequacy, distribution hardening and asset sizing. These traditional activities serve as the foundation for a safe, reliable, and secure system. Technology applications, such as distribution automation, advanced metering infrastructure, energy storage, micro grids, and DER integration, are

being incorporated into, and applied to, the foundational activities to advance the distribution energy delivery system into an enhanced safe, reliable, and secure system and the enabling platform that customers can interface and interconnect with in a safe, reliable and secure manner.

In order to ensure a safe, reliable, and secure foundation for the distribution energy delivery system, I&M developed plans to first address the leading causes of outages on its system – including, most importantly, vegetation management and aging infrastructure and then layers in distribution automation technology to enhance system capability and operation as part of a Grid Modernization effort. I&M has also initiated efforts to begin development and buildout of the enabling platform concept for DER integration and other advance technology options. Another fundamental aspect of the Grid Modernization plan is that it takes steps to align with both generation and transmission planning.

Grid Modernization recognizes the growth potential for third party distributed energy resources (DERs) and the increased need for active utility monitoring and controls to manage a more dynamic grid. This includes options for non-wires alternatives (NWAs), as well as I&M's progress in developing a process for screening and developing these NWA solutions.

The addition of renewables may lead to more distributed storage capacity on the grid. It is anticipated that these additions will continue to accelerate as FERC Order 2222 matures. Advanced Meter Infrastructure (AMI) and CVR offer both increased visibility into actual distribution system operation and improved system management. CVR provides automated management of system voltage levels and system losses and results in lower aggregate energy usage and peak demand. The combination of these evolutions will result in a grid which is more dynamic and inter-dependent and will require active utility monitoring and controls to manage. An Advanced Distribution Management System (ADMS) with Distributed Energy Resource Management System (DERMS) functionality will allow the Company to implement a new network architecture across AEP. This new network architecture will expand distribution planning criteria listed above, as the load in many instances will no longer be net with the DER energy produced.

The growth of DERs will require further alignment of the planning functions to inform new resource characterization approaches and novel DER sourcing mechanisms. AEP is currently processing a Request for Proposal from several ADMS vendors and will have the vendor / product selected by the end of 2021. Expectations are that a vendor contract, along with Statement of Work (SOW) will be completed Q1 2022, with conversion and systems integration completed by Q4 2023, and production planned for Q1 2024.

6.9 Journey to Fully Integrated Planning Process

I&M believes that continuing to deliver safe, reliable, and affordable energy in the future power system will require an integrated approach between transmission, distribution, and resource planning. For example, local capacity needs that were previously met through transmission-connection generation might be addressed at a lower cost by distributed energy resources. Non-wire

alternatives (“NWA”) such as microgrid and distributed scale solar and storage might be a lower cost solution to transmission and distribution constraints than new wire assets. Resilience and safety are enhanced with better visibility over future EV deployment and distributed generation at distribution circuit level to allow the planners to plan for multiple load conditions and increase hosting capacity to integrate more green energy generation. Better visibility also allows I&M to better understand locational value of distribution generation across its network which could lead to more efficient pricing and reduce inequities among DER customers.

In meeting its mission in the power system of tomorrow, AEP, has recently created a new Regulated Investment Planning team which brings together under one organization Integrated Resource Planning & Analysis, Transmission Planning & Analysis, Distribution Planning & Analysis, and Interconnection Services. Regulated Investment Planning will plan AEP’s regulated infrastructure programs across generation, transmission, and distribution to derive solutions that best meet the needs of customers.

Achieving a fully integrated planning process will require new tools, models, processes, and capabilities. To this end, AEP has engaged an external consultant to evaluate AEP’s existing planning tools, models, processes, and capabilities and produce a roadmap for AEP and I&M to achieve fully integrated planning. The project is in progress at the time of this report. In addition to the project, AEP will also continue to leverage new technologies, analytics, and automation as needed to deliver value for all Stakeholders.

7 Modeling Inputs and Assumptions

7.1 Resource Model

The IRP process aims to address the gap between resource needs and current resources. Given the various assets and resources that can satisfy the gap, a tool is needed to sort through the myriad of potential combinations and return an optimum solution. AURORA is the primary modeling application used by I&M and Siemens PTI in the development of this IRP.

AURORA is an industrial standard chronological unit commitment and dispatch model with extensive presence throughout the electric power industry. The model uses a state of the art, mixed integer programing approach ("MIP") to capture details of power plant and transmission network operations while observing real world constraints, such as emission reduction targets, transmission and plant operation limitations, renewable energy availability and mandatory portfolio targets. It is widely used by electric utilities, consulting agencies, and other stakeholders to forecast generator performance and economics, develop IRPs, forecast power market prices, and assess detailed impacts of regulations and market changes affecting the electric power industry. AURORA has gained wide acceptance among electric utility executives, stakeholder groups, and regulatory commissions.

Key inputs to the AURORA model include load forecasts, both supply- and demand-side resource costs and operating characteristics (e.g., heat rates), fuel costs, fixed and variable operating costs, outage rates, emission rates, as well as capital costs. The model assesses the potential performance, fixed and variable O&M costs, and capital costs of prospective and existing generation technologies and resources, and is capable of optimizing resource additions for economic, system reliability, and policy compliance reasons on a utility system, regional or nationwide scale. Outputs of the model include plant generation, gross margin, emissions, and a variety of other metrics. The model also considers transfer limits to reflect transmission constraints.

The AURORA model can be run in several modes. Two were utilized for the 2021 I&M IRP: The Long-term Capacity Expansion model (LTCE) and the Dispatch Simulation model (Dispatch model). The LTCE was utilized to determine the optimal mix of existing and new generating assets that meet demand over time while adhering to regulatory and reliability requirements. The LTCE model was relied on extensively in Step 3 of the IRP Process: Create Candidate Portfolios. All portfolios were optimized based on lowest cost. The Dispatch model was utilized to assess how a portfolio of assets will perform under a fixed set of market conditions. Dispatch results were used to inform Key Performance Indicators used in Step 3 and the stochastic results in Step 4.

Siemens PTI has used AURORA for well over 15 years as its primary model for asset valuation, power market forecasting, and IRP analyses. The model is equipped to analyze portfolio risks by assessing portfolio performance across 200 different future market outlooks. Siemens PTI has developed a sophisticated stochastic framework to ensure that these future market outlooks reflect both relevant historic volatility in key market drivers and cross relationships between different market

drivers. Siemens PTI has also developed modules to simulate the different operating characteristics of ISO/RTO regions across the country. For this reason, it is one of the most comprehensive, reliable, and flexible tools in the market for conducting IRPs. Siemens PTI has successfully conducted numerous IRPs for many utilities across the country.

In order to perform the deterministic and probabilistic modeling, AEP provided three fundamental forecast scenarios (a reference case plus a high and low scenario). The AEP reference case forecast, discussed in further detail below as the EIA-based fundamental forecast, served as the basis for the set of Reference Scenario development inputs in Step 3 of the IRP process. The high and the low fundamental forecasts, coupled with the reference forecast, allowed Siemens to develop a set of probability distributions for key market variables from these inputs.

7.2 Fundamental Forecast Process

The AEP EIA-based Fundamentals Forecast is a long-term, weather-normalized commodity market forecast principally based upon the assumptions contained in the EIA's Annual Energy Outlook (EIA AEO). The AEP Fundamentals Forecast is not specific to this IRP analysis; rather, it is made available to AEPSC and all AEP operating companies for various planning and analysis uses. The EIA-based Fundamentals Forecast used for this IRP includes: 1) prices for various qualities of coals; 2) monthly and annual locational natural gas prices, including the benchmark Henry Hub; 3) nuclear fuel prices; 4) sulfur dioxide (SO_2), nitrogen oxides (NOx), and CO_2 burden values; 5) locational implied heat rates; 6) electric generation capacity values; 7) renewable energy subsidies; and 8) inflation factors. The AEP Fundamentals Forecast is also developed using the AURORA model. AEP uses AURORA to produce the zonal level energy forecasts, based on internally defined input components. It is not the same AURORA model that Siemens used as part of the IRP Process.

Figure 22 below describes AEP's EIA-based Fundamentals Forecast components, which were sourced directly from the previously described EIA AEO, third-party energy consultancies, and internally generated information.

Forecast Components	EIA	Other	Source
Economy; Inflation/GDP deflators	✓		EIA Reference case
Generating Reserve Margins		✓	RTO Requirements
Electric Load		✓	AEP Load Forecasting
Electric Load shapes		✓	AEP Fundamentals
Solar/Wind production shapes by area		✓	NREL
Coal; Delivered price to EIA regions	✓	✓	EIA Reference case FOB prices + AEP Fundamentals
Natural gas price; Henry Hub	✓		EIA Reference case
Natural gas price; Locational values	✓	✓	EIA Reference case - Henry Hub + AEP Fundamentals
Natural gas supply; Lower 48 production	✓		EIA Reference case
Natural gas demand (incl. losses)	✓		EIA Reference case
Natural gas; net pipeline/LNG exports	✓		EIA Reference case
Oil price, WTI	✓		EIA Reference case
Fuel Oil price; locational values	✓	✓	EIA Reference case - WTI + AEP Fundamentals
Uranium prices		✓	AEP Fundamentals
Other Fuel(Biofuel, etc…)	✓		EIA Reference case
New gen unit options and capital costs	✓		EIA Reference case
Existing gen units	✓		EIA Reference case
Announced new gen units	✓		EIA Reference case
Aged-out retirements of existing gen units	✓		EIA Reference case
Gen unit maintenance schedule		✓	AEP Fundamentals
Gen unit outages		✓	AEP Fundamentals
Unit-level emission rates; CO_2, SO_2, NO_x		✓	US EPA CEMS data
Application of a CO_2 burden		✓	AEP Environmental
REC		✓	AEP Regulatory Forecast
PTC	✓		EIA Reference case
ITC	✓		EIA Reference case
State-mandated Renewable Portfolio Standards		✓	AEP Environmental
Reporting parameters; Peak/Off-Peak/NERC Holidays		✓	PJM/SPP/other RTO and/or internal guidelines
Transmission/links between Zones		✓	AEP Fundamentals

Figure 22. EIA-based Fundamental Forecast Components

Since the EIA AEO does not provide the granularity for most regulatory applications, AEP's AURORA model was utilized to create a reasonable proxy for the EIA AEO while providing the level of detail necessary for downstream consumption. The AURORA model used by AEP iteratively generates zonal, but not company-specific, long-term capacity expansion plans, annual energy dispatch, fuel burns and emission totals from inputs including fuel, load, emissions, and capital costs.

The base Fundamentals Forecast employs a CO_2 dispatch burden (adder) on all existing fossil fuel-fired generating units that escalates 3.5% per annum from $15 per metric ton commencing in 2028. This CO_2 dispatch burden is a proxy for the many pathways CO_2 may take (e.g., renewables subsidies/penetration, voluntary and mandatory portfolio standards, low natural gas prices, considerable reduction in battery storage costs) in addition to any regulation to impose fees on the combustion of carbon-based fuels. Additionally, for the Enhanced Regulation Scenario, the Company developed an alternative High CO_2 forecast that accelerates the CO_2 dispatch burden to commence in 2025 at a cost of $40 per metric ton escalated at 5% per year. This is illustrated in Figure 24 below.

The Fundamentals Forecast is not only concerned with the status of regulations and other current conditions that affect prices, but must also reflect reasonable expectations regarding future conditions that affect prices. As such, the carbon price proxy used for fundamentals forecasting is a reasonable assessment of future costs based on the status of carbon regulations and potential changes thereto.

7.3 Key drivers for Candidate Portfolio development

For this IRP, I&M/AEP developed a series of fundamental forecasts of key market drivers for use with Candidate Portfolio development that together represent the expected path forward for each forecasted input variable. Key market drivers included henry hub natural gas prices, powder river basin coal prices, CO2 pricing and capacity prices. As further discussed in section 7.4, AEP and Siemens PTI collaborated on cost and performance characteristics for generating technologies.

7.4 Input Forecasts

Figure 23 to Figure 26 below, shown in 2019 dollars, illustrate the forecasted fundamental parameters (fuel, capacity, and CO_2 emission prices) that were used in IRP Step 3 during the long-term optimization modeling for this IRP. Coal prices did not vary among the different Scenarios.

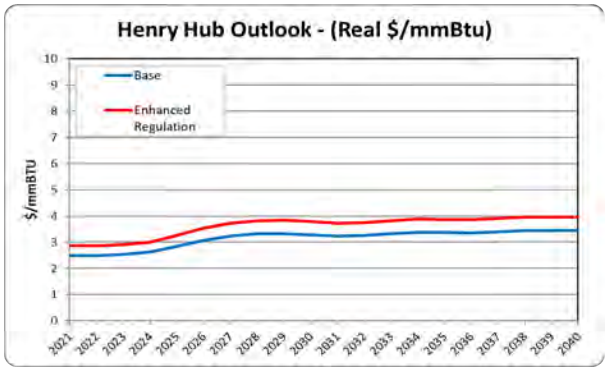


Figure 23. Henry Hub Outlook

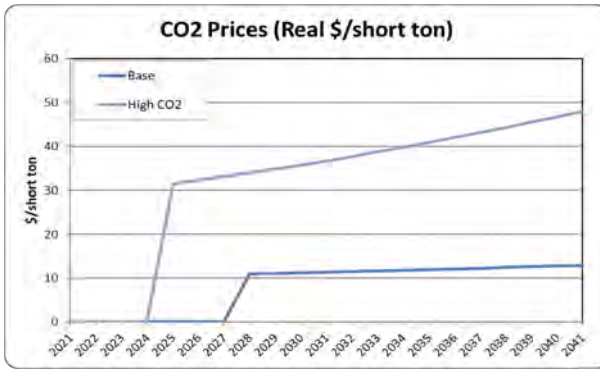


Figure 24. CO_2 Prices

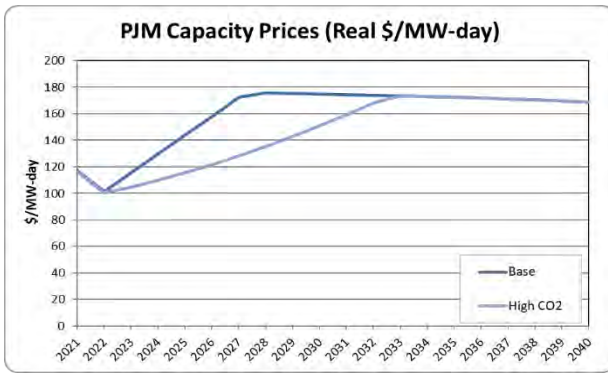


Figure 25. Capacity Prices

Figure 26. Coal Prices

Scenario on- and off-peak power price forecasts were a modeling output produced by the AURORA dispatch model and informed by the Scenario input assumptions, described in Section 3, along with a view of the greater PJM market. Figure 27 illustrates the energy prices for the Reference Scenario. Energy Prices for the three Scenarios are available in Exhibit C-17.

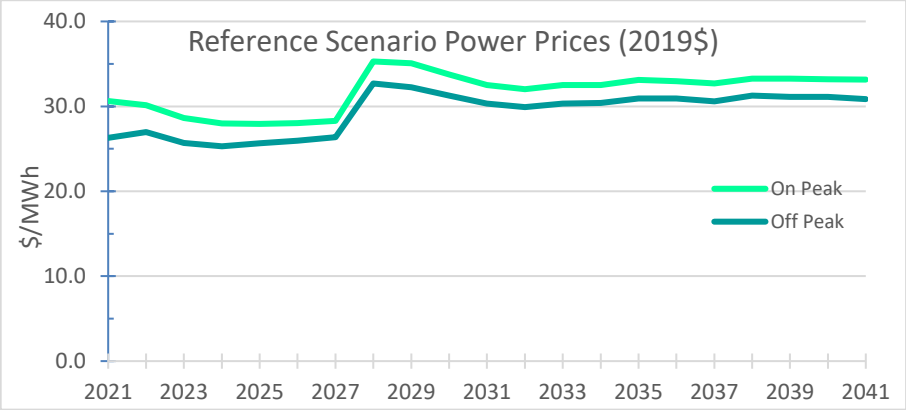


Figure 27. AEP I&M Zone Reference Scenario Power Prices (2019$/MWh)

7.5 Avoided Costs

7.5.1 Avoided Capacity Costs

For this IRP, the avoided capacity costs are taken from the Company's fundamentals forecast as the proxy estimate for the marginal market cost for capacity on the PJM market. The avoided generation capacity cost utilized in this analysis is shown in Figure 27. For the Reference and RTA scenarios as defined in Section 7.4, the base fundamental capacity cost was used. For the Enhanced Regulation scenario, the High CO_2 capacity cost was used.

7.5.2 Avoided Transmission and Distribution Cost

The Company's transmission and distribution systems are designed, constructed, and operated to serve not only the load physically connected to I&M's wires, but also to operate adequately and reliably with interconnected systems. The T&D systems must have the capacity to link generation resources safely and reliably with various load centers while also interfacing with, and managing, the loads from distributed resources as well, whether owned by the Company or by other entities including end use customers. For this IRP, a system level estimate of $20 per kW-year was applied to demand-side resource costs within the MPS to augment the program benefit stream. This system level estimate represents the Company's valuation for any localized benefits that may be realized from T&D system capital deferrals (i.e. avoided costs) resulting from EE, DR, and DER and is consistent with the avoided T&D costs used in the I&M AMI Business Case (I&M AMI CBA) performed by Accenture in 2020. In the I&M AMI CBA, the Company and Accenture performed analysis to determine the $20 per kW-year level for avoided T&D to be within industry range and appropriate to I&M specific.

7.5.3 Avoided Energy & Operating Cost

I&M's avoided operating cost including fuel, plant Operation & Maintenance (O&M), spinning reserve, and emission allowances, excluding transmission and distribution losses as discussed above, is provided in Figure 27.

7.6 Supply-Side Resource Options and Costs

7.6.1 Overview

New supply-side capacity alternatives were modeled to represent peaking and baseload/ intermediate capacity resource options. Natural gas base/intermediate, peaking generating technologies, large-scale solar and wind resources, hybrid energy resources and stand-alone storage resources were all considered as part of this IRP.

For this IRP, the cost and performance characteristics of the resources were informed through a combination of the EIA Annual Energy Outlook,[15] the NREL Annual Technology Baseline Report,[16] and with All-Source Informational RFP / Renewable RFP Results. The EIA AEO Report provided the basis for most conventional resources, while renewable and storage resources were informed by the All-Source Informational RFP and the Siemens PTI National Model. The NREL AEO report provides long-term forecasts for technologies and is the source of the learning curve applied to annual capital costs.

The IRP modeling considered generic resource cost and performance characteristics and did not attempt to model resource differences based on ownership structure for example (owned, power purchase agreement, tax equity, etc.). This approach allows the IRP modeling and process to focus on resource type and the underlying performance and installed and operating cost that are common regardless of ownership structure. This also avoids potentially inaccurate treatment when modeling federal and state policies and other ownership structure characteristics that are examined in more detail when specific resources are being acquired. Furthermore, as discussed in the Short-Term Action Plan the Company has committed to using an all-source RFP to solicit resources needed in the Near-Term. This will ensure the timely recognition of federal tax policies and allows for the consideration of project specific accurate and relevant information needed to evaluate the best resources for I&M. This includes the consideration of items such as: tax efficiency and utilization, terminal value of owned projects, impacts to financing costs and availability of financing, etc.

To improve the robustness of model results, a number of alternative resources explicitly modeled were reduced through an economic screening process focused on observed penetration in AURORA LTCE runs. The Siemens PTI team identified a set of forecasted expensive resources that the LTCE process routinely did not select as a reasonable option. Specifically, Coal and Coal with Carbon Capture Utilization and Storage (CCUS) base-load options were considered but were ultimately removed from the AURORA resource optimization modeling analyses. For coal generation resources, environmental regulation (see Section 6) makes the construction of new coal plants economically impractical. It is important to note that alternative technologies with comparable cost

[15] https://www.eia.gov/analysis/studies/powerplants/capitalcost/pdf/capital_cost_AEO2020.pdf

[16] https://atb.nrel.gov/

and performance characteristics may ultimately be substituted should technological or market-based profile changes warrant.

Table 7 and Table 8 below offer a summary of the technology performance parameter data. Appendix Volume 1, Exhibit D includes a summary of these performance parameters and resource costs:

Table 7. Plant Performance and Financial Data, Fossil

Plant Parameters	Fossil			
Technology	Advanced 1x1 Combined Cycle w 90% CO_2	Advanced 2x1 Combined Cycle	Advanced 1x1 Combined Cycle	Simple Cycle Frame CT
Fuel	Nat.Gas	Nat. Gas.	Nat. Gas	Nat. Gas.
Development Time (yrs)	7	6	5	5
Size (MW)	390	1,070	440	250
Baseload Heat Rate, HHV (Btu/kWh)	6,431	6,370	6,431	9,905
VOM (2019$/MWh)	5.84	1.87	2.55	0.60
FOM (2019$/kW-yr)	27.59	11.26	14.10	7.00
Book Life	30	30	30	30
Debt Life	30	30	30	30
Pre-Tax WACC	7.19%	7.19%	7.19%	7.19%

Table 8. Plant Performance and Financial Data, Carbon Free

Plant Parameters	Storage	Nuclear	Renewables			
Technology	Batteries - Li-ion	Small Modular Reactor	Solar Tier-2	Solar + Storage	Solar Tier-1	Onshore Wind
Fuel	All	Uranium	Sun	Sun	Sun	Wind
Development Time (yrs)	1	10	1	1	1	1
Size (MW)	50MW/ 200MWh	600	50	100	50	200
Baseload Heat Rate, HHV (Btu/kWh)		10,046				
VOM (2019$/MWh)		3.03				PTC
FOM (2019$/kW-yr)	20.67	96.14	16.70	37.55	16.70	31.72
Book Life	30	40	35	10	35	30
Debt Life	10	40	35	10	35	30
Pre-Tax WACC	7.19%	7.19%	7.19%	7.19%	7.19%	7.19%

7.6.2 Base/Intermediate Alternatives

7.6.2.1 Natural Gas Combined Cycle (NGCC)

An NGCC plant combines a steam cycle and a combustion gas turbine cycle to produce power. Waste heat (~1,100°F) from one or more combustion turbines passes through a Heat Recovery Steam Generator (HRSG) to produce steam. The steam drives a steam turbine generator which produces about one-third of the NGCC plant power, depending upon the gas-to-steam turbine design "platform," while the combustion turbines produce the other two-thirds.

The main features of the NGCC plant are high reliability, reasonable capital costs, operating efficiency (at 45-63% Lower Heating Value), low emission levels, small footprint and shorter construction periods than coal-based plants. In the past 10 to 12 years, NGCC plants were often selected to meet new intermediate and certain base-load needs. Although cycling duty is typically not a concern, an issue faced by NGCC when load-following is the erosion of efficiency due to an inability to maintain optimum air-to-fuel pressure and turbine exhaust and steam temperatures. Methods to address these include:

- Installation of advanced automated controls.
- Supplemental firing while at full load with a reduction in firing when load decreases. When supplemental firing reaches zero, fuel to the gas turbine is cutback. This approach reduces efficiency at full-load but would likewise greatly reduce efficiency degradation in lower-load ranges.
- Use of multiple gas turbines coupled with a HRSG that will give the widest load range with minimum efficiency penalty.

At this time, the Company considers both "1x1" (one combustion turbine generator and one steam turbine generator) and "2x1" (two combustion turbine generators and one steam turbine generator) combined cycle configurations to be the best fit as they most align with historical operating experience and expected output relative to the overall Company's needs.

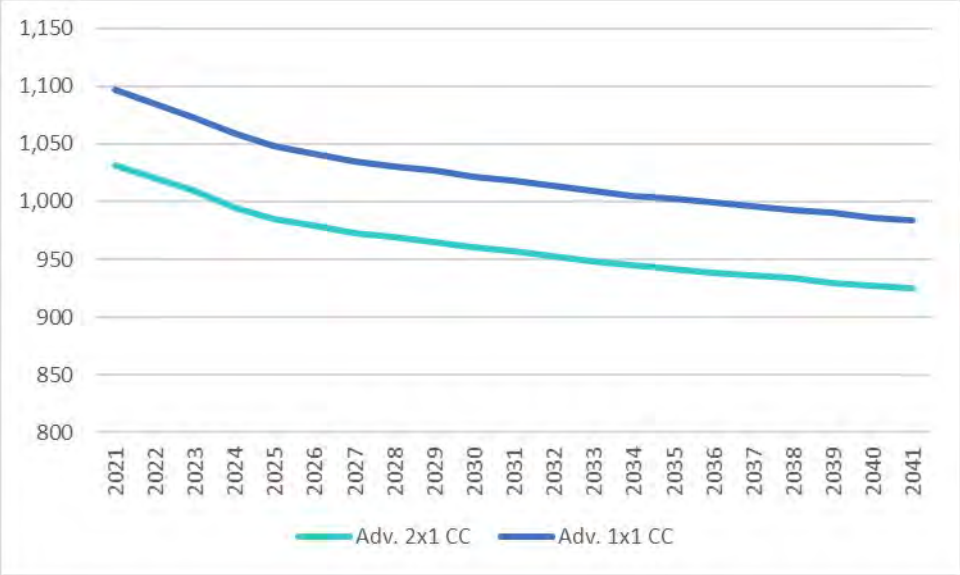


Figure 28. CC 2x1 and 1x1 All-in Capex (2019$/kw)

It's important to note that the NGCC technology discussed above can in fact operate on several different fuels with minor modifications to the CT combustion hardware and software. For more than ten years, major CT manufacturers refined the combustion characteristics of their respective offerings to effectively combust a wide array of industrial gas and synthetic fuels – including hydrogen. So called "green" hydrogen[17] produced from electrolysis of water using renewable power, is rapidly moving past the pilot phase as a power generation fuel worldwide. Depending upon the exact CT model, CTs are currently capable of reliably firing hydrogen/natural gas fuels blends ranging from 30% hydrogen, potentially increasing to 100% hydrogen, and several projects are underway across the U.S. which will soon use hydrogen fuel.

7.6.2.2 Small Modular Reactor (SMR)

While no small modular reactors are currently operating, several are under consideration nationwide. A few manufacturers are conducting research, developing designs, and working to gain Nuclear Regulatory Commission (NRC) approval. SMRs operate essentially the same as conventional nuclear reactors in that nuclear fuel is used to generate heat which in turn is used to produce steam at pressure that is expanded through a steam turbine generator to produce electricity. SMRs differ from traditional nuclear reactors in a few keyways. First, SMRs designs are inherently safe, so that in event of an emergency where cooling pumps cannot be operated, the unit goes into a fail-safe mode. Second, as the name suggests, the design is modular, permitting developers to select the number of modules needed to meet a specific power requirement. Each module is generally between 50 and 72 MWs, depending upon the manufacturer. Third, each module will be constructed in a

17 Green hydrogen is made with electrolyzers powered by non-carbon emitting resources. Other types of hydrogen production, for example "blue" hydrogen, are made from reforming methane with CCS of the CO_2 byproduct.

factory setting to improve quality control thereby minimizing field modifications, which have historically resulted in significant cost overruns.

7.6.2.3 Carbon Capture Utilization and Storage (CCUS)

To reduce the carbon emissions of fossil combusting technologies, carbon capture technology has been applied on a limited basis globally. This technology captures about 90% of the carbon emissions from a coal or gas-fired industrial or power generating plant which may then be used for an industrial purpose like enhanced oil recovery, fuel production, etc., or directly stored deep underground. At present, twenty-six commercial-scale carbon capture projects are operating globally with 21 more in early development and 13 in advanced development.

7.6.3 Peaking Alternatives

Peaking generating sources provide needed capacity during high-demand periods and/or periods in which significant shifts in the load (or supply) curve dictate the need for “quick-response” capability. The peaks occur for only a small number of hours each year and the installed reserve requirement is predicated on a one day in ten-year loss of load expectation, so the capacity dedicated to serving this reliability function can be expected to provide relatively little energy over an annual load cycle. As a result, fuel efficiency and other variable costs applicable to these resources are of lesser concern. Rather, this capacity should be obtained at the lowest practical installed/fixed cost, despite the fact that such capacity often has very high energy costs and produce reliably when called upon. Ultimately, such “peaking” resource requirements are manifested in the system load duration curve.

In addition, in certain situations, peaking capacity such as combustion turbines can provide backup and some have the ability to provide emergency, Black Start, capability to the grid.

7.6.3.1 Simple Cycle Natural Gas Combustion Turbines (NGCT)

In “industrial” or “frame-type” Combustion Turbine (CT) systems, air compressed by an axial compressor is mixed with fuel and burned in a combustion chamber. The resulting hot gas then expands and cools while passing through a turbine. The rotating rear turbine not only runs the axial compressor in the front section, but also provides rotating shaft power to drive an electric generator. The exhaust from a combustion turbine can range in temperature between 800- and 1,150-degrees Fahrenheit and contains substantial thermal energy. A CT system is one in which the exhaust from the gas turbine is vented to the atmosphere and its energy lost, *i.e.,* not recovered as in a combined-cycle design. While not as efficient (at 30-35% Lower Heating Value), they are inexpensive to purchase, compact, reliable, and simple to operate. Additionally, as discussed above with the NGCC resources, the NGCT resources operate on several different fuels with minor modifications.

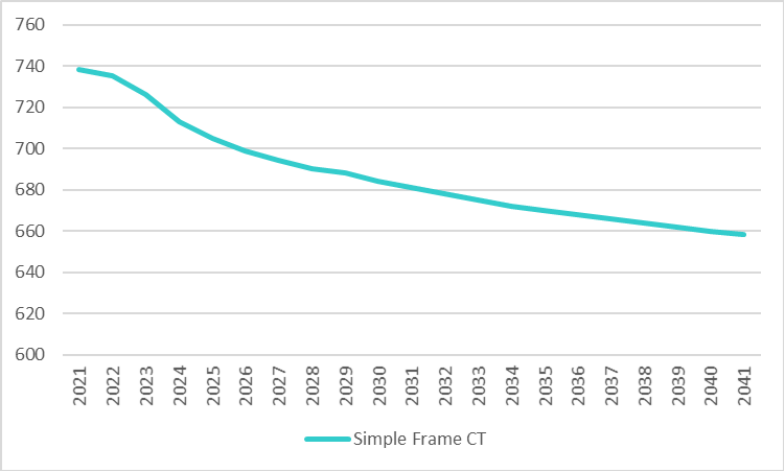


Figure 29. NGCT All-in Capex (2019$/kw)

7.6.3.2 Battery Storage

The modeling of Battery Storage as a Peaking resource option is becoming a more common occurrence in IRPs. In recent years Lithium-ion battery technology has emerged as the fastest growing least cost platform for stationary storage applications. The Battery Storage resource that was modeled in this IRP is a Lithium-ion storage technology and it has a nameplate rating of 50MW and 200MWh. Figure 30 below shows the forecasted all-in capital cost of this resource. See Section 7.6.4.3 below for a discussion of the hybrid resources included in this IRP.

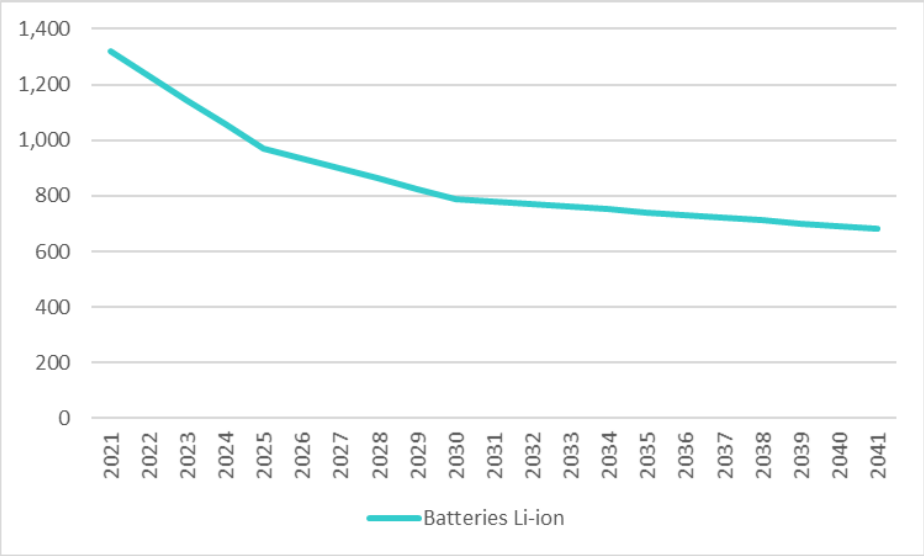


Figure 30. Battery Storage All-in Capex (2019$/kw)

7.6.4 Renewable Alternatives

Renewable generation alternatives use energy sources that are either naturally occurring (wind, solar, hydro or geothermal), or are sourced from a by-product or waste-product of another process (biomass or landfill gas). Until recently, development of renewable resources was largely driven primarily by resource availability, renewable portfolio standards, and supporting tax policies. These drivers remain in place today, which when coupled with reduced costs and increased technology capacity factors, makes renewable technologies highly competitive with traditional fossil resources on a cost of energy basis. Within the IRP, modeling of federal tax credits associated with renewable investments assumed efficient tax realization of these benefits as described further in sections 7.6.4.1 and 7.6.4.2.

7.6.4.1 Utility-Scale Solar

Energy from the sun can be used to generate electricity by using either concentrated solar or photovoltaic technology. Concentrating solar focuses the sun's rays to heat a working fluid to temperatures sufficient to generate steam. This steam is injected into a conventional steam turbine generator to produce electricity and is similar to traditional centralized supply assets in that stage. Photovoltaics can more easily be distributed throughout the grid and are a scalable resource that, for example, can be as small as a few kilowatts or as large as 500MW. This IRP considers photovoltaic technology.

The cost of utility-scale, solar projects has declined in recent years and is expected to continue to decline. This has been mostly a result of reduced panel prices that have resulted from manufacturing efficiencies spurred by accelerating penetration of solar energy globally. With the trend firmly established, forecasts generally foresee declining nominal prices and improved performance in the

next decade as well, notwithstanding solar panel tariffs which from an IRP perspective are regarded as a short-term impact.

Solar resources were made available in the AURORA model with some limits on the rate with which they could be chosen. In the IRP modeling, large-scale solar resources were available in yearly quantities up to 500MW of nameplate capacity starting in 2025. A limit on solar capacity additions is needed because as solar costs continue to decrease relative to the market price of energy, there will come a point where the optimization model will theoretically pick an unlimited number of solar resources, a nonsensical result. Solar resources were available in two tiers with up to 250 MW per tier. Tier 2 as referred to in this IRP, is the average of higher bids received as part of the All Source and Renewable RFP. Tier 1 pricing is considered a “Best-In-Class” solar resource and is based on the lowest bid received for solar resources from the All Source and Renewable RFP. Both tiers of solar resources were available in blocks of 50MW. Additionally, both tiers of solar resources were modeled with capacity factors of approximately 22.4%, which is representative of a single axis tracking solar resource located in Ft. Wayne, Indiana.

Figure 31 below illustrates the projected large-scale solar pricing included in the IRP model. Both tiers account for Federal ITCs. The large-scale solar pricing used in this IRP reflects a normalized treatment of the ITC, as well as a four-year safe harbor factor in ITC pricing. This safe harbor factor allows projects to lock in ITC benefits four years prior to commercial operation, as long as construction has commenced. The ITC benefit of 26% is included through 2025 and then declines to 10% throughout the remainder of the forecast horizon.

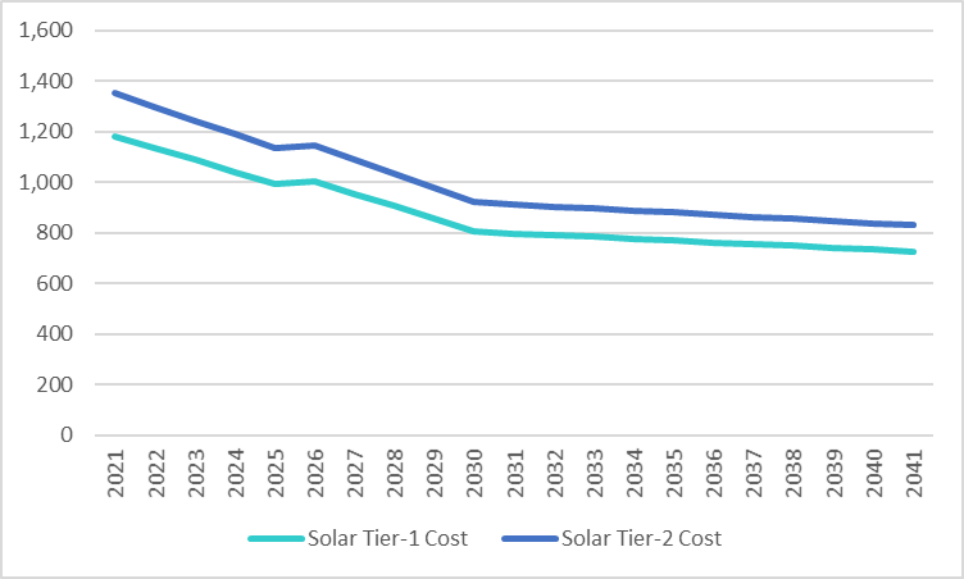


Figure 31. Solar Tier 1 and Tier 2 All-in Capex (2019$/kw)

7.6.4.2 Wind

Utility-scale onshore wind energy is generated by projects usually containing many turbines ranging from 1.0 to 3.2MW each. Typically, multiple wind turbines are grouped in rows or grids to develop a wind turbine power project which requires only a single connection to the transmission system. Careful site selection and turbine placement within the project are particularly critical since wind velocity varies by geography, and the proximity of the wind farm to a transmission system with available capacity, which impacts cost.

A variable source of power in most non-coastal locales, with capacity factors ranging from 30 percent (in the eastern portion of the U.S.) to over 50 percent (largely in more westerly portions of the U.S., including the Plains states), and has negligible operating costs.

Another consideration with wind power is that its most critical factors (*i.e.*, wind speed and sustainability) are typically highest in more remote locations, which can require the electricity to be transmitted longer distances to load centers necessitating the build out of high voltage transmission to optimally integrate large additions of wind into the grid.

For modeling purposes, wind resources are first made available to the model in 2025 (i.e., commercial operation date 12/31/24), due to the amount of time necessary to secure resources and obtain any necessary regulatory approvals. The figure below shows the All-in CapEx costs for wind resources. Wind resources were modeled as a 200MW resource with a 40.5% capacity factor load shape. Wind resources capacity credit for capacity planning purposes is based on PJM's ELCC

analysis and is assumed to start at 15% and reduce to 11% by 2028 of nameplate.[18] The wind pricing reflects the value of Federal Production Tax Credits (PTCs). For this IRP, the Company assumed 60% PTC for projects in service by the end of year 2025. These PTC values are based on developers taking advantage of the safe-harbor guidelines which provide up to a four-year delay in the effects of declining tax credits as long as adequate construction has commenced. Wind costs were developed based on the Siemens National Forecast Model.

The amount of wind resources available beginning in 2025 was limited to 800 MW nameplate annually through the remainder of the planning period. In total, wind resources were limited to 1,600 MW nameplate over the planning period until 2034, and then increased to 3,200 MW through the remainder of the planning period. The annual limit on wind additions is based on the two RFPs that were considered for this IRP and I&M's ability to plan, manage, and develop either the construction or the procurement of these resources.

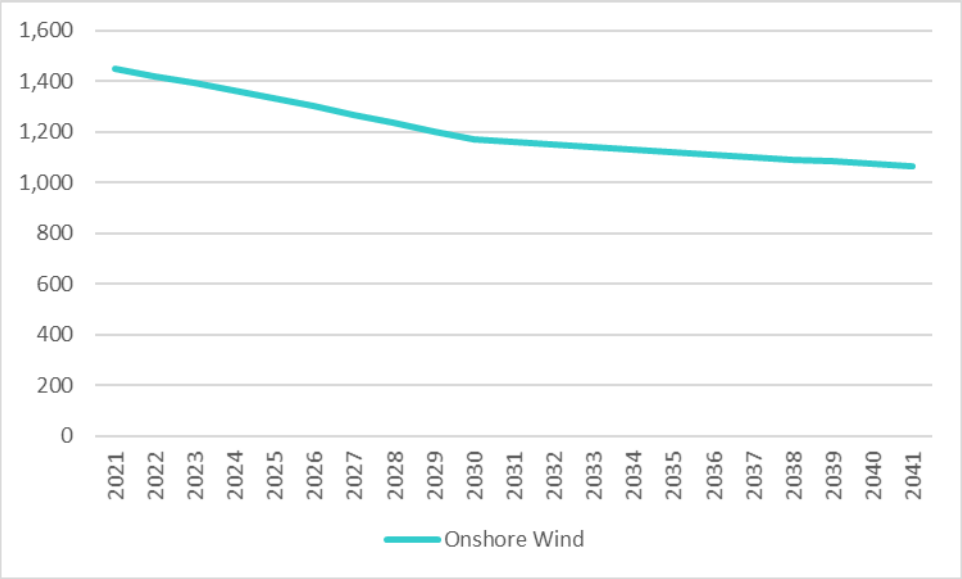


Figure 32. Wind Resources All-in Capex (2019$/kw)

7.6.4.3 Hybrid Resource Options

Hybrid renewable energy systems combine a renewable energy source and/or energy storage technologies into a single plant. The value behind a hybrid resource is the ability to charge the storage with low-cost renewable energy which would be available to discharge during high demand hours where there is, theoretically, limited renewable or low-cost energy available to meet the necessary load requirements.

[18] https://www.pjm.com/-/media/planning/res-adeq/elcc/elcc-class-ratings-for-2023-2024-bra.ashx).

As modeled in this IRP, the ELCC for the solar and storage components were calculated individually based off the ELCC curves for their specific technologies described in Section 7.6.4.4. The capacity ratio for a single hybrid resource available is a 100/20 MW Solar/Storage ratio with a 4-hour charging period for a maximum charge of 80MWh.

For modeling purposes, hybrid resources were assumed available for 2025 (i.e., commercial operation date 12/31/24), due to the amount of time necessary to secure resources and obtain any necessary regulatory approvals.

Figure 33 below illustrates the projected Solar + Storage All-In capital cost included in the IRP model. Solar + Storage short-term market costs decline rapidly in the initial years in line with the learning curves derived from the NREL ATB report. The hybrid solar + storage cost used in this IRP reflects a normalized treatment of the ITC, as well as a four-year safe harbor factor in ITC pricing. This safe harbor factor allows projects to lock in ITC benefits four years prior to commercial operation, as long as construction has commenced. The ITC benefit is included through the forecast horizon.

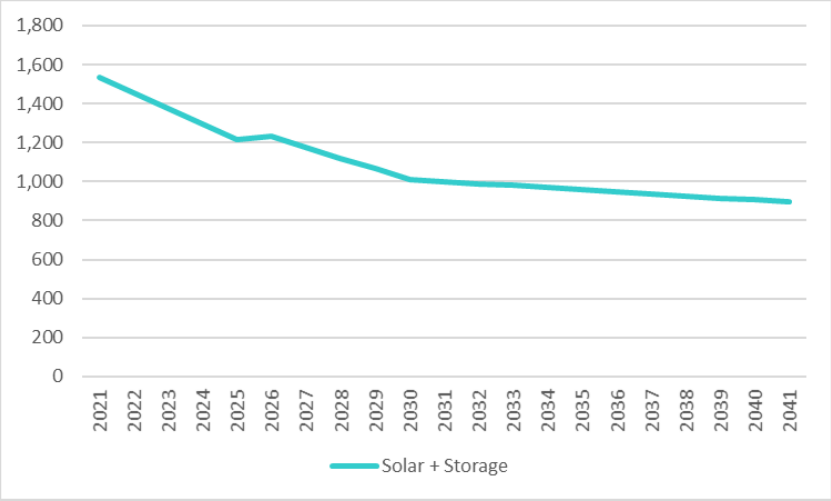


Figure 33. Hybrid Solar + Storage All-in Capex (2019$/kw)

7.6.4.4 Effective Load Carrying Capability (ELCC)

Effective Load Carrying Capability (ELCC)[19] is a method to quantify the resource adequacy contribution of a resource. For this IRP, PJM's guidance for ELCC of renewable and intermittent resources were modeled. Figure 34 below illustrates the ELCC applied to resources available in the modeling.

[19] https://www.pjm.com/-/media/planning/res-adeq/elcc/elcc-class-ratings-for-2023-2024-bra.ashx

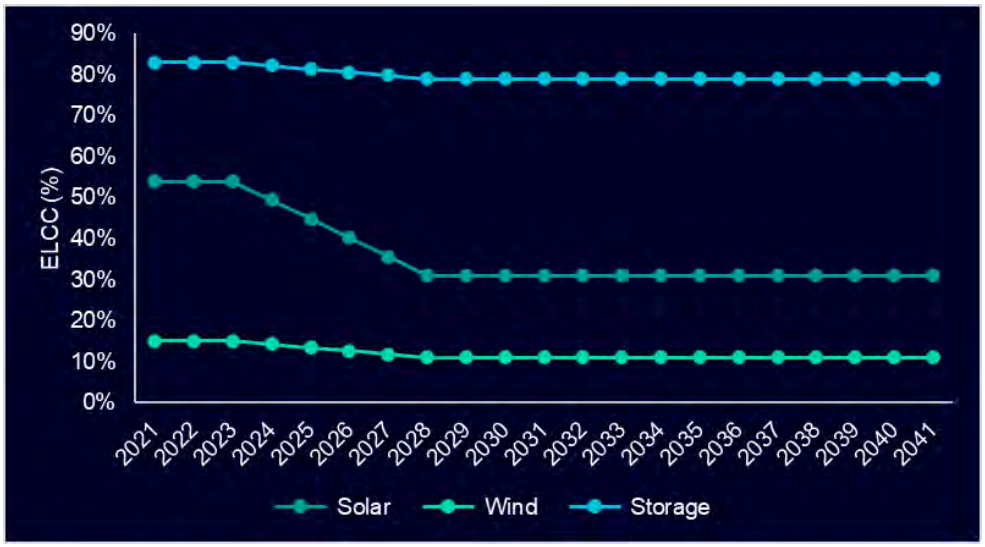


Figure 34. Effective Load Carrying Capability

7.6.5 Additional Modeling Considerations

7.6.5.1 Resource Limits

Additional modeling parameters were included to account for various logistical, commercial, and operational limitations that arise from procuring and deploying new resources. These limits, as shown in Table 9 below, reflect reasonable and practical annual and cumulative resource additions to help manage energy export value, regulatory approval, annual customer rate impact and project implementation risk. Furthermore, renewable and hybrid resource limits were informed by responses received from the Company's RFP's. In developing the Table 9 parameters, the Company considered when future resources could be needed associated with the timing of resource needs.

Table 9. Modeled Resource Parameters

Resource Limits (MW)	Annual	Cumulative		
	2025+	2025-2034	2035-3037	2038+
Solar Tier 1	250	1,800	2,400	3,500
Solar Tier 2	250	1,800	2,400	3,500
Solar Hybrid	500	1,800	2,400	3,500
Wind	800	1,600	3,200	5,800
Gas CC 2x1	1,070	1,070	1,070	1,070
Gas CC 1x1	440	880	880	880

Gas CT Adv.	500	4,000	4,000	4,000
SMR	600	1,200	1,200	1,200

7.6.5.2 Resource Capital Costs for the Rapid Technology Advancement Scenario

For the RTA Scenario, advanced technology resources costs were reduced by 35% shown in Figure 35.

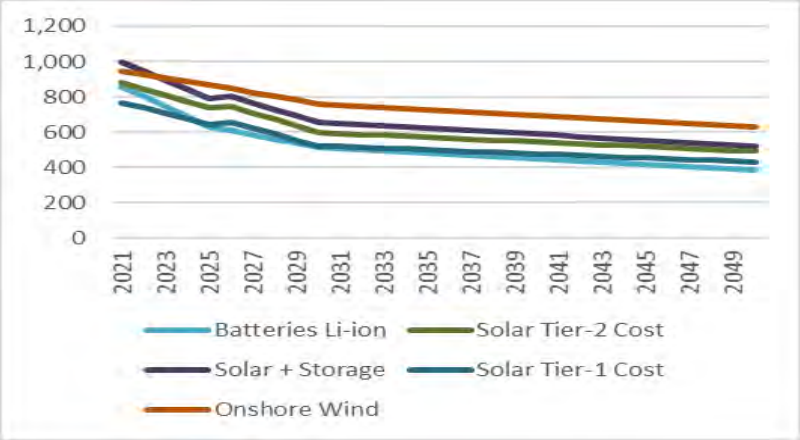


Figure 35. All-in CapEx (2019$/kW), Rapid Technology Advancement Scenario

7.7 New Demand-Side Resources

As part of the IRP, additional or "incremental" demand-side resources beyond those described in Section 5.6.2 were identified and ultimately modeled based on I&M's 2021 MPS performed by GDS Associates and Brightline Group ("the GDS Team"). Non-income qualified EE programs were modeled on a comparable economic basis as supply-side programs while all other Demand-side programs were informed by the MPS and included in the IRP.

7.7.1 DSM Market Potential Study Overview

To evaluate the potential for future DSM resources in the 2021 I&M IRP, I&M utilized the MPS prepared by the GDS Team for energy efficiency, demand response, and distributed energy resources potential. The I&M MPS provided updated DSM programs, measures, costs and energy and demand savings for a 20-year time horizon (2023-2042). The study included primary market research and a comprehensive review of current programs, historical savings, and projected energy savings opportunities, to develop estimates of technical, economic, and achievable potential. Separate estimates of energy efficiency, demand response, and distributed energy resources (DER) potential were developed. EECO or CVR was not evaluated in the MPS as I&M had previously conducted an analysis for energy and demand savings across all circuits in the I&M service area.

7.7.2 Modeling Framework

The GDS Team used its Excel-based energy efficiency and DR planning models to perform all of the analyses in the I&M MPS. These models allow the user to develop forecasts of measure and program costs, participants, kWh and kW savings, and benefit/cost ratios over the planning horizon. These models are transparent and all formulas, model inputs and model outputs can be viewed by the model user.

7.7.3 MPS Adjustment to I&M's Energy Sales Forecast

Before assessing the future potential for energy efficiency, demand response, or distributed energy resources in the I&M service area, a few modifications to I&M's 2020-vintage forecast were necessary to create an adjusted baseline forecast for use in the MPS.

First, the I&M sales forecast uses the appliance efficiency forecast published in the EIA Annual Energy Outlook (AEO) as inputs for the various end-use indices contained within the statistically adjusted end-use models employed by I&M. Over time, the EIA appliance efficiency projections allow for existing equipment stock to exceed the prevailing federal minimum efficiency standards. In contrast, the majority of savings from efficient technologies in the MPS (and included in the recommended I&M DSM programs) are based on comparisons to equipment that meets, but does not exceed, known federal minimum efficiency standards. To align the sales forecast used in the MPS with the assumed savings opportunities, the GDS Team developed an adjusted "code frozen" forecast that permits the existing equipment stock to improve and meet, but not exceed, legislated federal minimum standards. The result is a sales forecast that is higher, over the 20-year horizon, than I&M's base sales forecast associated with the IRP.

Second, in Indiana, commercial or industrial customers with a peak load greater than 1MW are eligible to opt out of utility-funded electric energy efficiency programs. In the I&M service area, approximately 9% of commercial kWh sales have opted out of utility-funded electric energy efficiency programs, while roughly 50% of industrial kWh sales have opted out. GDS excluded these sales from the forecast and associated estimates of future electric energy efficiency potential.[20]

Last, commercial, and industrial (C&I) sales in the I&M forecast are consistent with the designated commercial and industrial rate code based on the current tariff designation. As a result, there were a small number of customers that the GDS Team typically classifies as commercial, based on their Standard Industry Code (SIC), designated as industrial in the 2019 I&M C&I sector customer databases. To better align commercial vs. industrial savings opportunities with a facilities typical service area, the GDS team reclassified these industrial sales to the commercial sector. The result

[20] As a sensitivity in the Market Potential Study, GDS produced an estimate of potential savings assuming commercial and industrial customers could no longer opt-out of utility-funded electric energy efficiency programs. The I&M IRP and associated DSM inputs reflect the current conditions that allow opt-out customers in Indiana.

of this reclassification was a shift of approximately 0.5% of industrial sector sales in Indiana, and 0.3% of industrial sector sales in Michigan, to the commercial sector.

7.7.4 Energy Efficiency (EE) Measures & Potential

7.7.4.1 Measures Considered

Measure list development during the I&M MPS was a collaborative effort in which the GDS Team developed draft lists that were shared with I&M and MPS Stakeholders. The energy efficiency measure lists were informed by a wide range of sources, including current I&M program offerings, the Michigan Energy Measures Database (MEMD), the Illinois Technical Reference Manual (TRM), and commercially viable emerging technologies, among others. The final measure lists ultimately included in the study reflected the source review and considerations from the parties that participated in the measure list review process.

In total, the GDS Team analyzed 353 unique EE measure types for this study. Several measures were included with multiple permutations to account for specific market segments, such as different building types, efficiency levels, and replacement options. In total, GDS developed 2,106 measure permutations each for I&M's Indiana and Michigan service areas.

Table 10. Number of Electric Measures Evaluated in Market Potential Study

	Number of Measures	Total Number of Measure Permutations
I&M		
Residential	168	673
Commercial	157	1,405
Industrial/Ag[21]	28	28
Total	353	2,106

Within the residential, commercial, and industrial market segments, the energy efficiency measures targeted the following major end-uses:

[21] For the industrial sector, the analysis employed a top-down analysis at the end-use level as opposed to a detailed measure analysis. The GDS Team selected this approach to more comprehensively target industrial loads given the myriad of different energy-consuming equipment within industrial facilities and to align with the methodological approach employed by the Michigan Public Service Commission's independent statewide analysis of future market potential.

Table 11. Electric End-Uses Included in the Market Potential Study

Residential	CC&I	
	Commercial	Industrial
Heating	Interior Lighting	Lighting
Cooling	Exterior Lighting	HVACHVAC
Water Heating	Refrigeration	Machine Drive
Cooking	Space Cooling	Process Heat
Refrigerator	Space Heating	Process Cool / Refrigeration
Freezer	Ventilation	Other Process
Dishwasher	Water Heating	Process – Machine Drive
Clothes Washer	Plug Loads / Office Equipment	Other Facility
Dryer	Cooking	Compressed Air
TV	Other	Water / Wastewater
Light	Whole Building / Behavioral	Process – Agriculture
Miscellaneous		Whole Building / Behavior

7.7.4.2 I&M DSM Measure Assumptions and Market/Equipment Characteristics

The GDS Team reviewed the assumptions for measure costs, savings and useful lives included in prior I&M DSM plans and updated these assumptions where appropriate. The GDS Team utilized data specific to I&M when it was available and current. I&M evaluation report findings, I&M program planning assumptions, and the MEMD were leveraged to the extent feasible – additional data sources were only used if these sources either did not address a certain measure or contained outdated information. Additional source documents included the Illinois Technical Reference Manual (TRM), Energy Information administration (EIA), American Council for an Energy-Efficient Economy (ACEEE) research reports, the Northwest Power Conservation Council and Regional Technical Forum (Industrial processes), and DOE commercial building reports.

In addition to measure assumption development, the GDS Team engaged in primary market research to collect updated equipment penetration, saturation, and efficiency characteristics, as well as customer willingness to participate in program offerings data, across select end-uses/technologies. Due to COVID-19 considerations and overall schedule constraints, the GDS Team conducted a web-based survey to complete the research. The resulting data was used to develop updated estimates of baseline and efficient equipment saturation estimates in the market potential study and to develop expected long-term adoption rates for energy efficiency over the study horizon.

7.7.4.3 Electric Energy Efficiency Potential

The amount of available EE is typically described in four sets: technical potential, economic potential, achievable potential, and program potential.

Briefly, the technical potential encompasses all known efficiency improvements that are possible, regardless of cost, and thus, whether or not it is cost-effective (i.e., all EE measures would be adopted if technically feasible). The logical subset of this pool is the economic potential. In both the Indiana and Michigan jurisdictions, economic potential for energy efficiency only includes measures that are cost-effective based on screening with the Utility Cost Test (UCT). In I&M's service territory, the UCT considers electric energy, capacity, and transmission & distribution (T&D) savings as benefits, and utility incentives and direct install equipment expenses as the cost. Consistent with application of economic potential according to the National Action Plan for Energy Efficiency, the measure level economic screening does not consider non-incentive/measure delivery costs (e.g., admin, marketing, evaluation etc.) in determining cost-effectiveness.[22]

Except for the low-income segment of the residential sector, all measures were required to have a UCT benefit-cost ratio greater than 1.0 to be included in economic potential and all subsequent estimates of energy efficiency potential. Low-income measures were not required to be cost-effective.

Achievable potential is the amount of cost-effective energy that can realistically be saved given various market barriers. Achievable potential considers real-world barriers to encouraging end users to adopt efficiency measures; the non-measure costs of delivering programs (for administration, marketing, analysis, and EM&V); and the capability of programs and administrators to boost program activity over time. Barriers include financial constraints, customer awareness and willingness-to-participate (WTP) in programs, technical constraints, and other barriers that the "program intervention" is modeled to overcome. Additional considerations include political and/or regulatory constraints. The potential study evaluated two achievable potential scenarios:

- Maximum Achievable Potential (MAP) estimates achievable potential with I&M paying incentives equal to 100% of measure incremental costs and aggressive adoption rates.
- Realistic Achievable Potential (RAP) estimates achievable potential with I&M paying incentive levels (as a percent of incremental measure costs) closely calibrated to historical levels but is not constrained by any previously determined spending levels.

Finally, the GDS Team conducted research and analysis to identify areas for I&M to consider for potential improvements to the current program portfolio. Program potential also considers what can or should be accomplished with utility-sponsored programs versus energy efficiency savings that happen through alternative interventions. Overall, the GDS Team refined the Realistic Achievable Potential into the Program Potential scenario based on the following updated factors:

- Incentive levels and structures: Measures within existing I&M programs were modeled within their current framework unless research dictates otherwise

[22] National Action Plan for Energy Efficiency: Understanding Cost-Effectiveness of Energy Efficiency Programs. Note: Non-incentive delivery costs are included in the assessment of program potential and overall DSM budgets for IRP inputs.

- Program non-incentive costs (admin)
- Measure Assignments: In some cases, achievable potential cost-effective measures were reassigned to new program types

A comparison of the Realistic Achievable Potential (RAP) and Program Potential is shown below. The decrease from RAP to Program Potential in the residential sector is driven by changes in program mapping for certain measures, aligning the income-qualified program spending with historical levels to reduce cross subsidization concerns across customer segments, as well as programs being dropped from the program potential if not cost-effective at the program-level (i.e., after including administrative costs).

Table 12. Comparison of MPS Achievable and Program Potential (20-YR Cumulative Annual MWH)

Program	RAP (gross)	Program Potential (gross)
Residential	837,529	464,715
C&I	1,175,228	1,181,177
Total	2,012,756	1,645,891

7.7.5 Demand Response (DR) Potential

Demand response (DR) potential for the I&M territory was estimated following a similar methodology as the EE analysis. Technical, economic, and two achievable scenarios (maximum and realistic) were developed for I&M's territories considering the potential for 23 different DR program iterations. Expansions to I&M's existing DR programs were considered, as well as new program opportunities. Utility cost components included program development, implementation, incentive, and evaluation costs. Programs were screened using the UCT, using a threshold of 1.0 and considering the performance of the program across the full twenty-year study period. In this study, the MAP scenario represents a 'best practice' estimate of what could be achieved considering I&M's customers' likely participation rates and assumes higher levels of incentives for participation. The RAP scenario reflects a realistic scenario estimate based on typical or 'average' participation rates likely to be achieved considering program barriers. Program types that compose the MAP and RAP scenarios are listed in Table 13.

Table 13. DR Potential Study Program Results by Sector

Sector	Program	MAP	RAP
Residential	Connected Thermostat	XX	X
	Time-of-use (TOU) Rate w/o enabling technology	X	X
	Critical Peak Pricing (CPP) Rate w/o enabling technology	X	X
	Central AC DLC	X	X
	Behavioral	X	X
C&I	Connected Thermostat	XX	X
	DWHDWH DLC	XX	X
	Real Time Pricing (RTP) Rate	X	X
	Critical Peak Pricing (CPP) Rate w/o enabling technology	X	X
	Time-of-use (TOU) Rate w/o enabling technology	X	X
	Capacity Bidding	X	X
	Curtailable Rate	X	

The RAP results for demand response by sector over the MPS horizon are shown in Figure 36 for Indiana and Figure 37 for Michigan respectively.

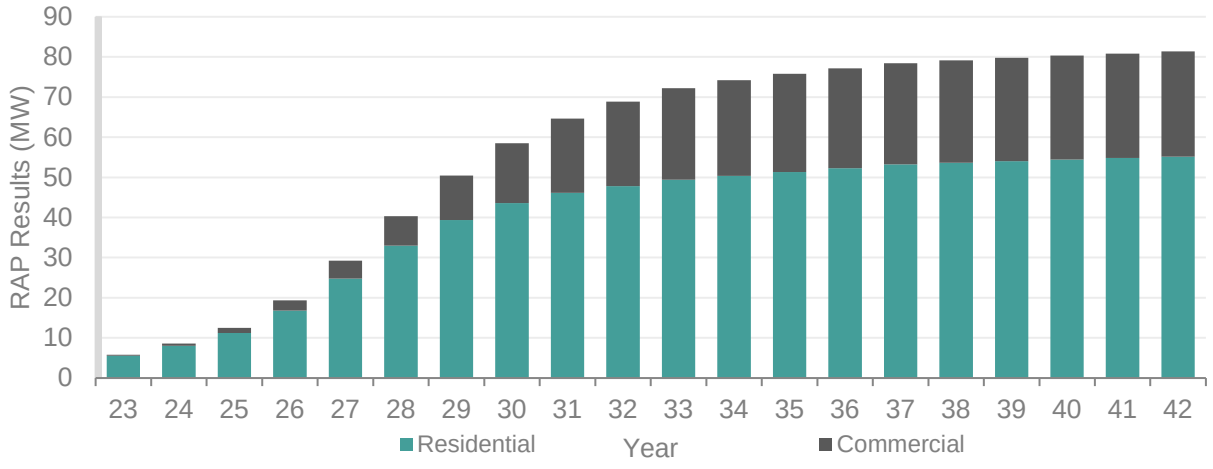


Figure 36. Realistic Achievable Demand Response Potential by Sector – Indiana

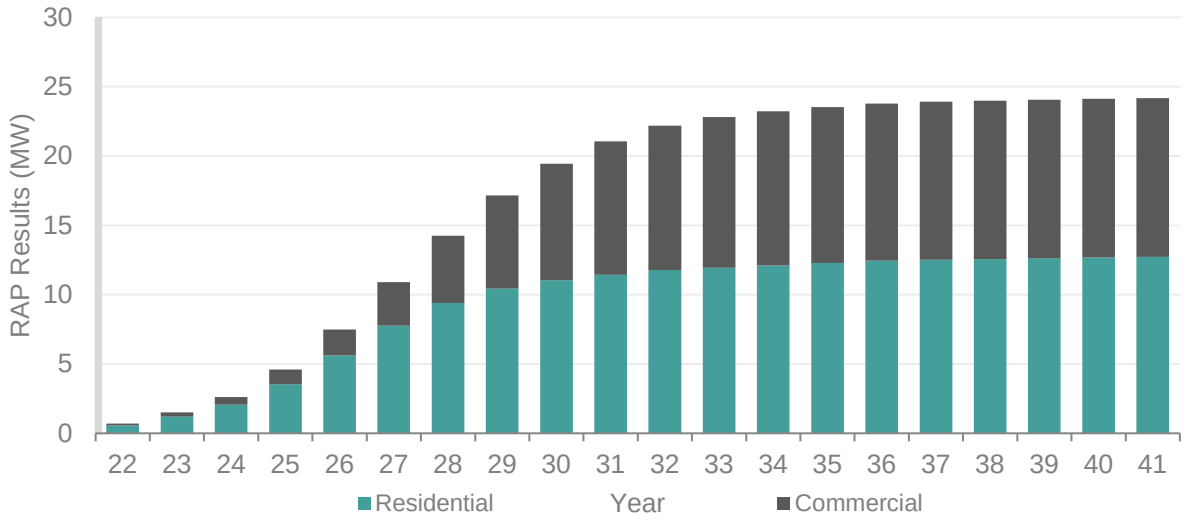


Figure 37. Realistic Achievable Demand Response Potential by Sector - Michigan

7.7.6 Distributed Energy Resources (DER) Potential

DER resources were modeled based on residential and non-residential solar photovoltaic (PV) and non-residential combined heat and power (CHP) resources. Potential for both resources was assessed based on premise-level availability to host the DER technology across I&M's territory with economic analysis based on estimated market costs and generation benefits to the end-use customer. To determine the level of customer penetration, I&M estimated adoption forecasts based on Bass diffusion curves. The diffusion curves were informed by existing installed systems, assumed maximum market penetration, and coefficients of innovation and imitation. GDS used I&M's internal customer data to inform quantities of existing solar PV and CHP systems active in I&M's service territory. Using primary research conducted in 2021 with I&M residential and non-residential customers, GDS estimated various adoption levels to calculate scenarios of maximum market penetration. The Bass curve was fitted within these parameters using innovation and imitation coefficients based on state-specific research conducted by NREL.[23] This forecast considered the level of solar (PV) and CHP installations over the 20-year MPS time horizon.

The DER analysis ultimately found all modeled solar PV and CHP resources were not cost effective according to the Total Resource Cost (TRC) Test. The TRC Test was selected as the primary cost-effectiveness screening test for DERs to encapsulate both utility and customer perspectives and

[23] Sigrin, B, *et. al*. The Distributed Generation Market Demand Model (dGen): Documentation. National Renewable Energy Laboratory. February 2016.

determine whether a utility-sponsored program intervention is prudent. Ultimately, no solar PV or CHP technologies passed cost-effectiveness screening under the TRC.[24] As a result, achievable market potential was not assessed.

While the analysis shows that DER is not cost effective from the customer perspective, the Company did include in the IRP modeling an assumed level of incremental DER.

7.8 Future DSM Resources

7.8.1 Energy Efficiency Bundles

7.8.1.1 Bundle Development

EE bundles for modeling were developed by the GDS Team used a statistical process, known as "k-means clustering", to determine the number of bundles and which measures to assign to individual bundles.

In statistical terms, k-means clustering measures the Euclidean distance between a randomly selected "centroid" (a single point in the Euclidean space), and a single data point, which in this analysis is an EE measure. A set number of bundles is defined for the process to assign each EE measure to one of the bundles. The process is iterative for each EE measure until the distances between points are minimized.

The NPV benefits and costs per lifetime kWh savings for each EE measure were used to cluster the measures into bundles. After the k-means clustering analysis is performed and each measure has been assigned to a bundle, various statistical metrics are output to help the user determine the quality of the clustering for that set number of bundles. The clustering analysis was performed for numbers of bundles ranging from two to twenty. There is no right or wrong answer when selecting the number of bundles, as the user must weigh the feasibility of using any number of bundles against the statistical metrics that help to identify the better numbers of bundles.

Based on the k-means clustering outputs, the GDS Team identified five residential bundles, one income-qualified bundle, and eight C&I bundles for IRP inputs. Based on measure-bundle assignment, the GDS Team then mapped the program potential savings from the Market Potential Study into the identified EE bundles for IRP model input. It is important to note that the bundles are not equal in measure counts or overall magnitude of savings. Select bundles are as small as a single measure type, while other bundles represent a comprehensive suite of measures across various

[24] The GDS Team conducted a sensitivity analysis around transmission and distribution (T&D) costs and material/installation costs on solar PV measure permutations. T&D costs were increased by 500% and technology costs were decreased by 35%. Neither change, on their own, allowed solar PV permutations to pass the TRC.

end-uses, provided they possess similar characteristics as identified by the k-means clustering technique. Further details on these bundles are included in the following sub-section.

7.8.1.2 Adjustments to EE IRP Inputs

Two adjustments to the Market Potential Study's program energy efficiency potential savings, and one direct adjustment to costs, were necessary prior to inclusion in the IRP. The first adjustment was to provide the program potential savings at the generator level. The MPS savings are reported at the meter-level. Sector savings were adjusted based on I&M's Peak Demand Line Loss Factors to convert savings from the meter level up to the generator level.[25]

The second savings adjustment, referred to as a "Supplemental Efficiency Adjustment (SEA)" is included to align the projections of future energy efficiency potential with the embedded efficiency trends already included in the I&M load forecast as discussed in Section 5.6.2. Also discussed in the load forecast section, the sales forecast developed for the Market Potential Study does not include any projections of energy efficiency beyond prevailing building codes and equipment standards, while the I&M load forecast used for the IRP does include implicit assumptions about future energy efficiency. The SEA functions to net out incremental efficiency already embedded in the IRP load forecast.

The SEA adjustment begins by calculating the weighted average Effective Useful Life (EUL) of each incremental annual EE bundle. The lifetime savings of each individual measure included in the EE bundle is assigned the overall bundles weighted average EUL to maintain a consistent estimate of lifetime savings impacts. Finally, a SEA matrix (either 5-year, 10-year, 15-Year, or 20-year) was applied to the annual stream of lifetime savings (based on the weighted average EUL) to account for the portion of future year savings that are assumed to already be reflected in the I&M sales forecast.[26]

On the cost side, because the IRP's Capacity Expansion Model does not calculate avoided transmission and distribution (T&D) benefit associated with DSM measures, the GDS Team provided I&M and Siemens with energy efficiency (and demand response) costs that have been adjusted to net out the avoided T&D benefit, see 7.5.2 for the discussion on Avoided Costs.

The GDS team provided the energy efficiency IRP inputs across three different vintage bundles: 2023-2025, 2026-2028, and 2029-2040 to better optimize the value of energy efficiency to the system over time periods that align with subsequent I&M planning periods. The energy efficiency MWh and MW impacts for each vintage block provide the cumulative annual lifetime savings. Conversely, because energy efficiency program costs are only incurred during the year of measure

[25] I&M's peak demand line loss factors were used for adjusting both energy and demand savings from the customer meter up to generation. The peak demand line loss factor was used a proxy for marginal line loss factors, which have not been studied by I&M.

[26] The 5-year, 10-year, 15-Year, or 20-year SEA matrixes were assigned based on each incremental annual EE bundles weighted average EUL. A weighted average annual EUL of 5-years or less was assigned the 5-year SEA matrix, an EUL of 10-years or less was assigned the 10-year matrix, etc.

installation, budgets are only reflected during the identified years in each vintage block. The energy efficiency resources provided to I&M for IRP modeling, are discussed below in the next section. The modeled bundle savings are found in Appendix E.

7.8.1.3 Time-Differentiated Savings

The AURORA software views demand-side resources as non-dispatchable "generators" that produce energy similar to non-dispatchable supply-side generators such as wind or solar. Thus, the value of each resource is impacted by the hours of the day and time of the year that it "generates" energy.

In addition to the annual impacts shown in the tables above, typical hourly (8,760) shapes for each EE bundle, that reflect the various measures and end-uses reflected in each EE bundle, were provided to the I&M modeling team to permit the IRP model to assess the value of energy savings on an hourly basis. The GDS Team disaggregated the EE bundle savings based on the same end-use load shapes utilized in the market potential in order to produce an overall bundle 8,760 savings profile. As a result. the 8,760 shapes are unique for each EE sector and vintage bundle.

7.8.1.4 Alternative EE IRP Input Scenarios

As part of the IURC Cause 45546 settlement, the Company agreed to model portfolios utilizing a Net-to-Gross (NTG) adjustment factor in place of the previously described SEA factor. Two additional bundles with the NTG factor applied were prepared to support an RTA Scenario and the Reference Scenario portfolios.

The measure/bundle assignment was not altered for the NTG factor bundles and in both the SEA and NTG bundles, the gross program savings were the same. In addition, the first adjustment (noted in 7.8.1.2) to the Market Potential Study's program energy efficiency potential was also carried forward in the NTG Factor IRP inputs to adjust to savings at the generator level.

In the NTG factor IRP bundles, a second adjustment converted the projected gross program savings estimates to net savings using I&M's most recent program evaluation results but does not assume that customers will adopt more efficient technologies outside of a utility sponsored program. This is in contrast to the SEA factor approach, which utilized gross program savings but assumes a weighted average effective useful life (EUL) for all measures in each bundle and adjusts the same projected gross program savings to account for the future customer adoption of efficient technologies already considered in the load forecast.

In addition to the SEA and NTG factor EE IRP inputs developed for a Reference Scenario, the GDS Team provided a set of EE bundles for the RTA Scenario. Those inputs were developed consistent with the approach outlined above but were based on an MPS scenario that assumed all measure costs (and associated incentives) were reduced by 35%.

7.8.2 Demand Response IRP Inputs

Levels of DR potential for summer peak demand reduction associated with RAP and MAP scenarios were provided as inputs to the IRP. Each scenario's reductions were divided into two bins based on resource type, whether a dispatchable, or callable, DR resource or a fixed DR resource. Time-of-use rate programs make up the only fixed DR resource in the RAP and MAP scenarios. All other programs in the scenarios were dispatchable resources.

Program cost outputs from the potential study were formatted as required by the IRP into annual program costs for each sector, scenario, and resource type. Program costs were shown in the year of their occurrence and not annualized over the life of the program. Table 14 and Table 15 shows the levels of DR potential provided for Dispatchable and Fixed DR programs.

Table 14. Dispatchable DR Scenario Inputs

	RAP				MAP			
	Residential		C&I		Residential		C&I	
	DR MW Summer Peak Impact (Cumulative)	Annual Program Costs (Nom $/kW-yr)	DR MW Summer Peak Impact (Cumulative)	Annual Program Costs (Nom $/kW-yr)	DR MW Summer Peak Impact (Cumulative)	Annual Program Costs (Nom $/kW-yr)	DR MW Summer Peak Impact (Cumulative)	Annual Program Costs (Nom $/kW-yr)
2023	6.01	$222.58	0.80	$1,377.45	7.22	$246.57	0.93	$1,160.15
2027	28.50	$76.77	17.99	$78.04	36.14	$89.38	15.90	$62.83
2032	56.17	$38.61	42.04	$34.04	79.90	$50.18	42.99	$29.85
2042	65.52	$33.61	46.50	$29.71	110.72	$44.31	48.52	$23.07

Table 15. Fixed DR Scenario Inputs

	RAP				MAP			
	Residential		C&I		Residential		C&I	
	DR MW Summer Peak Impact (Cumulative)	Annual Program Costs (Nom $/kW-yr)	DR MW Summer Peak Impact (Cumulative)	Annual Program Costs (Nom $/kW-yr)	DR MW Summer Peak Impact (Cumulative)	Annual Program Costs (Nom $/kW-yr)	DR MW Summer Peak Impact (Cumulative)	Annual Program Costs (Nom $/kW-yr)
2023	0.67	$270.76	0.03	$2,709.98	0.94	$279.94	0.03	$2,619.97
2027	4.51	$46.81	0.63	$125.17	6.90	$62.61	0.54	$171.22
2032	8.24	$13.20	1.49	$52.63	12.79	$12.34	1.75	$47.20

The DER analysis ultimately found all modeled solar PV and CHP resources were not cost effective according to the Total Resource Cost (TRC) Test. The TRC Test was selected as the primary cost-effectiveness screening test for DERs to encapsulate both utility and customer perspectives and determine whether a utility-sponsored program intervention is prudent. Ultimately, no solar PV or

CHP technologies passed cost-effectiveness screening under the TRC.[27] As a result, achievable market potential was not assessed.

While the analysis shows that DER is not cost effective from the customer perspective, the Company did include in the IRP modeling an assumed level of incremental DER.

7.8.3 DER IRP Inputs

Although the I&M MPS found no cost-effective achievable potential (under current avoided costs and cost-effectiveness screening parameters) from DERs, the GDS Team performed additional modeling based on a business-as-usual scenario to understand how future DER growth may occur in the territory at its current trajectory with no utility intervention. This scenario was modelled based on primary data reported from its customers on data for willingness to adopt DER technologies without any utility incentive. Forecasted incremental generation additional to existing capacity for solar PV and CHP over the study horizon is presented in Table 16 below. The maximum MW impact of the DER resources is also shown in the table below. This forecast was utilized in all Candidate Portfolios.

Table 16. DER Forecasted Generation

Year	Solar PV - BAU (MWh)	CHP - BAU (MWh)	Max (MW)
2023	2,377	41	1.05
2027	5,862	107	2.71
2032	15,224	297	9.45
2042	160,970	1,898	71.09

7.8.4 Conservation Voltage Reduction (CVR)

The future potential for CVR is based on the number of remaining distribution substations where CVR can be cost effectively deployed and operated in I&M's energy delivery system. The Company performed cost effective analysis for the distribution substation busses (i.e., the electrical point of common connection for a set of distribution circuits, typically a set of three circuits) that do not currently have CVR deployed. The analysis estimated cost effectiveness underestimated CVR operational and performance parameters using AMI technology and resulted in an additional 420 distribution circuits, comprised of 343 in I&M's Indiana jurisdiction and 77 in I&M's Michigan jurisdiction. The total energy and peak demand savings from this CVR potential is estimated at approximately 230 GWh of energy savings and 75 MW of demand savings through 2027.

[27] The GDS Team conducted a sensitivity analysis around transmission and distribution (T&D) costs and material/installation costs on solar PV measure permutations. T&D costs were increased by 500% and technology costs were decreased by 35%. Neither change, on their own, allowed solar PV permutations to pass the TRC.

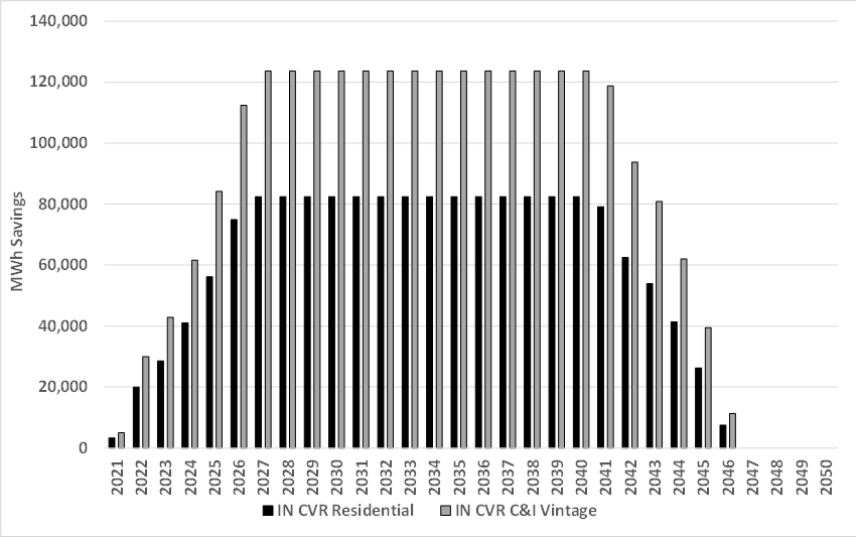


Figure 38. Indiana CVR Forecast Energy Savings

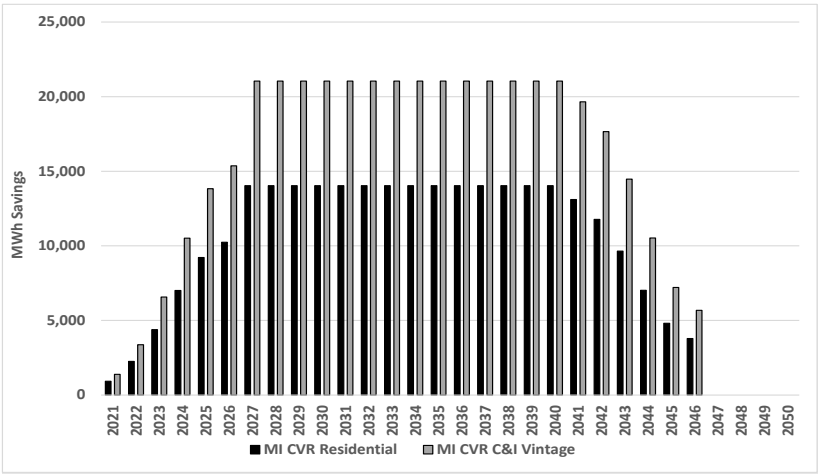


Figure 39. Michigan CVR Forecast Energy Savings

7.9 Integration of Demand-Side Options within AURORA Modeling

Siemens PTI, the GDS Team and the I&M IRP team collaborated on the development of the forecasted inputs needed to include DSM Resources in the analysis. In the IRP analysis, the DSM options included EE, DR and distributed energy resources (DER) and over 50 programs were modeled. Each supply-side and several demand-side resources were offered into the AURORA model as descripted below. Each resource has specific values for capacity, energy production (or savings) and cost.

Table 17. DSM Resource Treatment

Measure	Program	Treatment	# of Programs
Energy Efficiency	Conservation Voltage Reduction (CVR)	Going-In	4
	Low Income Qualified (IQW)	Going-In	3
	Michigan 2022 EE Plan	Going-In	1
	Long-Term Vintages	Optimized	39
Demand Response	Residential	Non-Optimized	1
	Commercial & Industrial	Non-Optimized	1
Distributed Energy Generation	Rooftop Solar (DG)	Going-In	2
	Combined Heat & Power (CHP)	Going-In	1

Going In: These programs will be included as part of the going-in position of I&M's portfolio, regardless of cost.

Optimized: These programs will be exposed to the optimization routine, and the capacity and generation impact will be determined by the economic need for these programs.

Non-Optimized: The capacity is included as part of I&M's going in resource; however, the actual impact to each Portfolio depends on the economic dispatch of the program. DR programs are applied for three continuous hours for I&M's top five days of demand, totaling 15 hours each year. DER and EE capacity and shapes are represented by the information provided by GDS analysis. The economic benefit of these programs is not evaluated in the IRP analysis.

7.10 Candidate Portfolios

As discussed in Section 3, I&M Candidate Portfolios were developed utilizing AURORA's LTCE modeling for the Reference and other portfolios. I&M and Siemens developed over 14 portfolios as part of the IRP Process which included the Preferred Portfolio and additional portfolios for other settlement agreement requirements. In addition to the Reference Portfolio, the IRP considered 10 Sensitivities off the Reference Portfolio and two alternative scenarios with an additional sensitivity off of the Rapid Technology Advancement scenario. The approach is to implement a scenario- and sensitivity-based approach to create Candidate Portfolios and to ultimately test which portfolios perform the best over a wide range of future market and regulatory conditions.

Table 18. Reference and Potential Candidate Portfolios

Portfolio Name	Description
Reference Case (Original)	Rockport Unit 1 (2028) Rockport Unit 2 (2024) and Cook (2034, 2037)
Rockport 1 2024	Rockport Unit 1 Early Retirement (2024)
Rockport 1 2025	Rockport Unit 1 Early Retirement (2025)
Rockport 1 2026	Rockport Unit 1 Early Retirement (2026)
Cook 2050+	Cook Unit 1 and Unit 2 License Extensions (beyond 2034 and 2037)
Cook 2050+ and No Gas	Cook Unit 1 and Unit 2 License Extensions and No Conventional Gas
Expanded Build Limits	Expanded Cumulative Build Limits on Renewable Energy and Storage
Reference'	Reference Case (Original) with an Import and Export Limit at ~30% of I&M Load
Rapid Technology Advancement	35% Reduction in Renewable, Storage and EE Costs
Enhanced Regulation	Increased Environmental Regulations Leading to High Gas, Coal and CO2 Prices
Rockport 1 2024 N2G	Rockport Unit 1 Early Retirement (2024) Replacing SEA with Net to Gross EE Bundle Savings
Rockport 1 2026 N2G	Rockport Unit 1 Early Retirement (2026) Replacing SEA with Net to Gross EE Bundle Savings
Rapid Technology Advancement N2G	Rapid Technology Advancement (RTA) Replacing SEA with Net to Gross EE Bundle Savings
Reference with No Renewable Limits	Removed cumulative Build Limits on Renewable Energy and Storage

7.11 Probabilistic (Stochastic) Distributions

Probabilistic modeling incorporates several market variables and probability distributions into the analysis. The approach is integral to the 5-Step IRP Process, allowing for the evaluation of a portfolio's performance over a wide range of market conditions. The Balanced Scorecard is populated from data that is extracted from the results of the probabilistic modeling and is the foundation to inform the risk analysis.

Probabilistic modeling begins with the simulation of 200 sets of future pathways for coal prices, natural gas prices, carbon emission prices, peak and average load, and capital costs for a range of technologies. Each of these stochastic variables is propagated to the end of the study period and

was informed by boundary conditions provided through a High and Low fundamental forecast and High and Low load forecasts by AEP. The high and low forecasts were informed by EIA reports. These 200 iterations of each stochastic variable are then loaded as inputs into the dispatch model of AURORA. These inputs thus allow for the testing of each portfolio's performance across a wide range of market conditions. These inputs can be seen in the following set of Figures.

All Portfolios were subjected to each of the 200 iterations using AURORA in dispatch mode where the I&M portfolio is fixed but other PJM members can make decisions under each market scenario.

7.11.1 Load Stochastics

To account for electricity demand variability that derives from economic growth, weather, energy efficiency, and demand side management measures, Siemens PTI developed stochastics around the average and peak load growth expectations for the I&M control area and the neighboring ISO zones. The stochastic distributions for I&M average and peak load can be seen in the Figure 40 below.

The Siemens PTI's long-term load forecasting process for neighboring utilities and zones follows a two-step process that captures both the impact of historical load drivers such as economic growth and variability in weather and the possible disruptive impacts of energy efficiency penetration, distributed generation penetration, and the widespread adoption of electric vehicles in constructing the average and peak demand outlook.

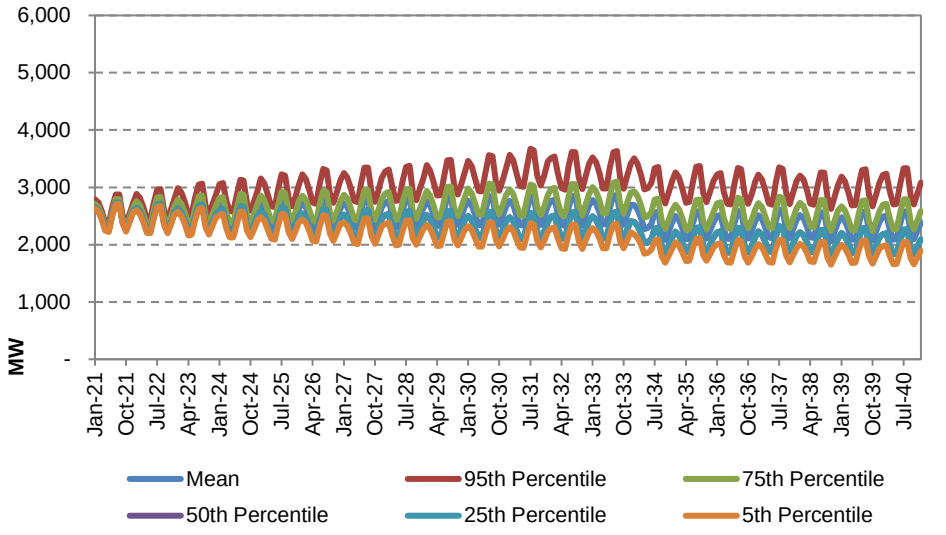


Figure 40. I&M Average Monthly Load

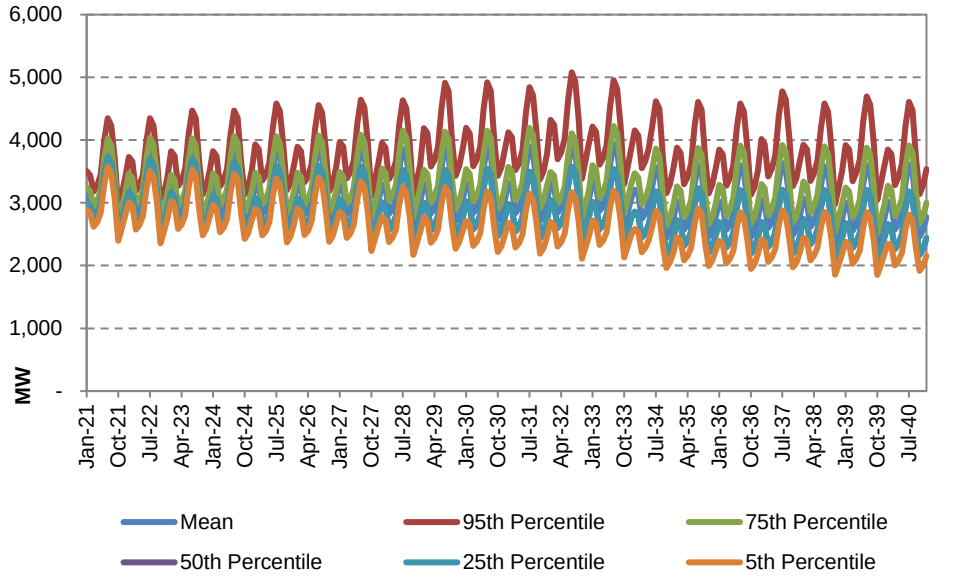


Figure 41. I&M Peak Monthly Load

7.11.2 Gas Stochastics

Siemens PTI developed natural gas price stochastic distributions for the benchmark Henry Hub market point. These stochastic distributions are first based on the Reference Scenario view of natural gas prices with probability bands developed then based on a combination of historical volatility and mean reversion parameters as well as a forward view of expected volatility. For the period 2021-2024, volatility calculated from the past three years of price data is used. For 2025-2027, volatility calculated from the past five years is used. For 2028-2041, volatility calculated from the past 10 years is used. This allows gas price volatility to be low in the short-term, moderate in the medium-term and higher in the long-term in alignment with observed historical volatility. The 95th percentile probability bands are driven by increased gas demand (e.g., coal retirements) and fracking regulations that raise the cost of producing gas. Prices in the 5th percentile are driven by significant renewable development that keeps gas plant utilization relatively low as well as few to no new environmental regulation around power plant emissions.

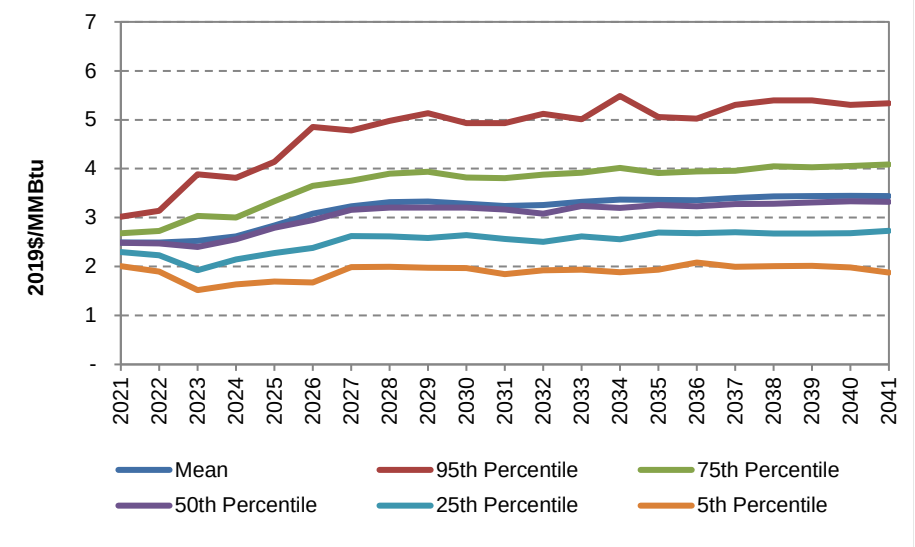


Figure 42. Henry Hub Stochastic Annual Price

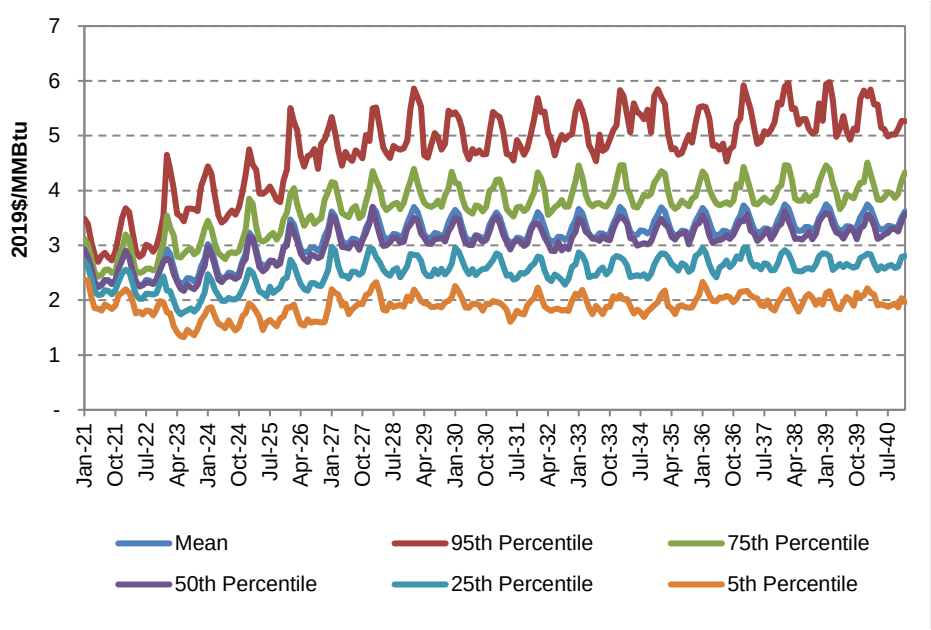


Figure 43. Henry Hub Stochastic Monthly Price

7.11.3 Coal Stochastics

Siemens PTI developed coal price stochastic distributions for the CAPP, NAPP, ILB and PRB basins. These stochastic distributions are first based on the Reference Scenario view of coal prices with probability bands developed, then based on a combination of historical volatility and mean reversion parameters. It should be noted that most coal contracts in the U.S. are bilateral and only approximately 20% are traded on the New York Mercantile Exchange (NYMEX). The historical data

set that is used to calculate the parameters is comprised of the weekly traded data reported in NYMEX.

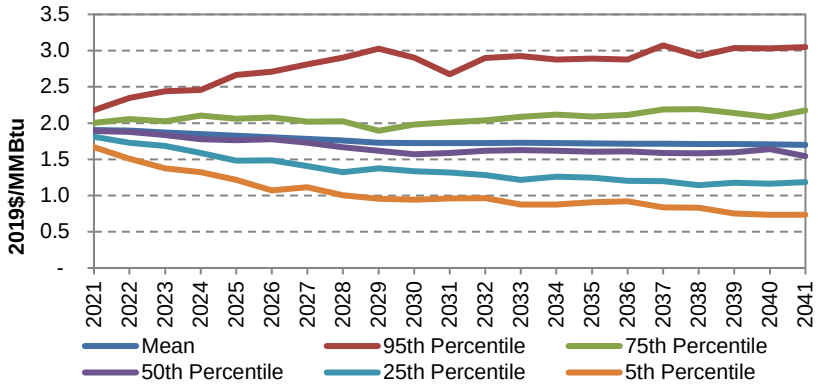


Figure 44. Stochastic Illinois Basin Coal Price

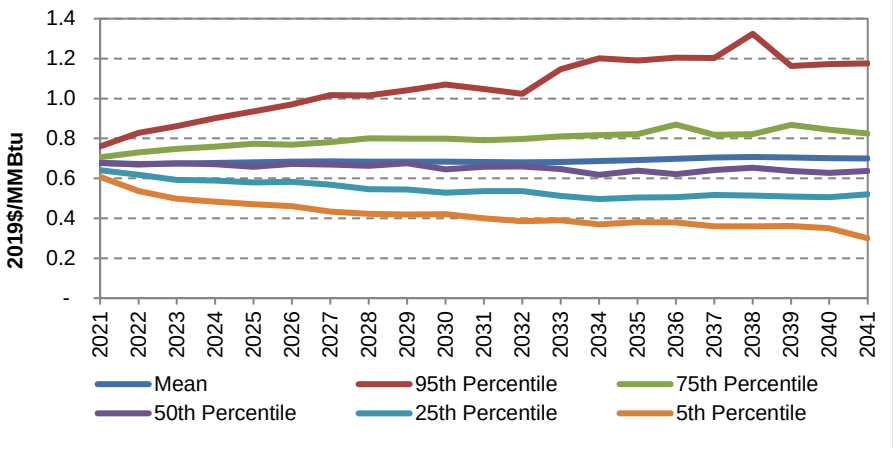


Figure 45. Stochastic Powder River Basin Coal Price

7.11.4 Capital Cost Stochastics

Siemens PTI developed the uncertainty distributions for the cost of new entry units by technology type, which was used in AURORA for determining the economic new builds based on market signals. These technologies included gas peaking units, gas combined cycles units, solar, wind, and battery storage resources. The methodology of developing the capital cost distributions is a two-step process: (1) a parametric distribution based on a Reference Scenario view of future all-in capital costs, historical costs, and volatilities, and a sampling of results to develop probability bands around the Reference Case; and (2) a quantum distribution that captures the additional uncertainty with each technology that factors in learning curve effects, improvements in technology over time, and other uncertain events such as leaps in technological innovation.

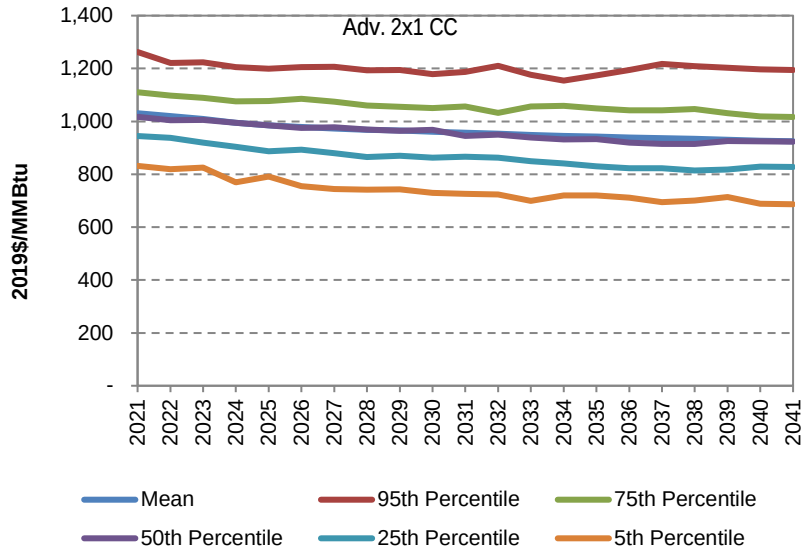


Figure 46: Stochastic Gas Combined Cycle Capital Cost

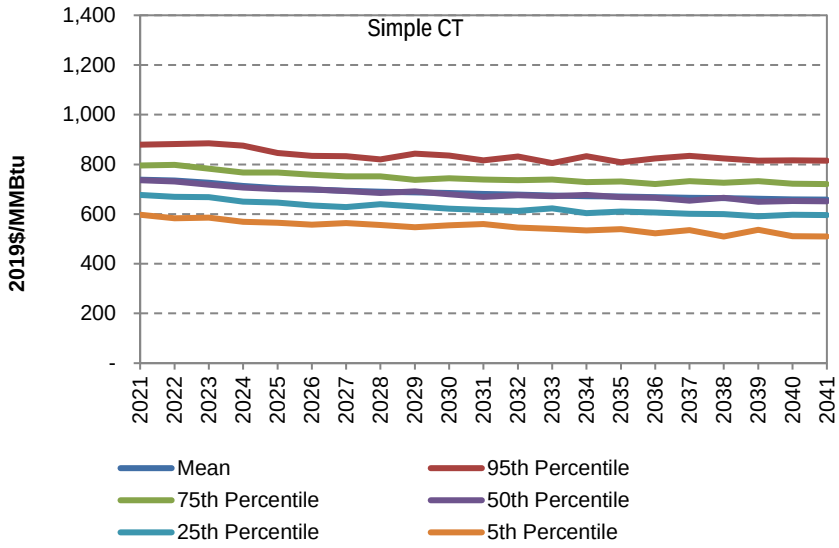


Figure 47: Stochastic Simple Frame Combustion Turbine Capital Cost

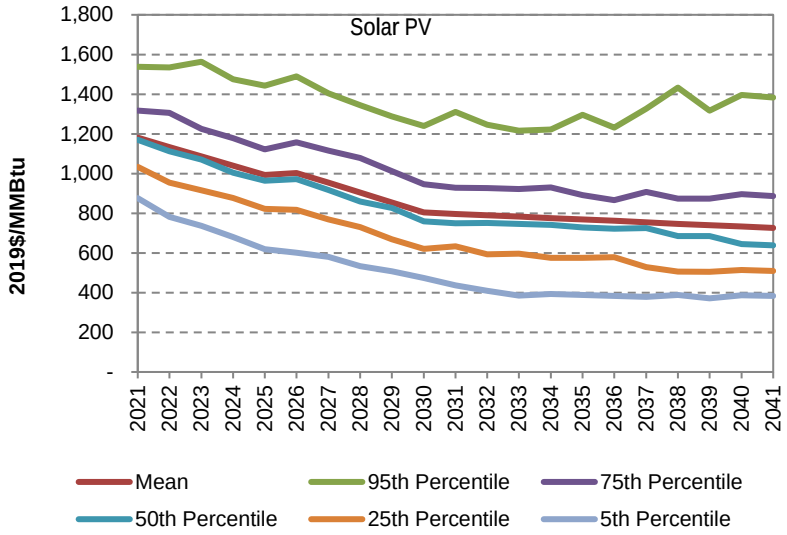


Figure 48: Stochastic Solar PV Tracking Capital Cost

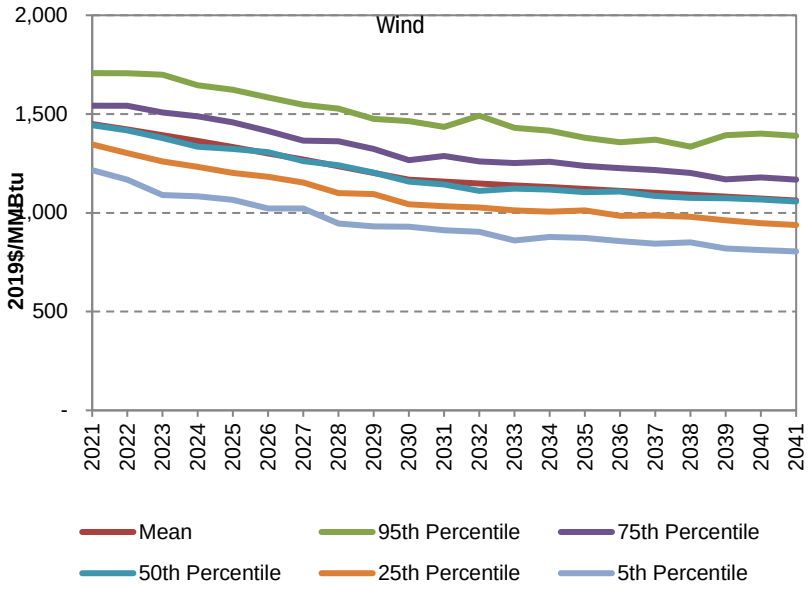


Figure 49: Stochastic Simple Frame Combustion Turbine Capital Cost

7.11.5 National CO_2 Emission Price

Siemens PTI developed uncertainty distributions around carbon compliance costs, which were used in AURORA to capture the inherent risk associated with regulatory compliance requirements. The technique to develop carbon costs distributions, unlike the previous variables, is based on projections largely derived from expert judgment, as there are no national historical data sets (only regional markets in California and the northeast U.S.) to estimate the parameters for developing carbon costs distributions. The Reference Scenario CO_2 price outlook reflects a view that some type of legislation will likely occur in the late-2020s to provide incentives for faster shifts from fossil to renewable generation. The bottom end of the distribution assumes no future regulation.

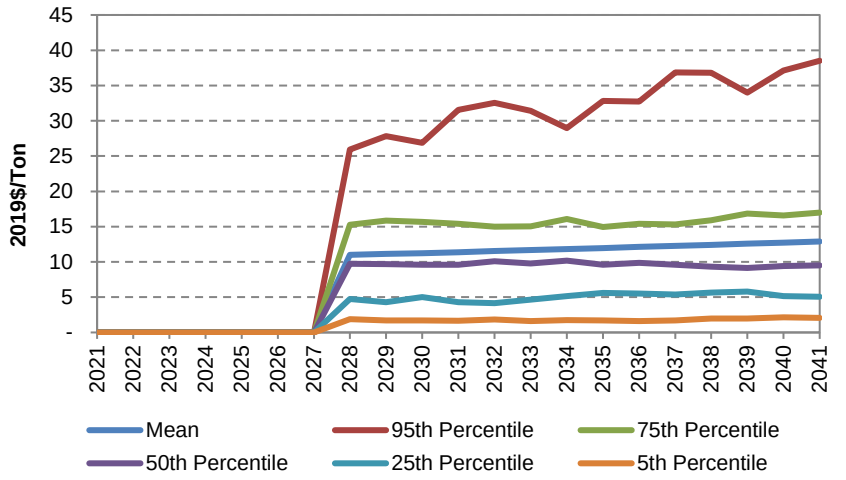


Figure 50. Stochastic CO_2 Price

7.11.6 Cross-Commodity Stochastics

Siemens PTI captured the cross-commodity correlations in the stochastic process, which is a separate stochastic process from those for gas, coal, and CO_2 prices. The feedback effects are based on statistical relationships between coal and gas switching and the variable cost of coal and gas generators. Siemens conducted a fundamental analysis to define the relationship between gas and coal dispatch costs and demand. The dispatch costs of gas and coal were calculated from the gas and coal stochastics and CO_2 stochastics, along with generic assumptions for variable operation and maintenance costs. Where the gas-coal dispatch differential changes significantly enough to affect demand, gas demand from the previous year was adjusted to reflect the corresponding change in demand. A gas price delta was then calculated based on the defined gas demand. This gas price delta was then added to the gas stochastic path developed from historic volatility to calculate an integrated set of CO_2 and natural gas stochastic price forecasts.

8 Portfolio Development

As an integral step in the IRP process, I&M developed several “potential” Candidate Portfolios for analysis in Step 3 of the IRP Process. Each of these portfolios represents a potential strategic resource planning decision, alternative potential future market condition(s), or various regulatory requirements.

Key performance indicators (KPI) are used to demonstrate the viability and merits of each individual portfolio in Step 3 of the IRP Process. It is important to note this step of the analysis is meant to evaluate each individual portfolio and not compare portfolios amongst themselves. The goal is to identify resulting Candidate Portfolios that represent a variety of strategic alternatives for further analysis. The group of selected Candidate Portfolios then advance to the IRP Step 4: Portfolio Analysis where they are analyzed to develop comparative measures (metrics) for presentation in the Balanced Scorecard.

I&M evaluated a total of 14 Candidate Portfolios for initial review which were identified and developed during the IRP process based upon multiple sources of input, including feedback received in Stakeholder meetings 1, 2, and 3A (including supplementary comments received), the review of Siemens PTI and I&M, and I&M’s Settlement Agreement in Cause No. 45546. The potential Candidate Portfolios included potential strategic decisions around Rockport retirement dates, Cook license extensions, a high-renewable future and two Scenarios offering varying future states of the world to reflect rapid technology advancements and enhanced regulations. The potential Candidate Portfolios offered varying strategic insights and potential decisions to transition I&M’s portfolio through the retirement of the Rockport units by 2028 and the remaining IRP planning period.

The potential Candidate Portfolios and KPIs were presented and discussed with Stakeholders during Stakeholder Meeting #3B and were advanced to Step 4: Portfolio Analysis, in order to further the detailed analysis around all identified portfolios. Two additional metrics were added to the Balanced Scorecard in response to stakeholder input as described in section 2.5.2.: 1) the 5-Year Net Rate Increase CAGR (2025-2029), and 2) Average Number of Unique Generators in order to more thoroughly assess affordability and rate stability. Additionally, two metrics were modified from end of plan year values to average values over the planning period.

The resulting evaluation from Step 4: Portfolio Analysis including the Balanced Scorecard results were presented during the final Stakeholder meeting.

8.1 Candidate Portfolio Descriptions

The following section describes the designed set of Candidate Portfolios. The table below provides a summary of each of the 14 selected portfolios’ capacity additions and retirements that were then analyzed in the Step 4 for the development of comparative metrics.

Table 19. Candidate Portfolios and Descriptions

Portfolio Name	Description
Reference Case (Original)	Rockport Unit 1 (2028) Rockport Unit 2 (2024) and Cook (2034, 2037)
Rockport 1 2024	Rockport Unit 1 Early Retirement (2024)
Rockport 1 2025	Rockport Unit 1 Early Retirement (2025)
Rockport 1 2026	Rockport Unit 1 Early Retirement (2026)
Cook 2050+	Cook Unit 1 and Unit 2 License Extensions (beyond 2034 and 2037)
Cook 2050+ and No Gas	Cook Unit 1 and Unit 2 License Extensions and No Conventional Gas
Expanded Build Limits	Expanded Cumulative Build Limits on Renewable Energy and Storage
Reference'	Reference Case (Original) with an Import and Export Limit at ~30% of I&M Load
Rapid Technology Advancement	35% Reduction in Renewable, Storage and EE Costs
Enhanced Regulation	Increased Environmental Regulations Leading to High Gas, Coal and CO2 Prices
Rockport 1 2024 N2G	Rockport Unit 1 Early Retirement (2024) Replacing SEA with Net to Gross EE Bundle Savings
Rockport 1 2026 N2G	Rockport Unit 1 Early Retirement (2026) Replacing SEA with Net to Gross EE Bundle Savings
Rapid Technology Advancement N2G	Rapid Technology Advancement (RTA) Replacing SEA with Net to Gross EE Bundle Savings
Reference with No Renewable Limits	Removed cumulative Build Limits on Renewable Energy and Storage

A summary of the Candidate Portfolio near-term and long-term resource additions identified in Step 3 is shown in Table 20. Appendix Vol. 1, Exhibit C includes the annual resource additions by Portfolio, type and year.

Table 20. Candidate Portfolio Capacity Changes

	2022 - 2028 Additions							2029 - 2041 Retirements and Additions					
	Capacity Additions (MW)							Capacity Additions (MW)					
Portfolio	Wind	Solar	Storage	Gas CT	Gas CC	EE*	Market*	Wind	Solar	Storage	Gas CT	Gas CC	EE*
Reference Case	1,600	1,800	160	750	0	189	-314	0	0	0	1,250	1,070	124
Rockport 1 - 2024	1,600	1,800	380	500	0	208	-1,569	0	0	0	1,250	1,070	140
Rockport 1 - 2025	1,600	1,800	460	500	0	204	-314	0	700	0	1,000	1,070	124
Rockport 1 - 2026	1,600	1,800	80	750	0	194	-314	0	0	0	750	1,070	140
Cook 2050+	1,600	1,800	160	750	0	189	-314	0	0	0	0	0	117
Cook 2050+ and No Gas	1,600	1,800	850	0	0	234	-314	0	0	150	0	0	121
Expanded Build Limits	2,400	2,700	240	250	0	217	-314	0	250	0	1,000	1,070	131
Reference'	1,600	1,800	60	750	0	234	-314	0	150	0	1,000	1,070	180
Rapid Technology Advancement	1,600	1,800	160	750	0	179	-313	4,200	1,050	50	1,250	0	136
Enhanced Regulation	1,600	1,800	160	750	0	223	-314	4,200	1,050	0	1,250	0	156
Rockport 1 2024 N2G	1,600	1,800	460	500	0	174	-1,568	0	0	0	1,250	1,070	231
Rockport 1 2026 NTG	1,600	1,800	100	750	0	165	-313	0	0	0	1,000	1,070	306
Rapid Technology Advancement N2G	1,600	1,800	160	750	0	162	-314	4,200	1,100	0	1,250	0	273
Reference with No Renewable Limits	6,000	6,000	600	0	0	189	-314	0	0	0	750	0	124

*EE Capacity represents total capacity available in 2028 and 2041
*EE Capacity represents maximum capacity of all programs and does not represent output at I&M peak demand hour
**Market Capacity represents capacity shortfall in the year 2024 for the portfolios

8.2 Reference Portfolio (Original)

The Reference Case reflects the model's selection of the most economic resource additions using base forecast assumptions. It includes a combination of solar, wind and hybrid through 2027 and CT additions in 2028 to fill I&M's capacity and energy requirements created by the retirement of the Rockport Plant by 2028. Cook Unit 1 and 2 operations continue through 2034 and 2037, respectively, where they are replaced with a combination of Gas CT and CC additions to account for the necessary baseload capacity and energy that is lost. In addition to the supply-side resources, a diverse mix of energy efficiency resources were included across three vintages that peak at 246 MW in 2033. Additionally, any further capacity shortfalls are met through short-term annual capacity market purchases.

8.3 Reference Portfolio Sensitivities

Several alternatives to the Reference Portfolio were analyzed. These included three Rockport retirement alternatives requested by Stakeholders and determined through settlement agreements with the Company to analyze an earlier retirement of Rockport unit 1. Additional alternative strategies were identified by I&M including the analysis related to extending the Cook Nuclear facility operating life and alternative constraints related to annual resource build limits and the management of energy imports and exports.

Note: Candidate portfolios were designed with combinations of hybrid and stand-alone solar and storage technologies. Hybrid and stand-alone solar and storage are combined for reporting in Table 20.

8.3.1 Rockport Unit 1 – 2024

The Rockport Unit 1 – 2024 early retirement Candidate Portfolio retires the Rockport Unit 1 plant four years earlier than its planned retirement in 2028. In comparison to the Reference portfolio, Rockport Unit 1 – 2024 replaces CT capacity with standalone storage due to the availability of resources in the earlier years. In addition to the standalone storage, Rockport Unit 1 – 2024 portfolio includes a similar mix of wind, solar and hybrid resources in the early years as the Reference portfolio as well as CT and CC capacity additions in the later years as a replacement for the assumed (for modeling purposes) Cook Unit 1 and 2 retirements. In addition to the supply-side resources, a diverse mix of energy efficiency resources were added across three vintages that peak at 286 MW in 2034. Additionally, any further capacity shortfalls are met through short-term annual capacity market purchases.

8.3.2 Rockport Unit 1 – 2025

The Rockport Unit 1 -2025 early retirement Candidate Portfolio retires the Rockport Unit 1 plant three years early. Similar to Rockport Unit 1 – 2024 portfolio, Rockport Unit 1 – 2025 has additional standalone storage as a replacement for Rockport 1 early retirement in place of some CT capacity. Rockport Unit 1 – 2025 portfolio includes a similar mix of wind, solar and hybrid resources in the early years along with additional standalone storage to account for the larger capacity need in 2025 due to Rockport 1 retirement. Like the Reference and Rockport Unit 1 – 2024 portfolios, Cook Unit 1 and 2 operations are assumed for modeling purposes to continue through 2034 and 2037, respectively, and are replaced with a combination of CT and Gas CC additions to account for the necessary baseload capacity that is lost. Unlike the previous portfolios, Rockport Unit 1 – 2025 exchanges some CT capacity in the later years for solar additions. In addition to the supply-side resources, a diverse mix of energy efficiency resources were added across three vintages that peak at 243 MW in 2032. All shortfalls in capacity are met through capacity market purchases.

8.3.3 Rockport Unit 1 – 2026

The Rockport Unit 1 - 2026 early retirement Candidate Portfolio retires the Rockport Unit 1 plant two years early. Rockport Unit 1 – 2026 portfolio includes is largely identical to the Reference portfolio with the exception of slight timing adjustments and tradeoff between standalone solar and hybrid resources as well as earlier CT additions to replace the Rockport capacity lost in 2026. The Cook units operations remain the same as the reference portfolio and are replaced with similar CT and CC capacity additions in later years. In addition to the supply-side resources, a diverse mix of energy efficiency resources were added across three vintages that peak at 286 MW in 2034. Additionally, any further capacity shortfalls are met through short-term annual capacity market purchases.

8.3.4 Cook 2050+

The Cook 2050+ Candidate Portfolio extends the licenses of the Cook Nuclear facilities for 20 years, beyond the end of the study period. The Cook 2050+ Candidate Portfolio includes an identical mix of resources as the Reference Portfolio to replace the Rockport Units 1-2 capacity. Cook Unit 1 and 2 operations continue through 2050+ whereas no further portfolio additions are necessary. In

addition to the supply-side resources, a diverse mix of energy efficiency resources were added across three vintages that peak at 247 MW in 2033. Additionally, any further capacity shortfalls in capacity are met through short-term annual capacity market purchases. Fuel, Variable O&M and Fixed O&M Costs for the extended life of the Cook Units in the Cook 2050+ Portfolio were applied to the projected generation and accounted for out of the model and added to the Portfolio CTSL projections. A fuel cost adjustment was made for the additional years in the planning period and involved taking the latest year available (2034 for Cook 1 and 2037 for Cook 2) fuel cost on a $/MWh basis and assuming a 2% inflation increase to the nominal cost..

8.3.5 Cook 2050+ and No Gas Allowed

The Cook 2050+ and No Gas Allowed Candidate Portfolio extends the licenses of the Cook Nuclear facilities for 20 years, beyond the end of the study period, and removes all gas resources from the optimization routine. The Cook 2050+ and No Gas Allowed portfolio has a similar mix of solar, wind and hybrid resources in the early years to replace Rockport Unit 2 capacity. Rockport Unit 1 capacity is replaced with standalone storage in the Cook 2050+ and No Gas Allowed Portfolio. Cook Unit 1 and 2 operations continue through 2050+ whereas no further additions are necessary other than a few additional storage units to account for depreciating efficiency in earlier storage units. In addition to the supply-side resources, a diverse mix of energy efficiency resources were added across three vintages that peak at 293 MW in 2031. Additionally, any further capacity shortfalls are met through short-term annual capacity market purchases. Fuel, Variable O&M and Fixed O&M Costs for the extended life of the Cook Units in the Cook 2050+ Portfolio were applied to the projected generation and accounted for out of the model and added to the Portfolio CTSL projections. A fuel cost adjustment was made for the additional years in the planning period and involved taking the latest year available (2034 for Cook 1 and 2037 for Cook 2) fuel cost on a $/MWh basis and assuming a 2% inflation increase to the nominal cost.

8.3.6 Expanded Build Limits

The Expanded Build Limits Candidate Portfolio expands annual and cumulative resource limits and was constructed to test the resource limits. The optimized Expanded Build Limits portfolio increases the amount of all renewable options in the early years as the limits allow and fewer CT units as there is more renewable capacity. Cook Units 1 and 2 capacity are replaced with a combination of Solar, CT and Gas CC additions to account for the necessary baseload capacity that is lost. In addition to the supply-side resources, a diverse mix of energy efficiency resources were added across three vintages that peak at 299 MW in 2034. Additionally, any further capacity shortfalls are met through short-term annual capacity market purchases.

8.3.7 Reference' (Reference Prime)

The Reference' Candidate Portfolio technology mix was optimized in Step 3, as described section 3.4.3 with an import and export limit at approximately 30% of load. Importantly, the import and export limits were not applied in the Step 4 Portfolio Analysis (stochastic simulations) and therefore not

reflected in the cost and performance characteristics of the Candidate Portfolios or in the balanced scorecard metrics.

The Reference' portfolio includes a similar mix of solar, wind and hybrid resources with slight changes in timing of solar additions and some tradeoff between standalone solar and hybrid resources. Cook Unit 1 and 2 capacity is replaced by the same additions as the Reference portfolio (CT and CC) with the exception of a small amount of additional solar in the later years. In addition to the supply-side resources, a diverse mix of energy efficiency resources were added across three vintages that peak at 293 MW in 2031. Additionally, any further capacity shortfalls in capacity are met through short-term annual capacity market purchases.

8.3.8 Removed Build Limits

The Removed Build Limits Candidate Portfolio expands annual and cumulative resource limits even further than the Expanded Build Limits portfolio and was also constructed to test the resource limits used in the IRP. The optimized Removed Build Limits portfolio includes more of all renewable options and fewer CT units as there is more renewable capacity. Cook Units 1 and 2 capacity are replaced with a combination of Solar, Wind and Gas CT additions to account for the necessary baseload capacity that is lost. In addition to the supply-side resources, a diverse mix of energy efficiency resources were added across three vintages that peak at 247 MW in 2033. Additionally, any further capacity shortfalls are met through short-term annual capacity market purchases.

8.4 Scenarios

Two scenario-based portfolios (Rapid Technology Advancement and Enhanced Regulation) were developed to evaluate various future states of the world that capture potential changes to regulatory construct, economic and market conditions and technological progress.

8.4.1 Rapid Technology Advancement

The Rapid Technology Advancement Portfolio includes an identical mix of additions as the Reference Portfolio in the early years (2022-2030) but includes a 35% reduction in renewable and storage resource technology costs. The capacity additions that replace Cook Unit 1 and 2 are largely renewable focused instead of gas driven like the Reference Portfolio. There is CT peaking capacity in the later years, but in replacement of the CC capacity, the Rapid Technology Advancement Portfolio incorporates a large amount of wind and solar capacity after 2030. In addition to the supply-side resources, a diverse mix of energy efficiency resources were added across three vintages that peak at 250 MW in 2033. Additionally, any further capacity shortfalls are met through short-term annual capacity market purchases.

8.4.2 Enhanced Regulation

The Enhanced Regulation Portfolio is largely identical to the Rapid Technology Advancement portfolio which includes a similar buildout in the early years as the Reference Portfolio but replaces Cook Unit 1 and 2 capacity with CT and renewable resources post 2030. In addition to the supply-side resources, a diverse mix of energy efficiency resources were added across three vintages that

peak at 287 MW in 2034. Additionally, any further capacity shortfalls in capacity are met through short-term annual capacity market purchases.

8.5 Net to Gross Sensitivities

Additional sensitivities were identified as a result of the Settlement Agreement in IURC Cause No. 45546. These sensitivities evaluated the effect of applying a Net to Gross (NTG) Energy Efficiency adjustment to the EE bundle potential savings described in section 7.8.1 and the recognized impact to the EE resource selection in the model. The NTG factor was only applied, however, to the new EE Bundle resources as described in section 7.8.1.4 while the Company's load forecast described in Section 5.6.2 remained the same.

The EE resources selected in the NTG portfolios are consistent among the three NTG portfolios discussed below. Each of the NTG portfolio's results included a smaller number of EE bundles selected, less EE savings in the earlier years of the planning period, and a higher amount of EE savings in the later years. However, the NTG approach includes and monetizes some energy efficiency savings that already are included in the Company's load forecast. In preparation for the Company's next IRP, the Company plans to study and test potential modifications to how it models EE bundles savings in the IRP modeling construct.

8.5.1 Rockport Unit 1 – 2024 Net to Gross

The Rockport Unit 1 – 2024 Net to Gross portfolio has the Rockport Unit 1 retiring four years early and replaces the EE inputs from SAE adjustment factors to NTG adjusted factors. Rockport Unit 1 – 2024 Net to Gross results include a nearly identical mix of supply-side resources as the original Rockport 1 2024 portfolio with slight changes in timings and some tradeoff between standalone solar and hybrid resources in the early year additions. Cook Unit 1 and 2 capacity replacements are identical to what was added in the Rockport 1 – 2024 portfolio. In addition to the supply-side resources, a diverse mix of energy efficiency bundles was selected across three vintages that peak at 352 MW in 2036, keeping in mind, this includes some savings already assumed in the associated load forecast. However, the EE selected from 2023-2026 was seven MW less than the comparable portfolio. Additionally, any further capacity shortfalls are met through short-term annual capacity market purchases.

8.5.2 Rockport Unit 1 – 2026 Net to Gross

The Rockport Unit 1 – 2026 Net to Gross portfolio has the Rockport Unit 1 retire early two years early and replaces the EE inputs from SAE adjustment factors to NTG adjusted factors. Rockport Unit 1 – 2026 Net to Gross results includes a nearly identical mix of supply-side resources as the original Rockport 1 2026 portfolio with slight changes in timings and some tradeoff between standalone solar and hybrid resources in the early year additions. Cook Unit 1 and 2 operations are assumed for modeling purposes to continue through 2034 and 2037, respectively, where they are replaced with a combination of CT and Gas CC additions to account for the necessary baseload capacity that is lost. In addition to the supply-side resources, a diverse mix of energy efficiency bundles was selected across three vintages that peak at 352 MW in 2038, keeping in mind, this

includes some savings already assumed in the associated load forecast. However, the EE selected from 2023-2026 was four MW less than the comparable portfolio. Additionally, any further capacity shortfalls are met through short-term annual capacity market purchases.

8.5.3 Rapid Technology Advancement – Net to Gross

The Rapid Technology Advancement Net to Gross portfolio is based on the RTA scenario and replaces the EE inputs from SAE adjustment factors to NTG adjusted factors. The Rapid Technology Advancement – Net to Gross portfolio results includes an identical mix of supply-side resources additions in the early years to replace Rockport capacity. Cook Unit 1 and 2 operations are assumed for modeling purposes to continue through 2034 and 2037, respectively, where they are replaced with CT peaking capacity as well as reduced-cost wind and solar additions to account for the necessary baseload capacity that is lost in addition to the supply-side resources, a diverse mix of energy efficiency bundles was selected across three vintages that peak at 451 MW in 2037, keeping in mind, this includes some savings already assumed in the associated load forecast. However, the EE selected from 2023-2026 was four MW less than the comparable portfolio. Additionally, any further capacity shortfalls are met through short-term annual capacity market purchases.

8.6 Concluding Comments on Candidate Portfolios

A total of 14 Candidate Portfolios were developed in Step 3 of the IRP process. The resulting expansion plans are described above. An initial review of all Candidate Portfolios showed that a majority of the Candidate Portfolios revealed similar patterns and portfolio additions, specifically in the near-term period to address the retirement of the Rockport Plant. This includes a combination of solar, wind and hybrid resources as soon as they are available to replace the capacity need that exists when Rockport Unit 2 is no longer available beginning in 2024, along with CT capacity additions to replace Rockport Unit 1 retirement in 2028. The standouts for differences are regarding the Rockport 1 retirement sensitivities whereas Rockport Unit 1 – 2024 and Rockport Unit 1 – 2025 portfolios include early additions of standalone storage in order to replace the Rockport capacity as a CT addition is not available until 2026 due to construction timing. Regarding the post 2030 differences, Rapid Technology Advancement and Enhanced Regulation portfolios contain a large amount of wind and solar additions, due to the economic benefits that are unique to these scenarios, as a replacement for Cook Unit 1 and Unit 2 retirements that are assumed for modeling purposes. The results of the portfolio selection and key performance metrics were presented in Stakeholder meeting 3B. During this process, and in subsequent discussion, it was decided that all 14 portfolios would progress to Step 4 as Candidate Portfolios for further analysis.

The development of Candidate Portfolios does not include the evaluation of comparative metrics that could be used to assess which, if any, Candidate Portfolios are better suited to meet I&M's objectives. Rather, KPI's were developed in Step 3 for each Candidate Portfolio to determine whether or not they met reliability and risk requirements. Most portfolios met these requirements with sufficient capacity and limitations on imports and exports of energy. However, several portfolios showed the potential to result in large exports of energy which could present an economic risk to

those Candidate Portfolios. Comparative metrics to evaluate the relative cost and performance characteristics of each of the Candidate Portfolios were developed in Step 4, as discussed below.

9 Portfolio Performance and Preferred Portfolio Selection

9.1 Evaluation of Portfolio Performance

A total of 14 Candidate Portfolios were developed from Step 3 of the IRP process. The resulting expansion plans are described in Section 8. The results of the portfolio selection and KPIs were presented in Stakeholder meeting 3B for all the portfolios that were developed at that time. During this process, and in subsequent discussions, it was determined that all 14 portfolios would be progressed to Step 4 as Candidate Portfolios for further analysis. Two additional portfolios were constructed subsequently and will be discussed in this section. These include the Preferred Portfolio and then the OVEC 2030 Portfolio Sensitivity.

9.2 Stochastic Risk Assessment

Once the 14 Candidate Portfolios were identified, the remaining steps were to conduct the stochastic risk assessment and generate the comparative metrics used in the Balanced Scorecard. A stochastic risk analysis approach was utilized to provide a holistic assessment of how the 14 portfolios performed under a range of market conditions.

Key information is provided in the metrics in the Balanced Scorecard below. A major benefit of the Balanced Scorecard is that it provides I&M and Stakeholders clear insight into the differences between cost, cost uncertainty, sustainability, market reliance and resource diversity.

The specific metrics used to inform the Balanced Scorecard are displayed in Table 21 below. A full discussion is included in Section 2.

Table 21. IRP Objectives and Metrics

Objective Category	Objective	Metric
Affordability	Affordability	20-Year NPV Cost to Serve Load 10-Year NPV Cost to Serve Load
	Rate Stability	95th percentile value of NPV Cost to Serve Load Difference Between Mean and 95th Percentile 5 Year Net Rate Increase CAGR (2025-2029) Capital Investment Through 2028
	Market Risk Minimization	20-Year Average of Purchases as a % of Load 20-Year Average of Sales as a % of Load
Sustainability	Sustainability	% Reduction of CO_2 (2005-2041)
Reliability and Resource Diversification	Reliability	Surplus Reserve Margin above FPR Requirement
	Resource Diversity	Number of Unique Generators (2041) Number of Unique Fuel Types (2041)

A summary of how the 14 Candidate Portfolios described in Section 8 performed against key metrics is provided in the Table 22 below:

Table 22. Candidate Portfolio Balanced Abbreviated Scorecard

Candidate Portfolio	20-Year NPV CTSL	10-Year NPV CTSL	95th Percentile Value of NPV CTSL	Reduction of CO_2 (2005-2041)	Purchases as a % of Load (2021-2041)	Sales as a % of Load (2021-2041)	Surplus Reserve Margin (2041)
Reference Case (Original)	$7.30 B	$4.28 B	$8.55 B	75.9%	6.4%	25.9%	8.6%
Rockport 1 2024	$7.30 B	$4.29 B	$8.58 B	76.0%	6.3%	25.0%	5.8%
Rockport 1 2025	$7.49 B	$4.39 B	$8.76 B	77.5%	6.1%	25.9%	6.3%
Rockport 1 2026	$7.27 B	$4.27 B	$8.54 B	76.6%	6.3%	26.0%	1.2%
Cook 2050+	$6.57 B	$4.29 B	$7.90 B	97.8%	2.7%	37.5%	7.5%
Cook 2050+ and No Gas	$7.03 B	$4.42 B	$8.36 B	99.4%	2.8%	35.3%	1.6%
Reference with Expanded Build Limits	$7.93 B	$4.57 B	$9.23 B	81.0%	4.1%	38.4%	3.2%
Reference’	$6.98 B	$4.06 B	$8.26 B	76.4%	6.2%	26.3%	2.5%
Reference with No Renewable Limits	$10.49 B	$6.10 B	$12.13 B	96.2%	2.7%	96.3%	4.9%
Rapid Technology Advancement	$7.50 B	$4.26 B	$8.81 B	94.4%	3.6%	36.8%	5.1%
Enhanced Regulation	$7.49 B	$4.16 B	$8.81 B	94.3%	3.6%	37.2%	4.0%
Rockport 1 2024 NTG	$7.43 B	$4.37 B	$8.70 B	76.7%	6.0%	25.4%	7.0%
Rockport 1 2026 NTG	$7.26 B	$4.29 B	$8.53 B	77.3%	6.0%	26.2%	1.7%
Rapid Technology Advancement NTG	$7.28 B	$4.19 B	$8.85 B	93.5%	4.0%	35.3%	1.4%

I&M conducted a review of the Candidate Portfolio Balanced Scorecard shown in Table 22, the comparative metrics for each Candidate Portfolio, and refined the list of Candidate Portfolios to those Candidate Portfolios that represented viable strategic options for I&M. Table 23 shows the rationale for the eliminated Candidate Portfolios and those that were refined or maintained for further study.

Table 23. Candidate Portfolios Analysis and Screening

Portfolio Name, Revised	Action	Rational
Reference Case (Original)	Refined	Used for initial comparison
Rockport 1 2024	Inform	Evaluate Early Rockport Retirement, Minimal Lead Time for New Resources
Rockport 1 2025	Inform	Evaluate Early Rockport Retirement, Minimal Lead Time for New Resources
Rockport 1 2026	Compare	Evaluate Early Rockport Retirement
Cook 2050+[1]	Compare	Optionality to Maintain Nuclear Resources, Sustainability Goals
Cook 2050+ and No Gas	Compare	Optionality to Maintain Nuclear Resources, Sustainability Goals
Expanded Build Limits	Inform	Evaluate Build Limits, High Exports and Costs
Reference'	Evaluate	Manage Export Limits
No Build Limits	Inform	No Build Limits, High Exports and High Costs
Rapid Technology Advancement	Compare	Scenario Results
Enhanced Regulation	Compare	Scenario Results
Rockport 1 2024 N2G	Inform	Evaluate Alternative Treatment of Energy Efficiency Resources
Rockport 1 2026 N2G	Inform	Evaluate Alternative Treatment of Energy Efficiency Resources
Rapid Technology Advancement N2G	Inform	Evaluate Alternative Treatment of Energy Efficiency Resources

As shown in Table 23, the Reference Case (Original) was refined and replaced by the Reference' Candidate Portfolio, as described in Section 8.3.7. The Rockport 2024 and Rockport 2025 Candidate Portfolios, which considered the early retirement of Rockport Unit 1, were screened out due a lack of time (i) for a reasonable transition and (ii) to replace the Rockport Unit 1 capacity and energy needed to maintain system reliability and resource adequacy for I&M's customers. The Rockport 2026 Portfolio was maintained for comparison purposes. However, based on the time needed to conduct a competitive procurement process, secure all required permits, obtain regulatory approval, and construct the level of resource additions that would be required to replace both Rockport Units 1 and 2 in this condensed timeframe, the Company determined that there is likely insufficient time for a reasonable and practical transition. Additionally, the Rockport early retirement

Candidate Portfolios would not allow sufficient time for I&M to work with the local communities, employees and other stakeholders impacted by the retirement of Rockport.[28]

The Expanded Build Limits portfolio and the No Build Limits portfolio, used to evaluate the cost and performance implications of portfolio limitations on new capacity additions, were screened out due to their high energy exports, exposure to market risk, and costs. Energy exports that exceed acceptable thresholds can produce greater economic risks due to the uncertainty of future energy spot market prices and also did not meet I&M's objectives around managing capacity and energy length above its projected load requirements. Annual build limits were removed for the Reference with No Renewable Limits Candidate Portfolio, which as shown in Table 22, results in Sales as a Percent of Load averaging 96.3% over the analysis period. The three Net-to-Gross portfolios, Rockport 1 2024 N2G, Rockport 1 2026 N2G, and Rapid Technology Advancement N2G, were screened out as they were used to evaluate an alternative method of modeling new energy efficiency resources related to the Settlement Agreement in IURC Cause No. 45546. While the Company plans to study and test potential modifications needed to model NTG EE bundles savings in the IRP modeling construct in future IRP's, this approach includes and monetizes energy efficiency savings that already are included in the Company's load forecast described in Section 5.6.2 and further discussed in section 7.8.1 used for this IRP.

Table 24 shows the resulting focused Candidate Portfolios complete Balanced Scorecard metrics used to inform the development of the Preferred Portfolio.

Table 24. Focused Candidate Portfolio Balanced Scorecard

Portfolio	20-Year NPV CTSL	10-Year NPV CTSL	95th Percentile Value of NPV CTSL	Difference Btw. Mean and 95th Percentile	5 Year Net Rate Increase CAGR (2025-2029)	Capital Investment Through 2028	% Reduction of CO2 (2005-2041)	Purchases as a % of Load (2021-2041)	Sales as a % of Load (2021-2041)	Surplus Reserve Margin (2041)	# of Unique Generators (2041)
Reference'	$6.98 B	$4.06 B	$8.26 B	18.3%	1.3%	$5.52 B	76.4%	6.2%	26.3%	2.5%	61
Rockport 1 2026	$7.27 B	$4.27 B	$8.54 B	17.5%	1.3%	$5.56 B	76.6%	6.3%	26.0%	1.2%	58
Cook 2050+	$6.57 B	$4.29 B	$7.90 B	21.0%	1.5%	$5.69 B	97.8%	2.7%	37.5%	7.5%	55
Cook 2050+ and No Gas	$7.03 B	$4.42 B	$8.26 B	20.4%	1.5%	$5.40 B	99.4%	2.8%	35.3%	1.6%	68
Rapid Technology Adv.	$7.50 B	$4.26 B	$8.81 B	17.5%	0.0%	$3.8 B	94.4%	3.6%	36.8%	5.1%	101
Enhanced Regulation	$7.49 B	$4.16 B	$8.81 B	17.6%	1.50%	$5.69 B	94.3%	3.6%	37.2%	4.0%	100

[28] Refer to AEP's commitment to a Just Transition at AEPs-Climate-Impact-Analysis-2021.pdf (aepsustainability.com)

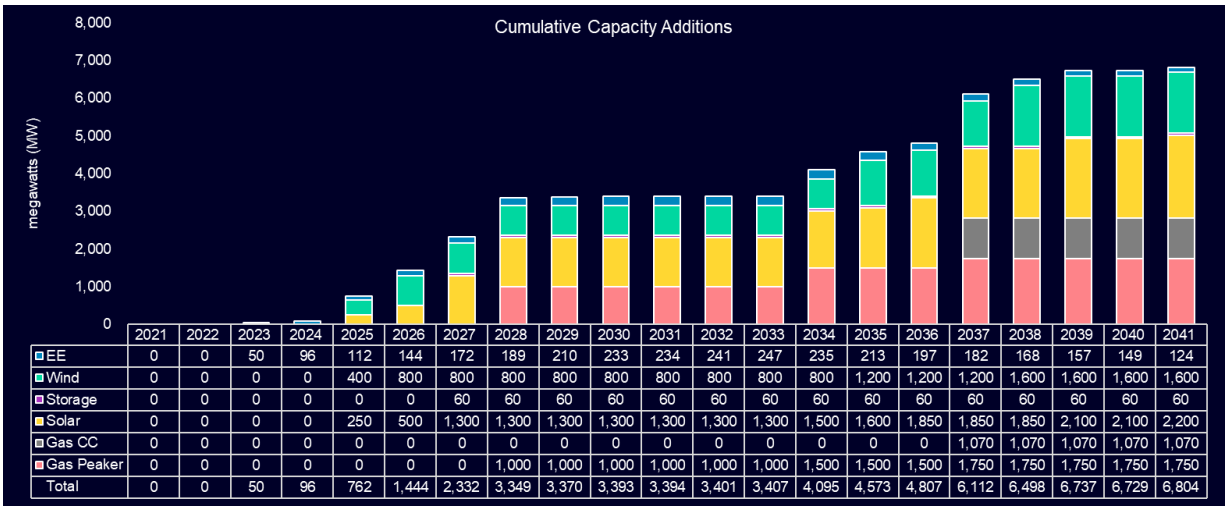
Based on the results of the IRP Step 4 analysis of the Candidate Portfolios as shown in Table 24, the Reference' Candidate Portfolio was selected as the basis for the development of the Preferred Portfolio. The selection of the Reference' Candidate Portfolio resulted in the 2nd lowest 20-Year NPV CTSL and the lowest 10-Year NPV CTSL (net present value of the cost to serve load) metrics and with respect to the other metrics was very similar to or better than the Rockport 2026, Rapid Technology Advancement and Enhanced Regulation portfolios. Only the Cook 2050+ portfolio has a lower 20-year NPV CTSL metric. The Cook 2050+ portfolios were used exclusively to inform the development of the Preferred Portfolio. These portfolios do not include the estimated capital costs that would be necessary to support extending the lives of the Cook units, thus impacting the Affordability metrics in the Balanced Scorecard and as shown in Table 24. However, the Cook 2050+ portfolios do provide valuable strategic insights related to sustainability, reliability and resource adequacy. In addition, the Reference' Candidate Portfolio results in a forecasted CAGR that is in line with all of the other portfolios shown in Table 24 with the exception of the Rapid Technology candidate portfolio. However, the Rapid Technology Advancement candidate portfolio assumes, as described in Section 3, a 35% reduction in wind, solar, storage, energy efficiency and demand response technology costs. With very similar capacity additions as the Reference' Portfolio, this scenario was insightful to the benefits of low cost renewable resources if there is a future rapid decline in renewable technology costs. For purposes of developing the Preferred Portfolio, the Company is assuming the more conservative cost assumptions included in the Preferred Portfolio and informed by the RFP's discussed in sections 6.2 and 6.3. Furthermore, one of the Company's priorities is to manage the levels of Average Sales as a Percentage of Load across the analysis period, as shown in Table 24. While the Reference' Portfolio has one of the lower sales percentages of the Portfolios included in Table 24, the Company wanted to further address this "energy length" in the development of the Preferred Portfolio. Stakeholders also expressed concern regarding the potential for future energy length, specifically with respect to the potential future impacts of an industry wide transition to renewable energy resources. The concern is that while individual utility assumptions regarding future market sales may be reasonable, when evaluated in aggregate with other utilities' plans, there could become a market surplus that would reduce the opportunity for future market sales. If this situation were to occur, it may result in less market sales revenues than forecasted.

9.3 Preferred Portfolio Overview

The Preferred Portfolio was informed by the results of the many Candidate Portfolios discussed in Section 8. It represents a balanced plan that supports I&M's IRP objectives and provides a planning basis for the Company's near-term plan, 2022 – 2028, and long-term-indicative plan, 2029 – 2041. The Preferred Portfolio also maintains optionality for the Company's continued consideration for the life extension of the Cook nuclear units beginning in 2034, by including the same resource types in the near-term plan, but reducing the amounts to manage the Sales as a Percentage of Load metric over the long-term. The Preferred Portfolio was derived from the Reference' Candidate Portfolio with adjustments to resource selections to reduce risks around near-term capital requirements, project execution, reserve margin and energy position surplus influence on portfolio costs in order to best

align with the Company's overall objectives and metrics. Resource additions in the Preferred Portfolio are shown in Figure 51. Table 20 shows the comparison of resource additions for all Portfolios from a near-term (2022 to 2028) and long-term (2029 to 2041) perspective. Appendix C has key information for each Portfolio, and Appendix C-19 and C-20 show total resources by year and total capacity relative to the Company's forecasted load obligation. Key additions through 2041 include:

- 2,200 MW of Solar Resources
- 1,600 MW of Wind Resources
- 60 MW of Storage Resources paired with Solar Resources
- 247 MW of peak EE resources in 2033
- 2,820 MW of Dispatchable Gas Resources



	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041
EE	0	0	50	96	112	144	172	189	210	233	234	241	247	235	213	197	182	168	157	149	124
Wind	0	0	0	0	400	800	800	800	800	800	800	800	800	800	1,200	1,200	1,200	1,600	1,600	1,600	1,600
Storage	0	0	0	0	0	0	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60
Solar	0	0	0	0	250	500	1,300	1,300	1,300	1,300	1,300	1,300	1,300	1,500	1,600	1,850	1,850	1,850	2,100	2,100	2,200
Gas CC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1,070	1,070	1,070	1,070	1,070
Gas Peaker	0	0	0	0	0	0	0	1,000	1,000	1,000	1,000	1,000	1,000	1,500	1,500	1,500	1,750	1,750	1,750	1,750	1,750
Total	0	0	50	96	762	1,444	2,332	3,349	3,370	3,393	3,394	3,401	3,407	4,095	4,573	4,807	6,112	6,498	6,737	6,729	6,804

Figure 51. Preferred Portfolio Capacity Expansion Plan

The Balance Scorecard metrics are shown in Table 25 below and are further discussed in Section 9.4

Table 25. Preferred Portfolio Scorecard Metrics

Portfolio	20-Year NPV CTSL	10-Year NPV CTSL	95th Percentile Value of NPV CTSL	Difference Btw. Mean and 95th Percentile	5 Year Net Rate Increase CAGR (2025-2029)	Capital Investment Through 2028	% Reduction of CO2e (2005-2041)	Purchases as a % of Load (2021-2041)	Sales as a % of Load (2021-2041)	Surplus Reserve Margin (2041)	# of Unique Generators (2041)
Preferred Portfolio	$6.76 B	$3.89 B	$8.10 B	19.6%	1.40%	$3.83 B	76.2%	7.20%	19.80%	4.7%	66

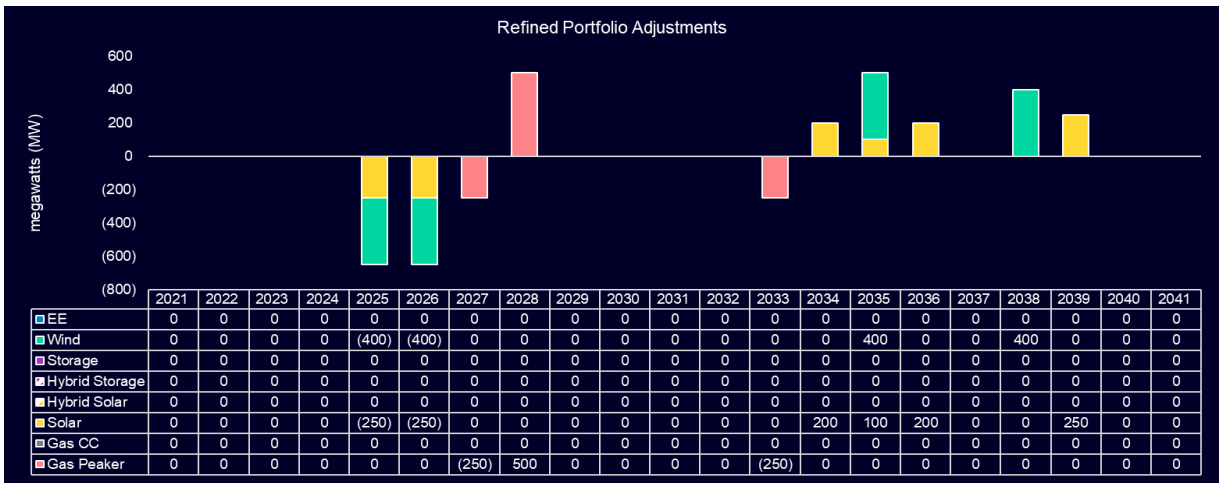
	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041
Wind	0	0	0	0	400	400	0	0	0	0	0	0	0	0	400	0	0	400	0	0	0
Storage	0	0	0	0	0	0	60	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Solar	0	0	0	0	250	250	800	0	0	0	0	0	0	200	100	250	0	0	250	0	100
Gas CC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1,070	0	0	0	0
Gas Peaker	0	0	0	0	0	0	0	1,000	0	0	0	0	0	500	0	0	250	0	0	0	0

Figure 52. Preferred Portfolio Incremental Capacity Additions (UCAP)

The Preferred Portfolio was informed from all the Candidate Portfolios and derived from the Reference' Portfolio. The adjustments to the Reference' Portfolio included:

- In 2025-2026, renewable additions were reduced by 50%, these additions were shifted out to later years
- 2027 and 2033 gas peaker additions were combined and added in 2028, for a total of 1,000 MW
- Includes an additional 250 MW of solar resources in long-term

Each of these adjustments is discussed further below.



	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041
EE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Wind	0	0	0	0	(400)	(400)	0	0	0	0	0	0	0	0	400	0	0	400	0	0	0
Storage	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hybrid Storage	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hybrid Solar	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Solar	0	0	0	0	(250)	(250)	0	0	0	0	0	0	0	200	100	200	0	0	250	0	0
Gas CC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Gas Peaker	0	0	0	0	0	0	(250)	500	0	0	0	0	(250)	0	0	0	0	0	0	0	0

Figure 53. Preferred Portfolio - Adjustments to Reference'

9.4 Path to the Preferred Portfolio

I&M's Preferred Portfolio results from modifications to the optimized Reference' portfolio, which was one of the best performing portfolios in the Balanced Scorecard. Resource type additions in the

Preferred Portfolio are similar to the Cook 2050+ Portfolio in the near-term through 2028, while managing near-term capacity and energy length positions.

More specifically, the Company evaluated the resource additions in the Cook 2050+ Portfolio relative to the Reference' Portfolio, assessing the various metrics discussed in Section 8. The Reference' Portfolio included a high amount of renewable resources in the near term to take advantage of Federal renewable tax credits, in particular wind resources, however that impacted the Company's energy position, imposing additional market risk through forecasted energy margins, as reflected in the Sales as a Percentage of Load metric in the Balanced Scorecard and Exhibit C-21. This sales length begins to grow in 2025 as the model adds low-cost wind and solar resources up to the Company constraints, discussed in Section 7.6.5.1. Due to this and other considerations, the Company reduced the solar and wind resource additions in 2025 and 2026 by 50%, which reduced the forecasted energy length in 2027 by approximately a third, down to 29% and is reflected in the Preferred Portfolio, while meeting its PJM capacity obligation.

Additionally, this modification reduces the Preferred Portfolio's Capital Investment through 2028 to $3.83 B, whereas the Reference' Portfolio has a $5.52 B capital investment need through the same time period. If similar resource price conditions occurred as modeled in the RTA Portfolio, the Preferred Portfolio would realize similar benefits proportional to the resources selected. As an example, a 35% reduction in resource costs would reduce the Preferred Portfolio resource costs by approximately $1 billion. The reduced amount of renewable additions may also reduce the Company's implementation risk that otherwise would be associated with adding the large amounts of solar and wind resources called for in the Reference' Portfolio.

Table 26 below shows the forecasted impacts of each rate component on the metric in 2029. As shown on line 6, Total Gross Revenue Requirement, the Preferred Portfolio has significantly lower costs than the Reference' portfolio. The Net Cost of Service Impact on line 8 shows the Reference' Portfolio has the lowest Net Cost of Service Impact, which directly correlates to the calculation of Net Retail Rate Impact. However, the clear drivers of the lower Net Cost of Service Impact is the Grossed up PTC/ITC credits shown on line 5, which assumes efficient realization of federal renewable tax credits as described in section 7.6.4, and the forecasted value of energy margins from market sales, shown on line 7. The Reference' Portfolio has a forecasted benefit of $409M while the Preferred Portfolio has a forecasted benefit of $269M, a difference of $140M in one year. This is an example of the risks the Company is managing in the development of the Preferred Portfolio by reducing the Solar and Wind resources as compared to those that were included in the Reference' portfolio.

Table 26: Retail Rate Impact Comparison

		2029 Single year Cost of Service Components and Net CAGR components	
		Preferred Portfolio	Reference'
Line			
	Ratemaking Revenue Requirement - 100% owned		
1	Pre-Tax Return on Rate Base	$249	$354
2	Depreciation Expense	$118	$170
3	Fixed O&M	$126	$169
4	Subtotal, prior to PTC/ITC	$493	$693
5	Less: Grossed Up PTC/ITC	($72)	($142)
6	Total Gross Revenue Requirement	$421	$552
7	Less: Variable Energy Margin (Revenue-Fuel-VOM)	($269)	($409)
8	Net Cost of Service Impact	$151	$143
9			
10	Year over year Gross COS change	($6)	($11)
11	Year over year Net COS change	($12)	($18)
12			
13		**5 Year CAGR end year 2029**	
14		Net	Net
15	2020 Base Year Retail & FERC Revenues	$2,181	$2,181
16	2029 Projection, New Resource Cost of Service	$151	$143
17	Total 2029 Net Cost of Service	$2,332	$2,324
18			
19	Gross / Net % Cumulative Increase over 2020 Base year	6.9%	6.6%
20	Net CAGR 2025-2029	1.40%	1.30%
21			
22	2025-2028 Cumulative Capital Investment	3.83	5.52

Furthermore, the Company identified that the introduction of a 250 MW CT in 2027 in the Reference' Portfolio could be delayed by a year and combined with the 2028 CT's. In the Preferred Portfolio, the Company chose to delay the introduction of this CT in 2027 and at the same time pull forward a plan to introduce a CT in 2033 for a total of 1,000 MW of CT's in 2028. The results of this modification to the Reference' Portfolio's impact on Capacity Surplus can be seen in Exhibit C-20 by year. From 2025 through 2037 the Preferred Portfolio has a lower Capacity Surplus than the Reference' Portfolio. The combination of these resources is used to meet capacity needs in 2028 with the planned retirement of the Rockport Unit 1. While the Preferred Portfolio includes 1,000 MW of CT resources in 2028, the Company will conduct future competitive procurement processes to determine the optimal resource selections.

With these adjustments, the Company is able to retain the optionality for decisions related to potential license extensions at the Cook nuclear plant.

9.5 Description of the Preferred Portfolio

Figure 54 illustrates I&M's UCAP capacity position for the Preferred Portfolio and the PJM capacity obligation. In addition to the existing resources, nameplate capacities of new supply-side resources in the Preferred Portfolio includes 1,600 MW of wind resources selected through 2038, 1,900 MW of stand-alone solar resources selected through 2041, the selection of hybrid paired solar + storage resources in 2027 of 60 MW storage / 300 MW Solar in 2027, 1,070 MW of Gas CC selected in 2037, and 1,750 MW of Gas CT resources through 2040. Resource additions built through 2028 are sufficient from a capacity and energy perspective to address needs in light of the retirement of the Rockport Units. In the Preferred Portfolio, Rockport Unit 1 and Unit 2 operations continue through 2028 and 2024, respectively. Cook Unit 1 and 2 operations are assumed for IRP modeling purposes only to continue through 2034 and 2037, respectively.

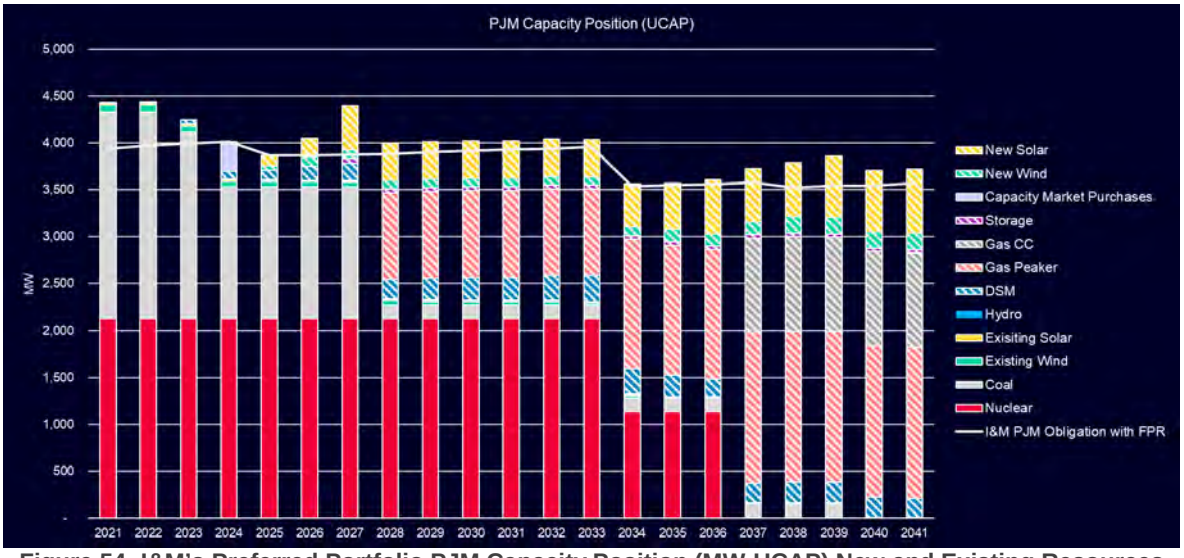


Figure 54: I&M's Preferred Portfolio PJM Capacity Position (MW-UCAP) New and Existing Resources

In addition to the supply-side resources, a diverse mix of energy efficiency bundles was selected across three vintages that peak at 247 MW in 2033. The energy efficiency programs are spread across three vintages (2023-2025, 2026-2028 and 2029-2040) and across eight C&I bundles and five Residential bundles. The Preferred Portfolio selected all C&I Block 1, C&I Block 3, and C&I Block 8 bundles, as well as substantial quantities of C&I Block 7, Residential Block 2, Residential Block 3 and Residential Block 7. The Preferred Portfolio also has small quantities of C&I Block 2, C&I Block 4, C&I Block 5 and C&I Block 6. In addition, low-income energy efficiency and EE programs included in existing filings (i.e., MI 2021) are included in all periods. The optimal dispatch of demand response is selected and is informed through the MPS and includes incremental resources of 121 MW. The only short-term capacity deficit relative to the PJM minimum reserve requirement is observed in 2024 and is currently forecasted to be ~314 MW as the portfolio transitions from Rockport Unit 2 to a portfolio with more renewable resources. Short term capacity needs are subject to further adjustments prior to the PJM Delivery Year based on evolving load forecasts and unit performance.

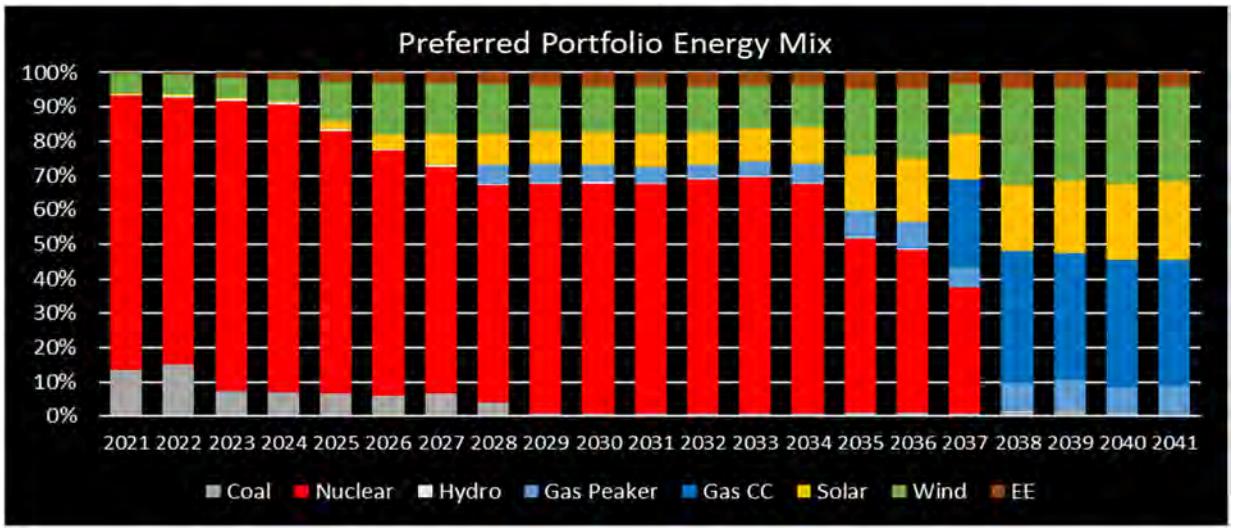


Figure 55: Preferred Portfolio Energy Mix

The forecasted energy mix by resource type contribution in the Preferred Portfolio over the planning period is illustrated in Figure 55. From an energy perspective, the Preferred Portfolio resources include the addition of energy rich renewable resources and DSM resources that serve to somewhat mitigate future risks related to fuel price uncertainty and potential carbon emission prices. Additionally, these resources include incremental dispatchable generating resources (CT) to support resource adequacy and reliability during the periods when renewable resources are not providing energy to meet the Company's load obligation.

The Preferred Portfolio performs well across a range of metrics that were used in the Balanced Scorecard. The Preferred Portfolio performs very well in absolute terms and relative to other Candidate Portfolios and is the lowest cost portfolio. The Preferred Portfolio provides several additional benefits to I&M customers and Stakeholders, including:

Affordability and Rate Stability:

- The Preferred Portfolio is among the lowest reasonable cost portfolios measured on both a 20-year and 10-year cost to serve load metric. The only comparable portfolios are the Cook 2050+ life extension portfolios, which do not include consideration of the capital investments required to extend the life of those facilities (will be evaluated further in future IRPs).
- The Preferred Portfolio has one of the lowest absolute values for the 95th percentile value of NPV cost to serve load. All portfolios share a similar upside risk. This translates into having one of the lowest risk of increases in cost across the portfolios.
- Resource type additions in the Preferred Portfolio are similar through 2028 as the portfolios modeled considered Cook license extensions (Cook 2050+) resulting in a "no regrets" position for the next several years.
- The Preferred Portfolio includes dispatchable resources that can enhance opportunities for wholesale sales without overexposure to market risks.

- The Preferred Portfolio takes advantage of existing tax incentives for new wind, solar and hybrid solar resources.

Market Risk

- The Preferred Portfolio mitigates overreliance on market purchases and sales for capacity and energy throughout the forecast horizon.
- The Preferred Portfolio requires market purchases for capacity in 2024 to account for Rockport unit 2 settlement requirements.
- Market purchases for energy are reasonable and do not overexpose I&M to the spot energy market, with the preferred portfolio averaging 7.2% over the forecast horizon. Additionally, market sales for energy are reasonable and do not overexpose I&M to the spot energy market, with the preferred portfolio averaging 19.8% over the forecast horizon.
- The Preferred Portfolio results in small amounts of surplus capacity over the forecast period.
- The Preferred Portfolio avoids reliance on any single resource or fuel type, with potentially over 60 unique resources and eight unique fuel types.

Sustainability:

- The Preferred Portfolio leads to a lower carbon future, achieving 76% reduction from 2005 levels by 2041 when including equivalent emissions for spot market purchases. Excluding spot market purchase emissions estimates, the Preferred Portfolio realizes CO2 emissions reductions of 82%.
- The Preferred Portfolio includes a substantial amount of renewable resources as it continues to transform its fleet.
- The Preferred Portfolio maintains the optionality for the Cook License Extensions which maintains the opportunity to extend the operations a significant emission-free resource.
- The Preferred Portfolio provides potential opportunities for natural gas conversion to hydrogen fuel later in the planning period.
- The Preferred Portfolio significantly reduces the reliance on coal fired generation.

Reliability and Resource Diversity:

- The Preferred Portfolio includes additions that when added to Company's current resources, provides a more diversified portfolio of supply-side and demand-side resources that will allow the Company to optimize the use of each resource type to ensure the reliable supply of electricity.
- The CT resources provide flexible, fast ramping capabilities and can help mitigate risks brought on by the intermittent renewable resource additions.

9.6 Affordability

Affordability is an important objective in the Balanced Scorecard and is measured as a component of the stochastic analysis. The metrics to capture the affordability objective include the 20-year Net Present Value of Cost to Serve Load and a 10-year Net Present Value of Cost to Serve Load. The values in the Balanced Scorecard represent the stochastic mean (average) of the 200 dispatch

simulations of the portfolio under varying market conditions. Within each stochastic run, the model outputs the annual cost of each component to calculate total portfolio cost, including fuel costs, emission costs, variable operations and maintenance costs, fixed operations and maintenance costs, energy export revenue, energy import costs, and capacity market purchase costs. The components of the cost to serve load are summed over the forecast horizon and discounted by I&Ms weighted average cost of capital of 7.19% to arrive at the Net Present Value Cost to Serve Load. A lower Net Present Value Cost to Serve Load translates into a lower expected cost of energy for customers.

The Preferred Portfolio is the least cost portfolio across all other Candidate Portfolios, with the 20-year Net Present Value Cost to Serve Load of $6.76 B and a 10-year Net Present Value Cost to Serve Load of $3.89 B. The Net Present Value Cost to Serve Load of the preferred portfolio is over 6% less than the reference portfolio and over 2% less than the Reference' portfolio.

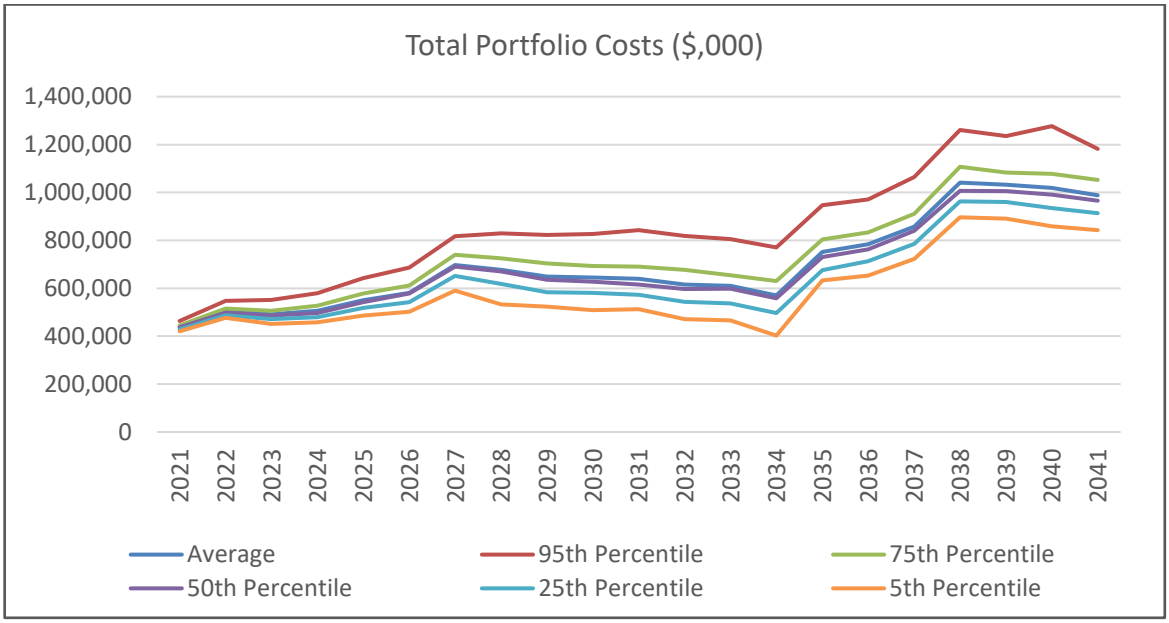


Figure 56. Total Preferred Portfolio Cost P-Bands, Preferred Portfolio

9.7 Rate Stability

The Rate Stability objective is measured through two approaches. The first approach is measured in a similar way to the Affordability objective, using the 20-year and 10-year Net Present Value Cost to Serve Load from the stochastic analysis. However, the objective provides a measure of the 95th percentile of the Net Present Value Cost to Serve Load to identify an upper boundary of portfolio costs across the 200 iterations. The 95th percentile can be considered a reasonable upper boundary or worst-case perspective that the portfolio could experience. The 95th percentile can be interpreted to say that there is a 95% chance that total portfolio costs as measured by the Net Present Value Cost to Serve Load will be at or below this measure. As a result, the risk of the total portfolio costs over the study period can be quantified allowing the comparison of risk. In addition to the 95th percentile, a 5-year CAGR of the net retail rate impact was calculated. The 5-yr CAGR metric

provides near term insight to customer affordability and rate impacts of the resource additions in a given portfolio. The CAGR was calculated using a traditional, non-levelized, calculation of the annual cost of service and the change in revenue requirement for the period of 2025-2029 when new resources are added.

The Preferred Portfolio performed well in the rate stability category. The 95th percentile of the 20-year Net Present Value Cost to Serve Load was determined to be $8.1 B, which is the 2nd lowest number when compared to other portfolios with only the Cook 2050+ portfolio as lower although this does not include the estimated capital costs that would be necessary to support extending the lives of the Cook units. In terms of the impact to retail rates, the Preferred Portfolio on a CAGR basis performed in-line with the other Candidate Portfolios excluding the technology cost assumptions used in the RTA Portfolio. The Preferred Portfolio out-performed all others when considering the amount of dollars required of the early years of the plan, measured through capital intensity. The Preferred Portfolio capital investment through 2028 totaled $3.83 B, which is much less when compared to the $5.69 B from the Reference portfolio or $5.52 B from the Reference' portfolio.

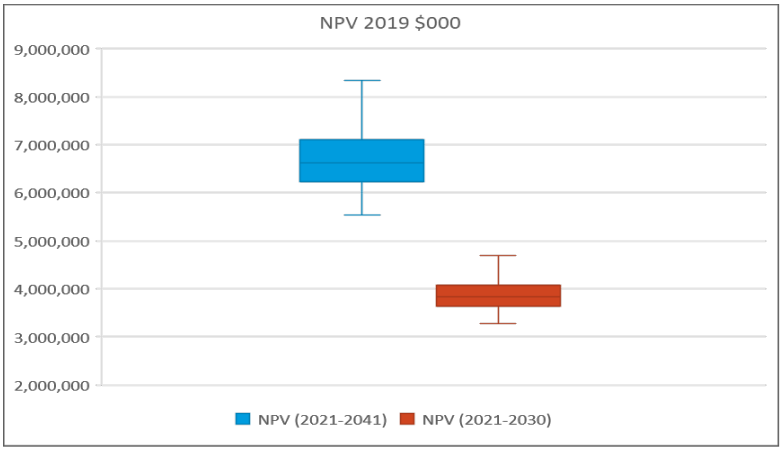


Figure 57. NPV of Cost to Serve Load, Preferred Portfolio

9.8 Sustainability

The Sustainability objective results are determined from the stochastic analysis and are estimated through direct GHG emissions of each generation type plus the impact from spot market purchases imported from the market. The metric is based on tons of carbon dioxide (CO_2) and includes direct emissions from I&M assets and estimated emissions from spot market purchases. The Reference Portfolio capacity expansion plan developed in Step 3 of the IRP process for PJM was used to estimate the average carbon content of the market purchases. CO2 emissions for each portfolio can be found in Exhibits C-1 through C16. A table for all portfolios of CO_2 emissions from direct I&M assets, total direct emissions including estimated market purchase emissions and estimated Lifecycle CO_2e emissions can be found in Exhibits C-24, C-25 and C-26.

The Preferred Portfolio performed consistent with all other portfolios. The Preferred Portfolio reduces annual CO_2 emissions when including equivalent emissions for spot market purchases by a total of

76% when measured against 2005 levels that did not include emissions assumptions from short-term and spot market purchases. Excluding spot market purchase emissions estimates, the Preferred Portfolio realizes CO_2 emissions reductions of 82%. This represents a significant decrease over the 20-year period. The Preferred Portfolio, however, does not reduce emissions from the portfolio as drastically as the sensitivities in which the Cook nuclear facility is considered to continue operations. These portfolios reduce CO_2 emissions by over 90% from 2005 levels. A major factor in developing the Preferred Portfolio was that it resulted in a consistent mix of resource additions prior to the period where a decision would need to be made to extend the lives pf the Cook Nuclear Plant. In the event the Cook Nuclear license were to be extended and the Company executed the Preferred Portfolio near-term plan through 2028, the Company would expect an annual CO_2 emissions reduction of 92% in 2041 when measured against levels from 2005. The Company's resource portfolio impact with potential licenses extension of the Cook Nuclear Plant units will be further examined in subsequent IRPs.

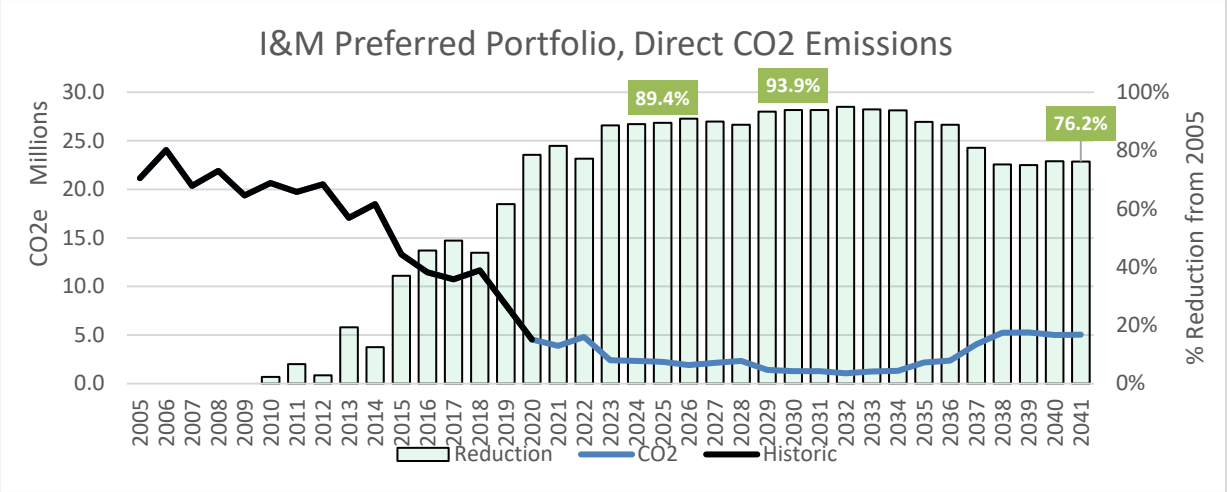


Figure 58. I&M Preferred Portfolio CO_2 Direct Emission

The Preferred Portfolio also results in dramatic reductions of SO_2 and NOx emissions as illustrated in Figure 59.

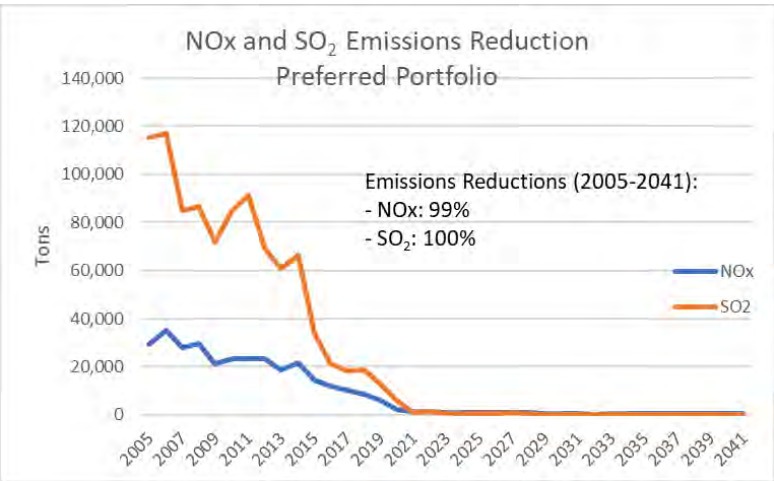


Figure 59: I&M Preferred Portfolio SO_2 and NOx Emissions Reductions

9.9 Market Risk Minimization

The Market Risk Minimization objective metrics includes a calculation of average annual energy sales and average annual energy purchases, each divided by the average annual load and expressed as a percentage over the 20-year time horizon. The metric is meant to capture a measure of reliance on market sales and/or purchases by the resulting portfolios. The greater the energy market purchases, or sales, required by a Candidate Portfolio, the greater the exposure to the risk that energy prices will be higher than the short-run marginal cost of energy production from the I&M fleet. Conversely, the greater the energy market sales by a Candidate Portfolio, the greater the exposure to the risk that energy prices will be lower than the short-run marginal cost of energy production from the I&M fleet. For the market risk minimization, heavy reliance on spot market purchases or sales could lead to an inflated value of a portfolio. With that said, it must be recognized that purchases and sales do not carry the same risk profile given that lesser spot sales reduce the energy cost offset while over-reliance on spot market purchases can potentially result in extremely high-cost power purchases during tight market conditions or even complete lack of supply.

The Preferred Portfolio performed well in terms of energy market risk minimization. The Preferred Portfolio averaged 7.2 percent of purchases as a percent of load and 19.8% of sales as a percent of load over the 2021 to 2041 timeframe.

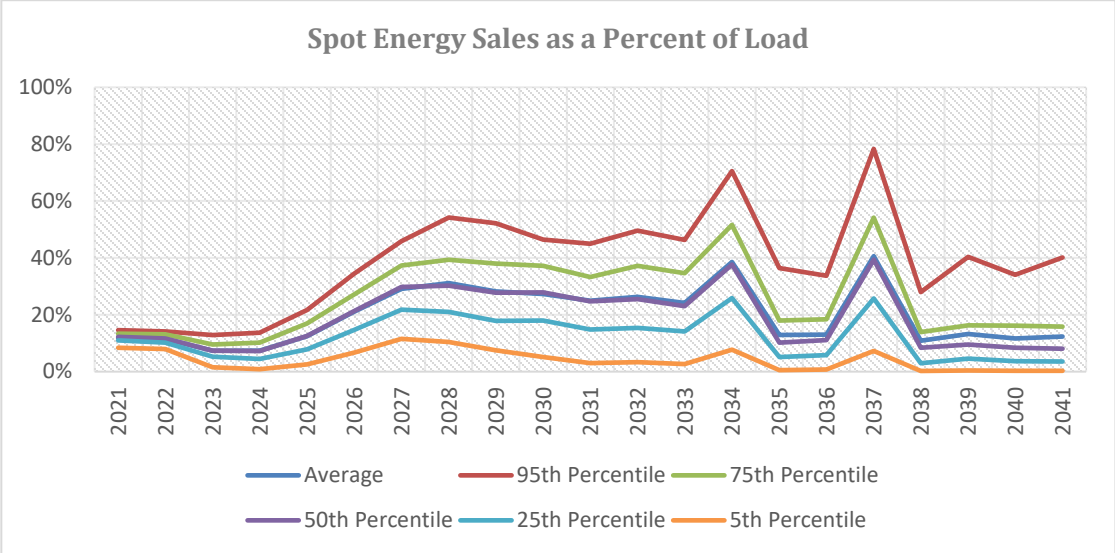


Figure 60. Spot Energy Sales as a Percent of Load

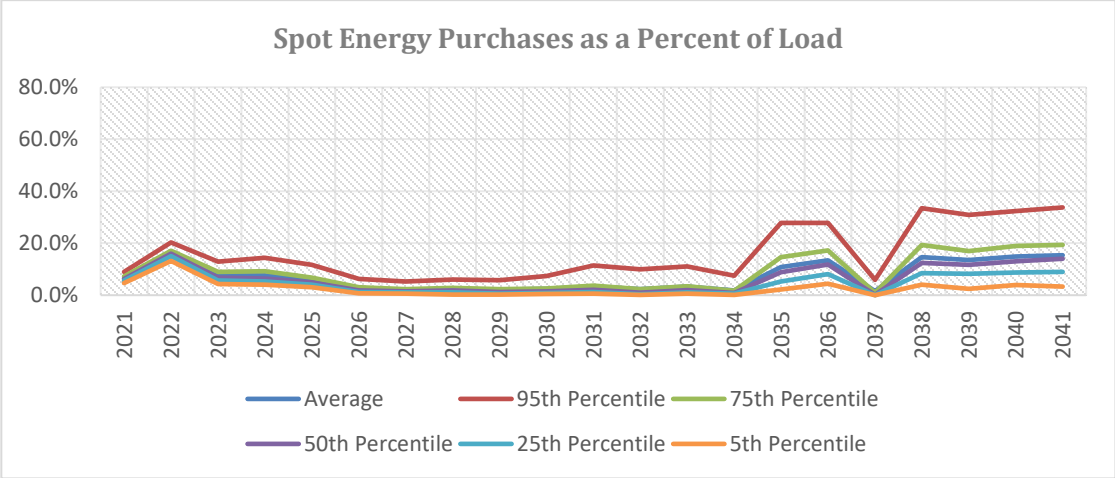


Figure 61. Spot Energy Purchases as a Percent of Load

9.10 Reliability and Resource Diversity

For the Reliability and Resource Diversity objective, the metrics used are the percent above or below I&M's PJM Reserve Margin Obligation (2041), Fuel Mix, and the Number of Unique Generators. The analysis includes the PJM Capacity Obligation, Reserve Margin and PJM's Guidance on Effective Load Carrying Capability (ELCC) for intermittent resource capacity analysis. The Preferred Portfolio had a surplus reserve margin of 4.7% in 2041, 66 unique generators in 2041 and eight fuel types. The retirement of the Rockport Plant by 2028 will result in approximately 50% of I&M's existing capacity resources. An important consideration in development of I&M's Preferred Portfolio was the resulting portfolios support of near-term reliability, resiliency and resource adequacy for I&M's customers

9.11 Supplemental Analysis

Once a Preferred Portfolio was selected, supplemental analysis was conducted to comply with Indiana and Michigan requirements related to Indiana Cause No. 45546 and Michigan Case No. U-20591. As a result, a scenario was modeled in which the OVEC Inter-Company Power Agreement (ICPA) was terminated early in 2030. It is important to note that the ICPA does not contain an early termination clause. This analysis was performed on the basis of certain assumptions that may not be achievable or consistent with the results. Specifically, the resources selected from the Preferred Portfolio were fixed and the OVEC contract termination date was modified to end in 2030. The portfolio was then optimized through the long-term capacity expansion module of AURORA to allow replacement resource options to be identified.

The OVEC 2030 Portfolio includes an identical mix of additions to the Preferred Portfolio except for the incremental addition of 250 MW of CT in 2030 to replace the OVEC capacity removed from the plan.

Because the model did not originally include the OVEC demand charges (non-energy charges), the OVEC demand charges were added to the Preferred Portfolio costs to provide an “apples to apples” comparison with the OVEC 2030 Portfolio, which includes the total cost of the incremental supply resource that replaces I&M’s share of OVEC’s capacity.

The Company also conducted an analysis of its obligations associated with terminating the OVEC ICPA early based on forecasted information from OVEC. This analysis evaluated two early termination scenarios, 1) if only I&M terminated the ICPA early, and 2) if all sponsoring companies, including I&M, terminated the ICPA early (which in practicality means closure of the OVEC units). Under both scenarios, early termination costs included repayment of the remaining debt obligation and decommissioning costs. The scenario in which only I&M terminated the ICPA early also included I&M’s obligation through 2040 for ongoing demand-related costs. This assessment was based on the information available to I&M, and may not represent all costs I&M would incur in either scenario if the ICPA were terminated early. As stated previously though, the ICPA does not contain an early termination clause.

The results of the analysis estimated the net present value of I&M’s obligation under the first scenario to be approximately $102 million and under the second scenario to be approximately $28 million.

10 Short-Term Action Plan and Conclusion

The I&M IRP is regularly reviewed as new information becomes available. I&M intends to pursue the following activities for the IRP Short-Term Action Plan:

1. Continue the planning and regulatory actions necessary to implement additional cost-effective DSM programs in Indiana and Michigan consistent with this IRP that identified the potential for increased levels of cost-effective EE.
2. Obtain the capacity needed for the PJM Planning Year 2024/2025 deficit (currently estimated to be about 314 MW in this IRP).
3. Issue an All-Source RFP in the first quarter of 2022 to seek resources to satisfy the 2025 and 2026 needs (in-service by the end of 2024 and 2025), which the Preferred Portfolio identified as 800 MW of wind and 500 MW of solar.
4. Issue an All-Source RFP in 2023 or 2024 to satisfy identified needs, targeting 2027 and 2028 renewables, storage, and gas additions (in-service by the end of 2026 and 2027), totaling 800MW of solar, 60 MW of storage as a hybrid resource, and 1,000 MW of gas peaking.
5. Initiate efforts to evaluate Cook relicensing costs.
6. Adjust this action plan and future IRPs to reflect changing circumstances, as necessary.

Since the Company's last IRP, I&M accomplishments towards that Short-Term Action Plan included:

- The Company entered into a settlement agreement related to the Rockport Unit 2 bringing clarity to how Rockport Unit 2 will be used to serve customers after the lease ends.

- In this IRP, the Company included the introduction of additional battery storage technology as part of its Preferred Portfolio and is preparing an All-Source RFP in 2022 to solicit resource additions identified in 2025 and 2026.

- The Company completed a Market Potential Study in 2021 assessing the potential for DSM/EE over a twenty year forecast period and used these results in this IRP.

- As discussed in sections 6.2 and 6.3, the Company performed a Renewables RFP in November 2020 and an All-Source Informational RFP as part of this IRP to evaluate market prices for renewable resources.

- The Company continues to monitor PJM's Capacity Performance rule and has notified PJM of its intention to continue as Fixed Resource Requirement (FRR) Entity through the 2023/2024 PJM Planning Year ending May 31, 2024.

- Finally, while no federal regulatory requirements to reduce CO_2 emissions are in place, AEP has taken action to reduce and offset CO_2 emissions from its generating fleet. AEP expects CO_2 emissions from its operations to continue to decline due to the retirement of the Rockport Plant by 2029 and actions taken to diversify the generation fleet and increase energy efficiency where there is regulatory support for such activities.

10.1 Conclusion:

This IRP incorporated an extensive and thorough process that engaged Stakeholders through five public Stakeholder meetings and tested several Scenarios and many different portfolios to arrive at a Preferred Portfolio. The Preferred Portfolio performs well across a range of metrics that were used in the Balanced Scorecard. The Preferred Portfolio is the best performing portfolio across multiple measures on the Balanced Scorecard and provides several additional benefits to I&M customers and Stakeholders, including the following:

Affordability and Rate Stability:

- The Preferred Portfolio is among the lowest reasonable cost portfolios measured on both a 20-year and 10-year cost to serve load metric. The only comparable portfolios are the Cook 2050+ life extension portfolios, which do not include consideration of the capital investments required to extend the life of those facilities (will be evaluated further in future IRPs).
- The Preferred Portfolio has one of the lowest absolute values for the 95th percentile value of NPV cost to serve load. All portfolios share a similar upside risk. This translates into having one of the lowest risk of increases in cost across the portfolios.
- Resource type additions in the Preferred Portfolio are similar through 2028 to the portfolios that modeled Cook license extensions (Cook 2050+), resulting in a “no regrets” position for the next several years.
- The Preferred Portfolio includes dispatchable resources that can enhance opportunities for wholesale sales without overexposure to market risks.
- The Preferred Portfolio takes advantage of existing tax incentives for new wind, solar and hybrid solar resources.
- The Preferred Portfolio requires the lowest capital requirements during the near-term planning period, which also lowers the risk associated with the availability of acquiring the necessary resources.

Market Risk

- The Preferred Portfolio mitigates overreliance on market purchases and sales for capacity and energy throughout the forecast horizon.
- The Preferred Portfolio requires short-term PJM capacity purchases for capacity in 2024 to replace Rockport Unit 2 capacity.
- Market purchases and sales of energy are reasonable and there is less reliance on the spot energy market, with the Preferred Portfolio averaging 7.2% for purchases and 19.8% for sales over the forecast horizon.
- The Preferred Portfolio results in small amounts of surplus capacity over the forecast period
- The Preferred Portfolio avoids reliance on any single resource or fuel type, with potentially over 60 unique resources and eight unique fuel types.

Sustainability:

- The Preferred Portfolio leads to a lower carbon future, achieving 76% reduction by 2041, when including CO_2 emissions for short-term and spot market purchases, from 2005 levels that did not include CO_2 emissions assumptions from short-term and spot market purchases. Excluding short-term and spot market purchase emissions estimates, the Preferred Portfolio realizes CO_2 emissions reductions of 82% by 2041.
- The Preferred Portfolio includes a substantial amount of renewable resources as it continues to transform its fleet.
- The Preferred Portfolio maintains the optionality for the Cook License Extensions which maintains the opportunity to extend the operations of a significant emission-free resource.
- The Preferred Portfolio provides potential opportunities for natural gas conversion to hydrogen fuel later in the planning period.
- The Preferred Portfolio significantly reduces the reliance on coal fired generation by 2029.

Reliability and Resource Diversity:

- The Preferred Portfolio includes additions that when added to the Company's current resources, provides a more diversified portfolio of supply-side and demand-side resources that will allow the Company to optimize the use of each resource type to ensure the reliable supply of electricity while also maintaining PJM capacity requirements and supporting resource adequacy.
- The Combustion Turbine (CT) resources provide flexible, fast ramping capabilities and can help mitigate risks associated with intermittent renewable resource additions.
  The Preferred Portfolio manages the reliance on market purchases and sales for capacity and energy purposes. In addition, it avoids reliance on any single resource or fuel type, with potentially over 60 unique resources and eight unique fuel types.

In conjunction with the Company's Short-Term Action Plan, the Preferred Portfolio offers I&M significant flexibility should future conditions differ considerably from the assumptions underpinning the Preferred Portfolio.

Appendix Vol. 1 – Included in Hard Copy

Exhibit A	Load Forecast Table
Exhibit B	IRP Public Summary Document
Exhibit C	Case and Scenario Results
Exhibit D	New Generation Resources
Exhibit E	I&M Hourly Data
Exhibit G	Stakeholder Process Exhibits
Exhibit H	Cross Reference Table

Exhibit A Load Forecast Table

Exhibit A-1

Indiana Michigan Power Company
Annual Internal Energy Requirements and Growth Rates
2011-2041

	Residential Sales		Commercial Sales		Industrial Sales		Other Internal Sales		Losses		Total Internal Energy Requiremen	
Year	GWH	% Growth	GWH	% Growth	GWH	% Growth	GWH	% Growth	GWH	% Growth	GWH	% Grow
Actual												
2011	5,997	---	5,045	---	7,523	---	4,975	---	2,388	---	25,929	---
2012	5,771	-3.8	5,001	-0.9	7,556	0.4	5,112	2.8	2,290	-4.1	25,731	-0.8
2013	5,778	0.1	4,943	-1.2	7,522	-0.5	5,103	-0.2	2,374	3.6	25,719	0.0
2014	5,776	0.0	4,884	-1.2	7,640	1.6	5,103	0.0	2,339	-1.5	25,741	0.1
2015	5,483	-5.1	4,891	0.2	7,570	-0.9	5,033	-1.4	2,069	-11.5	25,047	-2.7
2016	5,578	1.7	4,979	1.8	7,780	2.8	5,121	1.8	1,949	-5.8	25,407	1.4
2017	5,311	-4.8	4,785	-3.9	7,781	0.0	5,032	-1.7	1,837	-5.8	24,745	-2.6
2018	5,731	7.9	4,852	1.4	7,836	0.7	4,678	-7.0	1,906	3.8	25,002	1.0
2019	5,409	-5.6	4,685	-3.4	7,589	-3.1	4,530	-3.2	1,855	-2.7	24,068	-3.7
2020	5,464	1.0	4,475	-4.5	7,225	-4.8	3,476	-23.3	1,645	-11.3	22,286	-7.4
Forecast												
2021*	5,399	-1.2	4,535	1.3	7,504	3.9	3,000	-13.7	1,800	9.4	22,237	-0.2
2022	5,420	0.4	4,496	-0.9	7,659	2.1	3,023	0.8	1,619	-10.1	22,217	-0.1
2023	5,441	0.4	4,532	0.8	7,647	-0.1	3,036	0.4	1,593	-1.6	22,250	0.2
2024	5,428	-0.3	4,551	0.4	7,603	-0.6	3,047	0.4	1,625	2.0	22,254	0.0
2025	5,440	0.2	4,557	0.1	7,624	0.3	3,013	-1.1	1,614	-0.6	22,248	0.0
2026	5,444	0.1	4,530	-0.6	7,648	0.3	2,993	-0.7	1,611	-0.2	22,226	-0.1
2027	5,444	0.0	4,504	-0.6	7,696	0.6	3,000	0.2	1,616	0.4	22,261	0.2
2028	5,453	0.2	4,489	-0.3	7,763	0.9	3,014	0.5	1,616	0.0	22,334	0.3
2029	5,463	0.2	4,482	-0.1	7,810	0.6	3,018	0.1	1,622	0.4	22,395	0.3
2030	5,467	0.1	4,492	0.2	7,853	0.6	3,027	0.3	1,627	0.3	22,466	0.3
2031	5,483	0.3	4,515	0.5	7,902	0.6	3,036	0.3	1,633	0.4	22,569	0.5
2032	5,502	0.3	4,530	0.3	7,950	0.6	3,049	0.4	1,640	0.4	22,670	0.4
2033	5,523	0.4	4,527	0.0	8,007	0.7	3,054	0.2	1,646	0.4	22,757	0.4
2034	5,543	0.4	4,530	0.1	8,064	0.7	1,188	-61.1	1,580	-4.0	20,905	-8.1
2035	5,566	0.4	4,541	0.2	8,110	0.6	514	-56.7	1,559	-1.3	20,289	-2.9
2036	5,589	0.4	4,556	0.3	8,149	0.5	514	0.1	1,566	0.4	20,374	0.4
2037	5,615	0.5	4,564	0.2	8,188	0.5	515	0.1	1,572	0.4	20,453	0.4
2038	5,639	0.4	4,563	0.0	8,232	0.5	251	-51.3	1,564	-0.5	20,248	-1.0
2039	5,664	0.4	4,510	-1.2	8,280	0.6	65	-74.0	1,560	-0.2	20,079	-0.8
2040	5,688	0.4	4,472	-0.8	8,324	0.5	65	-0.1	1,561	0.1	20,111	0.2
2041	5,711	0.4	4,504	0.7	8,360	0.4	65	-0.1	1,569	0.5	20,210	0.5
*Includes 6 months actual and 6 months forecast data.												
Average Annual Growth Rates												
2011-2020		-1.0		-1.3		-0.4		-3.9		-4.1		-1.7
2022-2041		0.3		0.0		0.5		-18.3		-0.2		-0.5

Exhibit A-2a

Indiana Michigan Power Company-Indiana
Annual Internal Energy Requirements and Growth Rates
2011-2041

	Residential Sales		Commercial Sales		Industrial Sales		Other Internal Sales		Losses		Total Internal Energy Requiremen	
Year	GWH	% Growth	GWH	% Growth	GWH	% Growth	GWH	% Growth	GWH	% Growth	GWH	% Grow
Actual												
2011	4,750	---	4,240	---	6,727	---	4,352	---	1,744	---	21,814	---
2012	4,553	-4.1	4,183	-1.3	6,755	0.4	4,477	2.9	1,713	-1.8	21,681	-0.6
2013	4,564	0.2	4,134	-1.2	6,709	-0.7	4,483	0.1	1,713	0.0	21,603	-0.4
2014	4,556	-0.2	4,090	-1.1	6,809	1.5	4,479	-0.1	1,660	-3.1	21,594	0.0
2015	4,314	-5.3	4,086	-0.1	6,729	-1.2	4,412	-1.5	1,365	-17.7	20,906	-3.2
2016	4,392	1.8	4,151	1.6	6,948	3.3	4,487	1.7	1,148	-16.0	21,127	1.1
2017	4,165	-5.2	3,977	-4.2	6,965	0.2	4,422	-1.4	1,038	-9.5	20,568	-2.6
2018	4,510	8.3	4,042	1.6	7,018	0.8	4,055	-8.3	1,580	52.1	21,204	3.1
2019	4,246	-5.8	3,910	-3.3	6,794	-3.2	3,925	-3.2	1,505	-4.7	20,380	-3.9
2020	4,268	0.5	3,736	-4.5	6,461	-4.9	3,210	-18.2	1,331	-11.5	19,005	-6.7
Forecast												
2021*	4,216	-1.2	3,776	1.1	6,731	4.2	2,932	-8.7	1,510	13.4	19,165	0.8
2022	4,240	0.6	3,740	-1.0	6,897	2.5	2,953	0.7	1,369	-9.3	19,198	0.2
2023	4,259	0.4	3,766	0.7	6,874	-0.3	2,965	0.4	1,346	-1.6	19,210	0.1
2024	4,246	-0.3	3,782	0.4	6,828	-0.7	2,976	0.4	1,372	1.9	19,205	0.0
2025	4,254	0.2	3,790	0.2	6,846	0.3	2,978	0.0	1,365	-0.6	19,231	0.1
2026	4,257	0.1	3,770	-0.5	6,866	0.3	2,983	0.2	1,362	-0.2	19,239	0.0
2027	4,259	0.0	3,750	-0.5	6,909	0.6	2,990	0.2	1,368	0.4	19,276	0.2
2028	4,267	0.2	3,739	-0.3	6,972	0.9	3,004	0.5	1,368	0.0	19,350	0.4
2029	4,276	0.2	3,733	-0.1	7,016	0.6	3,008	0.1	1,373	0.4	19,407	0.3
2030	4,281	0.1	3,736	0.1	7,056	0.6	3,017	0.3	1,377	0.3	19,468	0.3
2031	4,295	0.3	3,753	0.4	7,102	0.6	3,026	0.3	1,383	0.4	19,558	0.5
2032	4,311	0.4	3,768	0.4	7,147	0.6	3,039	0.4	1,389	0.4	19,654	0.5
2033	4,330	0.4	3,767	0.0	7,201	0.8	3,044	0.2	1,395	0.4	19,736	0.4
2034	4,348	0.4	3,769	0.1	7,254	0.7	1,179	-61.3	1,328	-4.8	17,879	-9.4
2035	4,369	0.5	3,780	0.3	7,297	0.6	504	-57.2	1,307	-1.6	17,257	-3.5
2036	4,390	0.5	3,794	0.4	7,332	0.5	505	0.1	1,313	0.5	17,335	0.5
2037	4,413	0.5	3,802	0.2	7,368	0.5	505	0.1	1,319	0.4	17,407	0.4
2038	4,435	0.5	3,800	-0.1	7,408	0.6	242	-52.2	1,311	-0.6	17,195	-1.2
2039	4,458	0.5	3,748	-1.4	7,453	0.6	56	-76.7	1,307	-0.3	17,022	-1.0
2040	4,480	0.5	3,712	-1.0	7,494	0.5	56	0.1	1,308	0.1	17,049	0.2
2041	4,501	0.5	3,743	0.8	7,527	0.4	56	0.1	1,315	0.6	17,143	0.5
*Includes 6 months actual and 6 months forecast data.												
Average Annual Growth Rates												
2011-2020		-1.2		-1.4		-0.4		-3.3		-3.0		-1.5
2022-2041		0.3		0.0		0.5		-18.8		-0.2		-0.6

Exhibit A-2b

Indiana Michigan Power Company-Michigan
Annual Internal Energy Requirements and Growth Rates
2011-2041

	Residential Sales		Commercial Sales		Industrial Sales		Other Internal Sales		Losses		Total Internal Energy Requiremen	
Year	GWH	% Growth	GWH	% Growth	GWH	% Growth	GWH	% Growth	GWH	% Growth	GWH	% Grow
Actual												
2011	1,248	---	805	---	796	---	623	---	644	---	4,114	---
2012	1,217	-2.4	818	1.7	802	0.8	635	1.9	577	-10.3	4,050	-1.6
2013	1,215	-0.2	809	-1.1	813	1.4	619	-2.5	660	14.3	4,116	1.6
2014	1,219	0.4	794	-1.9	831	2.2	624	0.8	679	2.8	4,147	0.8
2015	1,169	-4.2	806	1.5	841	1.2	621	-0.5	704	3.7	4,140	-0.2
2016	1,186	1.4	828	2.8	831	-1.1	634	2.0	802	13.9	4,280	3.4
2017	1,145	-3.4	808	-2.4	816	-1.8	609	-3.8	798	-0.5	4,177	-2.4
2018	1,221	6.6	810	0.2	818	0.3	623	2.3	326	-59.2	3,798	-9.1
2019	1,162	-4.8	775	-4.3	795	-2.9	605	-2.9	350	7.4	3,688	-2.9
2020	1,197	3.0	740	-4.6	764	-3.9	266	-56.0	314	-10.3	3,280	-11.0
Forecast												
2019*	1,182	-1.2	760	2.7	772	1.1	68	-74.4	290	-7.6	3,073	-6.3
2022	1,180	-0.2	757	-0.4	762	-1.3	70	2.5	250	-13.8	3,018	-1.8
2023	1,183	0.2	766	1.3	774	1.5	71	1.3	247	-1.2	3,041	0.7
2024	1,181	-0.1	768	0.2	776	0.3	71	0.5	253	2.3	3,049	0.3
2025	1,187	0.5	767	-0.2	778	0.3	35	-50.4	250	-1.1	3,017	-1.1
2026	1,186	0.0	760	-0.9	782	0.4	10	-71.1	248	-0.6	2,987	-1.0
2027	1,185	-0.1	754	-0.8	786	0.6	10	-0.6	249	0.2	2,985	-0.1
2028	1,186	0.0	750	-0.5	791	0.6	10	-0.7	248	-0.3	2,985	0.0
2029	1,186	0.1	749	-0.2	794	0.4	10	-0.8	249	0.2	2,988	0.1
2030	1,186	0.0	756	1.0	797	0.4	10	-0.8	249	0.3	2,999	0.4
2031	1,188	0.2	763	0.8	800	0.4	10	-0.8	250	0.4	3,011	0.4
2032	1,191	0.2	762	-0.1	803	0.3	10	-0.9	251	0.2	3,015	0.1
2033	1,193	0.2	761	-0.1	806	0.4	10	-0.9	251	0.2	3,021	0.2
2034	1,195	0.2	761	0.0	810	0.4	10	-1.0	251	0.1	3,026	0.2
2035	1,197	0.2	761	0.1	813	0.4	9	-1.0	252	0.1	3,032	0.2
2036	1,199	0.2	762	0.1	817	0.4	9	-1.0	252	0.2	3,039	0.2
2037	1,202	0.2	762	0.1	820	0.4	9	-1.0	253	0.2	3,046	0.2
2038	1,204	0.2	763	0.1	823	0.4	9	-1.1	253	0.2	3,053	0.2
2039	1,206	0.2	762	-0.1	827	0.4	9	-1.1	254	0.1	3,057	0.2
2040	1,208	0.1	761	-0.2	830	0.4	9	-1.2	254	0.1	3,061	0.1
2041	1,209	0.1	761	0.1	834	0.4	9	-1.2	255	0.3	3,067	0.2
Average Annual Growth Rates												
2011-2020		-0.5		-0.9		-0.5		-9.0		-7.7		-2.5
2022-2041		0.1		0.0		0.5		-10.3		0.1		0.1

*Includes 6 months actual and 6 months forecast data.

Exhibit A-3

Indiana Michigan Power Company
Composition of Forecast of Other Internal Sales (GWh)
2019-2038

	Indiana			Michigan			Total Company		
Year	Street Lighting	Wholesale	Total	Street Lighting	Wholesale	Total	Street Lighting	Wholesale	Total
2022	56	2,897	2,953	10	60	70	67	2,957	3,023
2023	56	2,909	2,965	10	61	71	66	2,970	3,036
2024	56	2,920	2,976	10	61	71	66	2,981	3,047
2025	56	2,922	2,978	10	25	35	66	2,947	3,013
2026	56	2,927	2,983	10	0	10	66	2,927	2,993
2027	56	2,934	2,990	10	0	10	66	2,934	3,000
2028	56	2,948	3,004	10	0	10	66	2,948	3,014
2029	56	2,952	3,008	10	0	10	66	2,952	3,018
2030	56	2,961	3,017	10	0	10	66	2,961	3,027
2031	56	2,970	3,026	10	0	10	66	2,970	3,036
2032	56	2,983	3,039	10	0	10	66	2,983	3,049
2033	56	2,988	3,044	10	0	10	66	2,988	3,054
2034	56	1,123	1,179	10	0	10	66	1,123	1,188
2035	56	448	504	9	0	9	65	448	514
2036	56	449	505	9	0	9	65	449	514
2037	56	449	505	9	0	9	65	449	515
2038	56	185	242	9	0	9	65	185	251
2039	56	0	56	9	0	9	65	0	65
2040	56	0	56	9	0	9	65	0	65
2041	56	0	56	9	0	9	65	0	65

Exhibit A-4

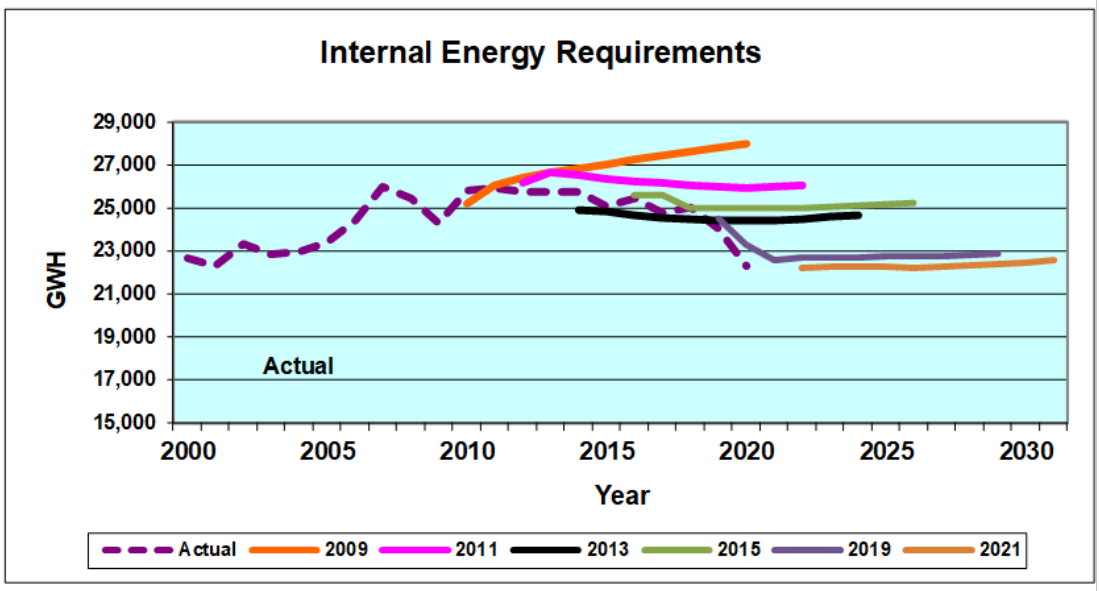
Indiana Michigan Power Company
Seasonal and Annual Peak Internal Demands, Energy Requirements and Load Factor
2011-2041

	Summer Peak			Preceding Winter Peak			Annual Peak, Energy and Load Factor				
	Date	MW	% Growth	Date	MW	% Growth	MW	% Growth	GWH	% Growth	Load Factor %
Actual											
2011	07/21/11	4,837	---	12/13/10	3,785	---	4,837	---	25,929	---	61.2
2012	07/06/12	4,726	-2.3	01/20/12	3,686	-2.6	4,726	-2.3	25,731	-0.8	62.2
2013	09/10/13	4,540	-3.9	01/22/13	3,782	2.6	4,540	-3.9	25,719	0.0	64.7
2014	09/05/14	4,388	-3.4	01/22/14	3,938	4.1	4,388	-3.4	25,741	0.1	66.8
2015	07/28/15	4,398	0.2	01/14/15	3,952	0.4	4,398	0.2	25,047	-2.7	65.0
2016	08/11/16	4,547	3.4	01/13/16	3,702	-6.3	4,547	3.4	25,407	1.4	63.8
2017	07/19/17	4,230	-7.0	12/15/16	3,795	2.5	4,230	-7.0	24,745	-2.6	66.8
2018	06/18/18	4,369	3.3	01/16/18	3,723	-1.9	4,369	3.3	25,002	1.0	65.1
2019	07/15/19	4,191	-4.1	01/30/19	3,766	1.2	4,191	-4.1	24,068	-3.7	65.5
2020	07/09/20	3,970	-5.3	12/19/19	3,445	-8.5	3,970	-5.3	22,286	-7.4	64.1
Forecast											
2021*		4,398	10.8		3,365	-2.3	3,930	-1.0	22,237	-0.2	64.6
2022		3,932	-10.6		3,380	0.4	3,932	0.0	22,217	-0.1	64.3
2023		3,942	0.2		3,378	-0.1	3,942	0.2	22,250	0.2	64.4
2024		3,936	-0.1		3,368	-0.3	3,936	-0.1	22,254	0.0	64.5
2025		3,943	0.2		3,382	0.4	3,943	0.2	22,248	0.0	64.4
2026		3,944	0.0		3,372	-0.3	3,944	0.0	22,226	-0.1	64.2
2027		3,949	0.1		3,374	0.1	3,949	0.1	22,261	0.2	64.4
2028		3,952	0.1		3,375	0.0	3,952	0.1	22,334	0.3	64.5
2029		3,972	0.5		3,391	0.5	3,972	0.5	22,395	0.3	64.4
2030		3,985	0.3		3,400	0.3	3,985	0.3	22,466	0.3	64.2
2031		4,004	0.5		3,414	0.4	4,004	0.5	22,569	0.5	64.3
2032		4,012	0.2		3,417	0.1	4,012	0.2	22,670	0.4	64.5
2033		4,038	0.6		3,439	0.7	4,038	0.6	22,757	0.4	64.3
2034		3,670	-9.1		3,298	-4.1	3,670	-9.1	20,905	-8.1	64.8
2035		3,685	0.4		3,108	-5.7	3,685	0.4	20,289	-2.9	62.8
2036		3,691	0.2		3,115	0.2	3,691	0.2	20,374	0.4	63.0
2037		3,717	0.7		3,138	0.7	3,717	0.7	20,453	0.4	62.8
2038		3,659	-1.6		3,143	0.1	3,659	-1.6	20,248	-1.0	63.0
2039		3,661	0.1		3,065	-2.5	3,661	0.1	20,079	-0.8	62.6
2040		3,657	-0.1		3,059	-0.2	3,657	-0.1	20,111	0.2	62.8
2041		3,690	0.9		3,081	0.7	3,690	0.9	20,210	0.5	62.5

***Total energy requirements reflect 3 months actual and 9 months forecast data.**

Exhibit A-5

INDIANA MICHIGAN POWER COMPANY
COMPARISON OF FORECASTS



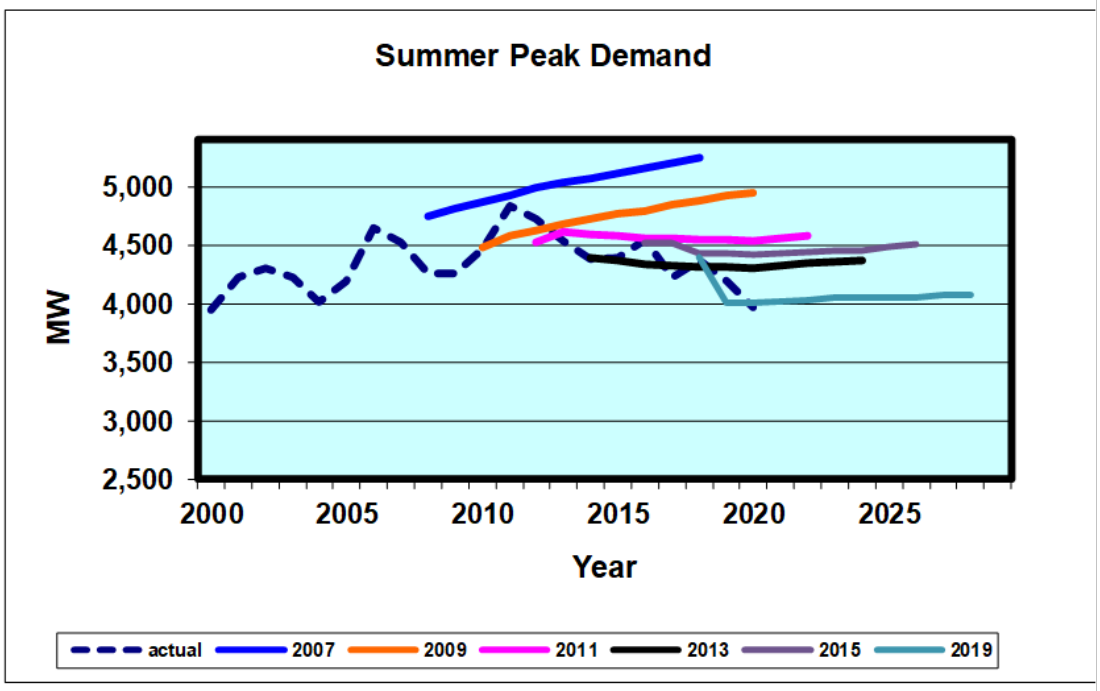
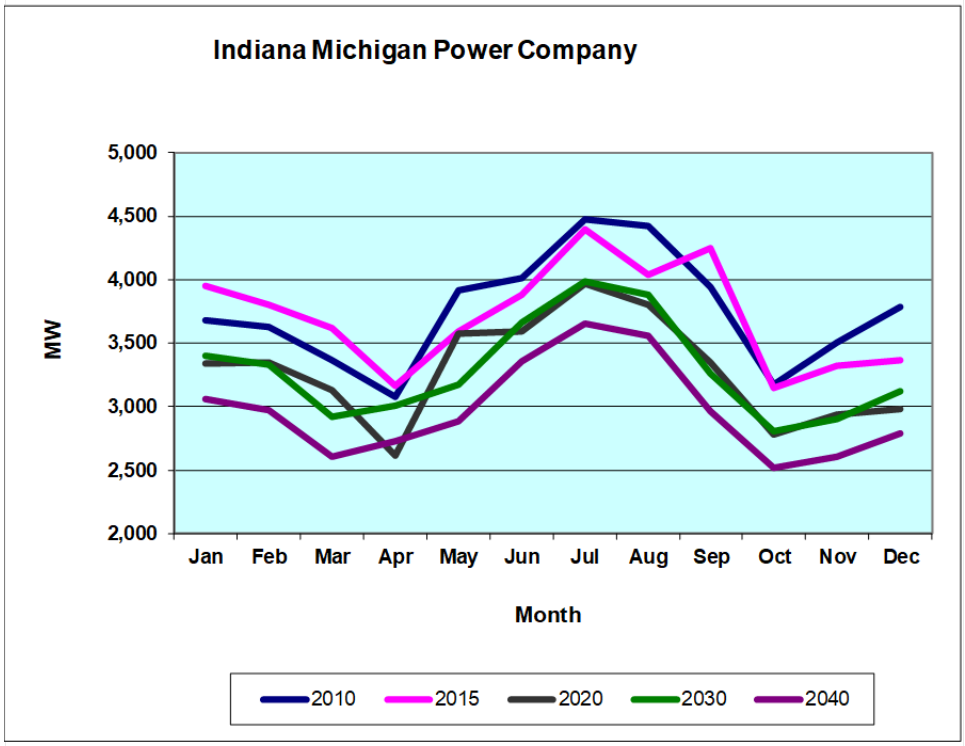


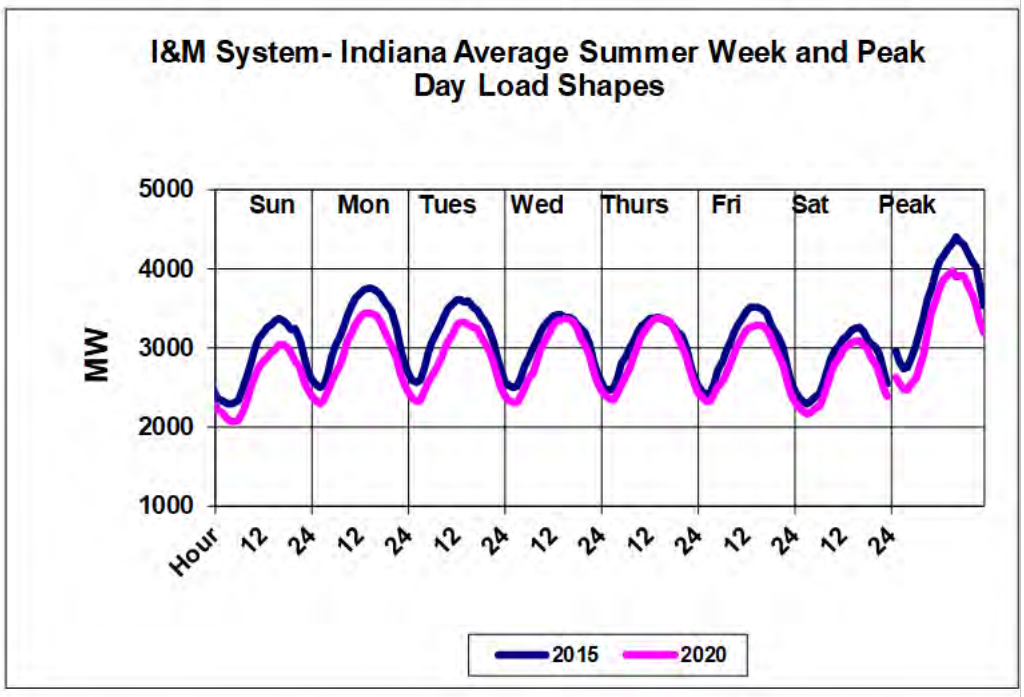
Exhibit A-6

Indiana Michigan Power Company
Profiles of Monthly Peak Internal Demands
2008, 2013, 2018 (Actual)
2028 and 2038



INDIANA MICHIGAN POWER
An AEP Company

Exhibit A-7



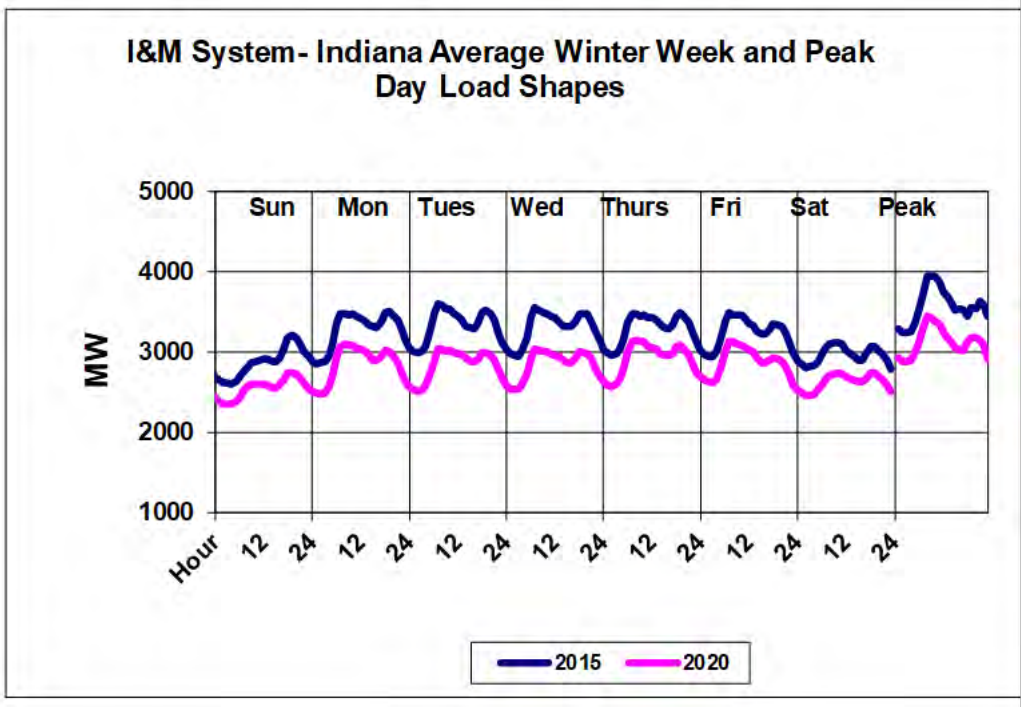
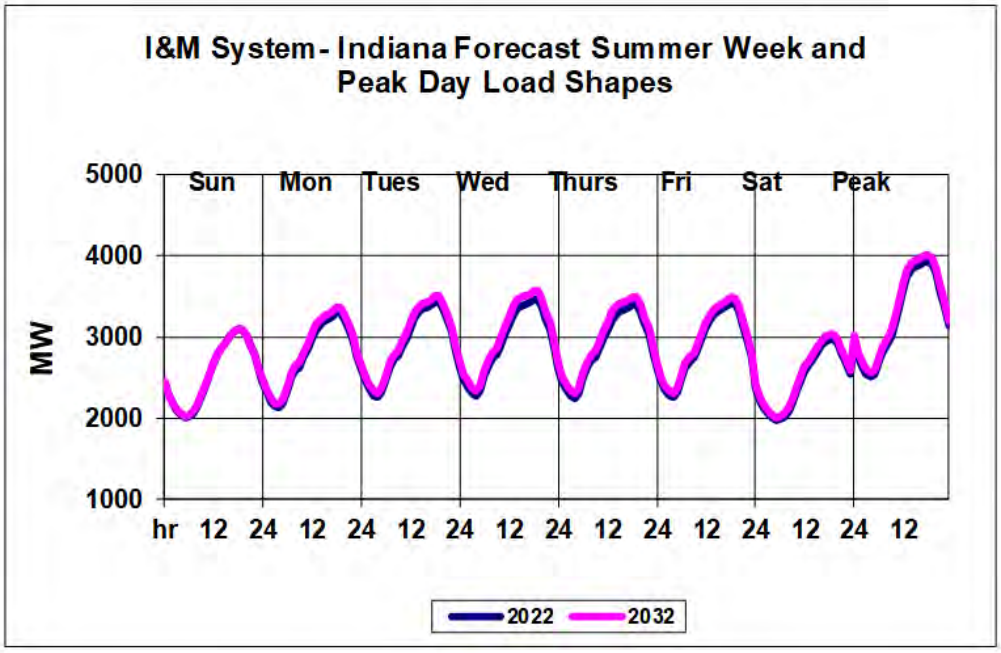


Exhibit A-8


I&M System- Indiana Forecast Summer Week and Peak Day Load Shapes
MW
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4000
3000
2000
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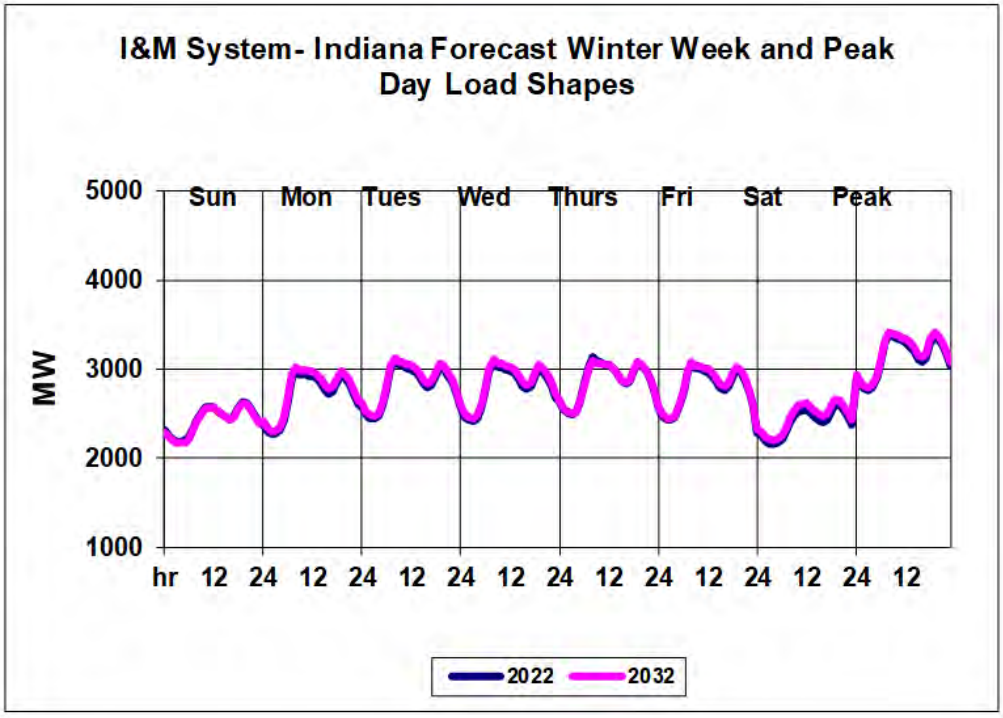
I&M System- Indiana Forecast Winter Week and Peak Day Load Shapes
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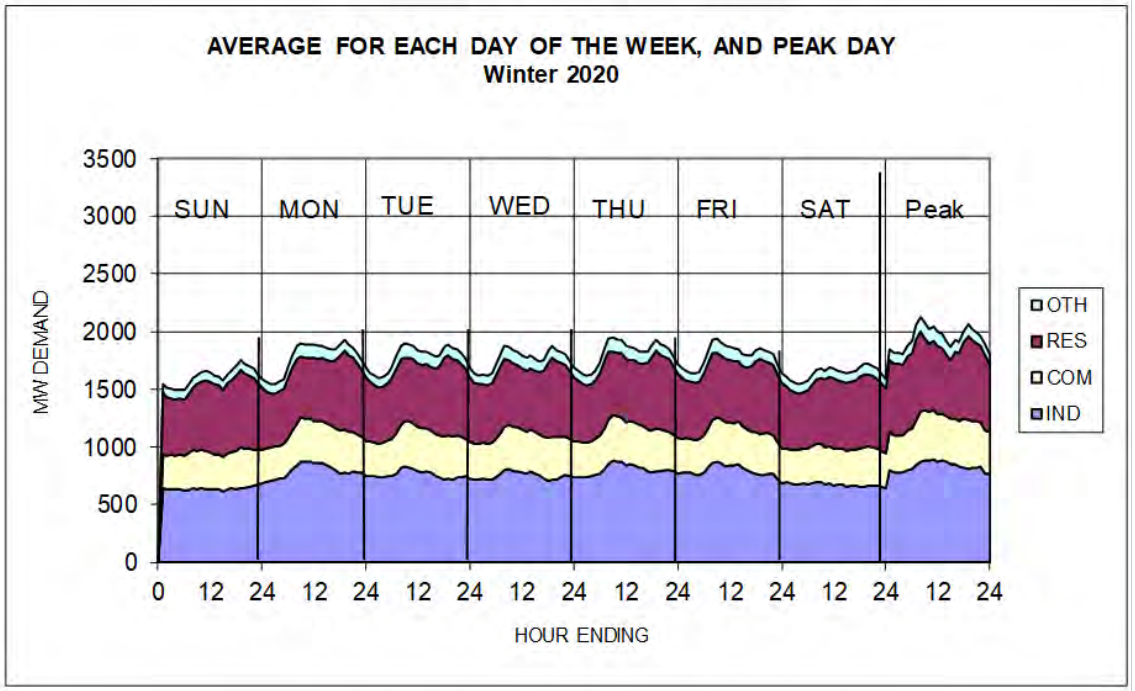
Exhibit A-9

I&M - INDIANA JURISDICTION
HOURLY DEMAND BY CLASS



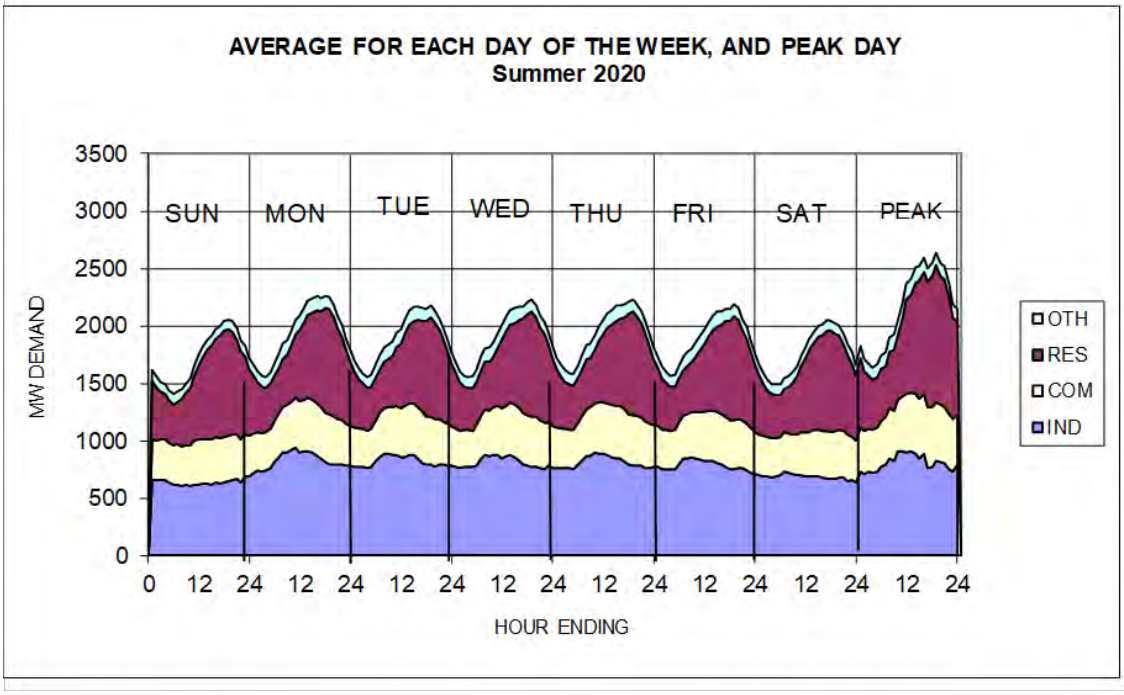


Exhibit A-10

Indiana Michigan Power Company
Recorded and Weather Normalized Peak Load (MW) and Energy (GWh)
2011-2020

Indiana Michigan Power Company	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
A. Peak Load - Summer										
1. Recorded	4,837	4,726	4,540	4,388	4,398	4,547	4,230	4,369	4,191	3,970
2. Weather - Normalized	4,479	4,584	4,577	4,519	4,532	4,580	4,512	4,407	4,244	3,955
B. Peak Load - Preceding Winter										
1. Recorded	3,785	3,686	3,782	3,938	3,952	3,702	3,795	3,723	3,766	3,445
2. Weather - Normalized	3,808	3,813	3,804	3,825	3,811	3,744	3,704	3,728	3,654	3,555
C. Energy										
1. Recorded	25,929	25,731	25,719	25,741	25,047	25,407	24,745	25,002	24,068	22,286
2. Weather - Normalized	25,646	25,651	25,660	25,654	25,100	25,285	25,029	24,576	23,933	22,354

Exhibit A-11

INDIANA MICHIGAN POWER COMPANY LOAD FORECAST
DATA SOURCES OUTSIDE THE COMPANY

DATA SERIES	FREQUENCY	GEOGRAPHIC	INTERVAL	SOURCE	ADJUSTMENT
Average Daily Temperatures at time of Daily Peak Load	Daily	Selected weather stations throughout the AEP System	1984-2020	NOAA (1) Weather Bank	None
Heating and Cooling Degree-Days	Monthly	Selected weather stations throughout the AEP System	1/84-1/21	NOAA (1) Weather Bank	
Gross Regional Product, Manufacturing	Monthy	U. S.	1984-2057	Moody's Analytics (2)	Extrapolated Forecast
Implicit Deflator-Gross Domestic Product	Monthly	U. S.	1980-2057	Moody's Analytics (2)	Extrapolated Forecast
U.S. Gas Prices, U.S. Gas Consumption	Monthly	U.S.	1980-2057	DOE/EIA (6)	Growth rates used for forecast with historical data, extrapolated forecast
Federal Reserve Board Industrial Production Indexes - Selected Industries	Monthly	U. S.	1975-2057	Moody's Analytics (2) FRB (3)	None
Residential Appliance Efficiencies, Saturation Trends, Housing Size	Annual, Monthly	East North Central Census Region	1995-2057	DOE via Itron(7) Itron	Extrapolated projections, applied trends to Company Saturations
Commericial Equipment Efficiencies, Saturations Square-Footage	Annual, Monthly	East North Central Census Region	1995-2057	DOE via Itron(8) Itron	Extrapolated projections
U. S., Indiana and Michigan Natural Gas Prices by Sector	Monthly	U. S.	1980-2020	DOE/EIA (4)	None
Gross Regional Product	Monthly	Selected Indiana and Michigan Counties	1980-2057	Moody's Analytics (5)	Extrapolated Forecast
Employment (Total and Selected Sectors), Personal Income and Population	Monthly	Selected Indiana and Michigan Counties	1980-2057	Moody's Analytics (5)	Extrapolated Forecast

Source Citations:
(1) "Local Climatological Data," National Oceanographic and Atmospheric Administration.
(2) January 2021 Forecast, Moody's Analytics
(3) Board of Governors of Federal Reserve System, "Federal Reserve Statistical Release," 1975-2020
(4) U. S. Department of Energy/Energy Information Administration "Natural Gas Monthly," Selected Issues.
(5) January 2021 Regional Forecast, Moody's Analytics
(6) U.S. Department of Energy/Energy Information Administration "Annual Energy Outlook 2021 with Projections to 2050" .
(8) Itron Summer 2020, DOE "Annual Energy Outlook 2020"
(7) Itron Summer 2020 DOE "Annual Energy Outlook 2020"

Exhibit A-12

Indiana Michigan and Indiana and Michigan Jurisdictions
DSM/Energy Efficiency Included in Load Forecast
Energy (GWh) and Coincident Peak Demand (MW)

	I&M DSM/EE			I&M - Indiana DSM/EE			I&M - Michigan DSM/EE		
Year	Energy	Summer* Demand	Winter* Demand	Energy	Summer* Demand	Winter* Demand	Energy	Summer* Demand	Winter* Demand
2022	27.0	6.0	8.7	20.3	5.6	7.9	6.7	0.4	0.8
2023	37.6	8.1	8.3	29.1	7.6	5.8	8.4	0.5	2.5
2024	33.0	5.7	8.3	27.3	5.4	6.6	5.7	0.3	1.7
2025	31.5	1.9	8.8	28.6	1.5	8.4	2.9	0.5	0.4
2026	53.3	5.0	12.2	44.6	3.5	11.0	8.7	1.5	1.2
2027	72.9	7.7	15.2	59.1	5.4	13.4	13.9	2.3	1.9
2028	89.2	10.0	17.6	71.2	7.0	15.2	18.1	3.0	2.5
2029	93.8	11.0	17.9	75.1	7.8	15.3	18.8	3.2	2.6
2030	70.3	7.6	14.2	61.9	6.2	13.0	8.4	1.4	1.1
2031	38.8	2.9	9.8	38.8	2.9	9.8	0.0	0.0	0.0
2032	19.1	0.0	7.2	19.1	0.0	7.2	0.0	0.0	0.0
2033	19.1	0.0	7.2	19.1	0.0	7.2	0.1	0.0	0.0
2034	17.4	0.0	6.6	17.4	0.0	6.6	0.0	0.0	0.0
2035	10.9	0.0	8.4	10.9	0.0	8.4	0.0	0.0	0.0
2036	1.3	0.0	1.0	1.3	0.0	1.0	0.0	0.0	0.0
2037	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2038	10.4	2.2	5.0	10.1	2.1	4.9	0.3	0.1	0.1
2039	77.9	16.5	18.2	75.7	16.0	17.7	2.2	0.5	0.5
2040	121.8	25.8	28.3	118.4	25.1	27.5	3.4	0.7	0.8
2041	92.1	19.4	21.4	89.5	18.9	20.8	2.5	0.6	0.6

***Demand coincident with Company's seasonal peak demand.**

Exhibit A-13

Indiana Michigan Power Company
Short-Term Load Forecast
Blended Forecast vs. Long-Term Model Results

Class	Indiana	Michigan
Residential	Long-Term	Long-Term
Commercial	Long-Term	Long-Term
Industrial	Long-Term	Long-Term
Other Retail	Long-Term	Long-Term

Exhibit A-14

Blending Illustration

Month	Short-term Forecast	Weight	Long-term Forecast	Weight	Blended Forecast
1	1,000	100%	1,150	0%	1,000
2	1,010	100%	1,160	0%	1,010
3	1,020	100%	1,170	0%	1,020
4	1,030	100%	1,180	0%	1,030
5	1,040	83%	1,190	17%	1,065
6	1,050	67%	1,200	33%	1,100
7	1,060	50%	1,210	50%	1,135
8	1,070	33%	1,220	67%	1,170
9	1,080	17%	1,230	83%	1,205
10	1,090	0%	1,240	100%	1,240
11	1,100	0%	1,250	100%	1,250
12	1,110	0%	1,260	100%	1,260

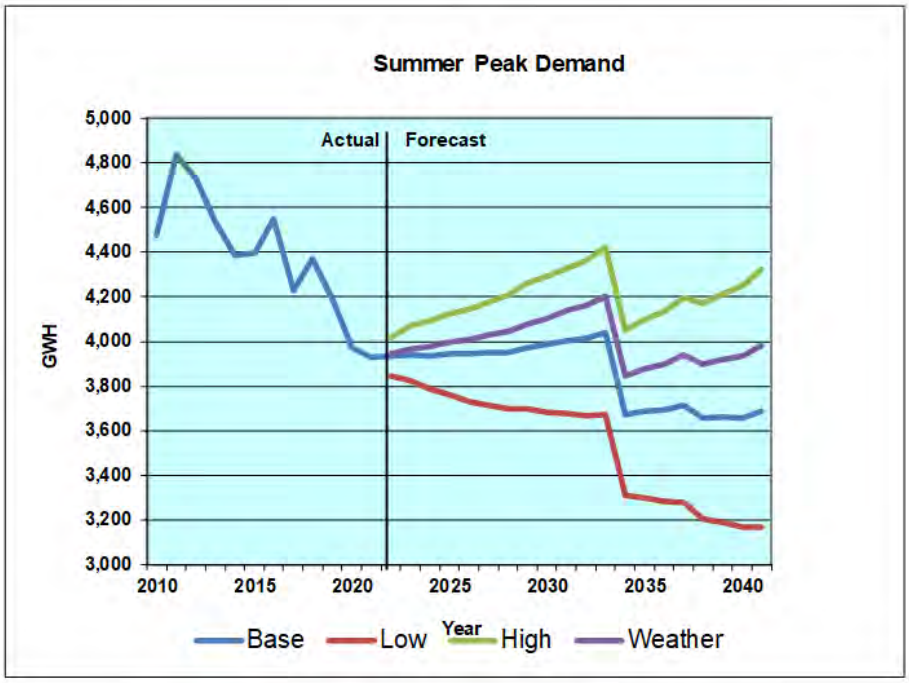
Exhibit A-15

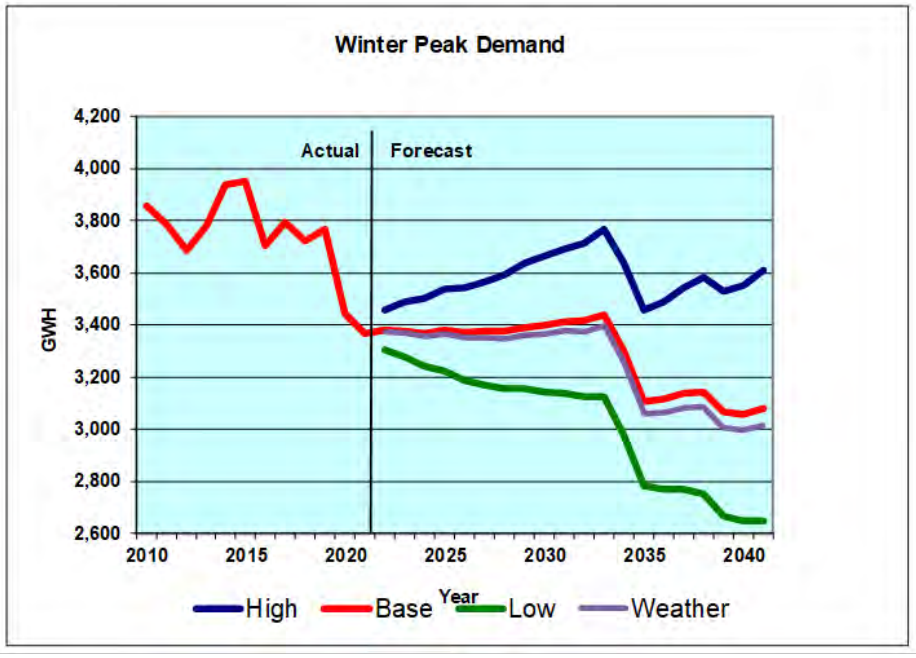
Indiana Michigan Power Company
Low, Base and High Case for
Forecasted Seasonal Peak Demands and Internal Energy Requirements

	Winter Peak Internal Demands (MW)			Summer Peak Internal Demands (MW)			Internal Energy Requirements (GWH)		
Year	Low Case	Base Case	High Case	Low Case	Base Case	High Case	Low Case	Base Case	High Case
2022	3,303	3,380	3,456	3,843	3,932	4,020	21,713	22,217	22,713
2023	3,277	3,378	3,487	3,824	3,942	4,069	21,584	22,250	22,970
2024	3,240	3,368	3,503	3,786	3,936	4,093	21,406	22,254	23,144
2025	3,224	3,382	3,536	3,759	3,943	4,123	21,211	22,248	23,263
2026	3,189	3,372	3,543	3,731	3,944	4,145	21,023	22,226	23,358
2027	3,172	3,374	3,567	3,712	3,949	4,174	20,924	22,261	23,530
2028	3,158	3,375	3,594	3,698	3,952	4,208	20,899	22,334	23,783
2029	3,156	3,391	3,635	3,696	3,972	4,258	20,841	22,395	24,006
2030	3,144	3,400	3,663	3,685	3,985	4,293	20,775	22,466	24,204
2031	3,136	3,414	3,692	3,678	4,004	4,330	20,734	22,569	24,405
2032	3,123	3,417	3,711	3,668	4,012	4,359	20,725	22,670	24,626
2033	3,126	3,439	3,767	3,670	4,038	4,423	20,686	22,757	24,926
2034	2,974	3,298	3,638	3,310	3,670	4,048	18,855	20,905	23,059
2035	2,783	3,108	3,455	3,300	3,685	4,097	18,168	20,289	22,553
2036	2,769	3,115	3,490	3,282	3,691	4,136	18,114	20,374	22,827
2037	2,770	3,138	3,545	3,281	3,717	4,198	18,054	20,453	23,105
2038	2,753	3,143	3,582	3,206	3,659	4,171	17,741	20,248	23,081
2039	2,668	3,065	3,528	3,187	3,661	4,214	17,480	20,079	23,113
2040	2,648	3,059	3,554	3,166	3,657	4,249	17,410	20,111	23,361
2041	2,646	3,081	3,608	3,169	3,690	4,322	17,359	20,210	23,670
Average Annual Growth Rate % - 2022-2041									
	-1.2	-0.5	0.2	-1.0	-0.3	0.4	-1.2	-0.5	0.2

Exhibit A-16

Indiana Michigan Power Company
Range of Forecasts and Weather Scenario





Indiana Michigan Power Company

Forecasted DSM, Adjusted for IRP Modeling

Exhibit A-17

	Indiana Michigan		
Year	Energy (MWh)	Summer Peak (MW)	Winter Peak (MW)
2021	13,351	2.5	3.5
2022	27,041	6.0	8.7
2023	14,856	1.8	0.3
2024	-	-	-
2025	-	-	-
2026	-	-	-
2027	-	-	-
2028	-	-	-
2029	-	-	-
2030	-	-	-
2031	-	-	-
2032	-	-	-
2033	-	-	-
2034	-	-	-
2035	-	-	-
2036	-	-	-
2037	-	-	-
2038	-	-	-
2039	-	-	-
2040	-	-	-
2041	-	-	-

Exhibit B IRP Public Summary Document

2021 INTEGRATED RESOURCE PLANNING

PUBLIC SUMMARY

January 31, 2022

INDIANA MICHIGAN POWER

An AEP Company

BOUNDLESS ENERGY

I&M 2021 IRP Public Summary

This 2021 Integrated Resource Plan (IRP, Plan, or Report) is submitted by Indiana Michigan Power Company (I&M or Company) based upon the best information available at the time of preparation. The purpose of the IRP is to develop a set of supply- and demand-side resources that guides how I&M generates and supplies electricity in a way that balances affordability, sustainability, and reliability.

This Plan is not a firm commitment to specific resource additions or other courses of action over the period of the plan, as the future is uncertain. The Plan provides the basis for a short-term course of action and strives to maintain optionality in meeting I&M's resource obligations in order for the Company to take advantage of market opportunities and technological advancements. Accordingly, this IRP includes a near-term plan, 2022 – 2028, and a long-term-indicative plan, 2029 – 2041, based on a number of assumptions that are subject to change as new information becomes available or as circumstances warrant.

I&M is on the brink of a major generation transformation as Rockport Unit 1 and Unit 2 will retire by the end of 2028. These coal-fired resources represent nearly one-half of the Company's generation fleet and the retirement of these units provides a significant opportunity for I&M to transition to more renewable resources, further diversify I&M's generation portfolio, and reduce its carbon emissions[1]. At the core of this transformation must be reliability, resiliency and affordability. To assess this, during the IRP development I&M established a Balanced Scorecard that evaluated a wide range of potential portfolios against metrics that included: affordability, rate stability, sustainability impact, market risk minimization, reliability, and resource diversity. Additionally, I&M's Preferred Portfolio was developed with the understanding that significant resource decisions will need to be made in the future regarding the possibility to extend the operating life of the Cook Nuclear Plant.

[1] I&M is part of American Electric Power (AEP), and AEP has set carbon emission reduction goals to achieve 80% reduction by 2030 from a 2000 baseline and net zero emissions by 2050. See AEPs-Climate-Impact-Analysis-2021.pdf (aepsustainability.com).

Indiana Michigan Power Company (I&M or Company) customers consist of both retail and sales-for-resale (wholesale) customers located in the states of Indiana and Michigan (Figure 1). Currently, I&M serves approximately 471,000 and 130,000 retail customers in the states of Indiana and Michigan, respectively. The peak load requirement of I&M's total retail and wholesale customers is seasonal in nature, with distinctive peaks occurring in the summer and winter seasons. I&M's all-time highest recorded peak demand was 4,837MW, which occurred in July 2011; and the highest recorded winter peak was 3,952MW, which occurred in January 2015. The most recent (summer 2020 and winter 2020/21) actual I&M summer and winter peak demands at the time this process began were 3,970MW and 3,365MW, occurring on July 19, 2020 and February 17, 2021, respectively.

Figure 1: I&M Service Territory and Generating Locations

Over the next 20-year period (2022-2041), I&M's service territory is expected to see population and non-farm employment growth of 0.0% and 0.4% per year, respectively. Not surprisingly, I&M is projected to see customer count growth at a similar rate of 0.1% per year. Over the same forecast period, I&M's retail sales are projected to grow at 0.3% per year with stronger growth expected from the industrial class (+0.46% per year) while the residential class experiences 0.3% CAGR and the commercial class remains relatively flat over the forecast horizon. Finally, I&M's internal energy and peak demand are expected to decrease at an average rate of 0.5% and 0.3% per year, respectively, through 2041.

Indiana IRP Stakeholder Process

For this IRP, I&M considered multiple sources of feedback, including comments in the Director's report, Stakeholder feedback, internal suggestions, as well as recommendations from the Siemens PTI consulting team. The Company engaged an experienced outside consultant, Siemens PTI, to bring their own experience, expertise, and collaboration tools to the stakeholder process. Both Siemens PTI and I&M promoted Stakeholder engagement during Stakeholder meetings despite the fact that all Stakeholder meetings had to be held virtually during this process due to the COVID pandemic.

The goal was a Stakeholder engagement process focused on promoting transparency in the IRP process, encouraging questions and feedback along the way, and converting feedback to actionable suggestions to incorporate into the IRP process. IRP Stakeholders included, but were not limited to, I&M residential, commercial, and industrial customers, regulators, customer advocacy groups, environmental advocacy groups, fuel suppliers and advocacy groups and elected officials.

At the core of the process was a series of five Stakeholder Meeting Workshops. Stakeholder feedback was also received, and questions were answered via e-mail and with phone

calls/meetings in between each session per request to ensure Stakeholder feedback was considered and incorporated in the development of the plan.

Also as part of the overall Stakeholder Engagement process, the Company reviewed the proposed All-Source RFP response documents with Stakeholders for additional feedback. Additionally a separate engagement process was developed for those "Technical Stakeholders" who desired to examine in more detail the underlying analysis performed during the IRP process.

Figure 2. Topic Covered in Stakeholder Meetings

Planning Process

The I&M 2021 IRP followed a 5-step structured and holistic approach, illustrated in Figure 3 to identify the Preferred Portfolio that best meets I&M's defined objectives over a wide range of potential future conditions and included an All-Source Informational RFP to include market-based pricing and a Market Potential Study (MPS) to inform the IRP process. This structured approach provided a comprehensive decision support tool to aid I&M in developing a long-term plan based on the current generation portfolio and the anticipated retirements of generation over the next twenty years. This long-term plan evaluates the need for additional resources and provides a resource portfolio that balances I&M's objectives.

Figure 3: IRP Process

The 2021 IRP is designed to evaluate ongoing changes and uncertainties in the market. As a result, I&M's IRP objectives are based on the need for a resource strategy that provides support for a series of near-term resource decisions while providing important directional insight into the long-term resources needs and key considerations to maximize the long-term potential value to its customers and communities. To that end, I&M identified six objectives for the Preferred Portfolio in the 2021 IRP that align with customer and corporate priorities, including customer affordability, rate stability, market risk minimization, sustainability impact, reliability, and resource diversity. Table 1 provides more detail on these IRP objectives.

Table 1. I&M IRP Objectives

Objective Category	Objective	Objective Description
Affordability	Affordability	Meet energy and demand requirements of customers at an affordable cost that minimizes cost to serve load. Provide all customers with an affordable supply of energy.
	Rate Stability	Meet energy and demand requirements of customers with rate stability by providing a predictable, balanced, and diverse mix of energy resources designed to ensure costs do not vary greatly across alternative future market conditions or supply disruptions.
	Market Risk Minimization	Avoid overreliance on spot market for energy and capacity purchases and sales, which could introduce excess risk for customers.
Sustainability	Sustainability	Ability to produce energy in a way that proactively reduces pollution and impact on surrounding neighborhoods and ecosystem. Provide environmentally responsible power, leading to a low carbon future.
Reliability and Resource Diversification	Reliability	Ability to effectively produce and deliver the energy required by customers with minimal interruptions and consistent quality while maintaining compliance with PJM capacity obligations.
	Resource Diversity	Mitigate the risk of overreliance on one type of resource. Operational flexibility to back up the resource for resource types that could become operationally or economically eclipsed.

The IRP process complies with regulations and reliability requirements, while also quantifying risks introduced by the market and regulatory environments, the risk of over-reliance

on imports and/or exports, and the risk of supply disruptions. The process considered numerous new resource options across multiple portfolios and evaluated these portfolios across a wide range of metrics.

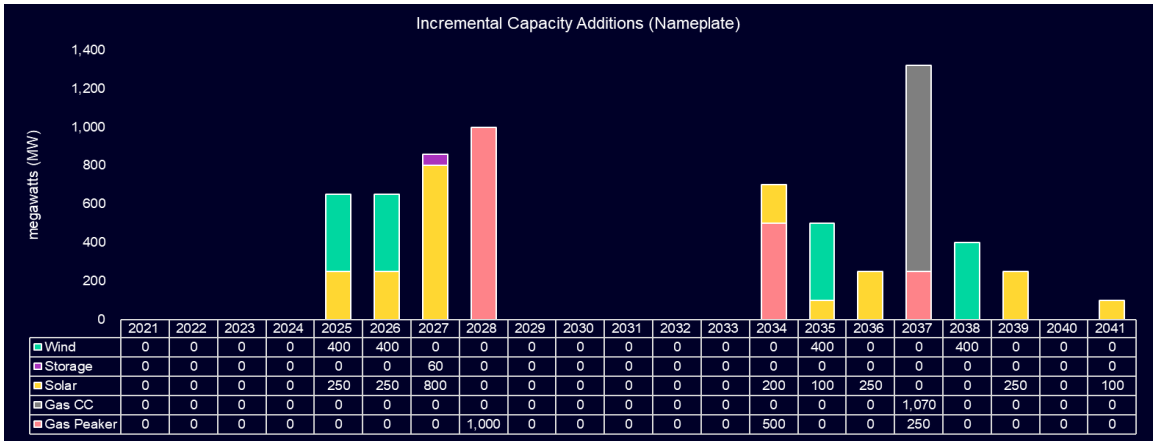
The electric utility industry is changing rapidly and is subject to a significant number of external factors that are largely outside its control. Examples include increased costs in business operations as well as the uncertainty in the timing and impacts that growth in renewable resources, customer-owned generation, and electrification of vehicles and the greater economy will have on load and resource requirements. Also, the focus of resource planning is shifting from the historical vertical approach to an integrated process that better coordinates and aligns the planning of generation, transmission, and distribution. As future IRPs are conducted, the Company expects continuous improvement in incorporating these dynamic and uncertain factors into the IRP process.

Summary of I&M's Resource Plan

I&M has prepared the Preferred Portfolio with a near-term plan, 2022 - 2028 and a long-term-indicative plan, 2029 – 2041. The near-term plan includes the resource additions that will be necessary for the Company to make from 2022 through 2028 and is inclusive of the Company's Short-Term Action Plan. The long-term-indicative plan includes the resource decisions that the Company will need to make from 2029 through the end of the planning period in 2041. The Company now has clarity regarding the Rockport Unit 1 retirement and the treatment of Rockport Unit 2 and the need for replacement capacity prior to 2028. Resource decisions beyond 2028 will ultimately be determined based on future decisions regarding the potential license extensions of the Cook Nuclear Plant, as well as other factors that will change over this time period. Because decisions have not been made regarding the license extensions and cost estimates have not been completed regarding the cost to extend the license, the Preferred Portfolio assumes Cook Unit 1 and 2 operations continue through 2034 and 2037, respectively.

With this significant decision regarding the potential license extensions at the Cook plant still uncertain, the Company was very intentional and thoughtful to structure the near-term plans in a manner that maintains optionality regarding the future decisions at the Cook Nuclear Plant. A significant consideration that the Company evaluated in the development of the Preferred Portfolio was the amount of energy being exported and potential future market risks. To maintain optionality regarding the future operations of the Cook Nuclear Plant, which is a significant emission-free energy producer, it was important for the Company to balance the need for near-term renewables and gas capacity additions with the energy position of the Company, while ensuring reliability. The resource additions included in the Company's Preferred Portfolio allow the Company to effectively begin its generation transition plan, replace the Rockport capacity, and maintain the option to extend the Cook Nuclear Plant Operating License. The Company's Preferred Portfolio achieves these three goals and performs well in the Balanced Scorecard against other Candidate Portfolios.

In addition to the existing resources, nameplate capacities of new supply-side resources in the Preferred Portfolio are shown in Figure 3 and include 1,600 MW of wind resources selected through 2038, 1,900 MW of stand-alone solar resources selected through 2041, the selection of hybrid paired solar + storage resources in 2027 of 60 MW storage / 300 MW Solar in 2027, 1,070 MW of Gas CC selected in 2037, and 1,750 MW of Gas CT resources through 2040.



	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041
Wind	0	0	0	0	400	400	0	0	0	0	0	0	0	0	400	0	0	400	0	0	0
Storage	0	0	0	0	0	0	60	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Solar	0	0	0	0	250	250	800	0	0	0	0	0	0	200	100	250	0	0	250	0	100
Gas CC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1,070	0	0	0	0
Gas Peaker	0	0	0	0	0	0	0	1,000	0	0	0	0	0	500	0	0	250	0	0	0	0

Figure 4. Incremental Capacity Additions (UCAP)

Figure 5 illustrates I&M's UCAP capacity position for the Preferred Portfolio and the PJM capacity obligation including existing resources for the periods when their capacity is available. The near-term plan includes both supply-side and demand-side resource additions in the Preferred Portfolio to meet the Company's near-term capacity needs. Resource additions through 2028 are sufficient from a capacity and energy needs perspective, with the exception of a short-term capacity deficit relative to the PJM minimum reserve requirement in PJM Planning Year 2024/2025. This deficit is currently expected to be approximately 314 MW, and will be filled with short-term PJM capacity purchases, as Rockport Unit 2 is transitioned out of the Company's regulated fleet and the Company transitions to a portfolio with more renewable resources. Short-term capacity needs are subject to further adjustments prior to the PJM Delivery Year based on evolving load forecasts and unit performance.

In the long-term plan between 2029 and 2041, utilizing an assumption for IRP modeling purposes that Cook Unit 1 and 2 will only operate until the end of the current license periods, the Preferred Portfolio includes an additional 800 MW of wind resources, 900 MW of solar, 1,070 MW of gas combined cycle, and 750 MW of gas peaking capacity. These resource additions will be modeled in future IRPs and updated as decisions are made regarding the Cook license extensions. The entire capacity plan is shown below:

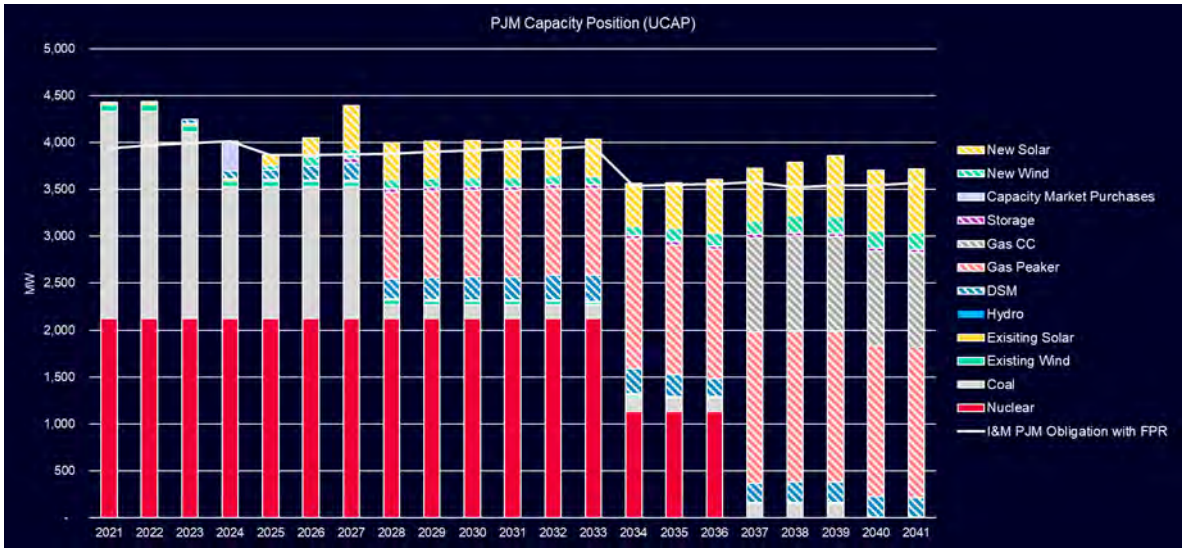


Figure 5. I&M's Preferred Portfolio - PJM Capacity Position (UCAP)

I&M conducted an expanded MPS that evaluated for a 20-year time horizon (2023-2042) the energy efficiency, demand response, and distributed energy resources potential separately for I&M's Indiana and Michigan jurisdictions. The MPS used the most granular load shape information available to improve the value realized from these measures. Energy Efficiency measure potential was developed using I&M's hourly load shape forecast data through an apportioning process based on the evaluation of which measures best aligned to load shapes according to I&M's customer segmentation and use profiles. This expanded approach in the MPS development stage helped improve energy efficiency measure attributes for the time-based value of these resources, thereby improving the level of energy efficiency benefits to be realized during the IRP modelling and optimization process.

Informed by the MPS, a diverse mix of energy efficiency bundles was selected across three vintages that peak at 247 MW in 2033. Furthermore, the Preferred Portfolio includes incremental resources of 121 MW of demand response, 71 MW of distributed energy resources and 116 MW of conservation voltage reduction, based on the Company's MPS and internal analysis.

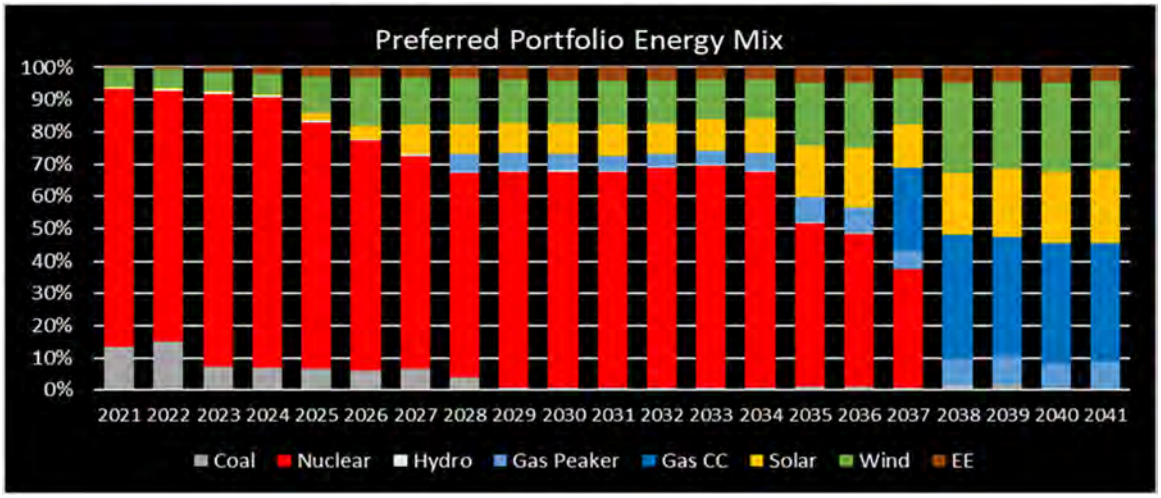


Figure 6: Preferred Portfolio Energy Mix

The forecasted energy mix by resource type contribution in the Preferred Portfolio over the planning period is illustrated in Figure 6. From an energy perspective, the Preferred Portfolio resources include the addition of energy rich renewable resources and DSM resources that serve to somewhat mitigate future risks related to fuel price uncertainty and potential carbon emission prices. Additionally, these resources include incremental dispatchable generating resources (CT) to support resource adequacy and reliability during the periods when renewable resources are not providing energy to meet the Company's load obligation.

I&M's Short Term Action Plan

The I&M IRP is regularly reviewed as new information becomes available. I&M intends to pursue the following activities for the IRP Short-Term Action Plan:

1. Continue the planning and regulatory actions necessary to implement additional cost-effective DSM programs in Indiana and Michigan consistent with this IRP that identified the potential for increased levels of cost-effective EE.
2. Obtain the capacity needed for the PJM Planning Year 2024/2025 deficit (currently estimated to be about 314 MW in this IRP).
3. Issue an All-Source RFP in the first quarter of 2022 to seek resources to satisfy the 2025 and 2026 needs (in-service by the end of 2024 and 2025), which the Preferred Portfolio identified as 800 MW of wind and 500 MW of solar.
4. Issue an All-Source RFP in 2023 or 2024 to satisfy identified needs, targeting 2027 and 2028 renewables, storage, and gas additions (in-service by the end of 2026 and 2027), totaling 800MW of solar, 60 MW of storage as a hybrid resource, and 1,000 MW of gas peaking.
5. Initiate efforts to evaluate Cook relicensing costs.
6. Adjust this action plan and future IRPs to reflect changing circumstances, as necessary.

Conclusion

This IRP incorporated an extensive and thorough process that engaged Stakeholders through five public Stakeholder meetings and tested several Scenarios and many different Portfolios to arrive at a Preferred Portfolio.

The Preferred Portfolio performs well across a range of metrics that were used in the Balanced Scorecard. The Preferred Portfolio is the best performing portfolio across multiple measures on the Balanced Scorecard and provides several additional benefits to I&M customers and Stakeholders, including the following:

Affordability and Rate Stability:

- The Preferred Portfolio is among the lowest reasonable cost portfolios measured on both a 20-year and 10-year cost to serve load metric. The only comparable portfolios are the Cook 2050+ life extensions portfolios, which do not include consideration of the capital investments required to extend the life of those facilities (will be evaluated further in future IRPs).
- The Preferred Portfolio has one of the lowest absolute values for the 95th percentile value of NPV cost to serve load. All portfolios share a similar upside risk. This translates into having one of the lowest risk of increases in cost across the portfolios.
- Resource type additions in the Preferred Portfolio are similar through 2028 to the portfolios that modeled Cook license extensions (Cook 2050+), resulting in a “no regrets” position for the next several years.
- The Preferred Portfolio includes dispatchable resources that can enhance opportunities for wholesale sales without overexposure to market risks.
- The Preferred Portfolio takes advantage of existing tax incentives for new wind, solar and hybrid solar resources.
- The Preferred Portfolio requires the lowest capital requirements during the near-term planning period, which also lowers the risk associated with the availability of acquiring the necessary resources.

Market Risk

- The Preferred Portfolio mitigates overreliance on market purchases and sales for capacity and energy throughout the forecast horizon.
- The Preferred Portfolio requires short-term PJM capacity purchases for capacity in 2024 to replace Rockport Unit 2 capacity.
- Market purchases and sales of energy are reasonable and there is less reliance on the spot energy market, with the Preferred Portfolio averaging 7.2% for purchases and 19.8% for sales over the forecast horizon.
- The Preferred Portfolio results in small amounts of surplus capacity over the forecast period

- The Preferred Portfolio avoids reliance on any single resource or fuel type, with potentially over 60 unique resources and eight unique fuel types.

Sustainability:

- The Preferred Portfolio leads to a lower carbon future, achieving 76% reduction by 2041, when including CO_2 emissions for short-term and spot market purchases, from 2005 levels that did not include CO_2 emissions assumptions from short-term and spot market purchases. Excluding short-term and spot market purchase emissions estimates, the Preferred Portfolio realizes CO_2 emissions reductions of 82% by 2041.
- The Preferred Portfolio includes a substantial amount of renewable resources as it continues to transform its fleet.
- The Preferred Portfolio maintains the optionality for the Cook License Extensions which maintains the opportunity to extend the operations of a significant emission-free resource.
- The Preferred Portfolio provides potential opportunities for natural gas conversion to hydrogen fuel later in the planning period.
- The Preferred Portfolio significantly reduces the reliance on coal fired generation by 2029.

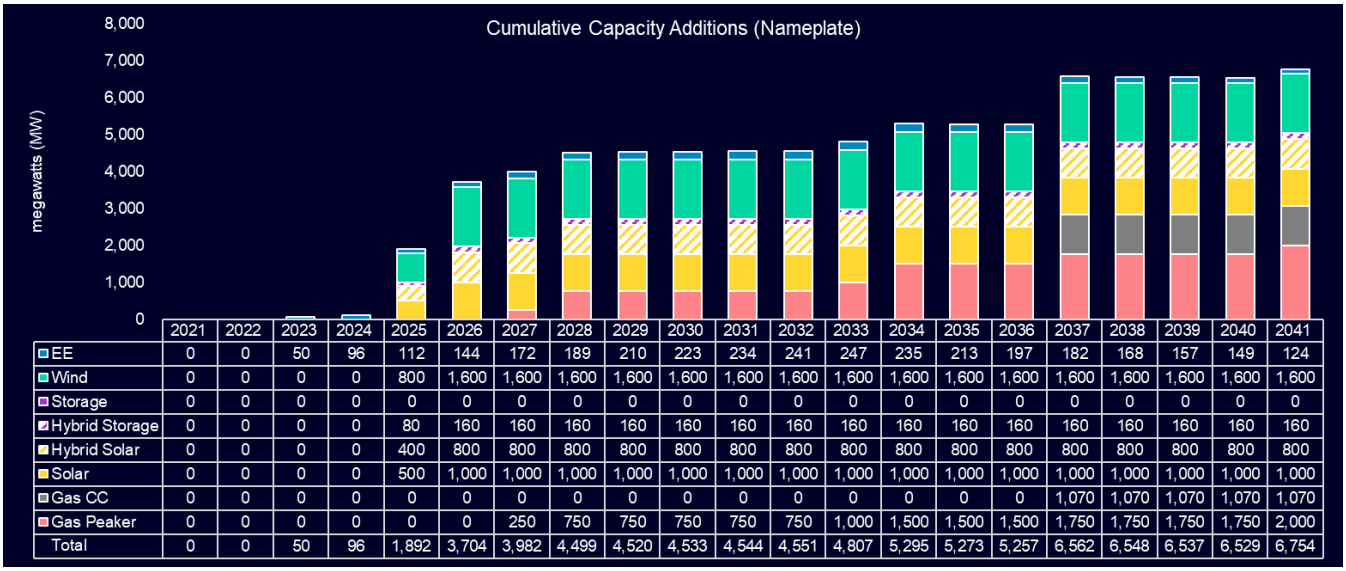
Reliability and Resource Diversity:

- The Preferred Portfolio includes additions that when added to the Company's current resources, provides a more diversified portfolio of supply-side and demand-side resources that will allow the Company to optimize the use of each resource type to ensure the reliable supply of electricity while also maintaining PJM capacity requirements and supporting resource adequacy.
- The Combustion Turbine (CT) resources provide flexible, fast ramping capabilities and can help mitigate risks associated with intermittent renewable resource additions.
- The Preferred Portfolio manages the reliance on market purchases and sales for capacity and energy purposes. In addition, it avoids reliance on any single resource or fuel type, with potentially over 60 unique resources and eight unique fuel types.

The Preferred Portfolio manages the reliance on either market purchases or sales for capacity or energy purposes. In addition, it avoids reliance on any single resource or fuel type, with potentially over 60 unique resources and 8 unique fuel types and offers I&M significant flexibility should future conditions differ considerably from the assumptions underpinning the Preferred Portfolio.

Exhibit C Case and Scenario Results

Exhibit C-1: Portfolio Name: Reference (Original)



	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041
EE	0	0	50	96	112	144	172	189	210	223	234	241	247	235	213	197	182	168	157	149	124
Wind	0	0	0	0	800	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600
Storage	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hybrid Storage	0	0	0	0	80	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160
Hybrid Solar	0	0	0	0	400	800	800	800	800	800	800	800	800	800	800	800	800	800	800	800	800
Solar	0	0	0	0	500	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
Gas CC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1,070	1,070	1,070	1,070	1,070
Gas Peaker	0	0	0	0	0	0	250	750	750	750	750	750	1,000	1,500	1,500	1,500	1,750	1,750	1,750	1,750	2,000
Total	0	0	50	96	1,892	3,704	3,982	4,499	4,520	4,533	4,544	4,551	4,807	5,295	5,273	5,257	6,562	6,548	6,537	6,529	6,754

Mean IRP Cost to Serve Load (2019 $,000)

	Fuel Cost	Fixed Cost	Emissions Cost	Variable O&M	Energy Export Revenue	Energy Import Cost	Cost to Serve Load
2021	144,271	189,516	48	61,145	80,946	124,407	438,441
2022	131,232	222,721	59	53,884	81,824	178,018	504,090
2023	111,965	241,999	34	59,706	48,661	126,599	491,638
2024	114,030	253,214	45	59,600	47,791	127,061	506,154
2025	112,209	556,560	53	14,817	128,262	102,424	657,791
2026	117,053	878,520	52	(27,327)	252,326	84,752	800,714
2027	135,064	897,382	49	(27,912)	271,132	92,216	825,667
2028	144,001	835,000	16,699	(30,584)	322,977	90,680	732,652
2029	131,925	811,464	7,326	(27,121)	291,685	70,670	702,140
2030	129,848	802,042	6,304	(28,408)	274,897	62,443	696,986
2031	121,561	774,530	5,750	(31,315)	244,374	64,385	689,846
2032	124,378	760,520	4,772	(26,756)	254,734	61,368	669,141
2033	128,017	767,443	5,766	(28,340)	243,203	48,045	677,383
2034	127,726	785,432	8,767	(28,159)	314,380	41,291	619,976
2035	86,388	707,086	9,072	47,723	96,032	59,892	813,766
2036	81,416	693,649	8,987	45,309	83,926	78,558	823,408
2037	221,685	831,780	41,404	61,234	265,473	11,322	900,482
2038	169,570	748,099	43,047	31,277	52,294	111,624	1,051,323
2039	171,587	730,178	44,082	31,044	54,864	108,296	1,030,323
2040	165,528	711,558	42,600	30,906	46,986	119,167	1,022,773
2041	171,512	703,430	45,688	30,859	56,398	118,061	1,014,281
						NPV $B	**$ 7.30**

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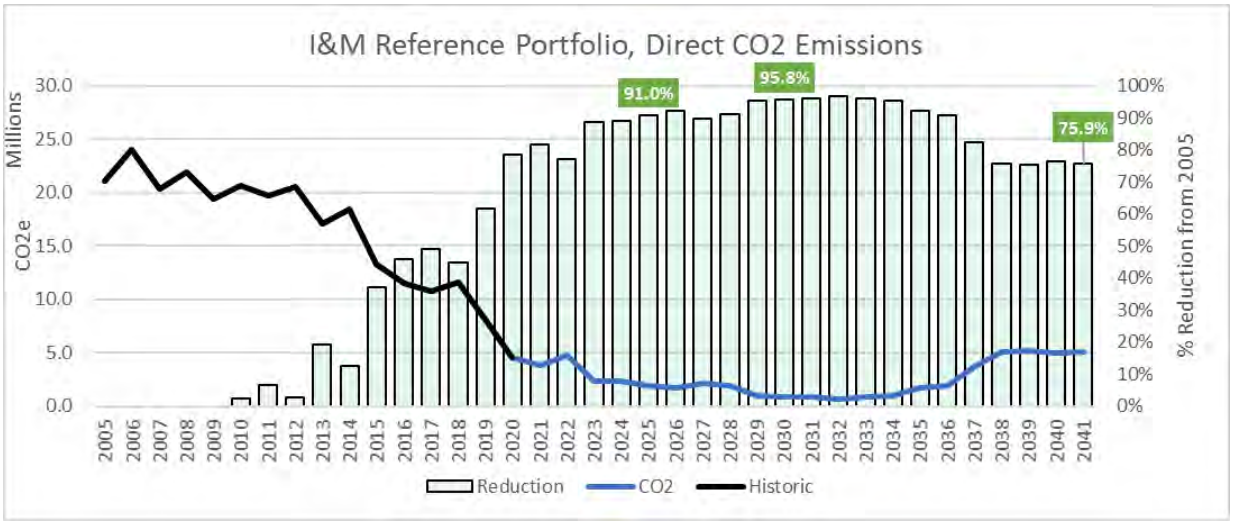
Stochastic Range IRP Cost to Serve Load (NPV $,000)					
	95th Percentile	75th Percentile	50th Percentile	25th Percentile	5th Percentile
NPV (2021-2041)	8,550,712	7,638,924	7,174,575	6,807,873	6,396,077
NPV (2021-2030)	4,900,444	4,457,193	4,224,769	4,029,736	3,821,922
CAGR (2022-2030)	6.12%	5.13%	4.12%	3.08%	1.48%

Stochastic Range IRP Cost to Serve Load ($,000)					
	95th Percentile	75th Percentile	50th Percentile	25th Percentile	5th Percentile
2021	463,476	445,134	437,065	428,671	421,134
2022	546,926	514,808	498,451	487,077	476,845
2023	552,133	505,873	486,499	470,872	450,176
2024	580,381	528,181	497,586	479,138	458,661
2025	743,350	686,931	650,364	621,571	582,905
2026	917,107	851,590	803,123	755,507	691,899
2027	946,035	874,444	824,354	774,793	706,720
2028	879,914	784,297	730,793	673,819	576,746
2029	879,218	758,484	695,347	625,507	548,532
2030	876,164	756,155	695,663	626,163	541,817
2031	896,781	742,595	672,747	624,350	542,270
2032	863,477	727,228	658,660	592,955	506,441
2033	870,328	728,403	670,404	605,607	507,633
2034	825,869	691,200	615,111	539,969	451,394
2035	1,003,113	865,811	791,207	742,260	693,078
2036	1,007,764	876,928	804,599	759,163	688,706
2037	1,101,184	946,887	888,368	826,353	754,662
2038	1,271,572	1,116,478	1,017,877	972,963	906,147
2039	1,248,102	1,083,929	1,005,320	956,136	889,087
2040	1,285,496	1,075,912	995,064	934,181	859,631
2041	1,220,873	1,074,828	989,443	941,348	867,445



Direct and Lifecycle Emissions (tons CO_2), Stochastic

Year	Direct I&M	Imports (CO_2e)	Total Direct + Imports	Total Lifecycle GHG CO_2e[1]
2021	3,288,302	593,074	3,881,376	3,689,955
2022	3,316,800	1,491,801	4,808,601	4,616,224
2023	1,700,556	713,037	2,413,594	2,333,940
2024	1,604,358	717,650	2,322,008	2,246,984
2025	1,674,176	557,572	2,231,748	2,210,291
2026	1,683,291	238,291	1,921,582	1,948,750
2027	1,923,804	208,947	2,132,751	2,243,589
2028	2,107,020	244,839	2,351,859	1,605,478
2029	1,191,191	214,944	1,406,135	1,756,660
2030	1,034,606	257,342	1,291,948	1,623,259
2031	931,595	348,998	1,280,593	1,597,097
2032	803,138	258,611	1,061,748	1,363,743
2033	883,320	352,573	1,235,893	1,543,513
2034	1,128,919	186,566	1,315,485	1,680,460
2035	1,167,023	991,971	2,158,994	2,549,272
2036	1,147,102	1,212,125	2,359,227	2,776,447
2037	3,865,740	170,117	4,035,857	5,347,449
2038	3,916,618	1,327,267	5,243,885	6,586,721
2039	4,058,104	1,217,233	5,275,337	6,654,828
2040	3,668,364	1,338,488	5,006,853	6,341,131
2041	3,642,442	1,383,251	5,025,693	6,371,141

2005 Baseline Direct I&M Emissions (tons CO2): 21,134,511

[1] Based on NREL GHG emissions rates shown in Exhibit C-23

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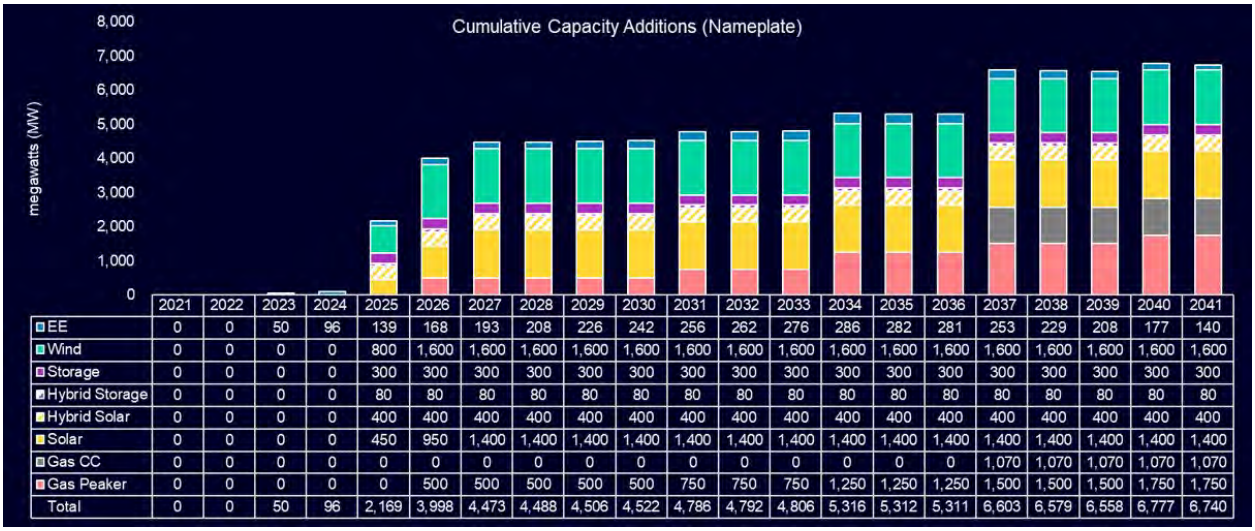
Exhibit C-2: Portfolio Name: Rockport 1 - 2024



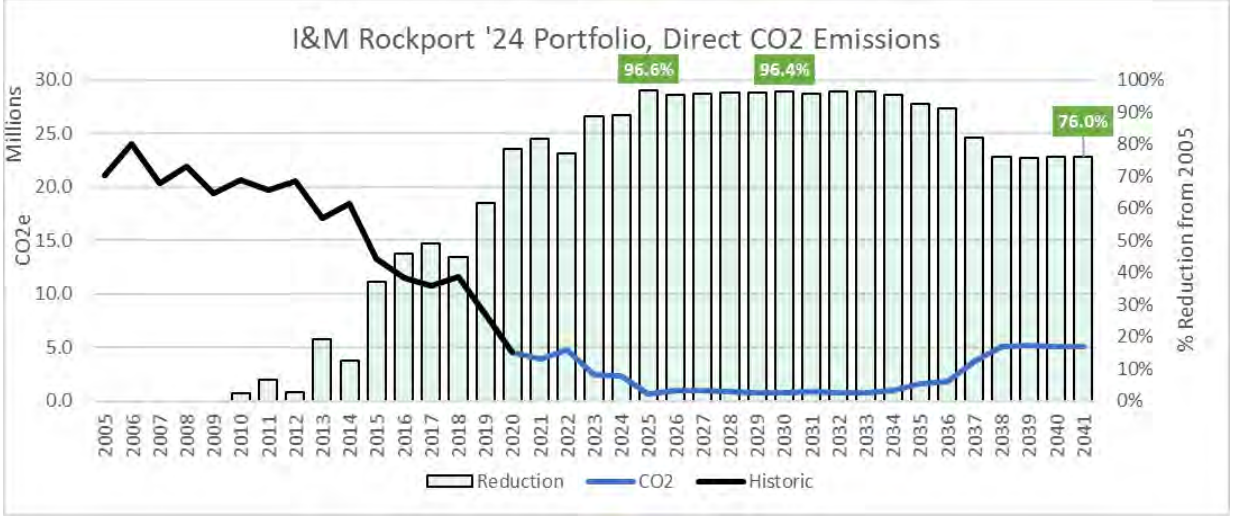
	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041
EE	0	0	50	96	139	168	193	208	226	242	256	262	276	286	282	281	253	229	208	177	140
Wind	0	0	0	0	800	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600
Storage	0	0	0	0	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300
Hybrid Storage	0	0	0	0	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80
Hybrid Solar	0	0	0	0	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400
Solar	0	0	0	0	450	950	1,400	1,400	1,400	1,400	1,400	1,400	1,400	1,400	1,400	1,400	1,400	1,400	1,400	1,400	1,400
Gas CC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1,070	1,070	1,070	1,070	1,070
Gas Peaker	0	0	0	0	0	500	500	500	500	500	750	750	750	1,250	1,250	1,250	1,500	1,500	1,500	1,750	1,750
Total	0	0	50	96	2,169	3,998	4,473	4,488	4,506	4,522	4,786	4,792	4,806	5,316	5,312	5,311	6,603	6,579	6,558	6,777	6,740

Mean IRP Cost to Serve Load (2019 $,000)

	Fuel Cost	Fixed Cost	Emissions Cost	Variable O&M	Energy Export Revenue	Energy Import Cost	Cost to Serve Load
2021	144,301	189,516	48	61,146	81,062	124,460	438,410
2022	131,293	222,721	58	53,887	81,857	177,968	504,071
2023	112,340	234,403	35	59,726	49,139	126,582	483,945
2024	113,209	242,001	44	59,570	47,816	128,842	495,843
2025	87,317	586,927	0	13,426	93,054	104,542	699,157
2026	109,622	858,029	13	(29,570)	214,924	84,981	808,151
2027	114,098	919,508	9	(29,094)	239,968	92,704	857,257
2028	119,022	812,696	5,080	(31,638)	281,067	92,393	716,232
2029	125,083	800,812	5,279	(27,300)	284,452	71,018	690,123
2030	124,368	792,907	4,546	(28,553)	270,304	62,820	685,626
2031	123,892	787,253	6,422	(31,256)	251,774	64,336	698,167
2032	126,507	773,001	5,407	(26,702)	261,836	61,410	677,355
2033	125,596	762,724	4,768	(28,414)	243,396	48,183	669,294
2034	126,517	788,271	8,166	(28,206)	318,579	41,176	616,732
2035	84,716	710,954	8,357	47,667	97,173	57,982	812,210
2036	80,485	697,106	8,442	45,272	86,660	75,797	819,977
2037	223,076	821,448	41,552	61,342	275,317	10,914	881,705
2038	170,454	737,967	43,028	31,357	54,434	107,427	1,036,616
2039	172,234	720,303	43,967	31,117	56,436	104,657	1,016,405
2040	171,040	723,057	43,990	31,124	53,654	116,034	1,031,591
2041	172,883	693,584	45,741	30,983	56,000	115,518	1,004,108
						NPV $B	**$ 7.30**

Stochastic Range IRP Cost to Serve Load ($,000)					
	95th Percentile	75th Percentile	50th Percentile	25th Percentile	5th Percentile
2021	463,467	444,836	436,836	428,611	421,083
2022	547,158	515,006	498,417	486,799	476,949
2023	544,504	498,121	478,971	463,313	443,053
2024	570,874	518,263	486,320	468,042	448,932
2025	790,538	727,565	692,445	664,936	633,458
2026	920,135	844,324	806,101	766,333	719,833
2027	977,449	903,664	849,125	809,441	745,535
2028	874,399	768,558	708,723	653,878	566,750
2029	869,410	749,359	681,637	612,494	536,406
2030	866,765	746,643	678,529	616,783	529,120
2031	907,246	753,432	682,815	630,836	549,423
2032	874,043	741,293	660,610	599,285	513,264
2033	865,298	725,169	664,556	596,646	498,302
2034	821,660	692,760	611,234	541,252	438,640
2035	1,000,571	864,118	789,925	742,040	686,898
2036	1,006,272	874,187	801,742	750,733	687,843
2037	1,086,459	929,123	871,320	806,024	740,880
2038	1,255,955	1,101,347	1,003,554	959,435	891,602
2039	1,232,511	1,066,926	992,720	942,551	876,484
2040	1,288,835	1,087,278	1,004,772	942,795	867,236
2041	1,210,669	1,066,787	980,785	935,144	857,789

Stochastic Range IRP Cost to Serve Load (NPV $,000)					
	95th Percentile	75th Percentile	50th Percentile	25th Percentile	5th Percentile
NPV (2021-2041)	8,585,315	7,646,824	7,162,424	6,791,435	6,403,657
NPV (2021-2030)	4,921,791	4,487,243	4,234,256	4,047,005	3,859,868
CAGR(2022-2030)	6.02%	4.85%	3.93%	2.85%	1.05%



Direct And Lifecycle Emissions (tons CO_2), Stochastic

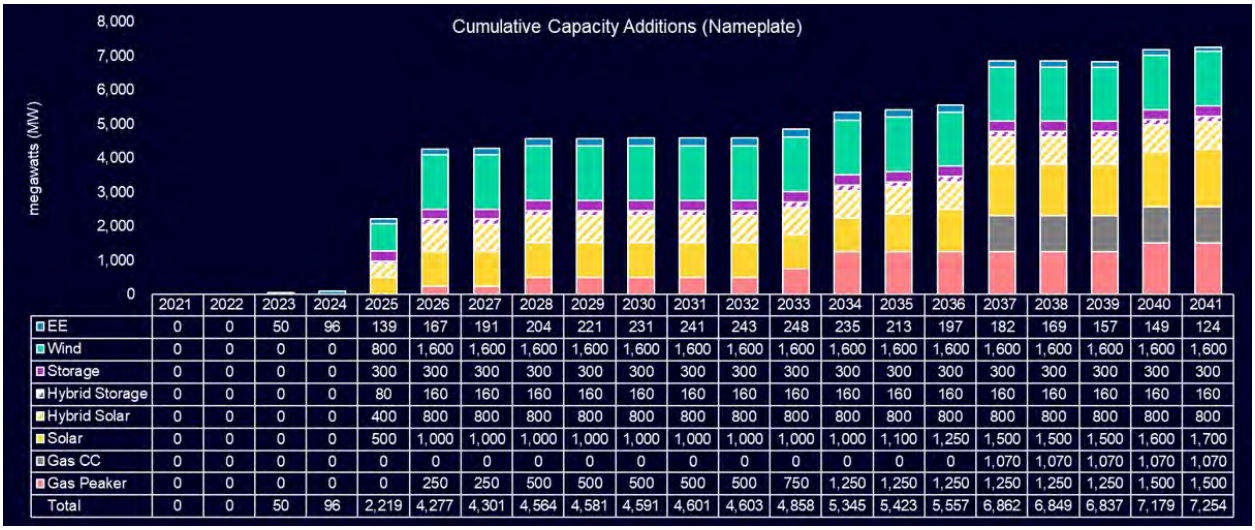
Year	Direct I&M	Imports (CO_2e)	Total Direct + Imports	Total Lifecycle GHG CO_2e[1]
2021	3,281,135	594,076	3,875,211	3,684,394
2022	3,317,585	1,493,279	4,810,864	4,618,413
2023	1,701,951	713,571	2,415,523	2,335,749
2024	1,566,831	741,151	2,307,982	2,236,310
2025	385,949	322,167	708,117	889,196
2026	909,996	54,268	964,263	1,310,300
2027	853,147	84,773	937,920	1,325,471
2028	713,436	126,521	839,957	1,223,480
2029	725,775	91,245	817,020	1,197,041
2030	628,542	125,765	754,307	1,123,366
2031	743,187	161,569	904,756	1,289,402
2032	641,560	128,271	769,831	1,143,963
2033	608,016	179,329	787,345	1,150,951
2034	862,557	80,705	943,262	1,341,912
2035	899,898	697,320	1,597,217	1,991,510
2036	891,569	945,812	1,837,381	2,230,823
2037	3,632,500	132,458	3,764,958	5,053,844
2038	3,709,711	1,345,520	5,055,231	6,363,684
2039	3,840,866	1,310,703	5,151,569	6,467,333
2040	3,589,828	1,455,607	5,045,435	6,335,787
2041	3,547,177	1,522,980	5,070,157	6,358,211

2005 Baseline Direct I&M Emissions (tons CO2): 21,134,511

[1] Based on NREL GHG emissions rates shown in Exhibit C-23

INDIANA MICHIGAN POWER
An AEP Company

Exhibit C-3: Portfolio Name: Rockport 1 - 2025



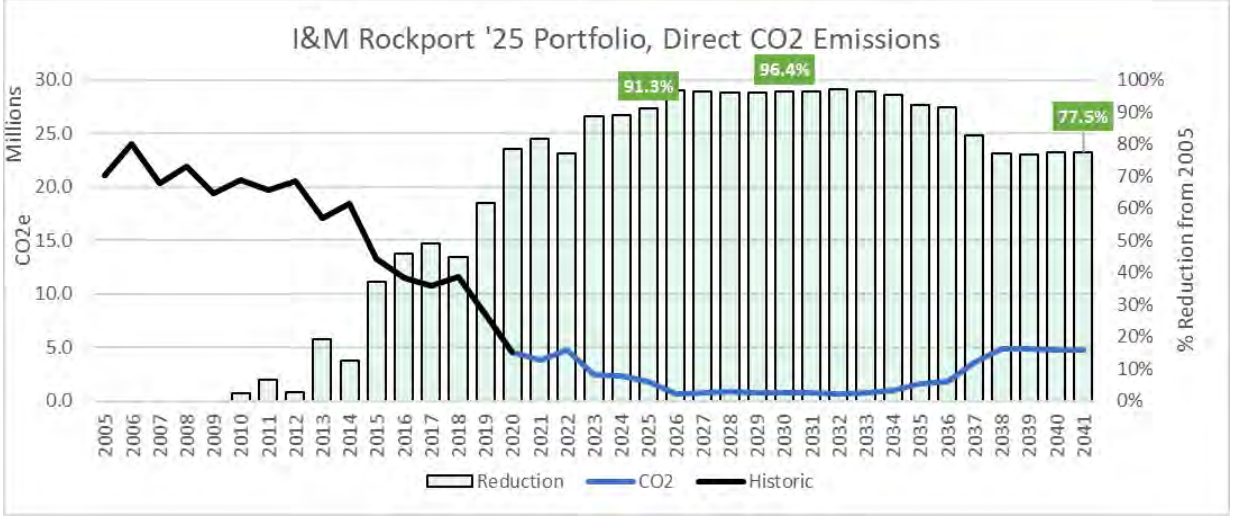
	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041
EE	0	0	50	96	139	167	191	204	221	231	241	243	248	235	213	197	182	169	157	149	124
Wind	0	0	0	0	800	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600
Storage	0	0	0	0	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300
Hybrid Storage	0	0	0	0	80	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160
Hybrid Solar	0	0	0	0	400	800	800	800	800	800	800	800	800	800	800	800	800	800	800	800	800
Solar	0	0	0	0	500	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,100	1,250	1,500	1,500	1,500	1,600	1,700
Gas CC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1,070	1,070	1,070	1,070	1,070
Gas Peaker	0	0	0	0	0	250	250	500	500	500	500	500	750	1,250	1,250	1,250	1,250	1,250	1,250	1,500	1,500
Total	0	0	50	96	2,219	4,277	4,301	4,564	4,581	4,591	4,601	4,603	4,858	5,345	5,423	5,557	6,862	6,849	6,837	7,179	7,254

Mean IRP Cost to Serve Load (2019 $,000)

	Fuel Cost	Fixed Cost	Emissions Cost	Variable O&M	Energy Export Revenue	Energy Import Cost	Cost to Serve Load
2021	144,280	189,516	48	61,145	80,964	124,421	438,446
2022	131,250	222,721	58	53,884	81,693	177,883	504,103
2023	112,237	241,999	34	59,721	49,036	126,589	491,539
2024	114,040	251,190	45	59,599	47,609	126,980	504,240
2025	110,383	599,681	51	14,734	129,159	103,463	699,143
2026	100,960	929,264	7	(28,275)	227,686	84,879	859,150
2027	107,044	924,829	4	(29,292)	231,934	93,123	863,774
2028	118,949	840,229	5,060	(31,640)	280,723	92,380	744,002
2029	125,060	827,652	5,275	(27,301)	284,041	70,994	717,322
2030	124,365	817,856	4,544	(28,553)	269,905	62,799	710,947
2031	117,699	789,987	4,332	(31,424)	242,004	64,665	702,779
2032	121,268	775,636	3,639	(26,848)	253,100	61,620	681,924
2033	125,597	782,233	4,742	(28,414)	242,134	48,268	690,151
2034	126,476	799,909	8,156	(28,207)	315,128	41,350	631,944
2035	84,685	733,096	8,346	48,011	98,800	58,841	833,887
2036	80,457	736,851	8,473	46,136	94,234	75,043	852,219
2037	218,113	882,547	40,056	62,916	291,378	10,760	921,722
2038	165,028	797,877	41,403	32,894	65,338	101,366	1,073,884
2039	166,290	778,696	42,174	32,633	67,287	98,536	1,051,715
2040	165,661	791,813	42,404	33,001	69,026	105,650	1,069,504
2041	166,442	772,642	43,783	33,147	73,910	103,914	1,046,237
						NPV $B	**$ 7.49**

Stochastic Range IRP Cost to Serve Load (2019 $,000)					
	95th Percentile	75th Percentile	50th Percentile	25th Percentile	5th Percentile
2021	463,446	444,983	437,049	428,712	421,002
2022	547,148	514,978	498,517	486,893	476,846
2023	552,095	505,841	486,432	470,912	450,568
2024	577,668	525,994	494,821	477,293	456,264
2025	786,388	728,428	692,061	663,169	625,680
2026	962,509	900,388	859,198	815,515	765,567
2027	984,313	910,136	855,312	815,728	749,649
2028	901,805	796,527	736,857	681,635	594,639
2029	896,069	776,405	708,753	639,463	563,793
2030	892,257	771,806	704,087	641,993	554,596
2031	911,121	758,092	686,775	636,067	554,549
2032	879,235	745,230	666,224	603,471	517,667
2033	885,852	745,565	685,026	617,501	519,740
2034	837,347	707,587	626,025	557,098	454,054
2035	1,022,215	885,673	811,653	763,676	708,310
2036	1,038,579	907,640	835,972	783,866	720,422
2037	1,125,966	971,126	911,269	845,497	777,790
2038	1,293,333	1,133,881	1,043,802	996,717	933,237
2039	1,264,584	1,099,502	1,028,970	977,962	910,818
2040	1,328,576	1,129,026	1,038,646	986,441	913,953
2041	1,237,477	1,107,598	1,023,236	977,725	903,854

Stochastic Range IRP Cost to Serve Load (NPV 2019 $,000)					
	95th Percentile	75th Percentile	50th Percentile	25th Percentile	5th Percentile
NPV (2021-2041)	8,756,321	7,833,886	7,337,956	6,970,844	6,576,541
NPV (2021-2030)	5,017,107	4,574,101	4,326,143	4,133,839	3,952,800
CAGR(2022-2030)	6.40%	5.32%	4.41%	3.37%	1.66%



Direct and Lifecycle Emissions (tons CO_2), Stochastic

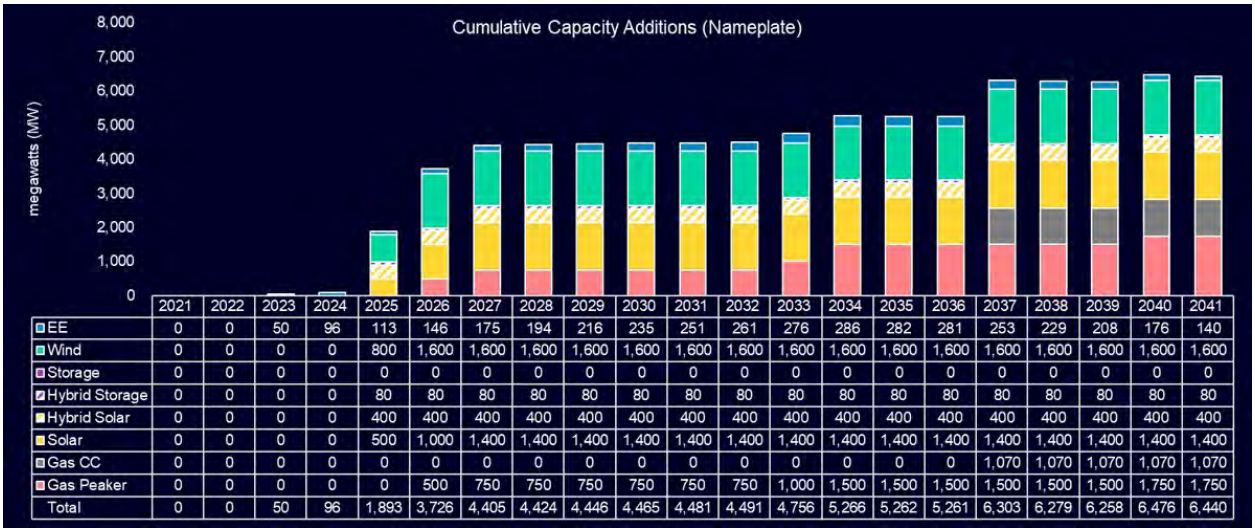
Year	Direct I&M	Imports (CO_2e)	Total Direct + Imports	Total Lifecycle GHG CO_2e[1]
2021	3,280,348	593,588	3,873,936	3,683,166
2022	3,315,794	1,492,041	4,807,835	4,615,573
2023	1,696,776	713,732	2,410,508	2,331,177
2024	1,603,455	717,658	2,321,113	2,246,162
2025	1,531,215	307,356	1,838,571	1,923,419
2026	656,834	53,286	710,120	1,073,836
2027	661,864	91,582	753,446	1,114,319
2028	711,473	126,446	837,919	1,221,183
2029	724,880	91,108	815,987	1,195,924
2030	628,324	125,593	753,917	1,122,950
2031	579,583	165,792	745,375	1,107,189
2032	500,363	131,331	631,695	986,108
2033	607,889	180,508	788,397	1,151,988
2034	861,860	82,975	944,835	1,343,381
2035	898,991	707,831	1,606,822	2,012,758
2036	890,136	934,170	1,824,306	2,247,065
2037	3,510,479	134,060	3,644,539	4,973,848
2038	3,579,362	1,258,265	4,837,627	6,183,776
2039	3,697,646	1,221,988	4,919,634	6,271,216
2040	3,465,388	1,314,421	4,779,808	6,119,797
2041	3,395,376	1,357,573	4,752,948	6,097,355

2005 Baseline Direct I&M Emissions (tons CO2): 21,134,511

[1] Based on NREL GHG emissions rates shown in Exhibit C-23

INDIANA MICHIGAN POWER
An AEP Company

Exhibit C-4: Portfolio Name: Rockport 1 - 2026



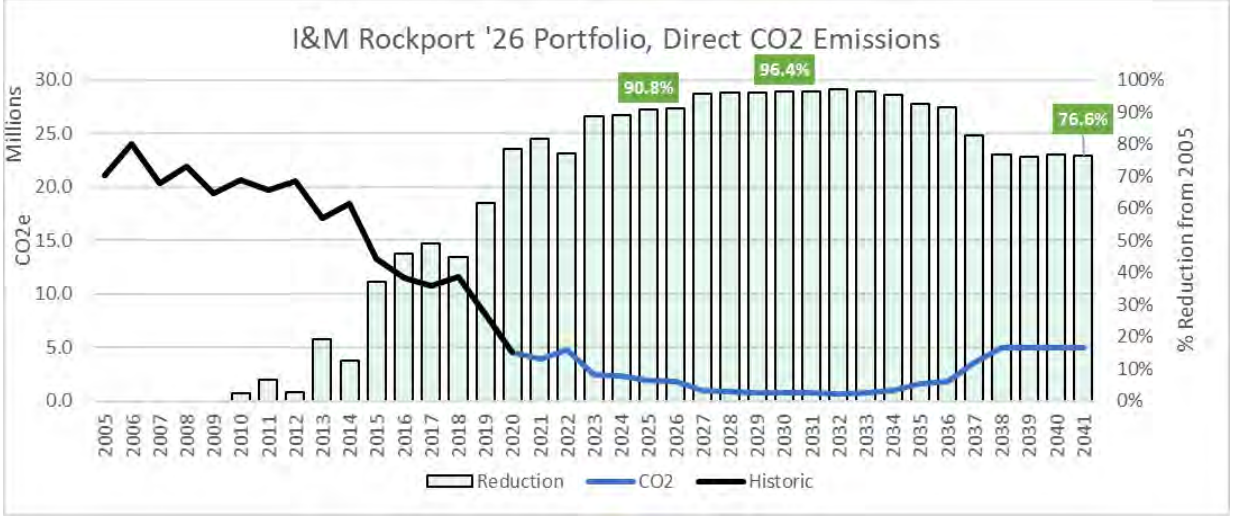
	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041
EE	0	0	50	96	113	146	175	194	216	235	251	261	276	286	282	281	253	229	208	176	140
Wind	0	0	0	0	800	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600
Storage	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hybrid Storage	0	0	0	0	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80
Hybrid Solar	0	0	0	0	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400
Solar	0	0	0	0	500	1,000	1,400	1,400	1,400	1,400	1,400	1,400	1,400	1,400	1,400	1,400	1,400	1,400	1,400	1,400	1,400
Gas CC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1,070	1,070	1,070	1,070	1,070
Gas Peaker	0	0	0	0	0	500	750	750	750	750	750	750	1,000	1,500	1,500	1,500	1,500	1,500	1,500	1,750	1,750
Total	0	0	50	96	1,893	3,726	4,405	4,424	4,446	4,465	4,481	4,491	4,756	5,266	5,262	5,261	6,303	6,279	6,258	6,476	6,440

Mean IRP Cost to Serve Load (2019 $,000)

	Fuel Cost	Fixed Cost	Emissions Cost	Variable O&M	Energy Export Revenue	Energy Import Cost	Cost to Serve Load
2021	144,390	189,516	48	61,150	81,026	124,345	438,424
2022	131,253	222,721	58	53,884	81,808	178,001	504,110
2023	112,204	241,999	34	59,718	48,948	126,570	491,574
2024	114,045	253,214	45	59,599	47,659	126,946	506,184
2025	112,904	554,960	53	14,850	130,120	102,605	655,242
2026	132,385	850,288	52	(28,281)	250,338	84,934	789,039
2027	121,016	923,360	13	(28,900)	246,429	92,555	861,614
2028	127,893	817,099	7,547	(31,418)	292,749	92,233	720,227
2029	133,904	805,635	7,865	(27,074)	296,661	70,727	693,924
2030	132,014	798,187	6,773	(28,355)	280,910	62,467	689,939
2031	123,950	771,354	6,440	(31,254)	251,304	64,405	682,883
2032	126,549	758,051	5,420	(26,701)	261,752	61,411	662,545
2033	130,528	769,961	6,282	(28,282)	250,670	47,959	675,590
2034	131,063	795,976	9,740	(28,079)	325,629	41,171	623,511
2035	89,671	719,037	9,939	47,798	104,534	57,697	819,261
2036	85,362	705,623	10,088	45,400	93,439	75,107	827,536
2037	223,156	809,528	41,581	61,345	275,334	11,011	869,854
2038	170,535	726,845	43,050	31,360	54,363	107,362	1,025,604
2039	172,397	710,058	44,006	31,124	56,404	104,547	1,006,291
2040	171,179	713,397	44,029	31,125	53,495	115,919	1,022,155
2041	172,929	684,982	45,757	30,984	55,819	115,506	995,734
						NPV $B	**$ 7.27**

Stochastic Range IRP Cost to Serve Load (2019 $,000)					
	95th Percentile	75th Percentile	50th Percentile	25th Percentile	5th Percentile
2021	463,535	444,853	437,279	428,668	420,999
2022	547,115	514,948	498,400	486,984	476,878
2023	552,078	505,299	486,442	470,828	450,641
2024	580,364	527,875	496,861	479,322	458,289
2025	740,723	684,990	647,585	619,222	580,389
2026	889,485	833,866	789,584	745,724	692,782
2027	980,493	909,465	853,116	813,605	749,340
2028	873,676	772,590	714,835	659,094	564,085
2029	871,160	752,615	683,345	617,029	540,188
2030	871,577	753,162	684,359	618,758	533,051
2031	891,081	739,024	667,057	614,073	533,143
2032	858,295	726,463	646,962	583,993	497,408
2033	871,165	731,908	670,773	603,364	499,400
2034	845,013	698,975	615,456	547,561	440,754
2035	1,026,201	871,550	796,639	743,613	693,759
2036	1,019,929	884,749	808,553	757,135	695,114
2037	1,073,611	921,213	857,814	792,465	727,155
2038	1,249,248	1,092,169	990,689	946,666	878,751
2039	1,229,913	1,054,679	980,811	930,558	864,437
2040	1,292,385	1,078,400	995,190	931,275	855,644
2041	1,209,380	1,056,197	970,017	924,668	847,192

Stochastic Range IRP Cost to Serve Load (NPV 2019 $,000)					
	95th Percentile	75th Percentile	50th Percentile	25th Percentile	5th Percentile
NPV (2021-2041)	8,539,711	7,608,982	7,126,290	6,747,711	6,360,193
NPV (2021-2030)	4,893,635	4,459,483	4,213,998	4,022,269	3,836,395
CAGR(2022-2030)	6.10%	4.97%	4.04%	2.96%	1.18%



Direct and Lifecycle Emissions (tons CO_2), Stochastic

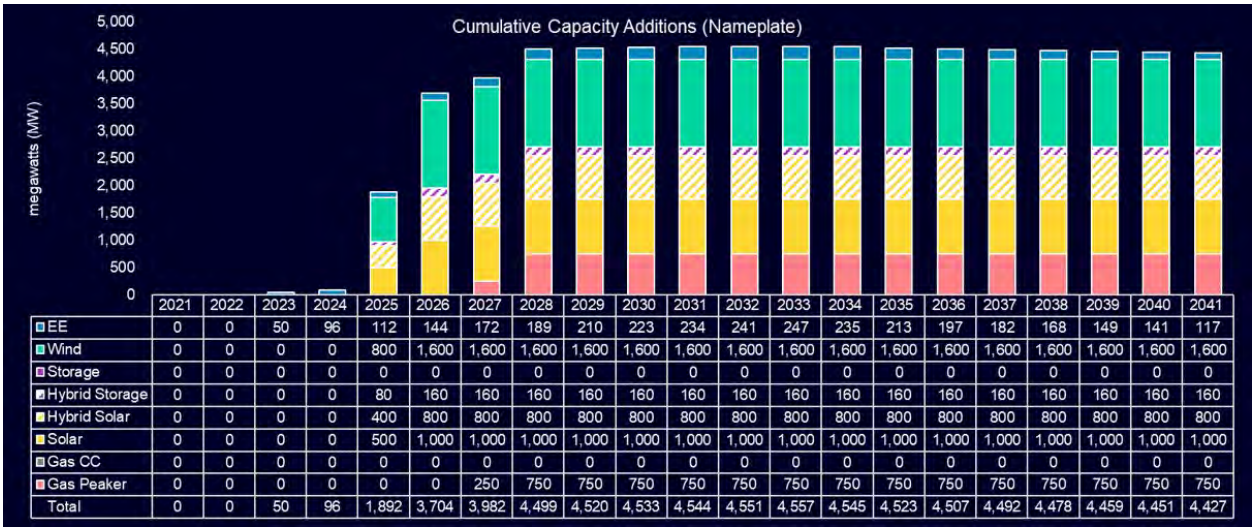
Year	**Direct I&M**	**Imports (CO_2e)**	Total Direct + **Imports**	Total **Lifecycle GHG CO_2e**[1]
2021	3,285,838	592,443	3,878,281	3,687,085
2022	3,316,024	1,493,541	4,809,565	4,617,282
2023	1,695,321	713,388	2,408,708	2,329,516
2024	1,603,790	718,025	2,321,815	2,246,842
2025	1,650,732	296,075	1,946,807	2,021,044
2026	1,789,698	53,787	1,843,485	2,344,224
2027	854,349	82,556	936,904	1,536,995
2028	713,887	127,175	841,063	1,466,783
2029	727,171	88,196	815,367	1,443,387
2030	630,405	122,562	752,967	1,338,082
2031	580,488	161,994	742,483	1,291,598
2032	501,449	129,381	630,830	1,146,337
2033	609,893	176,155	786,048	1,293,942
2034	862,470	79,937	942,407	1,481,930
2035	899,870	692,863	1,592,733	2,132,433
2036	891,486	936,637	1,828,123	2,362,977
2037	3,522,956	133,642	3,656,598	5,057,939
2038	3,599,690	1,342,608	4,942,298	6,363,188
2039	3,720,360	1,307,237	5,027,598	6,467,704
2040	3,488,701	1,452,494	4,941,195	6,336,091
2041	3,423,778	1,520,906	4,944,685	6,357,560

2005 Baseline Direct I&M Emissions (tons CO2): 21,134,511

[1] Based on NREL GHG emissions rates shown in Exhibit C-23

INDIANA MICHIGAN POWER
An AEP Company

Exhibit C-5: Portfolio Name: Cook 2050+



	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041
EE	0	0	50	96	112	144	172	189	210	223	234	241	247	235	213	197	182	168	149	141	117
Wind	0	0	0	0	800	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600
Storage	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hybrid Storage	0	0	0	0	80	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160
Hybrid Solar	0	0	0	0	400	800	800	800	800	800	800	800	800	800	800	800	800	800	800	800	800
Solar	0	0	0	0	500	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
Gas CC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Gas Peaker	0	0	0	0	0	0	250	750	750	750	750	750	750	750	750	750	750	750	750	750	750
Total	0	0	50	96	1,892	3,704	3,982	4,499	4,520	4,533	4,544	4,551	4,557	4,545	4,523	4,507	4,492	4,478	4,459	4,451	4,427

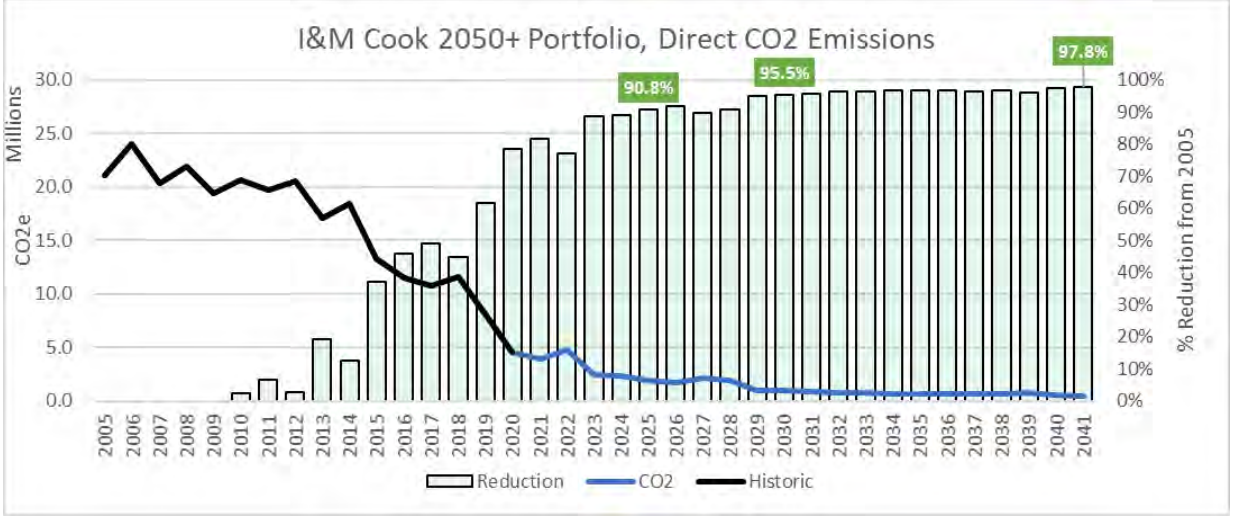
Mean IRP Cost to Serve Load (2019 $,000)

	Fuel Cost	Fixed Cost	Emissions Cost	Variable O&M	Energy Export Revenue	Energy Import Cost	Cost to Serve Load
2021	144,307	189,516	48	61,146	81,115	124,522	438,425
2022	131,293	222,721	58	53,886	81,742	177,877	504,094
2023	112,216	249,618	34	59,720	48,997	126,594	499,181
2024	114,065	260,833	45	59,599	47,641	126,932	513,828
2025	112,894	564,179	53	14,850	130,088	102,582	664,461
2026	117,660	886,139	54	(27,298)	255,124	84,935	806,355
2027	136,084	900,239	50	(27,875)	274,081	92,344	826,761
2028	146,702	836,905	17,573	(30,504)	328,964	90,522	732,057
2029	133,873	813,369	7,858	(27,075)	296,389	70,715	701,879
2030	132,038	803,947	6,778	(28,355)	280,540	62,433	696,064
2031	123,964	776,435	6,446	(31,254)	250,796	64,404	688,489
2032	126,560	762,425	5,423	(26,701)	260,952	61,435	667,756
2033	125,625	746,102	4,750	(28,413)	242,096	48,296	654,122
2034	117,322	721,993	4,996	(28,463)	300,652	41,374	556,195
2035	121,670	714,203	4,755	76,680	310,673	7,669	612,791
2036	117,580	700,863	4,767	74,396	285,987	10,661	621,791
2037	121,517	689,077	4,565	76,923	302,937	8,418	596,262
2038	120,133	681,524	4,240	76,948	303,861	7,743	585,800
2039	120,893	662,014	4,569	76,540	307,387	8,517	564,372
2040	119,516	649,842	3,898	76,960	294,711	6,803	561,481
2041	120,541	622,425	4,989	75,338	289,942	7,923	537,029
						NPV $B	**$ 6.57**

INDIANA MICHIGAN POWER
An AEP Company

Stochastic Range IRP Cost to Serve Load (2019 $,000)					
	95th Percentile	75th Percentile	50th Percentile	25th Percentile	5th Percentile
2021	463,476	444,839	436,958	428,661	420,939
2022	547,116	514,804	498,478	487,066	476,824
2023	559,524	513,505	494,055	478,567	458,279
2024	587,278	535,570	504,746	486,943	465,936
2025	750,317	693,468	656,901	628,680	589,782
2026	919,817	857,406	808,439	761,524	700,254
2027	949,633	877,597	824,043	772,898	702,719
2028	885,596	786,149	727,654	669,453	571,697
2029	879,935	760,921	692,188	625,585	549,088
2030	877,671	757,507	689,008	626,209	540,674
2031	897,400	743,764	673,053	620,706	540,154
2032	863,670	731,542	651,131	589,810	503,694
2033	849,879	709,662	649,680	581,937	483,384
2034	760,200	630,586	551,905	479,474	383,765
2035	816,256	677,620	600,492	533,214	457,865
2036	815,099	691,227	622,477	539,077	456,520
2037	800,525	673,674	591,638	523,034	412,462
2038	779,742	654,487	579,462	514,693	407,623
2039	760,930	631,545	559,755	491,152	375,454
2040	751,306	633,933	555,135	489,673	394,099
2041	737,341	610,977	535,391	454,929	376,415

Stochastic Range IRP Cost to Serve Load (NPV 2019 $,000)					
	95th Percentile	75th Percentile	50th Percentile	25th Percentile	5th Percentile
NPV (2021-2041)	7,896,458	6,965,985	6,454,927	6,058,013	5,587,851
NPV (2021-2030)	4,928,348	4,472,609	4,234,868	4,052,377	3,853,541
CAGR(2022-2030)	6.19%	5.04%	4.16%	3.05%	1.36%



Direct Emissions (tons CO_2), Stochastic

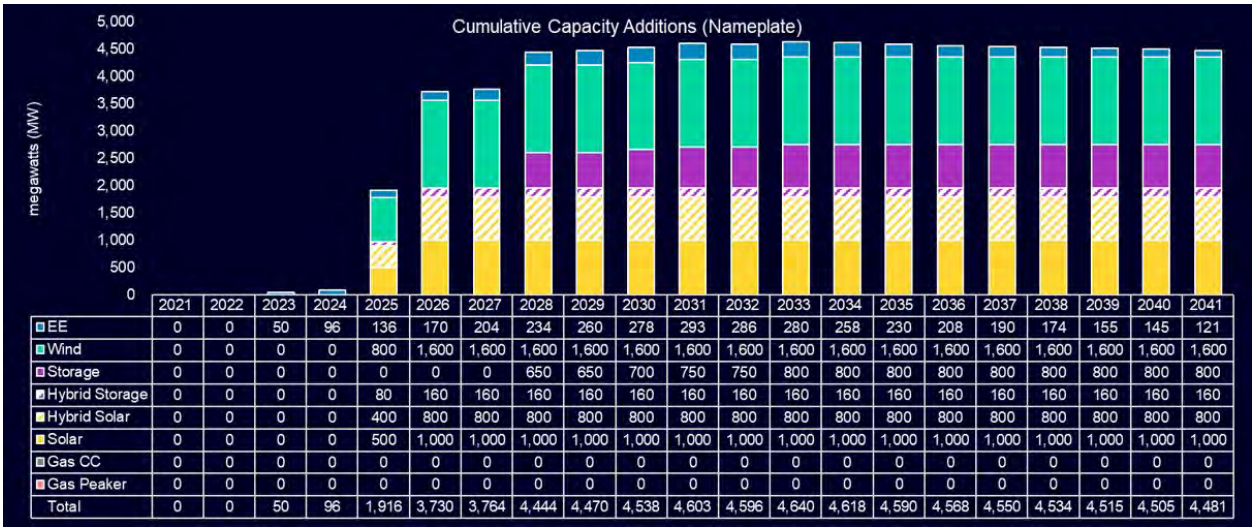
Year	Direct I&M	Imports(CO_2e)	Total Direct+ Imports	Total Lifecycle GHG CO_2e[1]
2021	3,281,421	595,076	3,876,498	3,685,654
2022	3,317,665	1,491,860	4,809,525	4,617,092
2023	1,695,822	713,653	2,409,475	2,330,239
2024	1,604,716	717,781	2,322,496	2,247,429
2025	1,650,220	295,730	1,945,951	2,020,232
2026	1,658,558	56,786	1,715,344	1,931,928
2027	2,098,024	82,045	2,180,069	2,412,981
2028	1,853,545	110,365	1,963,910	2,293,905
2029	943,606	88,145	1,031,751	1,442,200
2030	820,316	122,162	942,478	1,338,284
2031	745,269	162,058	907,327	1,292,247
2032	643,023	129,836	772,860	1,147,180
2033	608,724	180,400	789,124	1,152,817
2034	614,759	82,590	697,349	1,061,372
2035	592,601	99,531	692,133	1,044,099
2036	588,552	100,792	689,344	1,041,045
2037	605,703	110,655	716,358	1,067,604
2038	575,860	113,685	689,545	1,036,768
2039	689,599	101,369	790,968	1,147,477
2040	441,495	100,153	541,647	879,362
2041	361,783	103,587	465,370	802,255

2005 Baseline Direct I&M Emissions (tons CO2): 21,134,511

[1] Based on NREL GHG emissions rates shown in Exhibit C-23

INDIANA MICHIGAN POWER
An AEP Company

Exhibit C-6: Portfolio Name: Cook 2050+ and No Gas



	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041
EE	0	0	50	96	136	170	204	234	260	278	293	286	280	258	230	208	190	174	155	145	121
Wind	0	0	0	0	800	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600
Storage	0	0	0	0	0	0	0	650	650	700	750	750	800	800	800	800	800	800	800	800	800
Hybrid Storage	0	0	0	0	80	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160
Hybrid Solar	0	0	0	0	400	800	800	800	800	800	800	800	800	800	800	800	800	800	800	800	800
Solar	0	0	0	0	500	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
Gas CC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Gas Peaker	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	50	96	1,916	3,730	3,764	4,444	4,470	4,538	4,603	4,596	4,640	4,618	4,590	4,568	4,550	4,534	4,515	4,505	4,481

Mean IRP Cost to Serve Load (2019 $,000)

	Fuel Cost	Fixed Cost	Emissions Cost	Variable O&M	Energy Export Revenue	Energy Import Cost	Cost to Serve Load
2021	144,377	189,516	48	61,149	81,074	124,401	438,417
2022	131,225	222,721	58	53,883	81,705	177,920	504,102
2023	112,176	249,618	34	59,717	48,971	126,614	499,185
2024	114,086	260,833	45	59,601	47,638	126,892	513,814
2025	112,896	574,851	53	14,849	131,685	102,241	673,196
2026	117,485	888,186	54	(27,306)	256,681	84,861	806,589
2027	128,812	881,618	50	(28,081)	268,105	93,038	807,329
2028	119,710	912,271	16,051	(31,174)	293,434	92,266	809,911
2029	107,066	887,794	0	(27,762)	261,112	72,802	778,789
2030	108,751	890,837	0	(28,956)	251,455	64,591	783,768
2031	104,876	869,241	0	(31,775)	227,333	66,128	781,138
2032	110,475	847,759	0	(27,148)	240,092	62,577	753,571
2033	110,399	836,185	0	(28,822)	222,791	50,465	745,437
2034	102,776	811,503	0	(28,867)	279,817	42,062	647,657
2035	107,179	803,195	0	76,294	289,364	8,089	704,302
2036	103,440	789,572	0	74,022	265,835	11,856	713,055
2037	107,302	777,219	0	76,556	281,940	9,059	687,200
2038	107,338	769,327	0	76,612	284,627	8,357	676,338
2039	106,713	748,966	0	76,172	286,212	9,143	654,234
2040	107,118	736,723	0	76,650	276,704	7,778	650,826
2041	106,314	708,422	0	74,964	268,849	9,811	626,247
						NPV $B	**$ 7.03**

INDIANA MICHIGAN POWER
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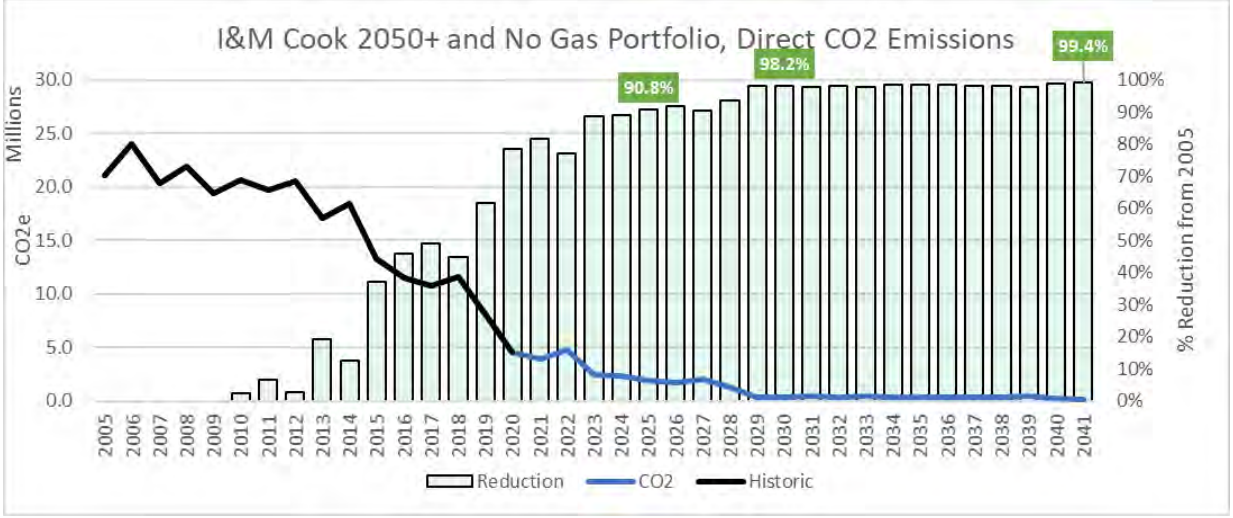
Stochastic Range IRP Cost to Serve Load (2019 $,000)					
	95th Percentile	75th Percentile	50th Percentile	25th Percentile	5th Percentile
2021	463,443	444,839	437,016	428,700	421,053
2022	547,083	514,983	498,365	486,963	476,898
2023	559,696	513,455	494,119	478,521	458,261
2024	587,257	535,550	504,629	486,937	465,924
2025	758,920	701,750	665,553	636,864	598,457
2026	920,568	857,798	808,459	761,872	699,760
2027	930,877	857,569	803,898	752,167	681,515
2028	963,750	864,687	806,840	746,834	662,271
2029	960,138	839,037	769,164	702,004	629,542
2030	963,946	844,216	778,244	711,498	625,058
2031	987,225	836,983	762,857	712,180	634,326
2032	952,510	816,149	736,928	673,882	588,229
2033	939,574	800,329	743,631	670,751	574,636
2034	849,529	721,182	640,972	569,476	473,156
2035	905,018	766,377	693,460	625,615	547,792
2036	903,920	780,689	711,239	628,795	545,546
2037	891,788	761,727	682,083	613,645	503,374
2038	867,536	746,048	670,090	605,514	495,426
2039	847,953	719,415	648,574	581,020	465,332
2040	837,529	721,366	643,867	577,181	484,003
2041	824,376	698,141	624,872	540,905	463,666

Stochastic Range IRP Cost to Serve Load (NPV 2019 $,000)					
	95th Percentile	75th Percentile	50th Percentile	25th Percentile	5th Percentile
NPV (2021-2041)	8,361,317	7,433,658	6,911,252	6,512,788	6,038,960
NPV (2021-2030)	5,058,836	4,609,336	4,355,711	4,177,481	3,982,498
CAGR(2022-2030)	7.52%	6.58%	5.70%	4.74%	3.24%

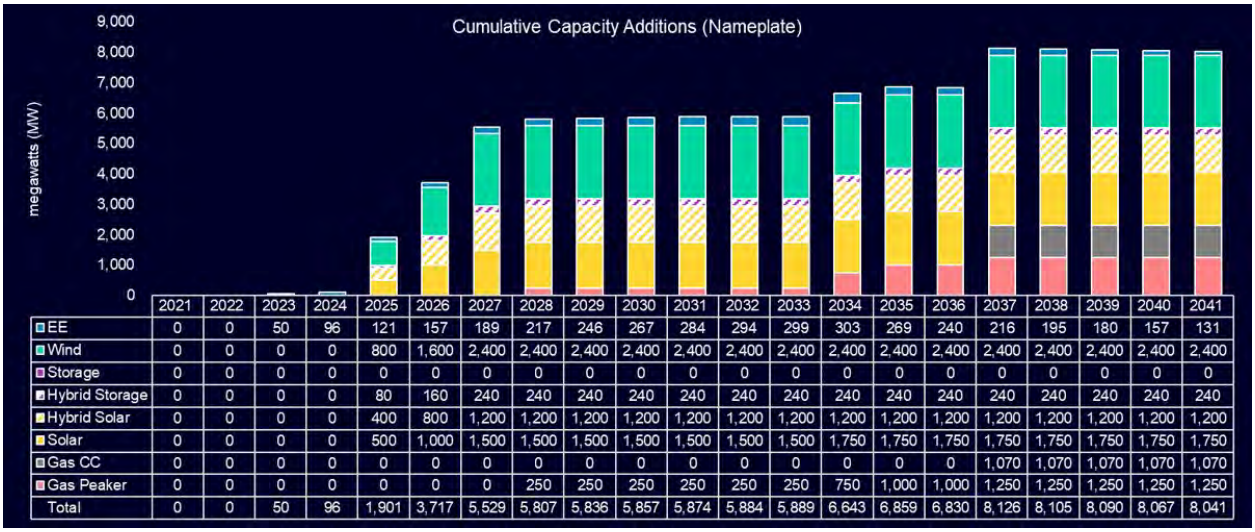


Direct and Lifecycle Emissions (tons CO_2), Stochastic				
Year	Direct I&M	Imports (CO_2e)	Total Direct + Imports	Total Lifecycle GHG CO_2e[1]
2021	3,284,986	593,283	3,878,269	3,687,128
2022	3,314,691	1,492,385	4,807,076	4,614,933
2023	1,693,924	714,301	2,408,225	2,329,160
2024	1,605,888	717,258	2,323,145	2,247,993
2025	1,650,259	290,285	1,940,544	2,014,804
2026	1,649,566	55,975	1,705,541	1,922,873
2027	1,899,178	93,248	1,992,425	2,198,646
2028	1,206,110	128,043	1,334,152	1,573,475
2029	278,978	110,591	389,570	707,245
2030	238,335	146,652	384,987	699,585
2031	240,384	182,294	422,679	737,156
2032	209,458	143,613	353,071	666,885
2033	213,062	206,032	419,094	727,577
2034	223,080	89,119	312,199	621,577
2035	219,292	103,713	323,006	622,882
2036	226,897	115,379	342,275	643,523
2037	251,394	121,855	373,249	675,066
2038	251,689	119,895	371,585	673,573
2039	333,963	107,900	441,864	748,745
2040	142,903	115,573	258,477	554,530
2041	0	124,526	124,526	410,937

2005 Baseline Direct I&M Emissions (tons CO_2): 21,134,511

[1] Based on NREL GHG emissions rates shown in Exhibit C-23

Exhibit C-7: Portfolio Name: Expanded Build Limits



	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041
EE	0	0	50	96	121	157	189	217	246	267	284	294	299	303	269	240	216	195	180	157	131
Wind	0	0	0	0	800	1,600	2,400	2,400	2,400	2,400	2,400	2,400	2,400	2,400	2,400	2,400	2,400	2,400	2,400	2,400	2,400
Storage	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hybrid Storage	0	0	0	0	80	160	240	240	240	240	240	240	240	240	240	240	240	240	240	240	240
Hybrid Solar	0	0	0	0	400	800	1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200
Solar	0	0	0	0	500	1,000	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,750	1,750	1,750	1,750	1,750	1,750	1,750	1,750
Gas CC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1,070	1,070	1,070	1,070	1,070
Gas Peaker	0	0	0	0	0	0	0	250	250	250	250	250	250	750	1,000	1,000	1,250	1,250	1,250	1,250	1,250
Total	0	0	50	96	1,901	3,717	5,529	5,807	5,836	5,857	5,874	5,884	5,889	6,643	6,859	6,830	8,126	8,105	8,090	8,067	8,041

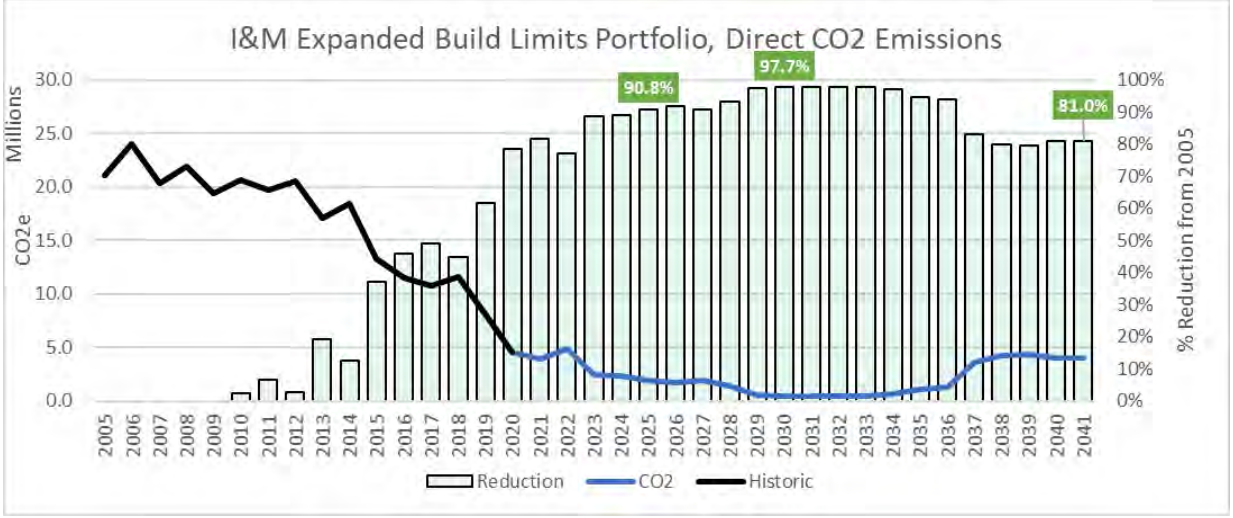
Mean IRP Cost to Serve Load (2019 $,000)

	Fuel Cost	Fixed Cost	Emissions Cost	Variable O&M	Energy Export Revenue	Energy Import Cost	Cost to Serve Load
2021	145,157	189,516	50	61,458	81,622	125,055	440,562
2022	131,916	222,721	60	54,154	82,216	178,759	506,507
2023	112,786	241,999	35	60,020	49,310	127,148	493,817
2024	114,651	253,214	45	59,897	47,912	127,497	508,584
2025	113,359	560,714	53	14,919	131,242	102,939	661,950
2026	117,659	880,567	54	(27,298)	255,819	84,894	800,047
2027	128,633	1,180,922	49	(20,311)	381,502	89,531	997,318
2028	128,163	1,092,141	12,536	(23,176)	445,084	85,365	849,819
2029	115,821	1,062,317	2,583	(19,767)	412,937	66,717	814,565
2030	116,375	1,047,192	2,220	(20,991)	396,142	57,924	806,500
2031	111,142	1,016,449	2,116	(23,840)	363,796	57,754	799,593
2032	115,775	997,872	1,797	(19,217)	377,516	56,938	775,497
2033	115,420	978,195	1,576	(20,927)	358,955	41,781	757,036
2034	116,949	1,029,853	4,877	(19,850)	451,626	37,432	717,271
2035	78,926	952,564	6,568	56,145	212,362	30,104	911,683
2036	74,793	934,151	6,703	53,790	193,607	41,779	917,140
2037	216,688	1,067,505	39,733	69,740	409,817	7,001	989,730
2038	162,167	979,231	40,744	39,647	141,958	56,445	1,136,276
2039	163,330	955,459	41,475	39,350	144,538	54,972	1,110,048
2040	158,733	932,641	40,469	39,329	131,795	60,375	1,099,752
2041	158,907	898,368	41,547	39,063	129,444	59,955	1,068,095
						NPV $B	**$ 7.93**

INDIANA MICHIGAN POWER
An AEP Company

Stochastic Range IRP Cost to Serve Load (2019 $,000)					
	95th Percentile	75th Percentile	50th Percentile	25th Percentile	5th Percentile
2021	464,942	445,062	437,273	428,691	421,185
2022	548,197	515,297	498,531	486,993	476,873
2023	552,342	506,886	486,779	470,729	450,646
2024	583,365	528,494	497,386	479,355	458,273
2025	750,103	689,730	652,893	624,117	585,596
2026	913,632	851,194	801,967	755,444	693,785
2027	1,132,980	1,057,333	995,176	935,144	855,371
2028	1,004,623	915,374	856,076	783,270	661,546
2029	1,010,362	885,086	808,868	734,432	624,883
2030	1,002,561	880,218	802,363	724,922	616,420
2031	1,023,560	866,340	788,747	728,131	614,888
2032	992,260	850,364	768,794	695,450	588,112
2033	974,585	827,054	758,402	681,190	546,400
2034	944,218	804,864	710,411	630,153	504,927
2035	1,108,300	967,134	896,990	840,915	770,025
2036	1,104,706	969,532	906,889	844,507	767,055
2037	1,178,854	1,057,287	984,197	910,634	819,491
2038	1,336,115	1,187,713	1,113,151	1,059,964	1,005,915
2039	1,305,338	1,160,732	1,090,688	1,038,336	981,528
2040	1,328,795	1,157,836	1,073,878	1,019,006	950,536
2041	1,261,278	1,122,309	1,049,645	997,075	932,731

Stochastic Range IRP Cost to Serve Load (NPV 2019 $,000)					
	95th Percentile	75th Percentile	50th Percentile	25th Percentile	5th Percentile
NPV (2021-2041)	9,225,882	8,326,459	7,829,533	7,414,614	6,935,971
NPV (2021-2030)	5,239,535	4,772,294	4,505,286	4,330,806	4,102,463
CAGR(2022-2030)	8.06%	7.14%	5.99%	4.97%	3.10%



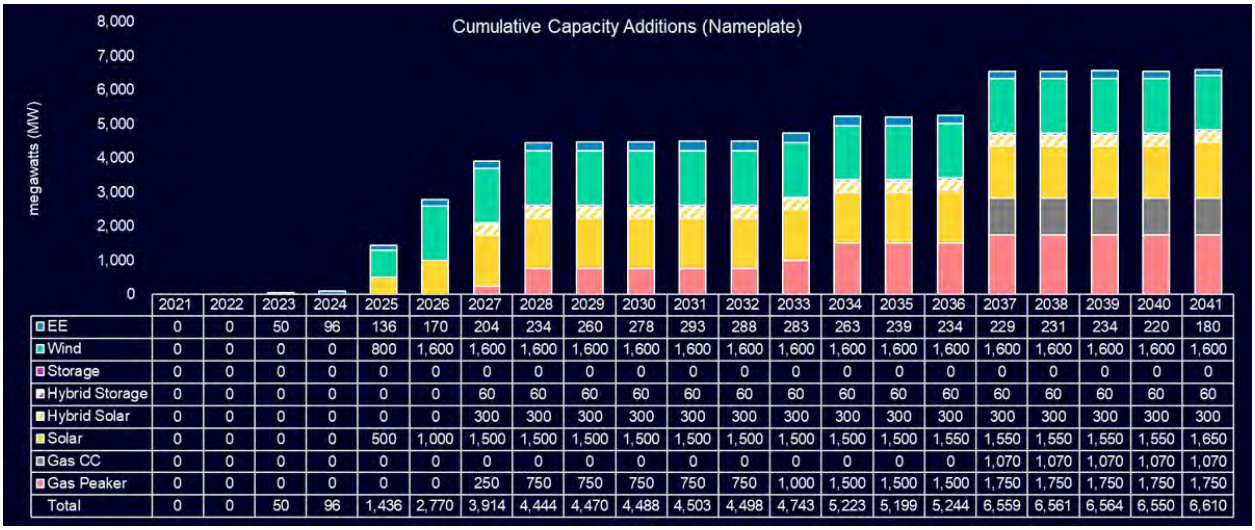
Direct and Lifecycle Emissions (tons CO_2), Stochastic

Year	Direct I&M	Imports (CO_2e)	Total Direct	Total Lifecycle GHG CO_2e[1]
2021	3,304,306	596,532	3,900,838	3,708,394
2022	3,333,238	1,499,226	4,832,464	4,639,127
2023	1,703,577	716,529	2,420,107	2,340,284
2024	1,613,637	720,243	2,333,881	2,258,260
2025	1,652,725	295,011	1,947,736	2,022,678
2026	1,658,366	56,465	1,714,831	1,931,414
2027	1,883,814	39,281	1,923,095	2,270,949
2028	1,395,760	45,117	1,440,878	1,852,595
2029	491,939	56,148	548,086	1,037,068
2030	425,525	59,971	485,496	967,723
2031	403,485	73,754	477,240	955,924
2032	350,141	92,152	442,294	917,541
2033	341,792	92,395	434,187	902,022
2034	602,978	34,727	637,705	1,170,933
2035	750,901	343,000	1,093,901	1,638,222
2036	745,847	502,383	1,248,231	1,792,606
2037	3,482,797	81,300	3,564,097	4,997,868
2038	3,525,291	681,269	4,206,560	5,650,524
2039	3,640,829	656,792	4,297,621	5,746,163
2040	3,313,559	735,101	4,048,660	5,461,494
2041	3,221,981	784,873	4,006,855	5,408,561

2005 Baseline Direct I&M Emissions (tons CO_2): 21,134,511

[1] Based on NREL GHG emissions rates shown in Exhibit C-23

Exhibit C-8: Portfolio Name: Reference'



	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041
EE	0	0	50	96	136	170	204	234	260	278	293	288	283	263	239	234	229	231	234	220	180
Wind	0	0	0	0	800	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600
Storage	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hybrid Storage	0	0	0	0	0	0	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60
Hybrid Solar	0	0	0	0	0	0	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300
Solar	0	0	0	0	500	1,000	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,550	1,550	1,550	1,550	1,550	1,650
Gas CC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1,070	1,070	1,070	1,070	1,070
Gas Peaker	0	0	0	0	0	0	250	750	750	750	750	750	1,000	1,500	1,500	1,500	1,750	1,750	1,750	1,750	1,750
Total	0	0	50	96	1,436	2,770	3,914	4,444	4,470	4,488	4,503	4,498	4,743	5,223	5,199	5,244	6,559	6,561	6,564	6,550	6,610

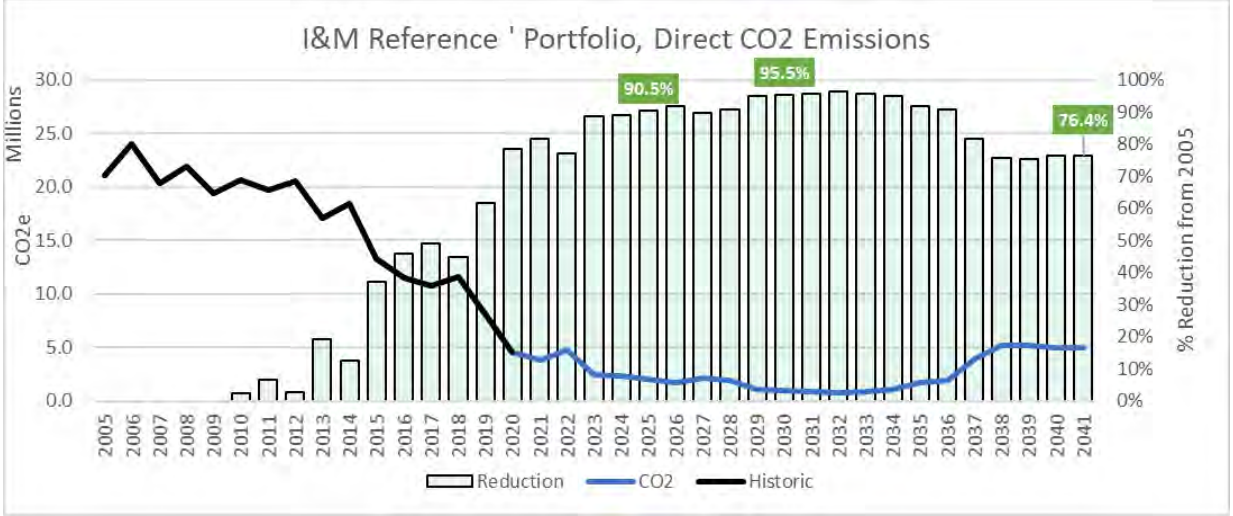
Mean IRP Cost to Serve Load (2019 $,000)

	Fuel Cost	Fixed Cost	Emissions Cost	Variable O&M	Energy Export Revenue	Energy Import Cost	Cost to Serve Load
2021	144,217	189,516	48	61,142	80,898	124,438	438,465
2022	131,251	222,721	59	53,884	81,818	178,007	504,104
2023	112,324	241,999	35	59,725	49,129	126,574	491,525
2024	114,117	253,214	45	59,602	47,737	126,949	506,185
2025	113,013	475,463	53	13,468	114,701	105,911	593,197
2026	117,600	703,445	53	(30,068)	216,545	85,713	660,187
2027	135,875	866,665	49	(27,886)	276,082	92,337	790,958
2028	146,690	808,051	17,449	(30,507)	332,625	90,272	699,241
2029	133,988	784,850	7,887	(27,072)	300,427	70,526	669,277
2030	132,112	775,971	6,797	(28,353)	285,054	62,221	663,455
2031	124,034	750,023	6,466	(31,252)	255,054	64,088	657,594
2032	126,623	730,554	5,442	(26,699)	264,271	61,288	632,503
2033	130,592	738,097	6,334	(28,280)	251,534	47,910	642,898
2034	131,259	756,915	9,800	(28,074)	324,164	41,297	586,298
2035	89,874	680,612	9,950	47,804	102,222	59,217	784,936
2036	85,584	680,846	10,099	45,579	93,416	76,182	804,319
2037	227,748	819,424	42,981	61,642	283,273	11,048	878,189
2038	174,895	741,921	44,427	31,646	62,537	106,041	1,036,705
2039	177,042	724,226	45,486	31,409	66,036	102,294	1,014,422
2040	171,066	700,263	44,001	31,292	57,087	112,321	1,001,857
2041	172,542	674,146	45,665	31,477	62,443	109,829	972,463
						NPV $B	**$ 6.98**

INDIANA MICHIGAN POWER
An AEP Company

Stochastic Range IRP Cost to Serve Load (2019 $,000)					
	95th Percentile	75th Percentile	50th Percentile	25th Percentile	5th Percentile
2021	463,504	445,048	437,058	428,772	421,123
2022	547,232	514,957	498,383	486,966	476,982
2023	552,091	505,899	486,394	470,986	450,644
2024	579,673	527,959	497,173	479,001	458,305
2025	680,017	623,538	586,975	557,916	520,865
2026	760,564	704,919	662,205	617,658	562,299
2027	915,212	842,152	788,216	736,551	666,324
2028	852,738	753,643	694,685	635,921	537,382
2029	847,692	727,401	660,566	592,750	515,216
2030	845,316	725,751	656,567	593,056	506,447
2031	866,125	713,247	642,424	590,447	507,917
2032	828,955	696,624	615,684	553,504	467,979
2033	839,910	699,829	634,713	571,083	467,300
2034	792,659	661,745	579,175	512,502	404,458
2035	974,079	838,235	762,688	710,761	662,476
2036	991,675	859,180	786,616	735,050	673,183
2037	1,083,482	926,805	869,006	802,752	735,643
2038	1,256,703	1,102,151	1,003,478	960,298	892,332
2039	1,231,616	1,065,714	988,084	941,133	875,301
2040	1,258,475	1,056,998	974,242	914,235	839,610
2041	1,173,698	1,035,920	947,167	900,934	827,055

Stochastic Range IRP Cost to Serve Load (NPV 2019 $,000)					
	95th Percentile	75th Percentile	50th Percentile	25th Percentile	5th Percentile
NPV (2021-2041)	8,257,589	7,311,618	6,845,909	6,472,383	6,080,146
NPV (2021-2030)	4,691,280	4,242,809	4,000,792	3,814,867	3,623,101
CAGR(2022-2030)	6%	4%	4%	2%	1%



Direct and Lifecycle Emissions (tons CO_2), Stochastic				
Year	Direct I&M	Imports (CO_2e)	Total Direct + Imports	Total Lifecycle GHG CO_2e[1]
2021	3,277,210	593,731	3,870,941	3,680,440
2022	3,315,742	1,493,656	4,809,398	4,617,072
2023	1,701,152	713,695	2,414,847	2,335,137
2024	1,607,371	718,128	2,325,499	2,250,206
2025	1,657,547	349,723	2,007,270	2,034,052
2026	1,657,861	68,954	1,726,816	1,849,681
2027	2,087,829	81,476	2,169,306	2,403,476
2028	1,850,665	107,188	1,957,853	2,288,706
2029	946,624	86,068	1,032,692	1,443,518
2030	822,195	119,155	941,350	1,337,400
2031	747,385	157,471	904,856	1,290,030
2032	645,006	128,024	773,030	1,147,592
2033	738,387	175,384	913,770	1,295,525
2034	991,314	81,945	1,073,259	1,489,827
2035	1,033,066	711,555	1,744,620	2,157,450
2036	1,021,132	949,417	1,970,549	2,387,936
2037	3,748,907	133,309	3,882,215	5,193,508
2038	3,822,248	1,325,143	5,147,391	6,477,344
2039	3,961,586	1,277,613	5,239,199	6,577,455
2040	3,590,717	1,405,391	4,996,107	6,292,196
2041	3,541,305	1,443,347	4,984,652	6,288,643

2005 Baseline Direct I&M Emissions (tons CO_2): 21,134,511

[1] Based on NREL GHG emissions rates shown in Exhibit C-23

INDIANA MICHIGAN POWER
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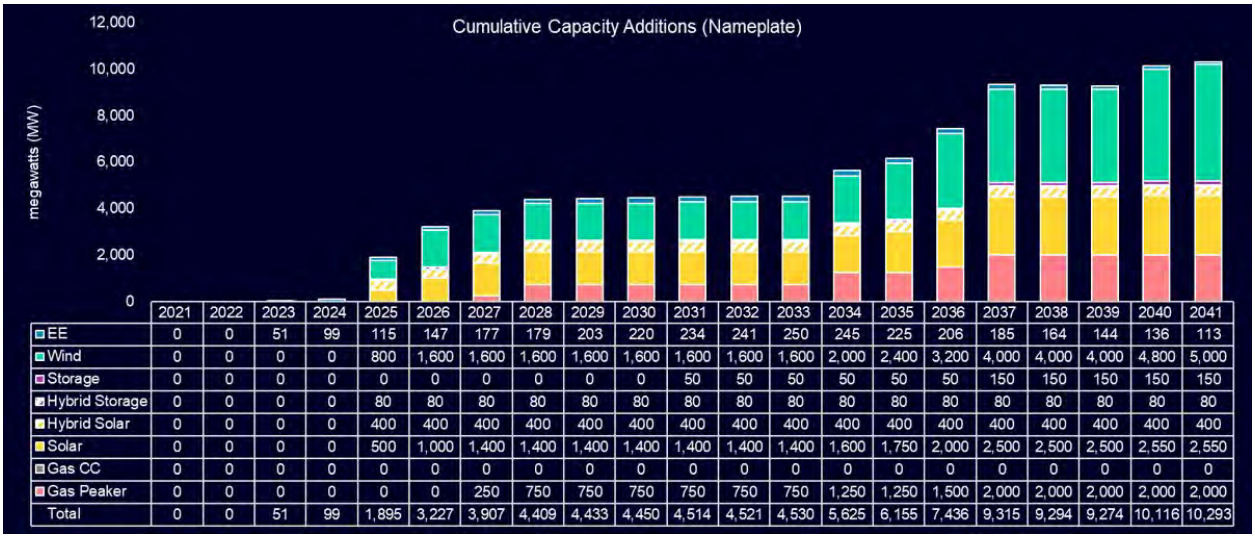
Exhibit C-9: Portfolio Name: Rapid Technology Advancement



	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041
EE	0	0	51	99	115	147	177	179	203	220	234	241	250	245	225	206	185	164	144	136	113
Wind	0	0	0	0	800	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600	2,000	2,400	3,200	4,000	4,000	4,000	4,800	5,000
Storage	0	0	0	0	0	0	0	0	0	0	50	50	50	50	50	50	150	150	150	150	150
Hybrid Storage	0	0	0	0	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80
Hybrid Solar	0	0	0	0	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400
Solar	0	0	0	0	500	1,000	1,400	1,400	1,400	1,400	1,400	1,400	1,400	1,600	1,750	2,000	2,500	2,500	2,500	2,550	2,550
Gas CC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Gas Peaker	0	0	0	0	0	0	250	750	750	750	750	750	750	1,250	1,250	1,500	2,000	2,000	2,000	2,000	2,000
Total	0	0	51	99	1,895	3,227	3,907	4,409	4,433	4,450	4,514	4,521	4,530	5,625	6,155	7,436	9,315	9,294	9,274	10,116	10,293

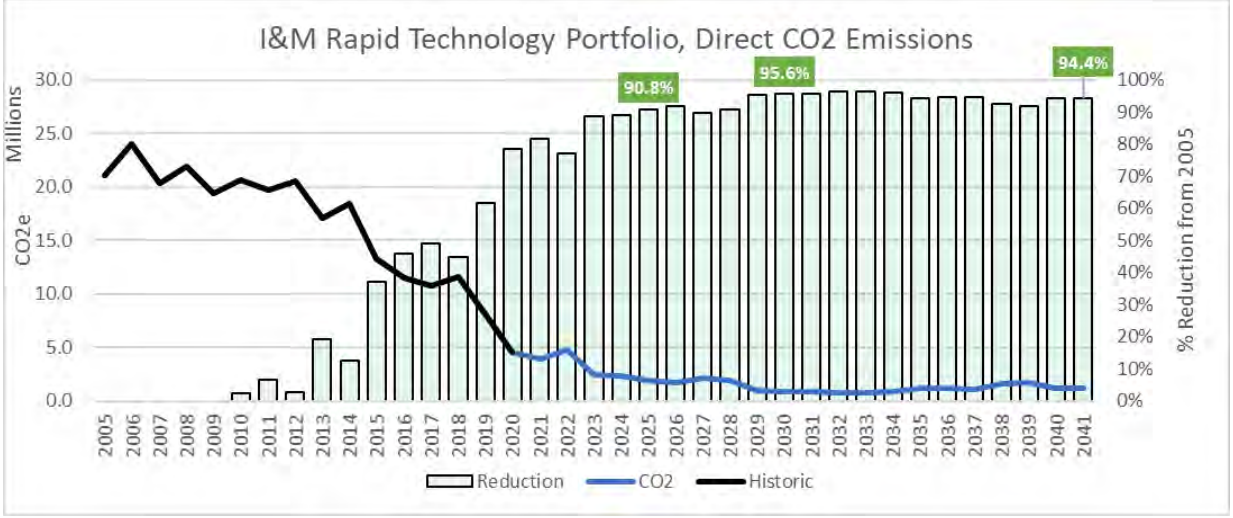
Mean IRP Cost to Serve Load (2019 $,000)

	Fuel Cost	Fixed Cost	Emissions Cost	Variable O&M	Energy Export Revenue	Energy Import Cost	Cost to Serve Load
2021	144,337	189,516	48	61,147	81,017	124,417	438,449
2022	131,385	222,721	59	53,890	81,781	177,793	504,067
2023	112,314	242,382	35	59,725	49,175	126,516	491,794
2024	114,089	252,264	45	59,602	47,834	126,797	504,957
2025	112,964	555,415	53	14,852	130,156	102,499	655,617
2026	117,677	877,031	54	(27,299)	254,684	84,892	797,660
2027	135,738	896,193	50	(27,891)	273,188	92,235	823,137
2028	145,876	828,723	17,285	(30,534)	325,291	90,552	726,438
2029	133,150	810,433	7,652	(27,096)	293,292	70,719	701,107
2030	131,453	801,247	6,616	(28,372)	278,326	62,402	694,788
2031	123,469	774,006	6,280	(31,270)	248,884	64,369	687,279
2032	126,172	760,254	5,325	(26,715)	258,892	61,389	667,081
2033	125,221	746,044	4,674	(28,431)	240,113	48,224	655,431
2034	125,260	914,180	7,792	(22,571)	409,750	37,289	651,576
2035	82,899	862,817	7,940	54,161	181,232	28,981	855,169
2036	80,630	1,024,323	8,835	58,326	262,217	22,518	931,595
2037	90,550	1,227,621	10,590	68,122	397,984	9,505	1,007,193
2038	33,137	1,261,493	10,500	43,527	217,034	44,903	1,174,120
2039	36,047	1,229,714	11,386	43,379	222,550	44,072	1,141,336
2040	30,546	1,328,743	9,389	49,355	288,392	27,570	1,156,811
2041	36,297	1,313,095	11,926	50,722	309,852	23,114	1,122,440
						NPV $B	**$ 7.50**

INDIANA MICHIGAN POWER
An AEP Company

Stochastic Range IRP Cost to Serve Load (2019 $,000)					
	95th Percentile	75th Percentile	50th Percentile	25th Percentile	5th Percentile
2021	463,439	444,955	437,290	428,695	421,077
2022	547,128	514,916	498,320	486,847	476,855
2023	552,165	506,113	486,700	471,204	450,889
2024	578,453	526,375	495,989	477,957	457,259
2025	741,205	684,818	648,072	619,911	580,952
2026	910,690	848,592	799,705	753,041	689,544
2027	945,900	873,789	820,577	769,597	698,420
2028	879,811	780,243	722,002	664,267	565,232
2029	878,827	758,847	691,238	625,383	549,967
2030	875,767	755,847	687,754	624,677	540,520
2031	895,443	742,265	672,384	618,937	538,724
2032	862,073	730,225	650,274	589,449	503,144
2033	849,930	710,844	650,300	584,202	484,945
2034	870,493	735,809	648,545	570,534	455,290
2035	1,049,468	910,035	838,824	786,732	715,535
2036	1,121,974	989,731	924,061	849,188	770,532
2037	1,202,556	1,087,823	1,005,978	928,573	790,700
2038	1,354,880	1,233,412	1,158,242	1,105,225	1,024,830
2039	1,320,520	1,190,292	1,133,314	1,070,408	982,309
2040	1,339,857	1,220,021	1,150,483	1,089,641	997,019
2041	1,318,256	1,190,716	1,112,828	1,042,023	966,284

Stochastic Range IRP Cost to Serve Load (NPV 2019 $,000)					
	95th Percentile	75th Percentile	50th Percentile	25th Percentile	5th Percentile
NPV (2021-2041)	8,808,653	7,866,137	7,375,296	6,970,337	6,540,953
NPV (2021-2030)	4,895,200	4,441,228	4,203,464	4,022,062	3,827,547
CAGR(2022-2030)	6.16%	5.03%	4.13%	3.04%	1.32%



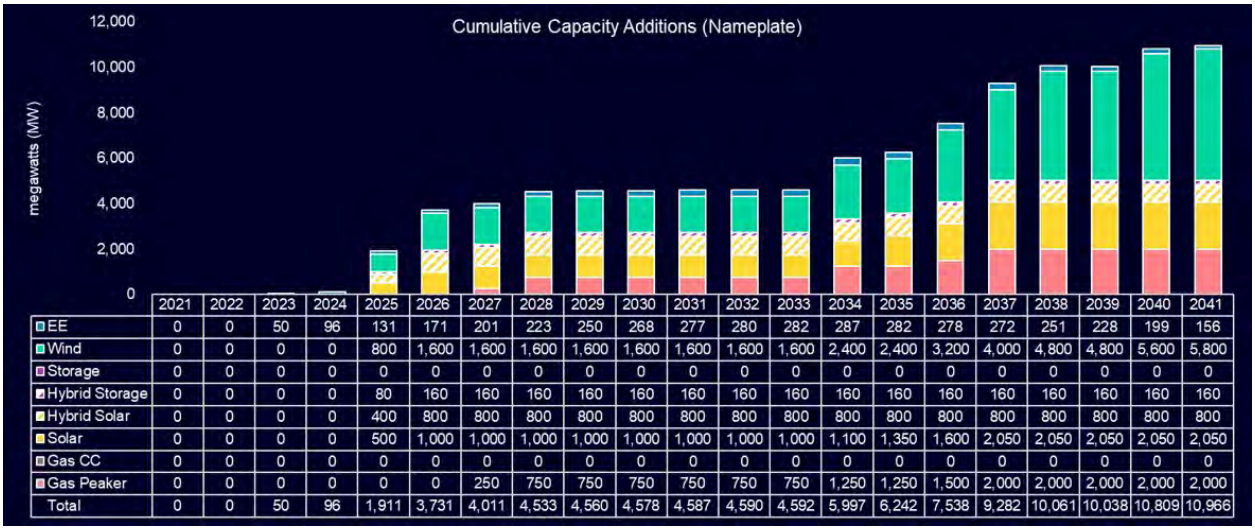
Direct and Lifecycle Emissions (tons CO_2), Stochastic

Year	Direct I&M	Imports (CO_2e)	Total Direct + Imports	Total Lifecycle GHG CO_2e[1]
2021	3,282,883	593,567	3,876,450	3,685,530
2022	3,322,290	1,490,656	4,812,946	4,620,102
2023	1,700,516	712,630	2,413,146	2,333,480
2024	1,604,406	716,753	2,321,159	2,245,912
2025	1,651,229	295,382	1,946,611	2,020,429
2026	1,655,844	57,084	1,712,928	1,929,219
2027	2,079,709	81,725	2,161,435	2,394,417
2028	1,823,861	111,793	1,935,654	2,264,658
2029	921,981	89,221	1,011,202	1,418,964
2030	802,497	122,719	925,215	1,318,842
2031	728,158	162,684	890,843	1,273,696
2032	629,066	128,763	757,829	1,130,499
2033	594,224	179,696	773,920	1,135,911
2034	823,286	35,294	858,580	1,304,501
2035	848,607	331,162	1,179,769	1,649,156
2036	887,419	259,470	1,146,889	1,694,893
2037	1,037,683	95,064	1,132,746	1,794,368
2038	1,038,555	530,268	1,568,822	2,272,540
2039	1,211,137	509,794	1,720,931	2,442,283
2040	861,795	321,108	1,182,904	1,915,627
2041	883,272	297,761	1,181,034	1,936,381

2005 Baseline Direct I&M Emissions (tons CO_2): 21,134,511

[1] Based on NREL GHG emissions rates shown in Exhibit C-23

Exhibit C-10: Portfolio Name: Enhanced Regulation



	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041
EE	0	0	50	96	131	171	201	223	250	268	277	280	282	287	282	278	272	251	228	199	156
Wind	0	0	0	0	800	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600	2,400	2,400	3,200	4,000	4,800	4,800	5,600	5,800
Storage	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hybrid Storage	0	0	0	0	80	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160
Hybrid Solar	0	0	0	0	400	800	800	800	800	800	800	800	800	800	800	800	800	800	800	800	800
Solar	0	0	0	0	500	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,100	1,350	1,600	2,050	2,050	2,050	2,050	2,050
Gas CC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Gas Peaker	0	0	0	0	0	0	250	750	750	750	750	750	750	1,250	1,250	1,500	2,000	2,000	2,000	2,000	2,000
Total	0	0	50	96	1,911	3,731	4,011	4,533	4,560	4,578	4,587	4,590	4,592	5,997	6,242	7,538	9,282	10,061	10,038	10,809	10,966

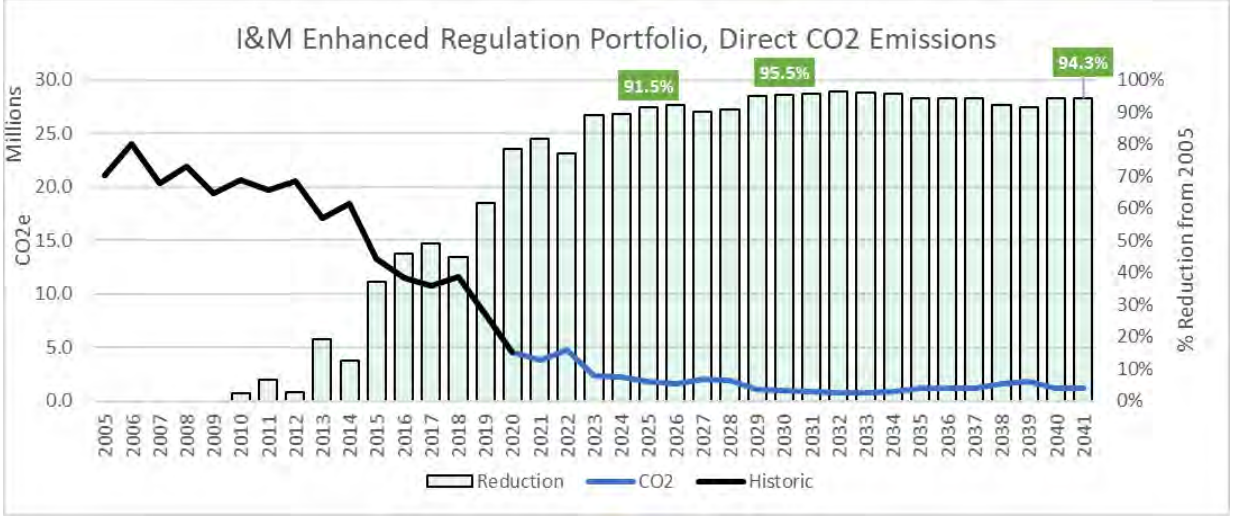
Mean IRP Cost to Serve Load (2019 $,000)

	Fuel Cost	Fixed Cost	Emissions Cost	Variable O&M	Energy Export Revenue	Energy Import Cost	Cost to Serve Load
2021	144,291	189,516	48	61,145	80,928	124,343	438,416
2022	131,329	222,721	58	53,866	82,542	179,140	504,571
2023	111,074	241,999	33	59,621	47,116	127,288	492,893
2024	113,111	253,214	43	59,502	46,191	127,894	507,797
2025	110,980	519,366	51	14,711	128,156	102,641	619,582
2026	116,440	815,798	54	(27,404)	255,405	85,032	734,501
2027	135,241	854,554	46	(27,974)	274,479	92,426	779,814
2028	146,567	828,957	16,853	(30,560)	330,927	90,474	721,280
2029	134,280	806,561	7,949	(27,067)	300,447	70,562	691,361
2030	132,252	797,338	6,860	(28,351)	284,398	62,220	685,646
2031	124,166	822,314	6,496	(31,250)	253,889	64,168	731,291
2032	126,739	807,289	5,467	(26,697)	263,569	61,314	710,106
2033	125,849	792,008	4,805	(28,409)	244,173	48,135	698,072
2034	126,210	961,610	8,054	(22,537)	415,284	37,352	694,802
2035	83,934	892,618	8,199	54,191	184,946	29,039	882,521
2036	82,636	1,002,811	9,400	58,382	269,717	22,449	905,145
2037	94,145	1,247,835	11,384	68,234	414,276	9,614	1,015,904
2038	35,775	1,270,378	11,260	43,609	228,710	44,439	1,175,118
2039	39,293	1,268,027	12,342	43,460	234,530	43,806	1,171,623
2040	31,603	1,368,439	9,713	49,385	297,153	27,431	1,189,005
2041	37,292	1,319,620	12,243	50,746	317,759	23,044	1,122,018
						NPV $B	**$ 7.49**

INDIANA MICHIGAN POWER
An AEP Company

Stochastic Range IRP Cost to Serve Load (2019 $,000)					
	95th Percentile	75th Percentile	50th Percentile	25th Percentile	5th Percentile
2021	463,471	444,911	437,233	428,728	420,886
2022	548,292	514,906	498,855	487,402	477,260
2023	551,861	506,850	487,441	472,149	451,785
2024	581,741	528,859	498,736	481,473	459,951
2025	706,051	648,555	611,923	583,708	544,168
2026	847,835	784,752	735,962	689,606	626,507
2027	905,527	830,806	775,917	725,164	656,045
2028	872,830	775,423	716,917	658,927	558,049
2029	870,084	749,636	682,914	616,023	536,063
2030	867,872	747,945	679,405	615,613	528,277
2031	940,581	786,689	715,982	663,462	581,112
2032	907,116	773,893	693,206	631,122	545,822
2033	894,501	754,006	693,489	625,001	526,063
2034	915,070	778,461	690,965	612,215	496,605
2035	1,078,484	938,787	866,002	812,834	743,609
2036	1,098,357	964,145	897,549	822,335	743,509
2037	1,215,619	1,099,951	1,013,524	933,999	793,981
2038	1,361,078	1,234,545	1,161,472	1,104,542	1,021,823
2039	1,356,171	1,224,164	1,159,899	1,097,565	1,009,008
2040	1,376,279	1,253,919	1,181,915	1,120,474	1,022,767
2041	1,320,529	1,191,582	1,112,610	1,039,478	962,055

Stochastic Range IRP Cost to Serve Load (NPV 2019 $,000)					
	95th Percentile	75th Percentile	50th Percentile	25th Percentile	5th Percentile
NPV (2021-2041)	8,806,379	7,865,043	7,366,958	6,961,794	6,512,057
NPV (2021-2030)	4,789,479	4,337,179	4,101,709	3,914,749	3,717,375
CAGR(2022-2030)	6.02%	4.88%	3.96%	2.82%	1.05%

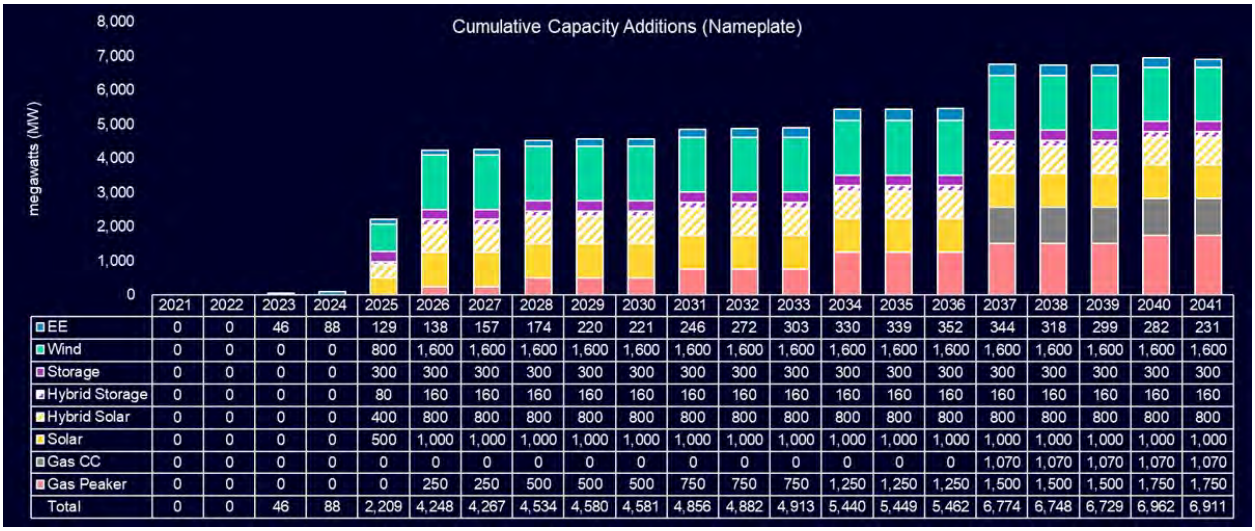


Direct and Lifecycle Emissions (tons CO_2), Stochastic				
Year	Direct I&M	Imports (CO_2e)	Total Direct + Imports	Total Lifecycle GHG CO_2e[1]
2021	3,280,303	592,536	3,872,840	3,682,067
2022	3,297,643	1,510,029	4,807,672	4,616,718
2023	1,593,388	724,130	2,317,519	2,247,400
2024	1,506,868	731,860	2,238,727	2,172,420
2025	1,509,051	296,112	1,805,164	1,892,028
2026	1,557,081	56,637	1,613,718	1,840,258
2027	2,003,211	81,170	2,084,382	2,327,977
2028	1,799,562	108,769	1,908,331	2,246,230
2029	953,622	86,104	1,039,726	1,451,397
2030	825,597	118,979	944,577	1,341,015
2031	750,522	158,496	909,018	1,294,570
2032	647,980	129,059	777,038	1,151,940
2033	614,781	178,135	792,916	1,157,339
2034	852,956	35,323	888,278	1,337,889
2035	878,455	330,245	1,208,700	1,681,791
2036	943,324	255,757	1,199,081	1,754,171
2037	1,135,211	94,310	1,229,522	1,903,661
2038	1,128,048	519,650	1,647,698	2,362,844
2039	1,302,652	501,303	1,803,955	2,536,789
2040	890,909	318,718	1,209,627	1,946,114
2041	902,005	297,063	1,199,068	1,957,049

2005 Baseline Direct I&M Emissions (tons CO_2): 21,134,511

[1] Based on NREL GHG emissions rates shown in Exhibit C-23

Exhibit C-11: Portfolio Name: Rockport 1 -2024 NTG



	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041
EE	0	0	46	88	129	138	157	174	220	221	246	272	303	330	339	352	344	318	299	282	231
Wind	0	0	0	0	800	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600
Storage	0	0	0	0	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300
Hybrid Storage	0	0	0	0	80	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160
Hybrid Solar	0	0	0	0	400	800	800	800	800	800	800	800	800	800	800	800	800	800	800	800	800
Solar	0	0	0	0	500	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
Gas CC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1,070	1,070	1,070	1,070	1,070
Gas Peaker	0	0	0	0	0	250	250	500	500	500	750	750	750	1,250	1,250	1,250	1,500	1,500	1,500	1,750	1,750
Total	0	0	46	88	2,209	4,248	4,267	4,534	4,580	4,581	4,856	4,882	4,913	5,440	5,449	5,462	6,774	6,748	6,729	6,962	6,911

Mean IRP Cost to Serve Load (2019 $,000)

	Fuel Cost	Fixed Cost	Emissions Cost	Variable O&M	Energy Export Revenue	Energy Import Cost	Cost to Serve Load
2021	144,331	189,516	48	61,146	80,946	124,348	438,444
2022	131,313	222,721	59	53,889	81,778	177,865	504,068
2023	112,237	232,249	34	59,719	48,560	127,002	482,678
2024	113,202	239,963	44	59,569	47,046	129,600	495,325
2025	87,317	591,899	0	13,598	93,776	104,594	703,632
2026	100,991	921,551	7	(28,275)	224,456	85,045	854,863
2027	107,056	916,921	4	(29,294)	228,195	93,372	859,864
2028	118,977	834,889	5,068	(31,640)	276,582	92,772	743,231
2029	125,048	826,825	5,268	(27,304)	281,756	71,187	718,952
2030	124,330	810,497	4,535	(28,556)	268,017	62,975	705,605
2031	123,868	810,720	6,412	(31,259)	250,738	64,472	722,770
2032	126,473	795,865	5,395	(26,706)	262,942	61,427	699,080
2033	125,543	780,601	4,774	(28,409)	245,025	48,065	685,358
2034	126,455	805,612	8,152	(28,209)	323,038	40,934	629,295
2035	84,607	727,291	8,369	47,662	101,534	56,021	822,081
2036	80,351	709,472	8,359	45,267	91,915	72,968	824,085
2037	222,650	843,199	41,457	61,313	286,400	10,335	891,313
2038	169,877	761,437	42,887	31,319	59,999	100,261	1,046,080
2039	171,616	743,254	43,811	31,080	62,443	96,942	1,024,260
2040	170,289	747,073	43,801	31,069	60,987	105,602	1,036,848
2041	172,017	714,941	45,533	30,923	63,219	104,712	1,005,855
						NPV $B	**$ 7.43**

INDIANA MICHIGAN POWER
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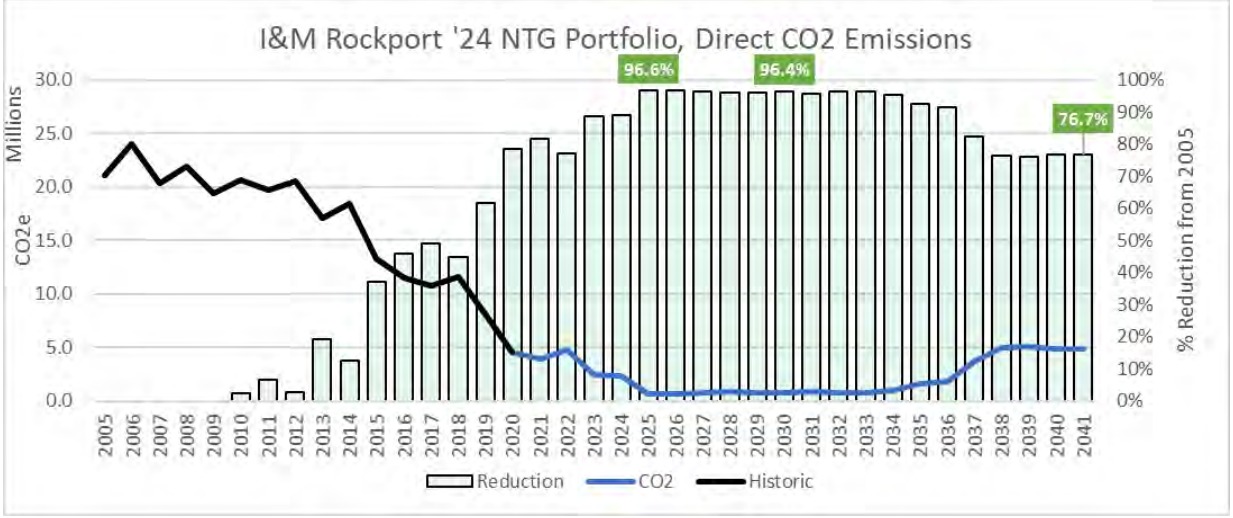
Stochastic Range IRP Cost to Serve Load (2019 $,000)					
	95th Percentile	75th Percentile	50th Percentile	25th Percentile	5th Percentile
2021	463,475	445,072	436,971	428,706	421,164
2022	547,236	514,841	498,306	486,996	476,969
2023	543,283	497,150	477,419	462,087	441,708
2024	570,406	517,396	485,828	467,537	448,502
2025	795,006	732,030	696,869	669,311	637,958
2026	959,307	895,253	854,395	811,510	762,020
2027	980,113	905,792	851,982	811,954	748,162
2028	901,638	794,407	735,766	681,419	594,811
2029	897,633	778,410	710,180	641,601	566,236
2030	887,330	765,992	698,498	636,674	549,660
2031	931,945	778,087	707,254	654,917	574,123
2032	895,834	762,684	682,967	620,495	534,835
2033	881,774	741,606	681,186	612,468	513,453
2034	834,139	705,674	624,218	553,108	451,343
2035	1,010,862	873,618	800,691	753,381	696,428
2036	1,010,831	879,104	807,766	755,566	691,982
2037	1,096,525	939,278	882,635	814,767	747,482
2038	1,265,366	1,109,190	1,014,892	968,781	903,770
2039	1,239,990	1,073,324	1,000,560	950,684	884,960
2040	1,295,061	1,094,447	1,008,163	951,145	877,837
2041	1,205,115	1,068,430	980,517	934,580	861,110

Stochastic Range IRP Cost to Serve Load (NPV 2019 $,000)					
	95th Percentile	75th Percentile	50th Percentile	25th Percentile	5th Percentile
NPV (2021-2041)	8,703,931	7,769,030	7,283,464	6,911,258	6,522,256
NPV (2021-2030)	4,999,431	4,561,581	4,311,849	4,123,502	3,934,935
CAGR(2022-2030)	6.32%	5.22%	4.31%	3.27%	1.52%



Direct and Lifecycle Emissions (tons CO_2), Stochastic				
Year	Direct I&M	Imports (CO_2e)	Total Direct + Imports	Total Lifecycle GHG CO_2e[1]
2021	3,282,847	592,629	3,875,476	3,684,533
2022	3,318,821	1,491,647	4,810,468	4,617,889
2023	1,696,953	720,093	2,417,046	2,337,705
2024	1,566,335	753,884	2,320,219	2,248,570
2025	386,089	322,856	708,945	895,916
2026	657,838	55,796	713,634	1,077,480
2027	662,099	95,347	757,446	1,118,350
2028	711,866	131,167	843,033	1,226,373
2029	724,306	93,518	817,824	1,197,681
2030	627,117	127,987	755,104	1,123,998
2031	742,143	163,612	905,755	1,290,279
2032	640,377	127,955	768,332	1,142,314
2033	606,105	177,998	784,102	1,147,470
2034	861,133	77,620	938,753	1,337,230
2035	897,108	673,067	1,570,175	1,964,101
2036	888,415	910,509	1,798,924	2,191,941
2037	3,624,450	123,866	3,748,316	5,035,173
2038	3,698,259	1,256,178	4,954,437	6,260,158
2039	3,827,870	1,213,089	5,040,959	6,353,535
2040	3,574,630	1,323,894	4,898,523	6,185,019
2041	3,531,076	1,383,615	4,914,691	6,198,506

2005 Baseline Direct I&M Emissions (tons CO_2): 21,134,511

[1] Based on NREL GHG emissions rates shown in Exhibit C-23

INDIANA MICHIGAN POWER
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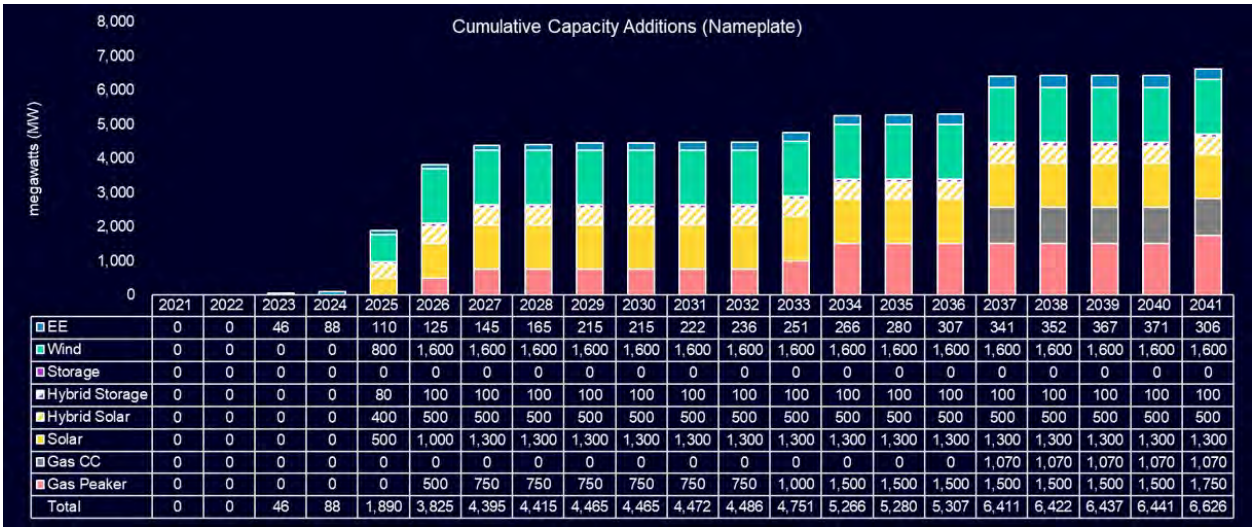
Exhibit C-12: Portfolio Name: Rockport 1 -2026 NTG



	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041
EE	0	0	46	88	110	125	145	165	215	215	222	236	251	266	280	307	341	352	367	371	306
Wind	0	0	0	0	800	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600
Storage	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hybrid Storage	0	0	0	0	80	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Hybrid Solar	0	0	0	0	400	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500
Solar	0	0	0	0	500	1,000	1,300	1,300	1,300	1,300	1,300	1,300	1,300	1,300	1,300	1,300	1,300	1,300	1,300	1,300	1,300
Gas CC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1,070	1,070	1,070	1,070	1,070
Gas Peaker	0	0	0	0	0	500	750	750	750	750	750	750	1,000	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,750
Total	0	0	46	88	1,890	3,825	4,395	4,415	4,465	4,465	4,472	4,486	4,751	5,266	5,280	5,307	6,411	6,422	6,437	6,441	6,626

Mean IRP Cost to Serve Load (2019 $,000)

	Fuel Cost	Fixed Cost	Emissions Cost	Variable O&M	Energy Export Revenue	Energy Import Cost	Cost to Serve Load
2021	144,398	189,516	48	61,150	81,105	124,421	438,430
2022	131,306	222,721	58	53,887	81,773	177,889	504,088
2023	112,269	239,845	34	59,720	48,641	127,038	490,263
2024	114,053	251,176	45	59,600	46,911	127,735	505,691
2025	112,892	555,648	53	14,849	129,429	102,862	656,865
2026	132,407	863,748	53	(27,935)	253,113	84,971	800,130
2027	121,054	921,676	13	(28,901)	243,386	92,737	863,192
2028	127,951	817,725	7,561	(31,417)	289,254	92,560	724,748
2029	133,921	810,533	7,869	(27,077)	294,471	70,895	701,197
2030	132,003	794,211	6,767	(28,358)	278,800	62,647	688,233
2031	123,984	767,046	6,450	(31,256)	249,226	64,673	680,962
2032	126,582	753,415	5,431	(26,702)	260,475	61,622	659,438
2033	130,569	760,670	6,291	(28,274)	248,826	48,187	668,428
2034	131,118	787,155	9,756	(28,080)	325,857	41,196	614,557
2035	89,703	716,448	9,947	47,797	106,133	57,458	814,872
2036	85,384	703,286	10,037	45,399	96,691	73,836	820,699
2037	222,945	824,443	41,533	61,329	284,781	10,430	874,647
2038	170,119	744,022	42,949	31,331	60,007	100,733	1,029,447
2039	171,797	726,625	43,863	31,091	62,923	96,732	1,007,185
2040	166,338	704,018	42,581	30,975	55,705	105,233	993,441
2041	172,176	688,463	45,568	30,935	64,196	104,061	978,291
						NPV $B	**$ 7.26**

INDIANA MICHIGAN POWER
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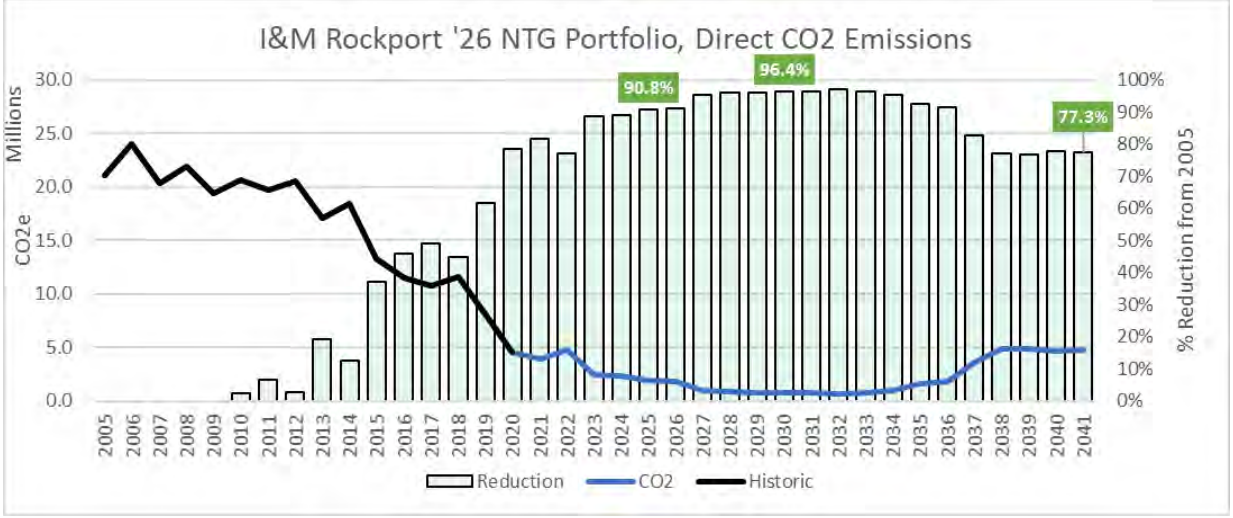
Stochastic Range IRP Cost to Serve Load (2019 $,000)					
	95th Percentile	75th Percentile	50th Percentile	25th Percentile	5th Percentile
2021	463,474	444,940	437,127	428,702	421,097
2022	546,999	514,912	498,428	486,859	476,816
2023	550,959	504,804	485,060	469,670	449,258
2024	579,285	527,328	496,698	478,965	457,814
2025	742,786	686,087	649,279	620,853	582,260
2026	900,680	846,151	800,805	756,858	703,735
2027	982,445	909,496	854,323	816,240	752,528
2028	879,463	776,083	719,218	663,396	570,012
2029	879,214	760,040	691,142	625,212	547,789
2030	871,037	749,123	680,877	617,812	532,921
2031	890,383	736,243	665,203	613,501	532,711
2032	855,867	723,308	642,721	581,498	495,724
2033	864,756	724,518	660,777	596,749	493,966
2034	820,440	690,522	607,883	539,981	433,048
2035	1,004,618	867,658	793,275	740,584	689,936
2036	1,008,277	876,576	804,146	752,233	689,754
2037	1,079,883	922,481	865,972	798,275	731,236
2038	1,248,859	1,093,016	998,255	951,973	886,774
2039	1,223,405	1,056,410	983,230	933,657	867,677
2040	1,250,852	1,050,724	964,687	907,461	835,146
2041	1,176,878	1,040,738	953,059	907,020	833,586

Stochastic Range IRP Cost to Serve Load (NPV 2019 $,000)					
	95th Percentile	75th Percentile	50th Percentile	25th Percentile	5th Percentile
NPV (2021-2041)	8,534,928	7,590,090	7,118,829	6,746,380	6,361,432
NPV (2021-2030)	4,910,009	4,471,146	4,224,077	4,039,196	3,853,629
CAGR(2022-2030)	6.07%	4.90%	4.01%	2.91%	1.14%



Direct and Lifecycle Emissions (tons CO_2), Stochastic				
Year	Direct I&M	Imports (CO_2e)	Total Direct + Imports	Total Lifecycle GHG CO_2e[1]
2021	3,286,018	593,600	3,879,618	3,688,340
2022	3,318,504	1,491,945	4,810,449	4,617,979
2023	1,698,625	720,601	2,419,226	2,339,745
2024	1,604,223	730,335	2,334,558	2,259,570
2025	1,650,086	300,116	1,950,203	2,024,496
2026	1,790,972	54,481	1,845,453	2,357,629
2027	855,241	85,290	940,531	1,541,172
2028	714,865	131,139	846,004	1,472,337
2029	727,801	90,227	818,028	1,446,044
2030	630,194	124,898	755,092	1,340,025
2031	581,220	165,559	746,779	1,296,151
2032	502,193	130,440	632,634	1,148,565
2033	610,415	179,120	789,535	1,297,736
2034	865,645	80,310	945,955	1,483,643
2035	903,316	689,711	1,593,027	2,130,079
2036	894,351	920,523	1,814,874	2,347,029
2037	3,521,159	127,225	3,648,384	5,046,339
2038	3,594,671	1,260,104	4,854,776	6,270,447
2039	3,712,188	1,207,927	4,920,115	6,353,627
2040	3,379,095	1,315,946	4,695,041	6,068,856
2041	3,415,260	1,372,693	4,787,952	6,191,119

2005 Baseline Direct I&M Emissions (tons CO_2): 21,134,511

[1] Based on NREL GHG emissions rates shown in Exhibit C-23

INDIANA MICHIGAN POWER
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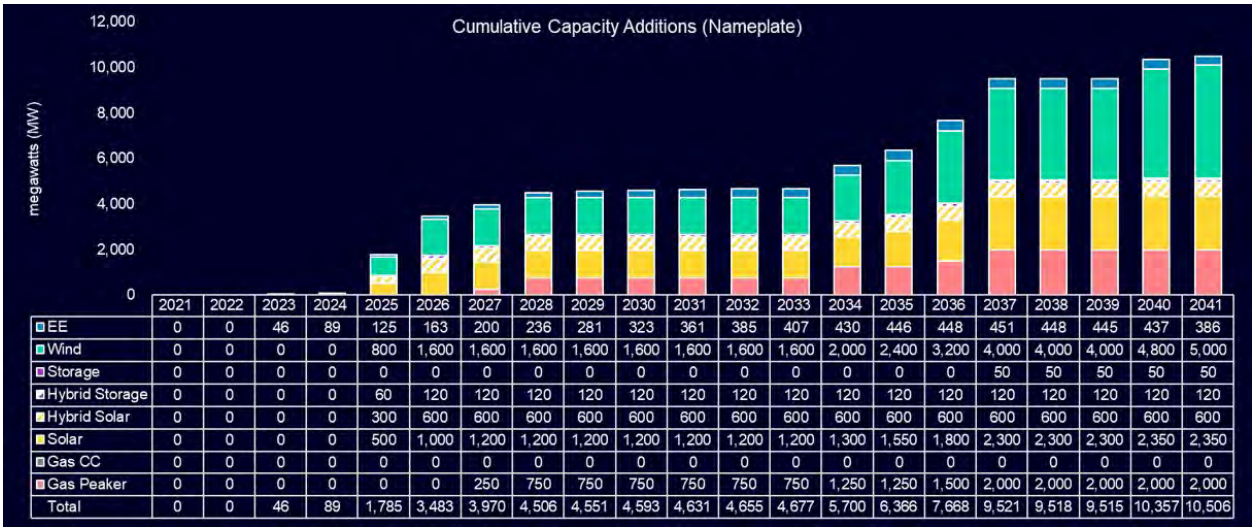
Exhibit C-13: Portfolio Name: Rapid Technology Advancement - NTG



	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041
EE	0	0	46	89	125	163	200	236	281	323	361	385	407	430	446	448	451	448	445	437	386
Wind	0	0	0	0	800	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600	2,000	2,400	3,200	4,000	4,000	4,000	4,800	5,000
Storage	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	50	50	50	50	50
Hybrid Storage	0	0	0	0	60	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120
Hybrid Solar	0	0	0	0	300	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600
Solar	0	0	0	0	500	1,000	1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,300	1,550	1,800	2,300	2,300	2,300	2,350	2,350
Gas CC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Gas Peaker	0	0	0	0	0	0	250	750	750	750	750	750	750	1,250	1,250	1,500	2,000	2,000	2,000	2,000	2,000
Total	0	0	46	89	1,785	3,483	3,970	4,506	4,551	4,593	4,631	4,655	4,677	5,700	6,366	7,668	9,521	9,518	9,515	10,357	10,506

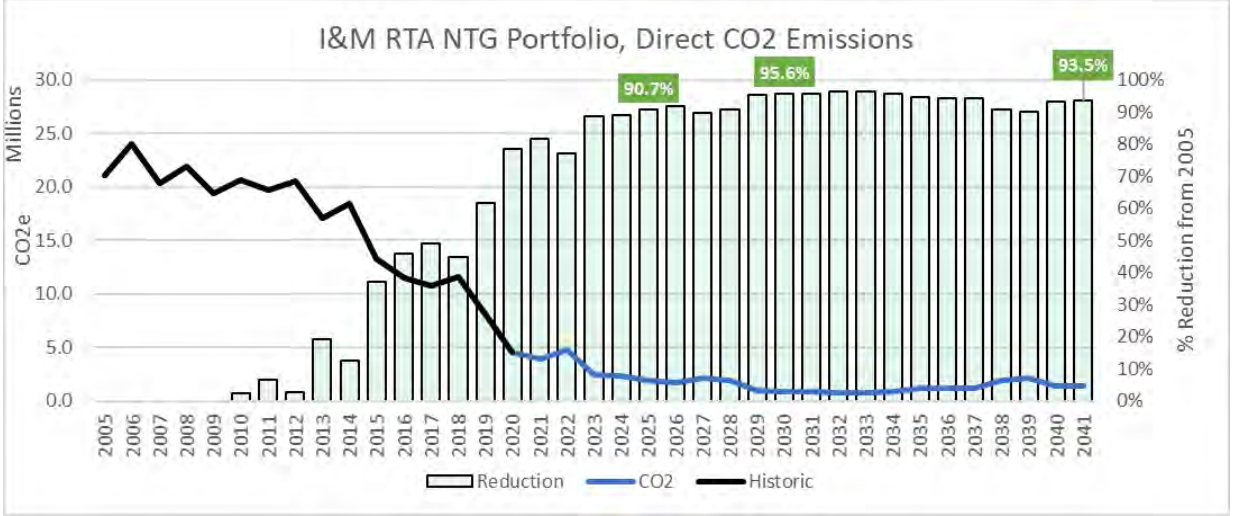
Mean IRP Cost to Serve Load (2019 $,000)

	Fuel Cost	Fixed Cost	Emissions Cost	Variable O&M	Energy Export Revenue	Energy Import Cost	Cost to Serve Load
2021	144,363	189,516	48	61,149	81,077	124,397	438,396
2022	131,213	222,721	58	53,883	81,782	178,008	504,101
2023	112,307	237,568	34	59,723	48,776	126,999	487,853
2024	113,939	247,917	45	59,596	46,964	127,625	502,152
2025	113,083	538,321	53	14,510	125,819	103,300	643,439
2026	117,631	830,850	54	(27,993)	244,405	85,048	761,173
2027	135,686	879,225	50	(27,895)	272,866	92,307	806,508
2028	145,806	821,791	17,242	(30,537)	327,937	90,357	716,548
2029	133,161	798,670	7,657	(27,096)	297,270	70,559	685,221
2030	131,438	789,643	6,615	(28,373)	284,587	62,091	676,595
2031	123,446	760,974	6,274	(31,271)	255,850	63,834	666,716
2032	126,134	744,705	5,312	(26,717)	267,358	60,988	642,613
2033	125,204	730,874	4,693	(28,423)	248,632	47,566	631,071
2034	125,489	834,463	7,825	(25,233)	375,792	38,407	604,572
2035	82,851	847,695	7,927	54,159	192,024	27,244	827,456
2036	82,016	1,003,145	9,211	58,360	278,833	21,426	894,420
2037	93,309	1,218,371	11,203	68,371	426,558	9,064	972,712
2038	36,380	1,129,262	11,421	38,174	166,963	66,015	1,112,856
2039	40,024	1,102,093	12,503	38,062	173,675	64,519	1,083,264
2040	32,579	1,210,502	9,962	44,114	234,661	40,738	1,102,808
2041	37,555	1,196,066	12,268	45,505	255,510	35,090	1,068,427
						NPV $B	**$ 7.28**

INDIANA MICHIGAN POWER
An AEP Company

Stochastic Range IRP Cost to Serve Load (2019 $,000)					
	95th Percentile	75th Percentile	50th Percentile	25th Percentile	5th Percentile
2021	463,447	444,822	436,914	428,651	421,250
2022	546,950	514,996	498,370	486,938	476,878
2023	548,441	501,668	482,691	467,056	446,901
2024	576,292	523,722	493,256	474,605	454,491
2025	729,056	672,986	636,094	608,066	567,683
2026	870,653	810,896	763,370	716,795	657,035
2027	929,177	856,972	803,901	753,112	682,192
2028	869,802	770,499	712,220	653,922	556,878
2029	862,937	742,373	675,507	609,125	533,119
2030	857,579	738,931	670,141	606,788	520,577
2031	874,122	721,956	651,735	598,940	517,607
2032	838,505	706,541	626,636	563,659	477,889
2033	827,730	687,887	626,405	558,695	457,244
2034	822,441	682,790	599,020	525,072	421,729
2035	1,022,521	880,379	812,130	759,282	687,528
2036	1,085,763	955,008	888,201	810,815	731,885
2037	1,168,192	1,057,542	970,533	891,466	748,663
2038	1,307,829	1,170,793	1,094,684	1,044,635	970,106
2039	1,258,662	1,129,256	1,069,100	1,010,508	939,028
2040	1,287,549	1,160,096	1,091,481	1,036,139	955,204
2041	1,254,110	1,130,044	1,057,187	987,548	919,107

Stochastic Range IRP Cost to Serve Load (NPV 2019 $,000)					
	95th Percentile	75th Percentile	50th Percentile	25th Percentile	5th Percentile
NPV (2021-2041)	8,586,066	7,660,665	7,168,633	6,756,284	6,337,117
NPV (2021-2030)	4,822,275	4,370,475	4,131,172	3,949,631	3,755,185
CAGR(2022-2030)	5.90%	4.71%	3.79%	2.64%	0.86%



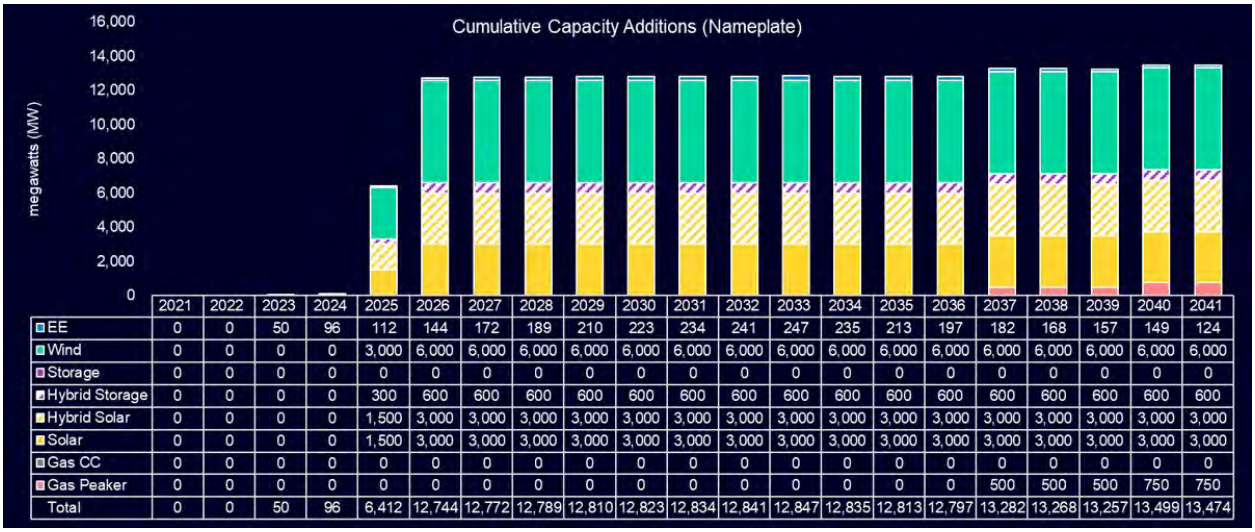
Direct and Lifecycle Emissions (tons CO_2), Stochastic				
Year	Direct I&M	Imports (CO_2e)	Total Direct + Imports	Total Lifecycle GHG CO_2e[1]
2021	3,284,393	593,245	3,877,638	3,686,513
2022	3,313,916	1,493,589	4,807,505	4,615,377
2023	1,700,421	720,011	2,420,432	2,340,797
2024	1,597,095	729,785	2,326,880	2,252,311
2025	1,657,375	308,629	1,966,004	2,027,557
2026	1,654,190	59,485	1,713,675	1,906,681
2027	2,077,451	82,756	2,160,207	2,393,458
2028	1,820,183	109,360	1,929,543	2,258,994
2029	922,573	87,587	1,010,159	1,417,993
2030	802,332	118,458	920,791	1,314,396
2031	727,693	155,363	883,055	1,265,845
2032	627,781	122,426	750,207	1,122,717
2033	593,718	171,065	764,784	1,126,713
2034	830,159	48,569	878,728	1,305,300
2035	847,262	309,273	1,156,535	1,625,760
2036	925,221	243,032	1,168,254	1,721,105
2037	1,111,600	87,347	1,198,947	1,876,051
2038	1,138,528	791,513	1,930,041	2,610,347
2039	1,325,028	761,935	2,086,963	2,786,464
2040	909,591	484,227	1,393,819	2,102,261
2041	922,818	449,713	1,372,531	2,102,824

2005 Baseline Direct I&M Emissions (tons CO_2): 21,134,511

[1] Based on NREL GHG emissions rates shown in Exhibit C-23

INDIANA MICHIGAN POWER
An AEP Company

Exhibit C-14: Portfolio Name: Reference No Renewable Limits



	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041
EE	0	0	50	96	112	144	172	189	210	223	234	241	247	235	213	197	182	168	157	149	124
Wind	0	0	0	0	3,000	6,000	6,000	6,000	6,000	6,000	6,000	6,000	6,000	6,000	6,000	6,000	6,000	6,000	6,000	6,000	6,000
Storage	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hybrid Storage	0	0	0	0	300	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600
Hybrid Solar	0	0	0	0	1,500	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000
Solar	0	0	0	0	1,500	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000
Gas CC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Gas Peaker	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	500	500	500	750	750
Total	0	0	50	96	6,412	12,744	12,772	12,789	12,810	12,823	12,834	12,841	12,847	12,835	12,813	12,797	13,282	13,268	13,257	13,499	13,474

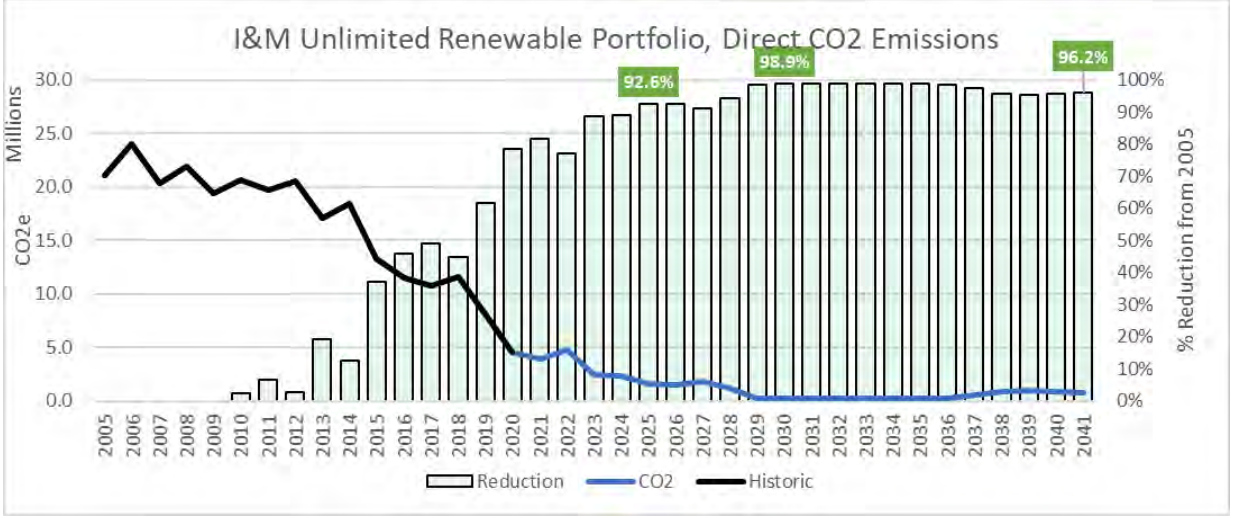
Mean IRP Cost to Serve Load (2019 $,000)

	Fuel Cost	Fixed Cost	Emissions Cost	Variable O&M	Energy Export Revenue	Energy Import Cost	Cost to Serve Load
2021	144,386	189,516	48	61,150	81,119	124,417	438,399
2022	131,296	222,721	58	53,886	81,804	177,939	504,097
2023	112,227	241,999	35	59,720	49,079	126,644	491,541
2024	114,072	253,214	45	59,600	47,647	126,920	506,198
2025	111,499	1,368,212	53	(105,200)	411,812	85,132	1,047,874
2026	116,151	2,455,628	53	(269,940)	843,551	80,934	1,539,263
2027	128,176	2,412,733	48	(273,213)	871,028	86,946	1,483,658
2028	119,095	2,268,892	15,902	(279,597)	1,042,151	81,749	1,157,927
2029	107,066	2,211,485	0	(268,681)	1,003,793	63,883	1,109,960
2030	108,752	2,169,754	0	(272,453)	965,495	53,573	1,094,130
2031	104,876	2,111,392	0	(277,679)	913,326	52,745	1,078,009
2032	110,474	2,067,892	0	(267,582)	923,191	53,652	1,041,246
2033	110,395	2,025,257	0	(270,808)	907,911	35,132	992,065
2034	102,771	1,974,124	0	(272,997)	974,990	35,173	864,081
2035	58,382	1,871,184	0	87,107	712,487	5,501	1,309,385
2036	54,539	1,834,150	0	84,902	685,849	7,384	1,295,127
2037	68,328	1,841,408	3,136	87,639	717,454	5,811	1,288,407
2038	10,148	1,738,058	3,164	57,460	429,162	35,377	1,414,646
2039	10,847	1,695,076	3,384	57,188	430,380	35,259	1,371,231
2040	14,251	1,679,378	4,340	57,672	424,616	34,355	1,365,194
2041	16,136	1,627,002	5,248	57,448	418,970	32,996	1,319,112
						NPV $B	**$ 10.49**

INDIANA MICHIGAN POWER
An AEP Company

Stochastic Range IRP Cost to Serve Load (2019 $,000)					
	95th Percentile	75th Percentile	50th Percentile	25th Percentile	5th Percentile
2021	463,489	444,825	437,202	428,627	420,863
2022	547,947	514,890	498,376	487,033	476,910
2023	552,092	505,896	486,266	470,784	450,668
2024	579,681	527,894	497,152	479,070	458,324
2025	1,182,397	1,106,899	1,040,215	995,018	918,182
2026	1,812,280	1,651,889	1,539,849	1,440,817	1,270,006
2027	1,722,565	1,588,799	1,489,501	1,390,912	1,252,726
2028	1,465,400	1,293,160	1,167,332	1,035,683	832,319
2029	1,414,056	1,236,111	1,117,426	983,875	766,726
2030	1,389,552	1,243,902	1,082,383	963,734	778,585
2031	1,373,886	1,196,764	1,075,862	961,729	747,127
2032	1,390,602	1,182,893	1,038,783	909,137	675,363
2033	1,315,205	1,138,621	1,004,740	871,181	636,277
2034	1,219,165	1,014,437	864,540	706,851	498,297
2035	1,564,493	1,413,584	1,309,824	1,206,689	1,057,771
2036	1,536,463	1,419,026	1,292,226	1,183,717	1,031,520
2037	1,554,620	1,408,706	1,298,569	1,175,218	985,765
2038	1,625,611	1,500,210	1,409,564	1,337,467	1,224,197
2039	1,586,462	1,442,135	1,367,593	1,292,714	1,168,762
2040	1,564,521	1,446,550	1,363,153	1,283,720	1,165,716
2041	1,542,242	1,404,250	1,319,097	1,227,750	1,139,752

Stochastic Range IRP Cost to Serve Load (NPV 2019 $,000)					
	95th Percentile	75th Percentile	50th Percentile	25th Percentile	5th Percentile
NPV (2021-2041)	12,126,611	11,130,703	10,408,193	9,804,281	9,172,532
NPV (2021-2030)	6,803,763	6,417,633	6,084,643	5,797,006	5,385,942
CAGR(2022-2030)	13.39%	11.66%	10.28%	8.70%	5.98%



Direct and Lifecycle Emissions (tons CO_2), Stochastic

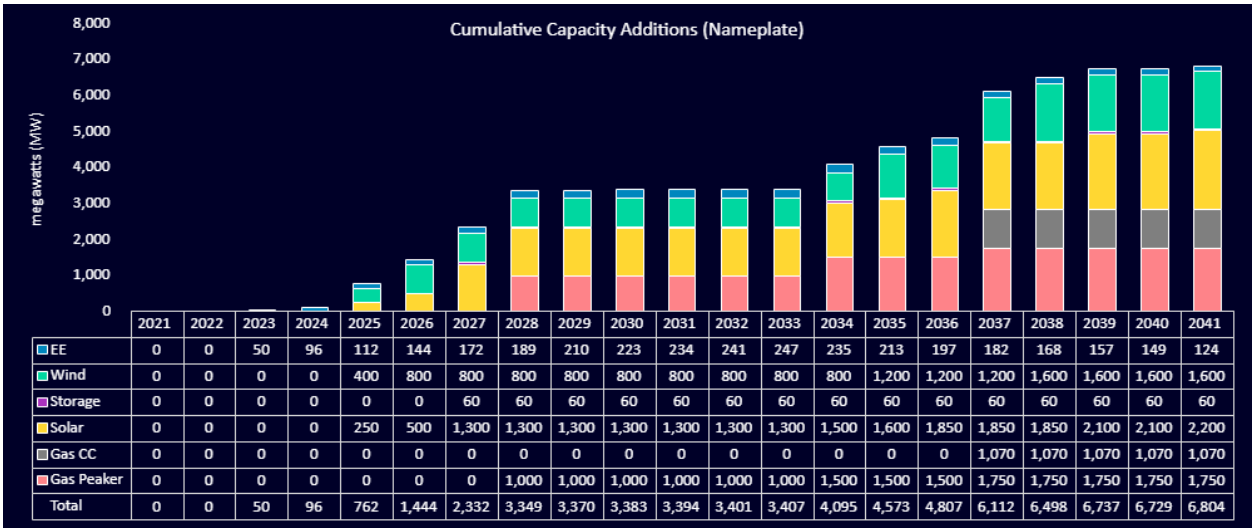
Year	Direct I&M	Imports (CO_2e)	Total Direct	Total Lifecycle GHG CO_2e[1]
2021	3,285,383	593,519	3,878,901	3,687,706
2022	3,318,093	1,492,757	4,810,850	4,618,381
2023	1,696,305	714,442	2,410,747	2,331,458
2024	1,605,108	717,650	2,322,758	2,247,665
2025	1,565,607	8,531	1,574,138	1,997,886
2026	1,554,375	1,401	1,555,776	2,465,795
2027	1,852,717	2,005	1,854,721	2,751,426
2028	1,166,585	2,499	1,169,084	2,101,010
2029	270,285	12,925	283,210	1,288,944
2030	230,427	5,636	236,062	1,238,768
2031	233,411	8,551	241,961	1,244,603
2032	203,750	15,863	219,613	1,223,554
2033	207,801	8,925	216,726	1,213,479
2034	217,987	6,813	224,800	1,222,458
2035	221,926	32,417	254,343	1,242,974
2036	229,896	54,589	284,485	1,276,395
2037	496,637	34,694	531,331	1,555,807
2038	508,121	394,777	902,898	1,928,428
2039	613,309	382,827	996,135	2,029,557
2040	483,494	395,379	878,873	1,912,560
2041	392,760	412,794	805,554	1,835,356

2005 Baseline Direct I&M Emissions (tons CO_2): 21,134,511

[1] Based on NREL GHG emissions rates shown in Exhibit C-23

INDIANA MICHIGAN POWER
An AEP Company

Exhibit C-15: Portfolio Name: Preferred Portfolio



	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041
EE	0	0	50	96	112	144	172	189	210	223	234	241	247	235	213	197	182	168	157	149	124
Wind	0	0	0	0	400	800	800	800	800	800	800	800	800	800	1,200	1,200	1,200	1,600	1,600	1,600	1,600
Storage	0	0	0	0	0	0	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60
Solar	0	0	0	0	250	500	1,300	1,300	1,300	1,300	1,300	1,300	1,300	1,500	1,600	1,850	1,850	1,850	2,100	2,100	2,200
Gas CC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1,070	1,070	1,070	1,070	1,070
Gas Peaker	0	0	0	0	0	0	0	1,000	1,000	1,000	1,000	1,000	1,000	1,500	1,500	1,500	1,750	1,750	1,750	1,750	1,750
Total	0	0	50	96	762	1,444	2,332	3,349	3,370	3,383	3,394	3,401	3,407	4,095	4,573	4,807	6,112	6,498	6,737	6,729	6,804

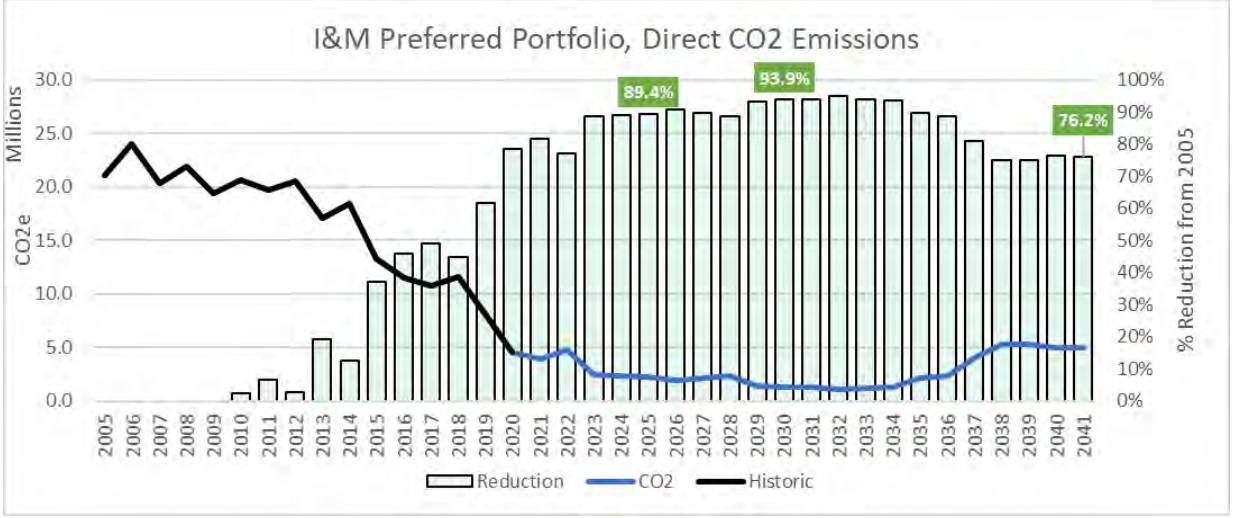
Mean IRP Cost to Serve Load ($,000)

	Fuel Cost	Fixed Cost	Emissions Cost	Variable O&M	Energy Export Revenue	Energy Import Cost	Cost to Serve Load
2021	144,443	189,516	48	61,152	81,155	124,385	438,390
2022	131,271	222,721	59	53,885	81,710	177,863	504,089
2023	112,311	241,999	34	59,724	49,067	126,554	491,552
2024	114,056	253,214	45	59,599	47,622	126,932	506,219
2025	113,301	361,652	52	35,753	78,874	118,641	550,517
2026	118,014	481,810	56	14,966	129,832	96,357	581,362
2027	129,176	627,870	50	17,411	177,715	100,486	697,273
2028	156,993	619,830	20,241	15,828	236,173	101,039	677,655
2029	143,801	601,075	10,570	17,890	204,216	80,723	649,368
2030	140,527	596,437	9,290	17,045	190,780	72,576	644,723
2031	130,922	574,538	8,787	14,554	166,310	78,148	639,672
2032	132,419	558,941	7,390	18,087	172,472	72,340	616,113
2033	136,110	548,846	8,015	16,774	160,362	61,399	610,540
2034	136,320	594,110	11,533	18,052	238,890	49,425	569,685
2035	95,112	596,585	11,658	44,920	77,633	81,347	751,582
2036	90,536	620,582	11,654	43,366	78,741	96,692	783,507
2037	232,615	760,357	44,418	59,458	251,721	14,300	858,069
2038	178,571	747,344	45,619	31,737	68,518	106,094	1,041,190
2039	180,753	757,311	46,719	32,338	82,581	97,853	1,032,392
2040	174,106	732,731	45,002	32,197	71,988	107,274	1,019,322
2041	176,312	705,228	46,969	32,404	78,248	105,517	988,437
						NPV $B	**$ 6.76**

INDIANA MICHIGAN POWER
An AEP Company

Stochastic Range IRP Cost to Serve Load (2019 $,000)					
	95th Percentile	75th Percentile	50th Percentile	25th Percentile	5th Percentile
2021	463,514	444,916	437,102	428,572	421,083
2022	547,108	514,873	498,453	486,890	476,938
2023	552,080	505,863	486,466	470,930	450,675
2024	579,639	527,921	496,897	479,286	458,333
2025	642,060	578,589	542,486	517,505	486,248
2026	686,366	612,164	578,137	541,801	502,122
2027	817,184	739,421	691,002	652,131	590,595
2028	829,501	724,742	670,627	618,269	532,902
2029	822,999	703,387	636,299	583,670	523,468
2030	827,011	693,719	628,193	580,282	508,373
2031	842,589	690,463	615,591	573,407	512,316
2032	818,769	676,603	597,245	543,541	470,909
2033	805,338	654,714	598,576	536,346	466,057
2034	770,652	630,714	557,900	497,061	402,585
2035	946,530	803,890	730,149	675,764	633,002
2036	970,579	832,774	763,013	712,867	653,148
2037	1,064,884	911,192	839,803	784,873	722,717
2038	1,261,489	1,107,305	1,006,858	962,931	896,368
2039	1,235,398	1,083,039	1,005,203	960,606	891,052
2040	1,277,026	1,077,977	990,467	935,232	858,261
2041	1,182,606	1,052,249	965,028	913,705	842,609

Stochastic Range IRP Cost to Serve Load (NPV 2019 $,000)					
	95th Percentile	75th Percentile	50th Percentile	25th Percentile	5th Percentile
NPV (2021-2041)	8,097,095	7,105,997	6,621,375	6,231,914	5,895,490
NPV (2021-2030)	4,506,825	4,071,804	3,827,808	3,644,249	3,466,605
CAGR(2022-2030)	5.45%	3.90%	3.03%	2.03%	0.66%

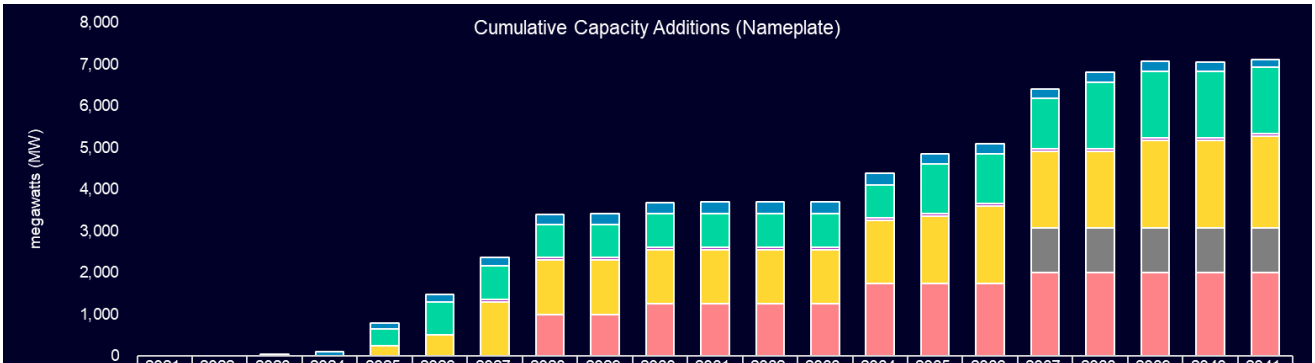


Direct and Lifecycle Emissions (tons CO_2), Stochastic				
Year	Direct I&M	Imports (CO_2e)	Total Direct + Imports	Total Lifecycle GHG CO_2e[1]
2021	3,288,302	593,074	3,881,376	3,689,955
2022	3,316,800	1,491,801	4,808,601	4,616,224
2023	1,700,556	713,037	2,413,594	2,333,940
2024	1,604,358	717,650	2,322,008	2,246,984
2025	1,674,176	557,572	2,231,748	2,210,291
2026	1,683,291	238,291	1,921,582	1,948,750
2027	1,923,804	208,947	2,132,751	2,243,589
2028	2,107,020	244,839	2,351,859	1,605,478
2029	1,191,191	214,944	1,406,135	1,756,660
2030	1,034,606	257,342	1,291,948	1,623,259
2031	931,595	348,998	1,280,593	1,597,097
2032	803,138	258,611	1,061,748	1,363,743
2033	883,320	352,573	1,235,893	1,543,513
2034	1,128,919	186,566	1,315,485	1,680,460
2035	1,167,023	991,971	2,158,994	2,549,272
2036	1,147,102	1,212,125	2,359,227	2,776,447
2037	3,865,740	170,117	4,035,857	5,347,449
2038	3,916,618	1,327,267	5,243,885	6,586,721
2039	4,058,104	1,217,233	5,275,337	6,654,828
2040	3,668,364	1,338,488	5,006,853	6,341,131
2041	3,642,442	1,383,251	5,025,693	6,371,141

2005 Baseline Direct I&M Emissions (tons CO_2): 21,134,511

[1] Based on NREL GHG emissions rates shown in Exhibit C-23

Exhibit C-16: Portfolio Name: OVEC 2030



	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041
EE	0	0	50	96	136	170	204	234	260	278	293	288	283	279	253	247	241	242	244	221	180
Wind	0	0	0	0	400	800	800	800	800	800	800	800	800	800	1,200	1,200	1,200	1,600	1,600	1,600	1,600
Storage	0	0	0	0	0	0	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60
Solar	0	0	0	0	250	500	1,300	1,300	1,300	1,300	1,300	1,300	1,300	1,500	1,600	1,850	1,850	1,850	2,100	2,100	2,200
Gas CC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1,070	1,070	1,070	1,070	1,070
Gas Peaker	0	0	0	0	0	0	0	1,000	1,000	1,250	1,250	1,250	1,250	1,750	1,750	1,750	2,000	2,000	2,000	2,000	2,000
Total	0	0	50	96	786	1,470	2,364	3,394	3,420	3,688	3,703	3,698	3,693	4,389	4,863	5,107	6,421	6,822	7,074	7,051	7,110

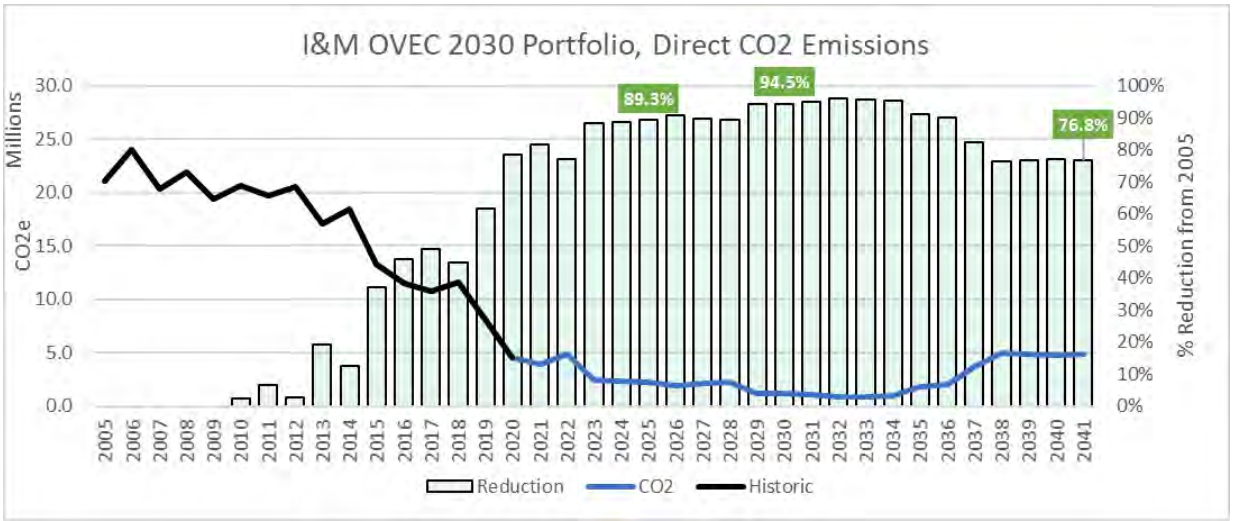
Mean IRP Cost to Serve Load ($,000)

	Fuel Cost	Fixed Cost	Emissions Cost	Variable O&M	Energy Export Revenue	Energy Import Cost	Cost to Serve Load
2021	$ 144,443	$ 189,516	$ 48	$ 61,152	$ 81,155	$ 124,385	$ 438,390
2022	$ 131,895	$ 222,721	$ 59	$ 53,915	$ 83,364	$ 177,803	$ 503,027
2023	$ 112,694	$ 241,999	$ 35	$ 59,739	$ 50,333	$ 126,745	$ 490,876
2024	$ 114,702	$ 253,214	$ 46	$ 59,630	$ 49,184	$ 127,215	$ 505,617
2025	$ 113,744	$ 361,653	$ 52	$ 35,775	$ 80,529	$ 118,865	$ 549,552
2026	$ 118,412	$ 481,810	$ 57	$ 14,985	$ 132,588	$ 96,684	$ 579,352
2027	$ 129,638	$ 627,870	$ 49	$ 17,434	$ 181,179	$ 100,802	$ 694,610
2028	$ 161,397	$ 619,830	$ 21,513	$ 15,953	$ 245,684	$ 101,044	$ 674,052
2029	$ 146,550	$ 601,075	$ 10,894	$ 17,939	$ 209,955	$ 80,666	$ 646,896
2030	$ 150,362	$ 618,206	$ 11,866	$ 17,278	$ 202,294	$ 70,812	$ 665,814
2031	$ 137,794	$ 595,816	$ 10,788	$ 14,731	$ 170,833	$ 76,035	$ 663,307
2032	$ 138,529	$ 579,749	$ 9,040	$ 18,244	$ 176,329	$ 70,447	$ 639,184
2033	$ 137,452	$ 569,206	$ 8,135	$ 16,795	$ 156,925	$ 59,874	$ 634,414
2034	$ 137,894	$ 614,039	$ 11,462	$ 18,077	$ 235,324	$ 47,588	$ 593,219
2035	$ 97,129	$ 616,102	$ 11,949	$ 44,955	$ 76,740	$ 82,388	$ 775,483
2036	$ 92,281	$ 639,704	$ 11,762	$ 43,395	$ 77,424	$ 97,813	$ 807,177
2037	$ 234,875	$ 779,098	$ 44,793	$ 59,517	$ 247,826	$ 13,770	$ 881,060
2038	$ 181,018	$ 765,720	$ 46,006	$ 31,810	$ 67,072	$ 107,638	$ 1,065,121
2039	$ 182,690	$ 775,221	$ 47,025	$ 32,391	$ 80,086	$ 100,149	$ 1,057,391
2040	$ 176,602	$ 750,309	$ 45,411	$ 32,267	$ 72,384	$ 107,878	$ 1,040,083
2041	$ 178,490	$ 722,379	$ 47,334	$ 32,461	$ 79,985	$ 104,516	$ 1,005,472
						NPV $B	**$ 6.85**

Stochastic Range IRP Cost to Serve Load (2019 $,000)					
	95th Percentile	75th Percentile	50th Percentile	25th Percentile	5th Percentile
2021	463,514	444,916	437,102	428,572	421,083
2022	547,631	514,224	497,556	486,109	475,318
2023	552,031	504,930	485,025	470,275	449,121
2024	579,666	527,205	496,165	478,273	457,236
2025	641,697	577,065	540,843	517,155	483,925
2026	685,162	611,001	576,490	539,000	499,773
2027	815,613	738,099	687,299	648,160	584,901
2028	822,350	722,130	669,567	615,651	528,500
2029	822,568	701,458	633,942	579,330	517,020
2030	844,693	717,234	650,780	600,935	533,102
2031	864,396	713,522	644,164	598,474	529,441
2032	841,569	697,028	616,648	563,960	489,417
2033	826,746	680,978	624,201	558,534	493,744
2034	793,973	654,199	579,825	517,534	424,386
2035	975,821	826,277	754,464	701,201	655,337
2036	1,006,553	856,723	784,188	733,122	679,543
2037	1,083,239	933,247	863,160	803,508	742,795
2038	1,290,581	1,130,483	1,027,712	987,128	915,674
2039	1,260,314	1,110,508	1,033,784	980,022	909,944
2040	1,296,981	1,095,851	1,012,784	955,065	874,191
2041	1,196,901	1,069,206	982,016	930,512	859,720

Stochastic Range IRP Cost to Serve Load (NPV 2019 $,000)					
	95th Percentile	75th Percentile	50th Percentile	25th Percentile	5th Percentile
NPV (2021-2041)	8,178,946	7,207,269	6,718,752	6,323,231	5,978,044
NPV (2021-2030)	4,517,156	4,079,581	3,832,092	3,641,178	3,463,925
CAGR(2022-2030)	6%	4%	4%	3%	1%

Supplemental Analysis for Full Portfolio Cost related to required OVEC Debt and Other Cost Obligations are found in Confidential Appendix Volume 3:



Direct and Lifecycle Emissions (tons CO_2), Stochastic				
Year	Direct I&M	Imports (CO_2e)	Total Direct + Imports	Total Lifecycle GHG CO_2e[1]
2021	3,288,302	593,074	3,881,376	3,689,946
2022	3,372,462	1,476,830	4,849,292	4,656,149
2023	1,741,250	706,495	2,447,745	2,367,698
2024	1,651,312	714,215	2,365,527	2,288,559
2025	1,710,094	555,294	2,265,389	2,242,871
2026	1,724,378	235,568	1,959,946	1,986,663
2027	1,970,243	205,624	2,175,867	2,286,123
2028	2,003,362	240,613	2,243,975	2,758,283
2029	1,003,040	211,371	1,214,412	1,820,518
2030	904,569	261,760	1,166,328	1,734,517
2031	678,204	366,472	1,044,676	1,551,196
2032	586,859	273,226	860,084	1,326,138
2033	543,303	369,820	913,123	1,355,343
2034	793,077	201,400	994,477	1,483,559
2035	831,113	1,036,235	1,867,348	2,390,395
2036	803,064	1,258,074	2,061,137	2,605,471
2037	3,523,975	182,983	3,706,958	5,128,328
2038	3,565,772	1,379,461	4,945,233	6,400,895
2039	3,605,665	1,291,320	4,896,985	6,392,894
2040	3,439,102	1,364,356	4,803,458	6,248,925
2041	3,537,038	1,371,751	4,908,789	6,393,242

2005 Baseline Direct I&M Emissions (tons CO_2): 21,134,511

[1] Based on NREL GHG emissions rates shown in Exhibit C-23

Exhibit C-17: Scenario Power Prices (2019$)

Average ($/MWh)	Reference	RTA	ER
Year	Average	Average	Average
2021	28.5	28.5	28.5
2022	28.6	28.6	28.6
2023	27.2	27.2	27.2
2024	26.6	26.6	26.6
2025	26.8	26.6	26.6
2026	27.0	26.7	26.9
2027	27.3	27.1	27.3
2028	34.0	33.7	33.9
2029	33.7	33.4	33.5
2030	32.5	32.2	32.4
2031	31.4	31.1	31.3
2032	31.0	30.7	30.8
2033	31.4	31.1	31.3
2034	31.5	31.1	31.3
2035	32.0	31.5	31.7
2036	31.9	31.1	31.4
2037	31.6	30.9	31.4
2038	32.3	31.2	31.8
2039	32.2	31.2	31.8
2040	32.2	31.0	31.3
2041	32.0	30.8	31.1

On Peak	Reference	RTA	ER
Year	Average	Average	Average
2021	30.6	30.6	30.6
2022	30.1	30.1	30.1
2023	28.6	28.6	28.6
2024	28.0	27.9	28.0
2025	27.9	27.7	27.8
2026	28.0	27.7	27.9
2027	28.3	28.0	28.2
2028	35.3	35.0	35.2
2029	35.1	34.8	35.0
2030	33.7	33.4	33.6
2031	32.5	32.2	32.4
2032	32.0	31.7	31.9
2033	32.5	32.2	32.4
2034	32.5	32.1	32.3
2035	33.1	32.6	32.8
2036	33.0	32.1	32.5
2037	32.7	31.9	32.5
2038	33.3	32.3	32.8
2039	33.3	32.4	32.9
2040	33.2	32.1	32.5
2041	33.2	32.1	32.3

Off Peak	Reference	RTA	ER
Year	Average	Average	Average
2021	26.3	26.3	26.3
2022	27.0	27.0	27.0
2023	25.7	25.7	25.7
2024	25.3	25.3	25.3
2025	25.6	25.5	25.5
2026	26.0	25.7	25.9
2027	26.4	26.2	26.3
2028	32.7	32.5	32.6
2029	32.2	32.0	32.1
2030	31.3	31.0	31.1
2031	30.3	30.1	30.2
2032	29.9	29.7	29.8
2033	30.3	30.0	30.2
2034	30.4	30.0	30.2
2035	30.9	30.5	30.6
2036	30.9	30.1	30.4
2037	30.6	29.8	30.3
2038	31.3	30.2	30.8
2039	31.1	30.1	30.6
2040	31.1	29.9	30.2
2041	30.9	29.5	29.9

Exhibit C-18: GWh Output by Unit/Portfolio

Reference (Original) Portfolio Average Output by Unit (GWh)																					
	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041
AEP IM Hydro	113	113	113	113	113	113	113	113	113	113	96	96	96	87	87	87	5	5	5	5	5
Deer Creek	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	4	3	3	3	3	3
Donald C Cook 1	9,162	7,809	8,394	9,187	8,390	8,396	9,164	8,417	8,397	9,164	8,389	8,614	9,163	9,163	0	0	0	0	0	0	0
Donald C Cook 2	9,405	8,565	10,281	9,438	9,636	10,284	9,406	9,675	10,284	9,411	9,637	10,312	9,405	9,646	10,283	9,434	10,281	0	0	0	0
Olive	8	8	8	9	7	9	8	8	7	9	7	8	8	8	7	7	9	8	8	7	9
Rockport 1	1,307	1,317	1,297	1,246	1,181	1,175	1,354	862	0	0	0	0	0	0	0	0	0	0	0	0	0
Rockport 2	1,548	1,549	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
St. Joesph Solar	47	44	46	43	47	43	47	45	46	44	47	47	44	46	46	48	43	47	44	47	44
Twin Branch	4	3	4	3	4	3	4	4	4	3	4	4	3	4	4	4	3	4	3	4	3
Watervliet	6	7	7	7	6	7	6	6	6	7	6	6	7	7	6	6	7	6	7	6	7
New CCGT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7,153	7,293	7,234	7,125	7,017
New CT	0	0	0	0	0	0	313	1,039	1,070	915	769	655	803	1,180	1,256	1,196	1,213	1,266	1,396	1,171	1,602
New Solar	0	0	0	0	1,779	3,558	3,558	3,567	3,558	3,558	3,558	3,567	3,558	3,558	3,558	3,567	3,558	3,558	3,558	3,567	3,558
New Wind	0	0	0	0	2,673	5,346	5,346	5,364	5,346	5,346	5,346	5,364	5,346	5,346	5,346	5,364	5,346	5,346	5,346	5,364	5,346
Storage	0	0	0	0	-1	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-2
EE Total (adjusted)	11	91	302	492	562	743	815	910	934	1,025	1,007	1,022	975	1,042	911	875	846	756	670	702	644
Wind Contracts	1,399	1,278	1,354	1,385	1,362	1,299	1,399	1,379	1,068	1,022	1,001	1,032	682	691	0	0	0	0	0	0	0
OVEC	301	321	297	273	337	355	411	242	247	208	207	181	184	193	198	203	220	223	297	128	0

Rockport 1 - 2024 Portfolio Average Output by Unit (GWh)																					
	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041
AEP IM Hydro	113	113	113	113	113	113	113	113	113	113	96	96	96	87	87	87	5	5	5	5	5
Deer Creek	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	4	3	3	3	3	3
Donald C Cook 1	9,162	7,809	8,394	9,188	8,390	8,396	9,164	8,417	8,397	9,164	8,389	8,614	9,163	9,163	0	0	0	0	0	0	0
Donald C Cook 2	9,405	8,565	10,281	9,438	9,637	10,284	9,406	9,675	10,284	9,411	9,637	10,312	9,405	9,645	10,283	9,433	10,280	0	0	0	0
Olive	8	8	8	9	7	9	8	8	7	9	7	8	8	8	7	7	9	8	8	7	9
Rockport 1	1,304	1,321	1,315	1,212	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Rockport 2	1,551	1,548	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
St. Joesph Solar	47	44	46	43	47	43	47	45	46	44	47	47	44	46	46	48	43	47	44	47	44
Twin Branch	4	3	4	3	4	3	4	4	4	3	4	4	3	4	4	4	3	4	3	4	3
Watervliet	6	7	7	7	6	7	6	6	6	7	6	6	7	7	6	6	7	6	7	6	7
New CCGT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7,218	7,348	7,289	7,195	7,097
New CT	0	0	0	0	0	873	665	757	771	674	868	746	682	1,105	1,163	1,135	1,192	1,228	1,345	1,313	1,558
New Solar	0	0	0	0	1,680	2,668	3,558	3,567	3,558	3,558	3,558	3,567	3,558	3,558	3,558	3,567	3,558	3,558	3,558	3,567	3,558
New Wind	0	0	0	0	2,673	5,346	5,346	5,364	5,346	5,346	5,346	5,364	5,346	5,346	5,346	5,364	5,346	5,346	5,346	5,364	5,346
Storage	0	0	0	0	-5	-5	-6	-6	-6	-6	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-4
EE Total (adjusted)	11	91	302	492	645	816	872	957	968	1,058	1,040	1,047	1,017	1,153	1,072	1,080	1,019	897	791	761	671
Wind Contracts	1,399	1,278	1,354	1,385	1,362	1,299	1,399	1,379	1,068	1,022	1,001	1,032	682	691	0	0	0	0	0	0	0
OVEC	300	321	299	274	350	366	424	249	253	216	218	190	193	202	205	212	229	236	313	134	0

Rockport 1 - 2025 Portfolio Average Output by Unit (GWh)																					
	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041
AEP IM Hydro	113	113	113	113	113	113	113	113	113	113	96	96	96	87	87	87	5	5	5	5	5
Deer Creek	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	4	3	3	3	3	3
Donald C Cook 1	9,162	7,809	8,394	9,187	8,390	8,396	9,164	8,417	8,397	9,164	8,389	8,614	9,163	9,163	0	0	0	0	0	0	0
Donald C Cook 2	9,404	8,564	10,281	9,438	9,637	10,284	9,406	9,675	10,284	9,411	9,637	10,312	9,405	9,645	10,283	9,433	10,280	0	0	0	0
Olive	8	8	8	9	7	9	8	8	7	9	7	8	8	8	7	7	9	8	8	7	9
Rockport 1	1,306	1,318	1,310	1,247	1,099	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Rockport 2	1,549	1,549	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
St. Joesph Solar	47	44	46	43	47	43	47	45	46	44	47	47	44	46	46	48	43	47	44	47	44
Twin Branch	4	3	4	3	4	3	4	4	4	3	4	4	3	4	4	4	3	4	3	4	3
Watervliet	6	7	7	7	6	7	6	6	6	7	6	6	7	7	6	6	7	6	7	6	7
New CCGT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7,198	7,306	7,246	7,142	7,029
New CT	0	0	0	0	0	438	335	754	771	674	586	502	682	1,103	1,161	1,133	995	1,030	1,127	1,133	1,339
New Solar	0	0	0	0	1,779	3,558	3,558	3,567	3,558	3,558	3,558	3,567	3,558	3,558	3,755	4,062	4,546	4,546	4,546	4,755	4,941
New Wind	0	0	0	0	2,673	5,346	5,346	5,364	5,346	5,346	5,346	5,364	5,346	5,346	5,346	5,364	5,346	5,346	5,346	5,364	5,346
Storage	0	0	0	0	-5	-7	-7	-7	-7	-7	-7	-7	-7	-7	-7	-6	-6	-6	-6	-6	-6
EE Total (adjusted)	11	91	302	492	645	815	870	955	965	1,048	1,024	1,025	976	1,042	911	875	846	756	670	702	644
Wind Contracts	1,399	1,278	1,354	1,385	1,362	1,299	1,399	1,379	1,068	1,022	1,001	1,032	682	691	0	0	0	0	0	0	0
OVEC	300	321	298	274	348	366	424	249	252	216	218	190	193	202	205	212	228	236	312	134	0

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2021 Integrated Resource Plan

Rockport 1 - 2026 Portfolio Average Output by Unit (GWh)																					
	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041
AEP IM Hydro	113	113	113	113	113	113	113	113	113	113	96	96	96	87	87	87	5	5	5	5	5
Deer Creek	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	4	3	3	3	3	3
Donald C Cook 1	9,162	7,809	8,394	9,187	8,390	8,396	9,164	8,417	8,397	9,164	8,389	8,614	9,163	9,163	0	0	0	0	0	0	0
Donald C Cook 2	9,404	8,564	10,281	9,438	9,636	10,284	9,406	9,675	10,284	9,411	9,637	10,312	9,405	9,645	10,283	9,433	10,280	0	0	0	0
Olive	8	8	8	9	7	9	8	8	7	9	7	8	8	8	7	7	9	8	8	7	9
Rockport 1	1,308	1,319	1,308	1,247	1,214	1,084	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Rockport 2	1,552	1,548	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
St. Joesph Solar	47	44	46	43	47	43	47	45	46	44	47	47	44	46	46	48	43	47	44	47	44
Twin Branch	4	3	4	3	4	3	4	4	4	3	4	4	3	4	4	4	3	4	3	4	3
Watervliet	6	7	7	7	6	7	6	6	6	7	6	6	7	7	6	6	7	6	7	6	7
New CCGT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7,218	7,348	7,292	7,194	7,096
New CT	0	0	0	0	0	442	667	758	774	677	587	505	685	1,104	1,163	1,135	1,002	1,037	1,135	1,139	1,345
New Solar	0	0	0	0	1,779	2,767	3,558	3,567	3,558	3,558	3,558	3,567	3,558	3,558	3,558	3,567	3,558	3,558	3,558	3,567	3,558
New Wind	0	0	0	0	2,673	5,346	5,346	5,364	5,346	5,346	5,346	5,364	5,346	5,346	5,346	5,364	5,346	5,346	5,346	5,364	5,346
Storage	0	0	0	0	-1	-2	-2	-2	-2	-2	-2	-2	-1	-1	-1	-1	-1	-1	-1	-1	-1
EE Total (adjusted)	11	91	302	492	563	745	816	913	937	1,035	1,023	1,044	1,016	1,153	1,072	1,080	1,019	897	791	759	669
Wind Contracts	1,399	1,278	1,354	1,385	1,362	1,299	1,399	1,379	1,068	1,022	1,001	1,032	682	691	0	0	0	0	0	0	0
OVEC	300	321	299	274	348	365	424	249	253	216	218	190	193	202	205	212	229	236	313	134	0

Cook 2050+ Portfolio Average Output by Unit (GWh)																					
	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041
AEP IM Hydro	113	113	113	113	113	113	113	113	113	113	96	96	96	87	87	87	5	5	5	5	5
Deer Creek	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	4	3	3	3	3	3
Donald C Cook 1	9,162	7,809	8,394	9,187	8,390	8,395	9,164	8,417	8,397	9,164	8,389	8,614	9,163	9,163	9,164	9,189	9,164	9,164	9,164	9,189	9,164
Donald C Cook 2	9,404	8,564	10,281	9,437	9,636	10,284	9,406	9,675	10,284	9,411	9,637	10,312	9,405	9,645	10,283	9,433	10,280	10,284	10,284	10,312	10,284
Olive	8	8	8	9	7	9	8	8	7	9	7	8	8	8	7	7	9	8	8	7	9
Rockport 1	1,304	1,319	1,309	1,248	1,213	1,204	1,378	892	0	0	0	0	0	0	0	0	0	0	0	0	0
Rockport 2	1,552	1,550	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
St. Joesph Solar	47	44	46	43	47	43	47	45	46	44	47	47	44	46	46	48	43	47	44	47	44
Twin Branch	4	3	4	3	4	3	4	4	4	3	4	4	3	4	4	4	3	4	3	4	3
Watervliet	6	7	7	7	6	7	6	6	6	7	6	6	7	7	6	6	7	6	7	6	7
New CCGT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
New CT	0	0	0	0	0	0	335	1,120	1,148	1,005	871	749	683	676	644	624	611	560	614	515	624
New Solar	0	0	0	0	1,779	3,558	3,558	3,567	3,558	3,558	3,558	3,567	3,558	3,558	3,558	3,567	3,558	3,558	3,558	3,567	3,558
New Wind	0	0	0	0	2,673	5,346	5,346	5,364	5,346	5,346	5,346	5,364	5,346	5,346	5,346	5,364	5,346	5,346	5,346	5,364	5,346
Storage	0	0	0	0	-1	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-2
EE Total (adjusted)	11	91	302	492	562	743	815	910	934	1,025	1,007	1,022	975	1,042	911	875	846	756	642	673	617
Wind Contracts	1,399	1,278	1,354	1,385	1,362	1,299	1,399	1,379	1,068	1,022	1,001	1,032	682	691	0	0	0	0	0	0	0
OVEC	300	320	299	274	348	364	422	247	252	216	218	190	193	202	199	206	228	228	303	130	0

Cook 2050+ and No Gas Portfolio Average Output by Unit (GWh)																					
	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041
AEP IM Hydro	113	113	113	113	113	113	113	113	113	113	96	96	96	87	87	87	5	5	5	5	5
Deer Creek	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	4	3	3	3	3	3
Donald C Cook 1	9,162	7,809	8,394	9,187	8,389	8,396	9,164	8,417	8,397	9,164	8,389	8,614	9,163	9,163	9,164	9,189	9,164	9,164	9,164	9,189	9,164
Donald C Cook 2	9,404	8,564	10,281	9,438	9,636	10,284	9,406	9,675	10,284	9,411	9,637	10,312	9,405	9,645	10,283	9,433	10,280	10,284	10,284	10,312	10,284
Olive	8	8	8	9	7	9	8	8	7	9	7	8	8	8	7	7	9	8	8	7	9
Rockport 1	1,308	1,317	1,307	1,249	1,213	1,195	1,373	893	0	0	0	0	0	0	0	0	0	0	0	0	0
Rockport 2	1,552	1,549	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
St. Joesph Solar	47	44	46	43	47	43	47	45	46	44	47	47	44	46	46	48	43	47	44	47	44
Twin Branch	4	3	4	3	4	3	4	4	4	3	4	4	3	4	4	4	3	4	3	4	3
Watervliet	6	7	7	7	6	7	6	6	6	7	6	6	7	7	6	6	7	6	7	6	7
New CCGT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
New CT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
New Solar	0	0	0	0	1,779	3,558	3,558	3,567	3,558	3,558	3,558	3,567	3,558	3,558	3,558	3,567	3,558	3,558	3,558	3,567	3,558
New Wind	0	0	0	0	2,673	5,346	5,346	5,364	5,346	5,346	5,346	5,364	5,346	5,346	5,346	5,364	5,346	5,346	5,346	5,364	5,346
Storage	0	0	0	0	-1	-3	-3	-7	-8	-7	-8	-8	-8	-8	-8	-8	-8	-7	-7	-7	-7
EE Total (adjusted)	11	91	302	492	634	814	891	1,022	1,054	1,162	1,143	1,122	1,036	1,083	932	886	853	759	645	675	619
Wind Contracts	1,399	1,278	1,354	1,385	1,362	1,299	1,399	1,379	1,068	1,022	1,001	1,032	682	691	0	0	0	0	0	0	0
OVEC	300	321	299	274	348	364	422	248	253	216	218	190	193	202	199	206	228	228	303	130	0

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Reference with Expanded Build Limits Portfolio Average Output by Unit (GWh)																					
	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041
AEP IM Hydro	113	113	113	113	113	113	113	113	113	113	96	96	96	87	87	87	5	5	5	5	5
Deer Creek	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	4	3	3	3	3	3
Donald C Cook 1	9,162	7,809	8,394	9,187	8,390	8,395	9,164	8,417	8,397	9,164	8,389	8,614	9,163	9,163	0	0	0	0	0	0	0
Donald C Cook 2	9,404	8,564	10,281	9,437	9,636	10,284	9,406	9,675	10,284	9,411	9,637	10,312	9,405	9,645	10,283	9,433	10,280	0	0	0	0
Olive	8	8	8	9	7	9	8	8	7	9	7	8	8	8	7	7	9	8	8	7	9
Rockport 1	1,310	1,319	1,309	1,249	1,208	1,204	1,365	877	0	0	0	0	0	0	0	0	0	0	0	0	0
Rockport 2	1,552	1,549	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
St. Joesph Solar	47	44	46	43	47	43	47	45	46	44	47	47	44	46	46	48	43	47	44	47	44
Twin Branch	4	3	4	3	4	3	4	4	4	3	4	4	3	4	4	4	3	4	3	4	3
Watervliet	6	7	7	7	6	7	6	6	6	7	6	6	7	7	6	6	7	6	7	6	7
New CCGT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7,148	7,214	7,147	7,053	6,934
New CT	0	0	0	0	0	0	0	365	375	329	286	247	226	660	909	887	982	998	1,094	929	1,101
New Solar	0	0	0	0	1,788	3,558	5,336	5,350	5,336	5,336	5,336	5,350	5,336	5,831	5,831	5,845	5,831	5,831	5,831	5,845	5,831
New Wind	0	0	0	0	2,686	5,346	8,019	8,046	8,019	8,019	8,019	8,046	8,019	8,019	8,019	8,046	8,019	8,019	8,019	8,046	8,019
Storage	0	0	0	0	-2	-3	-5	-5	-5	-5	-5	-5	-5	-4	-4	-4	-4	-4	-4	-4	-4
EE Total (adjusted)	11	91	302	492	587	773	846	971	1,010	1,120	1,114	1,137	1,077	1,205	1,033	966	915	804	712	708	648
Wind Contracts	1,399	1,278	1,354	1,385	1,362	1,299	1,399	1,379	1,068	1,022	1,001	1,032	682	691	0	0	0	0	0	0	0
OVEC	301	323	299	275	349	364	416	243	249	213	216	188	191	200	203	210	227	234	311	133	0

Reference' Portfolio Average Output by Unit (GWh)																					
	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041
AEP IM Hydro	113	113	113	113	113	113	113	113	113	113	96	96	96	87	87	87	5	5	5	5	5
Deer Creek	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	4	3	3	3	3	3
Donald C Cook 1	9,162	7,809	8,394	9,187	8,390	8,396	9,164	8,417	8,397	9,164	8,389	8,614	9,163	9,163	0	0	0	0	0	0	0
Donald C Cook 2	9,405	8,564	10,281	9,437	9,636	10,284	9,406	9,675	10,284	9,411	9,637	10,312	9,405	9,645	10,283	9,433	10,281	0	0	0	0
Olive	8	8	8	9	7	9	8	8	7	9	7	8	8	8	7	7	9	8	8	7	9
Rockport 1	1,304	1,322	1,314	1,250	1,219	1,201	1,366	887	0	0	0	0	0	0	0	0	0	0	0	0	0
Rockport 2	1,548	1,545	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
St. Joesph Solar	47	44	46	43	47	43	47	45	46	44	47	47	44	46	46	48	43	47	44	47	44
Twin Branch	4	3	4	3	4	3	4	4	4	3	4	4	3	4	4	4	3	4	3	4	3
Watervliet	6	7	7	7	6	7	6	6	6	7	6	6	7	7	6	6	7	6	7	6	7
New CCGT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7,222	7,347	7,286	7,191	7,084
New CT	0	0	0	0	0	0	337	1,125	1,152	1,007	874	751	906	1,326	1,392	1,358	1,389	1,422	1,555	1,317	1,556
New Solar	0	0	0	0	988	1,976	3,558	3,567	3,558	3,558	3,558	3,567	3,558	3,558	3,558	3,666	3,656	3,656	3,656	3,666	3,854
New Wind	0	0	0	0	2,673	5,346	5,346	5,364	5,346	5,346	5,346	5,364	5,346	5,346	5,346	5,364	5,346	5,346	5,346	5,364	5,346
Storage	0	0	0	0	0	0	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
EE Total (adjusted)	11	91	302	492	634	814	891	1,022	1,054	1,162	1,143	1,123	1,038	1,086	940	941	945	900	856	895	795
Wind Contracts	1,399	1,278	1,354	1,385	1,362	1,299	1,399	1,379	1,068	1,022	1,001	1,032	682	691	0	0	0	0	0	0	0
OVEC	300	321	299	274	349	366	423	248	253	216	218	190	193	202	206	212	229	236	313	134	0

Rapid Technology Advancement Portfolio Average Output by Unit (GWh)																					
	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041
AEP IM Hydro	113	113	113	113	113	113	113	113	113	113	96	96	96	87	87	87	5	5	5	5	5
Deer Creek	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	4	3	3	3	3	3
Donald C Cook 1	9,162	7,809	8,394	9,187	8,390	8,395	9,164	8,417	8,397	9,164	8,389	8,614	9,163	9,162	0	0	0	0	0	0	0
Donald C Cook 2	9,404	8,564	10,281	9,438	9,636	10,284	9,406	9,675	10,284	9,411	9,637	10,312	9,404	9,644	10,282	9,431	10,271	0	0	0	0
Olive	8	8	8	9	7	9	8	8	7	9	7	8	8	8	7	7	9	8	8	7	8
Rockport 1	1,303	1,324	1,313	1,249	1,216	1,204	1,368	880	0	0	0	0	0	0	0	0	0	0	0	0	0
Rockport 2	1,554	1,549	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
St. Joesph Solar	47	44	46	43	47	43	47	45	46	44	47	47	44	46	46	48	43	47	44	47	44
Twin Branch	4	3	4	3	4	3	4	4	4	3	4	4	3	4	4	4	3	4	3	4	3
Watervliet	6	7	7	7	6	7	6	6	6	7	6	6	7	7	6	6	7	6	6	6	7
New CCGT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
New CT	0	0	0	0	0	0	329	1,097	1,118	981	849	731	665	1,049	1,088	1,157	1,389	1,379	1,538	1,254	1,524
New Solar	0	0	0	0	1,779	3,558	3,558	3,567	3,558	3,558	3,558	3,567	3,558	3,755	4,249	4,755	5,633	5,633	5,633	5,647	5,633
New Wind	0	0	0	0	2,673	5,346	5,346	5,364	5,346	5,346	5,346	5,364	5,346	8,405	8,405	11,645	14,807	18,008	18,008	21,387	22,144
Storage	0	0	0	0	-2	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-4	-3	-3	-3	-3
EE Total (adjusted)	11	91	306	500	573	753	833	875	910	1,017	1,006	1,023	983	1,133	1,053	1,038	1,005	897	792	786	687
Wind Contracts	1,399	1,278	1,354	1,385	1,362	1,299	1,399	1,379	1,068	1,022	1,001	1,032	682	691	0	0	0	0	0	0	0
OVEC	300	321	298	272	346	361	418	244	249	212	214	186	189	196	198	197	211	217	290	123	0

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Enhanced Regulation Portfolio Average Output by Unit (GWh)																					
	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041
AEP IM Hydro	113	113	113	113	113	113	113	113	113	113	96	96	96	87	87	87	5	5	5	5	5
Deer Creek	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	4	3	3	3	3	3
Donald C Cook 1	9,162	7,809	8,394	9,187	8,390	8,395	9,164	8,417	8,397	9,164	8,389	8,614	9,163	9,163	0	0	0	0	0	0	0
Donald C Cook 2	9,404	8,564	10,281	9,437	9,637	10,284	9,406	9,675	10,284	9,411	9,637	10,312	9,405	9,645	10,283	9,433	10,279	0	0	0	0
Olive	8	8	8	9	7	9	8	8	7	9	7	8	8	8	7	7	9	8	8	7	8
Rockport 1	1,304	1,318	1,211	1,154	1,078	1,100	1,275	826	0	0	0	0	0	0	0	0	0	0	0	0	0
Rockport 2	1,551	1,532	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
St. Joesph Solar	47	44	46	43	47	43	47	45	46	44	47	47	44	46	46	48	43	47	44	47	44
Twin Branch	4	3	4	3	4	3	4	4	4	3	4	4	3	4	4	4	3	4	3	4	3
Watervliet	6	7	7	7	6	7	6	6	6	7	6	6	7	7	6	6	7	6	7	6	7
New CCGT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
New CT	0	0	0	0	0	0	345	1,140	1,161	1,011	878	755	691	1,090	1,129	1,237	1,533	1,509	1,667	1,297	1,557
New Solar	0	0	0	0	1,779	3,558	3,558	3,567	3,558	3,558	3,558	3,567	3,558	3,755	4,249	4,755	5,633	5,633	5,633	5,647	5,633
New Wind	0	0	0	0	2,673	5,346	5,346	5,364	5,346	5,346	5,346	5,364	5,346	8,405	8,405	11,645	14,807	18,008	18,008	21,387	22,144
Storage	0	0	0	0	-1	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-2
EE Total (adjusted)	11	91	302	492	628	824	887	1,000	1,028	1,133	1,095	1,092	1,026	1,152	1,070	1,072	1,077	961	847	834	725
Wind Contracts	1,399	1,278	1,354	1,385	1,362	1,299	1,399	1,379	1,068	1,022	1,001	1,032	682	691	0	0	0	0	0	0	0
OVEC	300	321	299	274	348	370	428	250	254	217	219	191	194	201	203	205	224	230	305	126	0

Rockport 1 - 2024 NTG Portfolio Average Output by Unit (GWh)																					
	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041
AEP IM Hydro	113	113	113	113	113	113	113	113	113	113	96	96	96	87	87	87	5	5	5	5	5
Deer Creek	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	4	3	3	3	3	3
Donald C Cook 1	9,162	7,809	8,394	9,188	8,390	8,396	9,164	8,417	8,397	9,164	8,389	8,614	9,163	9,163	0	0	0	0	0	0	0
Donald C Cook 2	9,404	8,565	10,280	9,438	9,637	10,284	9,406	9,675	10,284	9,411	9,637	10,312	9,405	9,645	10,283	9,433	10,280	0	0	0	0
Olive	8	8	8	9	7	9	8	8	7	9	7	8	8	8	7	7	9	8	8	7	9
Rockport 1	1,305	1,324	1,310	1,211	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Rockport 2	1,552	1,546	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
St. Joesph Solar	47	44	46	43	47	43	47	45	46	44	47	47	44	46	46	48	43	47	44	47	44
Twin Branch	4	3	4	3	4	3	4	4	4	3	4	4	3	4	4	4	3	4	3	4	3
Watervliet	6	7	7	7	6	7	6	6	6	7	6	6	7	7	6	6	7	6	7	6	7
New CCGT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7,205	7,332	7,269	7,170	7,069
New CT	0	0	0	0	0	439	336	755	770	672	867	745	679	1,103	1,158	1,130	1,187	1,219	1,336	1,304	1,548
New Solar	0	0	0	0	1,779	3,558	3,558	3,567	3,558	3,558	3,558	3,567	3,558	3,558	3,558	3,567	3,558	3,558	3,558	3,567	3,558
New Wind	0	0	0	0	2,673	5,346	5,346	5,364	5,346	5,346	5,346	5,364	5,346	5,346	5,346	5,364	5,346	5,346	5,346	5,364	5,346
Storage	0	0	0	0	-5	-7	-7	-7	-7	-7	-7	-7	-7	-7	-7	-6	-6	-6	-6	-6	-6
EE Total (adjusted)	11	91	271	434	573	689	724	822	889	989	1,007	1,088	1,080	1,311	1,278	1,341	1,409	1,328	1,261	1,350	1,287
Wind Contracts	1,399	1,278	1,354	1,385	1,362	1,299	1,399	1,379	1,068	1,022	1,001	1,032	682	691	0	0	0	0	0	0	0
OVEC	300	321	299	274	350	366	424	249	252	215	217	189	193	201	205	212	228	236	312	134	0

Rockport 1 - 2026 NTG Portfolio Average Output by Unit (GWh)																					
	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041
AEP IM Hydro	113	113	113	113	113	113	113	113	113	113	96	96	96	87	87	87	5	5	5	5	5
Deer Creek	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	4	3	3	3	3	3
Donald C Cook 1	9,162	7,809	8,394	9,187	8,390	8,396	9,164	8,417	8,397	9,164	8,389	8,614	9,163	9,163	0	0	0	0	0	0	0
Donald C Cook 2	9,404	8,564	10,280	9,438	9,636	10,284	9,406	9,675	10,284	9,411	9,637	10,312	9,405	9,645	10,283	9,433	10,280	0	0	0	0
Olive	8	8	8	9	7	9	8	8	7	9	7	8	8	8	7	7	9	8	8	7	9
Rockport 1	1,310	1,319	1,312	1,247	1,213	1,085	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Rockport 2	1,550	1,551	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
St. Joesph Solar	47	44	46	43	47	43	47	45	46	44	47	47	44	46	46	48	43	47	44	47	44
Twin Branch	4	3	4	3	4	3	4	4	4	3	4	4	3	4	4	4	3	4	3	4	3
Watervliet	6	7	7	7	6	7	6	6	6	7	6	6	7	7	6	6	7	6	7	6	7
New CCGT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7,211	7,336	7,274	7,174	7,075
New CT	0	0	0	0	0	442	669	760	775	676	588	506	686	1,110	1,168	1,140	1,004	1,037	1,134	964	1,344
New Solar	0	0	0	0	1,779	2,965	3,558	3,567	3,558	3,558	3,558	3,567	3,558	3,558	3,558	3,567	3,558	3,558	3,558	3,567	3,558
New Wind	0	0	0	0	2,673	5,346	5,346	5,364	5,346	5,346	5,346	5,364	5,346	5,346	5,346	5,364	5,346	5,346	5,346	5,364	5,346
Storage	0	0	0	0	-1	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2
EE Total (adjusted)	11	91	271	434	527	654	695	797	868	966	948	993	950	1,159	1,132	1,223	1,342	1,306	1,278	1,395	1,326
Wind Contracts	1,399	1,278	1,354	1,385	1,362	1,299	1,399	1,379	1,068	1,022	1,001	1,032	682	691	0	0	0	0	0	0	0
OVEC	300	321	299	274	348	365	424	249	253	216	218	190	193	202	205	212	229	236	313	134	0

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Rapid Technology Advancement NTG Portfolio Average Output by Unit (GWh)																					
	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041
AEP IM Hydro	113	113	113	113	113	113	113	113	113	113	96	96	96	87	87	87	5	5	5	5	5
Deer Creek	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	4	3	3	3	3	3
Donald C Cook 1	9,162	7,809	8,394	9,187	8,390	8,395	9,164	8,417	8,397	9,164	8,389	8,614	9,163	9,162	0	0	0	0	0	0	0
Donald C Cook 2	9,404	8,564	10,281	9,438	9,636	10,284	9,406	9,675	10,284	9,411	9,637	10,312	9,404	9,644	10,282	9,432	10,274	0	0	0	0
Olive	8	8	8	9	7	9	8	8	7	9	7	8	8	8	7	7	9	8	8	7	8
Rockport 1	1,309	1,318	1,313	1,242	1,222	1,202	1,366	876	0	0	0	0	0	0	0	0	0	0	0	0	0
Rockport 2	1,550	1,547	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
St. Joesph Solar	47	44	46	43	47	43	47	45	46	44	47	47	44	46	46	48	43	47	44	47	44
Twin Branch	4	3	4	3	4	3	4	4	4	3	4	4	3	4	4	4	3	4	3	4	3
Watervliet	6	7	7	7	6	7	6	6	6	7	6	6	7	7	6	6	7	6	6	6	7
New CCGT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
New CT	0	0	0	0	0	0	329	1,098	1,119	980	848	729	664	1,059	1,086	1,213	1,500	1,531	1,706	1,331	1,593
New Solar	0	0	0	0	1,581	3,162	3,558	3,567	3,558	3,558	3,558	3,567	3,558	3,755	4,249	4,755	5,732	5,732	5,732	5,845	5,831
New Wind	0	0	0	0	2,673	5,346	5,346	5,364	5,346	5,346	5,346	5,364	5,346	6,876	8,405	11,645	14,807	14,807	14,807	18,175	18,943
Storage	0	0	0	0	-1	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-3	-3	-3	-3	-3
EE Total (adjusted)	10	91	274	441	568	748	820	961	1,032	1,220	1,247	1,308	1,278	1,510	1,457	1,492	1,558	1,460	1,384	1,475	1,393
Wind Contracts	1,399	1,278	1,354	1,385	1,362	1,299	1,399	1,379	1,068	1,022	1,001	1,032	682	691	0	0	0	0	0	0	0
OVEC	300	321	299	272	346	362	418	244	249	212	214	186	189	196	198	202	220	228	305	126	0

Reference with No Renewable Limits Portfolio Average Output by Unit (GWh)																					
	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041
AEP IM Hydro	113	113	113	113	113	113	113	113	113	113	96	96	96	87	87	87	5	5	5	5	5
Deer Creek	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	4	3	3	3	3	3
Donald C Cook 1	9,162	7,809	8,394	9,187	8,390	8,396	9,164	8,417	8,397	9,164	8,389	8,614	9,163	9,163	0	0	0	0	0	0	0
Donald C Cook 2	9,404	8,564	10,281	9,437	9,637	10,284	9,406	9,675	10,284	9,411	9,637	10,312	9,405	9,645	10,283	9,433	10,279	0	0	0	0
Olive	8	8	8	9	7	9	8	8	7	9	7	8	8	8	7	7	9	8	8	7	9
Rockport 1	1,309	1,321	1,309	1,248	1,147	1,132	1,343	864	0	0	0	0	0	0	0	0	0	0	0	0	0
Rockport 2	1,551	1,548	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
St. Joesph Solar	47	44	46	43	47	43	47	45	46	44	47	47	44	46	46	48	43	47	44	47	44
Twin Branch	4	3	4	3	4	3	4	4	4	3	4	4	3	4	4	4	3	4	3	4	3
Watervliet	6	7	7	7	6	7	6	6	6	7	6	6	7	7	6	6	7	6	7	6	7
New CCGT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
New CT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	420	424	459	580	678
New Solar	0	0	0	0	5,929	11,859	11,859	11,888	11,859	11,859	11,859	11,888	11,859	11,859	11,859	11,888	11,859	11,859	11,859	11,888	11,859
New Wind	0	0	0	0	10,024	20,047	20,047	20,115	20,047	20,047	20,047	20,115	20,047	20,047	20,047	20,115	20,047	20,047	20,047	20,115	20,047
Storage	0	0	0	0	-6	-12	-12	-12	-12	-12	-11	-11	-11	-11	-11	-11	-10	-10	-10	-10	-9
EE Total (adjusted)	11	91	302	492	562	743	815	910	934	1,025	1,007	1,022	975	1,042	911	875	846	756	670	702	644
Wind Contracts	1,399	1,278	1,354	1,385	1,362	1,299	1,399	1,379	1,068	1,022	1,001	1,032	682	691	0	0	0	0	0	0	0
OVEC	300	321	298	274	334	338	408	239	245	209	212	185	188	198	201	208	230	238	315	134	0

Preferred Portfolio Average Output by Unit (GWh)																					
	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041
AEP IM Hydro	113	113	113	113	113	113	113	113	113	113	96	96	96	87	87	87	5	5	5	5	5
Deer Creek	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	4	3	3	3	3	3
Donald C Cook 1	9,162	7,809	8,394	9,187	8,389	8,395	9,164	8,417	8,397	9,164	8,389	8,614	9,163	9,163	0	0	0	0	0	0	0
Donald C Cook 2	9,404	8,564	10,281	9,437	9,636	10,283	9,406	9,675	10,284	9,411	9,637	10,312	9,405	9,645	10,283	9,433	10,280	0	0	0	0
Olive	8	8	8	9	7	9	8	8	7	9	7	8	8	8	7	7	9	8	8	7	9
Rockport 1	1,310	1,320	1,313	1,248	1,233	1,220	1,391	900	0	0	0	0	0	0	0	0	0	0	0	0	0
Rockport 2	1,552	1,548	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
St. Joesph Solar	47	44	46	43	47	43	47	45	46	44	47	47	44	46	46	48	43	47	44	47	44
Twin Branch	4	3	4	3	4	3	4	4	4	3	4	4	3	4	4	4	3	4	3	4	3
Watervliet	6	7	7	7	6	7	6	6	6	7	6	6	7	7	6	6	7	6	7	6	7
New CCGT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7,246	7,342	7,261	7,161	7,055
New CT	0	0	0	0	0	0	0	1,538	1,569	1,370	1,188	1,020	1,152	1,560	1,622	1,575	1,576	1,590	1,740	1,472	1,749
New Solar	0	0	0	0	494	988	2,569	2,576	2,569	2,569	2,569	2,576	2,569	2,965	3,162	3,666	3,656	3,656	4,151	4,161	4,348
New Wind	0	0	0	0	1,336	2,673	2,673	2,682	2,673	2,673	2,673	2,682	2,673	2,673	4,009	4,023	4,009	5,346	5,346	5,364	5,346
Storage	0	0	0	0	0	0	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
EE Total (adjusted)	11	91	302	492	634	814	891	1,022	1,054	1,162	1,143	1,123	1,038	1,086	940	941	945	900	856	895	795
Wind Contracts	1,399	1,278	1,354	1,385	1,362	1,299	1,399	1,379	1,068	1,022	1,001	1,032	682	691	0	0	0	0	0	0	0
OVEC	300	321	299	274	351	371	428	251	256	218	221	192	195	204	206	212	229	235	312	133	0

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OVEC 2030 Portfolio Average Output by Unit (GWh)																					
	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041
AEP IM Hydro	113	113	113	113	113	113	113	113	113	113	96	96	96	87	87	87	5	5	5	5	5
Deer Creek	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	4	3	3	3	3	3
Donald C Cook 1	9,162	7,809	8,393	9,187	8,389	8,395	9,164	8,417	8,397	9,164	8,389	8,614	9,163	9,163	0	0	0	0	0	0	0
Donald C Cook 2	9,404	8,564	10,280	9,437	9,636	10,283	9,406	9,675	10,284	9,411	9,637	10,312	9,405	9,646	10,283	9,433	10,281	0	0	0	0
Olive	8	8	8	9	7	9	8	8	7	9	7	8	8	8	7	7	9	8	8	7	9
Rockport 1	1,310	1,331	1,332	1,278	1,253	1,239	1,413	971	0	0	0	0	0	0	0	0	0	0	0	0	0
Rockport 2	1,552	1,567	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
St. Joesph Solar	47	44	46	43	47	43	47	45	46	44	47	47	44	46	46	48	43	47	44	47	44
Twin Branch	4	3	4	3	4	3	4	4	4	3	4	4	3	4	4	4	3	4	3	4	3
Watervliet	6	7	7	7	6	7	6	6	6	7	6	6	7	7	6	6	7	6	7	6	7
New CCGT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7,264	7,369	7,280	7,185	7,074
New CT	0	0	0	0	0	0	0	1,625	1,651	1,759	1,483	1,282	1,188	1,601	1,680	1,623	1,617	1,626	1,770	1,511	1,785
New Solar	0	0	0	0	494	988	2,569	2,576	2,569	2,569	2,569	2,576	2,569	2,965	3,162	3,666	3,656	3,656	4,151	4,161	4,348
New Wind	0	0	0	0	1,336	2,673	2,673	2,682	2,673	2,673	2,673	2,682	2,673	2,673	4,009	4,023	4,009	5,346	5,346	5,364	5,346
Storage	0	0	0	0	0	0	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
EE Total (adjusted)	11	91	302	492	634	814	891	1,022	1,054	1,162	1,143	1,123	1,038	1,086	940	941	945	900	856	895	795
Wind Contracts	1,399	1,278	1,354	1,385	1,362	1,299	1,399	1,379	1,068	1,022	1,001	1,032	682	691	0	0	0	0	0	0	0
OVEC	300	344	318	287	364	390	449	265	267	90	0	0	0	0	0	0	0	0	0	0	0

Exhibit C-19: Capacity Position

UCAP (MW)	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041
Reference (Original)	4,424	4,437	4,247	3,700	4,278	4,801	4,974	4,089	4,100	4,107	4,104	4,124	4,347	3,811	3,736	3,695	3,815	3,829	3,821	3,667	3,879
Rockport 1 2024	4,424	4,437	4,832	2,445	3,258	4,013	4,129	4,033	4,040	4,047	4,274	4,294	4,289	3,760	3,673	3,618	3,735	3,748	3,734	3,805	3,778
Rockport 1 2025	4,424	4,437	4,832	3,700	3,281	4,028	3,962	4,094	4,097	4,098	4,089	4,103	4,320	3,779	3,728	3,728	3,690	3,700	3,687	3,789	3,798
Rockport 1 2026	4,424	4,437	4,247	3,700	4,279	3,784	4,120	4,033	4,047	4,060	4,063	4,089	4,320	3,796	3,713	3,663	3,555	3,573	3,563	3,636	3,615
Cook 2050+	4,424	4,437	4,832	3,700	4,278	4,801	4,974	4,089	4,100	4,107	4,104	4,124	4,117	4,109	4,034	3,993	4,010	4,024	4,013	3,859	3,842
Cook 2050+ and No Gas	4,424	4,437	4,832	3,700	4,290	4,817	4,766	3,943	3,949	3,988	4,017	4,019	4,033	4,009	3,911	3,844	3,849	3,852	3,828	3,661	3,628
Expanded Build Limits	4,424	4,437	4,247	3,700	4,284	4,812	5,243	4,080	4,096	4,107	4,109	4,131	4,125	3,674	3,804	3,742	3,863	3,879	3,867	3,710	3,686
Reference'	4,424	4,437	4,247	3,700	4,045	4,369	4,920	4,046	4,064	4,077	4,079	4,095	4,315	3,784	3,698	3,664	3,790	3,815	3,811	3,657	3,663
No Build Limits	4,424	4,437	4,247	3,700	5,687	7,406	7,125	5,515	5,519	5,519	5,509	5,523	5,509	4,506	4,424	4,376	3,713	3,720	3,705	3,774	3,749
Rapid Technology Advancement	4,424	4,437	4,834	3,702	4,280	4,805	4,982	4,095	4,112	4,124	4,127	4,151	4,148	3,742	3,750	4,109	3,726	3,828	3,820	3,751	3,756
Enhanced Regulation	4,424	4,437	4,247	3,700	4,167	4,651	4,722	4,024	4,042	4,054	4,458	4,476	4,467	3,702	3,650	3,688	3,686	3,791	3,803	3,736	3,716
Rockport 1 2024 N2G	4,425	4,438	4,833	2,447	3,282	4,022	3,949	4,077	4,088	4,087	4,314	4,332	4,323	3,797	3,715	3,665	3,779	3,790	3,777	3,848	3,824
Rockport 1 2026 N2G	4,425	4,438	4,248	3,701	4,283	3,838	4,128	4,037	4,057	4,060	4,054	4,072	4,293	3,771	3,702	3,659	3,555	3,579	3,577	3,426	3,632
Rapid Technology N2G	4,424	4,438	4,248	3,701	4,218	4,690	4,944	4,061	4,073	4,079	4,077	4,099	4,092	3,632	3,687	4,037	3,664	3,678	3,670	3,619	3,624
Preferred Portfolio	4,424	4,437	4,247	3,700	3,881	4,065	4,414	4,033	4,051	4,064	4,066	4,082	4,072	3,603	3,592	3,620	3,746	3,815	3,888	3,734	3,741
OVEC 2030	4,424	4,437	4,832	3,700	3,881	4,065	4,414	4,033	4,051	4,144	4,146	4,163	4,153	3,684	3,672	3,700	3,826	3,895	3,968	3,964	3,971
I&M PJM Obligation with FPR	**3,939**	**3,972**	**3,994**	**4,014**	**3,864**	**3,868**	**3,876**	**3,882**	**3,904**	**3,914**	**3,928**	**3,934**	**3,960**	**3,533**	**3,548**	**3,554**	**3,580**	**3,523**	**3,540**	**3,546**	**3,573**

Represents short term capacity purchase years

Exhibit C-20: Capacity Surplus

Capacity Surplus (MW)	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041
Reference (Original)	485	465	253	-314	414	933	1,098	207	196	193	176	190	387	278	188	141	235	306	281	121	306
Rockport 1 2024	485	465	838	-1,569	-606	145	253	151	136	133	346	360	329	227	125	64	155	225	194	259	205
Rockport 1 2025	485	465	838	-314	-583	160	86	212	193	184	161	169	360	246	180	174	110	177	147	243	225
Rockport 1 2026	485	465	253	-314	415	-84	244	151	143	146	135	155	360	263	165	109	-25	50	23	90	42
Cook 2050+	485	465	838	-314	414	933	1,098	207	196	193	176	190	157	576	486	439	430	501	473	313	269
Cook 2050+ and No Gas	485	465	838	-314	426	949	890	61	45	74	89	85	73	476	363	290	269	329	288	115	55
Expanded Build Limits	485	465	253	-314	420	944	1,367	198	192	193	181	197	165	141	256	188	283	356	327	164	113
Reference'	485	465	253	-314	181	501	1,044	164	160	163	151	161	355	251	150	110	210	292	271	111	90
No Build Limits	485	465	253	-314	1,823	3,538	3,249	1,633	1,615	1,605	1,581	1,589	1,549	973	876	822	133	197	165	228	176
Rapid Technology Advancement	485	465	840	-312	416	937	1,106	213	208	210	199	217	188	209	202	555	146	305	280	205	183
Enhanced Regulation	485	465	253	-314	303	783	846	142	138	140	530	542	507	169	102	134	106	268	263	190	143
Rockport 1 2024 N2G	486	466	839	-1,567	-582	154	73	195	184	173	386	398	363	264	167	111	199	267	237	302	251
Rockport 1 2026 N2G	486	466	254	-313	419	-30	252	155	153	146	126	138	333	238	154	105	-25	56	37	-120	59
Rapid Technology N2G	485	466	254	-313	354	822	1,068	179	169	165	149	165	132	99	139	483	84	155	130	73	51
Preferred Portfolio	485	465	253	-314	17	197	538	151	147	150	138	148	112	70	44	66	166	292	348	188	168
OVEC 2030	485	465	838	-314	17	197	538	151	147	230	218	229	193	151	124	146	246	372	428	418	398

Exhibit C-21: Exports as % of I&M Load

Exports (% of Load)	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041
Reference (Original)	12%	12%	7%	7%	21%	42%	45%	43%	41%	40%	37%	39%	37%	51%	16%	14%	44%	9%	9%	8%	9%
Rockport 1 2024	12%	12%	7%	7%	16%	37%	41%	39%	39%	39%	38%	40%	37%	51%	17%	15%	45%	9%	9%	9%	9%
Rockport 1 2025	12%	12%	7%	7%	21%	39%	40%	39%	39%	39%	36%	39%	36%	51%	17%	16%	48%	11%	11%	12%	12%
Rockport 1 2026	12%	12%	7%	7%	21%	42%	42%	40%	41%	40%	38%	40%	38%	52%	18%	16%	45%	9%	9%	9%	9%
Cook 2050+	12%	12%	7%	7%	21%	42%	45%	44%	41%	40%	38%	40%	36%	49%	52%	48%	50%	51%	52%	50%	49%
Cook 2050+ and No Gas	12%	12%	7%	7%	21%	43%	44%	39%	37%	37%	34%	37%	34%	46%	49%	45%	47%	48%	49%	48%	46%
Expanded Build Limits	12%	12%	7%	7%	21%	43%	64%	60%	57%	57%	55%	57%	54%	73%	36%	33%	67%	24%	24%	22%	22%
Reference'	12%	12%	7%	7%	18%	36%	46%	44%	42%	41%	38%	40%	38%	52%	17%	16%	46%	10%	11%	9%	10%
No Renewable Limits	12%	12%	7%	7%	70%	146%	147%	142%	139%	138%	136%	139%	135%	157%	118%	113%	118%	72%	73%	73%	71%
Rapid Technology Advancement	12%	12%	7%	7%	21%	43%	45%	44%	41%	40%	37%	40%	36%	66%	31%	44%	67%	37%	39%	51%	53%
Enhanced Regulation	12%	12%	7%	7%	21%	42%	45%	44%	41%	41%	38%	40%	37%	67%	31%	45%	68%	38%	39%	51%	54%
Rockport 1 2024 N2G	12%	12%	7%	7%	16%	39%	39%	38%	39%	39%	38%	40%	37%	52%	17%	16%	46%	10%	10%	10%	10%
Rockport 1 2026 N2G	12%	12%	7%	7%	21%	43%	42%	40%	41%	40%	37%	40%	37%	53%	18%	16%	46%	10%	10%	9%	10%
Rapid Technology N2G	12%	12%	7%	7%	20%	41%	45%	44%	41%	41%	38%	41%	38%	61%	33%	47%	71%	29%	30%	41%	44%
Preferred Portfolio	12%	12%	7%	7%	12%	21%	29%	31%	28%	27%	25%	26%	24%	39%	13%	13%	41%	11%	13%	12%	12%
OVEC 2030	12%	12%	7%	8%	13%	21%	29%	32%	29%	28%	25%	27%	24%	38%	13%	13%	40%	11%	13%	12%	12%

Exhibit C-22: Imports as % of I&M Load

Imports (% of Load)	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041
Reference (Original)	6%	16%	8%	8%	3%	1%	1%	1%	1%	1%	1%	1%	2%	1%	8%	11%	1%	16%	15%	17%	17%
Rockport 1 2024	7%	16%	8%	8%	3%	1%	1%	1%	1%	1%	1%	1%	2%	1%	7%	10%	1%	15%	15%	16%	17%
Rockport 1 2025	7%	16%	8%	8%	3%	1%	1%	1%	1%	1%	2%	1%	2%	1%	8%	10%	1%	14%	14%	15%	15%
Rockport 1 2026	6%	16%	8%	8%	3%	1%	1%	1%	1%	1%	1%	1%	2%	1%	7%	10%	1%	15%	14%	16%	17%
Cook 2050+	7%	16%	8%	8%	3%	1%	1%	1%	1%	1%	1%	1%	2%	1%	1%	1%	1%	1%	1%	1%	1%
Cook 2050+ and No Gas	6%	16%	8%	8%	3%	1%	1%	1%	1%	1%	2%	1%	2%	1%	1%	1%	1%	1%	1%	1%	1%
Expanded Build Limits	7%	16%	8%	8%	3%	1%	0%	0%	0%	1%	1%	1%	1%	0%	4%	5%	1%	7%	7%	8%	9%
Reference'	7%	16%	8%	8%	4%	1%	1%	1%	1%	1%	1%	1%	2%	1%	8%	10%	1%	15%	14%	16%	16%
No Renewable Limits	7%	16%	8%	8%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%	4%	4%	4%	5%
Rapid Technology Advancement	7%	16%	8%	8%	3%	1%	1%	1%	1%	1%	1%	1%	2%	0%	3%	3%	1%	6%	6%	3%	3%
Enhanced Regulation	6%	16%	8%	8%	3%	1%	1%	1%	1%	1%	1%	1%	2%	0%	3%	3%	1%	6%	6%	3%	3%
Rockport 1 2024 N2G	6%	16%	8%	8%	3%	1%	1%	1%	1%	1%	1%	1%	2%	1%	7%	10%	1%	14%	13%	15%	15%
Rockport 1 2026 N2G	7%	16%	8%	8%	3%	1%	1%	1%	1%	1%	2%	1%	2%	1%	7%	10%	1%	14%	13%	15%	15%
Rapid Technology N2G	6%	16%	8%	8%	3%	1%	1%	1%	1%	1%	1%	1%	2%	0%	3%	3%	1%	9%	8%	5%	5%
Preferred Portfolio	6%	16%	8%	8%	6%	2%	2%	2%	2%	2%	3%	2%	3%	2%	11%	13%	2%	15%	14%	15%	15%
OVEC 2030	6%	16%	8%	8%	6%	2%	2%	2%	2%	2%	3%	2%	3%	2%	11%	14%	2%	15%	14%	15%	15%

Exhibit C-23: GHG Emissions

Life Cycle GHG Emissions[1]
(grams of CO_2e per kWh)

	Specific Technology	Market
All Coal		1,002
Sub Critical	1,062	
Super Critical	863	
All Gas		474
Gas CT	599	
Gas CC[3]	481	
All Nuclear		16
Onshore Wind	12	12
All PV		54
Thin Film	35	
Crystalline	57	
All hydropower	7	7
Bio Power	43	43

Grams of CO_2e per purchased kWh: 374

INDIANA MICHIGAN POWER
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Exhibit C-24: I&M CO_2 Profile - Direct Emissions, I&M Assets

I&M CO2 Profile - Direct Emissions -		Preferred Portfolio	Reference Portfolio	Reference' Portfolio	Rockport '24 Portfolio	Rockport '25 Portfolio	Rockport '26 Portfolio	Cook 2050+ Portfolio	Cook 2050+ and No Gas Portfolio	Rapid Technology Portfolio	Enhanced Regulation Portfolio	Rockport '24 NTG Portfolio	Rockport '26 NTG Portfolio	RTA NTG Portfolio	Expanded Build Limits Portfolio	Unlimited Renewable Portfolio	OVEC 2030 Portfolio
Type	CO2	CO2	CO2	CO2	CO2	CO2	CO2	CO2	CO2	CO2	CO2	CO2	CO2	CO2	CO2	CO2	CO2
Unit	short tons	tons	tons	tons	tons	tons	tons	tons	tons	tons	tons	tons	tons	tons	tons	tons	tons
2005	21,134,511	21,134,511	21,134,511	21,134,511	21,134,511	21,134,511	21,134,511	21,134,511	21,134,511	21,134,511	21,134,511	21,134,511	21,134,511	21,134,511	21,134,511	21,134,511	21,134,511
2006	24,053,204	24,053,204	24,053,204	24,053,204	24,053,204	24,053,204	24,053,204	24,053,204	24,053,204	24,053,204	24,053,204	24,053,204	24,053,204	24,053,204	24,053,204	24,053,204	24,053,204
2007	20,364,761	20,364,761	20,364,761	20,364,761	20,364,761	20,364,761	20,364,761	20,364,761	20,364,761	20,364,761	20,364,761	20,364,761	20,364,761	20,364,761	20,364,761	20,364,761	20,364,761
2008	21,906,034	21,906,034	21,906,034	21,906,034	21,906,034	21,906,034	21,906,034	21,906,034	21,906,034	21,906,034	21,906,034	21,906,034	21,906,034	21,906,034	21,906,034	21,906,034	21,906,034
2009	19,380,586	19,380,586	19,380,586	19,380,586	19,380,586	19,380,586	19,380,586	19,380,586	19,380,586	19,380,586	19,380,586	19,380,586	19,380,586	19,380,586	19,380,586	19,380,586	19,380,586
2010	20,659,516	20,659,516	20,659,516	20,659,516	20,659,516	20,659,516	20,659,516	20,659,516	20,659,516	20,659,516	20,659,516	20,659,516	20,659,516	20,659,516	20,659,516	20,659,516	20,659,516
2011	19,725,745	19,725,745	19,725,745	19,725,745	19,725,745	19,725,745	19,725,745	19,725,745	19,725,745	19,725,745	19,725,745	19,725,745	19,725,745	19,725,745	19,725,745	19,725,745	19,725,745
2012	20,538,940	20,538,940	20,538,940	20,538,940	20,538,940	20,538,940	20,538,940	20,538,940	20,538,940	20,538,940	20,538,940	20,538,940	20,538,940	20,538,940	20,538,940	20,538,940	20,538,940
2013	17,056,824	17,056,824	17,056,824	17,056,824	17,056,824	17,056,824	17,056,824	17,056,824	17,056,824	17,056,824	17,056,824	17,056,824	17,056,824	17,056,824	17,056,824	17,056,824	17,056,824
2014	18,487,380	18,487,380	18,487,380	18,487,380	18,487,380	18,487,380	18,487,380	18,487,380	18,487,380	18,487,380	18,487,380	18,487,380	18,487,380	18,487,380	18,487,380	18,487,380	18,487,380
2015	13,310,452	13,310,452	13,310,452	13,310,452	13,310,452	13,310,452	13,310,452	13,310,452	13,310,452	13,310,452	13,310,452	13,310,452	13,310,452	13,310,452	13,310,452	13,310,452	13,310,452
2016	11,469,979	11,469,979	11,469,979	11,469,979	11,469,979	11,469,979	11,469,979	11,469,979	11,469,979	11,469,979	11,469,979	11,469,979	11,469,979	11,469,979	11,469,979	11,469,979	11,469,979
2017	10,753,307	10,753,307	10,753,307	10,753,307	10,753,307	10,753,307	10,753,307	10,753,307	10,753,307	10,753,307	10,753,307	10,753,307	10,753,307	10,753,307	10,753,307	10,753,307	10,753,307
2018	11,653,974	11,653,974	11,653,974	11,653,974	11,653,974	11,653,974	11,653,974	11,653,974	11,653,974	11,653,974	11,653,974	11,653,974	11,653,974	11,653,974	11,653,974	11,653,974	11,653,974
2019	8,120,326	8,120,326	8,120,326	8,120,326	8,120,326	8,120,326	8,120,326	8,120,326	8,120,326	8,120,326	8,120,326	8,120,326	8,120,326	8,120,326	8,120,326	8,120,326	8,120,326
2020	4,534,809	4,534,809	4,534,809	4,534,809	4,534,809	4,534,809	4,534,809	4,534,809	4,534,809	4,534,809	4,534,809	4,534,809	4,534,809	4,534,809	4,534,809	4,534,809	4,534,809
2021	3,288,302	3,280,559	3,277,210	3,281,135	3,280,348	3,265,838	3,281,421	3,284,986	3,282,883	3,280,303	3,292,947	3,318,921	3,319,504	3,294,393	3,304,306	3,285,383	3,288,302
2022	3,316,800	3,314,629	3,315,742	3,317,585	3,315,794	3,316,024	3,317,665	3,314,691	3,322,290	3,297,643	3,318,921	3,319,504	3,313,916	3,333,238	3,318,093	3,372,462	
2023	1,700,556	1,681,880	1,701,152	1,701,951	1,696,776	1,695,321	1,695,822	1,693,924	1,700,516	1,593,388	1,696,953	1,698,625	1,700,421	1,703,577	1,686,305	1,741,250	
2024	1,604,368	1,602,365	1,607,371	1,568,831	1,603,455	1,603,790	1,604,716	1,605,888	1,604,406	1,506,868	1,568,335	1,604,223	1,597,095	1,613,637	1,605,108	1,651,312	
2025	1,674,176	1,604,310	1,657,547	385,949	1,531,215	1,650,732	1,650,220	1,650,259	1,651,229	1,509,051	386,089	1,650,086	1,657,375	1,652,725	1,655,607	1,710,094	
2026	1,683,291	1,618,204	1,657,861	969,996	655,834	1,789,698	1,658,558	1,649,566	1,655,844	1,557,861	657,838	1,790,972	1,654,190	1,658,366	1,654,375	1,724,378	
2027	1,923,804	2,048,394	2,087,829	853,147	661,864	854,349	2,098,024	1,889,178	2,079,709	2,003,211	662,099	855,241	2,077,451	1,883,814	1,852,717	1,970,243	
2028	2,107,020	1,769,126	1,859,665	713,436	711,473	713,887	1,853,545	1,206,110	1,823,861	1,799,562	711,866	714,865	1,820,183	1,395,760	1,166,595	2,093,362	
2029	1,191,191	892,199	946,624	726,775	724,880	727,171	943,606	278,978	921,981	953,622	724,306	727,801	922,573	491,939	270,285	1,003,040	
2030	1,034,606	759,807	822,195	628,542	628,324	630,405	820,316	238,335	802,497	825,597	627,117	630,194	802,332	425,525	230,427	904,569	
2031	931,595	673,825	747,385	749,187	579,583	580,488	745,269	240,384	728,158	750,522	742,143	581,220	727,693	403,485	233,411	678,204	
2032	803,138	578,791	645,006	641,560	500,363	501,449	643,023	209,458	629,066	647,980	640,377	502,193	627,781	350,141	203,750	586,859	
2033	883,320	668,184	738,387	668,016	607,889	609,893	608,724	213,062	594,224	614,781	606,105	610,415	593,718	341,792	207,801	543,303	
2034	1,129,919	896,927	991,314	862,557	861,860	862,470	614,759	223,080	823,286	852,956	861,133	865,645	830,159	602,978	217,987	793,077	
2035	1,167,023	945,704	1,033,066	899,898	899,991	899,870	592,601	219,292	849,607	878,455	897,108	900,316	847,262	750,901	221,926	831,113	
2036	1,147,102	917,074	1,021,132	891,569	890,136	891,486	588,552	226,897	887,419	943,224	888,415	894,351	925,221	745,847	229,896	803,064	
2037	3,865,740	3,610,986	3,748,907	3,632,500	3,510,479	3,522,956	605,703	251,394	1,087,883	1,135,211	3,624,450	3,521,159	1,111,600	3,492,797	496,637	3,523,975	
2038	3,916,618	3,696,935	3,822,248	3,709,711	3,579,362	3,598,690	575,860	251,689	1,038,555	1,128,048	3,698,258	3,594,671	1,138,528	3,525,291	508,121	3,565,772	
2039	4,058,104	3,832,305	3,961,586	3,840,866	3,697,646	3,720,360	689,599	333,963	1,211,137	1,302,652	3,827,870	3,712,188	1,325,028	3,640,829	613,309	3,805,665	
2040	3,668,364	3,475,092	3,590,717	3,588,828	3,465,388	3,488,701	441,495	142,903	861,795	890,909	3,574,630	3,479,095	909,591	3,313,559	483,494	3,439,102	
2041	3,642,442	3,543,078	3,541,305	3,547,177	3,395,376	3,423,778	361,783	0	883,272	902,005	3,531,076	3,415,260	922,818	3,221,961	392,760	3,537,038	
		82.8%	83.2%	83.2%	83.2%	83.9%	83.8%	99.3%	100.0%	96.8%	95.7%	83.3%	83.8%	95.6%	84.8%	96.1%	83.3%

INDIANA MICHIGAN POWER
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Exhibit C-25: I&M CO_2 Profile - Direct Emissions including Imports

Portfolio		Preferred Portfolio	Reference Portfolio	Reference ' Portfolio	Rockport '24 Portfolio	Rockport '25 Portfolio	Rockport '26 Portfolio	Cook 2050+ Portfolio	Cook 2050+ and No Gas Portfolio	Rapid Technology Portfolio	Enhanced Regulation Portfolio	Rockport '24 NTG Portfolio	Rockport '26 NTG Portfolio RTA	Expanded Build Limits Portfolio	Unlimited Renewable Portfolio	OVEC 2030 Portfolio
Type		CO2	CO2	CO2	CO2	CO2	CO2	CO2	CO2	CO2	CO2	CO2	CO2	CO2	CO2	CO2
Unit		short tons	tons	tons	tons	tons	tons	tons	tons	tons	tons	tons	tons	tons	tons	tons
2005		21,134,511	21,134,511	21,134,511	21,134,511	21,134,511	21,134,511	21,134,511	21,134,511	21,134,511	21,134,511	21,134,511	21,134,511	21,134,511	21,134,511	21,134,511
2006		24,053,204	24,053,204	24,053,204	24,053,204	24,053,204	24,053,204	24,053,204	24,053,204	24,053,204	24,053,204	24,053,204	24,053,204	24,053,204	24,053,204	24,053,204
2007		20,364,761	20,364,761	20,364,761	20,364,761	20,364,761	20,364,761	20,364,761	20,364,761	20,364,761	20,364,761	20,364,761	20,364,761	20,364,761	20,364,761	20,364,761
2008		21,906,034	21,906,034	21,906,034	21,906,034	21,906,034	21,906,034	21,906,034	21,906,034	21,906,034	21,906,034	21,906,034	21,906,034	21,906,034	21,906,034	21,906,034
2009		19,380,586	19,380,586	19,380,586	19,380,586	19,380,586	19,380,586	19,380,586	19,380,586	19,380,586	19,380,586	19,380,586	19,380,586	19,380,586	19,380,586	19,380,586
2010		20,659,516	20,659,516	20,659,516	20,659,516	20,659,516	20,659,516	20,659,516	20,659,516	20,659,516	20,659,516	20,659,516	20,659,516	20,659,516	20,659,516	20,659,516
2011		19,725,745	19,725,745	19,725,745	19,725,745	19,725,745	19,725,745	19,725,745	19,725,745	19,725,745	19,725,745	19,725,745	19,725,745	19,725,745	19,725,745	19,725,745
2012		20,538,940	20,538,940	20,538,940	20,538,940	20,538,940	20,538,940	20,538,940	20,538,940	20,538,940	20,538,940	20,538,940	20,538,940	20,538,940	20,538,940	20,538,940
2013		17,056,824	17,056,824	17,056,824	17,056,824	17,056,824	17,056,824	17,056,824	17,056,824	17,056,824	17,056,824	17,056,824	17,056,824	17,056,824	17,056,824	17,056,824
2014		18,487,380	18,487,380	18,487,380	18,487,380	18,487,380	18,487,380	18,487,380	18,487,380	18,487,380	18,487,380	18,487,380	18,487,380	18,487,380	18,487,380	18,487,380
2015		13,310,452	13,310,452	13,310,452	13,310,452	13,310,452	13,310,452	13,310,452	13,310,452	13,310,452	13,310,452	13,310,452	13,310,452	13,310,452	13,310,452	13,310,452
2016		11,469,979	11,469,979	11,469,979	11,469,979	11,469,979	11,469,979	11,469,979	11,469,979	11,469,979	11,469,979	11,469,979	11,469,979	11,469,979	11,469,979	11,469,979
2017		10,753,307	10,753,307	10,753,307	10,753,307	10,753,307	10,753,307	10,753,307	10,753,307	10,753,307	10,753,307	10,753,307	10,753,307	10,753,307	10,753,307	10,753,307
2018		11,653,974	11,653,974	11,653,974	11,653,974	11,653,974	11,653,974	11,653,974	11,653,974	11,653,974	11,653,974	11,653,974	11,653,974	11,653,974	11,653,974	11,653,974
2019		8,120,326	8,120,326	8,120,326	8,120,326	8,120,326	8,120,326	8,120,326	8,120,326	8,120,326	8,120,326	8,120,326	8,120,326	8,120,326	8,120,326	8,120,326
2020		4,534,809	4,534,809	4,534,809	4,534,809	4,534,809	4,534,809	4,534,809	4,534,809	4,534,809	4,534,809	4,534,809	4,534,809	4,534,809	4,534,809	4,534,809
2021		3,881,376	3,873,697	3,870,941	3,875,211	3,873,936	3,876,281	3,876,498	3,876,269	3,876,450	3,872,840	3,875,476	3,878,618	3,877,638	3,900,838	3,881,376
2022		4,808,601	4,808,564	4,808,388	4,810,864	4,807,835	4,809,565	4,809,525	4,807,076	4,812,946	4,807,672	4,810,468	4,810,449	4,807,505	4,832,464	4,810,850	4,849,292
2023		2,413,594	2,396,835	2,414,847	2,415,523	2,410,508	2,408,708	2,409,475	2,408,225	2,413,146	2,317,519	2,417,946	2,419,226	2,420,432	2,420,107	2,410,747	2,447,745
2024		2,322,008	2,322,311	2,325,499	2,307,982	2,321,113	2,321,815	2,322,496	2,323,145	2,321,159	2,238,727	2,320,219	2,334,558	2,326,880	2,333,881	2,322,758	2,365,527
2025		2,231,748	1,903,321	2,007,270	708,117	1,038,571	1,946,807	1,945,951	1,940,544	1,946,611	1,805,164	708,945	1,950,203	1,966,004	1,947,736	1,574,138	2,265,389
2026		1,921,582	1,675,431	1,726,816	964,263	710,120	1,843,485	1,715,344	1,705,541	1,712,928	1,613,718	713,634	1,845,453	1,713,675	1,714,831	1,555,776	1,959,946
2027		2,132,751	2,132,499	2,169,306	937,920	733,446	936,904	2,180,069	1,982,425	2,161,435	2,084,382	757,446	940,331	2,160,207	1,923,095	1,854,721	2,175,867
2028		2,351,859	1,882,784	1,957,853	838,957	837,919	841,063	1,963,910	1,334,152	1,935,654	1,908,331	843,033	846,004	1,929,543	1,440,878	1,169,084	2,243,975
2029		1,406,135	980,669	1,032,692	817,020	815,987	815,367	1,031,751	385,570	1,011,202	1,039,726	817,824	838,028	1,010,159	548,086	283,210	1,214,412
2030		1,291,948	894,027	941,350	754,307	753,917	752,967	942,478	384,987	925,215	944,577	755,092	755,092	920,791	485,496	236,062	1,166,328
2031		1,280,593	838,483	904,856	904,756	745,375	742,483	907,327	422,679	890,843	909,018	905,755	746,779	883,055	477,240	241,961	1,044,676
2032		1,061,749	708,939	773,030	789,831	631,695	630,839	772,860	353,071	757,829	777,088	768,332	632,634	750,207	442,294	219,613	860,084
2033		1,235,893	846,690	913,770	787,345	788,397	786,048	789,124	419,094	773,920	792,916	784,102	788,535	764,784	494,187	216,726	913,123
2034		1,315,485	980,208	1,073,259	943,262	944,835	942,407	697,349	312,199	859,580	888,278	938,753	945,955	878,728	637,705	224,800	994,477
2035		2,158,994	1,669,236	1,744,620	1,597,217	1,606,822	1,592,733	692,133	323,006	1,179,769	1,208,700	1,570,175	1,593,027	1,556,535	1,093,901	254,343	1,867,348
2036		2,359,227	1,902,389	1,970,549	1,837,381	1,824,306	1,828,123	688,344	342,275	1,146,889	1,193,081	1,798,924	1,814,874	1,768,254	1,248,231	284,485	2,061,137
2037		4,035,857	3,744,542	3,882,215	3,764,958	3,644,539	3,665,598	716,358	373,249	1,132,746	1,229,522	3,748,316	3,648,394	1,198,947	3,564,097	531,331	3,706,958
2038		5,243,885	5,101,818	5,147,391	5,055,231	4,837,627	4,942,298	689,545	371,585	1,568,822	1,647,898	4,954,437	4,854,776	1,930,041	4,206,560	902,898	4,945,233
2039		5,275,337	5,195,044	5,238,199	5,151,569	4,919,634	5,027,598	790,968	441,864	1,720,931	1,803,955	5,040,693	4,920,115	2,066,963	4,297,621	996,135	4,896,985
2040		5,006,853	4,976,101	4,996,107	5,045,435	4,779,808	4,941,195	541,647	258,477	1,182,904	1,209,627	4,898,523	4,695,041	1,393,819	4,048,660	878,973	4,803,458
2041		5,025,693	5,103,546	4,984,652	5,070,157	4,752,948	4,944,685	465,370	124,526	1,181,034	1,190,068	4,914,881	4,787,952	1,372,531	4,006,855	805,554	4,908,789
		76.2%	75.9%	76.4%	76.0%	77.5%	76.6%	97.8%	99.4%	94.4%	94.3%	76.7%	77.3%	93.5%	81.0%	96.2%	76.8%

INDIANA MICHIGAN POWER
An AEP Company

Exhibit C-26: I&M CO2e Profile - Life-Cycle Emissions

I&M CO2 Profile - Life-Cycle Emissions - Expected (P50)

Portfolio		Historic	Preferred	Reference	Reference '	Rockport '24	Rockport '25	Rockport '26	Cook 2050+	Cook 2050+ and No Gas	Rapid Technology	Enhanced Regulation	Rockport '24	Rockport '26	RTA NTG	Expanded Build	Unlimited Renewable	OVEC 2030
Type		Emissions	Portfolio	Portfolio	Portfolio	Portfolio	Portfolio	Portfolio	Portfolio	Portfolio	Portfolio	Portfolio	NTG Portfolio	NTG Portfolio	Portfolio	Limits Portfolio	Portfolio	Portfolio
Unit		short tons	CO2 tons	CO2 tons	CO2 tons	CO2 tons	CO2 tons	CO2 tons	CO2 tons	CO2 tons	CO2 tons	CO2 tons	CO2 tons	CO2 tons	CO2 tons	CO2 tons	CO2 tons	CO2 tons
2005		21,134,511	21,134,511	21,134,511	21,134,511	21,134,511	21,134,511	21,134,511	21,134,511	21,134,511	21,134,511	21,134,511	21,134,511	21,134,511	21,134,511	21,134,511	21,134,511	21,134,511
2006		24,053,204	24,053,204	24,053,204	24,053,204	24,053,204	24,053,204	24,053,204	24,053,204	24,053,204	24,053,204	24,053,204	24,053,204	24,053,204	24,053,204	24,053,204	24,053,204	24,053,204
2007		20,364,761	20,364,761	20,364,761	20,364,761	20,364,761	20,364,761	20,364,761	20,364,761	20,364,761	20,364,761	20,364,761	20,364,761	20,364,761	20,364,761	20,364,761	20,364,761	20,364,761
2008		21,906,034	21,906,034	21,906,034	21,906,034	21,906,034	21,906,034	21,906,034	21,906,034	21,906,034	21,906,034	21,906,034	21,906,034	21,906,034	21,906,034	21,906,034	21,906,034	21,906,034
2009		19,380,586	19,380,586	19,380,586	19,380,586	19,380,586	19,380,586	19,380,586	19,380,586	19,380,586	19,380,586	19,380,586	19,380,586	19,380,586	19,380,586	19,380,586	19,380,586	19,380,586
2010		20,659,516	20,659,516	20,659,516	20,659,516	20,659,516	20,659,516	20,659,516	20,659,516	20,659,516	20,659,516	20,659,516	20,659,516	20,659,516	20,659,516	20,659,516	20,659,516	20,659,516
2011		19,725,745	19,725,745	19,725,745	19,725,745	19,725,745	19,725,745	19,725,745	19,725,745	19,725,745	19,725,745	19,725,745	19,725,745	19,725,745	19,725,745	19,725,745	19,725,745	19,725,745
2012		20,538,940	20,538,940	20,538,940	20,538,940	20,538,940	20,538,940	20,538,940	20,538,940	20,538,940	20,538,940	20,538,940	20,538,940	20,538,940	20,538,940	20,538,940	20,538,940	20,538,940
2013		17,056,824	17,056,824	17,056,824	17,056,824	17,056,824	17,056,824	17,056,824	17,056,824	17,056,824	17,056,824	17,056,824	17,056,824	17,056,824	17,056,824	17,056,824	17,056,824	17,056,824
2014		18,487,380	18,487,380	18,487,380	18,487,380	18,487,380	18,487,380	18,487,380	18,487,380	18,487,380	18,487,380	18,487,380	18,487,380	18,487,380	18,487,380	18,487,380	18,487,380	18,487,380
2015		13,310,452	13,310,452	13,310,452	13,310,452	13,310,452	13,310,452	13,310,452	13,310,452	13,310,452	13,310,452	13,310,452	13,310,452	13,310,452	13,310,452	13,310,452	13,310,452	13,310,452
2016		11,469,979	11,469,979	11,469,979	11,469,979	11,469,979	11,469,979	11,469,979	11,469,979	11,469,979	11,469,979	11,469,979	11,469,979	11,469,979	11,469,979	11,469,979	11,469,979	11,469,979
2017		10,753,307	10,753,307	10,753,307	10,753,307	10,753,307	10,753,307	10,753,307	10,753,307	10,753,307	10,753,307	10,753,307	10,753,307	10,753,307	10,753,307	10,753,307	10,753,307	10,753,307
2018		11,653,974	11,653,974	11,653,974	11,653,974	11,653,974	11,653,974	11,653,974	11,653,974	11,653,974	11,653,974	11,653,974	11,653,974	11,653,974	11,653,974	11,653,974	11,653,974	11,653,974
2019		8,120,326	8,120,326	8,120,326	8,120,326	8,120,326	8,120,326	8,120,326	8,120,326	8,120,326	8,120,326	8,120,326	8,120,326	8,120,326	8,120,326	8,120,326	8,120,326	8,120,326
2020		4,534,809	4,534,809	4,534,809	4,534,809	4,534,809	4,534,809	4,534,809	4,534,809	4,534,809	4,534,809	4,534,809	4,534,809	4,534,809	4,534,809	4,534,809	4,534,809	4,534,809
2021			3,689,955	3,682,985	3,880,440	3,694,394	3,883,166	3,687,085	3,885,654	3,687,128	3,685,530	3,682,067	3,694,533	3,688,340	3,688,513	3,708,394	3,687,706	3,689,946
2022			4,616,224	4,616,389	4,617,072	4,618,413	4,615,573	4,617,282	4,617,092	4,614,933	4,620,102	4,616,718	4,617,889	4,617,979	4,615,377	4,639,127	4,618,381	4,656,149
2023			2,333,940	2,318,584	2,335,137	2,335,749	2,331,177	2,329,516	2,330,239	2,329,160	2,333,480	2,247,400	2,337,705	2,339,745	2,340,797	2,340,284	2,331,458	2,367,698
2024			2,246,984	2,247,366	2,250,206	2,236,310	2,246,162	2,246,842	2,247,429	2,247,993	2,245,912	2,172,420	2,248,570	2,259,570	2,252,311	2,258,260	2,247,665	2,288,559
2025			2,210,291	1,979,942	2,034,052	889,196	1,923,419	2,021,044	2,020,232	2,014,804	2,020,429	1,892,028	895,916	2,024,496	2,027,557	2,022,678	1,997,886	2,242,871
2026			1,948,750	1,894,029	1,849,681	1,310,300	1,073,836	2,344,224	1,931,928	1,922,873	1,929,219	1,840,239	1,077,480	2,357,629	1,906,681	1,931,414	2,465,795	1,986,663
2027			2,249,589	2,365,027	2,403,476	1,325,471	1,114,319	1,536,995	2,412,861	2,198,646	2,394,417	2,327,977	1,118,350	1,541,172	2,393,458	2,270,949	2,751,426	2,286,123
2028			1,665,478	1,522,712	2,288,706	1,223,480	1,221,183	1,466,783	2,293,905	1,573,475	2,264,658	2,246,230	1,226,373	1,472,337	2,258,994	1,952,595	2,101,010	2,759,283
2029			1,756,660	1,384,445	1,443,518	1,197,041	1,195,924	1,443,387	1,442,200	707,245	1,418,964	1,451,397	1,197,681	1,446,044	1,417,993	1,037,068	1,288,944	1,820,518
2030			1,623,259	1,272,062	1,387,400	1,123,866	1,122,950	1,338,082	1,338,284	699,585	1,318,842	1,341,015	1,123,998	1,340,025	1,314,396	967,723	1,238,768	1,734,517
2031			1,597,097	1,214,361	1,280,030	1,289,402	1,107,189	1,291,598	1,292,247	737,156	1,273,696	1,294,570	1,290,279	1,296,151	1,265,845	955,924	1,244,603	1,551,196
2032			1,363,743	1,075,084	1,147,592	1,143,963	986,108	1,146,337	1,147,180	666,885	1,130,499	1,151,940	1,142,314	1,148,565	1,122,727	917,541	1,223,554	1,326,138
2033			1,543,513	1,219,497	1,285,525	1,150,951	1,151,988	1,293,942	1,152,817	727,577	1,135,911	1,157,339	1,147,470	1,297,736	1,126,713	902,022	1,213,479	1,355,343
2034			1,680,460	1,384,361	1,493,827	1,341,912	1,343,381	1,481,930	1,061,372	621,577	1,304,501	1,337,889	1,337,230	1,483,643	1,305,300	1,170,933	1,222,458	1,483,559
2035			2,549,272	2,070,552	2,157,450	1,991,510	2,012,758	2,132,433	1,044,099	622,882	1,649,156	1,681,791	1,964,101	2,130,079	1,625,760	1,638,222	1,242,974	2,380,395
2036			2,776,447	2,300,123	2,387,936	2,230,823	2,247,065	2,362,977	1,041,045	643,523	1,694,893	1,754,171	2,191,941	2,347,029	1,721,105	1,792,606	1,276,395	2,605,471
2037			5,347,449	5,026,518	5,193,508	5,053,844	4,973,848	5,057,939	1,067,604	675,066	1,794,368	1,903,661	5,035,173	5,046,339	1,676,051	4,997,868	1,555,807	5,128,328
2038			6,586,721	6,405,696	6,477,344	6,363,684	6,183,776	6,363,188	1,036,768	673,573	2,272,540	2,382,844	6,260,158	6,270,447	2,610,347	5,650,524	1,928,428	6,400,895
2039			6,654,828	6,507,062	6,577,455	6,467,333	6,271,216	6,467,704	1,147,477	748,745	2,442,283	2,536,789	6,353,535	6,363,627	2,786,494	5,746,163	2,029,557	6,392,894
2040			6,341,131	6,245,893	6,292,196	6,335,787	6,119,797	6,336,091	879,362	554,530	1,915,627	1,946,114	6,185,019	6,069,856	2,102,261	5,461,494	1,912,560	6,248,925
2041			6,371,141	6,385,295	6,288,643	6,358,211	6,097,355	6,357,560	802,255	410,937	1,936,381	1,957,049	6,198,506	6,191,119	2,102,824	5,406,561	1,835,356	6,393,242
			70%	70%	70%	70%	71%	70%	96%	98%	91%	91%	71%	71%	69%	74%	91%	70%

Exhibit D New Generation Resources

CAPITAL COST ASSUMPTIONS
Source: Siemens PTI, AEP I&M, NREL, IHS, EIA, EPA

Plant Parameters

Plant Parameters	Fossil				Storage	Nuclear	Renewables			
Technology	Advanced 1x1 w 90% CO2	Advanced 2x1 Combined Cycle	Advanced 1x1 Combined Cycle	Simple Cycle Frame CT	Batteries - Li-ion	Small Modular Reactor	Solar Tier-2	Solar+Storage	Solar Tier-1	Onshore Wind
Fuel	Nat.Gas	Nat. Gas.	Nat. Gas	Nat. Gas.	All	Ura.	Sun	Sun	Sun	Wind
Construction Time (Yrs)	7	6	5	5	1	10	1	1	1	1
Size (MW)	390	1,070	440	250	50MW/200MWh	600	50	100	50	200
Baseload Heat Rate, HHV (Btu/kWh)	6,431	6,370	6,431	9,905		10,046				
VOM (2019$/MWh)	5.84	1.87	2.55	0.60		3.03				PTC
FOM (2019$/kW-yr)	27.59	11.26	14.10	7.00	20.67	96.14	16.70	37.55	16.70	31.72
Book Life	30	30	30	30	30	40	35	10	35	30
Debt Life	30	30	30	30	10	40	35	10	35	30
Pre Tax WACC	7.19%	7.19%	7.19%	7.19%	7.19%	7.19%	7.19%	7.19%	7.19%	7.19%

All-in Capex, Avg. 2019$/kW	Adv. 1x1 CC w/90% CO2	Adv. 2x1 CC	Adv. 1x1 CC	Simple Frame CT	Batteries Li-ion	Small Modular Reactor	Solar Tier-2 Cost	Solar + Storage	Solar Tier-1 Cost	Onshore Wind
	2019$/kW	2019$/kW	2019$/kW	2019$/kW	2019$/kW	2019$/kW	2019 $/kW	2019 $/kW	2019 $/kW	2019 $/kW
2021	2,456	1,031	1,097	738	1,319	6,750	1,350	1,535	1,181	1,449
2022	2,419	1,020	1,085	735	1,232	6,715	1,296	1,454	1,134	1,421
2023	2,381	1,009	1,073	726	1,145	6,680	1,243	1,373	1,087	1,393
2024	2,326	995	1,059	713	1,058	6,645	1,189	1,293	1,040	1,363
2025	2,287	985	1,048	705	971	6,610	1,135	1,214	993	1,333
2026	2,260	979	1,042	699	935	6,575	1,147	1,232	1,003	1,301
2027	2,232	973	1,035	694	898	6,536	1,090	1,177	954	1,269
2028	2,210	969	1,030	690	862	6,500	1,033	1,121	904	1,236
2029	2,192	965	1,027	688	826	6,463	977	1,066	854	1,202
2030	2,171	961	1,022	684	790	6,418	920	1,011	804	1,168
2031	2,152	957	1,018	681	780	6,376	911	1,000	797	1,158
2032	2,133	953	1,014	678	770	6,331	903	990	790	1,149
2033	2,111	948	1,009	675	760	6,285	895	979	783	1,139
2034	2,093	945	1,005	672	751	6,247	887	968	776	1,130
2035	2,078	942	1,003	670	741	6,206	879	958	769	1,120
2036	2,060	939	999	668	731	6,157	871	947	762	1,111
2037	2,046	936	996	666	721	6,116	862	937	754	1,101
2038	2,031	934	993	664	711	6,074	854	926	747	1,091
2039	2,014	930	990	662	701	6,026	846	915	740	1,082
2040	1,997	927	986	660	691	5,978	838	905	733	1,072
2041	1,984	925	984	658	681	5,940	830	894	726	1,062

Exhibit E Energy Efficiency Bundles

Energy Efficiency (EE) IRP Bundles - MWh Savings by Vintage

	Residential & IQW						Commercial & Industrial							
Year	R1	R2	R3	R4	R5	IQW	CI1	CI2	CI3	CI4	CI5	CI6	CI7	CI8
2023-2025 EE Vintage Bundles														
2023	59	510	6,341	19	42,904	945	21,452	690	64,571	6,647	4,499	1,928	13,180	1,604
2024	114	1,057	12,105	40	88,841	1,836	42,167	1,458	118,977	12,754	8,080	3,457	22,338	3,376
2025	166	1,631	17,126	62	134,599	2,663	60,904	2,343	167,285	18,662	11,193	4,737	27,231	5,332
2026	156	1,530	14,739	58	116,203	2,439	52,469		153,052	13,195	7,472	3,157	25,506	4,889
2027	146	1,428	12,155	54	96,198	2,196	43,324		137,682	7,859	3,733	1,571	23,781	4,410
2028	135	1,322	9,504	50	75,585	1,939	33,930		121,481	3,778	1,257	526	21,920	3,903
2029	123	1,209	6,938	46	55,529	1,675	24,821		104,809	1,100			19,957	3,379
2030	111	1,090	3,797	42	31,728	1,409	16,563		88,067				17,931	2,851
2031	99	971	2,340	37	13,084	1,149	9,691		71,693				15,904	2,332
2032	87	854	843	33		902	4,366		56,139				13,937	1,838
2033	75	740		28		674	1,322		41,859				12,015	1,381
2034	64	629		24		473			29,276				10,121	976
2035	52	518		20		305			18,758				8,227	634
2036	42	417		16		164			10,582				6,603	366
2037	33	328		13		70			4,893				5,184	173
2038	25	252		10		16			1,653				3,892	59
2039	18	176		7		3			307				1,875	9
2040	9	109		4									618	
2041	3	51		2										
2042		18		1										

Energy Efficiency (EE) IRP Bundles - MWh Savings by Vintage

	Residential & IQW						Commercial & Industrial							
Year	R1	R2	R3	R4	R5	IQW	CI1	CI2	CI3	CI4	CI5	CI6	CI7	CI8
2026-2028 EE Vintage Bundles														
2026	59	691	6,566	28	60,336	982	24,885	3,338	55,702	13,670	8,640	3,212	4,572	2,534
2027	115	1,385	12,442	56	117,253	1,905	49,510	4,461	105,779	25,126	14,978	5,710	5,746	5,180
2028	167	2,076	17,511	84	169,066	2,759	73,644	5,465	151,091	33,825	19,233	7,375	6,076	7,857
2029	156	1,946	15,066	79	145,623	2,526	63,514		138,292	22,507	12,671	4,869	5,683	7,200
2030	146	1,817	12,420	74	120,215	2,274	52,516		124,461	11,331	6,140	2,372	5,288	6,489
2031	135	1,681	9,707	68	94,123	2,009	41,200		109,873	3,840	1,986	765	4,847	5,737
2032	123	1,537	7,082	63	54,903	1,735	30,209		94,852	211			4,391	4,962
2033	111	1,385	4,709	56	23,453	1,460	20,221		79,758				3,928	4,182
2034	99	1,233	2,379	50	60,336	1,190	10,515		64,985				3,466	3,416
2035	87	1,085	854	44	117,253	934	3,907		50,942				3,024	2,687
2036	75	939		38	169,066	698			38,036				2,588	2,015
2037	64	797		32	145,623	490			26,650				2,156	1,419
2038	52	655		27	120,215	315			17,118				1,724	919
2039	42	528		22	94,123	170			9,693				1,386	526
2040	33	415		17	54,903	72			4,508				1,078	246
2041	25	318		13	23,453	17			1,533				784	84
2042	18	221		9		3			285				239	13
2043	9	136		6									146	
2044	3	63		3									77	
2045		21		1									19	

INDIANA MICHIGAN POWER
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Energy Efficiency (EE) IRP Bundles - MWh Savings by Vintage

	Residential & IQW						Commercial & Industrial							
Year	R1	R2	R3	R4	R5	IQW	CI1	CI2	CI3	CI4	CI5	CI6	CI7	CI8
2029-2040 EE Vintage Bundles														
2029	59	803	6,623	34	68,775	1,012	30,906	6,413	49,113	19,728	11,223	4,005	6	3,277
2030	115	1,627	12,553	68	132,354	1,961	58,260	7,263	90,864	34,850	18,885	6,752	5	6,464
2031	167	2,417	17,658	101	188,839	2,835	84,490	7,991	127,490	44,922	23,404	8,531	5	9,474
2032	216	3,167	21,864	132	236,982	3,629	105,929	8,592	158,192	52,664	27,549	9,920	54	12,372
2033	261	3,983	25,135	167	276,155	4,337	125,187	9,065	183,813	54,678	27,596	9,918	301	15,454
2034	303	4,734	27,503	198	306,414	4,954	138,497	9,426	206,619	56,398	27,149	9,796	1,681	18,337
2035	340	5,420	29,071	227	311,778	5,478	149,360	9,697	229,012	59,661	28,414	10,211	7,056	21,075
2036	373	6,072	29,973	257	332,265	5,913	154,081	9,886	242,532	60,474	27,941	10,086	10,603	23,643
2037	402	6,657	30,021	283	335,883	6,260	152,340	10,015	259,298	60,154	27,206	9,908	12,340	26,031
2038	427	7,177	30,056	306	338,576	6,528	152,616	10,005	300,595	60,907	28,256	10,164	13,370	28,201
2039	449	7,629	30,065	326	340,485	6,722	154,245	9,988	331,319	60,168	27,702	10,059	12,026	30,070
2040	467	8,012	30,069	343	341,757	6,857	153,985	9,973	353,885	58,856	26,897	9,902	11,715	31,597
2041	421	7,252	23,373	311	263,701	5,867	119,536		306,707	34,847	15,960	5,899	10,175	28,354
2042	377	6,502	17,407	279	193,991	4,906	89,018		260,786	16,911	7,533	2,815	8,644	25,184
2043	333	5,764	12,278	248	133,973	4,015	62,722		217,192	5,509	2,377	893	7,160	22,105
2044	290	5,037	8,061	217	84,528	3,208	41,561		176,891				5,756	19,192
2045	248	4,323	4,781	186	46,034	2,494	24,718		140,447				4,454	16,416
2046	206	3,647	2,411	157	18,189	1,877	12,503		108,124				3,228	13,828
2047	169	3,012	865	130		1,357	4,430		80,138				1,985	11,245
2048	136	2,439		105		934	296		56,575				1,178	8,949
2050	107	1,932		84		579			37,370				710	6,919
2051	82	1,488		64		332			22,774				532	5,177
2052	60	1,108		48		161			12,295				335	3,716
2053	43	794		34		53			5,644				260	2,533
2054	29	548		24		18			1,900				210	1,619
2055	18	348		15		3			350				160	910
2056	9	195		8									111	369

Energy Efficiency (EE) IRP Bundles - MW Savings by Vintage

	Residential & IQW						Commercial & Industrial							
Year	R1	R2	R3	R4	R5	IQW	CI1	CI2	CI3	CI4	CI5	CI6	CI7	CI8
2023-2025 EE Vintage Bundles														
2023	0.01	0.92	4.03	0.03	4.54	0.18	2.99	0	10.18	1.41	0.78	0.34	0.98	1.43
2024	0.01	1.9	7.68	0.07	9.65	0.34	5.9	0	18.72	2.61	1.39	0.6	1.66	3.01
2025	0.02	2.93	10.85	0.12	14.78	0.5	8.52	0	26.4	3.73	1.93	0.82	2.04	4.75
2026	0.02	2.75	9.34	0.11	12.76	0.45	7.34		24.15	2.62	1.29	0.55	1.91	4.35
2027	0.02	2.57	7.7	0.1	10.57	0.41	6.06		21.73	1.55	0.64	0.27	1.78	3.93
2028	0.02	2.38	6.02	0.09	8.32	0.36	4.75		19.17	0.74	0.22	0.09	1.64	3.48
2029	0.01	2.18	4.39	0.09	6.12	0.31	3.47		16.54	0.21			1.5	3.01
2030	0.01	1.96	2.4	0.08	3.52	0.26	2.32		13.9				1.34	2.54
2031	0.01	1.75	1.48	0.07	1.46	0.21	1.36		11.32				1.19	2.08
2032	0.01	1.54	0.53	0.06		0.17	0.61		8.86				1.04	1.64
2033	0.01	1.33		0.05		0.13	0.19		6.61				0.9	1.23
2034	0.01	1.13		0.04		0.09			4.62				0.76	0.87
2035	0.01	0.93		0.04		0.06			2.96				0.62	0.56
2036	0	0.75		0.03		0.03			1.67				0.5	0.33
2037	0	0.59		0.02		0.01			0.77				0.39	0.15
2038	0	0.45		0.02					0.26				0.29	0.05
2039	0	0.32		0.01					0.05				0.14	0.01
2040	0	0.2		0.01									0.05	
2041	0	0.09												
2042		0.03												

Energy Efficiency (EE) IRP Bundles - MW Savings by Vintage

	Residential & IQW						Commercial & Industrial						
Year	R1	R2	R3	R4	R5	IQW	CI1	CI2	CI3	CI4	CI5	CI6	CI7	CI8
2026-2028 EE Vintage Bundles														
2026	0.01	1.25	4.15	0.05	6.74	0.18	3.47	0	8.89	2.77	1.49	0.55	0.35	2.24
2027	0.01	2.5	7.86	0.1	13.09	0.35	6.92	0	16.97	4.97	2.58	0.99	0.6	4.58
2028	0.02	3.75	11.07	0.16	18.86	0.5	10.27	0.01	24.3	6.59	3.31	1.28	0.68	6.94
2029	0.02	3.52	9.52	0.15	16.25	0.46	8.85		22.24	4.37	2.18	0.84	0.64	6.36
2030	0.02	3.28	7.85	0.14	13.41	0.42	7.32		20.02	2.18	1.06	0.41	0.6	5.73
2031	0.02	3.04	6.13	0.13	10.5	0.37	5.74		17.67	0.73	0.34	0.13	0.55	5.07
2032	0.01	2.78	4.48	0.12	6.12	0.32	4.21		15.26	0.04			0.5	4.38
2033	0.01	2.5	2.98	0.11	2.61	0.27	2.82		12.83				0.45	3.69
2034	0.01	2.23	1.5	0.09		0.22	1.46		10.46				0.4	3.02
2035	0	0	0	0		0.17	0.54		8.2				0.35	2.37
2036	0	0		0		0.13			6.12				0.3	1.78
2037	0	0		0		0.09			4.29				0.25	1.25
2038	0	0		0		0.06			2.76				0.2	0.81
2039	0	0		0		0.03			1.56				0.16	0.46
2040	0	0		0		0.01			0.73				0.13	0.22
2041	0	0		0		0			0.25				0.1	0.07
2042	0	0		0		0			0.05				0.04	0.01
2043	0	0		0									0.03	
2044	0	0											0.01	
2045		0											0.35	

Energy Efficiency (EE) IRP Bundles - MW Savings by Vintage

	Residential & IQW						Commercial & Industrial							
Year	R1	R2	R3	R4	R5	IQW	CI1	CI2	CI3	CI4	CI5	CI6	CI7	CI8
2029-2040 EE Vintage Bundles														
2029	0.01	1.45	4.19	0.1	7.64	0.18	4.17	0.01	7.81	3.84	1.93	0.69	0	2.91
2030	0.01	2.94	7.94	0.1	14.68	0.35	7.87	0.01	14.53	6.68	3.24	1.17	0	5.77
2031	0.02	4.36	11.17	0.2	20.89	0.5	11.38	0.01	20.52	8.51	4.02	1.48	0	8.52
2032	0.03	5.72	13.83	0.2	26.14	0.64	14.25	0.01	25.6	9.99	4.73	1.72	0.01	11.2
2033	0.03	7.19	15.9	0.3	30.37	0.76	16.85	0.01	30.01	10.31	4.73	1.71	0.03	13.99
2034	0.04	8.56	17.4	0.4	33.66	0.86	18.63	0.01	33.94	10.55	4.66	1.69	0.05	16.65
2035	0.04	9.8	18.4	0.4	34.15	0.96	20.04	0.01	37.61	11.21	4.88	1.76	0.06	19.19
2036	0.04	10.98	18.97	0.5	36.3	1.03	20.7	0.01	39.8	11.32	4.8	1.74	0.05	21.59
2037	0.05	12.05	19.01	0.5	36.57	1.09	20.54	0.01	42.62	11.23	4.67	1.71	0.05	23.82
2038	0.05	12.99	19.04	0.6	36.74	1.13	20.55	0.01	49.21	11.44	4.85	1.75	0.07	25.85
2039	0.05	13.81	19.04	0.6	36.83	1.17	20.65	0.01	54.26	11.26	4.76	1.74	0.07	27.62
2040	0.05	14.51	19.05	0.6	36.86	1.19	20.53	0.01	58.05	10.97	4.62	1.71	0.26	29.12
2041	0.05	13.13	14.81	0.6	28.41	1.02	15.92		50.32	6.49	2.74	1.02	0.24	26.14
2042	0.04	11.77	11.03	0.5	20.87	0.85	11.84		42.79	3.14	1.29	0.49	0.22	23.22
2043	0.04	10.44	7.78	0.5	14.4	0.69	8.33		35.64	1.02	0.41	0.15	0.2	20.39
2044	0.03	9.12	5.11	0.4	9.08	0.55	5.51		29.02				0.18	17.7
2045	0.03	7.83	3.03	0.3	4.94	0.43	3.26		23.04				0.16	15.14
2046	0.02	6.61	1.53	0.3	1.95	0.32	1.64		17.73				0.14	12.75
2047	0.02	5.46	0.55	0.2		0.23	0.58		13.14				0.12	10.37
2048	0.02	4.42		0.2		0.16	0.04		9.28				0.11	8.25
2050	0.01	3.5		0.2		0.1			6.13				0.09	6.38
2051	0.01	2.7		0.1		0.06			3.74				0.08	4.78
2052	0.01	2.01		0.1		0.03			2.02				0.06	3.43
2053	0	1.44		0.1		0.01			0.93				0.05	2.34
2054	0	0.99		0		0			0.31				0.04	1.49
2055	0	0.63				0			0.06				0.03	0.84
2056	0	0.35											0.02	0.34

EE IRP Bundles - Bundle Costs (in $ '000s)

	Residential & IQW						Commercial & Industrial							
Year	R1	R2	R3	R4	R5	IQW	CI1	CI2	CI3	CI4	CI5	CI6	CI7	CI8
2023	$293.50	$652.20	$1,245.20	$49.30	$6,543.90	$1,254.10	$2,611.50	$107.20	$5,607.70	$1,138.20	$1,010.10	$406.50	$1,121.20	$81.20
2024	$293.80	$759.70	$1,349.90	$58.40	$6,724.30	$1,284.00	$2,764.70	$226.30	$5,215.60	$1,282.10	$1,053.40	$417.90	$844.50	$102.10
2025	$294.10	$855.90	$1,416.00	$66.60	$7,169.00	$1,314.50	$2,798.20	$363.80	$5,222.60	$1,531.10	$1,233.80	$472.60	$535.80	$128.40
2026	$294.40	$945.00	$1,464.40	$74.50	$7,597.30	$1,345.70	$2,850.60	$516.40	$5,163.20	$2,200.90	$1,904.70	$644.30	$397.20	$156.00
2027	$294.80	$1,023.90	$1,501.60	$81.70	$7,963.60	$1,377.50	$3,053.70	$680.40	$5,114.40	$2,343.10	$1,844.10	$663.00	$108.00	$183.30
2028	$295.20	$1,092.50	$1,530.30	$88.00	$8,314.20	$1,409.80	$3,421.20	$846.50	$5,168.80	$2,541.20	$1,900.20	$678.30	$51.80	$208.70
2029	$295.60	$1,148.90	$1,547.90	$93.40	$8,656.70	$1,442.80	$3,507.20	$992.10	$4,828.50	$3,092.70	$2,437.00	$800.30	$0.40	$230.50
2030	$296.00	$1,222.70	$1,574.20	$98.50	$9,037.70	$1,476.40	$3,464.40	$1,123.20	$4,506.20	$3,104.40	$2,233.20	$738.20	$0.00	$247.70
2031	$296.50	$1,259.60	$1,591.60	$102.20	$9,381.80	$1,510.60	$3,743.80	$1,235.80	$4,385.00	$3,174.00	$2,167.70	$757.10	$0.00	$234.80
2032	$296.90	$1,288.50	$1,607.80	$105.00	$9,714.00	$1,545.60	$3,734.20	$1,329.00	$4,183.90	$3,590.80	$2,620.20	$859.00	$2.30	$251.90
2033	$297.40	$1,486.10	$1,622.00	$117.90	$10,073.30	$1,581.30	$4,024.20	$1,402.60	$4,056.70	$3,570.80	$2,338.90	$787.40	$12.80	$293.50
2034	$297.70	$1,499.50	$1,636.70	$119.30	$10,447.30	$1,617.80	$3,908.60	$1,458.10	$4,158.00	$3,740.30	$2,255.60	$763.40	$114.50	$307.10
2035	$298.10	$1,510.90	$1,655.20	$120.40	$10,737.30	$1,655.40	$4,093.00	$1,497.90	$4,496.10	$4,104.60	$2,659.40	$876.80	$485.60	$325.30
2036	$298.30	$1,594.70	$1,673.70	$130.40	$11,013.30	$1,694.50	$3,866.30	$1,527.60	$4,008.70	$3,927.00	$2,396.70	$798.60	$363.90	$344.20
2037	$298.60	$1,602.80	$1,692.60	$130.70	$11,313.40	$1,733.40	$3,679.80	$1,547.10	$4,618.80	$3,770.00	$2,298.10	$774.80	$237.00	$362.40
2038	$298.90	$1,609.40	$1,709.30	$130.90	$11,542.30	$1,773.30	$4,031.40	$1,545.90	$7,220.10	$3,986.90	$2,642.20	$848.30	$200.30	$377.40
2039	$299.10	$1,614.70	$1,723.50	$131.00	$11,756.90	$1,814.00	$4,112.50	$1,544.00	$6,787.30	$3,823.10	$2,374.60	$806.80	$2.70	$383.80
2040	$300.80	$1,619.90	$1,743.30	$131.20	$11,966.90	$1,855.70	$4,063.40	$1,545.30	$6,532.40	$3,665.50	$2,264.60	$779.20	$89.90	$382.60

Exhibit F I&M Internal Hourly Load Data

Exhibit F

Indiana Michigan Power Company

Hourly Internal Load

Indiana Michigan Power Company
2020 Hourly Load (MW)
(All Hours Are EST)

DATE	HR1	HR2	HR3	HR4	HR5	HR6	HR7	HR8
1/1/2020	2,040	1,934	1,932	1,942	1,897	1,835	1,885	1,955
1/2/2020	2,031	2,017	2,014	2,026	2,077	2,162	2,287	2,422
1/3/2020	2,101	2,071	2,056	2,054	2,102	2,166	2,300	2,348
1/4/2020	2,022	1,976	1,938	1,896	1,927	1,975	2,010	2,077
1/5/2020	2,058	1,992	2,001	1,979	2,001	1,997	2,071	2,145
1/6/2020	2,111	2,114	2,072	2,131	2,186	2,306	2,489	2,601
1/7/2020	2,174	2,143	2,153	2,142	2,197	2,297	2,347	2,461
1/8/2020	2,066	2,088	2,130	2,099	2,195	2,419	2,621	2,719
1/9/2020	2,320	2,286	2,275	2,302	2,342	2,459	2,667	2,792
1/10/2020	2,216	2,161	2,101	1,996	2,018	2,160	2,313	2,410
1/11/2020	1,973	1,899	1,853	1,903	1,895	1,935	1,952	2,016
1/12/2020	2,046	1,997	1,961	1,938	1,933	1,919	1,938	2,052
1/13/2020	2,116	2,097	2,051	2,039	2,088	2,217	2,395	2,486
1/14/2020	2,166	2,163	2,086	2,145	2,196	2,294	2,471	2,575
1/15/2020	2,149	2,141	2,134	2,126	2,168	2,268	2,452	2,550
1/16/2020	2,156	2,146	2,119	2,117	2,171	2,285	2,411	2,602
1/17/2020	2,280	2,280	2,280	2,225	2,291	2,381	2,627	2,710
1/18/2020	2,251	2,228	2,204	2,162	2,311	2,311	2,345	2,372
1/19/2020	2,271	2,237	2,239	2,212	2,243	2,312	2,317	2,405
1/20/2020	2,431	2,411	2,414	2,436	2,472	2,578	2,719	2,756
1/21/2020	2,377	2,303	2,229	2,283	2,364	2,431	2,660	2,777
1/22/2020	2,345	2,300	2,317	2,293	2,358	2,471	2,550	2,649
1/23/2020	2,219	2,192	2,164	2,194	2,250	2,358	2,558	2,619
1/24/2020	2,290	2,239	2,231	2,220	2,216	2,329	2,452	2,571
1/25/2020	2,060	2,006	2,026	1,994	1,943	2,077	2,160	2,255
1/26/2020	2,114	2,073	2,052	2,039	2,029	2,035	2,083	2,139
1/27/2020	2,126	2,108	2,128	2,119	2,170	2,327	2,503	2,621
1/28/2020	2,201	2,139	2,152	2,157	2,207	2,265	2,335	2,532
1/29/2020	2,194	2,170	2,170	2,148	2,227	2,319	2,500	2,630
1/30/2020	2,217	2,195	2,166	2,213	2,235	2,383	2,589	2,694
1/31/2020	2,241	2,207	2,167	2,183	2,247	2,352	2,542	2,670

Attachment MAB-1
Witness: M. A. Becker

Indiana Michigan Power Company
2020 Hourly Load (MW)
(All Hours Are EST)

DATE	HR1	HR2	HR3	HR4	HR5	HR6	HR7	HR8
2/1/2020	2,133	2,093	2,071	2,057	2,087	2,109	2,155	2,244
2/2/2020	2,079	2,063	2,057	2,048	2,024	2,065	2,105	2,188
2/3/2020	1,935	1,931	1,954	1,977	2,065	2,102	2,353	2,517
2/4/2020	1,992	1,998	1,964	1,966	1,999	2,044	2,207	2,324
2/5/2020	2,171	2,162	2,158	2,168	2,219	2,326	2,539	2,653
2/6/2020	2,371	2,336	2,299	2,323	2,351	2,481	2,591	2,700
2/7/2020	2,346	2,367	2,376	2,361	2,371	2,496	2,630	2,734
2/8/2020	2,125	2,174	2,190	2,200	2,201	2,214	2,268	2,352
2/9/2020	2,045	2,001	2,030	2,032	2,000	2,038	2,104	2,147
2/10/2020	2,198	2,177	2,142	2,163	2,215	2,345	2,471	2,640
2/11/2020	2,199	2,170	2,164	2,167	2,186	2,286	2,479	2,571
2/12/2020	2,216	2,171	2,177	2,164	2,260	2,353	2,531	2,674
2/13/2020	2,253	2,153	2,194	2,258	2,355	2,426	2,541	2,614
2/14/2020	2,415	2,395	2,372	2,384	2,425	2,530	2,728	2,836
2/15/2020	2,388	2,350	2,313	2,308	2,368	2,376	2,452	2,483
2/16/2020	2,042	1,970	1,878	1,889	1,929	1,933	1,984	2,065
2/17/2020	2,135	2,145	2,146	2,142	2,182	2,323	2,528	2,613
2/18/2020	2,159	2,128	2,127	2,152	2,249	2,346	2,496	2,567
2/19/2020	2,197	2,206	2,184	2,197	2,198	2,318	2,411	2,488
2/20/2020	2,247	2,226	2,239	2,233	2,329	2,405	2,628	2,673
2/21/2020	2,375	2,342	2,337	2,315	2,407	2,518	2,697	2,821
2/22/2020	2,214	2,169	2,163	2,157	2,159	2,201	2,261	2,316
2/23/2020	2,045	2,038	1,970	1,995	1,983	1,999	2,019	2,132
2/24/2020	2,062	2,054	2,055	2,066	2,147	2,225	2,423	2,478
2/25/2020	2,263	2,224	2,163	2,192	2,226	2,361	2,497	2,647
2/26/2020	2,303	2,270	2,246	2,295	2,356	2,505	2,661	2,735
2/27/2020	2,288	2,263	2,240	2,262	2,320	2,415	2,552	2,729
2/28/2020	2,353	2,287	2,304	2,310	2,313	2,451	2,638	2,721
2/29/2020	2,223	2,208	2,178	2,183	2,166	2,235	2,288	2,320
3/1/2020	2,150	2,125	2,096	2,085	2,100	2,129	2,178	2,210
3/2/2020	2,043	2,005	2,022	2,057	2,114	2,222	2,356	2,519

Attachment MAB-1
Witness: M. A. Becker

Indiana Michigan Power Company
2020 Hourly Load (MW)
(All Hours Are EST)

DATE	HR1	HR2	HR3	HR4	HR5	HR6	HR7	HR8
3/3/2020	2,068	2,055	2,034	2,008	2,085	2,193	2,233	2,347
3/4/2020	2,094	2,106	2,065	2,116	2,177	2,290	2,462	2,528
3/5/2020	2,144	2,159	2,174	2,195	2,244	2,392	2,570	2,652
3/6/2020	2,100	2,095	2,124	2,127	2,192	2,277	2,466	2,487
3/7/2020	2,047	2,046	2,013	2,067	2,094	2,154	2,201	2,175
3/8/2020	2,030	2,004	1,983	1,960	1,963	2,027	2,067	2,081
3/9/2020	1,974	1,968	1,971	2,030	2,138	2,301	2,411	2,414
3/10/2020	1,981	1,978	1,977	2,023	2,118	2,304	2,410	2,392
3/11/2020	2,063	2,073	2,099	2,169	2,255	2,462	2,573	2,562
3/12/2020	2,030	2,068	2,053	2,116	2,241	2,397	2,506	2,364
3/13/2020	2,025	2,012	2,028	2,053	2,134	2,296	2,370	2,400
3/14/2020	1,942	1,903	1,920	1,903	1,905	2,005	1,992	2,121
3/15/2020	1,973	1,910	1,945	1,887	1,914	1,937	2,051	2,089
3/16/2020	2,037	2,029	2,071	2,152	2,254	2,418	2,501	2,535
3/17/2020	2,062	2,067	2,046	2,138	2,210	2,384	2,464	2,488
3/18/2020	2,056	2,094	2,069	2,074	2,228	2,368	2,401	2,407
3/19/2020	1,979	1,995	2,077	2,112	2,144	2,276	2,398	2,426
3/20/2020	1,951	1,980	1,945	1,926	1,963	2,084	2,279	2,204
3/21/2020	1,948	1,909	1,936	1,925	1,977	2,017	2,083	2,093
3/22/2020	1,925	1,926	1,932	1,910	1,943	1,974	2,034	2,065
3/23/2020	2,025	2,028	2,023	2,063	2,105	2,284	2,392	2,388
3/24/2020	1,974	1,951	1,960	1,983	2,081	2,222	2,314	2,340
3/25/2020	1,951	1,981	1,992	1,977	2,070	2,209	2,290	2,310
3/26/2020	1,816	1,797	1,773	1,751	1,783	1,849	1,899	1,907
3/27/2020	1,715	1,723	1,715	1,777	1,865	1,967	2,096	2,134
3/28/2020	1,765	1,693	1,723	1,725	1,712	1,769	1,762	1,833
3/29/2020	1,704	1,700	1,654	1,665	1,674	1,709	1,693	1,773
3/30/2020	1,792	1,788	1,794	1,850	1,879	2,045	2,085	2,012
3/31/2020	1,866	1,855	1,841	1,907	1,980	2,119	2,152	2,178
4/1/2020	1,863	1,783	1,852	1,891	1,929	2,067	2,158	2,180
4/2/2020	1,911	1,873	1,861	1,914	1,979	2,086	2,115	2,143

Attachment MAB-1
Witness: M. A. Becker

Indiana Michigan Power Company
2020 Hourly Load (MW)
(All Hours Are EST)

DATE	HR1	HR2	HR3	HR4	HR5	HR6	HR7	HR8
4/3/2020	1,725	1,732	1,750	1,767	1,790	1,910	1,990	1,967
4/4/2020	1,659	1,593	1,621	1,635	1,643	1,703	1,712	1,728
4/5/2020	1,609	1,615	1,629	1,629	1,574	1,679	1,742	1,748
4/6/2020	1,710	1,662	1,719	1,754	1,872	1,994	2,070	2,122
4/7/2020	1,710	1,731	1,680	1,760	1,741	1,900	1,958	1,998
4/8/2020	1,673	1,646	1,613	1,640	1,718	1,757	1,815	1,883
4/9/2020	1,680	1,646	1,655	1,677	1,709	1,897	1,963	2,038
4/10/2020	1,790	1,767	1,803	1,809	1,856	1,913	1,943	1,968
4/11/2020	1,731	1,693	1,718	1,733	1,727	1,741	1,784	1,817
4/12/2020	1,645	1,617	1,559	1,583	1,582	1,642	1,625	1,664
4/13/2020	1,597	1,563	1,581	1,627	1,691	1,842	1,929	1,993
4/14/2020	1,706	1,730	1,768	1,814	1,873	1,980	2,038	2,061
4/15/2020	1,772	1,733	1,711	1,735	1,786	1,902	1,963	1,980
4/16/2020	1,705	1,680	1,691	1,725	1,809	1,914	1,972	1,981
4/17/2020	1,675	1,649	1,680	1,747	1,814	1,909	1,996	2,067
4/18/2020	1,859	1,858	1,857	1,848	1,873	1,872	1,906	1,912
4/19/2020	1,699	1,710	1,691	1,710	1,739	1,713	1,741	1,752
4/20/2020	1,606	1,595	1,602	1,645	1,757	1,874	1,954	1,966
4/21/2020	1,596	1,571	1,580	1,631	1,734	1,832	1,893	1,948
4/22/2020	1,737	1,734	1,774	1,780	1,843	1,962	2,035	2,072
4/23/2020	1,697	1,624	1,637	1,679	1,747	1,873	1,915	1,941
4/24/2020	1,702	1,678	1,653	1,669	1,707	1,858	1,919	1,944
4/25/2020	1,568	1,556	1,555	1,596	1,599	1,690	1,728	1,755
4/26/2020	1,705	1,669	1,687	1,692	1,679	1,723	1,747	1,803
4/27/2020	1,701	1,680	1,683	1,781	1,874	1,986	2,028	2,094
4/28/2020	1,644	1,628	1,612	1,645	1,681	1,809	1,871	1,913
4/29/2020	1,656	1,549	1,598	1,649	1,720	1,808	1,896	1,921
4/30/2020	1,698	1,647	1,677	1,696	1,787	1,908	1,989	1,953
5/1/2020	1,704	1,705	1,728	1,731	1,786	1,848	1,963	2,016
5/2/2020	1,550	1,577	1,549	1,574	1,505	1,576	1,585	1,599
5/3/2020	1,561	1,554	1,551	1,497	1,470	1,492	1,464	1,544

Attachment MAB-1
Witness: M. A. Becker

Indiana Michigan Power Company
2020 Hourly Load (MW)
(All Hours Are EST)

DATE	HR1	HR2	HR3	HR4	HR5	HR6	HR7	HR8
5/4/2020	1,532	1,521	1,541	1,588	1,697	1,814	1,915	1,973
5/5/2020	1,656	1,633	1,646	1,709	1,815	1,903	2,009	2,050
5/6/2020	1,722	1,620	1,566	1,616	1,697	1,797	1,840	1,893
5/7/2020	1,572	1,595	1,638	1,702	1,812	1,930	2,013	1,961
5/8/2020	1,634	1,618	1,653	1,700	1,752	1,784	1,949	1,933
5/9/2020	1,730	1,709	1,725	1,734	1,791	1,787	1,791	1,865
5/10/2020	1,609	1,633	1,636	1,643	1,659	1,644	1,670	1,686
5/11/2020	1,738	1,777	1,641	1,804	1,882	2,048	2,109	2,197
5/12/2020	1,868	1,863	1,855	1,875	1,971	2,100	2,197	2,208
5/13/2020	1,714	1,754	1,801	1,808	1,966	2,094	2,160	2,196
5/14/2020	1,760	1,715	1,692	1,767	1,865	1,948	2,046	2,108
5/15/2020	1,743	1,708	1,694	1,748	1,799	1,931	2,008	2,102
5/16/2020	1,627	1,617	1,612	1,571	1,617	1,670	1,642	1,697
5/17/2020	1,641	1,576	1,583	1,562	1,566	1,565	1,608	1,655
5/18/2020	1,761	1,738	1,713	1,783	1,836	1,960	2,035	2,103
5/19/2020	1,805	1,777	1,788	1,793	1,863	2,013	2,094	2,130
5/20/2020	1,617	1,580	1,543	1,573	1,670	1,800	1,937	2,083
5/21/2020	1,709	1,697	1,660	1,672	1,765	1,765	1,850	1,907
5/22/2020	1,668	1,660	1,674	1,695	1,775	1,888	1,957	2,047
5/23/2020	1,639	1,631	1,607	1,601	1,584	1,567	1,623	1,677
5/24/2020	1,631	1,600	1,545	1,490	1,527	1,522	1,575	1,652
5/25/2020	1,845	1,747	1,689	1,663	1,692	1,618	1,652	1,775
5/26/2020	1,934	1,856	1,862	1,868	1,948	2,071	2,185	2,211
5/27/2020	2,066	2,008	1,980	1,963	2,059	2,164	2,299	2,396
5/28/2020	1,979	1,969	1,953	1,966	2,054	2,147	2,255	2,341
5/29/2020	1,966	1,886	1,886	1,877	1,993	2,046	2,164	2,215
5/30/2020	1,678	1,657	1,614	1,594	1,627	1,629	1,669	1,727
5/31/2020	1,598	1,578	1,539	1,538	1,578	1,503	1,563	1,579
6/1/2020	1,635	1,645	1,643	1,698	1,784	1,862	2,028	2,063
6/2/2020	1,778	1,755	1,786	1,813	1,918	2,022	2,113	2,149
6/3/2020	2,081	1,978	1,813	1,810	1,851	1,920	2,010	2,093

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Indiana Michigan Power Company
2020 Hourly Load (MW)
(All Hours Are EST)

DATE	HR1	HR2	HR3	HR4	HR5	HR6	HR7	HR8
6/4/2020	1,944	1,939	1,920	1,902	1,876	2,031	2,186	2,199
6/5/2020	2,007	1,917	1,884	1,923	1,911	2,020	2,170	2,244
6/6/2020	1,958	1,869	1,814	1,792	1,799	1,728	1,835	2,008
6/7/2020	1,700	1,634	1,610	1,530	1,570	1,519	1,590	1,676
6/8/2020	1,801	1,741	1,673	1,735	1,837	1,935	1,977	2,072
6/9/2020	1,918	1,861	1,836	1,874	1,935	2,045	2,173	2,272
6/10/2020	2,180	2,142	2,114	2,127	2,223	2,360	2,489	2,568
6/11/2020	1,848	1,910	1,799	1,861	1,929	2,018	2,129	2,141
6/12/2020	1,819	1,750	1,659	1,775	1,837	1,864	1,973	2,123
6/13/2020	1,793	1,753	1,722	1,662	1,698	1,682	1,702	1,764
6/14/2020	1,628	1,576	1,574	1,565	1,596	1,572	1,587	1,643
6/15/2020	1,691	1,666	1,662	1,727	1,809	1,918	2,016	2,063
6/16/2020	1,841	1,816	1,787	1,843	1,922	2,028	2,112	2,139
6/17/2020	1,908	1,862	1,843	1,830	1,907	2,005	2,113	2,229
6/18/2020	1,949	1,870	1,852	1,876	1,922	1,904	2,003	2,088
6/19/2020	2,013	1,931	1,906	1,924	1,990	2,068	2,164	2,269
6/20/2020	1,979	1,904	1,867	1,833	1,819	1,615	1,714	1,934
6/21/2020	1,935	1,904	1,843	1,801	1,809	1,758	1,741	1,842
6/22/2020	1,859	1,805	1,803	1,841	1,920	2,025	2,170	2,293
6/23/2020	2,152	2,049	1,992	2,049	2,103	2,227	2,315	2,398
6/24/2020	1,891	1,857	1,876	1,907	1,978	2,059	2,170	2,208
6/25/2020	1,901	1,842	1,809	1,850	1,920	2,008	2,089	2,193
6/26/2020	1,888	1,875	1,822	1,846	1,890	2,042	2,126	2,226
6/27/2020	1,890	1,887	1,874	1,877	1,845	1,820	1,880	1,966
6/28/2020	1,883	1,821	1,769	1,772	1,740	1,748	1,760	1,906
6/29/2020	2,026	1,956	1,940	1,976	2,034	2,159	2,265	2,393
6/30/2020	2,202	2,145	2,087	2,060	2,110	2,221	2,303	2,377
7/1/2020	2,093	1,997	1,961	1,929	1,907	1,948	2,068	2,174
7/2/2020	2,032	1,984	1,931	1,933	1,982	2,036	2,111	2,255
7/3/2020	2,030	1,939	1,858	1,822	1,812	1,801	1,820	1,941
7/4/2020	2,069	1,897	1,883	1,838	1,799	1,784	1,818	1,913

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Indiana Michigan Power Company
2020 Hourly Load (MW)
(All Hours Are EST)

DATE	HR1	HR2	HR3	HR4	HR5	HR6	HR7	HR8
7/5/2020	1,949	1,849	1,818	1,796	1,747	1,727	1,751	1,837
7/6/2020	2,060	2,015	1,932	1,977	2,089	2,181	2,288	2,426
7/7/2020	2,247	2,183	2,135	2,112	2,211	2,211	2,343	2,518
7/8/2020	2,291	2,185	2,159	2,205	2,258	2,371	2,493	2,570
7/9/2020	2,219	2,153	2,099	2,087	2,148	2,197	2,336	2,444
7/10/2020	2,395	2,356	2,210	2,230	2,231	2,349	2,438	2,519
7/11/2020	1,973	1,883	1,921	1,872	1,931	1,941	1,984	2,117
7/12/2020	1,931	1,874	1,828	1,735	1,628	1,570	1,598	1,684
7/13/2020	1,947	1,909	1,849	1,881	1,983	2,040	2,133	2,245
7/14/2020	1,959	1,907	1,876	1,933	2,026	2,105	2,169	2,256
7/15/2020	2,090	2,003	1,969	1,967	2,088	2,146	2,253	2,353
7/16/2020	2,211	2,172	2,073	2,023	2,098	2,187	2,258	2,296
7/17/2020	2,004	1,956	1,909	1,929	2,026	2,135	2,160	2,279
7/18/2020	2,041	2,050	1,950	1,919	1,968	1,984	2,041	2,103
7/19/2020	2,321	2,242	2,191	2,082	2,138	2,164	2,169	2,301
7/20/2020	2,103	2,009	2,011	2,056	2,129	2,252	2,332	2,367
7/21/2020	2,087	2,061	2,001	2,002	2,100	2,213	2,265	2,347
7/22/2020	2,031	2,108	2,073	2,097	2,159	2,323	2,322	2,408
7/23/2020	2,135	2,095	2,074	2,101	2,209	2,316	2,364	2,472
7/24/2020	2,093	2,009	1,987	1,945	2,104	2,170	2,260	2,339
7/25/2020	2,029	1,980	1,925	1,867	1,843	1,931	1,939	2,081
7/26/2020	1,992	1,922	1,875	1,846	1,766	1,765	1,803	1,986
7/27/2020	2,375	2,311	2,286	2,295	2,384	2,463	2,599	2,689
7/28/2020	2,126	2,049	2,011	1,998	2,105	2,191	2,313	2,362
7/29/2020	2,135	2,109	2,100	2,051	2,102	2,255	2,359	2,381
7/30/2020	2,218	2,144	2,118	2,113	2,202	2,235	2,374	2,471
7/31/2020	2,074	2,042	2,036	2,051	2,118	2,179	2,220	2,324
8/1/2020	1,976	1,946	1,885	1,915	1,908	1,965	2,012	2,013
8/2/2020	1,923	1,857	1,807	1,801	1,773	1,801	1,762	1,828
8/3/2020	1,987	1,944	1,939	1,941	2,075	2,143	2,187	2,249
8/4/2020	2,001	1,952	1,946	1,956	2,049	2,166	2,208	2,265

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Indiana Michigan Power Company
2020 Hourly Load (MW)
(All Hours Are EST)

DATE	HR1	HR2	HR3	HR4	HR5	HR6	HR7	HR8
8/5/2020	1,849	1,816	1,802	1,769	1,824	1,849	1,887	1,949
8/6/2020	1,847	1,820	1,800	1,846	1,938	2,048	2,094	2,188
8/7/2020	1,926	1,896	1,879	1,907	1,960	2,052	2,076	2,173
8/8/2020	1,838	1,754	1,743	1,733	1,785	1,799	1,851	1,891
8/9/2020	1,881	1,861	1,781	1,747	1,721	1,749	1,769	1,880
8/10/2020	2,196	2,139	2,015	2,099	2,165	2,187	2,397	2,457
8/11/2020	2,021	1,991	1,954	2,033	2,096	2,207	2,287	2,350
8/12/2020	2,032	1,952	1,941	1,965	1,981	2,144	2,179	2,232
8/13/2020	2,070	1,975	1,984	1,974	1,986	2,101	2,158	2,209
8/14/2020	2,091	2,022	1,999	2,028	2,122	2,200	2,250	2,315
8/15/2020	1,988	1,923	1,867	1,865	1,854	1,896	1,880	2,041
8/16/2020	2,030	1,940	1,902	1,862	1,791	1,829	1,813	1,913
8/17/2020	1,971	1,929	1,924	1,965	2,042	2,185	2,160	2,311
8/18/2020	2,007	1,939	1,886	1,933	1,998	2,010	2,048	2,079
8/19/2020	1,830	1,764	1,719	1,720	1,900	2,017	2,074	2,125
8/20/2020	1,909	1,906	1,883	1,894	1,972	1,997	2,152	2,225
8/21/2020	1,954	1,923	1,892	1,876	1,991	2,102	2,118	2,217
8/22/2020	1,960	1,892	1,830	1,841	1,861	1,902	1,892	1,962
8/23/2020	1,924	1,868	1,851	1,801	1,790	1,786	1,744	1,863
8/24/2020	2,101	2,010	2,003	2,063	2,142	2,294	2,342	2,443
8/25/2020	2,353	2,277	2,196	2,166	2,311	2,470	2,535	2,632
8/26/2020	2,163	2,133	2,098	2,124	2,195	2,302	2,451	2,496
8/27/2020	2,300	2,268	2,193	2,163	2,330	2,455	2,566	2,632
8/28/2020	2,238	2,186	2,234	2,230	2,348	2,472	2,529	2,571
8/29/2020	2,087	2,061	1,976	1,982	2,011	2,059	2,073	2,138
8/30/2020	1,644	1,684	1,684	1,659	1,653	1,629	1,680	1,698
8/31/2020	1,834	1,832	1,866	1,910	2,006	2,133	2,206	2,216
9/1/2020	2,064	1,999	1,967	2,039	2,125	2,249	2,286	2,385
9/2/2020	2,109	2,094	2,063	2,073	2,090	2,178	2,255	2,280
9/3/2020	2,011	2,020	2,030	2,017	2,113	2,252	2,338	2,354
9/4/2020	1,944	1,876	1,867	1,891	1,992	2,088	2,123	2,133

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Indiana Michigan Power Company
2020 Hourly Load (MW)
(All Hours Are EST)

DATE	HR1	HR2	HR3	HR4	HR5	HR6	HR7	HR8
9/5/2020	1,682	1,647	1,677	1,644	1,661	1,704	1,680	1,686
9/6/2020	1,689	1,637	1,641	1,579	1,601	1,637	1,607	1,648
9/7/2020	1,724	1,716	1,691	1,710	1,777	1,743	1,803	1,837
9/8/2020	1,869	1,837	1,861	1,910	2,001	2,150	2,245	2,260
9/9/2020	1,994	1,912	1,944	1,962	2,101	2,196	2,287	2,294
9/10/2020	2,064	2,005	1,967	2,005	2,094	2,233	2,300	2,244
9/11/2020	1,856	1,868	1,900	1,941	2,025	2,142	2,230	2,221
9/12/2020	1,798	1,797	1,776	1,772	1,781	1,823	1,895	1,938
9/13/2020	1,922	1,886	1,829	1,797	1,801	1,834	1,816	1,896
9/14/2020	1,752	1,764	1,756	1,845	1,881	2,058	2,161	2,136
9/15/2020	1,815	1,769	1,705	1,746	1,805	1,906	1,950	1,949
9/16/2020	1,783	1,743	1,777	1,818	1,893	2,051	2,123	2,131
9/17/2020	1,889	1,847	1,865	1,875	1,989	2,124	2,172	2,168
9/18/2020	1,803	1,775	1,772	1,790	1,861	2,004	2,103	2,087
9/19/2020	1,608	1,606	1,624	1,651	1,679	1,749	1,778	1,749
9/20/2020	1,604	1,516	1,561	1,566	1,602	1,630	1,659	1,687
9/21/2020	1,656	1,691	1,710	1,784	1,870	2,055	2,078	2,141
9/22/2020	1,754	1,726	1,717	1,710	1,903	2,023	2,055	2,142
9/23/2020	1,805	1,798	1,810	1,841	1,949	2,065	2,144	2,153
9/24/2020	1,872	1,846	1,844	1,873	1,951	2,095	2,165	2,159
9/25/2020	1,867	1,807	1,797	1,698	1,838	1,999	2,109	2,153
9/26/2020	1,755	1,751	1,738	1,772	1,800	1,843	1,829	1,886
9/27/2020	1,684	1,668	1,665	1,645	1,678	1,657	1,648	1,757
9/28/2020	1,809	1,822	1,857	1,798	1,916	2,087	2,162	2,259
9/29/2020	1,770	1,761	1,768	1,842	1,922	2,099	2,193	2,184
9/30/2020	1,839	1,794	1,781	1,822	1,940	2,033	2,123	2,174
10/1/2020	1,793	1,831	1,803	1,857	1,961	2,107	2,220	2,191
10/2/2020	1,710	1,712	1,793	1,849	1,929	2,094	2,209	2,176
10/3/2020	1,772	1,765	1,768	1,764	1,814	1,776	1,938	1,957
10/4/2020	1,653	1,579	1,603	1,590	1,617	1,664	1,734	1,782
10/5/2020	1,814	1,791	1,806	1,862	2,008	2,139	2,274	2,262

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Indiana Michigan Power Company
2020 Hourly Load (MW)
(All Hours Are EST)

DATE	HR1	HR2	HR3	HR4	HR5	HR6	HR7	HR8
10/6/2020	1,865	1,845	1,856	1,884	1,944	2,106	2,203	2,231
10/7/2020	1,823	1,761	1,814	1,851	1,985	2,096	2,202	2,214
10/8/2020	1,754	1,739	1,748	1,777	1,844	1,897	2,085	2,080
10/9/2020	1,700	1,749	1,764	1,822	1,857	1,984	2,160	2,152
10/10/2020	1,764	1,729	1,743	1,710	1,767	1,798	1,893	1,834
10/11/2020	1,703	1,681	1,640	1,585	1,602	1,674	1,711	1,682
10/12/2020	1,787	1,752	1,764	1,836	1,951	2,075	2,212	2,226
10/13/2020	1,820	1,780	1,806	1,855	1,978	2,075	2,225	2,209
10/14/2020	1,806	1,777	1,793	1,827	1,926	2,124	2,172	2,202
10/15/2020	1,836	1,760	1,791	1,832	1,932	2,046	2,177	2,196
10/16/2020	1,842	1,878	1,904	1,899	2,048	2,116	2,261	2,264
10/17/2020	1,775	1,706	1,766	1,812	1,873	1,917	1,974	1,982
10/18/2020	1,685	1,679	1,660	1,594	1,672	1,650	1,677	1,747
10/19/2020	1,664	1,643	1,657	1,718	1,782	1,930	2,046	2,078
10/20/2020	1,644	1,611	1,623	1,660	1,779	1,909	2,022	2,031
10/21/2020	1,650	1,610	1,625	1,657	1,751	1,848	1,952	1,966
10/22/2020	1,589	1,539	1,535	1,579	1,709	1,840	1,941	1,964
10/23/2020	1,664	1,644	1,646	1,724	1,845	1,960	2,029	2,074
10/24/2020	1,641	1,593	1,577	1,595	1,648	1,710	1,805	1,819
10/25/2020	1,752	1,710	1,721	1,727	1,731	1,732	1,823	1,821
10/26/2020	1,806	1,803	1,832	1,829	1,982	2,156	2,211	2,267
10/27/2020	1,923	1,891	1,898	1,924	2,052	2,166	2,285	2,315
10/28/2020	1,962	1,914	1,923	1,939	2,026	2,159	2,320	2,357
10/29/2020	1,959	1,990	1,993	2,037	2,191	2,314	2,418	2,354
10/30/2020	1,892	1,870	1,856	1,931	2,049	2,143	2,260	2,224
10/31/2020	1,900	1,904	1,913	1,894	1,957	1,949	2,036	2,077
11/1/2020	1,744	1,729	1,688	1,695	1,761	1,742	1,814	1,793
11/2/2020	1,937	1,955	1,941	1,944	2,011	2,149	2,240	2,386
11/3/2020	1,987	1,999	1,961	2,000	2,041	2,090	2,290	2,358
11/4/2020	1,930	1,910	1,879	1,897	1,927	2,052	2,192	2,304
11/5/2020	1,903	1,884	1,837	1,822	1,900	1,936	2,149	2,154

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Indiana Michigan Power Company
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(All Hours Are EST)

DATE	HR1	HR2	HR3	HR4	HR5	HR6	HR7	HR8
11/6/2020	1,793	1,867	1,837	1,855	1,883	1,974	2,016	2,097
11/7/2020	1,763	1,710	1,759	1,748	1,756	1,810	1,831	1,830
11/8/2020	1,719	1,675	1,658	1,649	1,662	1,611	1,714	1,732
11/9/2020	1,772	1,766	1,714	1,741	1,781	1,931	2,097	2,191
11/10/2020	1,874	1,825	1,828	1,768	1,731	1,778	1,893	1,962
11/11/2020	1,774	1,744	1,747	1,740	1,766	1,816	1,979	2,076
11/12/2020	2,007	1,975	1,965	1,961	1,983	2,138	2,258	2,369
11/13/2020	1,913	1,963	1,949	1,969	2,015	2,065	2,248	2,298
11/14/2020	1,984	1,928	1,997	1,973	1,945	2,038	2,125	2,150
11/15/2020	1,841	1,797	1,813	1,833	1,770	1,796	1,883	1,815
11/16/2020	1,912	1,935	1,897	1,917	1,964	2,078	2,216	2,355
11/17/2020	1,988	1,927	1,903	1,923	2,018	2,095	2,222	2,348
11/18/2020	2,093	2,021	2,028	2,019	2,099	2,182	2,293	2,379
11/19/2020	2,050	2,007	2,015	2,018	2,043	2,118	2,287	2,369
11/20/2020	1,895	1,888	1,885	1,901	1,915	1,977	2,133	2,188
11/21/2020	1,777	1,779	1,771	1,775	1,816	1,877	1,925	1,973
11/22/2020	1,868	1,848	1,861	1,868	1,904	1,928	1,939	1,988
11/23/2020	1,953	1,920	1,889	1,904	1,926	2,065	2,211	2,313
11/24/2020	1,979	1,986	1,971	1,992	2,042	2,135	2,254	2,345
11/25/2020	1,876	1,861	1,934	1,975	2,014	2,086	2,193	2,336
11/26/2020	1,711	1,680	1,698	1,663	1,665	1,706	1,698	1,728
11/27/2020	1,541	1,669	1,610	1,632	1,641	1,665	1,746	1,825
11/28/2020	1,735	1,708	1,735	1,716	1,708	1,828	1,863	1,892
11/29/2020	1,811	1,827	1,829	1,833	1,762	1,744	1,897	1,945
11/30/2020	1,907	1,951	1,965	1,913	1,919	2,097	2,328	2,449
12/1/2020	2,169	2,106	2,050	2,090	2,116	2,201	2,408	2,442
12/2/2020	2,116	2,128	2,130	2,114	2,175	2,264	2,422	2,484
12/3/2020	2,116	2,110	2,104	2,115	2,142	2,222	2,276	2,366
12/4/2020	2,098	2,032	2,024	2,025	2,121	2,176	2,332	2,407
12/5/2020	1,968	1,948	1,971	1,982	1,982	2,085	2,143	2,222
12/6/2020	2,011	2,001	1,983	1,880	1,945	1,990	2,067	2,103

Attachment MAB-1
Witness: M. A. Becker

Indiana Michigan Power Company
2020 Hourly Load (MW)
(All Hours Are EST)

DATE	HR1	HR2	HR3	HR4	HR5	HR6	HR7	HR8
12/7/2020	2,024	2,044	2,033	2,019	2,107	2,204	2,374	2,454
12/8/2020	2,181	2,144	2,124	2,091	2,167	2,244	2,353	2,513
12/9/2020	2,190	2,150	2,080	2,117	2,153	2,224	2,302	2,442
12/10/2020	2,052	2,079	2,002	2,057	2,137	2,196	2,348	2,458
12/11/2020	2,002	1,954	1,959	1,936	1,951	2,062	2,190	2,284
12/12/2020	1,958	1,942	1,915	1,887	1,887	1,921	2,001	1,995
12/13/2020	1,844	1,784	1,780	1,769	1,811	1,847	1,849	1,931
12/14/2020	1,995	1,938	1,981	1,975	2,033	2,166	2,301	2,397
12/15/2020	2,172	2,151	2,124	2,130	2,178	2,304	2,447	2,528
12/16/2020	2,159	2,150	2,177	2,211	2,287	2,401	2,398	2,526
12/17/2020	2,175	2,166	2,160	2,167	2,183	2,281	2,465	2,543
12/18/2020	2,148	2,096	2,045	2,094	2,127	2,273	2,405	2,500
12/19/2020	2,143	2,123	2,095	2,067	2,074	2,114	2,126	2,162
12/20/2020	1,914	1,953	1,944	1,872	1,922	1,918	1,943	2,017
12/21/2020	2,006	2,014	2,018	1,983	2,089	2,166	2,296	2,392
12/22/2020	2,098	2,051	2,007	1,936	2,024	2,159	2,287	2,418
12/23/2020	2,052	2,075	2,068	2,060	2,078	2,168	2,287	2,397
12/24/2020	1,880	1,819	1,802	1,780	1,804	1,860	1,926	2,015
12/25/2020	1,831	1,806	1,781	1,781	1,793	1,819	1,853	1,930
12/26/2020	1,916	1,871	1,845	1,821	1,827	1,840	1,889	1,970
12/27/2020	1,991	1,976	1,963	1,938	1,947	1,979	2,031	2,053
12/28/2020	1,887	1,886	1,873	1,894	1,924	2,047	2,125	2,182
12/29/2020	2,029	2,042	2,028	2,027	2,026	2,147	2,277	2,340
12/30/2020	2,068	2,013	2,005	1,990	2,038	2,086	2,158	2,205
12/31/2020	1,973	1,971	1,941	1,925	1,925	2,001	2,034	2,131

Attachment MAB-1
Witness: M. A. Becker

Indiana Michigan Power Company
2020 Hourly Load (MW)
(All Hours Are EST)

DATE	HR9	HR10	HR11	HR12	HR13	HR14	HR15	HR16
1/1/2020	1,956	1,956	1,974	2,013	1,995	1,963	1,930	1,987
1/2/2020	2,415	2,458	2,434	2,357	2,363	2,309	2,290	2,321
1/3/2020	2,390	2,422	2,410	2,404	2,424	2,428	2,371	2,346
1/4/2020	2,100	2,154	2,198	2,229	2,197	2,225	2,176	2,197
1/5/2020	2,156	2,184	2,194	2,190	2,204	2,232	2,204	2,159
1/6/2020	2,577	2,539	2,574	2,493	2,476	2,479	2,428	2,349
1/7/2020	2,439	2,380	2,341	2,300	2,287	2,287	2,259	2,215
1/8/2020	2,709	2,688	2,666	2,640	2,535	2,626	2,549	2,509
1/9/2020	2,783	2,704	2,668	2,582	2,608	2,598	2,472	2,446
1/10/2020	2,417	2,402	2,372	2,425	2,449	2,467	2,387	2,325
1/11/2020	2,035	2,078	2,197	2,146	2,121	2,167	2,150	2,174
1/12/2020	2,096	2,060	2,139	2,147	2,186	2,140	2,114	2,183
1/13/2020	2,531	2,532	2,543	2,552	2,534	2,532	2,485	2,431
1/14/2020	2,568	2,550	2,557	2,551	2,523	2,492	2,463	2,405
1/15/2020	2,550	2,533	2,523	2,499	2,539	2,537	2,501	2,479
1/16/2020	2,596	2,650	2,646	2,611	2,589	2,553	2,485	2,485
1/17/2020	2,701	2,705	2,706	2,679	2,628	2,596	2,550	2,520
1/18/2020	2,400	2,406	2,458	2,437	2,422	2,382	2,369	2,320
1/19/2020	2,395	2,469	2,493	2,539	2,463	2,471	2,504	2,485
1/20/2020	2,824	2,823	2,786	2,740	2,721	2,684	2,627	2,605
1/21/2020	2,751	2,755	2,714	2,660	2,662	2,629	2,577	2,533
1/22/2020	2,595	2,546	2,530	2,482	2,463	2,426	2,375	2,324
1/23/2020	2,628	2,582	2,582	2,456	2,396	2,375	2,321	2,422
1/24/2020	2,635	2,604	2,552	2,544	2,559	2,529	2,454	2,413
1/25/2020	2,342	2,379	2,426	2,423	2,433	2,402	2,397	2,388
1/26/2020	2,189	2,230	2,243	2,248	2,283	2,265	2,223	2,215
1/27/2020	2,645	2,659	2,644	2,623	2,637	2,596	2,588	2,509
1/28/2020	2,597	2,572	2,607	2,573	2,560	2,557	2,534	2,463
1/29/2020	2,648	2,612	2,662	2,611	2,577	2,592	2,547	2,519
1/30/2020	2,680	2,659	2,639	2,615	2,612	2,598	2,564	2,523
1/31/2020	2,705	2,618	2,551	2,579	2,545	2,510	2,490	2,406

Attachment MAB-1
Witness: M. A. Becker

Indiana Michigan Power Company
2020 Hourly Load (MW)
(All Hours Are EST)

DATE	HR9	HR10	HR11	HR12	HR13	HR14	HR15	HR16
2/1/2020	2,270	2,323	2,325	2,335	2,276	2,268	2,252	2,261
2/2/2020	2,190	2,193	2,165	2,156	2,122	2,088	1,996	2,026
2/3/2020	2,529	2,493	2,466	2,411	2,401	2,351	2,300	2,294
2/4/2020	2,293	2,305	2,348	2,351	2,385	2,395	2,368	2,339
2/5/2020	2,628	2,601	2,643	2,609	2,588	2,579	2,587	2,575
2/6/2020	2,723	2,739	2,722	2,723	2,739	2,751	2,749	2,677
2/7/2020	2,747	2,696	2,667	2,590	2,562	2,534	2,480	2,425
2/8/2020	2,376	2,265	2,343	2,267	2,241	2,218	2,215	2,234
2/9/2020	2,212	2,233	2,221	2,260	2,296	2,282	2,304	2,339
2/10/2020	2,641	2,653	2,669	2,619	2,624	2,596	2,519	2,508
2/11/2020	2,549	2,476	2,480	2,469	2,442	2,468	2,431	2,347
2/12/2020	2,611	2,627	2,634	2,620	2,612	2,609	2,587	2,559
2/13/2020	2,628	2,606	2,613	2,566	2,549	2,552	2,561	2,509
2/14/2020	2,812	2,743	2,758	2,719	2,679	2,637	2,548	2,515
2/15/2020	2,494	2,525	2,495	2,397	2,388	2,344	2,296	2,305
2/16/2020	2,112	2,143	2,089	2,056	2,050	2,046	2,025	2,038
2/17/2020	2,629	2,592	2,611	2,582	2,587	2,567	2,528	2,506
2/18/2020	2,575	2,596	2,583	2,540	2,516	2,505	2,476	2,461
2/19/2020	2,462	2,417	2,395	2,355	2,333	2,308	2,245	2,193
2/20/2020	2,675	2,660	2,662	2,638	2,633	2,602	2,524	2,552
2/21/2020	2,745	2,723	2,683	2,627	2,579	2,566	2,494	2,410
2/22/2020	2,340	2,306	2,261	2,213	2,177	2,140	2,107	2,075
2/23/2020	2,158	2,164	2,129	2,044	2,037	2,001	1,913	1,973
2/24/2020	2,559	2,594	2,582	2,532	2,536	2,473	2,464	2,410
2/25/2020	2,668	2,650	2,682	2,633	2,663	2,626	2,590	2,573
2/26/2020	2,764	2,775	2,745	2,713	2,686	2,656	2,565	2,497
2/27/2020	2,722	2,711	2,715	2,663	2,639	2,587	2,567	2,509
2/28/2020	2,708	2,677	2,646	2,581	2,568	2,562	2,458	2,424
2/29/2020	2,328	2,305	2,223	2,251	2,246	2,216	2,171	2,139
3/1/2020	2,202	2,183	2,133	2,114	2,094	2,060	2,026	2,040
3/2/2020	2,503	2,477	2,432	2,455	2,425	2,416	2,349	2,307

Attachment MAB-1
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Indiana Michigan Power Company
2020 Hourly Load (MW)
(All Hours Are EST)

DATE	HR9	HR10	HR11	HR12	HR13	HR14	HR15	HR16
3/3/2020	2,343	2,326	2,311	2,292	2,286	2,274	2,242	2,208
3/4/2020	2,545	2,409	2,384	2,390	2,448	2,381	2,366	2,310
3/5/2020	2,576	2,566	2,568	2,468	2,478	2,465	2,403	2,341
3/6/2020	2,432	2,502	2,561	2,555	2,541	2,472	2,458	2,365
3/7/2020	2,250	2,258	2,203	2,166	2,138	2,105	2,029	2,034
3/8/2020	2,098	2,070	2,079	2,083	2,053	2,022	2,006	1,990
3/9/2020	2,393	2,396	2,370	2,400	2,368	2,273	2,243	2,225
3/10/2020	2,446	2,423	2,440	2,433	2,401	2,373	2,336	2,318
3/11/2020	2,545	2,568	2,513	2,459	2,447	2,392	2,358	2,298
3/12/2020	2,415	2,439	2,372	2,350	2,343	2,309	2,268	2,264
3/13/2020	2,330	2,319	2,315	2,225	2,306	2,242	2,224	2,166
3/14/2020	2,190	2,243	2,280	2,228	2,258	2,249	2,203	2,179
3/15/2020	2,055	2,068	2,105	2,114	2,068	2,050	2,042	2,016
3/16/2020	2,562	2,569	2,550	2,510	2,521	2,370	2,404	2,361
3/17/2020	2,500	2,497	2,483	2,494	2,466	2,394	2,331	2,261
3/18/2020	2,429	2,448	2,455	2,562	2,574	2,577	2,547	2,507
3/19/2020	2,466	2,473	2,483	2,500	2,524	2,491	2,421	2,356
3/20/2020	2,296	2,313	2,285	2,341	2,212	2,274	2,231	2,260
3/21/2020	2,143	2,178	2,094	2,159	2,164	2,137	2,117	2,134
3/22/2020	2,120	2,074	2,125	2,085	2,059	2,051	2,116	2,176
3/23/2020	2,376	2,438	2,412	2,428	2,412	2,350	2,253	2,215
3/24/2020	2,392	2,364	2,290	2,252	2,307	2,328	2,284	2,237
3/25/2020	2,268	2,359	2,308	2,265	2,215	2,142	2,075	2,050
3/26/2020	1,911	1,910	1,906	1,912	1,892	1,862	1,870	1,851
3/27/2020	2,148	2,142	2,144	2,145	2,155	2,086	2,085	2,060
3/28/2020	1,892	1,919	1,928	1,931	1,910	1,862	1,907	1,918
3/29/2020	1,824	1,877	1,877	1,927	1,960	1,962	1,949	1,970
3/30/2020	2,047	2,062	2,134	2,179	2,195	2,205	2,151	2,140
3/31/2020	2,237	2,179	2,180	2,179	2,216	2,159	2,152	2,126
4/1/2020	2,203	2,190	2,173	2,189	2,198	2,134	2,064	2,076
4/2/2020	2,167	2,084	2,041	2,052	2,029	1,986	1,910	1,915

Attachment MAB-1
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Indiana Michigan Power Company
2020 Hourly Load (MW)
(All Hours Are EST)

DATE	HR9	HR10	HR11	HR12	HR13	HR14	HR15	HR16
4/3/2020	2,019	1,997	1,967	1,966	1,890	1,852	1,835	1,819
4/4/2020	1,666	1,780	1,854	1,833	1,801	1,814	1,744	1,819
4/5/2020	1,785	1,800	1,862	1,812	1,810	1,751	1,754	1,735
4/6/2020	2,062	2,046	2,020	2,056	2,039	1,978	1,922	1,904
4/7/2020	1,952	2,006	1,928	1,907	1,994	1,997	1,970	1,911
4/8/2020	1,939	1,971	2,001	2,012	2,028	2,014	1,990	1,991
4/9/2020	2,067	2,086	2,126	2,034	2,088	2,062	2,051	2,050
4/10/2020	1,989	2,024	2,056	1,986	1,979	1,903	1,929	1,902
4/11/2020	1,877	1,847	1,821	1,845	1,767	1,786	1,720	1,717
4/12/2020	1,681	1,689	1,699	1,748	1,679	1,728	1,745	1,781
4/13/2020	2,043	2,096	2,137	2,162	2,117	2,082	2,026	1,975
4/14/2020	2,084	2,093	2,079	2,093	2,048	2,016	1,971	1,956
4/15/2020	2,030	2,044	2,053	2,057	2,033	1,988	1,933	1,902
4/16/2020	1,968	1,976	1,970	1,960	1,934	1,949	1,884	1,826
4/17/2020	2,131	2,189	2,186	2,168	2,161	2,122	2,081	2,064
4/18/2020	1,927	1,898	1,934	1,922	1,899	1,875	1,824	1,828
4/19/2020	1,799	1,809	1,814	1,807	1,759	1,738	1,697	1,717
4/20/2020	1,993	1,959	1,982	1,952	1,951	1,930	1,849	1,795
4/21/2020	1,970	2,044	2,054	2,043	2,046	1,982	1,939	1,899
4/22/2020	2,055	2,087	2,091	2,093	2,028	2,021	1,951	1,908
4/23/2020	1,990	2,009	2,059	2,060	2,043	1,953	1,915	1,895
4/24/2020	1,959	2,001	2,020	1,991	1,941	1,934	1,886	1,802
4/25/2020	1,799	1,808	1,834	1,845	1,810	1,804	1,799	1,835
4/26/2020	1,815	1,840	1,844	1,813	1,783	1,771	1,754	1,776
4/27/2020	2,090	2,005	2,078	2,072	2,057	1,991	1,952	1,913
4/28/2020	1,936	1,967	1,932	1,965	1,933	1,861	1,887	1,850
4/29/2020	2,026	2,107	2,110	2,059	2,064	2,031	1,995	1,962
4/30/2020	2,117	2,175	2,207	2,195	2,161	2,118	2,104	2,069
5/1/2020	2,026	2,025	1,971	1,936	1,936	1,856	1,780	1,753
5/2/2020	1,668	1,688	1,730	1,738	1,735	1,733	1,758	1,736
5/3/2020	1,615	1,589	1,625	1,686	1,697	1,740	1,718	1,746

Attachment MAB-1
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Indiana Michigan Power Company
2020 Hourly Load (MW)
(All Hours Are EST)

DATE	HR9	HR10	HR11	HR12	HR13	HR14	HR15	HR16
5/4/2020	2,027	2,015	2,026	2,028	2,019	1,953	1,923	1,891
5/5/2020	2,068	2,076	2,114	2,123	2,128	2,096	2,039	2,043
5/6/2020	1,887	1,892	1,891	1,883	1,852	1,810	1,749	1,717
5/7/2020	2,042	2,001	2,011	2,041	2,024	1,953	1,790	1,896
5/8/2020	2,090	2,144	2,120	2,116	2,099	2,042	1,988	1,936
5/9/2020	1,894	1,889	1,858	1,847	1,813	1,791	1,768	1,743
5/10/2020	1,784	1,784	1,706	1,812	1,714	1,700	1,680	1,770
5/11/2020	2,217	2,209	2,262	2,207	2,156	2,143	2,109	1,947
5/12/2020	2,217	2,201	2,196	2,151	2,126	2,043	1,984	1,962
5/13/2020	2,206	2,208	2,199	2,246	2,189	2,164	1,989	2,003
5/14/2020	2,134	2,113	2,159	2,180	2,170	2,170	2,108	2,071
5/15/2020	2,056	2,126	2,198	2,205	2,147	2,106	2,067	2,002
5/16/2020	1,725	1,739	1,776	1,768	1,795	1,791	1,821	1,861
5/17/2020	1,695	1,756	1,800	1,853	1,859	1,836	1,867	1,842
5/18/2020	2,207	2,259	2,272	2,283	2,218	2,222	2,183	2,137
5/19/2020	2,125	2,133	2,182	2,221	2,246	2,206	2,123	2,086
5/20/2020	2,140	2,161	2,185	2,165	2,116	2,077	2,065	2,006
5/21/2020	1,929	1,948	1,957	1,973	1,954	1,929	1,870	1,848
5/22/2020	2,061	2,101	2,119	2,108	2,097	2,074	2,036	1,947
5/23/2020	1,743	1,771	1,813	1,856	1,892	1,895	1,994	2,000
5/24/2020	1,815	1,863	1,956	2,013	2,103	2,148	2,209	2,207
5/25/2020	1,948	2,031	2,162	2,244	2,316	2,315	2,356	2,405
5/26/2020	2,415	2,581	2,695	2,839	2,890	2,925	2,968	2,863
5/27/2020	2,464	2,504	2,619	2,713	2,779	2,786	2,801	2,739
5/28/2020	2,405	2,450	2,474	2,493	2,462	2,433	2,429	2,467
5/29/2020	2,218	2,290	2,314	2,355	2,350	2,310	2,330	2,289
5/30/2020	1,793	1,867	1,839	1,910	1,937	1,941	1,895	1,926
5/31/2020	1,546	1,625	1,691	1,778	1,784	1,804	1,749	1,805
6/1/2020	2,136	2,202	2,219	2,230	2,264	2,213	2,154	2,092
6/2/2020	2,152	2,238	2,299	2,432	2,538	2,623	2,646	2,680
6/3/2020	2,187	2,305	2,359	2,410	2,435	2,432	2,406	2,403

Attachment MAB-1
Witness: M. A. Becker

Indiana Michigan Power Company
2020 Hourly Load (MW)
(All Hours Are EST)

DATE	HR9	HR10	HR11	HR12	HR13	HR14	HR15	HR16
6/4/2020	2,322	2,458	2,479	2,564	2,666	2,694	2,660	2,694
6/5/2020	2,357	2,546	2,601	2,729	2,779	2,808	2,821	2,757
6/6/2020	2,121	2,200	2,145	2,239	2,290	2,300	2,365	2,384
6/7/2020	1,735	1,844	1,879	1,984	1,996	2,076	2,101	2,223
6/8/2020	2,271	2,303	2,335	2,439	2,562	2,622	2,625	2,670
6/9/2020	2,372	2,539	2,699	2,852	2,956	2,987	2,963	2,949
6/10/2020	2,676	2,774	2,889	3,012	3,035	2,950	2,805	2,705
6/11/2020	2,241	2,299	2,282	2,342	2,383	2,425	2,452	2,430
6/12/2020	2,119	2,290	2,326	2,403	2,421	2,456	2,446	2,460
6/13/2020	1,816	1,887	1,921	1,929	1,959	1,931	1,950	1,978
6/14/2020	1,686	1,741	1,791	1,772	1,850	1,856	1,865	1,911
6/15/2020	2,103	2,171	2,222	2,244	2,296	2,291	2,274	2,341
6/16/2020	2,223	2,310	2,410	2,473	2,525	2,558	2,582	2,596
6/17/2020	2,330	2,427	2,487	2,545	2,617	2,640	2,669	2,697
6/18/2020	2,149	2,232	2,343	2,439	2,515	2,573	2,609	2,629
6/19/2020	2,424	2,544	2,642	2,750	2,824	2,821	2,777	2,713
6/20/2020	2,083	2,260	2,363	2,469	2,598	2,628	2,660	2,636
6/21/2020	1,971	2,111	2,152	2,150	2,234	2,264	2,287	2,216
6/22/2020	2,414	2,491	2,632	2,728	2,805	2,839	2,791	2,803
6/23/2020	2,366	2,436	2,428	2,485	2,460	2,403	2,408	2,414
6/24/2020	2,224	2,360	2,355	2,445	2,508	2,532	2,440	2,497
6/25/2020	2,276	2,247	2,363	2,377	2,500	2,554	2,534	2,556
6/26/2020	2,329	2,420	2,454	2,550	2,575	2,556	2,535	2,476
6/27/2020	2,087	2,172	2,235	2,302	2,352	2,400	2,415	2,459
6/28/2020	2,011	2,091	2,211	2,338	2,408	2,482	2,547	2,570
6/29/2020	2,500	2,687	2,801	2,904	2,987	3,014	3,000	2,982
6/30/2020	2,474	2,618	2,697	2,781	2,892	2,917	2,940	2,926
7/1/2020	2,275	2,427	2,535	2,622	2,701	2,747	2,768	2,797
7/2/2020	2,414	2,532	2,703	2,788	2,792	2,886	2,897	2,923
7/3/2020	2,164	2,327	2,436	2,549	2,601	2,667	2,733	2,751
7/4/2020	2,149	2,314	2,466	2,579	2,684	2,715	2,624	2,613

Attachment MAB-1
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Indiana Michigan Power Company
2020 Hourly Load (MW)
(All Hours Are EST)

DATE	HR9	HR10	HR11	HR12	HR13	HR14	HR15	HR16
7/5/2020	1,968	2,104	2,380	2,478	2,556	2,617	2,706	2,624
7/6/2020	2,640	2,797	2,957	3,063	3,170	3,196	3,225	3,218
7/7/2020	2,666	2,848	3,035	3,169	3,226	3,240	3,224	3,204
7/8/2020	2,790	2,924	3,108	3,222	3,294	3,269	3,172	3,084
7/9/2020	2,682	2,897	3,040	3,163	3,230	3,270	3,318	3,236
7/10/2020	2,619	2,668	2,687	2,777	2,771	2,735	2,720	2,702
7/11/2020	2,177	2,357	2,460	2,399	2,517	2,595	2,593	2,626
7/12/2020	1,815	1,948	2,050	2,152	2,119	2,131	2,131	2,238
7/13/2020	2,285	2,468	2,505	2,603	2,630	2,698	2,683	2,695
7/14/2020	2,369	2,475	2,601	2,733	2,779	2,845	2,839	2,859
7/15/2020	2,515	2,674	2,716	2,907	2,978	3,079	3,051	2,999
7/16/2020	2,347	2,394	2,417	2,453	2,491	2,481	2,465	2,455
7/17/2020	2,352	2,496	2,587	2,693	2,781	2,840	2,866	2,882
7/18/2020	2,258	2,437	2,593	2,708	2,792	2,864	2,907	2,924
7/19/2020	2,372	2,525	2,513	2,551	2,637	2,579	2,501	2,449
7/20/2020	2,456	2,609	2,645	2,735	2,798	2,849	2,844	2,852
7/21/2020	2,449	2,562	2,661	2,784	2,941	2,919	2,867	2,764
7/22/2020	2,476	2,556	2,607	2,631	2,679	2,712	2,767	2,802
7/23/2020	2,604	2,678	2,802	2,887	2,938	2,922	2,986	2,976
7/24/2020	2,443	2,470	2,525	2,633	2,680	2,734	2,757	2,778
7/25/2020	2,181	2,304	2,484	2,568	2,622	2,646	2,664	2,736
7/26/2020	2,103	2,296	2,381	2,572	2,638	2,750	2,797	2,916
7/27/2020	2,859	2,941	3,007	3,101	3,103	3,069	3,039	2,973
7/28/2020	2,525	2,633	2,730	2,855	2,910	2,936	2,895	2,892
7/29/2020	2,578	2,741	2,780	2,904	3,004	3,017	3,035	3,073
7/30/2020	2,502	2,636	2,713	2,758	2,815	2,806	2,781	2,747
7/31/2020	2,388	2,478	2,518	2,615	2,611	2,668	2,718	2,706
8/1/2020	2,102	2,135	2,138	2,155	2,166	2,140	2,125	2,182
8/2/2020	1,843	1,904	1,890	1,979	2,046	2,120	2,189	2,229
8/3/2020	2,393	2,505	2,584	2,651	2,691	2,714	2,716	2,688
8/4/2020	2,234	2,335	2,372	2,394	2,411	2,458	2,412	2,384

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Indiana Michigan Power Company
2020 Hourly Load (MW)
(All Hours Are EST)

DATE	HR9	HR10	HR11	HR12	HR13	HR14	HR15	HR16
8/5/2020	1,984	2,061	2,105	2,130	2,167	2,186	2,173	2,176
8/6/2020	2,227	2,312	2,368	2,417	2,433	2,462	2,440	2,429
8/7/2020	2,231	2,329	2,345	2,375	2,427	2,448	2,497	2,551
8/8/2020	1,996	2,095	2,170	2,250	2,302	2,346	2,439	2,493
8/9/2020	2,063	2,225	2,346	2,475	2,582	2,624	2,713	2,750
8/10/2020	2,579	2,732	2,807	2,929	3,020	3,097	3,119	3,150
8/11/2020	2,406	2,501	2,546	2,636	2,773	2,813	2,854	2,839
8/12/2020	2,375	2,498	2,610	2,665	2,687	2,799	2,820	2,870
8/13/2020	2,415	2,534	2,607	2,694	2,777	2,826	2,899	2,922
8/14/2020	2,363	2,479	2,602	2,723	2,867	2,923	2,897	2,959
8/15/2020	2,160	2,292	2,406	2,520	2,609	2,664	2,705	2,698
8/16/2020	2,010	2,123	2,295	2,302	2,374	2,434	2,491	2,545
8/17/2020	2,418	2,539	2,595	2,601	2,755	2,767	2,730	2,708
8/18/2020	2,115	2,150	2,154	2,176	2,303	2,386	2,406	2,384
8/19/2020	2,133	2,199	2,222	2,338	2,469	2,478	2,525	2,505
8/20/2020	2,299	2,335	2,431	2,491	2,564	2,644	2,699	2,760
8/21/2020	2,260	2,409	2,529	2,611	2,702	2,758	2,769	2,797
8/22/2020	2,099	2,222	2,232	2,381	2,490	2,615	2,648	2,648
8/23/2020	1,983	2,117	2,290	2,388	2,482	2,535	2,638	2,682
8/24/2020	2,612	2,777	2,842	3,016	3,125	3,143	3,169	3,162
8/25/2020	2,693	2,804	2,879	2,966	3,017	3,045	3,062	3,056
8/26/2020	2,634	2,757	2,921	3,029	3,120	3,108	3,159	3,200
8/27/2020	2,755	2,865	3,011	3,115	3,176	3,167	3,090	3,106
8/28/2020	2,671	2,794	3,001	3,030	3,116	3,037	2,924	2,805
8/29/2020	2,215	2,311	2,370	2,402	2,415	2,440	2,455	2,436
8/30/2020	1,785	1,882	1,939	2,034	2,079	2,098	2,182	2,193
8/31/2020	2,259	2,412	2,459	2,536	2,609	2,671	2,681	2,730
9/1/2020	2,421	2,599	2,599	2,737	2,785	2,825	2,839	2,789
9/2/2020	2,295	2,344	2,377	2,419	2,481	2,506	2,503	2,483
9/3/2020	2,345	2,523	2,617	2,658	2,639	2,659	2,816	2,864
9/4/2020	2,221	2,250	2,267	2,329	2,420	2,394	2,430	2,388

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Indiana Michigan Power Company
2020 Hourly Load (MW)
(All Hours Are EST)

DATE	HR9	HR10	HR11	HR12	HR13	HR14	HR15	HR16
9/5/2020	1,764	1,806	1,917	1,966	2,020	2,108	2,142	2,184
9/6/2020	1,710	1,801	1,837	1,898	1,845	1,914	1,956	1,998
9/7/2020	1,906	2,002	2,033	2,088	2,139	2,176	2,200	2,212
9/8/2020	2,318	2,405	2,442	2,638	2,667	2,708	2,708	2,701
9/9/2020	2,268	2,383	2,442	2,477	2,517	2,563	2,654	2,660
9/10/2020	2,331	2,397	2,418	2,428	2,417	2,381	2,385	2,354
9/11/2020	2,267	2,276	2,282	2,279	2,338	2,334	2,341	2,325
9/12/2020	1,919	2,020	2,067	2,129	2,205	2,234	2,305	2,288
9/13/2020	1,958	2,031	2,078	2,155	2,166	2,166	2,226	2,238
9/14/2020	2,171	2,264	2,214	2,275	2,262	2,318	2,251	2,298
9/15/2020	1,956	2,002	2,017	2,032	2,083	1,997	2,113	2,114
9/16/2020	2,178	2,209	2,181	2,241	2,278	2,290	2,300	2,341
9/17/2020	2,194	2,252	2,251	2,268	2,361	2,349	2,349	2,311
9/18/2020	2,154	2,134	2,135	2,130	2,137	2,125	2,108	2,089
9/19/2020	1,854	1,861	1,787	1,824	1,796	1,795	1,826	1,811
9/20/2020	1,717	1,729	1,716	1,799	1,801	1,797	1,809	1,819
9/21/2020	2,107	2,143	2,217	2,235	2,233	2,173	2,170	2,184
9/22/2020	2,173	2,188	2,236	2,283	2,257	2,253	2,282	2,260
9/23/2020	2,192	2,249	2,293	2,249	2,309	2,348	2,306	2,280
9/24/2020	2,166	2,229	2,279	2,317	2,350	2,381	2,392	2,351
9/25/2020	2,150	2,242	2,276	2,278	2,287	2,303	2,289	2,326
9/26/2020	1,905	1,977	1,993	2,026	2,072	2,095	2,129	2,148
9/27/2020	1,748	1,838	1,904	1,944	1,938	2,037	2,114	2,128
9/28/2020	2,198	2,251	2,263	2,272	2,328	2,235	2,147	2,150
9/29/2020	2,169	2,210	2,156	2,204	2,192	2,144	2,094	2,085
9/30/2020	2,168	2,179	2,236	2,264	2,251	2,215	2,175	2,172
10/1/2020	2,224	2,219	2,220	2,205	2,198	2,183	2,153	2,143
10/2/2020	2,232	2,227	2,215	2,194	2,181	2,106	2,065	1,981
10/3/2020	1,983	1,979	1,963	1,941	1,939	1,879	1,851	1,860
10/4/2020	1,836	1,876	1,902	1,929	1,931	1,897	1,922	1,911
10/5/2020	2,213	2,229	2,177	2,262	2,254	2,207	2,155	2,146

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Indiana Michigan Power Company
2020 Hourly Load (MW)
(All Hours Are EST)

DATE	HR9	HR10	HR11	HR12	HR13	HR14	HR15	HR16
10/6/2020	2,197	2,182	2,208	2,225	2,201	2,193	2,159	2,134
10/7/2020	2,243	2,247	2,243	2,268	2,248	2,241	2,237	2,200
10/8/2020	1,981	2,002	2,011	2,024	2,027	2,002	1,965	1,961
10/9/2020	2,170	2,198	2,184	2,212	2,215	2,209	2,164	2,112
10/10/2020	1,968	1,944	1,917	1,998	1,945	1,947	1,967	2,018
10/11/2020	1,770	1,843	1,852	1,892	1,842	1,932	1,925	2,003
10/12/2020	2,241	2,302	2,272	2,310	2,278	2,301	2,197	2,282
10/13/2020	2,205	2,213	2,254	2,260	2,220	2,194	2,146	2,165
10/14/2020	2,247	2,223	2,240	2,233	2,196	2,147	2,137	2,117
10/15/2020	2,188	2,248	2,268	2,260	2,268	2,134	2,151	2,158
10/16/2020	2,301	2,277	2,196	2,165	2,165	2,111	2,081	2,040
10/17/2020	2,012	1,998	1,990	1,959	1,925	1,921	1,887	1,880
10/18/2020	1,743	1,784	1,782	1,761	1,741	1,748	1,777	1,826
10/19/2020	2,077	2,074	2,054	2,050	2,009	1,975	1,918	1,913
10/20/2020	2,041	2,045	2,029	2,021	2,002	1,985	1,952	1,943
10/21/2020	1,980	2,002	2,002	1,976	1,971	1,924	1,861	1,835
10/22/2020	1,958	1,969	1,979	1,983	2,006	1,996	1,983	1,969
10/23/2020	2,103	2,161	2,180	2,178	2,151	2,096	2,131	2,079
10/24/2020	1,842	1,788	1,840	1,889	1,862	1,873	1,848	1,873
10/25/2020	1,901	1,904	1,889	1,875	1,878	1,866	1,865	1,915
10/26/2020	2,264	2,297	2,319	2,292	2,266	2,270	2,250	2,198
10/27/2020	2,362	2,355	2,312	2,339	2,231	2,316	2,286	2,229
10/28/2020	2,358	2,275	2,263	2,286	2,215	2,254	2,158	2,138
10/29/2020	2,401	2,330	2,305	2,246	2,202	2,264	2,257	2,242
10/30/2020	2,243	2,280	2,235	2,224	2,217	2,118	2,088	2,098
10/31/2020	2,115	2,024	2,048	1,990	1,961	1,884	1,898	1,877
11/1/2020	1,886	1,967	2,007	2,065	2,078	2,089	2,096	2,083
11/2/2020	2,387	2,443	2,438	2,357	2,337	2,317	2,200	2,222
11/3/2020	2,366	2,339	2,330	2,268	2,273	2,262	2,192	2,111
11/4/2020	2,313	2,280	2,268	2,115	2,208	2,260	2,229	2,186
11/5/2020	2,207	2,225	2,260	2,242	2,275	2,245	2,177	2,113

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Indiana Michigan Power Company
2020 Hourly Load (MW)
(All Hours Are EST)

DATE	HR9	HR10	HR11	HR12	HR13	HR14	HR15	HR16
11/6/2020	2,185	2,173	2,194	2,187	2,175	2,164	2,068	2,095
11/7/2020	1,900	1,896	1,908	1,879	1,938	1,788	1,714	1,698
11/8/2020	1,747	1,792	1,831	1,785	1,804	1,836	1,866	1,863
11/9/2020	2,164	2,206	2,245	2,138	2,104	2,145	2,174	2,098
11/10/2020	1,961	1,984	2,040	2,051	2,092	2,093	2,076	2,037
11/11/2020	2,109	2,149	2,129	2,142	2,168	2,117	2,135	2,098
11/12/2020	2,351	2,319	2,300	2,255	2,286	2,251	2,225	2,163
11/13/2020	2,307	2,312	2,244	2,250	2,293	2,258	2,163	2,144
11/14/2020	2,132	2,152	2,156	2,123	2,143	2,129	2,036	2,058
11/15/2020	1,889	1,938	1,854	1,794	1,818	1,900	1,900	1,914
11/16/2020	2,375	2,387	2,338	2,360	2,331	2,282	2,232	2,218
11/17/2020	2,365	2,402	2,395	2,340	2,340	2,333	2,277	2,224
11/18/2020	2,442	2,417	2,391	2,369	2,337	2,307	2,271	2,242
11/19/2020	2,285	2,291	2,285	2,268	2,282	2,124	2,160	2,052
11/20/2020	2,209	2,206	2,193	2,165	2,153	2,101	2,089	2,058
11/21/2020	2,011	2,070	2,067	2,046	2,014	2,048	1,929	1,993
11/22/2020	2,025	2,102	2,093	2,082	2,009	2,063	2,091	2,076
11/23/2020	2,310	2,302	2,296	2,254	2,260	2,274	2,201	2,154
11/24/2020	2,378	2,410	2,380	2,429	2,371	2,390	2,299	2,282
11/25/2020	2,358	2,348	2,399	2,371	2,306	2,253	2,250	2,231
11/26/2020	1,797	1,906	1,966	1,940	1,932	1,857	1,828	1,808
11/27/2020	1,860	1,877	1,920	1,920	1,885	1,875	1,873	1,861
11/28/2020	1,901	1,911	1,941	1,929	1,894	1,890	1,819	1,845
11/29/2020	1,914	1,925	1,913	1,900	1,891	1,878	1,842	1,907
11/30/2020	2,499	2,491	2,532	2,514	2,489	2,476	2,466	2,427
12/1/2020	2,501	2,518	2,474	2,463	2,507	2,503	2,467	2,377
12/2/2020	2,423	2,459	2,410	2,418	2,336	2,354	2,275	2,236
12/3/2020	2,347	2,299	2,304	2,246	2,225	2,199	2,163	2,117
12/4/2020	2,437	2,422	2,407	2,304	2,282	2,244	2,257	2,149
12/5/2020	2,181	2,182	2,208	2,211	2,207	2,201	2,178	2,120
12/6/2020	2,144	2,184	2,169	2,162	2,160	2,169	2,183	2,180

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Indiana Michigan Power Company
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(All Hours Are EST)

DATE	HR9	HR10	HR11	HR12	HR13	HR14	HR15	HR16
12/7/2020	2,495	2,532	2,526	2,500	2,506	2,486	2,429	2,387
12/8/2020	2,479	2,445	2,480	2,516	2,511	2,509	2,404	2,417
12/9/2020	2,460	2,432	2,387	2,334	2,349	2,309	2,290	2,199
12/10/2020	2,451	2,393	2,291	2,287	2,269	2,246	2,211	2,193
12/11/2020	2,303	2,324	2,308	2,270	2,268	2,238	2,197	2,151
12/12/2020	2,088	2,108	2,099	2,070	2,064	2,055	2,028	2,028
12/13/2020	1,997	1,892	2,037	2,035	2,087	2,051	2,085	2,069
12/14/2020	2,473	2,478	2,481	2,481	2,481	2,474	2,448	2,396
12/15/2020	2,521	2,549	2,510	2,384	2,445	2,433	2,431	2,404
12/16/2020	2,497	2,451	2,429	2,390	2,366	2,370	2,335	2,313
12/17/2020	2,534	2,550	2,541	2,544	2,540	2,532	2,480	2,405
12/18/2020	2,557	2,551	2,542	2,541	2,480	2,450	2,370	2,367
12/19/2020	2,216	2,242	2,228	2,199	2,154	2,133	2,177	2,154
12/20/2020	2,023	2,071	2,133	2,081	2,127	2,066	2,034	2,019
12/21/2020	2,444	2,464	2,468	2,471	2,484	2,471	2,411	2,257
12/22/2020	2,375	2,398	2,378	2,390	2,368	2,327	2,279	2,229
12/23/2020	2,380	2,359	2,365	2,374	2,351	2,308	2,266	2,193
12/24/2020	1,915	1,952	1,967	1,961	1,939	1,933	1,942	1,930
12/25/2020	1,975	2,017	2,014	2,001	1,995	1,965	1,941	1,940
12/26/2020	2,079	2,101	2,093	2,104	1,962	2,018	1,952	1,951
12/27/2020	2,070	2,009	2,073	2,048	2,075	2,031	1,962	1,894
12/28/2020	2,262	2,289	2,317	2,255	2,335	2,332	2,316	2,299
12/29/2020	2,338	2,374	2,325	2,298	2,257	2,251	2,285	2,276
12/30/2020	2,231	2,301	2,344	2,348	2,366	2,326	2,300	2,276
12/31/2020	2,139	2,150	2,173	2,134	2,116	2,077	2,063	2,052

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Witness: M. A. Becker

Indiana Michigan Power Company
2020 Hourly Load (MW)
(All Hours Are EST)

DATE	HR17	HR18	HR19	HR20	HR21	HR22	HR23	HR24
1/1/2020	1,938	2,042	2,119	2,145	2,204	2,173	2,099	2,070
1/2/2020	2,308	2,389	2,395	2,363	2,356	2,263	2,173	2,153
1/3/2020	2,325	2,399	2,394	2,356	2,296	2,240	2,117	2,059
1/4/2020	2,216	2,260	2,289	2,268	2,254	2,202	2,149	2,068
1/5/2020	2,195	2,276	2,337	2,347	2,316	2,256	2,202	2,170
1/6/2020	2,361	2,397	2,505	2,478	2,424	2,370	2,280	2,187
1/7/2020	2,214	2,275	2,367	2,355	2,436	2,345	2,306	2,197
1/8/2020	2,524	2,490	2,592	2,614	2,558	2,548	2,460	2,385
1/9/2020	2,486	2,483	2,527	2,509	2,470	2,396	2,312	2,242
1/10/2020	2,328	2,365	2,298	2,304	2,311	2,260	2,201	2,038
1/11/2020	2,152	2,205	2,269	2,298	2,229	2,181	2,114	2,074
1/12/2020	2,196	2,289	2,340	2,330	2,319	2,280	2,216	2,149
1/13/2020	2,411	2,484	2,514	2,487	2,424	2,335	2,250	2,219
1/14/2020	2,388	2,357	2,462	2,427	2,419	2,388	2,324	2,235
1/15/2020	2,456	2,488	2,426	2,460	2,420	2,388	2,283	2,247
1/16/2020	2,512	2,597	2,646	2,601	2,592	2,560	2,443	2,339
1/17/2020	2,558	2,610	2,609	2,585	2,496	2,450	2,408	2,336
1/18/2020	2,362	2,399	2,464	2,449	2,423	2,415	2,368	2,310
1/19/2020	2,551	2,573	2,674	2,645	2,594	2,559	2,517	2,492
1/20/2020	2,600	2,659	2,713	2,708	2,648	2,595	2,477	2,431
1/21/2020	2,528	2,560	2,670	2,655	2,597	2,540	2,481	2,393
1/22/2020	2,315	2,357	2,468	2,448	2,435	2,445	2,362	2,270
1/23/2020	2,464	2,505	2,572	2,590	2,558	2,504	2,441	2,345
1/24/2020	2,440	2,410	2,439	2,367	2,368	2,322	2,213	2,084
1/25/2020	2,399	2,379	2,389	2,385	2,327	2,281	2,200	2,145
1/26/2020	2,258	2,275	2,339	2,293	2,265	2,263	2,223	2,117
1/27/2020	2,512	2,533	2,579	2,535	2,526	2,465	2,360	2,267
1/28/2020	2,483	2,515	2,557	2,568	2,528	2,486	2,362	2,281
1/29/2020	2,488	2,516	2,573	2,513	2,516	2,443	2,382	2,275
1/30/2020	2,499	2,456	2,518	2,574	2,531	2,479	2,383	2,293
1/31/2020	2,391	2,430	2,478	2,413	2,402	2,342	2,251	2,128

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Indiana Michigan Power Company
2020 Hourly Load (MW)
(All Hours Are EST)

DATE	HR17	HR18	HR19	HR20	HR21	HR22	HR23	HR24
2/1/2020	2,248	2,306	2,355	2,308	2,306	2,266	2,224	2,160
2/2/2020	2,057	2,067	2,166	2,131	2,093	2,066	2,012	1,966
2/3/2020	2,268	2,285	2,362	2,368	2,329	2,252	2,154	2,029
2/4/2020	2,351	2,370	2,433	2,393	2,400	2,347	2,294	2,211
2/5/2020	2,611	2,680	2,761	2,682	2,670	2,634	2,542	2,481
2/6/2020	2,655	2,615	2,700	2,709	2,677	2,597	2,461	2,363
2/7/2020	2,402	2,410	2,482	2,475	2,446	2,408	2,306	2,080
2/8/2020	2,200	2,230	2,311	2,304	2,288	2,231	2,139	2,103
2/9/2020	2,375	2,362	2,444	2,450	2,422	2,353	2,277	2,250
2/10/2020	2,479	2,492	2,549	2,533	2,498	2,397	2,309	2,234
2/11/2020	2,402	2,405	2,490	2,493	2,489	2,438	2,342	2,293
2/12/2020	2,595	2,660	2,724	2,633	2,621	2,565	2,405	2,321
2/13/2020	2,489	2,541	2,642	2,683	2,649	2,626	2,497	2,452
2/14/2020	2,501	2,510	2,573	2,647	2,650	2,573	2,496	2,430
2/15/2020	2,315	2,331	2,383	2,344	2,297	2,237	2,172	2,106
2/16/2020	2,054	2,102	2,176	2,253	2,257	2,205	2,219	2,155
2/17/2020	2,511	2,544	2,604	2,572	2,536	2,475	2,383	2,247
2/18/2020	2,464	2,422	2,490	2,489	2,485	2,395	2,334	2,235
2/19/2020	2,173	2,193	2,292	2,392	2,458	2,412	2,333	2,184
2/20/2020	2,445	2,463	2,647	2,657	2,618	2,573	2,495	2,424
2/21/2020	2,391	2,374	2,448	2,494	2,486	2,439	2,329	2,270
2/22/2020	2,037	2,067	2,173	2,241	2,211	2,210	2,146	2,102
2/23/2020	1,972	1,977	2,065	2,139	2,182	2,144	2,098	1,976
2/24/2020	2,470	2,448	2,523	2,558	2,564	2,483	2,384	2,300
2/25/2020	2,608	2,601	2,653	2,652	2,623	2,539	2,444	2,317
2/26/2020	2,626	2,624	2,691	2,701	2,636	2,584	2,487	2,366
2/27/2020	2,501	2,494	2,553	2,603	2,576	2,477	2,449	2,344
2/28/2020	2,454	2,461	2,501	2,524	2,529	2,459	2,379	2,297
2/29/2020	2,143	2,157	2,214	2,307	2,297	2,284	2,237	2,157
3/1/2020	2,054	2,094	2,132	2,202	2,193	2,146	2,108	2,069
3/2/2020	2,267	2,276	2,317	2,354	2,319	2,225	2,121	2,095

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Indiana Michigan Power Company
2020 Hourly Load (MW)
(All Hours Are EST)

DATE	HR17	HR18	HR19	HR20	HR21	HR22	HR23	HR24
3/3/2020	2,184	2,190	2,202	2,297	2,343	2,315	2,198	2,117
3/4/2020	2,278	2,304	2,308	2,396	2,403	2,309	2,280	2,162
3/5/2020	2,333	2,337	2,322	2,361	2,388	2,345	2,270	2,162
3/6/2020	2,448	2,459	2,415	2,424	2,409	2,336	2,243	2,138
3/7/2020	2,029	2,033	2,101	2,174	2,200	2,181	2,146	2,072
3/8/2020	1,964	2,018	2,059	2,184	2,194	2,088	2,034	1,985
3/9/2020	2,233	2,268	2,318	2,364	2,296	2,196	2,089	2,020
3/10/2020	2,315	2,287	2,344	2,423	2,395	2,299	2,209	2,127
3/11/2020	2,315	2,307	2,325	2,351	2,306	2,133	2,137	2,123
3/12/2020	2,241	2,254	2,222	2,322	2,298	2,231	2,082	2,041
3/13/2020	2,139	2,159	2,168	2,247	2,220	2,107	2,021	1,939
3/14/2020	2,233	2,181	2,215	2,298	2,250	2,136	2,054	2,009
3/15/2020	2,052	2,049	2,062	2,171	2,183	2,130	2,057	2,023
3/16/2020	2,274	2,276	2,293	2,287	2,204	2,098	2,079	2,085
3/17/2020	2,212	2,238	2,257	2,319	2,306	2,253	2,132	2,122
3/18/2020	2,481	2,385	2,324	2,388	2,336	2,225	2,115	1,988
3/19/2020	2,291	2,252	2,284	2,232	2,129	2,131	2,063	2,032
3/20/2020	2,181	2,177	2,216	2,227	2,176	2,112	1,970	1,936
3/21/2020	2,118	2,112	2,147	2,158	2,097	2,044	1,893	1,928
3/22/2020	2,157	2,180	2,222	2,192	2,157	2,108	2,074	2,081
3/23/2020	2,262	2,262	2,257	2,295	2,205	2,141	2,094	2,054
3/24/2020	2,164	2,227	2,230	2,246	2,225	2,141	1,984	1,970
3/25/2020	2,039	2,008	1,993	2,083	2,040	1,965	1,925	1,833
3/26/2020	1,877	1,960	1,922	1,986	1,942	1,896	1,822	1,678
3/27/2020	2,006	2,063	2,023	1,998	2,037	1,948	1,874	1,801
3/28/2020	1,920	1,939	1,959	1,950	1,892	1,889	1,787	1,733
3/29/2020	1,945	1,936	1,936	1,929	1,954	1,878	1,827	1,796
3/30/2020	2,128	2,117	2,083	2,115	2,092	1,991	1,923	1,867
3/31/2020	2,091	2,139	2,132	2,127	2,102	2,003	1,943	1,920
4/1/2020	2,051	2,074	2,012	2,056	2,054	1,996	1,918	1,868
4/2/2020	1,901	1,906	1,933	1,972	1,946	1,878	1,798	1,761

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Indiana Michigan Power Company
2020 Hourly Load (MW)
(All Hours Are EST)

DATE	HR17	HR18	HR19	HR20	HR21	HR22	HR23	HR24
4/3/2020	1,810	1,827	1,794	1,873	1,878	1,779	1,713	1,677
4/4/2020	1,846	1,871	1,829	1,899	1,873	1,775	1,673	1,607
4/5/2020	1,770	1,761	1,794	1,836	1,823	1,775	1,761	1,717
4/6/2020	1,898	1,928	1,895	1,986	1,857	1,815	1,735	1,763
4/7/2020	1,955	1,917	1,880	1,933	1,928	1,805	1,804	1,742
4/8/2020	1,991	2,000	2,004	2,025	2,005	1,906	1,806	1,733
4/9/2020	2,043	2,056	2,013	2,060	2,006	1,963	1,871	1,817
4/10/2020	1,854	1,841	1,847	1,918	1,883	1,854	1,744	1,737
4/11/2020	1,679	1,738	1,775	1,806	1,801	1,755	1,696	1,683
4/12/2020	1,748	1,781	1,779	1,822	1,810	1,765	1,644	1,586
4/13/2020	1,979	1,961	1,935	1,992	1,960	1,900	1,830	1,745
4/14/2020	1,967	1,940	1,926	1,953	1,993	1,906	1,877	1,813
4/15/2020	1,874	1,847	1,836	1,869	1,886	1,832	1,771	1,727
4/16/2020	1,823	1,828	1,846	1,814	1,861	1,827	1,760	1,727
4/17/2020	2,057	1,964	2,006	2,016	2,005	1,925	1,883	1,899
4/18/2020	1,811	1,816	1,844	1,872	1,881	1,840	1,793	1,757
4/19/2020	1,705	1,731	1,724	1,797	1,788	1,756	1,696	1,630
4/20/2020	1,819	1,826	1,804	1,819	1,825	1,789	1,647	1,668
4/21/2020	1,909	1,877	1,860	1,902	1,908	1,864	1,780	1,780
4/22/2020	1,871	1,894	1,910	1,923	1,907	1,829	1,775	1,690
4/23/2020	1,858	1,868	1,841	1,828	1,848	1,770	1,729	1,743
4/24/2020	1,836	1,781	1,684	1,765	1,717	1,656	1,627	1,640
4/25/2020	1,870	1,859	1,863	1,895	1,886	1,817	1,774	1,701
4/26/2020	1,742	1,773	1,747	1,781	1,735	1,749	1,656	1,606
4/27/2020	1,858	1,870	1,867	1,929	1,921	1,843	1,796	1,629
4/28/2020	1,845	1,850	1,843	1,867	1,879	1,809	1,752	1,770
4/29/2020	1,930	1,919	1,920	1,953	1,938	1,851	1,791	1,730
4/30/2020	2,029	2,011	1,994	1,951	1,960	1,914	1,790	1,791
5/1/2020	1,750	1,773	1,772	1,776	1,749	1,704	1,639	1,659
5/2/2020	1,816	1,855	1,830	1,769	1,830	1,758	1,669	1,595
5/3/2020	1,800	1,807	1,778	1,752	1,767	1,720	1,613	1,581

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Indiana Michigan Power Company
2020 Hourly Load (MW)
(All Hours Are EST)

DATE	HR17	HR18	HR19	HR20	HR21	HR22	HR23	HR24
5/4/2020	1,912	1,904	1,845	1,839	1,897	1,851	1,758	1,693
5/5/2020	2,037	2,013	2,012	2,026	2,013	1,944	1,886	1,800
5/6/2020	1,699	1,687	1,680	1,700	1,736	1,674	1,597	1,546
5/7/2020	1,911	1,909	1,889	1,881	1,922	1,821	1,736	1,660
5/8/2020	1,882	1,909	1,863	1,913	1,960	1,894	1,813	1,784
5/9/2020	1,748	1,725	1,719	1,786	1,821	1,736	1,729	1,675
5/10/2020	1,815	1,810	1,840	1,882	1,910	1,846	1,828	1,698
5/11/2020	1,991	2,033	2,010	2,041	1,981	1,942	1,864	1,853
5/12/2020	1,878	1,888	1,903	1,912	1,971	1,906	1,879	1,808
5/13/2020	1,982	1,958	1,962	1,978	1,995	1,926	1,843	1,793
5/14/2020	2,035	2,010	1,971	1,978	1,991	1,933	1,861	1,806
5/15/2020	2,009	2,004	1,983	1,948	1,943	1,813	1,656	1,634
5/16/2020	1,914	1,924	1,917	1,878	1,895	1,868	1,785	1,700
5/17/2020	1,859	1,853	1,833	1,899	1,924	1,900	1,778	1,792
5/18/2020	2,094	2,075	2,050	2,035	2,047	2,008	1,887	1,813
5/19/2020	2,089	2,070	2,051	2,058	2,066	1,874	1,849	1,796
5/20/2020	1,986	1,938	1,932	1,960	1,986	1,909	1,814	1,774
5/21/2020	1,847	1,833	1,824	1,871	1,942	1,857	1,787	1,711
5/22/2020	1,968	1,976	1,956	1,910	1,932	1,853	1,748	1,689
5/23/2020	1,998	1,992	1,960	1,927	1,907	1,791	1,744	1,670
5/24/2020	2,276	2,319	2,307	2,241	2,195	2,145	2,042	1,958
5/25/2020	2,417	2,405	2,341	2,277	2,268	2,229	2,092	2,010
5/26/2020	2,821	2,884	2,785	2,689	2,629	2,482	2,256	2,183
5/27/2020	2,653	2,615	2,535	2,491	2,471	2,323	2,190	2,073
5/28/2020	2,447	2,447	2,401	2,313	2,275	2,198	2,084	2,024
5/29/2020	2,262	2,256	2,226	2,144	2,073	2,031	1,877	1,763
5/30/2020	1,923	1,918	1,895	1,859	1,876	1,781	1,738	1,674
5/31/2020	1,833	1,901	1,938	1,913	1,950	1,925	1,843	1,691
6/1/2020	2,113	2,134	2,094	2,081	2,034	1,962	1,879	1,847
6/2/2020	2,713	2,681	2,706	2,620	2,571	2,438	2,293	2,176
6/3/2020	2,409	2,451	2,368	2,312	2,264	2,177	2,028	1,987

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Indiana Michigan Power Company
2020 Hourly Load (MW)
(All Hours Are EST)

DATE	HR17	HR18	HR19	HR20	HR21	HR22	HR23	HR24
6/4/2020	2,659	2,648	2,530	2,496	2,423	2,322	2,182	2,069
6/5/2020	2,773	2,724	2,664	2,567	2,460	2,312	2,142	2,061
6/6/2020	2,424	2,400	2,290	2,148	2,045	1,990	1,862	1,788
6/7/2020	2,227	2,298	2,260	2,248	2,158	2,086	1,965	1,823
6/8/2020	2,671	2,684	2,609	2,489	2,429	2,296	2,113	1,980
6/9/2020	2,855	2,801	2,730	2,620	2,518	2,481	2,372	2,256
6/10/2020	2,684	2,591	2,470	2,374	2,231	2,218	2,027	2,032
6/11/2020	2,473	2,469	2,375	2,321	2,281	2,143	1,975	1,905
6/12/2020	2,449	2,439	2,416	2,315	2,260	2,121	1,971	1,869
6/13/2020	2,012	1,993	1,945	1,895	1,851	1,815	1,729	1,631
6/14/2020	1,955	1,966	1,958	1,955	1,928	1,876	1,828	1,760
6/15/2020	2,338	2,303	2,302	2,261	2,202	2,120	2,021	1,929
6/16/2020	2,616	2,588	2,519	2,456	2,384	2,303	2,078	1,991
6/17/2020	2,683	2,672	2,596	2,516	2,454	2,345	2,166	2,056
6/18/2020	2,643	2,618	2,561	2,552	2,490	2,390	2,258	2,097
6/19/2020	2,740	2,767	2,696	2,624	2,534	2,390	2,215	2,081
6/20/2020	2,732	2,706	2,669	2,576	2,476	2,365	2,238	2,095
6/21/2020	2,200	2,187	2,152	2,169	2,172	2,048	1,958	1,932
6/22/2020	2,828	2,800	2,737	2,608	2,570	2,510	2,413	2,250
6/23/2020	2,418	2,349	2,294	2,293	2,190	2,120	2,018	1,934
6/24/2020	2,487	2,468	2,419	2,328	2,258	2,158	2,017	1,913
6/25/2020	2,555	2,585	2,513	2,380	2,297	2,290	2,059	2,004
6/26/2020	2,557	2,521	2,502	2,480	2,462	2,351	2,235	2,065
6/27/2020	2,437	2,420	2,391	2,355	2,309	2,194	2,068	1,952
6/28/2020	2,637	2,661	2,584	2,539	2,474	2,372	2,235	2,118
6/29/2020	2,989	2,921	2,849	2,782	2,704	2,607	2,422	2,271
6/30/2020	2,931	2,875	2,811	2,690	2,611	2,495	2,338	2,167
7/1/2020	2,829	2,807	2,767	2,646	2,547	2,465	2,271	2,150
7/2/2020	2,966	2,911	2,875	2,741	2,580	2,509	2,289	2,155
7/3/2020	2,809	2,773	2,716	2,618	2,524	2,443	2,286	2,166
7/4/2020	2,483	2,455	2,392	2,303	2,220	2,218	2,024	2,017

Attachment MAB-1
Witness: M. A. Becker

Indiana Michigan Power Company
2020 Hourly Load (MW)
(All Hours Are EST)

DATE	HR17	HR18	HR19	HR20	HR21	HR22	HR23	HR24
7/5/2020	2,748	2,795	2,771	2,692	2,595	2,501	2,346	2,171
7/6/2020	3,210	3,141	3,072	2,959	2,875	2,751	2,578	2,417
7/7/2020	3,101	3,066	3,015	2,923	2,810	2,646	2,502	2,401
7/8/2020	2,971	2,873	2,821	2,743	2,719	2,616	2,411	2,330
7/9/2020	3,258	3,269	3,167	3,063	2,945	2,769	2,686	2,522
7/10/2020	2,660	2,631	2,562	2,450	2,416	2,312	2,202	2,094
7/11/2020	2,634	2,580	2,529	2,414	2,353	2,244	2,136	2,029
7/12/2020	2,320	2,385	2,342	2,281	2,183	2,182	2,064	1,951
7/13/2020	2,709	2,696	2,621	2,547	2,426	2,328	2,192	2,084
7/14/2020	2,813	2,834	2,758	2,682	2,603	2,490	2,292	2,165
7/15/2020	3,008	2,924	2,804	2,737	2,666	2,601	2,424	2,325
7/16/2020	2,475	2,485	2,534	2,465	2,426	2,339	2,203	2,104
7/17/2020	2,798	2,826	2,811	2,659	2,528	2,457	2,272	2,061
7/18/2020	2,911	2,888	2,865	2,788	2,754	2,589	2,481	2,384
7/19/2020	2,378	2,425	2,334	2,351	2,236	2,262	2,150	2,142
7/20/2020	2,760	2,717	2,643	2,619	2,575	2,448	2,302	2,182
7/21/2020	2,658	2,648	2,590	2,530	2,536	2,447	2,330	2,231
7/22/2020	2,808	2,723	2,733	2,656	2,615	2,522	2,365	2,230
7/23/2020	2,932	2,915	2,810	2,735	2,647	2,514	2,386	2,238
7/24/2020	2,794	2,743	2,690	2,604	2,527	2,425	2,298	2,173
7/25/2020	2,774	2,709	2,708	2,583	2,455	2,411	2,183	2,110
7/26/2020	2,973	2,922	2,927	2,855	2,739	2,688	2,588	2,465
7/27/2020	2,834	2,747	2,694	2,619	2,511	2,456	2,317	2,232
7/28/2020	2,946	2,862	2,825	2,700	2,617	2,474	2,386	2,264
7/29/2020	3,036	3,066	2,921	2,829	2,777	2,629	2,452	2,309
7/30/2020	2,700	2,593	2,555	2,470	2,461	2,340	2,296	2,169
7/31/2020	2,698	2,640	2,508	2,474	2,386	2,294	2,146	2,060
8/1/2020	2,154	2,132	2,161	2,153	2,141	2,082	2,022	1,975
8/2/2020	2,325	2,335	2,300	2,281	2,157	2,144	2,004	1,997
8/3/2020	2,672	2,590	2,487	2,417	2,400	2,268	2,066	2,030
8/4/2020	2,370	2,354	2,278	2,226	2,207	2,101	1,987	1,884

Attachment MAB-1
Witness: M. A. Becker

Indiana Michigan Power Company
2020 Hourly Load (MW)
(All Hours Are EST)

DATE	HR17	HR18	HR19	HR20	HR21	HR22	HR23	HR24
8/5/2020	2,172	2,225	2,186	2,122	2,112	2,052	1,952	1,879
8/6/2020	2,421	2,374	2,374	2,313	2,259	2,185	2,048	1,979
8/7/2020	2,527	2,515	2,429	2,382	2,312	2,154	2,028	1,923
8/8/2020	2,519	2,517	2,481	2,378	2,316	2,167	2,063	1,949
8/9/2020	2,783	2,828	2,788	2,704	2,655	2,570	2,397	2,329
8/10/2020	3,098	3,036	2,871	2,651	2,554	2,388	2,241	2,134
8/11/2020	2,856	2,820	2,728	2,652	2,613	2,409	2,206	2,087
8/12/2020	2,909	2,833	2,812	2,660	2,512	2,443	2,276	2,118
8/13/2020	2,911	2,874	2,776	2,658	2,547	2,428	2,261	2,163
8/14/2020	2,909	2,823	2,725	2,616	2,498	2,371	2,234	2,061
8/15/2020	2,746	2,748	2,671	2,567	2,464	2,336	2,208	2,128
8/16/2020	2,594	2,595	2,511	2,356	2,319	2,228	2,129	2,025
8/17/2020	2,729	2,667	2,623	2,511	2,453	2,264	2,169	2,050
8/18/2020	2,365	2,399	2,331	2,311	2,213	2,153	2,028	1,893
8/19/2020	2,574	2,592	2,538	2,414	2,398	2,169	2,067	1,978
8/20/2020	2,753	2,741	2,676	2,567	2,482	2,303	2,150	2,029
8/21/2020	2,813	2,774	2,703	2,604	2,515	2,337	2,129	2,020
8/22/2020	2,717	2,663	2,611	2,519	2,377	2,257	2,148	2,045
8/23/2020	2,728	2,607	2,639	2,574	2,522	2,339	2,255	2,177
8/24/2020	3,147	3,134	3,050	2,951	2,838	2,675	2,510	2,378
8/25/2020	3,008	2,991	2,834	2,768	2,670	2,527	2,366	2,226
8/26/2020	3,158	3,081	3,001	2,893	2,684	2,629	2,513	2,389
8/27/2020	3,030	2,953	2,864	2,791	2,743	2,553	2,449	2,359
8/28/2020	2,717	2,682	2,667	2,601	2,583	2,396	2,276	2,162
8/29/2020	2,406	2,328	2,176	2,187	2,089	1,986	1,874	1,767
8/30/2020	2,218	2,242	2,176	2,199	2,156	2,088	1,889	1,905
8/31/2020	2,730	2,675	2,627	2,530	2,506	2,356	2,237	2,114
9/1/2020	2,741	2,636	2,614	2,590	2,528	2,381	2,274	2,108
9/2/2020	2,470	2,475	2,420	2,466	2,403	2,208	2,150	2,120
9/3/2020	2,765	2,728	2,613	2,538	2,498	2,333	2,144	2,037
9/4/2020	2,382	2,295	2,174	2,182	2,078	1,977	1,838	1,782

Attachment MAB-1
Witness: M. A. Becker

Indiana Michigan Power Company
2020 Hourly Load (MW)
(All Hours Are EST)

DATE	HR17	HR18	HR19	HR20	HR21	HR22	HR23	HR24
9/5/2020	2,162	2,143	2,113	2,019	2,001	1,917	1,838	1,726
9/6/2020	2,072	2,044	2,029	2,047	2,028	1,931	1,874	1,789
9/7/2020	2,223	2,235	2,148	2,204	2,062	2,049	2,017	1,934
9/8/2020	2,571	2,531	2,555	2,510	2,432	2,268	2,136	2,082
9/9/2020	2,661	2,684	2,608	2,623	2,514	2,375	2,240	2,104
9/10/2020	2,264	2,279	2,243	2,288	2,214	2,171	2,035	1,939
9/11/2020	2,262	2,197	2,173	2,203	2,156	2,083	1,924	1,898
9/12/2020	2,331	2,346	2,327	2,293	2,242	2,142	2,021	1,988
9/13/2020	2,284	2,223	2,221	2,189	2,116	1,985	1,893	1,810
9/14/2020	2,269	2,223	2,188	2,221	2,164	2,017	1,917	1,786
9/15/2020	2,171	2,117	2,105	2,104	2,026	1,964	1,889	1,812
9/16/2020	2,296	2,278	2,232	2,268	2,185	2,093	1,977	1,881
9/17/2020	2,180	2,120	2,126	2,171	2,109	2,002	1,902	1,880
9/18/2020	2,042	2,009	1,981	2,037	1,967	1,897	1,794	1,697
9/19/2020	1,838	1,833	1,806	1,886	1,837	1,728	1,684	1,655
9/20/2020	1,876	1,904	1,893	1,944	1,921	1,787	1,717	1,740
9/21/2020	2,182	2,124	2,112	2,147	2,064	1,888	1,869	1,812
9/22/2020	2,243	2,226	2,215	2,208	2,095	2,014	1,936	1,858
9/23/2020	2,228	2,212	2,154	2,215	2,078	2,056	1,854	1,855
9/24/2020	2,341	2,324	2,269	2,277	2,191	2,088	1,967	1,908
9/25/2020	2,317	2,245	2,202	2,118	2,131	2,040	1,929	1,845
9/26/2020	2,117	2,097	2,065	1,990	1,950	1,926	1,838	1,727
9/27/2020	2,179	2,134	2,175	2,157	2,047	1,968	1,937	1,872
9/28/2020	2,130	2,110	2,098	2,102	2,086	1,961	1,816	1,757
9/29/2020	2,114	2,043	2,108	2,112	2,001	1,886	1,916	1,840
9/30/2020	2,126	2,051	2,105	2,159	2,019	1,989	1,903	1,831
10/1/2020	2,130	2,124	2,109	2,049	2,031	1,874	1,849	1,754
10/2/2020	1,915	1,923	2,075	2,090	2,035	1,949	1,919	1,799
10/3/2020	1,870	1,925	1,951	1,953	1,883	1,835	1,774	1,744
10/4/2020	1,887	1,907	1,965	1,995	1,901	1,855	1,811	1,846
10/5/2020	2,091	2,074	2,128	2,126	2,088	2,027	1,955	1,858

Attachment MAB-1
Witness: M. A. Becker

Indiana Michigan Power Company
2020 Hourly Load (MW)
(All Hours Are EST)

DATE	HR17	HR18	HR19	HR20	HR21	HR22	HR23	HR24
10/6/2020	2,136	2,107	2,130	2,111	2,073	2,004	1,928	1,865
10/7/2020	2,172	2,085	2,109	2,134	2,054	1,973	1,863	1,796
10/8/2020	1,952	1,977	1,993	2,026	1,924	1,808	1,808	1,692
10/9/2020	2,138	2,069	2,142	2,038	2,006	1,941	1,830	1,729
10/10/2020	1,995	1,983	2,029	1,998	1,957	1,916	1,831	1,769
10/11/2020	1,985	1,979	1,997	1,990	1,951	1,937	1,875	1,743
10/12/2020	2,267	2,237	2,183	2,104	2,083	1,907	1,927	1,725
10/13/2020	2,074	2,109	2,102	2,119	2,064	2,013	1,853	1,878
10/14/2020	2,144	2,122	2,145	2,162	2,088	1,988	1,934	1,888
10/15/2020	2,042	2,054	2,082	2,119	2,112	2,047	1,962	1,890
10/16/2020	2,034	2,012	2,073	2,009	1,976	1,924	1,810	1,815
10/17/2020	1,920	1,952	1,948	1,942	1,895	1,843	1,729	1,713
10/18/2020	1,843	1,865	1,904	1,897	1,856	1,818	1,783	1,720
10/19/2020	1,931	1,940	1,983	1,935	1,884	1,799	1,734	1,680
10/20/2020	1,903	1,861	1,985	1,978	1,904	1,827	1,732	1,682
10/21/2020	1,821	1,827	1,875	1,860	1,816	1,736	1,658	1,624
10/22/2020	1,969	1,949	2,022	1,999	1,919	1,837	1,756	1,717
10/23/2020	2,028	2,008	1,999	1,950	1,876	1,805	1,741	1,657
10/24/2020	1,883	1,874	1,835	1,905	1,857	1,875	1,830	1,759
10/25/2020	1,947	1,986	2,029	2,024	1,995	1,994	1,915	1,876
10/26/2020	2,217	2,173	2,293	2,275	2,180	2,110	2,023	1,925
10/27/2020	2,232	2,281	2,312	2,291	2,215	2,067	2,006	1,988
10/28/2020	2,126	2,189	2,236	2,172	2,132	2,036	1,997	1,951
10/29/2020	2,249	2,209	2,288	2,246	2,070	2,045	1,952	1,882
10/30/2020	2,057	2,095	2,134	2,157	2,050	1,986	1,981	1,935
10/31/2020	1,885	1,911	1,990	1,992	1,980	1,933	1,890	1,840
11/1/2020	2,136	2,172	2,175	2,167	2,171	2,112	2,015	1,998
11/2/2020	2,195	2,248	2,224	2,255	2,284	2,248	2,164	2,066
11/3/2020	2,124	2,162	2,259	2,207	2,159	2,117	2,026	1,994
11/4/2020	2,086	2,186	2,249	2,178	2,127	2,081	1,982	1,917
11/5/2020	2,142	2,132	2,131	2,150	2,080	2,028	1,855	1,798

Attachment MAB-1
Witness: M. A. Becker

Indiana Michigan Power Company
2020 Hourly Load (MW)
(All Hours Are EST)

DATE	HR17	HR18	HR19	HR20	HR21	HR22	HR23	HR24
11/6/2020	2,102	2,082	2,149	2,109	2,074	1,968	1,914	1,835
11/7/2020	1,694	1,747	1,769	1,747	1,855	1,821	1,822	1,745
11/8/2020	1,912	1,991	2,007	2,039	1,979	1,903	1,868	1,784
11/9/2020	2,070	2,137	2,198	2,176	2,131	2,051	1,983	1,921
11/10/2020	2,014	2,044	2,082	2,145	2,114	2,053	1,971	1,813
11/11/2020	2,076	2,148	2,178	2,175	2,191	2,111	2,066	1,989
11/12/2020	2,134	2,170	2,232	2,223	2,189	2,078	2,049	2,006
11/13/2020	2,147	2,212	2,253	2,173	2,219	2,158	2,110	2,036
11/14/2020	2,050	2,124	2,102	2,079	2,063	2,042	1,974	1,942
11/15/2020	1,999	2,053	2,090	2,118	2,071	2,040	2,026	1,918
11/16/2020	2,205	2,246	2,294	2,264	2,252	2,215	2,110	2,047
11/17/2020	2,254	2,235	2,341	2,327	2,324	2,230	2,147	2,097
11/18/2020	2,218	2,292	2,300	2,290	2,189	2,183	2,127	2,036
11/19/2020	2,133	2,184	2,181	2,158	2,134	2,075	1,985	1,946
11/20/2020	2,019	2,080	2,091	1,974	2,047	1,889	1,889	1,843
11/21/2020	2,011	2,040	2,110	2,089	2,057	2,012	1,963	1,890
11/22/2020	2,137	2,188	2,161	2,159	2,115	2,029	2,045	1,936
11/23/2020	2,172	2,223	2,283	2,220	2,209	2,151	2,062	2,011
11/24/2020	2,288	2,262	2,312	2,232	2,223	2,193	2,107	1,977
11/25/2020	2,185	2,268	2,209	2,205	2,127	2,091	1,974	1,824
11/26/2020	1,816	1,852	1,854	1,846	1,824	1,785	1,790	1,578
11/27/2020	1,927	1,968	1,971	1,938	1,934	1,913	1,801	1,773
11/28/2020	1,832	1,966	2,034	2,044	2,027	1,985	1,953	1,858
11/29/2020	1,947	2,065	2,068	2,106	2,022	2,051	1,945	1,946
11/30/2020	2,346	2,474	2,425	2,448	2,458	2,330	2,247	2,143
12/1/2020	2,429	2,529	2,524	2,515	2,410	2,372	2,298	2,170
12/2/2020	2,245	2,327	2,390	2,379	2,346	2,311	2,245	2,184
12/3/2020	2,106	2,192	2,228	2,259	2,252	2,197	2,171	2,153
12/4/2020	2,186	2,248	2,258	2,240	2,203	2,214	2,090	1,986
12/5/2020	2,179	2,261	2,294	2,256	2,201	2,142	2,149	2,056
12/6/2020	2,230	2,290	2,317	2,323	2,262	2,238	2,188	2,097

Attachment MAB-1
Witness: M. A. Becker

Indiana Michigan Power Company
2020 Hourly Load (MW)
(All Hours Are EST)

DATE	HR17	HR18	HR19	HR20	HR21	HR22	HR23	HR24
12/7/2020	2,389	2,388	2,455	2,444	2,410	2,364	2,279	2,199
12/8/2020	2,405	2,463	2,481	2,476	2,442	2,366	2,313	2,196
12/9/2020	2,210	2,300	2,335	2,328	2,305	2,258	2,155	2,101
12/10/2020	2,161	2,244	2,269	2,268	2,249	2,194	2,113	2,051
12/11/2020	2,130	2,190	2,179	2,155	2,149	2,100	2,082	2,024
12/12/2020	2,063	2,143	2,149	2,141	2,108	2,093	1,976	1,937
12/13/2020	2,109	2,198	2,193	2,186	2,130	2,117	2,056	2,056
12/14/2020	2,371	2,451	2,450	2,470	2,421	2,381	2,311	2,220
12/15/2020	2,345	2,462	2,465	2,480	2,465	2,361	2,242	2,252
12/16/2020	2,316	2,426	2,495	2,484	2,486	2,402	2,255	2,218
12/17/2020	2,451	2,465	2,446	2,457	2,443	2,385	2,308	2,237
12/18/2020	2,395	2,442	2,433	2,379	2,400	2,360	2,288	2,188
12/19/2020	2,176	2,226	2,231	2,179	2,166	2,105	2,003	2,006
12/20/2020	2,043	2,127	2,204	2,225	2,215	2,162	2,135	2,105
12/21/2020	2,365	2,383	2,422	2,389	2,374	2,321	2,242	2,178
12/22/2020	2,248	2,320	2,342	2,320	2,331	2,281	2,229	2,170
12/23/2020	2,203	2,231	2,237	2,203	2,160	2,091	2,036	1,968
12/24/2020	1,956	2,015	2,027	2,015	1,987	1,971	1,925	1,878
12/25/2020	1,940	2,012	2,051	2,068	2,050	2,048	2,006	1,964
12/26/2020	2,018	2,124	2,163	2,148	2,156	2,126	2,095	2,028
12/27/2020	1,902	2,085	2,135	2,122	2,114	2,059	1,989	1,936
12/28/2020	2,291	2,327	2,371	2,328	2,309	2,228	2,189	2,030
12/29/2020	2,214	2,316	2,369	2,362	2,318	2,265	2,206	2,146
12/30/2020	2,283	2,284	2,315	2,293	2,238	2,214	2,068	2,046
12/31/2020	1,991	2,063	2,148	2,074	2,097	2,084	2,024	1,999

Attachment MAB-1
Witness: M. A. Becker

Exhibit G Stakeholder Process Exhibits

Communication and documentation of the Company's Stakeholder interactions can be found on the Company's IRP website at the following address:

https://www.indianamichiganpower.com/community/projects/irp/

Additionally, a copy of each presentation, minutes and IRP questions and responses can also be found in IRP Appendix Volume 4. This includes:

Stakeholder Website Comments
Stakeholder Meeting 1 Minutes and Presentation
Stakeholder Meeting 2 Minutes and Presentation
Stakeholder Meeting 3a Minutes and Presentation
Stakeholder Meeting 3b Minutes and Presentation
Stakeholder Meeting 4 Minutes and Presentation
Indiana Michigan Power All-Source Informational RFP Stakeholder Review Meeting
AURORA Technical Conference Agenda

Exhibit H Cross Reference Table

Cross Reference Table **170 IAC 4-7**	**Report Reference**
170 IAC 4-7-2 Integrated resource plan submission	
(c) On or before the applicable date, a utility subject to subsection (a) or (b) must submit electronically to the director or through an electronic filing system if requested by the director, the following documents:	
(1) The IRP.	
(2) A technical appendix containing supporting documentation sufficient to allow an interested party to evaluate the data and assumptions in the IRP. The technical appendix shall include at least the following:	
(A) The utility's energy and demand forecasts and input data used to develop the forecasts.	Vol1, Exhibit A
(B) The characteristics and costs per unit of resources examined in the IRP.	Vol1, Exhibit D
(C) Input and output files from capacity planning models, in electronic format.	Vol1, Vol 2, Vol3
(D) For each portfolio, the electronic files for the calculation of the revenue requirement if not provided as an output file.	Vol1, Exhibit C
If a utility does not provide the above information, it shall include a statement in the technical appendix specifying the nature of the information it is omitting and the reason necessitating its omission. The utility may request confidential treatment of the technical appendix under section 2.1 of this rule.	n/a
(3) An IRP summary that communicates core IRP concepts and results to nontechnical audiences in a simplified format using visual elements where appropriate. The IRP summary shall include, but is not limited to, the following:	Vol 1, Exhibit B, Public Summary Document
(A) A brief description of the utility's:	
(i) existing resources;	
(ii) preferred resource portfolio;	
(iii) key factors influencing the preferred resource portfolio;	
(iv) short term action plan;	
(v) public advisory process; and	
(vi) additional details requested by the director.	
(B) A simplified discussion of the utility's resource types and load characteristics. The utility shall make the IRP summary readily accessible on its website.	
(d) Contemporaneously with the submission of an IRP under this section, a utility shall provide to the director the following information:	Transmittal Letter
(1) The name and address of known individuals or entities considered by the utility to be interested parties.	

(2) A statement that the utility has sent known interested parties, electronically or by deposit in the United States mail, first class postage prepaid, a notice of the utility's submission of the IRP to the commission. The notice must include the following information:	
(A) A general description of the subject matter of the submitted IRP.	
(B) A statement that the commission invites interested parties to submit written comments on the utility's IRP within ninety (90) days of the IRP submittal. An interested party includes a business, organization, or particular customer that participated in the utility's previous public advisory process or submitted comments on the utility's previous IRP. A utility is not required to separately notify other customers.	
(3) A statement that the utility served a copy of the documents submitted under subsection (c) on the OUCC.	
170 4-7-2.6 Public Advisory Process	
(b) The utility shall provide information requested by an interested party relating to the development of the utility's IRP within fifteen (15) business days of a written request or as otherwise agreed to by the utility and the interested party. If a utility is unable to provide the requested information within fifteen (15) business days or the agreed time frame, it shall provide a statement to the director and the requestor as to the reason it is unable to provide the requested information.	Stakeholder Feedback section 4
(c) The utility shall solicit, consider, and timely respond to relevant input relating to the development of the utility's IRP provided by: (1) interested parties; (2) the OUCC; and (3) commission staff.	
(d) The utility retains full responsibility for the content of its IRP.	
(e) The utility shall conduct a public advisory process as follows:	
(1) Prior to submitting its IRP to the commission, the utility shall hold at least three (3) meetings, a majority of which shall be held in the utility's service territory. The topics discussed in the meetings shall include, but not be limited to, the following:	
(A) An introduction to the IRP and public advisory process.	
(B) The utility's load forecast.	
(C) Evaluation of existing resources.	
(D) Evaluation of supply-side and demand-side resource alternatives, including:	
(i) associated costs;	
(ii) quantifiable benefits; and	
(iii) performance attributes.	
(E) Modeling methods.	
(F) Modeling inputs.	
(G) Treatment of risk and uncertainty.	
(H) Discussion seeking input on its candidate resource portfolios.	
(I) The utility's scenarios and sensitivities.	
(J) Discussion of the utility's preferred resource portfolio and the utility's rationale for its selection.	
(2) The utility may hold additional meetings.	

(3) The schedule for meetings shall: (A) be determined by the utility; (B) be consistent with its internal IRP development schedule; and (C) provide an opportunity for public participation in a timely manner so that it may affect the outcome of the IRP.	
(4) The utility or its designee shall: (A) chair the participation process; (B) schedule meetings; (C) develop and publish to its website agendas and relevant material for those meetings at least seven (7) calendar days prior to the eeting; and (D) develop and publish to its website meeting minutes within fifteen (15) calendar days following the meeting.	
(5) Interested parties may request that relevant items be placed on the agenda of the meetings if they provide adequate notice to the utility.	
(6) The utility shall take reasonable steps to notify: (A) its customers; (B) the commission; (C) interested parties; and (D) the OUCC; of its public advisory process.	
170 IAC 4-7-4 Integrated resource plan contents	
An IRP must include the following:	
(1) At least a twenty (20) year future period for predicted or forecasted analyses.	Section 9
(2) An analysis of historical and forecasted levels of peak demand and energy usage in compliance with section 5(a) of this rule.	Section 5
(3) At least three (3) alternative forecasts of peak demand and energy usage in compliance with section 5(b) of this rule.	Section 5
(4) A description of the utility's existing resources in compliance with section 6(a) of this rule.	Section 6
(5) A description of the utility's process for selecting possible alternative future resources for meeting future demand for electric service, including a cost-benefit analysis, if performed.	Section 7.6
(6) A description of the possible alternative future resources for meeting future demand for electric service in compliance with section 6(b) of this rule.	Section 7.6
(7) The resource screening analysis and resource summary table required by section 7 of this rule.	Section 7.6, Appendix D
(8) A description of the candidate resource portfolios and the process for developing candidate resource portfolios in compliance with section 8(a) and 8(b) of this rule.	Section 8
(9) A description of the utility's preferred resource portfolio and the information required by section 8(c) of this rule.	Section 9
(10) A short term action plan for the next three (3) year period to implement the utility's preferred resource portfolio and its workable strategy, pursuant to section 9 of this rule.	Section 10
(11) A discussion of the:	Section 7.1
(A) inputs;	
(B) methods; and	
(C) definitions; used by the utility in the IRP.	

(12) Appendices of the data sets and data sources used to establish alternative forecasts in section 5(b) of this rule. If the IRP references a third-party data source, the IRP must include for the relevant data:	Appendix Exhibits
(A) source title;	
(B) author;	
(C) publishing address;	
(D) date;	
(E) page number; and	
(F) an explanation of adjustments made to the data.	
The data must be submitted within two (2) weeks of submitting the IRP in an editable format, such as a comma separated value or excel spreadsheet file.	
(13) A description of the utility's effort to develop and maintain a database of electricity consumption patterns, disaggregated by:	Section 5
(A) customer class;	
(B) rate class;	
(C) NAICS code;	
(D) DSM program; and	
(E) end-use.	
(14) The database in subdivision (13) may be developed using, but not limited to, the following methods:	
(A) Load research developed by the individual utility.	
(B) Load research developed in conjunction with another utility.	
(C) Load research developed by another utility and modified to meet the characteristics of that utility.	
(D) Engineering estimates.	
(E) Load data developed by a non-utility source.	
(15) A proposed schedule for industrial, commercial, and residential customer surveys to obtain data on:	
(A) end-use penetration;	
(B) end-use saturation rates; and	
(C) end-use electricity consumption patterns.	
(16) A discussion detailing how information from advanced metering infrastructure and smart grid, where available, will be used to enhance usage data and improve load forecasts, DSM programs, and other aspects of planning.	
(17) A discussion of the designated contemporary issues designated, if required by section 2.7(e) of this rule.	
(18) A discussion of distributed generation within the service territory and its potential effects on:	Section 5.11
(A) generation planning;	
(B) transmission planning;	
(C) distribution planning; and	
(D) load forecasting.	
(19) For models used in the IRP, including optimization and dispatch models, a description of the model's structure and applicability.	Section 7.1

(20) A discussion of how the utility's fuel inventory and procurement planning practices have been taken into account and influenced the IRP development.	Section 6.4.2
(21) A discussion of how the utility's emission allowance inventory and procurement practices for an air emission have been considered and influenced the IRP development.	Section 6.5
(22) A description of the generation expansion planning criteria. The description must fully explain the basis for the criteria selected.	Section 8
(23) A discussion of how compliance costs for existing or reasonably anticipated air, land, or water environmental regulations impacting generation assets have been taken into account and influenced the IRP development.	Section 6.5
(24) A discussion of how the utilities' resource planning objectives, such as:	Section 9
(A) cost effectiveness;	
(B) rate impacts;	
(C) risks; and	
(D) uncertainty; were balanced in selecting its preferred resource portfolio.	
(25) A description and analysis of the utility's base case scenario, sometimes referred to as a business as usual case or reference case. The base case scenario is the most likely future scenario and must meet the following criteria:	Section 8
(A) Be an extension of the status quo, using the best estimate of forecasted electrical requirements, fuel price projections, and an objective analysis of the resources required over the planning horizon to reliably and economically satisfy electrical needs.	Section 8
(B) Include:	
(i) existing federal environmental laws;	
(ii) existing state laws, such as renewable energy requirements and energy efficiency laws; and	
(iii) existing policies, such as tax incentives for renewable resources.	
(C) Existing laws or policies continuing throughout at least some portion of the planning horizon with a high probability of expiration or repeal must be eliminated or altered when applicable.	
(D) Not include future resources, laws, or policies unless:	
(i) a utility subject to section 2.6 of this rule solicits stakeholder input regarding the inclusion and describes the input received;	
(ii) future resources have obtained the necessary regulatory approvals; and	
(iii) future laws and policies have a high probability of being enacted. A base case scenario need not align with the utility's preferred resource portfolio.	
(26) A description and analysis of alternative scenarios to the base case scenario, including comparison of the alternative scenarios to the base case scenario.	Section 8

(27) A brief description of the models, focusing on the utility's Indiana jurisdictional facilities, of the following components of FERC Form 715:	Section 6.7.8
(A) The most current power flow data models, studies, and sensitivity analysis.	
(B) Dynamic simulation on its transmission system, including interconnections, focused on the determination of the performance and stability of its transmission system on various fault conditions. The description must state whether the simulation meets the standards of the North American Electric Reliability Corporation (NERC).	
(C) Reliability criteria for transmission planning as well as the assessment practice used. This description must include the following:	
(i) The limits of the utility's transmission use.	
(ii) The utility's assessment practices developed through experience and study.	
(iii) Operating restrictions and limitations particular to the utility.	
(28) A list and description of the methods used by the utility in developing the IRP, including the following:	Section 7.1
(A) For models used in the IRP, the model's structure and reasoning for its use.	
(B) The utility's effort to develop and improve the methodology and inputs, including for its:	Section 5.13
(i) load forecast;	
(ii) forecasted impact from demand-side programs;	
(iii) cost estimates; and	
(iv) analysis of risk and uncertainty.	
(29) An explanation, with supporting documentation, of the avoided cost calculation for each year in the forecast period, if the avoided cost calculation is used to screen demand-side resources. The avoided cost calculation must reflect timing factors specific to the resource under consideration such as project life and seasonal operation. The avoided cost calculation must include the following:	Section 7.5
(A) The avoided generating capacity cost adjusted for transmission and distribution losses and the reserve margin requirement.	
(B) The avoided transmission capacity cost.	
(C) The avoided distribution capacity cost.	
(D) The avoided operating cost, including:	
(i) fuel cost;	
(ii) plant operation and maintenance costs;	
(iii) spinning reserve;	
(iv) emission allowances;	
(v) environmental compliance costs; and	
(vi) transmission and distribution operation and maintenance costs.	

(30) A summary of the utility's most recent public advisory process, including the following:	Section 4, Appendix Volume 4
(A) Key issues discussed.	
(B) How the utility responded to the issues.	
(C) A description of how stakeholder input was used in developing the IRP.	
(31) A detailed explanation of the assessment of demand-side and supply-side resources considered to meet future customer electricity service needs.	Section 7
170 IAC 4-7-5 Energy and demand forecasts	
(a) The analysis of historical and forecasted levels of peak demand and energy usage must include the following:	Section 5
(1) Historical load shapes, including the following:	
(A) Annual load shapes.	
(B) Seasonal load shapes.	
(C) Monthly load shapes.	
(D) Selected weekly load shapes.	
(E) Selected daily load shapes, which shall include summer and winter peak days, and a typical weekday and weekend day.	
(2) Disaggregation of historical data and forecasts by:	
(A) customer class;	
(B) interruptible load; and	
(C) end-use; where information permits.	
(3) Actual and weather normalized energy and demand levels.	
(4) A discussion of methods and processes used to weather normalize.	
(5) A minimum twenty (20) year period for peak demand and energy usage forecasts.	
(6) An evaluation of the performance of peak demand and energy usage for the previous ten (10) years, including the following:	
(A) Total system.	
(B) Customer classes or rate classes, or both.	
(C) Firm wholesale power sales.	
(7) A discussion of how the impact of historical DSM programs is reflected in or otherwise treated in the load forecast.	
(8) Justification for the selected forecasting methodology.	
(9) A discussion of the potential changes under consideration to improve the credibility of the forecasted demand by improving the data quality, tools, and analysis.	
(10) For purposes of subdivisions (1) and (2), a utility may use utility specific data or data such as described in section 4(14) of this rule.	
(b) To establish plausible risk boundaries, the utility shall provide at least three (3) alternative forecasts of peak demand and energy usage including:	Section 5
(1) high;	
(2) low; and	
(3) most probable; peak demand and energy use forecasts.	

(c) In determining the peak demand and energy usage forecast that is deemed by the utility, with stakeholder input, to be most probable, the utility shall consider alternative assumptions such as:	Section 5
(1) Rate of change in population.	
(2) Economic activity.	
(3) Fuel prices.	
(4) Price elasticity.	
(5) Penetration of new technology.	
(6) Demographic changes in population.	
(7) Customer usage.	
(8) Changes in technology.	
(9) Behavioral factors affecting customer consumption.	
(10) State and federal energy policies.	
(11) State and federal environmental policies.	
170 IAC 4-7-6 Description of available resources	
(a) In describing its existing electric power resources, the utility must include in its IRP the following information relevant to the twenty (20) year planning period being evaluated:	
(1) The net and gross dependable generating capacity of the system and each generating unit.	Section 6.4
(2) The expected changes to existing generating capacity, including the following:	
(A) Retirements.	
(B) Deratings.	
(C) Plant life extensions.	
(D) Repowering.	
(E) Refurbishment.	
(3) A fuel price forecast by generating unit.	Appendix Vol 3, Exhibit B
(4) The significant environmental effects, including:	Section 6.5
(A) air emissions;	
(B) solid waste disposal;	
(C) hazardous waste;	
(D) subsequent disposal; and	
(E) water consumption and discharge; at existing fossil fueled generating units.	
(5) An analysis of the existing utility transmission system that includes the following:	Section 6.7
(A) An evaluation of the adequacy to support load growth and expected power transfers.	
(B) An evaluation of the supply-side resource potential of actions to reduce:	
(i) transmission losses;	

(ii) congestion; and	
(iii) energy costs.	
(C) An evaluation of the potential impact of demand-side resources on the transmission network.	Section 6.6.1
(6) A discussion of demand-side resources and their estimated impact on the utility's historical and forecasted peak demand and energy.	Section 6.6.2
The information listed in subdivisions (1) through (4) and in subdivision (6) shall be provided for each year of the future planning period.	
(b) In describing possible alternative methods of meeting future demand for electric service, a utility must analyze the following resources as alternatives in meeting future electric service requirements:	
(1) Rate design as a resource in meeting future electric service requirements.	
(2) Demand-side resources. For potential demand-side resources, the utility shall include the following:	
(A) A description of the potential demand-side resource, including its costs, characteristics, and parameters.	
(B) The method by which the costs, characteristics, and other parameters of the demand-side resource are determined.	
(C) The customer class or end-use, or both, affected by the demand-side resource.	
(D) Estimated annual and lifetime energy (kWh) and demand (kW) savings.	
(E) The estimated impact of a demand-side resource on the utility's load, generating capacity, and transmission and distribution requirements.	
(F) Whether the program provides an opportunity for all ratepayers to participate, including low-income residential ratepayers.	
(3) Supply-side resources. For potential supply-side resources, the utility shall include the following:	Section 7, Appendix D
(A) Identification and description of the supply-side resource considered, including the following:	
(i) Size in megawatts.	
(ii) Utilized technology and fuel type.	
(iii) Energy profile of nondispatchable resources.	
(iv) Additional transmission facilities necessitated by the resource.	
(B) A discussion of the utility's effort to coordinate planning, construction, and operation of the supply-side resource with other utilities to reduce cost.	Section 7.1
(C) A description of significant environmental effects, including the following:	Section 6.5
(i) Air emissions.	
(ii) Solid waste disposal.	
(iii) Hazardous waste and subsequent disposal.	
(iv) Water consumption and discharge.	
(4) Transmission facilities as resources. In analyzing transmission resources, the utility shall include the following:	Section 6.7

(A) The type of the transmission resource, including whether the resource consists of one (1) of the following:	
(i) New projects.	
(i) Upgrades to transmission facilities.	
(ii) Efficiency improvements.	
(iii) Smart grid technology.	
(B) A description of the timing, types of expansion, and alternative options considered.	
(C) The approximate cost of expected expansion and alteration of the transmission network.	
(D) A description of how the IRP accounts for the value of new or upgraded transmission facilities increasing power transfer capability, thereby increasing the utilization of geographically constrained cost effective resources.	
(E) A description of how:	Section 6.4, Section 6.7
(i) IRP data and information affect the planning and implementation processes of the RTO of which the utility is a member; and	
(ii) RTO planning and implementation processes affect the IRP.	
170 IAC 4-7-7 Selection of resources	
To eliminate nonviable alternatives, a utilityshall perform an initial screening of the future resource alternatives listed in section 6(b) of this rule. The utility's screening process and the decision to reject or accept a resource alternative for further analysis must be fully explained and supported in the IRP. The screening analysis must be additionally summarized in a resource summary table.	Section 7.6, 7.7, Appendix D
170 IAC 4-7-8 Resource portfolios	
(a) The utility shall develop candidate resource portfolios from existing and future resources identified in sections 6 and 7 of this rule. The utility shall provide a description of its process for developing its candidate resource portfolios, including a description of its optimization modeling, if used. In selecting the candidate resource portfolios, the utility shall at a minimum consider:	Section 8
(1) risk;	
(2) uncertainty;	
(3) regional resources;	
(4) environmental regulations;	
(5) projections for fuel costs;	
(6) load growth uncertainty;	
(7) economic factors; and	
(8) technological change.	
(b) With regard to candidate resource portfolios, the IRP must include the following:	

(1) An analysis of how candidate resource portfolios performed across a wide range of potential future scenarios, including the alternative scenarios required under section 4(26) of this rule.	
(2) The results of testing and rank ordering of the candidate resource portfolios by key resource planning objectives, including cost effectiveness and risk metrics.	
(3) The present value of revenue requirement for each candidate resource portfolio in dollars per kilowatt-hour delivered, with the interest rate specified.	
(c) Considering the analyses of the candidate resource portfolios, a utility shall select a preferred resource portfolio and include in the IRP the following:	Section 9
(1) A description of the utility's preferred resource portfolio.	
(2) Identification of the standards of reliability.	
(3) A description of the assumptions expected to have the greatest effect on the preferred resource portfolio.	
(4) An analysis showing that supply-side resources and demand-side resources have been evaluated on a consistent and comparable basis, including consideration of:	
(A) safety;	
(B) reliability;	
(C) risk and uncertainty;	
(D) cost effectiveness; and	
(E) customer rate impacts.	
(5) An analysis showing the preferred resource portfolio utilizes supply-side resources and demand-side resources that safely, reliably, efficiently, and cost-effectively meets the electric system demand taking cost, risk, and uncertainty into consideration.	
(6) An evaluation of the utility's DSM programs designed to defer or eliminate investment in a transmission or distribution facility, including their impacts on the utility's transmission and distribution system.	
(7) A discussion of the financial impact on the utility of acquiring future resources identified in the utility's preferred resource portfolio including, where appropriate, the following:	
(A) Operating and capital costs of the preferred resource portfolio.	
(B) The average cost per kilowatt-hour of the future resources, which must be consistent with the electricity price assumption used to forecast the utility's expected load by customer class in section 5 of this rule.	
(C) An estimate of the utility's avoided cost for each year of the preferred resource portfolio.	
(D) The utility's ability to finance the preferred resource portfolio.	
(8) A description of how the preferred resource portfolio balances cost effectiveness, reliability, and portfolio risk and uncertainty, including the following:	
(A) Quantification, where possible, of assumed risks and uncertainties, including, but not limited to:	Section 9
(i) environmental and other regulatory compliance;	
(ii) reasonably anticipated future regulations;	

(iii) public policy;	
(iv) fuel prices;	
(v) operating costs;	
(vi) construction costs;	
(vii) resource performance;	
(viii) load requirements;	
(ix) wholesale electricity and transmission prices;	
(x) RTO requirements; and	
(xi) technological progress.	
(B) An assessment of how robustness of risk considerations factored into the selection of the preferred resource portfolio.	
(9) Utilities shall include a discussion of potential methods under consideration to improve the data quality, tools, and analysis as part of the ongoing efforts to improve the credibility and efficiencies of their resource planning process.	Section 5.13
(10) A workable strategy to quickly and appropriately adapt its preferred resource portfolio to unexpected circumstances, including changes in the following:	Section 9
(A) Demand for electric service.	
(B) Cost of new supply-side resources or demand-side resources.	
(C) Regulatory compliance requirements and costs.	
(D) Wholesale market conditions.	
(E) Fuel costs.	
(F) Environmental compliance costs.	
(G) Technology and associated costs and penetration.	
(H) Other factors that would cause the forecasted relationship between supply and demand for electric service to be in error.	
170 IAC 4-7-9 Short term action plan	
(a) A utility shall prepare a short term action plan as part of its IRP and shall cover a three (3) year period beginning with the first year of the IRP submitted pursuant to this rule.	Section 10
(b) The short term action plan shall summarize the utility's preferred resource portfolio and its workable strategy, as described in section 8(c)(10) of this rule, where the utility must take action or incur expenses during the three (3) year period.	
(c) The short term action plan must include, but is not limited to, the following:	
(1) A description of resources in the preferred resource portfolio included in the short term action plan. The description may include references to other sections of the IRP to avoid duplicate descriptions. The description must include, but is not limited to, the following:	
(A) The objective of the preferred resource portfolio.	
(B) The criteria for measuring progress toward the objective.	

(2) Identification of goals for implementation of DSM programs that can be developed in accordance with IC 8-1-8.5-10 and 170 IAC 4-8-1 et seq. and consistent with the utility's longer resource planning objectives.	
(3) The implementation schedule for the preferred resource portfolio.	
(4) A budget with an estimated range for the cost to be incurred for each resource or program and expected system impacts.	
(5) A description and explanation of differences between what was stated in the utility's last filed short term action plan and what actually occurred.	

Appendix Vol. 2 – Load Forecast Model Equations and Statistical Test Results

Appendix Vol. 3 – Confidential Exhibits

Exhibit A FERC Form 715

Exhibit B Projected Fuel Costs

Exhibit C Short Term Large Industrial Energy Models

Exhibit D Long-term retail and wholesale forecast models data

Exhibit E Short Term and Long term Wholesale Energy Models

Exhibit F OVEC 2030 Supplemental Analysis

Appendix Vol. 4 – Public Participation Process

Exhibit A Stakeholder Website Comments

Exhibit B Stakeholder Meeting 1 Minutes and Presentation

Exhibit C Stakeholder Meeting 2 Minutes and Presentation

Exhibit D Stakeholder Meeting 3a Minutes and Presentation

Exhibit E Stakeholder Meeting 3b Minutes and Presentation

Exhibit F Stakeholder Meeting 4 Minutes and Presentation

Exhibit G Indiana Michigan Power All-Source Informational RFP Stakeholder Review Meeting

Exhibit H AURORA Technical Conference Agenda

INTEGRATED RESOURCE PLANNING REPORT

to the:
Indiana Utility Regulatory Commission

Appendix – Volume 2

Submitted Pursuant to:
Commission Rule 170 IAC 4-7

January 31, 2022

Volume 2, Exhibit A

Indiana Michigan Power Company

Model Equations

Results of Statistical Tests and Input Data Sets

Pertaining to the 2021 Load Forecast

Contents

Included herein are input data, model equations, and statistical results for the numerous forecasting models employed in developing the 2021 Load Forecast for Indiana Michigan Power Company. Those forecasted concepts that are produced judgmentally, without the use of econometric models, are not shown. The pages included are as output from the computer model. That output contains a data glossary, identifying the names of variables appearing in the models (or the variables labeled in the equations). The models are shown in the following order:

Retail Customer Models 1

Residential Energy/Usage Models.....316

Commercial Energy Models 728

Industrial Energy Models.....1034

Other Retail Energy Model.....1143

Long-term Wholesale Energy Models 1241

Demand-Side Management.....1384

Peak Demand Model.....1400

Residential and Commercial SAE Documentation.....1530

RETAIL CUSTOMERS

Indiana Michigan Power Company - Indiana
Residential Customers
Endogenous Variables

The MEANS Procedure

Variable	Label	Mean
YEAR	Year	2028.50
MONTH	Month	6.5000000
cr_imi	Residential Customers	399402.41

Indiana Michigan Power Company - Indiana
Residential Customers
Endogenous Variables

Obs	YEAR	MONTH	cr_imi
1	2000	1	389246
2	2000	2	389663
3	2000	3	390188
4	2000	4	388991
5	2000	5	388651
6	2000	6	388964
7	2000	7	388626
8	2000	8	389227
9	2000	9	389714
10	2000	10	390261
11	2000	11	390882
12	2000	12	390956
13	2001	1	392113
14	2001	2	391536
15	2001	3	392038
16	2001	4	391184
17	2001	5	391003
18	2001	6	390469
19	2001	7	390237
20	2001	8	391209
21	2001	9	391459
22	2001	10	391204
23	2001	11	391278
24	2001	12	392104
25	2002	1	393127
26	2002	2	393081
27	2002	3	393162
28	2002	4	393023
29	2002	5	392884
30	2002	6	392638
31	2002	7	392812
32	2002	8	393102
33	2002	9	393604
34	2002	10	393328
35	2002	11	393626
36	2002	12	394874
37	2003	1	395839
38	2003	2	396450
39	2003	3	395138
40	2003	4	394973
41	2003	5	393982
42	2003	6	394437
43	2003	7	394351
44	2003	8	394376
45	2003	9	394583
46	2003	10	395082
47	2003	11	395897
48	2003	12	397050
49	2004	1	398147
50	2004	2	398429

Indiana Michigan Power Company - Indiana
Residential Customers
Endogenous Variables

Obs	YEAR	MONTH	cr_imi
51	2004	3	398076
52	2004	4	397255
53	2004	5	396768
54	2004	6	396629
55	2004	7	397076
56	2004	8	397483
57	2004	9	397898
58	2004	10	398214
59	2004	11	398502
60	2004	12	399297
61	2005	1	399838
62	2005	2	398628
63	2005	3	401579
64	2005	4	398738
65	2005	5	398049
66	2005	6	397838
67	2005	7	396965
68	2005	8	398674
69	2005	9	397811
70	2005	10	397743
71	2005	11	398645
72	2005	12	399051
73	2006	1	399662
74	2006	2	399121
75	2006	3	399618
76	2006	4	398296
77	2006	5	398213
78	2006	6	397922
79	2006	7	397536
80	2006	8	398071
81	2006	9	397646
82	2006	10	398399
83	2006	11	398627
84	2006	12	399188
85	2007	1	399421
86	2007	2	399291
87	2007	3	400017
88	2007	4	399205
89	2007	5	398293
90	2007	6	398641
91	2007	7	397872
92	2007	8	398553
93	2007	9	398122
94	2007	10	392323
95	2007	11	398490
96	2007	12	399056
97	2008	1	399721
98	2008	2	399823
99	2008	3	399658
100	2008	4	398599

Indiana Michigan Power Company - Indiana
Residential Customers
Endogenous Variables

Obs	YEAR	MONTH	cr_imi
101	2008	5	397865
102	2008	6	397361
103	2008	7	397520
104	2008	8	397862
105	2008	9	397361
106	2008	10	397404
107	2008	11	397519
108	2008	12	398027
109	2009	1	398950
110	2009	2	398158
111	2009	3	399368
112	2009	4	396632
113	2009	5	396399
114	2009	6	396231
115	2009	7	396185
116	2009	8	396403
117	2009	9	396466
118	2009	10	395723
119	2009	11	396774
120	2009	12	397853
121	2010	1	398337
122	2010	2	390581
123	2010	3	407289
124	2010	4	397687
125	2010	5	396663
126	2010	6	396948
127	2010	7	396963
128	2010	8	396564
129	2010	9	396560
130	2010	10	396783
131	2010	11	397393
132	2010	12	397635
133	2011	1	399898
134	2011	2	389652
135	2011	3	407730
136	2011	4	397409
137	2011	5	397102
138	2011	6	396490
139	2011	7	396222
140	2011	8	396967
141	2011	9	396809
142	2011	10	396623
143	2011	11	397135
144	2011	12	397750
145	2012	1	398367
146	2012	2	398530
147	2012	3	398516
148	2012	4	398109
149	2012	5	397982
150	2012	6	397392

Indiana Michigan Power Company - Indiana
Residential Customers
Endogenous Variables

Obs	YEAR	MONTH	cr_imi
151	2012	7	397536
152	2012	8	397325
153	2012	9	397621
154	2012	10	398003
155	2012	11	398380
156	2012	12	398898
157	2013	1	400484
158	2013	2	399800
159	2013	3	400332
160	2013	4	398819
161	2013	5	398904
162	2013	6	398478
163	2013	7	398887
164	2013	8	398652
165	2013	9	399294
166	2013	10	401970
167	2013	11	399990
168	2013	12	401313
169	2014	1	401548
170	2014	2	400169
171	2014	3	401582
172	2014	4	401090
173	2014	5	399637
174	2014	6	399273
175	2014	7	399030
176	2014	8	400060
177	2014	9	400110
178	2014	10	399724
179	2014	11	401121
180	2014	12	402095
181	2015	1	401913
182	2015	2	402958
183	2015	3	402956
184	2015	4	401923
185	2015	5	400265
186	2015	6	401405
187	2015	7	400827
188	2015	8	400209
189	2015	9	401046
190	2015	10	401182
191	2015	11	401443
192	2015	12	402404
193	2016	1	403030
194	2016	2	403633
195	2016	3	403392
196	2016	4	403060
197	2016	5	402383
198	2016	6	402195
199	2016	7	402165
200	2016	8	401988

Indiana Michigan Power Company - Indiana
Residential Customers
Endogenous Variables

Obs	YEAR	MONTH	cr_imi
201	2016	9	402696
202	2016	10	402791
203	2016	11	403396
204	2016	12	405121
205	2017	1	405415
206	2017	2	405082
207	2017	3	405128
208	2017	4	404608
209	2017	5	404266
210	2017	6	403915
211	2017	7	404134
212	2017	8	403913
213	2017	9	404614
214	2017	10	404719
215	2017	11	405439
216	2017	12	406353
217	2018	1	406945
218	2018	2	407176
219	2018	3	406943
220	2018	4	406492
221	2018	5	406166
222	2018	6	406100
223	2018	7	406187
224	2018	8	406454
225	2018	9	406722
226	2018	10	407559
227	2018	11	407599
228	2018	12	408054
229	2019	1	408801
230	2019	2	409113
231	2019	3	408873
232	2019	4	408059
233	2019	5	407772
234	2019	6	407049
235	2019	7	407531
236	2019	8	407601
237	2019	9	407974
238	2019	10	408511
239	2019	11	409159
240	2019	12	410008
241	2020	1	410729
242	2020	2	410869
243	2020	3	410570
244	2020	4	411194
245	2020	5	412511
246	2020	6	411866
247	2020	7	412231
248	2020	8	412274
249	2020	9	412168
250	2020	10	411857

Indiana Michigan Power Company - Indiana
Residential Customers
Endogenous Variables

Obs	YEAR	MONTH	cr_imi
251	2020	11	411976
252	2020	12	412737
253	2021	1	.
254	2021	2	.
255	2021	3	.
256	2021	4	.
257	2021	5	.
258	2021	6	.
259	2021	7	.
260	2021	8	.
261	2021	9	.
262	2021	10	.
263	2021	11	.
264	2021	12	.
265	2022	1	.
266	2022	2	.
267	2022	3	.
268	2022	4	.
269	2022	5	.
270	2022	6	.
271	2022	7	.
272	2022	8	.
273	2022	9	.
274	2022	10	.
275	2022	11	.
276	2022	12	.
277	2023	1	.
278	2023	2	.
279	2023	3	.
280	2023	4	.
281	2023	5	.
282	2023	6	.
283	2023	7	.
284	2023	8	.
285	2023	9	.
286	2023	10	.
287	2023	11	.
288	2023	12	.
289	2024	1	.
290	2024	2	.
291	2024	3	.
292	2024	4	.
293	2024	5	.
294	2024	6	.
295	2024	7	.
296	2024	8	.
297	2024	9	.
298	2024	10	.
299	2024	11	.
300	2024	12	.

Indiana Michigan Power Company - Indiana
Residential Customers
Endogenous Variables

Obs	YEAR	MONTH	cr_imi
301	2025	1	.
302	2025	2	.
303	2025	3	.
304	2025	4	.
305	2025	5	.
306	2025	6	.
307	2025	7	.
308	2025	8	.
309	2025	9	.
310	2025	10	.
311	2025	11	.
312	2025	12	.
313	2026	1	.
314	2026	2	.
315	2026	3	.
316	2026	4	.
317	2026	5	.
318	2026	6	.
319	2026	7	.
320	2026	8	.
321	2026	9	.
322	2026	10	.
323	2026	11	.
324	2026	12	.
325	2027	1	.
326	2027	2	.
327	2027	3	.
328	2027	4	.
329	2027	5	.
330	2027	6	.
331	2027	7	.
332	2027	8	.
333	2027	9	.
334	2027	10	.
335	2027	11	.
336	2027	12	.
337	2028	1	.
338	2028	2	.
339	2028	3	.
340	2028	4	.
341	2028	5	.
342	2028	6	.
343	2028	7	.
344	2028	8	.
345	2028	9	.
346	2028	10	.
347	2028	11	.
348	2028	12	.
349	2029	1	.
350	2029	2	.

Indiana Michigan Power Company - Indiana
Residential Customers
Endogenous Variables

Obs	YEAR	MONTH	cr_imi
351	2029	3	.
352	2029	4	.
353	2029	5	.
354	2029	6	.
355	2029	7	.
356	2029	8	.
357	2029	9	.
358	2029	10	.
359	2029	11	.
360	2029	12	.
361	2030	1	.
362	2030	2	.
363	2030	3	.
364	2030	4	.
365	2030	5	.
366	2030	6	.
367	2030	7	.
368	2030	8	.
369	2030	9	.
370	2030	10	.
371	2030	11	.
372	2030	12	.
373	2031	1	.
374	2031	2	.
375	2031	3	.
376	2031	4	.
377	2031	5	.
378	2031	6	.
379	2031	7	.
380	2031	8	.
381	2031	9	.
382	2031	10	.
383	2031	11	.
384	2031	12	.
385	2032	1	.
386	2032	2	.
387	2032	3	.
388	2032	4	.
389	2032	5	.
390	2032	6	.
391	2032	7	.
392	2032	8	.
393	2032	9	.
394	2032	10	.
395	2032	11	.
396	2032	12	.
397	2033	1	.
398	2033	2	.
399	2033	3	.
400	2033	4	.

Indiana Michigan Power Company - Indiana
Residential Customers
Endogenous Variables

Obs	YEAR	MONTH	cr_imi
401	2033	5	.
402	2033	6	.
403	2033	7	.
404	2033	8	.
405	2033	9	.
406	2033	10	.
407	2033	11	.
408	2033	12	.
409	2034	1	.
410	2034	2	.
411	2034	3	.
412	2034	4	.
413	2034	5	.
414	2034	6	.
415	2034	7	.
416	2034	8	.
417	2034	9	.
418	2034	10	.
419	2034	11	.
420	2034	12	.
421	2035	1	.
422	2035	2	.
423	2035	3	.
424	2035	4	.
425	2035	5	.
426	2035	6	.
427	2035	7	.
428	2035	8	.
429	2035	9	.
430	2035	10	.
431	2035	11	.
432	2035	12	.
433	2036	1	.
434	2036	2	.
435	2036	3	.
436	2036	4	.
437	2036	5	.
438	2036	6	.
439	2036	7	.
440	2036	8	.
441	2036	9	.
442	2036	10	.
443	2036	11	.
444	2036	12	.
445	2037	1	.
446	2037	2	.
447	2037	3	.
448	2037	4	.
449	2037	5	.
450	2037	6	.

Indiana Michigan Power Company - Indiana
Residential Customers
Endogenous Variables

Obs	YEAR	MONTH	cr_imi
451	2037	7	.
452	2037	8	.
453	2037	9	.
454	2037	10	.
455	2037	11	.
456	2037	12	.
457	2038	1	.
458	2038	2	.
459	2038	3	.
460	2038	4	.
461	2038	5	.
462	2038	6	.
463	2038	7	.
464	2038	8	.
465	2038	9	.
466	2038	10	.
467	2038	11	.
468	2038	12	.
469	2039	1	.
470	2039	2	.
471	2039	3	.
472	2039	4	.
473	2039	5	.
474	2039	6	.
475	2039	7	.
476	2039	8	.
477	2039	9	.
478	2039	10	.
479	2039	11	.
480	2039	12	.
481	2040	1	.
482	2040	2	.
483	2040	3	.
484	2040	4	.
485	2040	5	.
486	2040	6	.
487	2040	7	.
488	2040	8	.
489	2040	9	.
490	2040	10	.
491	2040	11	.
492	2040	12	.
493	2041	1	.
494	2041	2	.
495	2041	3	.
496	2041	4	.
497	2041	5	.
498	2041	6	.
499	2041	7	.
500	2041	8	.

Indiana Michigan Power Company - Indiana
Residential Customers
Endogenous Variables

Obs	YEAR	MONTH	cr_imi
501	2041	9	.
502	2041	10	.
503	2041	11	.
504	2041	12	.
505	2042	1	.
506	2042	2	.
507	2042	3	.
508	2042	4	.
509	2042	5	.
510	2042	6	.
511	2042	7	.
512	2042	8	.
513	2042	9	.
514	2042	10	.
515	2042	11	.
516	2042	12	.
517	2043	1	.
518	2043	2	.
519	2043	3	.
520	2043	4	.
521	2043	5	.
522	2043	6	.
523	2043	7	.
524	2043	8	.
525	2043	9	.
526	2043	10	.
527	2043	11	.
528	2043	12	.
529	2044	1	.
530	2044	2	.
531	2044	3	.
532	2044	4	.
533	2044	5	.
534	2044	6	.
535	2044	7	.
536	2044	8	.
537	2044	9	.
538	2044	10	.
539	2044	11	.
540	2044	12	.
541	2045	1	.
542	2045	2	.
543	2045	3	.
544	2045	4	.
545	2045	5	.
546	2045	6	.
547	2045	7	.
548	2045	8	.
549	2045	9	.
550	2045	10	.

Indiana Michigan Power Company - Indiana
Residential Customers
Endogenous Variables

Obs	YEAR	MONTH	cr_imi
551	2045	11	.
552	2045	12	.
553	2046	1	.
554	2046	2	.
555	2046	3	.
556	2046	4	.
557	2046	5	.
558	2046	6	.
559	2046	7	.
560	2046	8	.
561	2046	9	.
562	2046	10	.
563	2046	11	.
564	2046	12	.
565	2047	1	.
566	2047	2	.
567	2047	3	.
568	2047	4	.
569	2047	5	.
570	2047	6	.
571	2047	7	.
572	2047	8	.
573	2047	9	.
574	2047	10	.
575	2047	11	.
576	2047	12	.
577	2048	1	.
578	2048	2	.
579	2048	3	.
580	2048	4	.
581	2048	5	.
582	2048	6	.
583	2048	7	.
584	2048	8	.
585	2048	9	.
586	2048	10	.
587	2048	11	.
588	2048	12	.
589	2049	1	.
590	2049	2	.
591	2049	3	.
592	2049	4	.
593	2049	5	.
594	2049	6	.
595	2049	7	.
596	2049	8	.
597	2049	9	.
598	2049	10	.
599	2049	11	.
600	2049	12	.

Indiana Michigan Power Company - Indiana
Residential Customers
Endogenous Variables

Obs	YEAR	MONTH	cr_imi
601	2050	1	.
602	2050	2	.
603	2050	3	.
604	2050	4	.
605	2050	5	.
606	2050	6	.
607	2050	7	.
608	2050	8	.
609	2050	9	.
610	2050	10	.
611	2050	11	.
612	2050	12	.
613	2051	1	.
614	2051	2	.
615	2051	3	.
616	2051	4	.
617	2051	5	.
618	2051	6	.
619	2051	7	.
620	2051	8	.
621	2051	9	.
622	2051	10	.
623	2051	11	.
624	2051	12	.
625	2052	1	.
626	2052	2	.
627	2052	3	.
628	2052	4	.
629	2052	5	.
630	2052	6	.
631	2052	7	.
632	2052	8	.
633	2052	9	.
634	2052	10	.
635	2052	11	.
636	2052	12	.
637	2053	1	.
638	2053	2	.
639	2053	3	.
640	2053	4	.
641	2053	5	.
642	2053	6	.
643	2053	7	.
644	2053	8	.
645	2053	9	.
646	2053	10	.
647	2053	11	.
648	2053	12	.
649	2054	1	.
650	2054	2	.

Indiana Michigan Power Company - Indiana
Residential Customers
Endogenous Variables

Obs	YEAR	MONTH	cr_imi
651	2054	3	.
652	2054	4	.
653	2054	5	.
654	2054	6	.
655	2054	7	.
656	2054	8	.
657	2054	9	.
658	2054	10	.
659	2054	11	.
660	2054	12	.
661	2055	1	.
662	2055	2	.
663	2055	3	.
664	2055	4	.
665	2055	5	.
666	2055	6	.
667	2055	7	.
668	2055	8	.
669	2055	9	.
670	2055	10	.
671	2055	11	.
672	2055	12	.
673	2056	1	.
674	2056	2	.
675	2056	3	.
676	2056	4	.
677	2056	5	.
678	2056	6	.
679	2056	7	.
680	2056	8	.
681	2056	9	.
682	2056	10	.
683	2056	11	.
684	2056	12	.
685	2057	1	.
686	2057	2	.
687	2057	3	.
688	2057	4	.
689	2057	5	.
690	2057	6	.
691	2057	7	.
692	2057	8	.
693	2057	9	.
694	2057	10	.
695	2057	11	.
696	2057	12	.

Indiana Michigan Power Company - Indiana
Residential Customers
Exogenous Variables

The MEANS Procedure

Variable	Label	Mean
YEAR	Year	2028.50
MONTH	Month	6.5000000
N_imi	Service Area Population	1648.53
hh_imi	Service Area Households	679.5783906
d1	Binary Variable - January	0.0833333
d2	Binary Variable - February	0.0833333
d3	Binary Variable - March	0.0833333
d4	Binary Variable - April	0.0833333
d5	Binary Variable - May	0.0833333
d6	Binary Variable - June	0.0833333
d7	Binary Variable - July	0.0833333
d8	Binary Varaible - August	0.0833333
d9	Binary Variable - September	0.0833333
d10	Binary Variable - October	0.0833333
d11	Binary Variable - November	0.0833333
dmar05	Binary Variable - March 2005	0.0014368
dapr05	Binary Variable - April 2005	0.0014368
dfeb10	Binary Variable - February 2010	0.0014368
dmar10	Binary Variable - March 2010	0.0014368
dapr10	Binary Variable - April 2010	0.0014368
dfeb11	Binary Variable - February 2011	0.0014368
dmar11	Binary Variable - March 2011	0.0014368
dapr11	Binary Variable - April 2011	0.0014368
oct07	Binary Variable - October 2007	0.0014368
nov07	Binary Variable - November 2007	0.0014368
oct13	Binary Variable - October 2013	0.0014368
nov13	Binary Variable - November 2013	0.0014368
dec16	Binary Variable - December 2016	0.0014368
jul16on	Binary Variable - July 2016 On	0.7155172
aprmay20	Binary Variable - April and May 2020	0.0028736

Obs	YEAR	MONTH	N_mi	hh_mi	d1	d2	d3	d4	d5	d6	d7	d8	d9	d10	d11	d05	d05	dapr	dfeb	dmar	dapr	dfeb	dmar	daug	doct	dnov	dsep	djul16	dmay20
1	2000	1	1572.18	600.039	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	2000	2	1573.02	600.263	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	2000	3	1573.84	600.492	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	2000	4	1574.64	600.739	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	2000	5	1575.42	601.005	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6	2000	6	1576.16	601.303	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7	2000	7	1576.86	601.631	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	2000	8	1577.54	602.009	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9	2000	9	1578.15	602.411	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10	2000	10	1578.72	602.839	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11	2000	11	1579.24	603.279	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12	2000	12	1579.70	603.734	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13	2001	1	1580.11	604.197	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14	2001	2	1580.44	604.639	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15	2001	3	1580.71	605.073	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16	2001	4	1580.94	605.503	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17	2001	5	1581.08	605.911	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18	2001	6	1581.16	606.292	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19	2001	7	1581.17	606.634	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20	2001	8	1581.11	606.949	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21	2001	9	1580.99	607.226	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22	2001	10	1580.84	607.478	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23	2001	11	1580.66	607.717	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24	2001	12	1580.48	607.939	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25	2002	1	1580.30	608.163	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
26	2002	2	1580.16	608.378	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27	2002	3	1580.05	608.601	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
28	2002	4	1579.99	608.842	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29	2002	5	1580.00	609.100	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30	2002	6	1580.10	609.388	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
31	2002	7	1580.29	609.712	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
32	2002	8	1580.59	610.069	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
33	2002	9	1580.96	610.444	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
34	2002	10	1581.41	610.834	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
35	2002	11	1581.90	611.233	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
36	2002	12	1582.43	611.630	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
37	2003	1	1582.99	612.025	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
38	2003	2	1583.51	612.388	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
39	2003	3	1584.02	612.723	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
40	2003	4	1584.51	613.042	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
41	2003	5	1584.96	613.315	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
42	2003	6	1585.34	613.540	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
43	2003	7	1585.64	613.709	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Obs	YEAR	MONTH	N_mi	hh_mi	d1	d2	d3	d4	d5	d6	d7	d8	d9	d10	d11	dmar15	dapr05	dfeb01	dmar11	dapr11	dfeb11	dmar11	dapr10	dnov07	doct07	dnov13	doct13	ddec16	djul16	apr20
44	2003	8	1585.85	613.827	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
45	2003	9	1585.99	613.890	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
46	2003	10	1586.08	613.918	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
47	2003	11	1586.11	613.915	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
48	2003	12	1586.12	613.898	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
49	2004	1	1586.11	613.871	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
50	2004	2	1586.10	613.843	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
51	2004	3	1586.10	613.826	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
52	2004	4	1586.13	613.832	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
53	2004	5	1586.19	613.866	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
54	2004	6	1586.31	613.937	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
55	2004	7	1586.49	614.061	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
56	2004	8	1586.75	614.234	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
57	2004	9	1587.06	614.450	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
58	2004	10	1587.44	614.696	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
59	2004	11	1587.86	614.970	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
60	2004	12	1588.33	615.260	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
61	2005	1	1588.85	615.563	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
62	2005	2	1589.37	615.853	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
63	2005	3	1589.91	616.133	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
64	2005	4	1590.50	616.409	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
65	2005	5	1591.09	616.663	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
66	2005	6	1591.69	616.884	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
67	2005	7	1592.29	617.066	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
68	2005	8	1592.89	617.207	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
69	2005	9	1593.48	617.303	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
70	2005	10	1594.06	617.369	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
71	2005	11	1594.64	617.405	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
72	2005	12	1595.20	617.418	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
73	2006	1	1595.77	617.412	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
74	2006	2	1596.30	617.389	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
75	2006	3	1596.82	617.360	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
76	2006	4	1597.35	617.321	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
77	2006	5	1597.87	617.282	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
78	2006	6	1598.37	617.243	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
79	2006	7	1598.86	617.213	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
80	2006	8	1599.34	617.196	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
81	2006	9	1599.81	617.188	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
82	2006	10	1600.27	617.195	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
83	2006	11	1600.73	617.217	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
84	2006	12	1601.18	617.256	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
85	2007	1	1601.64	617.312	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
86	2007	2	1602.08	617.385	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Obs	YEAR	MONTH	N_mi	hh_mi	d1	d2	d3	d4	d5	d6	d7	d8	d9	d10	d11	d05	d05	dapr	dfeb	dmar	dapr	dmay	djun	djul	daug	dsep	doct	dnov	ddec	japr16	mar20
87	2007	3	1602.53	617.478	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
88	2007	4	1603.00	617.596	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
89	2007	5	1603.48	617.735	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
90	2007	6	1603.97	617.899	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
91	2007	7	1604.49	618.089	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
92	2007	8	1605.02	618.306	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
93	2007	9	1605.56	618.537	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
94	2007	10	1606.10	618.780	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
95	2007	11	1606.65	619.034	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
96	2007	12	1607.19	619.284	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
97	2008	1	1607.72	619.532	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
98	2008	2	1608.23	619.763	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
99	2008	3	1608.72	619.975	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
100	2008	4	1609.19	620.169	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
101	2008	5	1609.63	620.337	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
102	2008	6	1610.04	620.469	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
103	2008	7	1610.41	620.561	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
104	2008	8	1610.74	620.609	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
105	2008	9	1611.03	620.620	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
106	2008	10	1611.29	620.592	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
107	2008	11	1611.52	620.529	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
108	2008	12	1611.71	620.431	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
109	2009	1	1611.89	620.302	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
110	2009	2	1612.04	620.153	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
111	2009	3	1612.17	619.980	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
112	2009	4	1612.29	619.779	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
113	2009	5	1612.39	619.556	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
114	2009	6	1612.49	619.315	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
115	2009	7	1612.58	619.056	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
116	2009	8	1612.67	618.783	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
117	2009	9	1612.76	618.514	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
118	2009	10	1612.85	618.245	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
119	2009	11	1612.95	617.994	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
120	2009	12	1613.06	617.761	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
121	2010	1	1613.19	617.557	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
122	2010	2	1613.33	617.399	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
123	2010	3	1613.49	617.285	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
124	2010	4	1613.68	617.217	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
125	2010	5	1613.90	617.216	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
126	2010	6	1614.15	617.280	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
127	2010	7	1614.44	617.425	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
128	2010	8	1614.76	617.650	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
129	2010	9	1615.10	617.934	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Obs	YEAR	MONTH	N_Mi	hh_mi	dd12	dd23	dd34	dd45	dd56	dd67	dd78	dd89	dd90	dd01	dmar05	dapr05	dfeb00	dmar00	dapr11	dfeb11	dmar11	dapr11	dnov17	doct17	dnov73	doct73	ddec16	djul16	dapr20
130	2010	10	1615.45	618.268	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
131	2010	11	1615.81	618.640	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
132	2010	12	1616.16	619.038	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
133	2011	1	1616.50	619.452	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
134	2011	2	1616.79	619.846	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
135	2011	3	1617.05	620.228	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
136	2011	4	1617.28	620.593	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
137	2011	5	1617.45	620.922	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
138	2011	6	1617.56	621.199	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
139	2011	7	1617.59	621.407	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
140	2011	8	1617.55	621.555	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
141	2011	9	1617.45	621.640	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
142	2011	10	1617.30	621.683	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
143	2011	11	1617.13	621.696	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
144	2011	12	1616.94	621.690	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
145	2012	1	1616.74	621.680	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
146	2012	2	1616.57	621.670	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
147	2012	3	1616.41	621.677	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
148	2012	4	1616.30	621.713	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
149	2012	5	1616.24	621.793	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
150	2012	6	1616.26	621.924	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
151	2012	7	1616.35	622.117	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
152	2012	8	1616.54	622.384	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
153	2012	9	1616.80	622.702	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
154	2012	10	1617.12	623.074	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
155	2012	11	1617.49	623.492	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
156	2012	12	1617.91	623.944	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
157	2013	1	1618.36	624.433	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
158	2013	2	1618.81	624.915	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
159	2013	3	1619.27	625.412	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
160	2013	4	1619.75	625.934	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
161	2013	5	1620.20	626.452	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
162	2013	6	1620.64	626.956	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
163	2013	7	1621.04	627.449	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
164	2013	8	1621.40	627.923	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
165	2013	9	1621.72	628.374	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
166	2013	10	1622.01	628.796	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
167	2013	11	1622.26	629.204	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
168	2013	12	1622.48	629.586	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
169	2014	1	1622.69	629.953	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
170	2014	2	1622.85	630.281	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
171	2014	3	1623.00	630.589	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
172	2014	4	1623.13	630.891	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Obs	YEAR	MONTH	Nmi	hhmi	dd1	dd2	dd3	dd4	dd5	dd6	dd7	dd8	dd9	dd10	dd11	ddmar05	ddapr05	ddfeb06	ddmar06	ddapr06	ddfeb07	ddmar07	ddapr07	ddoct10	ddnov10	ddoct11	ddnov11	ddoct16	ddjul16	apr2020
173	2014	5	1623.25	631.165	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
174	2014	6	1623.35	631.424	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
175	2014	7	1623.45	631.656	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
176	2014	8	1623.53	631.876	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
177	2014	9	1623.61	632.076	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
178	2014	10	1623.69	632.264	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
179	2014	11	1623.77	632.444	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
180	2014	12	1623.85	632.617	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
181	2015	1	1623.93	632.792	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
182	2015	2	1624.02	632.961	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
183	2015	3	1624.11	633.138	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
184	2015	4	1624.22	633.330	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
185	2015	5	1624.35	633.532	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
186	2015	6	1624.49	633.751	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
187	2015	7	1624.66	633.988	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
188	2015	8	1624.84	634.249	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
189	2015	9	1625.04	634.520	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
190	2015	10	1625.25	634.797	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
191	2015	11	1625.46	635.076	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
192	2015	12	1625.68	635.355	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
193	2016	1	1625.90	635.621	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
194	2016	2	1626.11	635.866	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
195	2016	3	1626.32	636.085	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
196	2016	4	1626.51	636.283	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
197	2016	5	1626.69	636.445	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
198	2016	6	1626.85	636.568	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
199	2016	7	1626.98	636.644	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
200	2016	8	1627.10	636.674	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
201	2016	9	1627.19	636.667	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
202	2016	10	1627.28	636.632	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
203	2016	11	1627.36	636.572	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
204	2016	12	1627.45	636.500	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0
205	2017	1	1627.55	636.417	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
206	2017	2	1627.66	636.343	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
207	2017	3	1627.80	636.271	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
208	2017	4	1627.97	636.221	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
209	2017	5	1628.17	636.189	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
210	2017	6	1628.42	636.194	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
211	2017	7	1628.72	636.232	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
212	2017	8	1629.08	636.317	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
213	2017	9	1629.47	636.433	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
214	2017	10	1629.91	636.577	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
215	2017	11	1630.39	636.746	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0

Obs	YEAR	MONTH	N_imi	hh_imi	dd1	dd2	dd3	dd4	dd5	dd6	dd7	dd8	dd9	dd10	dd11	ddr05	ddr05	daprb0	dfeb1	dmar1	daprr1	dmay1	dfeb1	dapr1	dmay1	daug1	dsep1	doct1	dnov1	ddec1	jul16	apr20
216	2017	12	1630.89	636.926	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
217	2018	1	1631.43	637.125	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
218	2018	2	1631.96	637.312	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
219	2018	3	1632.51	637.500	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
220	2018	4	1633.08	637.684	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
221	2018	5	1633.66	637.853	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
222	2018	6	1634.24	637.999	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
223	2018	7	1634.81	638.119	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
224	2018	8	1635.39	638.215	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
225	2018	9	1635.94	638.295	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
226	2018	10	1636.48	638.369	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
227	2018	11	1637.01	638.445	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
228	2018	12	1637.52	638.537	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
229	2019	1	1638.03	638.656	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
230	2019	2	1638.50	638.802	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
231	2019	3	1638.94	638.994	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
232	2019	4	1639.39	639.246	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
233	2019	5	1639.82	639.564	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
234	2019	6	1640.22	639.957	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
235	2019	7	1640.61	640.436	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
236	2019	8	1640.98	641.010	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
237	2019	9	1641.32	641.644	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
238	2019	10	1641.64	642.334	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
239	2019	11	1641.95	643.063	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
240	2019	12	1642.25	643.818	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
241	2020	1	1642.54	644.594	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
242	2020	2	1642.82	645.345	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
243	2020	3	1643.09	646.071	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
244	2020	4	1643.36	646.778	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
245	2020	5	1643.64	647.434	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
246	2020	6	1643.91	648.023	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
247	2020	7	1644.19	648.536	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
248	2020	8	1644.48	648.974	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
249	2020	9	1644.77	649.335	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
250	2020	10	1645.07	649.635	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
251	2020	11	1645.37	649.893	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
252	2020	12	1645.67	650.112	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
253	2021	1	1645.98	650.312	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
254	2021	2	1646.28	650.489	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
255	2021	3	1646.58	650.669	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
256	2021	4	1646.89	650.863	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
257	2021	5	1647.21	651.079	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
258	2021	6	1647.52	651.331	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0

Obs	YEAR	MONTH	Nmi	hhmi	d01	d02	d03	d04	d05	d06	d07	d08	d09	d10	d11	d05	d05	d06	d07	d08	d09	d10	d11	d12	d13	d16	jul16	apr20
259	2021	7	1647.84	651.627	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
260	2021	8	1648.16	651.981	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
261	2021	9	1648.47	652.368	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
262	2021	10	1648.79	652.793	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0
263	2021	11	1649.10	653.252	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0
264	2021	12	1649.41	653.733	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
265	2022	1	1649.73	654.244	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
266	2022	2	1650.03	654.739	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
267	2022	3	1650.33	655.244	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
268	2022	4	1650.63	655.767	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
269	2022	5	1650.94	656.284	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
270	2022	6	1651.24	656.791	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
271	2022	7	1651.54	657.278	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
272	2022	8	1651.85	657.758	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
273	2022	9	1652.14	658.209	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
274	2022	10	1652.43	658.653	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0
275	2022	11	1652.73	659.078	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0
276	2022	12	1653.01	659.496	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
277	2023	1	1653.30	659.912	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
278	2023	2	1653.57	660.305	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
279	2023	3	1653.84	660.693	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
280	2023	4	1654.12	661.098	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
281	2023	5	1654.40	661.502	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
282	2023	6	1654.67	661.908	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
283	2023	7	1654.94	662.322	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
284	2023	8	1655.21	662.753	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
285	2023	9	1655.46	663.182	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
286	2023	10	1655.72	663.617	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0
287	2023	11	1655.98	664.058	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0
288	2023	12	1656.23	664.500	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
289	2024	1	1656.48	664.952	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
290	2024	2	1656.72	665.392	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
291	2024	3	1656.95	665.836	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
292	2024	4	1657.19	666.283	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
293	2024	5	1657.42	666.733	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
294	2024	6	1657.65	667.179	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
295	2024	7	1657.87	667.624	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
296	2024	8	1658.09	668.072	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
297	2024	9	1658.31	668.511	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
298	2024	10	1658.52	668.949	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0
299	2024	11	1658.73	669.381	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0
300	2024	12	1658.93	669.812	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
301	2025	1	1659.14	670.249	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0

Obs	YEAR	MONTH	N_mi	hh_mi	dd1	dd2	dd3	dd4	dd5	dd6	dd7	dd8	dd9	dd10	dd11	dmar05	dapr05	dfeb00	dmar00	dapr01	dfeb01	dmar01	dapr01	doct17	dnov17	doct73	dnov73	ddec73	djul16	dapr20
302	2025	2	1659.33	670.659	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
303	2025	3	1659.52	671.073	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
304	2025	4	1659.72	671.495	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
305	2025	5	1659.92	671.915	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
306	2025	6	1660.11	672.334	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
307	2025	7	1660.31	672.753	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
308	2025	8	1660.50	673.177	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
309	2025	9	1660.70	673.593	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
310	2025	10	1660.89	674.004	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
311	2025	11	1661.08	674.414	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
312	2025	12	1661.28	674.822	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
313	2026	1	1661.47	675.233	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
314	2026	2	1661.65	675.620	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
315	2026	3	1661.84	676.003	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
316	2026	4	1662.03	676.394	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
317	2026	5	1662.22	676.781	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
318	2026	6	1662.41	677.166	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
319	2026	7	1662.60	677.543	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
320	2026	8	1662.78	677.918	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
321	2026	9	1662.97	678.290	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
322	2026	10	1663.15	678.653	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
323	2026	11	1663.34	679.011	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
324	2026	12	1663.52	679.367	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
325	2027	1	1663.71	679.723	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
326	2027	2	1663.88	680.056	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
327	2027	3	1664.05	680.389	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
328	2027	4	1664.23	680.732	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
329	2027	5	1664.41	681.071	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
330	2027	6	1664.58	681.409	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
331	2027	7	1664.76	681.742	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
332	2027	8	1664.93	682.083	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
333	2027	9	1665.10	682.417	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
334	2027	10	1665.28	682.750	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
335	2027	11	1665.45	683.077	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
336	2027	12	1665.61	683.405	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
337	2028	1	1665.78	683.739	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
338	2028	2	1665.95	684.057	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
339	2028	3	1666.11	684.378	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
340	2028	4	1666.28	684.705	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
341	2028	5	1666.44	685.026	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
342	2028	6	1666.61	685.351	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
343	2028	7	1666.77	685.675	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
344	2028	8	1666.94	686.001	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0

Obs	YEAR	MONTH	Nmi	hhmi	dd1	dd2	dd3	dd4	dd5	dd6	dd7	dd8	dd9	dd10	dd11	ddmar05	ddapr05	ddfeb06	ddmar06	ddapr06	ddfeb07	ddmar07	ddapr07	ddoct07	ddnov07	ddoct13	ddnov13	ddec16	ajul16	apr20
345	2028	9	1667.10	686.321	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
346	2028	10	1667.26	686.644	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
347	2028	11	1667.42	686.965	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
348	2028	12	1667.58	687.283	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
349	2029	1	1667.74	687.607	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
350	2029	2	1667.89	687.917	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
351	2029	3	1668.04	688.225	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
352	2029	4	1668.20	688.540	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
353	2029	5	1668.34	688.858	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
354	2029	6	1668.50	689.175	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
355	2029	7	1668.64	689.490	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
356	2029	8	1668.79	689.811	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
357	2029	9	1668.93	690.126	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
358	2029	10	1669.07	690.438	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
359	2029	11	1669.21	690.752	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
360	2029	12	1669.35	691.064	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
361	2030	1	1669.49	691.380	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
362	2030	2	1669.62	691.681	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
363	2030	3	1669.76	691.977	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
364	2030	4	1669.90	692.287	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
365	2030	5	1670.04	692.593	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
366	2030	6	1670.18	692.896	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
367	2030	7	1670.32	693.200	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
368	2030	8	1670.46	693.508	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
369	2030	9	1670.61	693.806	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
370	2030	10	1670.75	694.105	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
371	2030	11	1670.89	694.405	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
372	2030	12	1671.04	694.698	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
373	2031	1	1671.18	694.998	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
374	2031	2	1671.31	695.280	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
375	2031	3	1671.45	695.562	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
376	2031	4	1671.59	695.848	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
377	2031	5	1671.72	696.132	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
378	2031	6	1671.85	696.415	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
379	2031	7	1671.98	696.698	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
380	2031	8	1672.10	696.982	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
381	2031	9	1672.22	697.259	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
382	2031	10	1672.34	697.537	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
383	2031	11	1672.46	697.807	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
384	2031	12	1672.57	698.083	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
385	2032	1	1672.68	698.361	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
386	2032	2	1672.79	698.627	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
387	2032	3	1672.89	698.892	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0

Obs	YEAR	MONTH	N_im	hh_im	dd1	dd2	dd3	dd4	dd5	dd6	dd7	dd8	dd9	dd10	dd11	ddr15	ddr05	ddfb0	ddmr1	ddar1	ddpr1	ddmr1	ddar1	ddor1	ddnt7	ddco7	ddct3	ddov3	ddnt6	ddde1	japr6	apray20
388	2032	4	1673.00	699.167	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
389	2032	5	1673.11	699.438	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
390	2032	6	1673.21	699.711	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
391	2032	7	1673.31	699.986	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
392	2032	8	1673.41	700.261	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
393	2032	9	1673.52	700.534	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
394	2032	10	1673.62	700.808	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
395	2032	11	1673.72	701.081	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
396	2032	12	1673.82	701.351	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
397	2033	1	1673.93	701.627	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
398	2033	2	1674.02	701.883	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
399	2033	3	1674.12	702.136	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
400	2033	4	1674.22	702.396	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
401	2033	5	1674.31	702.649	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
402	2033	6	1674.41	702.899	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
403	2033	7	1674.50	703.140	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
404	2033	8	1674.59	703.381	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
405	2033	9	1674.68	703.615	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
406	2033	10	1674.76	703.842	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
407	2033	11	1674.85	704.068	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
408	2033	12	1674.93	704.288	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
409	2034	1	1675.01	704.512	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
410	2034	2	1675.09	704.724	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
411	2034	3	1675.16	704.933	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
412	2034	4	1675.24	705.150	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
413	2034	5	1675.31	705.366	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
414	2034	6	1675.38	705.586	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
415	2034	7	1675.45	705.807	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
416	2034	8	1675.52	706.035	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
417	2034	9	1675.58	706.260	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
418	2034	10	1675.64	706.487	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
419	2034	11	1675.71	706.716	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
420	2034	12	1675.76	706.944	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
421	2035	1	1675.82	707.184	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
422	2035	2	1675.87	707.412	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
423	2035	3	1675.92	707.638	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
424	2035	4	1675.97	707.876	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
425	2035	5	1676.02	708.112	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
426	2035	6	1676.07	708.350	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
427	2035	7	1676.11	708.590	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
428	2035	8	1676.15	708.834	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
429	2035	9	1676.19	709.079	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
430	2035	10	1676.23	709.315	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0

Obs	YEAR	MONTH	N_mi	hh_mi	dd1	dd2	dd3	dd4	dd5	dd6	dd7	dd8	dd9	dd10	dd11	dmar05	dapr05	dfeb00	dmar00	dapr01	dfeb01	dmar01	dapr01	doct17	dnov17	doct73	dnov73	ddec16	djul16	apr20
431	2035	11	1676.26	709.556	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0
432	2035	12	1676.30	709.793	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
433	2036	1	1676.33	710.038	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
434	2036	2	1676.36	710.269	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
435	2036	3	1676.40	710.502	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
436	2036	4	1676.42	710.732	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
437	2036	5	1676.46	710.959	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
438	2036	6	1676.49	711.185	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
439	2036	7	1676.52	711.407	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
440	2036	8	1676.55	711.632	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
441	2036	9	1676.58	711.844	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
442	2036	10	1676.61	712.056	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
443	2036	11	1676.64	712.265	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0
444	2036	12	1676.67	712.470	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
445	2037	1	1676.69	712.677	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
446	2037	2	1676.72	712.868	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
447	2037	3	1676.74	713.058	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
448	2037	4	1676.77	713.254	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
449	2037	5	1676.79	713.445	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
450	2037	6	1676.81	713.634	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
451	2037	7	1676.83	713.823	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
452	2037	8	1676.84	714.013	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
453	2037	9	1676.85	714.198	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
454	2037	10	1676.87	714.379	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
455	2037	11	1676.88	714.563	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0
456	2037	12	1676.89	714.740	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
457	2038	1	1676.90	714.925	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
458	2038	2	1676.90	715.094	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
459	2038	3	1676.90	715.265	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
460	2038	4	1676.91	715.439	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
461	2038	5	1676.91	715.611	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
462	2038	6	1676.91	715.782	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
463	2038	7	1676.91	715.955	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
464	2038	8	1676.91	716.128	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
465	2038	9	1676.91	716.297	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
466	2038	10	1676.91	716.467	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
467	2038	11	1676.91	716.637	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0
468	2038	12	1676.90	716.804	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
469	2039	1	1676.90	716.976	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
470	2039	2	1676.89	717.139	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
471	2039	3	1676.88	717.303	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
472	2039	4	1676.87	717.473	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
473	2039	5	1676.86	717.641	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0

Obs	YEAR	MONTH	N_im	hh_im	dd1	dd2	dd3	dd4	dd5	dd6	dd7	dd8	dd9	dd10	dd11	dmar05	dapr05	dfeb00	dmar00	dapr01	dfeb01	dmar01	dapr01	doct17	dnov17	doct73	dnov73	ded16	djul16	apr20
474	2039	6	1676.85	717.814	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
475	2039	7	1676.84	717.982	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
476	2039	8	1676.83	718.158	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
477	2039	9	1676.82	718.332	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
478	2039	10	1676.80	718.506	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
479	2039	11	1676.78	718.680	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
480	2039	12	1676.77	718.852	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
481	2040	1	1676.75	719.025	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
482	2040	2	1676.73	719.192	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
483	2040	3	1676.71	719.360	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
484	2040	4	1676.69	719.526	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
485	2040	5	1676.67	719.693	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
486	2040	6	1676.65	719.852	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
487	2040	7	1676.63	720.011	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
488	2040	8	1676.61	720.170	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
489	2040	9	1676.59	720.322	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
490	2040	10	1676.56	720.473	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
491	2040	11	1676.54	720.618	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
492	2040	12	1676.52	720.764	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
493	2041	1	1676.49	720.912	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
494	2041	2	1676.47	721.052	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
495	2041	3	1676.44	721.189	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
496	2041	4	1676.42	721.332	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
497	2041	5	1676.39	721.472	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
498	2041	6	1676.37	721.615	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
499	2041	7	1676.34	721.756	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
500	2041	8	1676.31	721.899	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
501	2041	9	1676.29	722.044	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
502	2041	10	1676.26	722.187	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
503	2041	11	1676.23	722.328	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
504	2041	12	1676.20	722.470	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
505	2042	1	1676.17	722.617	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
506	2042	2	1676.13	722.754	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
507	2042	3	1676.10	722.892	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
508	2042	4	1676.06	723.030	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
509	2042	5	1676.03	723.167	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
510	2042	6	1675.98	723.303	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
511	2042	7	1675.94	723.440	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
512	2042	8	1675.90	723.580	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
513	2042	9	1675.85	723.708	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
514	2042	10	1675.80	723.845	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
515	2042	11	1675.75	723.970	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
516	2042	12	1675.71	724.101	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0

Obs	YEAR	MONTH	N_imi	hh_imi	dd1	dd2	dd3	dd4	dd5	dd6	dd7	dd8	dd9	dd10	dd11	ddr05	ddr05	dfeb01	dmar01	dapr01	dmay01	djun01	djul01	daug01	dsep01	doct01	dnov01	ddec01	dapr16	dmay20
517	2043	1	1675.65	724.231	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
518	2043	2	1675.61	724.350	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
519	2043	3	1675.56	724.471	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
520	2043	4	1675.51	724.599	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
521	2043	5	1675.47	724.721	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
522	2043	6	1675.42	724.843	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
523	2043	7	1675.38	724.965	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
524	2043	8	1675.34	725.086	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
525	2043	9	1675.30	725.208	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
526	2043	10	1675.26	725.328	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
527	2043	11	1675.22	725.451	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0
528	2043	12	1675.19	725.573	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
529	2044	1	1675.15	725.699	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
530	2044	2	1675.12	725.821	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
531	2044	3	1675.08	725.947	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
532	2044	4	1675.05	726.076	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
533	2044	5	1675.01	726.208	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
534	2044	6	1674.97	726.345	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
535	2044	7	1674.93	726.485	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
536	2044	8	1674.88	726.630	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
537	2044	9	1674.84	726.778	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
538	2044	10	1674.79	726.927	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
539	2044	11	1674.75	727.076	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0
540	2044	12	1674.70	727.229	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
541	2045	1	1674.65	727.388	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
542	2045	2	1674.61	727.539	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
543	2045	3	1674.57	727.690	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
544	2045	4	1674.53	727.845	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
545	2045	5	1674.49	728.002	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
546	2045	6	1674.45	728.161	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
547	2045	7	1674.41	728.313	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
548	2045	8	1674.38	728.469	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
549	2045	9	1674.35	728.622	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
550	2045	10	1674.32	728.772	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
551	2045	11	1674.29	728.922	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
552	2045	12	1674.26	729.069	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
553	2046	1	1674.23	729.220	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
554	2046	2	1674.20	729.360	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
555	2046	3	1674.16	729.499	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
556	2046	4	1674.12	729.641	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
557	2046	5	1674.08	729.783	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
558	2046	6	1674.03	729.920	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
559	2046	7	1673.97	730.058	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0

Obs	YEAR	MONTH	N_imi	hh_imi	dd1	dd2	dd3	dd4	dd5	dd6	dd7	dd8	dd9	dd10	dd11	dmar05	dapr05	dfeb00	dmar00	dapr00	dfeb11	dmar11	dapr11	dmay11	doct17	dnov07	doct13	dnov13	ddec16	djul16	apr20	may20
560	2046	8	1673.91	730.196	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
561	2046	9	1673.85	730.330	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
562	2046	10	1673.78	730.465	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
563	2046	11	1673.70	730.598	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
564	2046	12	1673.63	730.730	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
565	2047	1	1673.55	730.864	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
566	2047	2	1673.48	730.988	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
567	2047	3	1673.40	731.116	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
568	2047	4	1673.32	731.245	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
569	2047	5	1673.25	731.376	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
570	2047	6	1673.18	731.507	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
571	2047	7	1673.12	731.640	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
572	2047	8	1673.05	731.773	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
573	2047	9	1672.99	731.905	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
574	2047	10	1672.94	732.039	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
575	2047	11	1672.89	732.173	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
576	2047	12	1672.84	732.307	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
577	2048	1	1672.79	732.446	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
578	2048	2	1672.75	732.577	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
579	2048	3	1672.71	732.713	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
580	2048	4	1672.67	732.847	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
581	2048	5	1672.62	732.982	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
582	2048	6	1672.59	733.119	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
583	2048	7	1672.55	733.255	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
584	2048	8	1672.51	733.394	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
585	2048	9	1672.46	733.531	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
586	2048	10	1672.42	733.671	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
587	2048	11	1672.39	733.806	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
588	2048	12	1672.35	733.945	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
589	2049	1	1672.31	734.084	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
590	2049	2	1672.27	734.220	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
591	2049	3	1672.23	734.355	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
592	2049	4	1672.19	734.493	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
593	2049	5	1672.16	734.632	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
594	2049	6	1672.12	734.775	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
595	2049	7	1672.09	734.915	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
596	2049	8	1672.05	735.058	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
597	2049	9	1672.02	735.199	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
598	2049	10	1671.99	735.343	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
599	2049	11	1671.96	735.485	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
600	2049	12	1671.94	735.626	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
601	2050	1	1671.91	735.771	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
602	2050	2	1671.89	735.913	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0

Obs	YEAR	MONTH	N_mi	hh_mi	dd1	dd2	dd3	dd4	dd5	dd6	dd7	dd8	dd9	dd10	dd11	dmar05	dapr05	dfeb06	dmar06	dapr06	dfeb07	dmar07	dapr07	doct07	dnov07	doct13	dnov13	ddec16	jul16	apr20
603	2050	3	1671.87	736.056	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
604	2050	4	1671.85	736.199	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
605	2050	5	1671.83	736.345	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
606	2050	6	1671.82	736.492	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
607	2050	7	1671.80	736.639	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
608	2050	8	1671.80	736.791	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
609	2050	9	1671.79	736.937	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
610	2050	10	1671.79	737.088	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
611	2050	11	1671.78	737.238	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
612	2050	12	1671.78	737.390	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
613	2051	1	1671.54	737.470	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
614	2051	2	1671.53	737.618	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
615	2051	3	1671.52	737.769	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
616	2051	4	1671.52	737.917	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
617	2051	5	1671.52	738.070	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
618	2051	6	1671.52	738.221	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
619	2051	7	1671.53	738.375	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
620	2051	8	1671.56	738.536	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
621	2051	9	1671.57	738.687	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
622	2051	10	1671.60	738.845	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
623	2051	11	1671.61	739.003	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
624	2051	12	1671.64	739.166	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
625	2052	1	1671.18	739.181	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
626	2052	2	1671.18	739.335	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
627	2052	3	1671.19	739.494	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
628	2052	4	1671.21	739.647	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
629	2052	5	1671.22	739.807	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
630	2052	6	1671.25	739.962	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
631	2052	7	1671.28	740.123	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
632	2052	8	1671.33	740.293	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
633	2052	9	1671.36	740.449	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
634	2052	10	1671.42	740.614	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
635	2052	11	1671.46	740.780	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
636	2052	12	1671.52	740.954	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
637	2053	1	1670.83	740.904	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
638	2053	2	1670.85	741.064	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
639	2053	3	1670.87	741.231	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
640	2053	4	1670.92	741.389	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
641	2053	5	1670.94	741.556	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
642	2053	6	1670.99	741.715	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
643	2053	7	1671.04	741.883	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
644	2053	8	1671.13	742.063	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
645	2053	9	1671.17	742.224	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0

Obs	YEAR	MONTH	Nmi	hhmi	dd1	dd2	dd3	dd4	dd5	dd6	dd7	dd8	dd9	dd10	dd11	ddmar05	ddapr05	ddfeb06	ddmar06	ddapr06	ddfeb07	ddmar07	ddaug10	ddnov10	ddoct11	ddnov11	ddoct13	ddec13	ddec16	julmay20
646	2053	10	1671.26	742.396	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
647	2053	11	1671.32	742.570	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
648	2053	12	1671.41	742.755	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
649	2054	1	1670.50	742.639	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
650	2054	2	1670.54	742.805	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
651	2054	3	1670.57	742.980	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
652	2054	4	1670.64	743.143	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
653	2054	5	1670.67	743.318	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
654	2054	6	1670.74	743.481	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
655	2054	7	1670.81	743.656	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
656	2054	8	1670.93	743.844	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
657	2054	9	1671.00	744.010	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
658	2054	10	1671.12	744.189	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
659	2054	11	1671.20	744.371	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
660	2054	12	1671.32	744.568	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
661	2055	1	1670.19	744.386	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
662	2055	2	1670.24	744.558	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
663	2055	3	1670.29	744.742	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
664	2055	4	1670.37	744.910	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
665	2055	5	1670.42	745.091	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
666	2055	6	1670.51	745.258	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
667	2055	7	1670.60	745.440	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
668	2055	8	1670.75	745.638	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
669	2055	9	1670.84	745.809	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
670	2055	10	1670.99	745.995	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
671	2055	11	1671.09	746.185	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
672	2055	12	1671.24	746.393	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
673	2056	1	1669.89	746.145	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
674	2056	2	1669.96	746.323	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
675	2056	3	1670.02	746.515	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
676	2056	4	1670.12	746.688	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
677	2056	5	1670.18	746.877	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
678	2056	6	1670.30	747.048	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
679	2056	7	1670.41	747.237	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
680	2056	8	1670.59	747.444	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
681	2056	9	1670.69	747.620	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
682	2056	10	1670.88	747.814	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
683	2056	11	1671.00	748.012	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
684	2056	12	1671.18	748.231	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
685	2057	1	1669.60	747.916	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
686	2057	2	1669.69	748.101	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
687	2057	3	1669.77	748.301	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
688	2057	4	1669.89	748.479	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0

Indiana Michigan Power Company - Indiana
Residential Customers
Exogenous Variables

Obs	YEAR	MONTH	N_mi	hhmi	dd1	dd2	dd3	dd4	dd5	dd6	dd7	dd8	dd9	dd10	dd11	dd15	dd50	dd00	dd01	dd11	dd10	dd17	dd73	dd33	dd36	dd6n	ajuly	aprmay20
689	2057	5	1669.96	748.675	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
690	2057	6	1670.10	748.851	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
691	2057	7	1670.23	749.047	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
692	2057	8	1670.45	749.263	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
693	2057	9	1670.57	749.444	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
694	2057	10	1670.78	749.644	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0
695	2057	11	1670.92	749.850	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0
696	2057	12	1671.14	750.081	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0

Indiana Michigan Power Company - Indiana
Residential Customers
Model Estimation

The SYSLIN Procedure
Ordinary Least Squares Estimation

Model	cr_imi
Dependent Variable	cr_imi
Label	Residential Customers

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	28	7.3515E9	2.6255E8	1116.51	<.0001
Error	223	52439566	235155.0		
Corrected Total	251	7.4039E9			

Root MSE	484.92783	R-Square	0.99292
Dependent Mean	399402.413	Adj R-Sq	0.99203
Coeff Var	0.12141		

Parameter Estimates

Variable	DF	Parameter Estimate	Standard Error	t Value	Pr > |t|	Variable Label
Intercept	1	10236.00	3841.907	2.66	0.0083	Intercept
cr1	1	0.950764	0.017282	55.01	<.0001	Residential Customers, Lagged
hhnindx	1	10015.62	5739.014	1.75	0.0823	Service Area Population and Households Index
d1	1	-5.63350	152.3197	-0.04	0.9705	Binary Variable - January
d2	1	-823.574	155.4568	-5.30	<.0001	Binary Variable - February
d3	1	-590.173	157.6778	-3.74	0.0002	Binary Variable - March
d4	1	-1607.81	158.8328	-10.12	<.0001	Binary Variable - April
d5	1	-1305.00	153.0169	-8.53	<.0001	Binary Variable - May
d6	1	-952.567	152.6070	-6.24	<.0001	Binary Variable - June
d7	1	-869.709	153.2659	-5.67	<.0001	Binary Variable - July
d8	1	-517.747	153.3076	-3.38	0.0009	Binary Varaible - August
d9	1	-633.527	152.5430	-4.15	<.0001	Binary Variable - September

Indiana Michigan Power Company - Indiana
Residential Customers
Model Estimation

The SYSLIN Procedure
Ordinary Least Squares Estimation

Parameter Estimates

Variable	DF	Parameter Estimate	Standard Error	t Value	Pr > |t|	Variable Label
d10	1	-667.606	156.1162	-4.28	<.0001	Binary Variable - October
d11	1	-269.064	155.8929	-1.73	0.0857	Binary Variable - November
oct07	1	-5851.31	498.3622	-11.74	<.0001	Binary Variable - October 2007
nov07	1	5430.493	504.9519	10.75	<.0001	Binary Variable - November 2007
dmar05	1	2916.565	501.4465	5.82	<.0001	Binary Variable - March 2005
dapr05	1	-1712.50	508.7529	-3.37	0.0009	Binary Variable - April 2005
dfeb10	1	-7709.78	498.8928	-15.45	<.0001	Binary Variable - February 2010
dmar10	1	16141.81	522.3996	30.90	<.0001	Binary Variable - March 2010
dapr10	1	-8325.08	516.6583	-16.11	<.0001	Binary Variable - April 2010
dfeb11	1	-10146.5	498.7014	-20.35	<.0001	Binary Variable - February 2011
dmar11	1	17441.10	531.7008	32.80	<.0001	Binary Variable - March 2011
dapr11	1	-9048.25	515.8580	-17.54	<.0001	Binary Variable - April 2011
oct13	1	2575.212	499.7103	5.15	<.0001	Binary Variable - October 2013
nov13	1	-2346.30	500.7148	-4.69	<.0001	Binary Variable - November 2013
dec16	1	829.7592	502.9309	1.65	0.1004	Binary Variable - December 2016
jul16on	1	292.2299	126.2317	2.32	0.0215	Binary Variable - July 2016 On
aprmay20	1	1765.096	359.4820	4.91	<.0001	Binary Variable - April and May 2020

Durbin-Watson	2.757968
Number of Observations	252
First-Order Autocorrelation	-0.37941

Indiana Michigan Power Company - Indiana
Residential Customers
Model Residuals

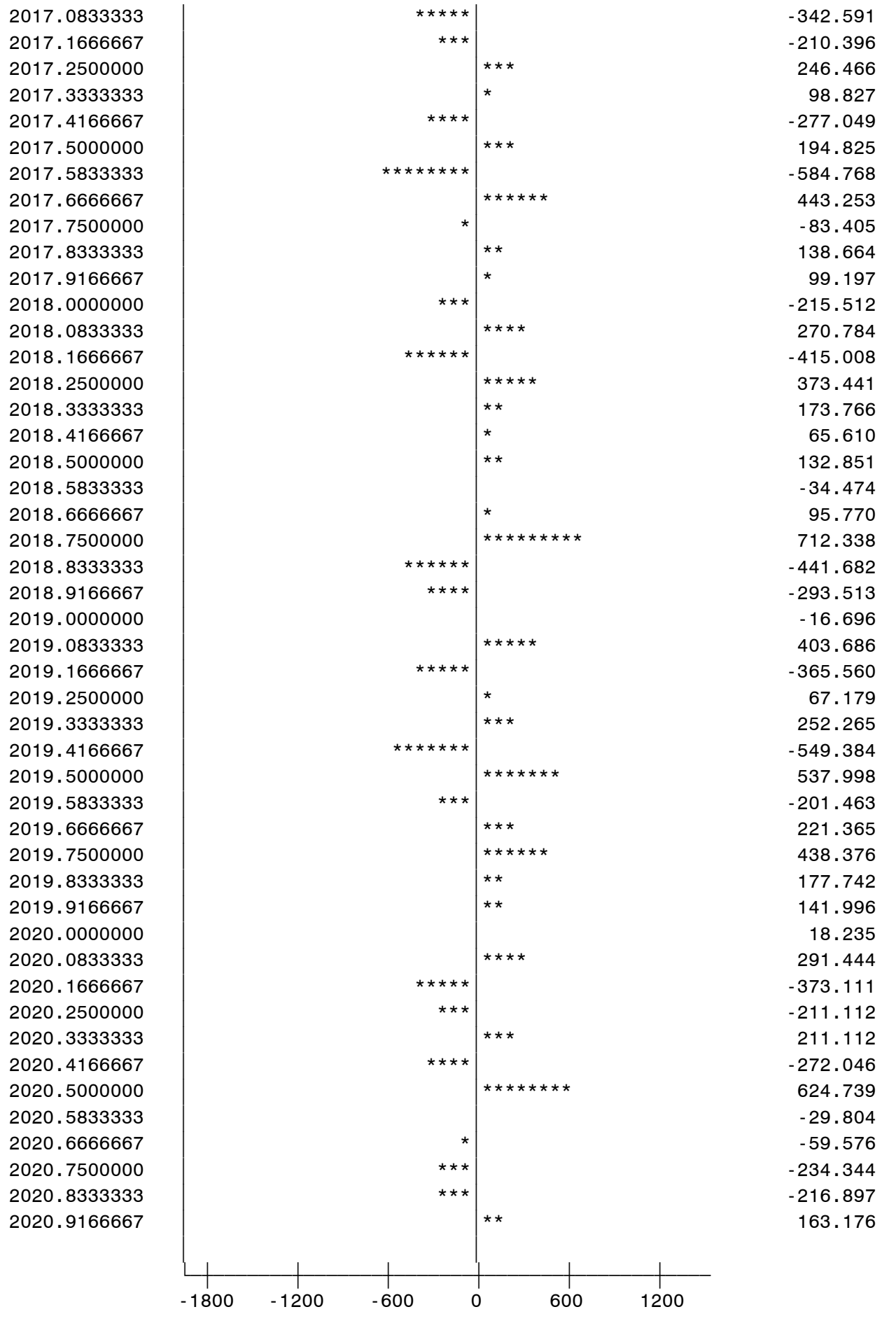
time		Residual Values Sum
2000.0000000	**	-134.893
2000.0833333	****	272.118
2000.1666667	**	165.746
2000.2500000	*******	-514.033
2000.3333333		-19.866
2000.4166667	****	262.956
2000.5000000	******	-456.368
2000.5833333	**	113.231
2000.6666667	**	143.895
2000.7500000	***	261.427
2000.8333333		-36.544
2000.9166667	**********	-822.175
2001.0000000	***	228.367
2001.0833333	********	-629.920
2001.1666667	***	188.518
2001.2500000	**	-123.363
2001.3333333	***	207.041
2001.4166667	*******	-504.678
2001.5000000	****	-308.764
2001.5833333	*******	535.327
2001.6666667		-19.374
2001.7500000	******	-474.175
2001.8333333	*******	-552.368
2001.9166667	*	-61.912
2002.0000000	**	143.320
2002.0833333	*	-53.475
2002.1666667	**	-158.393
2002.2500000	*********	646.898
2002.3333333	*****	340.538
2002.4166667	**	-123.049
2002.5000000	***	204.021
2002.5833333		-21.998
2002.6666667	****	320.757
2002.7500000	*****	-398.219
2002.8333333	***	-236.509
2002.9166667	******	458.677
2003.0000000	***	200.211
2003.0833333	*********	711.516
2003.1666667	******************	-1414.713
2003.2500000	*********	685.742
2003.3333333	******	-450.403
2003.4166667	********	595.580
2003.5000000		-4.171
2003.5833333	***	-247.133
2003.6666667	*	54.445
2003.7500000	*****	393.583
2003.8333333	*****	338.708
2003.9166667	******	450.963
2004.0000000	******	418.617

2004.0833333		******	479.081
2004.1666667	*****		-371.865
2004.2500000		**	163.968
2004.3333333		**	158.103
2004.4166667		**	132.626
2004.5000000		********	631.372
2004.5833333		****	263.328
2004.6666667		*****	408.466
2004.7500000		*****	364.844
2004.8333333	*		-45.681
2004.9166667		***	206.521
2005.0000000	*		-45.035
2005.0833333	**********		-951.458
2005.1666667			0.000
2005.2500000			0.000
2005.3333333			-3.188
2005.4166667		*	88.451
2005.5000000	********		-666.796
2005.5833333		**********	1520.259
2005.6666667	**********		-851.816
2005.7500000	*		-65.228
2005.8333333		*******	502.881
2005.9166667	***		-217.771
2006.0000000			-29.427
2006.0833333	****		-332.930
2006.1666667		******	445.679
2006.2500000	****		-330.362
2006.3333333		*******	541.667
2006.4166667			-21.899
2006.5000000	***		-213.120
2006.5833333		*****	337.879
2006.6666667	******		-479.138
2006.7500000		**********	712.814
2006.8333333	**		-172.929
2006.9166667	*		-97.152
2007.0000000	******		-433.821
2007.0833333			33.441
2007.1666667		*********	650.512
2007.2500000		**	166.793
2007.3333333	****		-275.135
2007.4166667		********	588.232
2007.5000000	********		-594.002
2007.5833333		******	466.484
2007.6666667	*******		-496.116
2007.7500000			0.000
2007.8333333			0.000
2007.9166667	**		-136.142
2008.0000000	*		-46.443
2008.0833333		***	241.465
2008.1666667	***		-253.436
2008.2500000	**		-137.123
2008.3333333	**		-166.029

2008.4166667		****	-323.366
2008.5000000		***	233.455
2008.5833333		*	74.064
2008.6666667	********		-634.478
2008.7500000	*		-79.056
2008.8333333	*****		-401.296
2008.9166667	****		-269.375
2009.0000000		**	135.993
2009.0833333	**********		-712.733
2009.1666667		**********	1020.006
2009.2500000	************************		-1845.337
2009.3333333		***	223.750
2009.4166667	*		-71.531
2009.5000000			-37.041
2009.5833333	**		-123.620
2009.6666667	**		-148.667
2009.7500000	**********		-914.131
2009.8333333		******	447.944
2009.9166667		***	261.629
2010.0000000	****		-314.500
2010.0833333			0.000
2010.1666667			0.000
2010.2500000			0.000
2010.3333333	*******		-520.060
2010.4166667		*****	388.336
2010.5000000		*	51.402
2010.5833333	*********		-712.314
2010.6666667	***		-220.030
2010.7500000		*	41.752
2010.8333333		*	41.931
2010.9166667	********		-564.437
2011.0000000		**********	1431.950
2011.0833333			0.000
2011.1666667			0.000
2011.2500000			0.000
2011.3333333		**	157.121
2011.4166667	*******		-512.706
2011.5000000	****		-278.472
2011.5833333		*****	373.082
2011.6666667	*****		-373.517
2011.7500000	*****		-371.001
2011.8333333	*		-76.366
2011.9166667	***		-212.867
2012.0000000	***		-213.398
2012.0833333		**	185.420
2012.1666667	***		-212.504
2012.2500000		******	415.822
2012.3333333		*****	377.021
2012.4166667	******		-441.165
2012.5000000		**	183.807
2012.5833333	*******		-513.839
2012.6666667		*	100.103

2012.7500000		***	235.774
2012.8333333	**		-148.385
2012.9166667	***		-257.699
2013.0000000		**********	798.450
2013.0833333	********		-575.373
2013.1666667		*****	373.746
2013.2500000	********		-627.147
2013.3333333		********	593.977
2013.4166667	****		-264.755
2013.5000000		******	467.106
2013.5833333	*******		-507.834
2013.6666667		******	474.355
2013.7500000			0.000
2013.8333333			0.000
2013.9166667		********	591.567
2014.0000000	******		-467.157
2014.0833333	**********		-1249.625
2014.1666667		**********	1243.368
2014.2500000		******	428.160
2014.3333333	**********		-857.135
2014.4166667	***		-189.306
2014.5000000	**		-166.234
2014.5833333		**********	745.738
2014.6666667	*		-65.007
2014.7500000	******		-461.749
2014.8333333		**********	906.364
2014.9166667		****	285.640
2015.0000000	**********		-857.331
2015.0833333		**********	1181.386
2015.1666667	*		-44.771
2015.2500000	*		-55.347
2015.3333333	**********		-1031.180
2015.4166667		**********	1335.386
2015.5000000	*****		-406.896
2015.5833333	**********		-825.048
2015.6666667		**********	717.303
2015.7500000		*	93.423
2015.8333333	**		-171.701
2015.9166667		****	273.678
2016.0000000	*		-49.919
2016.0833333		**********	777.766
2016.1666667	****		-267.817
2016.2500000		*********	649.355
2016.3333333			-12.192
2016.4166667		*	93.758
2016.5000000	**		-129.714
2016.5833333	********		-627.095
2016.6666667		*****	368.008
2016.7500000	**		-173.023
2016.8333333	*		-53.876
2016.9166667			0.000
2017.0000000	*******		-551.013

Indiana Michigan Power Company - Indiana
Residential Customers
Model Residuals



Indiana Michigan Power Company - Indiana
Residential Customers
Model Simulation

The SIMLIN Procedure

Inverse Coefficient Matrix for Endogenous Variables

Variable	cr_imi
cr_imi	1.0000

Reduced Form for Lagged Endogenous Variables

Variable	cr1
cr_imi	0.9508

Reduced Form for Exogenous Variables

Variable	hhnindx	d1	d2	d3	d4	d5	d6
cr_imi	10016	-5.6335	-823.5745	-590.1727	-1608	-1305	-952.5665

Reduced Form for Exogenous Variables

Variable	d7	d8	d9	d10	d11	oct07	nov07
cr_imi	-869.7089	-517.7469	-633.5269	-667.6064	-269.0635	-5851	5430

Reduced Form for Exogenous Variables

Variable	dmar05	dapr05	dfeb10	dmar10	dapr10	dfeb11	dmar11
cr_imi	2917	-1712	-7710	16142	-8325	-10147	17441

Reduced Form for Exogenous Variables

Variable	dapr11	dec16	jul16on	aprmay20	Intercept
cr_imi	-9048	829.7592	292.2299	1765	10236

Indiana Michigan Power Company - Indiana
Residential Customers
Model Simulation

The SIMLIN Procedure

Fit Statistics

Variable	N	Mean Error	Mean Pct Error	Mean Abs Error	Mean Abs Pct Error	RMS Error	RMS Pct Error	Label
cr_imi	252	-20.6929	-0.006426	916.3021	0.22979	1139	0.2861	Residential Customers

Indiana Michigan Power Company - Indiana
Residential Customers
Actual and Forecast

Year	Residential Customers	Growth Rate
2000	389614.08	.
2001	391319.50	0.4
2002	393271.75	0.5
2003	395179.83	0.5
2004	397814.50	0.7
2005	398629.92	0.2
2006	398524.92	0.0
2007	398273.67	-0.1
2008	398226.67	0.0
2009	397095.17	-0.3
2010	397450.25	0.1
2011	397482.25	0.0
2012	398054.92	0.1
2013	399743.58	0.4
2014	400453.25	0.2
2015	401544.25	0.3
2016	402987.50	0.4
2017	404798.83	0.4
2018	406866.42	0.5
2019	408370.92	0.4
2020	411748.50	0.8
2021	410614.14	-0.3
2022	410232.95	-0.1
2023	410441.65	0.1
2024	410796.98	0.1
2025	411207.76	0.1
2026	411628.56	0.1
2027	412041.23	0.1
2028	412435.49	0.1
2029	412809.83	0.1
2030	413162.23	0.1
2031	413495.89	0.1
2032	413806.03	0.1
2033	414088.70	0.1
2034	414341.67	0.1
2035	414561.75	0.1
2036	414750.93	0.0
2037	414911.67	0.0
2038	415042.98	0.0
2039	415145.39	0.0
2040	415223.98	0.0
2041	415281.50	0.0
2042	415320.49	0.0
2043	415339.69	0.0
2044	415346.50	0.0
2045	415350.03	0.0
2046	415355.08	0.0
2047	415347.13	0.0
2048	415329.20	0.0

Indiana Michigan Power Company - Indiana
Residential Customers
Actual and Forecast

Year	Residential Customers	Growth Rate
2049	415317.95	0
2050	415317.88	0
2051	415329.32	0
2052	415348.02	0
2053	415371.68	0
2054	415399.04	0
2055	415429.39	0
2056	415462.38	0
2057	415497.78	0

INDIANA MICHIGAN POWER COMPANY - INDIANA
COMMERCIAL CUSTOMERS
ENDOGENOUS VARIABLES

The MEANS Procedure

Variable	Label	Mean
YEAR	YEAR	2028.50
MONTH	MONTH	6.5000000
cc_imi	Commercial Customers	50723.54

INDIANA MICHIGAN POWER COMPANY - INDIANA
COMMERCIAL CUSTOMERS
ENDOGENOUS VARIABLES

Obs	YEAR	MONTH	cc_imi
1	2000	1	45455
2	2000	2	45385
3	2000	3	45449
4	2000	4	45549
5	2000	5	45583
6	2000	6	45719
7	2000	7	45728
8	2000	8	45828
9	2000	9	45982
10	2000	10	46151
11	2000	11	46221
12	2000	12	46357
13	2001	1	46318
14	2001	2	46320
15	2001	3	46555
16	2001	4	46519
17	2001	5	46485
18	2001	6	46683
19	2001	7	46652
20	2001	8	46794
21	2001	9	46862
22	2001	10	46947
23	2001	11	46906
24	2001	12	46979
25	2002	1	47111
26	2002	2	47021
27	2002	3	46923
28	2002	4	47069
29	2002	5	47232
30	2002	6	47264
31	2002	7	47299
32	2002	8	47343
33	2002	9	47507
34	2002	10	47505
35	2002	11	47601
36	2002	12	47591
37	2003	1	47735
38	2003	2	47711
39	2003	3	47589
40	2003	4	47532
41	2003	5	47737
42	2003	6	47776
43	2003	7	47824
44	2003	8	47956
45	2003	9	47972
46	2003	10	48003
47	2003	11	48090
48	2003	12	48173
49	2004	1	48279
50	2004	2	48092

INDIANA MICHIGAN POWER COMPANY - INDIANA
COMMERCIAL CUSTOMERS
ENDOGENOUS VARIABLES

Obs	YEAR	MONTH	cc_imi
51	2004	3	48185
52	2004	4	48235
53	2004	5	48171
54	2004	6	48245
55	2004	7	48363
56	2004	8	48294
57	2004	9	48378
58	2004	10	48388
59	2004	11	48445
60	2004	12	48672
61	2005	1	48538
62	2005	2	48801
63	2005	3	49271
64	2005	4	49059
65	2005	5	49147
66	2005	6	49229
67	2005	7	49252
68	2005	8	49636
69	2005	9	49500
70	2005	10	49665
71	2005	11	49451
72	2005	12	49754
73	2006	1	50042
74	2006	2	49772
75	2006	3	49876
76	2006	4	49786
77	2006	5	49869
78	2006	6	49904
79	2006	7	49901
80	2006	8	50002
81	2006	9	50011
82	2006	10	50178
83	2006	11	50114
84	2006	12	50231
85	2007	1	50331
86	2007	2	50178
87	2007	3	50496
88	2007	4	50458
89	2007	5	50471
90	2007	6	50607
91	2007	7	50646
92	2007	8	50706
93	2007	9	50633
94	2007	10	50359
95	2007	11	50834
96	2007	12	50795
97	2008	1	51011
98	2008	2	50875
99	2008	3	50878
100	2008	4	50990

INDIANA MICHIGAN POWER COMPANY - INDIANA
COMMERCIAL CUSTOMERS
ENDOGENOUS VARIABLES

Obs	YEAR	MONTH	cc_imi
101	2008	5	50998
102	2008	6	51043
103	2008	7	51128
104	2008	8	51223
105	2008	9	51229
106	2008	10	51268
107	2008	11	51216
108	2008	12	50565
109	2009	1	51751
110	2009	2	51263
111	2009	3	51712
112	2009	4	51334
113	2009	5	51235
114	2009	6	51334
115	2009	7	51383
116	2009	8	51269
117	2009	9	51360
118	2009	10	51518
119	2009	11	51454
120	2009	12	51250
121	2010	1	51470
122	2010	2	50297
123	2010	3	53090
124	2010	4	51556
125	2010	5	51454
126	2010	6	51582
127	2010	7	51609
128	2010	8	51461
129	2010	9	51485
130	2010	10	51653
131	2010	11	51671
132	2010	12	50853
133	2011	1	52113
134	2011	2	50389
135	2011	3	53630
136	2011	4	51641
137	2011	5	51581
138	2011	6	51639
139	2011	7	51408
140	2011	8	51812
141	2011	9	51594
142	2011	10	51627
143	2011	11	51612
144	2011	12	51520
145	2012	1	51820
146	2012	2	51699
147	2012	3	51680
148	2012	4	51727
149	2012	5	51727
150	2012	6	51706

INDIANA MICHIGAN POWER COMPANY - INDIANA
COMMERCIAL CUSTOMERS
ENDOGENOUS VARIABLES

Obs	YEAR	MONTH	cc_imi
151	2012	7	51783
152	2012	8	51727
153	2012	9	51857
154	2012	10	51960
155	2012	11	51861
156	2012	12	51856
157	2013	1	52024
158	2013	2	51828
159	2013	3	51131
160	2013	4	52645
161	2013	5	51912
162	2013	6	51943
163	2013	7	52135
164	2013	8	52210
165	2013	9	52010
166	2013	10	52329
167	2013	11	51975
168	2013	12	52042
169	2014	1	52083
170	2014	2	51782
171	2014	3	51989
172	2014	4	52009
173	2014	5	51964
174	2014	6	51965
175	2014	7	51929
176	2014	8	52185
177	2014	9	52103
178	2014	10	52046
179	2014	11	52198
180	2014	12	52232
181	2015	1	52067
182	2015	2	52256
183	2015	3	52356
184	2015	4	52244
185	2015	5	52098
186	2015	6	52451
187	2015	7	52410
188	2015	8	52323
189	2015	9	52261
190	2015	10	52397
191	2015	11	52347
192	2015	12	52289
193	2016	1	52256
194	2016	2	52639
195	2016	3	52733
196	2016	4	52488
197	2016	5	52510
198	2016	6	52616
199	2016	7	52464
200	2016	8	52687

INDIANA MICHIGAN POWER COMPANY - INDIANA
COMMERCIAL CUSTOMERS
ENDOGENOUS VARIABLES

Obs	YEAR	MONTH	cc_imi
201	2016	9	52589
202	2016	10	52593
203	2016	11	52599
204	2016	12	52722
205	2017	1	52697
206	2017	2	52638
207	2017	3	52956
208	2017	4	52913
209	2017	5	52866
210	2017	6	52863
211	2017	7	52867
212	2017	8	52899
213	2017	9	52923
214	2017	10	52949
215	2017	11	52955
216	2017	12	53032
217	2018	1	53109
218	2018	2	53093
219	2018	3	53187
220	2018	4	53072
221	2018	5	53141
222	2018	6	53104
223	2018	7	53286
224	2018	8	53229
225	2018	9	53577
226	2018	10	53323
227	2018	11	53634
228	2018	12	53335
229	2019	1	53459
230	2019	2	53353
231	2019	3	53377
232	2019	4	53352
233	2019	5	53324
234	2019	6	53227
235	2019	7	53341
236	2019	8	53316
237	2019	9	53445
238	2019	10	53457
239	2019	11	53458
240	2019	12	53410
241	2020	1	53504
242	2020	2	53428
243	2020	3	53530
244	2020	4	53522
245	2020	5	53775
246	2020	6	53546
247	2020	7	53671
248	2020	8	53648
249	2020	9	53685
250	2020	10	53698

INDIANA MICHIGAN POWER COMPANY - INDIANA
COMMERCIAL CUSTOMERS
ENDOGENOUS VARIABLES

Obs	YEAR	MONTH	cc_imi
251	2020	11	53630
252	2020	12	53785
253	2021	1	.
254	2021	2	.
255	2021	3	.
256	2021	4	.
257	2021	5	.
258	2021	6	.
259	2021	7	.
260	2021	8	.
261	2021	9	.
262	2021	10	.
263	2021	11	.
264	2021	12	.
265	2022	1	.
266	2022	2	.
267	2022	3	.
268	2022	4	.
269	2022	5	.
270	2022	6	.
271	2022	7	.
272	2022	8	.
273	2022	9	.
274	2022	10	.
275	2022	11	.
276	2022	12	.
277	2023	1	.
278	2023	2	.
279	2023	3	.
280	2023	4	.
281	2023	5	.
282	2023	6	.
283	2023	7	.
284	2023	8	.
285	2023	9	.
286	2023	10	.
287	2023	11	.
288	2023	12	.
289	2024	1	.
290	2024	2	.
291	2024	3	.
292	2024	4	.
293	2024	5	.
294	2024	6	.
295	2024	7	.
296	2024	8	.
297	2024	9	.
298	2024	10	.
299	2024	11	.
300	2024	12	.

INDIANA MICHIGAN POWER COMPANY - INDIANA
COMMERCIAL CUSTOMERS
ENDOGENOUS VARIABLES

Obs	YEAR	MONTH	cc_imi
301	2025	1	.
302	2025	2	.
303	2025	3	.
304	2025	4	.
305	2025	5	.
306	2025	6	.
307	2025	7	.
308	2025	8	.
309	2025	9	.
310	2025	10	.
311	2025	11	.
312	2025	12	.
313	2026	1	.
314	2026	2	.
315	2026	3	.
316	2026	4	.
317	2026	5	.
318	2026	6	.
319	2026	7	.
320	2026	8	.
321	2026	9	.
322	2026	10	.
323	2026	11	.
324	2026	12	.
325	2027	1	.
326	2027	2	.
327	2027	3	.
328	2027	4	.
329	2027	5	.
330	2027	6	.
331	2027	7	.
332	2027	8	.
333	2027	9	.
334	2027	10	.
335	2027	11	.
336	2027	12	.
337	2028	1	.
338	2028	2	.
339	2028	3	.
340	2028	4	.
341	2028	5	.
342	2028	6	.
343	2028	7	.
344	2028	8	.
345	2028	9	.
346	2028	10	.
347	2028	11	.
348	2028	12	.
349	2029	1	.
350	2029	2	.

INDIANA MICHIGAN POWER COMPANY - INDIANA
COMMERCIAL CUSTOMERS
ENDOGENOUS VARIABLES

Obs	YEAR	MONTH	cc_imi
351	2029	3	.
352	2029	4	.
353	2029	5	.
354	2029	6	.
355	2029	7	.
356	2029	8	.
357	2029	9	.
358	2029	10	.
359	2029	11	.
360	2029	12	.
361	2030	1	.
362	2030	2	.
363	2030	3	.
364	2030	4	.
365	2030	5	.
366	2030	6	.
367	2030	7	.
368	2030	8	.
369	2030	9	.
370	2030	10	.
371	2030	11	.
372	2030	12	.
373	2031	1	.
374	2031	2	.
375	2031	3	.
376	2031	4	.
377	2031	5	.
378	2031	6	.
379	2031	7	.
380	2031	8	.
381	2031	9	.
382	2031	10	.
383	2031	11	.
384	2031	12	.
385	2032	1	.
386	2032	2	.
387	2032	3	.
388	2032	4	.
389	2032	5	.
390	2032	6	.
391	2032	7	.
392	2032	8	.
393	2032	9	.
394	2032	10	.
395	2032	11	.
396	2032	12	.
397	2033	1	.
398	2033	2	.
399	2033	3	.
400	2033	4	.

INDIANA MICHIGAN POWER COMPANY - INDIANA
COMMERCIAL CUSTOMERS
ENDOGENOUS VARIABLES

Obs	YEAR	MONTH	cc_imi
401	2033	5	.
402	2033	6	.
403	2033	7	.
404	2033	8	.
405	2033	9	.
406	2033	10	.
407	2033	11	.
408	2033	12	.
409	2034	1	.
410	2034	2	.
411	2034	3	.
412	2034	4	.
413	2034	5	.
414	2034	6	.
415	2034	7	.
416	2034	8	.
417	2034	9	.
418	2034	10	.
419	2034	11	.
420	2034	12	.
421	2035	1	.
422	2035	2	.
423	2035	3	.
424	2035	4	.
425	2035	5	.
426	2035	6	.
427	2035	7	.
428	2035	8	.
429	2035	9	.
430	2035	10	.
431	2035	11	.
432	2035	12	.
433	2036	1	.
434	2036	2	.
435	2036	3	.
436	2036	4	.
437	2036	5	.
438	2036	6	.
439	2036	7	.
440	2036	8	.
441	2036	9	.
442	2036	10	.
443	2036	11	.
444	2036	12	.
445	2037	1	.
446	2037	2	.
447	2037	3	.
448	2037	4	.
449	2037	5	.
450	2037	6	.

INDIANA MICHIGAN POWER COMPANY - INDIANA
COMMERCIAL CUSTOMERS
ENDOGENOUS VARIABLES

Obs	YEAR	MONTH	cc_imi
451	2037	7	.
452	2037	8	.
453	2037	9	.
454	2037	10	.
455	2037	11	.
456	2037	12	.
457	2038	1	.
458	2038	2	.
459	2038	3	.
460	2038	4	.
461	2038	5	.
462	2038	6	.
463	2038	7	.
464	2038	8	.
465	2038	9	.
466	2038	10	.
467	2038	11	.
468	2038	12	.
469	2039	1	.
470	2039	2	.
471	2039	3	.
472	2039	4	.
473	2039	5	.
474	2039	6	.
475	2039	7	.
476	2039	8	.
477	2039	9	.
478	2039	10	.
479	2039	11	.
480	2039	12	.
481	2040	1	.
482	2040	2	.
483	2040	3	.
484	2040	4	.
485	2040	5	.
486	2040	6	.
487	2040	7	.
488	2040	8	.
489	2040	9	.
490	2040	10	.
491	2040	11	.
492	2040	12	.
493	2041	1	.
494	2041	2	.
495	2041	3	.
496	2041	4	.
497	2041	5	.
498	2041	6	.
499	2041	7	.
500	2041	8	.

INDIANA MICHIGAN POWER COMPANY - INDIANA
COMMERCIAL CUSTOMERS
ENDOGENOUS VARIABLES

Obs	YEAR	MONTH	cc_imi
501	2041	9	.
502	2041	10	.
503	2041	11	.
504	2041	12	.
505	2042	1	.
506	2042	2	.
507	2042	3	.
508	2042	4	.
509	2042	5	.
510	2042	6	.
511	2042	7	.
512	2042	8	.
513	2042	9	.
514	2042	10	.
515	2042	11	.
516	2042	12	.
517	2043	1	.
518	2043	2	.
519	2043	3	.
520	2043	4	.
521	2043	5	.
522	2043	6	.
523	2043	7	.
524	2043	8	.
525	2043	9	.
526	2043	10	.
527	2043	11	.
528	2043	12	.
529	2044	1	.
530	2044	2	.
531	2044	3	.
532	2044	4	.
533	2044	5	.
534	2044	6	.
535	2044	7	.
536	2044	8	.
537	2044	9	.
538	2044	10	.
539	2044	11	.
540	2044	12	.
541	2045	1	.
542	2045	2	.
543	2045	3	.
544	2045	4	.
545	2045	5	.
546	2045	6	.
547	2045	7	.
548	2045	8	.
549	2045	9	.
550	2045	10	.

INDIANA MICHIGAN POWER COMPANY - INDIANA
COMMERCIAL CUSTOMERS
ENDOGENOUS VARIABLES

Obs	YEAR	MONTH	cc_imi
551	2045	11	.
552	2045	12	.
553	2046	1	.
554	2046	2	.
555	2046	3	.
556	2046	4	.
557	2046	5	.
558	2046	6	.
559	2046	7	.
560	2046	8	.
561	2046	9	.
562	2046	10	.
563	2046	11	.
564	2046	12	.
565	2047	1	.
566	2047	2	.
567	2047	3	.
568	2047	4	.
569	2047	5	.
570	2047	6	.
571	2047	7	.
572	2047	8	.
573	2047	9	.
574	2047	10	.
575	2047	11	.
576	2047	12	.
577	2048	1	.
578	2048	2	.
579	2048	3	.
580	2048	4	.
581	2048	5	.
582	2048	6	.
583	2048	7	.
584	2048	8	.
585	2048	9	.
586	2048	10	.
587	2048	11	.
588	2048	12	.
589	2049	1	.
590	2049	2	.
591	2049	3	.
592	2049	4	.
593	2049	5	.
594	2049	6	.
595	2049	7	.
596	2049	8	.
597	2049	9	.
598	2049	10	.
599	2049	11	.
600	2049	12	.

INDIANA MICHIGAN POWER COMPANY - INDIANA
COMMERCIAL CUSTOMERS
ENDOGENOUS VARIABLES

Obs	YEAR	MONTH	cc_imi
601	2050	1	.
602	2050	2	.
603	2050	3	.
604	2050	4	.
605	2050	5	.
606	2050	6	.
607	2050	7	.
608	2050	8	.
609	2050	9	.
610	2050	10	.
611	2050	11	.
612	2050	12	.
613	2051	1	.
614	2051	2	.
615	2051	3	.
616	2051	4	.
617	2051	5	.
618	2051	6	.
619	2051	7	.
620	2051	8	.
621	2051	9	.
622	2051	10	.
623	2051	11	.
624	2051	12	.
625	2052	1	.
626	2052	2	.
627	2052	3	.
628	2052	4	.
629	2052	5	.
630	2052	6	.
631	2052	7	.
632	2052	8	.
633	2052	9	.
634	2052	10	.
635	2052	11	.
636	2052	12	.
637	2053	1	.
638	2053	2	.
639	2053	3	.
640	2053	4	.
641	2053	5	.
642	2053	6	.
643	2053	7	.
644	2053	8	.
645	2053	9	.
646	2053	10	.
647	2053	11	.
648	2053	12	.
649	2054	1	.
650	2054	2	.

INDIANA MICHIGAN POWER COMPANY - INDIANA
COMMERCIAL CUSTOMERS
ENDOGENOUS VARIABLES

Obs	YEAR	MONTH	cc_imi
651	2054	3	.
652	2054	4	.
653	2054	5	.
654	2054	6	.
655	2054	7	.
656	2054	8	.
657	2054	9	.
658	2054	10	.
659	2054	11	.
660	2054	12	.
661	2055	1	.
662	2055	2	.
663	2055	3	.
664	2055	4	.
665	2055	5	.
666	2055	6	.
667	2055	7	.
668	2055	8	.
669	2055	9	.
670	2055	10	.
671	2055	11	.
672	2055	12	.
673	2056	1	.
674	2056	2	.
675	2056	3	.
676	2056	4	.
677	2056	5	.
678	2056	6	.
679	2056	7	.
680	2056	8	.
681	2056	9	.
682	2056	10	.
683	2056	11	.
684	2056	12	.
685	2057	1	.
686	2057	2	.
687	2057	3	.
688	2057	4	.
689	2057	5	.
690	2057	6	.
691	2057	7	.
692	2057	8	.
693	2057	9	.
694	2057	10	.
695	2057	11	.
696	2057	12	.

INDIANA MICHIGAN POWER COMPANY - INDIANA
COMMERCIAL CUSTOMERS
EXOGENOUS VARIABLES

The MEANS Procedure

Variable	Label	Mean
YEAR	YEAR	2028.50
MONTH	MONTH	6.5000000
N_IMI	Service Area Population	1648.53
gdp_imi	Service Area Gross Regional Product	101669.91
d063on	Binary Variable-July 2006 On	0.8879310
d093on	Binary Variable-July 2009 On	0.8362069
d102on	Binary Variable-April 2010 On	0.8232759
feb16on	Binary Variable-February 2016 On	0.7227011
mar11	Binary Variable-March 2011	0.0014368
feb11	Binary Variable-February 2011	0.0014368
jan11	Binary Variable-January 2011	0.0014368
aug14on	Binary Varaible-August 2014 On	0.7485632
mar17on	Binary Variable-March 2017 On	0.7040230
jul18on	Binary Variable-July 2018 On	0.6810345
oct19on	Binary Variable-October 2019 On	0.6594828

Obs	YEAR	MONTH	N_IMI	gdp_imi	d063on	d093on	d102on	feb16on	mar11	feb11	jan11	aug14on	mar17on	jul18on	oct19on
1	2000	1	1572.18	64907.20	0	0	0	0	0	0	0	0	0	0	0
2	2000	2	1573.02	65198.30	0	0	0	0	0	0	0	0	0	0	0
3	2000	3	1573.84	65452.39	0	0	0	0	0	0	0	0	0	0	0
4	2000	4	1574.64	65661.56	0	0	0	0	0	0	0	0	0	0	0
5	2000	5	1575.42	65808.28	0	0	0	0	0	0	0	0	0	0	0
6	2000	6	1576.16	65881.05	0	0	0	0	0	0	0	0	0	0	0
7	2000	7	1576.86	65867.78	0	0	0	0	0	0	0	0	0	0	0
8	2000	8	1577.54	65767.56	0	0	0	0	0	0	0	0	0	0	0
9	2000	9	1578.15	65596.91	0	0	0	0	0	0	0	0	0	0	0
10	2000	10	1578.72	65368.77	0	0	0	0	0	0	0	0	0	0	0
11	2000	11	1579.24	65098.09	0	0	0	0	0	0	0	0	0	0	0
12	2000	12	1579.70	64798.86	0	0	0	0	0	0	0	0	0	0	0
13	2001	1	1580.11	64480.53	0	0	0	0	0	0	0	0	0	0	0
14	2001	2	1580.44	64177.86	0	0	0	0	0	0	0	0	0	0	0
15	2001	3	1580.71	63889.01	0	0	0	0	0	0	0	0	0	0	0
16	2001	4	1580.94	63618.27	0	0	0	0	0	0	0	0	0	0	0
17	2001	5	1581.08	63390.60	0	0	0	0	0	0	0	0	0	0	0
18	2001	6	1581.16	63219.84	0	0	0	0	0	0	0	0	0	0	0
19	2001	7	1581.17	63120.29	0	0	0	0	0	0	0	0	0	0	0
20	2001	8	1581.11	63095.47	0	0	0	0	0	0	0	0	0	0	0
21	2001	9	1580.99	63139.48	0	0	0	0	0	0	0	0	0	0	0
22	2001	10	1580.84	63244.10	0	0	0	0	0	0	0	0	0	0	0
23	2001	11	1580.66	63400.99	0	0	0	0	0	0	0	0	0	0	0
24	2001	12	1580.48	63602.95	0	0	0	0	0	0	0	0	0	0	0
25	2002	1	1580.30	63846.09	0	0	0	0	0	0	0	0	0	0	0
26	2002	2	1580.16	64105.47	0	0	0	0	0	0	0	0	0	0	0
27	2002	3	1580.05	64385.59	0	0	0	0	0	0	0	0	0	0	0
28	2002	4	1579.99	64689.01	0	0	0	0	0	0	0	0	0	0	0
29	2002	5	1580.00	64999.07	0	0	0	0	0	0	0	0	0	0	0
30	2002	6	1580.10	65308.01	0	0	0	0	0	0	0	0	0	0	0
31	2002	7	1580.29	65608.36	0	0	0	0	0	0	0	0	0	0	0
32	2002	8	1580.59	65901.06	0	0	0	0	0	0	0	0	0	0	0
33	2002	9	1580.96	66176.92	0	0	0	0	0	0	0	0	0	0	0
34	2002	10	1581.41	66441.34	0	0	0	0	0	0	0	0	0	0	0
35	2002	11	1581.90	66695.11	0	0	0	0	0	0	0	0	0	0	0
36	2002	12	1582.43	66938.77	0	0	0	0	0	0	0	0	0	0	0
37	2003	1	1582.99	67176.84	0	0	0	0	0	0	0	0	0	0	0
38	2003	2	1583.51	67395.09	0	0	0	0	0	0	0	0	0	0	0
39	2003	3	1584.02	67605.66	0	0	0	0	0	0	0	0	0	0	0
40	2003	4	1584.51	67816.16	0	0	0	0	0	0	0	0	0	0	0
41	2003	5	1584.96	68019.86	0	0	0	0	0	0	0	0	0	0	0
42	2003	6	1585.34	68217.50	0	0	0	0	0	0	0	0	0	0	0
43	2003	7	1585.64	68409.60	0	0	0	0	0	0	0	0	0	0	0
44	2003	8	1585.85	68598.88	0	0	0	0	0	0	0	0	0	0	0

Obs	YEAR	MONTH	N_IMI	gdp_imi	d063on	d093on	d102on	feb16on	mar11	feb11	jan11	aug14on	mar17on	jul18on	oct19on
45	2003	9	1585.99	68777.92	0	0	0	0	0	0	0	0	0	0	0
46	2003	10	1586.08	68948.32	0	0	0	0	0	0	0	0	0	0	0
47	2003	11	1586.11	69108.77	0	0	0	0	0	0	0	0	0	0	0
48	2003	12	1586.12	69257.73	0	0	0	0	0	0	0	0	0	0	0
49	2004	1	1586.11	69395.99	0	0	0	0	0	0	0	0	0	0	0
50	2004	2	1586.10	69515.83	0	0	0	0	0	0	0	0	0	0	0
51	2004	3	1586.10	69620.32	0	0	0	0	0	0	0	0	0	0	0
52	2004	4	1586.13	69709.74	0	0	0	0	0	0	0	0	0	0	0
53	2004	5	1586.19	69780.56	0	0	0	0	0	0	0	0	0	0	0
54	2004	6	1586.31	69831.55	0	0	0	0	0	0	0	0	0	0	0
55	2004	7	1586.49	69861.32	0	0	0	0	0	0	0	0	0	0	0
56	2004	8	1586.75	69871.65	0	0	0	0	0	0	0	0	0	0	0
57	2004	9	1587.06	69866.72	0	0	0	0	0	0	0	0	0	0	0
58	2004	10	1587.44	69851.53	0	0	0	0	0	0	0	0	0	0	0
59	2004	11	1587.86	69830.93	0	0	0	0	0	0	0	0	0	0	0
60	2004	12	1588.33	69809.66	0	0	0	0	0	0	0	0	0	0	0
61	2005	1	1588.85	69792.28	0	0	0	0	0	0	0	0	0	0	0
62	2005	2	1589.37	69784.14	0	0	0	0	0	0	0	0	0	0	0
63	2005	3	1589.91	69788.91	0	0	0	0	0	0	0	0	0	0	0
64	2005	4	1590.50	69811.60	0	0	0	0	0	0	0	0	0	0	0
65	2005	5	1591.09	69857.36	0	0	0	0	0	0	0	0	0	0	0
66	2005	6	1591.69	69930.69	0	0	0	0	0	0	0	0	0	0	0
67	2005	7	1592.29	70036.32	0	0	0	0	0	0	0	0	0	0	0
68	2005	8	1592.89	70176.32	0	0	0	0	0	0	0	0	0	0	0
69	2005	9	1593.48	70341.04	0	0	0	0	0	0	0	0	0	0	0
70	2005	10	1594.06	70527.03	0	0	0	0	0	0	0	0	0	0	0
71	2005	11	1594.64	70728.48	0	0	0	0	0	0	0	0	0	0	0
72	2005	12	1595.20	70939.91	0	0	0	0	0	0	0	0	0	0	0
73	2006	1	1595.77	71159.15	0	0	0	0	0	0	0	0	0	0	0
74	2006	2	1596.30	71366.59	0	0	0	0	0	0	0	0	0	0	0
75	2006	3	1596.82	71567.52	0	0	0	0	0	0	0	0	0	0	0
76	2006	4	1597.35	71763.23	0	0	0	0	0	0	0	0	0	0	0
77	2006	5	1597.87	71940.95	0	0	0	0	0	0	0	0	0	0	0
78	2006	6	1598.37	72095.29	0	0	0	0	0	0	0	0	0	0	0
79	2006	7	1598.86	72220.71	1	0	0	0	0	0	0	0	0	0	0
80	2006	8	1599.34	72317.97	1	0	0	0	0	0	0	0	0	0	0
81	2006	9	1599.81	72388.00	1	0	0	0	0	0	0	0	0	0	0
82	2006	10	1600.27	72436.98	1	0	0	0	0	0	0	0	0	0	0
83	2006	11	1600.73	72469.62	1	0	0	0	0	0	0	0	0	0	0
84	2006	12	1601.18	72490.32	1	0	0	0	0	0	0	0	0	0	0
85	2007	1	1601.64	72503.88	1	0	0	0	0	0	0	0	0	0	0
86	2007	2	1602.08	72514.07	1	0	0	0	0	0	0	0	0	0	0
87	2007	3	1602.53	72525.82	1	0	0	0	0	0	0	0	0	0	0
88	2007	4	1603.00	72543.89	1	0	0	0	0	0	0	0	0	0	0

Obs	YEAR	MONTH	N_IMI	gdp_imi	d063on	d093on	d102on	feb16on	mar11	feb11	jan11	aug14on	mar17on	jul18on	oct19on
89	2007	5	1603.48	72572.58	1	0	0	0	0	0	0	0	0	0	0
90	2007	6	1603.97	72616.27	1	0	0	0	0	0	0	0	0	0	0
91	2007	7	1604.49	72678.99	1	0	0	0	0	0	0	0	0	0	0
92	2007	8	1605.02	72757.34	1	0	0	0	0	0	0	0	0	0	0
93	2007	9	1605.56	72834.91	1	0	0	0	0	0	0	0	0	0	0
94	2007	10	1606.10	72898.08	1	0	0	0	0	0	0	0	0	0	0
95	2007	11	1606.65	72932.36	1	0	0	0	0	0	0	0	0	0	0
96	2007	12	1607.19	72922.65	1	0	0	0	0	0	0	0	0	0	0
97	2008	1	1607.72	72852.92	1	0	0	0	0	0	0	0	0	0	0
98	2008	2	1608.23	72713.87	1	0	0	0	0	0	0	0	0	0	0
99	2008	3	1608.72	72488.87	1	0	0	0	0	0	0	0	0	0	0
100	2008	4	1609.19	72159.34	1	0	0	0	0	0	0	0	0	0	0
101	2008	5	1609.63	71712.13	1	0	0	0	0	0	0	0	0	0	0
102	2008	6	1610.04	71133.89	1	0	0	0	0	0	0	0	0	0	0
103	2008	7	1610.41	70410.32	1	0	0	0	0	0	0	0	0	0	0
104	2008	8	1610.74	69537.04	1	0	0	0	0	0	0	0	0	0	0
105	2008	9	1611.03	68575.44	1	0	0	0	0	0	0	0	0	0	0
106	2008	10	1611.29	67547.15	1	0	0	0	0	0	0	0	0	0	0
107	2008	11	1611.52	66487.98	1	0	0	0	0	0	0	0	0	0	0
108	2008	12	1611.71	65433.02	1	0	0	0	0	0	0	0	0	0	0
109	2009	1	1611.89	64401.38	1	0	0	0	0	0	0	0	0	0	0
110	2009	2	1612.04	63490.46	1	0	0	0	0	0	0	0	0	0	0
111	2009	3	1612.17	62683.60	1	0	0	0	0	0	0	0	0	0	0
112	2009	4	1612.29	61989.53	1	0	0	0	0	0	0	0	0	0	0
113	2009	5	1612.39	61475.17	1	0	0	0	0	0	0	0	0	0	0
114	2009	6	1612.49	61173.65	1	0	0	0	0	0	0	0	0	0	0
115	2009	7	1612.58	61120.18	1	1	0	0	0	0	0	0	0	0	0
116	2009	8	1612.67	61319.39	1	1	0	0	0	0	0	0	0	0	0
117	2009	9	1612.76	61732.10	1	1	0	0	0	0	0	0	0	0	0
118	2009	10	1612.85	62325.03	1	1	0	0	0	0	0	0	0	0	0
119	2009	11	1612.95	63060.46	1	1	0	0	0	0	0	0	0	0	0
120	2009	12	1613.06	63903.75	1	1	0	0	0	0	0	0	0	0	0
121	2010	1	1613.19	64833.42	1	1	0	0	0	0	0	0	0	0	0
122	2010	2	1613.33	65751.99	1	1	0	0	0	0	0	0	0	0	0
123	2010	3	1613.49	66670.47	1	1	0	0	0	0	0	0	0	0	0
124	2010	4	1613.68	67585.58	1	1	1	0	0	0	0	0	0	0	0
125	2010	5	1613.90	68429.43	1	1	1	0	0	0	0	0	0	0	0
126	2010	6	1614.15	69167.01	1	1	1	0	0	0	0	0	0	0	0
127	2010	7	1614.44	69762.87	1	1	1	0	0	0	0	0	0	0	0
128	2010	8	1614.76	70213.44	1	1	1	0	0	0	0	0	0	0	0
129	2010	9	1615.10	70518.93	1	1	1	0	0	0	0	0	0	0	0
130	2010	10	1615.45	70704.05	1	1	1	0	0	0	0	0	0	0	0
131	2010	11	1615.81	70787.22	1	1	1	0	0	0	0	0	0	0	0
132	2010	12	1616.16	70784.61	1	1	1	0	0	0	0	0	0	0	0

Obs	YEAR	MONTH	N_IMI	gdp_imi	d063on	d093on	d102on	feb16on	mar11	feb11	jan11	aug14on	mar17on	jul18on	oct19on
133	2011	1	1616.50	70712.51	1	1	1	0	0	0	1	0	0	0	0
134	2011	2	1616.79	70595.35	1	1	1	0	0	1	0	0	0	0	0
135	2011	3	1617.05	70445.87	1	1	1	0	1	0	0	0	0	0	0
136	2011	4	1617.28	70274.74	1	1	1	0	0	0	0	0	0	0	0
137	2011	5	1617.45	70103.49	1	1	1	0	0	0	0	0	0	0	0
138	2011	6	1617.56	69949.23	1	1	1	0	0	0	0	0	0	0	0
139	2011	7	1617.59	69828.67	1	1	1	0	0	0	0	0	0	0	0
140	2011	8	1617.55	69747.49	1	1	1	0	0	0	0	0	0	0	0
141	2011	9	1617.45	69704.88	1	1	1	0	0	0	0	0	0	0	0
142	2011	10	1617.30	69694.99	1	1	1	0	0	0	0	0	0	0	0
143	2011	11	1617.13	69713.02	1	1	1	0	0	0	0	0	0	0	0
144	2011	12	1616.94	69754.80	1	1	1	0	0	0	0	0	0	0	0
145	2012	1	1616.74	69816.80	1	1	1	0	0	0	0	0	0	0	0
146	2012	2	1616.57	69891.16	1	1	1	0	0	0	0	0	0	0	0
147	2012	3	1616.41	69975.51	1	1	1	0	0	0	0	0	0	0	0
148	2012	4	1616.30	70066.97	1	1	1	0	0	0	0	0	0	0	0
149	2012	5	1616.24	70159.79	1	1	1	0	0	0	0	0	0	0	0
150	2012	6	1616.26	70249.53	1	1	1	0	0	0	0	0	0	0	0
151	2012	7	1616.35	70331.93	1	1	1	0	0	0	0	0	0	0	0
152	2012	8	1616.54	70407.16	1	1	1	0	0	0	0	0	0	0	0
153	2012	9	1616.80	70475.09	1	1	1	0	0	0	0	0	0	0	0
154	2012	10	1617.12	70539.57	1	1	1	0	0	0	0	0	0	0	0
155	2012	11	1617.49	70603.22	1	1	1	0	0	0	0	0	0	0	0
156	2012	12	1617.91	70668.66	1	1	1	0	0	0	0	0	0	0	0
157	2013	1	1618.36	70739.67	1	1	1	0	0	0	0	0	0	0	0
158	2013	2	1618.81	70813.86	1	1	1	0	0	0	0	0	0	0	0
159	2013	3	1619.27	70897.11	1	1	1	0	0	0	0	0	0	0	0
160	2013	4	1619.75	70994.96	1	1	1	0	0	0	0	0	0	0	0
161	2013	5	1620.20	71107.54	1	1	1	0	0	0	0	0	0	0	0
162	2013	6	1620.64	71237.28	1	1	1	0	0	0	0	0	0	0	0
163	2013	7	1621.04	71386.76	1	1	1	0	0	0	0	0	0	0	0
164	2013	8	1621.40	71558.45	1	1	1	0	0	0	0	0	0	0	0
165	2013	9	1621.72	71743.60	1	1	1	0	0	0	0	0	0	0	0
166	2013	10	1622.01	71941.41	1	1	1	0	0	0	0	0	0	0	0
167	2013	11	1622.26	72148.28	1	1	1	0	0	0	0	0	0	0	0
168	2013	12	1622.48	72360.78	1	1	1	0	0	0	0	0	0	0	0
169	2014	1	1622.69	72578.89	1	1	1	0	0	0	0	0	0	0	0
170	2014	2	1622.85	72785.15	1	1	1	0	0	0	0	0	0	0	0
171	2014	3	1623.00	72986.81	1	1	1	0	0	0	0	0	0	0	0
172	2014	4	1623.13	73187.25	1	1	1	0	0	0	0	0	0	0	0
173	2014	5	1623.25	73375.91	1	1	1	0	0	0	0	0	0	0	0
174	2014	6	1623.35	73549.44	1	1	1	0	0	0	0	0	0	0	0
175	2014	7	1623.45	73704.34	1	1	1	0	0	0	0	0	0	0	0
176	2014	8	1623.53	73841.82	1	1	1	0	0	0	0	1	0	0	0

Obs	YEAR	MONTH	N_IMI	gdp_imi	d063on	d093on	d102on	feb16on	mar11	feb11	jan11	aug14on	mar17on	jul18on	oct19on
177	2014	9	1623.61	73959.00	1	1	1	0	0	0	0	1	0	0	0
178	2014	10	1623.69	74059.88	1	1	1	0	0	0	0	1	0	0	0
179	2014	11	1623.77	74146.41	1	1	1	0	0	0	0	1	0	0	0
180	2014	12	1623.85	74220.24	1	1	1	0	0	0	0	1	0	0	0
181	2015	1	1623.93	74284.20	1	1	1	0	0	0	0	1	0	0	0
182	2015	2	1624.02	74336.40	1	1	1	0	0	0	0	1	0	0	0
183	2015	3	1624.11	74381.63	1	1	1	0	0	0	0	1	0	0	0
184	2015	4	1624.22	74422.97	1	1	1	0	0	0	0	1	0	0	0
185	2015	5	1624.35	74460.46	1	1	1	0	0	0	0	1	0	0	0
186	2015	6	1624.49	74495.91	1	1	1	0	0	0	0	1	0	0	0
187	2015	7	1624.66	74531.07	1	1	1	0	0	0	0	1	0	0	0
188	2015	8	1624.84	74568.10	1	1	1	0	0	0	0	1	0	0	0
189	2015	9	1625.04	74607.12	1	1	1	0	0	0	0	1	0	0	0
190	2015	10	1625.25	74650.02	1	1	1	0	0	0	0	1	0	0	0
191	2015	11	1625.46	74698.02	1	1	1	0	0	0	0	1	0	0	0
192	2015	12	1625.68	74752.47	1	1	1	0	0	0	0	1	0	0	0
193	2016	1	1625.90	74815.69	1	1	1	0	0	0	0	1	0	0	0
194	2016	2	1626.11	74885.64	1	1	1	1	0	0	0	1	0	0	0
195	2016	3	1626.32	74965.60	1	1	1	1	0	0	0	1	0	0	0
196	2016	4	1626.51	75058.23	1	1	1	1	0	0	0	1	0	0	0
197	2016	5	1626.69	75163.71	1	1	1	1	0	0	0	1	0	0	0
198	2016	6	1626.85	75283.16	1	1	1	1	0	0	0	1	0	0	0
199	2016	7	1626.98	75417.92	1	1	1	1	0	0	0	1	0	0	0
200	2016	8	1627.10	75570.29	1	1	1	1	0	0	0	1	0	0	0
201	2016	9	1627.19	75733.80	1	1	1	1	0	0	0	1	0	0	0
202	2016	10	1627.28	75909.24	1	1	1	1	0	0	0	1	0	0	0
203	2016	11	1627.36	76094.80	1	1	1	1	0	0	0	1	0	0	0
204	2016	12	1627.45	76288.93	1	1	1	1	0	0	0	1	0	0	0
205	2017	1	1627.55	76493.23	1	1	1	1	0	0	0	1	0	0	0
206	2017	2	1627.66	76692.59	1	1	1	1	0	0	0	1	0	0	0
207	2017	3	1627.80	76895.33	1	1	1	1	0	0	0	1	1	0	0
208	2017	4	1627.97	77106.80	1	1	1	1	0	0	0	1	1	0	0
209	2017	5	1628.17	77318.54	1	1	1	1	0	0	0	1	1	0	0
210	2017	6	1628.42	77528.89	1	1	1	1	0	0	0	1	1	0	0
211	2017	7	1628.72	77736.24	1	1	1	1	0	0	0	1	1	0	0
212	2017	8	1629.08	77943.34	1	1	1	1	0	0	0	1	1	0	0
213	2017	9	1629.47	78144.01	1	1	1	1	0	0	0	1	1	0	0
214	2017	10	1629.91	78342.21	1	1	1	1	0	0	0	1	1	0	0
215	2017	11	1630.39	78538.57	1	1	1	1	0	0	0	1	1	0	0
216	2017	12	1630.89	78733.68	1	1	1	1	0	0	0	1	1	0	0
217	2018	1	1631.43	78931.35	1	1	1	1	0	0	0	1	1	0	0
218	2018	2	1631.96	79119.43	1	1	1	1	0	0	0	1	1	0	0
219	2018	3	1632.51	79308.06	1	1	1	1	0	0	0	1	1	0	0
220	2018	4	1633.08	79504.22	1	1	1	1	0	0	0	1	1	0	0

Obs	YEAR	MONTH	N_IMI	gdp_imi	d063on	d093on	d102on	feb16on	mar1	feb1	jan1	aug14on	mar17on	jul18on	oct19on
221	2018	5	1633.66	79702.16	1	1	1	1	0	0	0	1	1	0	0
222	2018	6	1634.24	79902.48	1	1	1	1	0	0	0	1	1	0	0
223	2018	7	1634.81	80105.53	1	1	1	1	0	0	0	1	1	1	0
224	2018	8	1635.39	80311.67	1	1	1	1	0	0	0	1	1	1	0
225	2018	9	1635.94	80507.71	1	1	1	1	0	0	0	1	1	1	0
226	2018	10	1636.48	80690.05	1	1	1	1	0	0	0	1	1	1	0
227	2018	11	1637.01	80852.02	1	1	1	1	0	0	0	1	1	1	0
228	2018	12	1637.52	80986.51	1	1	1	1	0	0	0	1	1	1	0
229	2019	1	1638.03	81088.21	1	1	1	1	0	0	0	1	1	1	0
230	2019	2	1638.50	81146.02	1	1	1	1	0	0	0	1	1	1	0
231	2019	3	1638.94	81158.38	1	1	1	1	0	0	0	1	1	1	0
232	2019	4	1639.39	81118.14	1	1	1	1	0	0	0	1	1	1	0
233	2019	5	1639.82	81016.34	1	1	1	1	0	0	0	1	1	1	0
234	2019	6	1640.22	80846.82	1	1	1	1	0	0	0	1	1	1	0
235	2019	7	1640.61	80602.80	1	1	1	1	0	0	0	1	1	1	0
236	2019	8	1640.98	80283.55	1	1	1	1	0	0	0	1	1	1	0
237	2019	9	1641.32	79915.02	1	1	1	1	0	0	0	1	1	1	0
238	2019	10	1641.64	79509.00	1	1	1	1	0	0	0	1	1	1	1
239	2019	11	1641.95	79082.52	1	1	1	1	0	0	0	1	1	1	1
240	2019	12	1642.25	78652.14	1	1	1	1	0	0	0	1	1	1	1
241	2020	1	1642.54	78227.97	1	1	1	1	0	0	0	1	1	1	1
242	2020	2	1642.82	77846.38	1	1	1	1	0	0	0	1	1	1	1
243	2020	3	1643.09	77510.03	1	1	1	1	0	0	0	1	1	1	1
244	2020	4	1643.36	77229.86	1	1	1	1	0	0	0	1	1	1	1
245	2020	5	1643.64	77029.51	1	1	1	1	0	0	0	1	1	1	1
246	2020	6	1643.91	76924.74	1	1	1	1	0	0	0	1	1	1	1
247	2020	7	1644.19	76932.22	1	1	1	1	0	0	0	1	1	1	1
248	2020	8	1644.48	77055.88	1	1	1	1	0	0	0	1	1	1	1
249	2020	9	1644.77	77279.33	1	1	1	1	0	0	0	1	1	1	1
250	2020	10	1645.07	77590.67	1	1	1	1	0	0	0	1	1	1	1
251	2020	11	1645.37	77975.32	1	1	1	1	0	0	0	1	1	1	1
252	2020	12	1645.67	78420.29	1	1	1	1	0	0	0	1	1	1	1
253	2021	1	1645.98	78919.76	1	1	1	1	0	0	0	1	1	1	1
254	2021	2	1646.28	79426.17	1	1	1	1	0	0	0	1	1	1	1
255	2021	3	1646.58	79950.76	1	1	1	1	0	0	0	1	1	1	1
256	2021	4	1646.89	80498.60	1	1	1	1	0	0	0	1	1	1	1
257	2021	5	1647.21	81038.54	1	1	1	1	0	0	0	1	1	1	1
258	2021	6	1647.52	81557.05	1	1	1	1	0	0	0	1	1	1	1
259	2021	7	1647.84	82040.70	1	1	1	1	0	0	0	1	1	1	1
260	2021	8	1648.16	82491.17	1	1	1	1	0	0	0	1	1	1	1
261	2021	9	1648.47	82896.60	1	1	1	1	0	0	0	1	1	1	1
262	2021	10	1648.79	83267.78	1	1	1	1	0	0	0	1	1	1	1
263	2021	11	1649.10	83608.54	1	1	1	1	0	0	0	1	1	1	1
264	2021	12	1649.41	83922.05	1	1	1	1	0	0	0	1	1	1	1

Obs	YEAR	MONTH	N_IMI	gdp_imi	d063on	d093on	d102on	feb16on	mar11	feb11	jan11	aug14on	mar17on	jul18on	oct19on
265	2022	1	1649.73	84216.61	1	1	1	1	0	0	0	1	1	1	1
266	2022	2	1650.03	84477.71	1	1	1	1	0	0	0	1	1	1	1
267	2022	3	1650.33	84722.93	1	1	1	1	0	0	0	1	1	1	1
268	2022	4	1650.63	84963.53	1	1	1	1	0	0	0	1	1	1	1
269	2022	5	1650.94	85194.22	1	1	1	1	0	0	0	1	1	1	1
270	2022	6	1651.24	85418.56	1	1	1	1	0	0	0	1	1	1	1
271	2022	7	1651.54	85639.84	1	1	1	1	0	0	0	1	1	1	1
272	2022	8	1651.85	85863.30	1	1	1	1	0	0	0	1	1	1	1
273	2022	9	1652.14	86081.46	1	1	1	1	0	0	0	1	1	1	1
274	2022	10	1652.43	86297.46	1	1	1	1	0	0	0	1	1	1	1
275	2022	11	1652.73	86510.85	1	1	1	1	0	0	0	1	1	1	1
276	2022	12	1653.01	86721.15	1	1	1	1	0	0	0	1	1	1	1
277	2023	1	1653.30	86931.28	1	1	1	1	0	0	0	1	1	1	1
278	2023	2	1653.57	87127.44	1	1	1	1	0	0	0	1	1	1	1
279	2023	3	1653.84	87319.37	1	1	1	1	0	0	0	1	1	1	1
280	2023	4	1654.12	87513.03	1	1	1	1	0	0	0	1	1	1	1
281	2023	5	1654.40	87701.31	1	1	1	1	0	0	0	1	1	1	1
282	2023	6	1654.67	87883.81	1	1	1	1	0	0	0	1	1	1	1
283	2023	7	1654.94	88060.03	1	1	1	1	0	0	0	1	1	1	1
284	2023	8	1655.21	88232.78	1	1	1	1	0	0	0	1	1	1	1
285	2023	9	1655.46	88397.00	1	1	1	1	0	0	0	1	1	1	1
286	2023	10	1655.72	88556.02	1	1	1	1	0	0	0	1	1	1	1
287	2023	11	1655.98	88710.45	1	1	1	1	0	0	0	1	1	1	1
288	2023	12	1656.23	88860.80	1	1	1	1	0	0	0	1	1	1	1
289	2024	1	1656.48	89010.02	1	1	1	1	0	0	0	1	1	1	1
290	2024	2	1656.72	89151.52	1	1	1	1	0	0	0	1	1	1	1
291	2024	3	1656.95	89290.67	1	1	1	1	0	0	0	1	1	1	1
292	2024	4	1657.19	89430.30	1	1	1	1	0	0	0	1	1	1	1
293	2024	5	1657.42	89568.60	1	1	1	1	0	0	0	1	1	1	1
294	2024	6	1657.65	89706.12	1	1	1	1	0	0	0	1	1	1	1
295	2024	7	1657.87	89843.39	1	1	1	1	0	0	0	1	1	1	1
296	2024	8	1658.09	89982.82	1	1	1	1	0	0	0	1	1	1	1
297	2024	9	1658.31	90119.69	1	1	1	1	0	0	0	1	1	1	1
298	2024	10	1658.52	90256.02	1	1	1	1	0	0	0	1	1	1	1
299	2024	11	1658.73	90391.55	1	1	1	1	0	0	0	1	1	1	1
300	2024	12	1658.93	90526.03	1	1	1	1	0	0	0	1	1	1	1
301	2025	1	1659.14	90661.39	1	1	1	1	0	0	0	1	1	1	1
302	2025	2	1659.33	90788.74	1	1	1	1	0	0	0	1	1	1	1
303	2025	3	1659.52	90914.40	1	1	1	1	0	0	0	1	1	1	1
304	2025	4	1659.72	91042.34	1	1	1	1	0	0	0	1	1	1	1
305	2025	5	1659.92	91168.01	1	1	1	1	0	0	0	1	1	1	1
306	2025	6	1660.11	91291.18	1	1	1	1	0	0	0	1	1	1	1
307	2025	7	1660.31	91411.61	1	1	1	1	0	0	0	1	1	1	1
308	2025	8	1660.50	91531.38	1	1	1	1	0	0	0	1	1	1	1

Obs	YEAR	MONTH	N_IMI	gdp_imi	d063on	d093on	d102on	feb16on	mar11	feb11	jan11	aug14on	mar17on	jul18on	oct19on
309	2025	9	1660.70	91647.19	1	1	1	1	0	0	0	1	1	1	1
310	2025	10	1660.89	91761.59	1	1	1	1	0	0	0	1	1	1	1
311	2025	11	1661.08	91875.19	1	1	1	1	0	0	0	1	1	1	1
312	2025	12	1661.28	91988.58	1	1	1	1	0	0	0	1	1	1	1
313	2026	1	1661.47	92104.24	1	1	1	1	0	0	0	1	1	1	1
314	2026	2	1661.65	92215.24	1	1	1	1	0	0	0	1	1	1	1
315	2026	3	1661.84	92327.76	1	1	1	1	0	0	0	1	1	1	1
316	2026	4	1662.03	92446.22	1	1	1	1	0	0	0	1	1	1	1
317	2026	5	1662.22	92567.45	1	1	1	1	0	0	0	1	1	1	1
318	2026	6	1662.41	92692.03	1	1	1	1	0	0	0	1	1	1	1
319	2026	7	1662.60	92820.58	1	1	1	1	0	0	0	1	1	1	1
320	2026	8	1662.78	92955.46	1	1	1	1	0	0	0	1	1	1	1
321	2026	9	1662.97	93092.09	1	1	1	1	0	0	0	1	1	1	1
322	2026	10	1663.15	93232.37	1	1	1	1	0	0	0	1	1	1	1
323	2026	11	1663.34	93376.00	1	1	1	1	0	0	0	1	1	1	1
324	2026	12	1663.52	93522.76	1	1	1	1	0	0	0	1	1	1	1
325	2027	1	1663.71	93674.82	1	1	1	1	0	0	0	1	1	1	1
326	2027	2	1663.88	93821.97	1	1	1	1	0	0	0	1	1	1	1
327	2027	3	1664.05	93971.31	1	1	1	1	0	0	0	1	1	1	1
328	2027	4	1664.23	94127.71	1	1	1	1	0	0	0	1	1	1	1
329	2027	5	1664.41	94285.90	1	1	1	1	0	0	0	1	1	1	1
330	2027	6	1664.58	94445.61	1	1	1	1	0	0	0	1	1	1	1
331	2027	7	1664.76	94606.57	1	1	1	1	0	0	0	1	1	1	1
332	2027	8	1664.93	94771.22	1	1	1	1	0	0	0	1	1	1	1
333	2027	9	1665.10	94934.08	1	1	1	1	0	0	0	1	1	1	1
334	2027	10	1665.28	95097.61	1	1	1	1	0	0	0	1	1	1	1
335	2027	11	1665.45	95261.63	1	1	1	1	0	0	0	1	1	1	1
336	2027	12	1665.61	95425.98	1	1	1	1	0	0	0	1	1	1	1
337	2028	1	1665.78	95593.18	1	1	1	1	0	0	0	1	1	1	1
338	2028	2	1665.95	95754.96	1	1	1	1	0	0	0	1	1	1	1
339	2028	3	1666.11	95916.54	1	1	1	1	0	0	0	1	1	1	1
340	2028	4	1666.28	96080.44	1	1	1	1	0	0	0	1	1	1	1
341	2028	5	1666.44	96243.79	1	1	1	1	0	0	0	1	1	1	1
342	2028	6	1666.61	96406.42	1	1	1	1	0	0	0	1	1	1	1
343	2028	7	1666.77	96568.15	1	1	1	1	0	0	0	1	1	1	1
344	2028	8	1666.94	96731.56	1	1	1	1	0	0	0	1	1	1	1
345	2028	9	1667.10	96891.39	1	1	1	1	0	0	0	1	1	1	1
346	2028	10	1667.26	97050.34	1	1	1	1	0	0	0	1	1	1	1
347	2028	11	1667.42	97208.45	1	1	1	1	0	0	0	1	1	1	1
348	2028	12	1667.58	97365.77	1	1	1	1	0	0	0	1	1	1	1
349	2029	1	1667.74	97524.91	1	1	1	1	0	0	0	1	1	1	1
350	2029	2	1667.89	97675.67	1	1	1	1	0	0	0	1	1	1	1
351	2029	3	1668.04	97825.80	1	1	1	1	0	0	0	1	1	1	1
352	2029	4	1668.20	97980.41	1	1	1	1	0	0	0	1	1	1	1

Obs	YEAR	MONTH	N_IMI	gdp_imi	d063on	d093on	d102on	feb16on	mar11	feb11	jan11	aug14on	mar17on	jul18on	oct19on
353	2029	5	1668.34	98134.45	1	1	1	1	0	0	0	1	1	1	1
354	2029	6	1668.50	98287.96	1	1	1	1	0	0	0	1	1	1	1
355	2029	7	1668.64	98440.98	1	1	1	1	0	0	0	1	1	1	1
356	2029	8	1668.79	98596.07	1	1	1	1	0	0	0	1	1	1	1
357	2029	9	1668.93	98748.32	1	1	1	1	0	0	0	1	1	1	1
358	2029	10	1669.07	98900.29	1	1	1	1	0	0	0	1	1	1	1
359	2029	11	1669.21	99052.06	1	1	1	1	0	0	0	1	1	1	1
360	2029	12	1669.35	99203.72	1	1	1	1	0	0	0	1	1	1	1
361	2030	1	1669.49	99357.83	1	1	1	1	0	0	0	1	1	1	1
362	2030	2	1669.62	99504.52	1	1	1	1	0	0	0	1	1	1	1
363	2030	3	1669.76	99651.32	1	1	1	1	0	0	0	1	1	1	1
364	2030	4	1669.90	99803.28	1	1	1	1	0	0	0	1	1	1	1
365	2030	5	1670.04	99955.52	1	1	1	1	0	0	0	1	1	1	1
366	2030	6	1670.18	100108.10	1	1	1	1	0	0	0	1	1	1	1
367	2030	7	1670.32	100261.10	1	1	1	1	0	0	0	1	1	1	1
368	2030	8	1670.46	100417.05	1	1	1	1	0	0	0	1	1	1	1
369	2030	9	1670.61	100570.85	1	1	1	1	0	0	0	1	1	1	1
370	2030	10	1670.75	100724.95	1	1	1	1	0	0	0	1	1	1	1
371	2030	11	1670.89	100879.28	1	1	1	1	0	0	0	1	1	1	1
372	2030	12	1671.04	101033.76	1	1	1	1	0	0	0	1	1	1	1
373	2031	1	1671.18	101190.87	1	1	1	1	0	0	0	1	1	1	1
374	2031	2	1671.31	101340.39	1	1	1	1	0	0	0	1	1	1	1
375	2031	3	1671.45	101489.87	1	1	1	1	0	0	0	1	1	1	1
376	2031	4	1671.59	101644.29	1	1	1	1	0	0	0	1	1	1	1
377	2031	5	1671.72	101798.54	1	1	1	1	0	0	0	1	1	1	1
378	2031	6	1671.85	101952.52	1	1	1	1	0	0	0	1	1	1	1
379	2031	7	1671.98	102106.19	1	1	1	1	0	0	0	1	1	1	1
380	2031	8	1672.10	102262.07	1	1	1	1	0	0	0	1	1	1	1
381	2031	9	1672.22	102415.22	1	1	1	1	0	0	0	1	1	1	1
382	2031	10	1672.34	102568.27	1	1	1	1	0	0	0	1	1	1	1
383	2031	11	1672.46	102721.31	1	1	1	1	0	0	0	1	1	1	1
384	2031	12	1672.57	102874.46	1	1	1	1	0	0	0	1	1	1	1
385	2032	1	1672.68	103030.34	1	1	1	1	0	0	0	1	1	1	1
386	2032	2	1672.79	103181.49	1	1	1	1	0	0	0	1	1	1	1
387	2032	3	1672.89	103333.05	1	1	1	1	0	0	0	1	1	1	1
388	2032	4	1673.00	103487.65	1	1	1	1	0	0	0	1	1	1	1
389	2032	5	1673.11	103642.87	1	1	1	1	0	0	0	1	1	1	1
390	2032	6	1673.21	103798.81	1	1	1	1	0	0	0	1	1	1	1
391	2032	7	1673.31	103955.58	1	1	1	1	0	0	0	1	1	1	1
392	2032	8	1673.41	104115.80	1	1	1	1	0	0	0	1	1	1	1
393	2032	9	1673.52	104274.26	1	1	1	1	0	0	0	1	1	1	1
394	2032	10	1673.62	104433.50	1	1	1	1	0	0	0	1	1	1	1
395	2032	11	1673.72	104593.48	1	1	1	1	0	0	0	1	1	1	1
396	2032	12	1673.82	104754.15	1	1	1	1	0	0	0	1	1	1	1

Obs	YEAR	MONTH	N_IMI	gdp_imi	d063on	d093on	d102on	feb16on	mar11	feb11	jan11	aug14on	mar17on	jul18on	oct19on
397	2033	1	1673.93	104918.12	1	1	1	1	0	0	0	1	1	1	1
398	2033	2	1674.02	105074.75	1	1	1	1	0	0	0	1	1	1	1
399	2033	3	1674.12	105231.91	1	1	1	1	0	0	0	1	1	1	1
400	2033	4	1674.22	105394.91	1	1	1	1	0	0	0	1	1	1	1
401	2033	5	1674.31	105558.39	1	1	1	1	0	0	0	1	1	1	1
402	2033	6	1674.41	105722.32	1	1	1	1	0	0	0	1	1	1	1
403	2033	7	1674.50	105886.65	1	1	1	1	0	0	0	1	1	1	1
404	2033	8	1674.59	106054.05	1	1	1	1	0	0	0	1	1	1	1
405	2033	9	1674.68	106219.08	1	1	1	1	0	0	0	1	1	1	1
406	2033	10	1674.76	106384.41	1	1	1	1	0	0	0	1	1	1	1
407	2033	11	1674.85	106550.02	1	1	1	1	0	0	0	1	1	1	1
408	2033	12	1674.93	106715.87	1	1	1	1	0	0	0	1	1	1	1
409	2034	1	1675.01	106884.66	1	1	1	1	0	0	0	1	1	1	1
410	2034	2	1675.09	107045.45	1	1	1	1	0	0	0	1	1	1	1
411	2034	3	1675.16	107206.39	1	1	1	1	0	0	0	1	1	1	1
412	2034	4	1675.24	107372.91	1	1	1	1	0	0	0	1	1	1	1
413	2034	5	1675.31	107539.53	1	1	1	1	0	0	0	1	1	1	1
414	2034	6	1675.38	107706.20	1	1	1	1	0	0	0	1	1	1	1
415	2034	7	1675.45	107872.92	1	1	1	1	0	0	0	1	1	1	1
416	2034	8	1675.52	108042.38	1	1	1	1	0	0	0	1	1	1	1
417	2034	9	1675.58	108209.11	1	1	1	1	0	0	0	1	1	1	1
418	2034	10	1675.64	108375.83	1	1	1	1	0	0	0	1	1	1	1
419	2034	11	1675.71	108542.53	1	1	1	1	0	0	0	1	1	1	1
420	2034	12	1675.76	108709.20	1	1	1	1	0	0	0	1	1	1	1
421	2035	1	1675.82	108878.56	1	1	1	1	0	0	0	1	1	1	1
422	2035	2	1675.87	109039.68	1	1	1	1	0	0	0	1	1	1	1
423	2035	3	1675.92	109200.73	1	1	1	1	0	0	0	1	1	1	1
424	2035	4	1675.97	109367.18	1	1	1	1	0	0	0	1	1	1	1
425	2035	5	1676.02	109533.53	1	1	1	1	0	0	0	1	1	1	1
426	2035	6	1676.07	109699.79	1	1	1	1	0	0	0	1	1	1	1
427	2035	7	1676.11	109865.94	1	1	1	1	0	0	0	1	1	1	1
428	2035	8	1676.15	110034.66	1	1	1	1	0	0	0	1	1	1	1
429	2035	9	1676.19	110200.47	1	1	1	1	0	0	0	1	1	1	1
430	2035	10	1676.23	110366.00	1	1	1	1	0	0	0	1	1	1	1
431	2035	11	1676.26	110531.22	1	1	1	1	0	0	0	1	1	1	1
432	2035	12	1676.30	110696.05	1	1	1	1	0	0	0	1	1	1	1
433	2036	1	1676.33	110863.13	1	1	1	1	0	0	0	1	1	1	1
434	2036	2	1676.36	111024.33	1	1	1	1	0	0	0	1	1	1	1
435	2036	3	1676.40	111184.97	1	1	1	1	0	0	0	1	1	1	1
436	2036	4	1676.42	111347.68	1	1	1	1	0	0	0	1	1	1	1
437	2036	5	1676.46	111509.70	1	1	1	1	0	0	0	1	1	1	1
438	2036	6	1676.49	111670.99	1	1	1	1	0	0	0	1	1	1	1
439	2036	7	1676.52	111831.47	1	1	1	1	0	0	0	1	1	1	1
440	2036	8	1676.55	111993.79	1	1	1	1	0	0	0	1	1	1	1

Obs	YEAR	MONTH	N_IMI	gdp_imi	d063on	d093on	d102on	feb16on	mar11	feb11	jan11	aug14on	mar17on	jul18on	oct19on
441	2036	9	1676.58	112152.80	1	1	1	1	0	0	0	1	1	1	1
442	2036	10	1676.61	112311.25	1	1	1	1	0	0	0	1	1	1	1
443	2036	11	1676.64	112469.23	1	1	1	1	0	0	0	1	1	1	1
444	2036	12	1676.67	112626.85	1	1	1	1	0	0	0	1	1	1	1
445	2037	1	1676.69	112786.80	1	1	1	1	0	0	0	1	1	1	1
446	2037	2	1676.72	112938.87	1	1	1	1	0	0	0	1	1	1	1
447	2037	3	1676.74	113090.90	1	1	1	1	0	0	0	1	1	1	1
448	2037	4	1676.77	113248.14	1	1	1	1	0	0	0	1	1	1	1
449	2037	5	1676.79	113405.55	1	1	1	1	0	0	0	1	1	1	1
450	2037	6	1676.81	113563.23	1	1	1	1	0	0	0	1	1	1	1
451	2037	7	1676.83	113721.28	1	1	1	1	0	0	0	1	1	1	1
452	2037	8	1676.84	113882.37	1	1	1	1	0	0	0	1	1	1	1
453	2037	9	1676.85	114041.29	1	1	1	1	0	0	0	1	1	1	1
454	2037	10	1676.87	114200.64	1	1	1	1	0	0	0	1	1	1	1
455	2037	11	1676.88	114360.42	1	1	1	1	0	0	0	1	1	1	1
456	2037	12	1676.89	114520.62	1	1	1	1	0	0	0	1	1	1	1
457	2038	1	1676.90	114683.87	1	1	1	1	0	0	0	1	1	1	1
458	2038	2	1676.90	114839.62	1	1	1	1	0	0	0	1	1	1	1
459	2038	3	1676.90	114995.75	1	1	1	1	0	0	0	1	1	1	1
460	2038	4	1676.91	115157.58	1	1	1	1	0	0	0	1	1	1	1
461	2038	5	1676.91	115319.82	1	1	1	1	0	0	0	1	1	1	1
462	2038	6	1676.91	115482.45	1	1	1	1	0	0	0	1	1	1	1
463	2038	7	1676.91	115645.49	1	1	1	1	0	0	0	1	1	1	1
464	2038	8	1676.91	115811.62	1	1	1	1	0	0	0	1	1	1	1
465	2038	9	1676.91	115975.53	1	1	1	1	0	0	0	1	1	1	1
466	2038	10	1676.91	116139.92	1	1	1	1	0	0	0	1	1	1	1
467	2038	11	1676.91	116304.83	1	1	1	1	0	0	0	1	1	1	1
468	2038	12	1676.90	116470.30	1	1	1	1	0	0	0	1	1	1	1
469	2039	1	1676.90	116639.09	1	1	1	1	0	0	0	1	1	1	1
470	2039	2	1676.89	116800.31	1	1	1	1	0	0	0	1	1	1	1
471	2039	3	1676.88	116962.17	1	1	1	1	0	0	0	1	1	1	1
472	2039	4	1676.87	117130.18	1	1	1	1	0	0	0	1	1	1	1
473	2039	5	1676.86	117298.94	1	1	1	1	0	0	0	1	1	1	1
474	2039	6	1676.85	117468.46	1	1	1	1	0	0	0	1	1	1	1
475	2039	7	1676.84	117638.79	1	1	1	1	0	0	0	1	1	1	1
476	2039	8	1676.83	117812.68	1	1	1	1	0	0	0	1	1	1	1
477	2039	9	1676.82	117984.37	1	1	1	1	0	0	0	1	1	1	1
478	2039	10	1676.80	118156.55	1	1	1	1	0	0	0	1	1	1	1
479	2039	11	1676.78	118329.06	1	1	1	1	0	0	0	1	1	1	1
480	2039	12	1676.77	118501.76	1	1	1	1	0	0	0	1	1	1	1
481	2040	1	1676.75	118677.34	1	1	1	1	0	0	0	1	1	1	1
482	2040	2	1676.73	118847.16	1	1	1	1	0	0	0	1	1	1	1
483	2040	3	1676.71	119016.76	1	1	1	1	0	0	0	1	1	1	1
484	2040	4	1676.69	119188.81	1	1	1	1	0	0	0	1	1	1	1

Obs	YEAR	MONTH	N_IMI	gdp_imi	d063on	d093on	d102on	feb16on	mar11	feb11	jan11	aug14on	mar17on	jul18on	oct19on
485	2040	5	1676.67	119360.34	1	1	1	1	0	0	0	1	1	1	1
486	2040	6	1676.65	119531.21	1	1	1	1	0	0	0	1	1	1	1
487	2040	7	1676.63	119701.30	1	1	1	1	0	0	0	1	1	1	1
488	2040	8	1676.61	119873.33	1	1	1	1	0	0	0	1	1	1	1
489	2040	9	1676.59	120041.85	1	1	1	1	0	0	0	1	1	1	1
490	2040	10	1676.56	120209.73	1	1	1	1	0	0	0	1	1	1	1
491	2040	11	1676.54	120377.06	1	1	1	1	0	0	0	1	1	1	1
492	2040	12	1676.52	120543.93	1	1	1	1	0	0	0	1	1	1	1
493	2041	1	1676.49	120713.18	1	1	1	1	0	0	0	1	1	1	1
494	2041	2	1676.47	120873.98	1	1	1	1	0	0	0	1	1	1	1
495	2041	3	1676.44	121034.61	1	1	1	1	0	0	0	1	1	1	1
496	2041	4	1676.42	121200.61	1	1	1	1	0	0	0	1	1	1	1
497	2041	5	1676.39	121366.62	1	1	1	1	0	0	0	1	1	1	1
498	2041	6	1676.37	121532.74	1	1	1	1	0	0	0	1	1	1	1
499	2041	7	1676.34	121699.05	1	1	1	1	0	0	0	1	1	1	1
500	2041	8	1676.31	121868.33	1	1	1	1	0	0	0	1	1	1	1
501	2041	9	1676.29	122035.11	1	1	1	1	0	0	0	1	1	1	1
502	2041	10	1676.26	122202.12	1	1	1	1	0	0	0	1	1	1	1
503	2041	11	1676.23	122369.35	1	1	1	1	0	0	0	1	1	1	1
504	2041	12	1676.20	122536.79	1	1	1	1	0	0	0	1	1	1	1
505	2042	1	1676.17	122707.17	1	1	1	1	0	0	0	1	1	1	1
506	2042	2	1676.13	122869.49	1	1	1	1	0	0	0	1	1	1	1
507	2042	3	1676.10	123031.97	1	1	1	1	0	0	0	1	1	1	1
508	2042	4	1676.06	123200.13	1	1	1	1	0	0	0	1	1	1	1
509	2042	5	1676.03	123368.45	1	1	1	1	0	0	0	1	1	1	1
510	2042	6	1675.98	123536.92	1	1	1	1	0	0	0	1	1	1	1
511	2042	7	1675.94	123705.53	1	1	1	1	0	0	0	1	1	1	1
512	2042	8	1675.90	123877.09	1	1	1	1	0	0	0	1	1	1	1
513	2042	9	1675.85	124046.14	1	1	1	1	0	0	0	1	1	1	1
514	2042	10	1675.80	124215.52	1	1	1	1	0	0	0	1	1	1	1
515	2042	11	1675.75	124385.31	1	1	1	1	0	0	0	1	1	1	1
516	2042	12	1675.71	124555.59	1	1	1	1	0	0	0	1	1	1	1
517	2043	1	1675.65	124729.26	1	1	1	1	0	0	0	1	1	1	1
518	2043	2	1675.61	124895.14	1	1	1	1	0	0	0	1	1	1	1
519	2043	3	1675.56	125061.71	1	1	1	1	0	0	0	1	1	1	1
520	2043	4	1675.51	125234.72	1	1	1	1	0	0	0	1	1	1	1
521	2043	5	1675.47	125408.62	1	1	1	1	0	0	0	1	1	1	1
522	2043	6	1675.42	125583.48	1	1	1	1	0	0	0	1	1	1	1
523	2043	7	1675.38	125759.38	1	1	1	1	0	0	0	1	1	1	1
524	2043	8	1675.34	125939.21	1	1	1	1	0	0	0	1	1	1	1
525	2043	9	1675.30	126117.07	1	1	1	1	0	0	0	1	1	1	1
526	2043	10	1675.26	126295.74	1	1	1	1	0	0	0	1	1	1	1
527	2043	11	1675.22	126475.08	1	1	1	1	0	0	0	1	1	1	1
528	2043	12	1675.19	126655.01	1	1	1	1	0	0	0	1	1	1	1

Obs	YEAR	MONTH	N_IMI	gdp_imi	d063on	d093on	d102on	feb16on	mar11	feb11	jan11	aug14on	mar17on	jul18on	oct19on
529	2044	1	1675.15	126838.34	1	1	1	1	0	0	0	1	1	1	1
530	2044	2	1675.12	127016.09	1	1	1	1	0	0	0	1	1	1	1
531	2044	3	1675.08	127194.06	1	1	1	1	0	0	0	1	1	1	1
532	2044	4	1675.05	127375.10	1	1	1	1	0	0	0	1	1	1	1
533	2044	5	1675.01	127556.13	1	1	1	1	0	0	0	1	1	1	1
534	2044	6	1674.97	127737.05	1	1	1	1	0	0	0	1	1	1	1
535	2044	7	1674.93	127917.73	1	1	1	1	0	0	0	1	1	1	1
536	2044	8	1674.88	128101.12	1	1	1	1	0	0	0	1	1	1	1
537	2044	9	1674.84	128281.37	1	1	1	1	0	0	0	1	1	1	1
538	2044	10	1674.79	128461.55	1	1	1	1	0	0	0	1	1	1	1
539	2044	11	1674.75	128641.72	1	1	1	1	0	0	0	1	1	1	1
540	2044	12	1674.70	128821.97	1	1	1	1	0	0	0	1	1	1	1
541	2045	1	1674.65	129005.35	1	1	1	1	0	0	0	1	1	1	1
542	2045	2	1674.61	129180.10	1	1	1	1	0	0	0	1	1	1	1
543	2045	3	1674.57	129355.18	1	1	1	1	0	0	0	1	1	1	1
544	2045	4	1674.53	129536.60	1	1	1	1	0	0	0	1	1	1	1
545	2045	5	1674.49	129718.52	1	1	1	1	0	0	0	1	1	1	1
546	2045	6	1674.45	129901.04	1	1	1	1	0	0	0	1	1	1	1
547	2045	7	1674.41	130084.22	1	1	1	1	0	0	0	1	1	1	1
548	2045	8	1674.38	130271.12	1	1	1	1	0	0	0	1	1	1	1
549	2045	9	1674.35	130455.64	1	1	1	1	0	0	0	1	1	1	1
550	2045	10	1674.32	130640.74	1	1	1	1	0	0	0	1	1	1	1
551	2045	11	1674.29	130826.35	1	1	1	1	0	0	0	1	1	1	1
552	2045	12	1674.26	131012.42	1	1	1	1	0	0	0	1	1	1	1
553	2046	1	1674.23	131201.95	1	1	1	1	0	0	0	1	1	1	1
554	2046	2	1674.20	131382.63	1	1	1	1	0	0	0	1	1	1	1
555	2046	3	1674.16	131563.57	1	1	1	1	0	0	0	1	1	1	1
556	2046	4	1674.12	131750.86	1	1	1	1	0	0	0	1	1	1	1
557	2046	5	1674.08	131938.32	1	1	1	1	0	0	0	1	1	1	1
558	2046	6	1674.03	132125.88	1	1	1	1	0	0	0	1	1	1	1
559	2046	7	1673.97	132313.48	1	1	1	1	0	0	0	1	1	1	1
560	2046	8	1673.91	132504.16	1	1	1	1	0	0	0	1	1	1	1
561	2046	9	1673.85	132691.74	1	1	1	1	0	0	0	1	1	1	1
562	2046	10	1673.78	132879.28	1	1	1	1	0	0	0	1	1	1	1
563	2046	11	1673.70	133066.74	1	1	1	1	0	0	0	1	1	1	1
564	2046	12	1673.63	133254.12	1	1	1	1	0	0	0	1	1	1	1
565	2047	1	1673.55	133444.45	1	1	1	1	0	0	0	1	1	1	1
566	2047	2	1673.48	133625.44	1	1	1	1	0	0	0	1	1	1	1
567	2047	3	1673.40	133806.28	1	1	1	1	0	0	0	1	1	1	1
568	2047	4	1673.32	133993.06	1	1	1	1	0	0	0	1	1	1	1
569	2047	5	1673.25	134179.64	1	1	1	1	0	0	0	1	1	1	1
570	2047	6	1673.18	134366.00	1	1	1	1	0	0	0	1	1	1	1
571	2047	7	1673.12	134552.10	1	1	1	1	0	0	0	1	1	1	1
572	2047	8	1673.05	134741.02	1	1	1	1	0	0	0	1	1	1	1

Obs	YEAR	MONTH	N_IMI	gdp_imi	d063on	d093on	d102on	feb16on	mar11	feb11	jan11	aug14on	mar17on	jul18on	oct19on
573	2047	9	1672.99	134926.73	1	1	1	1	0	0	0	1	1	1	1
574	2047	10	1672.94	135112.33	1	1	1	1	0	0	0	1	1	1	1
575	2047	11	1672.89	135297.91	1	1	1	1	0	0	0	1	1	1	1
576	2047	12	1672.84	135483.52	1	1	1	1	0	0	0	1	1	1	1
577	2048	1	1672.79	135672.28	1	1	1	1	0	0	0	1	1	1	1
578	2048	2	1672.75	135855.11	1	1	1	1	0	0	0	1	1	1	1
579	2048	3	1672.71	136038.18	1	1	1	1	0	0	0	1	1	1	1
580	2048	4	1672.67	136224.60	1	1	1	1	0	0	0	1	1	1	1
581	2048	5	1672.62	136411.39	1	1	1	1	0	0	0	1	1	1	1
582	2048	6	1672.59	136598.61	1	1	1	1	0	0	0	1	1	1	1
583	2048	7	1672.55	136786.33	1	1	1	1	0	0	0	1	1	1	1
584	2048	8	1672.51	136977.69	1	1	1	1	0	0	0	1	1	1	1
585	2048	9	1672.46	137166.50	1	1	1	1	0	0	0	1	1	1	1
586	2048	10	1672.42	137355.85	1	1	1	1	0	0	0	1	1	1	1
587	2048	11	1672.39	137545.74	1	1	1	1	0	0	0	1	1	1	1
588	2048	12	1672.35	137736.16	1	1	1	1	0	0	0	1	1	1	1
589	2049	1	1672.31	137930.27	1	1	1	1	0	0	0	1	1	1	1
590	2049	2	1672.27	138115.50	1	1	1	1	0	0	0	1	1	1	1
591	2049	3	1672.23	138301.24	1	1	1	1	0	0	0	1	1	1	1
592	2049	4	1672.19	138493.80	1	1	1	1	0	0	0	1	1	1	1
593	2049	5	1672.16	138686.91	1	1	1	1	0	0	0	1	1	1	1
594	2049	6	1672.12	138880.55	1	1	1	1	0	0	0	1	1	1	1
595	2049	7	1672.09	139074.74	1	1	1	1	0	0	0	1	1	1	1
596	2049	8	1672.05	139272.67	1	1	1	1	0	0	0	1	1	1	1
597	2049	9	1672.02	139467.95	1	1	1	1	0	0	0	1	1	1	1
598	2049	10	1671.99	139663.77	1	1	1	1	0	0	0	1	1	1	1
599	2049	11	1671.96	139860.13	1	1	1	1	0	0	0	1	1	1	1
600	2049	12	1671.94	140057.04	1	1	1	1	0	0	0	1	1	1	1
601	2050	1	1671.91	140257.73	1	1	1	1	0	0	0	1	1	1	1
602	2050	2	1671.89	140449.23	1	1	1	1	0	0	0	1	1	1	1
603	2050	3	1671.87	140641.24	1	1	1	1	0	0	0	1	1	1	1
604	2050	4	1671.85	140840.29	1	1	1	1	0	0	0	1	1	1	1
605	2050	5	1671.83	141039.89	1	1	1	1	0	0	0	1	1	1	1
606	2050	6	1671.82	141240.03	1	1	1	1	0	0	0	1	1	1	1
607	2050	7	1671.80	141440.71	1	1	1	1	0	0	0	1	1	1	1
608	2050	8	1671.80	141645.25	1	1	1	1	0	0	0	1	1	1	1
609	2050	9	1671.79	141847.02	1	1	1	1	0	0	0	1	1	1	1
610	2050	10	1671.79	142049.35	1	1	1	1	0	0	0	1	1	1	1
611	2050	11	1671.78	142252.22	1	1	1	1	0	0	0	1	1	1	1
612	2050	12	1671.78	142455.64	1	1	1	1	0	0	0	1	1	1	1
613	2051	1	1671.54	142626.01	1	1	1	1	0	0	0	1	1	1	1
614	2051	2	1671.53	142823.95	1	1	1	1	0	0	0	1	1	1	1
615	2051	3	1671.52	143022.40	1	1	1	1	0	0	0	1	1	1	1
616	2051	4	1671.52	143228.10	1	1	1	1	0	0	0	1	1	1	1

Obs	YEAR	MONTH	N_IMI	gdp_imi	d063on	d093on	d102on	feb16on	mar11	feb11	jan11	aug14on	mar17on	jul18on	oct19on
617	2051	5	1671.52	143434.36	1	1	1	1	0	0	0	1	1	1	1
618	2051	6	1671.52	143641.16	1	1	1	1	0	0	0	1	1	1	1
619	2051	7	1671.53	143848.51	1	1	1	1	0	0	0	1	1	1	1
620	2051	8	1671.56	144059.83	1	1	1	1	0	0	0	1	1	1	1
621	2051	9	1671.57	144268.27	1	1	1	1	0	0	0	1	1	1	1
622	2051	10	1671.60	144477.27	1	1	1	1	0	0	0	1	1	1	1
623	2051	11	1671.61	144686.81	1	1	1	1	0	0	0	1	1	1	1
624	2051	12	1671.64	144896.91	1	1	1	1	0	0	0	1	1	1	1
625	2052	1	1671.18	145035.85	1	1	1	1	0	0	0	1	1	1	1
626	2052	2	1671.18	145240.39	1	1	1	1	0	0	0	1	1	1	1
627	2052	3	1671.19	145445.45	1	1	1	1	0	0	0	1	1	1	1
628	2052	4	1671.21	145657.99	1	1	1	1	0	0	0	1	1	1	1
629	2052	5	1671.22	145871.08	1	1	1	1	0	0	0	1	1	1	1
630	2052	6	1671.25	146084.71	1	1	1	1	0	0	0	1	1	1	1
631	2052	7	1671.28	146298.91	1	1	1	1	0	0	0	1	1	1	1
632	2052	8	1671.33	146517.18	1	1	1	1	0	0	0	1	1	1	1
633	2052	9	1671.36	146732.46	1	1	1	1	0	0	0	1	1	1	1
634	2052	10	1671.42	146948.31	1	1	1	1	0	0	0	1	1	1	1
635	2052	11	1671.46	147164.70	1	1	1	1	0	0	0	1	1	1	1
636	2052	12	1671.52	147381.65	1	1	1	1	0	0	0	1	1	1	1
637	2053	1	1670.83	147488.00	1	1	1	1	0	0	0	1	1	1	1
638	2053	2	1670.85	147699.31	1	1	1	1	0	0	0	1	1	1	1
639	2053	3	1670.87	147911.15	1	1	1	1	0	0	0	1	1	1	1
640	2053	4	1670.92	148130.70	1	1	1	1	0	0	0	1	1	1	1
641	2053	5	1670.94	148350.80	1	1	1	1	0	0	0	1	1	1	1
642	2053	6	1670.99	148571.45	1	1	1	1	0	0	0	1	1	1	1
643	2053	7	1671.04	148792.66	1	1	1	1	0	0	0	1	1	1	1
644	2053	8	1671.13	149018.07	1	1	1	1	0	0	0	1	1	1	1
645	2053	9	1671.17	149240.38	1	1	1	1	0	0	0	1	1	1	1
646	2053	10	1671.26	149463.25	1	1	1	1	0	0	0	1	1	1	1
647	2053	11	1671.32	149686.66	1	1	1	1	0	0	0	1	1	1	1
648	2053	12	1671.41	149910.65	1	1	1	1	0	0	0	1	1	1	1
649	2054	1	1670.50	149983.22	1	1	1	1	0	0	0	1	1	1	1
650	2054	2	1670.54	150201.48	1	1	1	1	0	0	0	1	1	1	1
651	2054	3	1670.57	150420.28	1	1	1	1	0	0	0	1	1	1	1
652	2054	4	1670.64	150647.02	1	1	1	1	0	0	0	1	1	1	1
653	2054	5	1670.67	150874.32	1	1	1	1	0	0	0	1	1	1	1
654	2054	6	1670.74	151102.17	1	1	1	1	0	0	0	1	1	1	1
655	2054	7	1670.81	151330.58	1	1	1	1	0	0	0	1	1	1	1
656	2054	8	1670.93	151563.31	1	1	1	1	0	0	0	1	1	1	1
657	2054	9	1671.00	151792.82	1	1	1	1	0	0	0	1	1	1	1
658	2054	10	1671.12	152022.90	1	1	1	1	0	0	0	1	1	1	1
659	2054	11	1671.20	152253.52	1	1	1	1	0	0	0	1	1	1	1
660	2054	12	1671.32	152484.71	1	1	1	1	0	0	0	1	1	1	1

Obs	YEAR	MONTH	N_IMI	gdp_imi	d063on	d093on	d102on	feb16on	mar11	feb11	jan11	aug14on	mar17on	jul18on	oct19on
661	2055	1	1670.19	152522.29	1	1	1	1	0	0	0	1	1	1	1
662	2055	2	1670.24	152747.69	1	1	1	1	0	0	0	1	1	1	1
663	2055	3	1670.29	152973.62	1	1	1	1	0	0	0	1	1	1	1
664	2055	4	1670.37	153207.74	1	1	1	1	0	0	0	1	1	1	1
665	2055	5	1670.42	153442.43	1	1	1	1	0	0	0	1	1	1	1
666	2055	6	1670.51	153677.65	1	1	1	1	0	0	0	1	1	1	1
667	2055	7	1670.60	153913.45	1	1	1	1	0	0	0	1	1	1	1
668	2055	8	1670.75	154153.69	1	1	1	1	0	0	0	1	1	1	1
669	2055	9	1670.84	154390.59	1	1	1	1	0	0	0	1	1	1	1
670	2055	10	1670.99	154628.07	1	1	1	1	0	0	0	1	1	1	1
671	2055	11	1671.09	154866.08	1	1	1	1	0	0	0	1	1	1	1
672	2055	12	1671.24	155104.68	1	1	1	1	0	0	0	1	1	1	1
673	2056	1	1669.89	155106.00	1	1	1	1	0	0	0	1	1	1	1
674	2056	2	1669.96	155338.72	1	1	1	1	0	0	0	1	1	1	1
675	2056	3	1670.02	155571.97	1	1	1	1	0	0	0	1	1	1	1
676	2056	4	1670.12	155813.66	1	1	1	1	0	0	0	1	1	1	1
677	2056	5	1670.18	156055.93	1	1	1	1	0	0	0	1	1	1	1
678	2056	6	1670.30	156298.73	1	1	1	1	0	0	0	1	1	1	1
679	2056	7	1670.41	156542.11	1	1	1	1	0	0	0	1	1	1	1
680	2056	8	1670.59	156790.05	1	1	1	1	0	0	0	1	1	1	1
681	2056	9	1670.69	157034.53	1	1	1	1	0	0	0	1	1	1	1
682	2056	10	1670.88	157279.59	1	1	1	1	0	0	0	1	1	1	1
683	2056	11	1671.00	157525.19	1	1	1	1	0	0	0	1	1	1	1
684	2056	12	1671.18	157771.37	1	1	1	1	0	0	0	1	1	1	1
685	2057	1	1669.60	157735.16	1	1	1	1	0	0	0	1	1	1	1
686	2057	2	1669.69	157975.39	1	1	1	1	0	0	0	1	1	1	1
687	2057	3	1669.77	158216.16	1	1	1	1	0	0	0	1	1	1	1
688	2057	4	1669.89	158465.62	1	1	1	1	0	0	0	1	1	1	1
689	2057	5	1669.96	158715.65	1	1	1	1	0	0	0	1	1	1	1
690	2057	6	1670.10	158966.22	1	1	1	1	0	0	0	1	1	1	1
691	2057	7	1670.23	159217.37	1	1	1	1	0	0	0	1	1	1	1
692	2057	8	1670.45	159473.23	1	1	1	1	0	0	0	1	1	1	1
693	2057	9	1670.57	159725.48	1	1	1	1	0	0	0	1	1	1	1
694	2057	10	1670.78	159978.32	1	1	1	1	0	0	0	1	1	1	1
695	2057	11	1670.92	160231.69	1	1	1	1	0	0	0	1	1	1	1
696	2057	12	1671.14	160485.66	1	1	1	1	0	0	0	1	1	1	1

INDIANA MICHIGAN POWER COMPANY - INDIANA
COMMERCIAL CUSTOMERS
MODEL ESTIMATION

The SYSLIN Procedure
Ordinary Least Squares Estimation

Model	cc_imi
Dependent Variable	cc_imi
Label	Commercial Customers

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	12	9.3663E8	78052721	233.35	<.0001
Error	227	75928349	334486.1		
Corrected Total	239	1.0126E9			

Root MSE	578.34775	R-Square	0.92501
Dependent Mean	50970.5167	Adj R-Sq	0.92105
Coeff Var	1.13467		

Parameter Estimates

Variable	DF	Parameter Estimate	Standard Error	t Value	Pr > |t|	Variable Label
Intercept	1	19955.67	4349.417	4.59	<.0001	Intercept
lgdpn_imi	1	7485.143	1158.291	6.46	<.0001	Service Area Gross Regional Product Per Capita
d063on	1	2574.787	121.8920	21.12	<.0001	Binary Variable-July 2006 On
d093on	1	1445.097	246.1630	5.87	<.0001	Binary Variable-July 2009 On
d102on	1	-479.233	243.6713	-1.97	0.0504	Binary Variable-April 2010 On
jan11	1	335.1040	584.2195	0.57	0.5668	Binary Variable-January 2011
feb11	1	-1375.12	584.2228	-2.35	0.0194	Binary Variable-February 2011
mar11	1	1882.956	584.2377	3.22	0.0015	Binary Variable-March 2011
aug14on	1	129.3517	168.0966	0.77	0.4424	Binary Varaible-August 2014 On

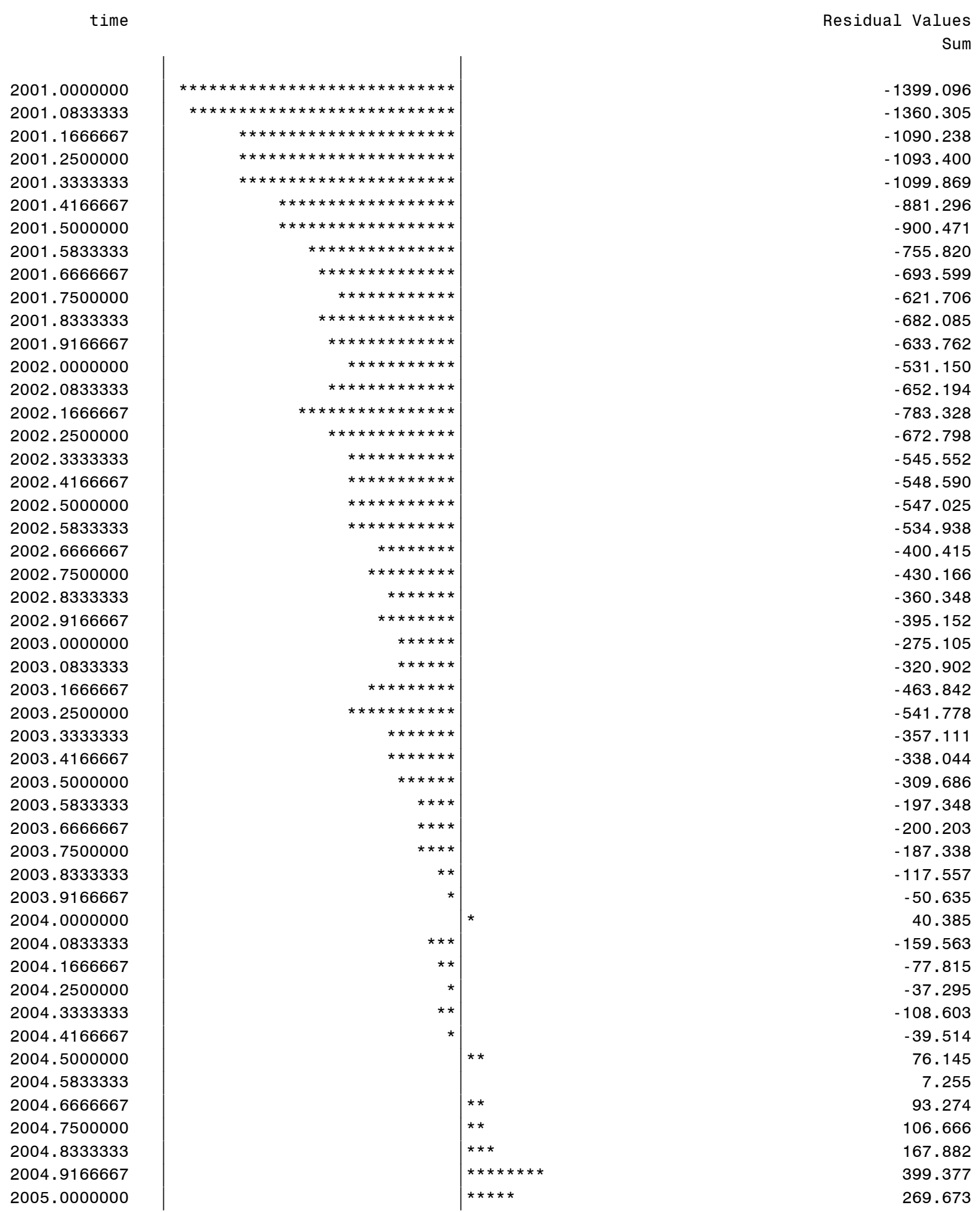
INDIANA MICHIGAN POWER COMPANY - INDIANA
COMMERCIAL CUSTOMERS
MODEL ESTIMATION

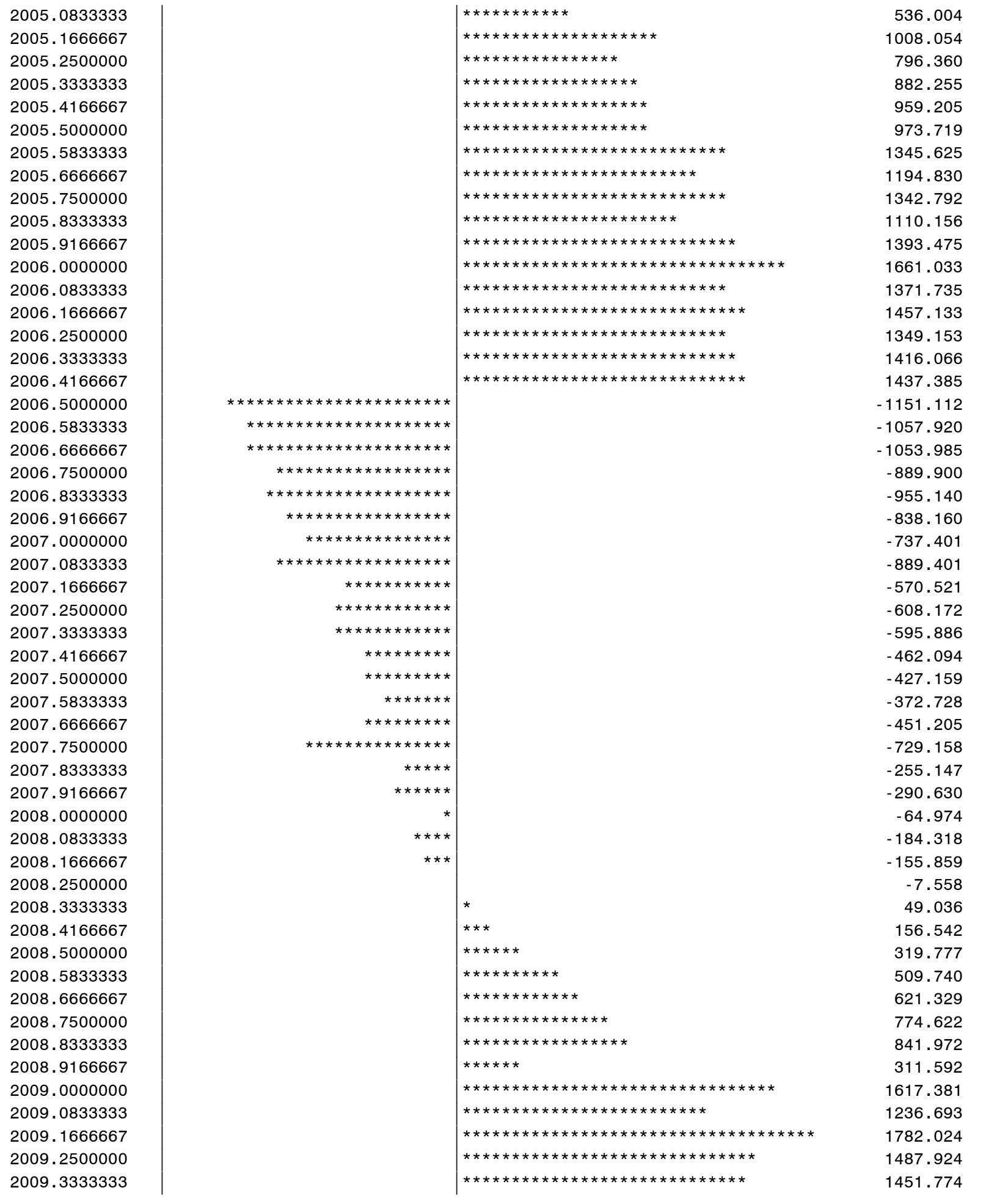
The SYSLIN Procedure
Ordinary Least Squares Estimation

Parameter Estimates

Variable	DF	Parameter Estimate	Standard Error	t Value	Pr > |t|	Variable Label
feb16on	1	248.9026	211.2363	1.18	0.2399	Binary Variable-February 2016 On
mar17on	1	129.7989	219.4525	0.59	0.5548	Binary Variable-March 2017 On
jul18on	1	196.7192	209.7063	0.94	0.3492	Binary Variable-July 2018 On
oct19on	1	508.8584	216.1454	2.35	0.0194	Binary Variable-October 2019 On

Durbin-Watson	0.408328
Number of Observations	240
First-Order Autocorrelation	0.782792


time
Residual Values
Sum
2001.0000000 -1399.096
2001.0833333 -1360.305
2001.1666667 -1090.238
2001.2500000 -1093.400
2001.3333333 -1099.869
2001.4166667 -881.296
2001.5000000 -900.471
2001.5833333 -755.820
2001.6666667 -693.599
2001.7500000 -621.706
2001.8333333 -682.085
2001.9166667 -633.762
2002.0000000 -531.150
2002.0833333 -652.194
2002.1666667 -783.328
2002.2500000 -672.798
2002.3333333 -545.552
2002.4166667 -548.590
2002.5000000 -547.025
2002.5833333 -534.938
2002.6666667 -400.415
2002.7500000 -430.166
2002.8333333 -360.348
2002.9166667 -395.152
2003.0000000 -275.105
2003.0833333 -320.902
2003.1666667 -463.842
2003.2500000 -541.778
2003.3333333 -357.111
2003.4166667 -338.044
2003.5000000 -309.686
2003.5833333 -197.348
2003.6666667 -200.203
2003.7500000 -187.338
2003.8333333 -117.557
2003.9166667 -50.635
2004.0000000 40.385
2004.0833333 -159.563
2004.1666667 -77.815
2004.2500000 -37.295
2004.3333333 -108.603
2004.4166667 -39.514
2004.5000000 76.145
2004.5833333 7.255
2004.6666667 93.274
2004.7500000 106.666
2004.8333333 167.882
2004.9166667 399.377
2005.0000000 269.673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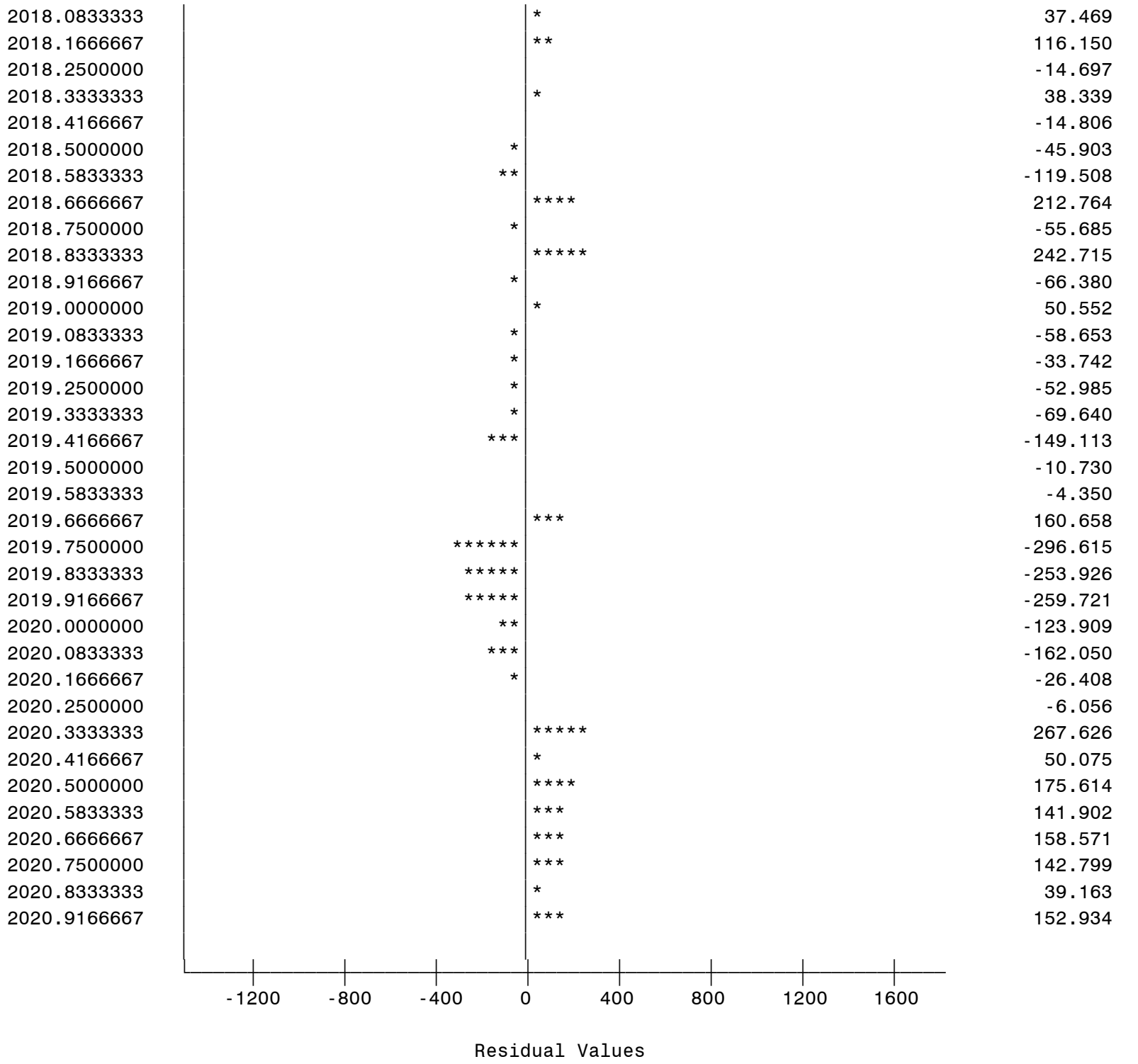
2005.1666667 ********** 1008.054
2005.2500000 ********** 796.360
2005.3333333 ********** 882.255
2005.4166667 ********** 959.205
2005.5000000 ********** 973.719
2005.5833333 ********** 1345.625
2005.6666667 ********** 1194.830
2005.7500000 ********** 1342.792
2005.8333333 ********** 1110.156
2005.9166667 ********** 1393.475
2006.0000000 ********** 1661.033
2006.0833333 ********** 1371.735
2006.1666667 ********** 1457.133
2006.2500000 ********** 1349.153
2006.3333333 ********** 1416.066
2006.4166667 ********** 1437.385
2006.5000000 ********** -1151.112
2006.5833333 ********** -1057.920
2006.6666667 ********** -1053.985
2006.7500000 ********** -889.900
2006.8333333 ********** -955.140
2006.9166667 ********** -838.160
2007.0000000 ********** -737.401
2007.0833333 ********** -889.401
2007.1666667 ********** -570.521
2007.2500000 ********** -608.172
2007.3333333 ********** -595.886
2007.4166667 ********** -462.094
2007.5000000 ********** -427.159
2007.5833333 ********** -372.728
2007.6666667 ********** -451.205
2007.7500000 ********** -729.158
2007.8333333 ********** -255.147
2007.9166667 ********** -290.630
2008.0000000 ********** -64.974
2008.0833333 ********** -184.318
2008.1666667 ********** -155.859
2008.2500000 ********** -7.558
2008.3333333 ********** 49.036
2008.4166667 ********** 156.542
2008.5000000 ********** 319.777
2008.5833333 ********** 509.740
2008.6666667 ********** 621.329
2008.7500000 ********** 774.622
2008.8333333 ********** 841.972
2008.9166667 ********** 311.592
2009.0000000 ********** 1617.381
2009.0833333 ********** 1236.693
2009.1666667 ********** 1782.024
2009.2500000 ********** 1487.924
2009.3333333 ********** 1451.774

2009.4166667		**********	1588.024
2009.5000000		****	198.903
2009.5833333		*	60.959
2009.6666667		**	102.168
2009.7500000		****	189.039
2009.8333333		*	37.701
2009.9166667	*****		-265.208
2010.0000000	***		-152.714
2010.0833333	**********		-1430.375
2010.1666667		********	1259.527
2010.2500000		**	103.604
2010.3333333	**		-90.263
2010.4166667	*		-41.343
2010.5000000	**		-77.237
2010.5833333	*****		-271.919
2010.6666667	******		-278.853
2010.7500000	***		-128.841
2010.8333333	**		-117.982
2010.9166667	**********		-934.099
2011.0000000			-0.000
2011.0833333			-0.000
2011.1666667			-0.000
2011.2500000	**		-86.774
2011.3333333	***		-127.729
2011.4166667	*		-52.736
2011.5000000	*****		-270.680
2011.5833333		***	141.836
2011.6666667	*		-72.043
2011.7500000	*		-38.670
2011.8333333	*		-56.412
2011.9166667	***		-153.776
2012.0000000		***	138.653
2012.0833333			8.875
2012.1666667			-19.862
2012.2500000			16.847
2012.3333333			6.664
2012.4166667			-23.843
2012.5000000		*	44.827
2012.5833333			-18.309
2012.6666667		**	105.663
2012.7500000		****	203.308
2012.8333333		**	99.292
2012.9166667		**	89.282
2013.0000000		*****	251.860
2013.0833333		*	50.105
2013.1666667	**********		-653.573
2013.2500000		**********	852.299
2013.3333333		**	109.546
2013.4166667		***	128.911
2013.5000000		******	307.059
2013.5833333		*******	365.772
2013.6666667		***	147.917

2013.7500000		*********	447.613
2013.8333333		*	73.302
2013.9166667		**	119.303
2014.0000000		***	138.707
2014.0833333	****		-182.760
2014.1666667			4.200
2014.2500000			4.285
2014.3333333	*		-59.432
2014.4166667	**		-75.638
2014.5000000	***		-126.956
2014.5833333			-13.866
2014.6666667	**		-107.365
2014.7500000	***		-174.213
2014.8333333	*		-30.599
2014.9166667			-3.685
2015.0000000	***		-174.744
2015.0833333			9.403
2015.1666667		**	105.288
2015.2500000			-10.355
2015.3333333	***		-159.553
2015.4166667		****	190.553
2015.5000000		***	146.776
2015.5833333		*	56.910
2015.6666667			-8.107
2015.7500000		**	124.552
2015.8333333		*	70.731
2015.9166667			8.290
2016.0000000	*		-30.015
2016.0833333		**	98.058
2016.1666667		****	184.995
2016.2500000	*		-68.341
2016.3333333	*		-56.038
2016.4166667		*	38.807
2016.5000000	***		-125.954
2016.5833333		**	82.459
2016.6666667	*		-31.296
2016.7500000	*		-44.215
2016.8333333	*		-56.100
2016.9166667		*	48.234
2017.0000000			3.680
2017.0833333	*		-74.288
2017.1666667		**	94.764
2017.2500000		*	31.989
2017.3333333	*		-34.599
2017.4166667	*		-56.786
2017.5000000	*		-71.404
2017.5833333	*		-57.674
2017.6666667	*		-51.101
2017.7500000	*		-42.041
2017.8333333	*		-52.598
2017.9166667			8.153
2018.0000000		*	68.844

INDIANA MICHIGAN POWER COMPANY - INDIANA
COMMERCIAL CUSTOMERS
MODEL RESIDUALS



INDIANA MICHIGAN POWER COMPANY - INDIANA
COMMERCIAL CUSTOMERS
ACTUAL AND FORECAST

YEAR	CUSTOMERS	GROWTH RATE
2001	46668.33	.
2002	47288.83	1.3
2003	47841.5	1.2
2004	48312.25	1.0
2005	49275.25	2.0
2006	49973.83	1.4
2007	50542.83	1.1
2008	51035.33	1.0
2009	51405.25	0.7
2010	51515.08	0.2
2011	51713.83	0.4
2012	51783.58	0.1
2013	52015.33	0.4
2014	52040.42	0.0
2015	52291.58	0.5
2016	52574.67	0.5
2017	52879.83	0.6
2018	53257.5	0.7
2019	53376.58	0.2
2020	53618.5	0.5
2021	53672.14	0.1
2022	54003.56	0.6
2023	54198.21	0.4
2024	54339.27	0.3
2025	54457.69	0.2
2026	54564.38	0.2
2027	54694.94	0.2
2028	54838.6	0.3
2029	54974.66	0.2
2030	55104.64	0.2
2031	55233.6	0.2
2032	55362.24	0.2
2033	55494.43	0.2
2034	55629.11	0.2
2035	55763.19	0.2
2036	55894.06	0.2
2037	56018.75	0.2
2038	56143.84	0.2
2039	56272.01	0.2
2040	56402.56	0.2
2041	56528.3	0.2
2042	56652.51	0.2
2043	56778.3	0.2
2044	56907.31	0.2
2045	57035.55	0.2
2046	57164.61	0.2
2047	57293.84	0.2
2048	57420.02	0.2
2049	57546.22	0.2

INDIANA MICHIGAN POWER COMPANY - INDIANA
COMMERCIAL CUSTOMERS
ACTUAL AND FORECAST

YEAR	CUSTOMERS	GROWTH RATE
2050	57673.68	0.2
2051	57801.15	0.2
2052	57928.64	0.2
2053	58056.13	0.2
2054	58183.64	0.2
2055	58311.17	0.2
2056	58438.7	0.2
2057	58566.25	0.2

INDIANA MICHIGAN POWER COMPANY - INDIANA
INDUSTRIAL CUSTOMERS
ENDOGENOUS VARIABLES

The MEANS Procedure

Variable	Label	Mean
YEAR	YEAR	2028.50
MONTH	MONTH	6.5000000
ci_imi	Industrial Customers	4128.40

INDIANA MICHIGAN POWER COMPANY - INDIANA
INDUSTRIAL CUSTOMERS
ENDOGENOUS VARIABLES

Obs	YEAR	MONTH	ci_imi
1	2000	1	4285
2	2000	2	4309
3	2000	3	4290
4	2000	4	4279
5	2000	5	4287
6	2000	6	4270
7	2000	7	4260
8	2000	8	4269
9	2000	9	4267
10	2000	10	4267
11	2000	11	4262
12	2000	12	4274
13	2001	1	4276
14	2001	2	4246
15	2001	3	4287
16	2001	4	4269
17	2001	5	4273
18	2001	6	4268
19	2001	7	4251
20	2001	8	4275
21	2001	9	4250
22	2001	10	4248
23	2001	11	4264
24	2001	12	4240
25	2002	1	4241
26	2002	2	4255
27	2002	3	4237
28	2002	4	4249
29	2002	5	4251
30	2002	6	4251
31	2002	7	4299
32	2002	8	4215
33	2002	9	4237
34	2002	10	4228
35	2002	11	4243
36	2002	12	4233
37	2003	1	4234
38	2003	2	4241
39	2003	3	4224
40	2003	4	4234
41	2003	5	4236
42	2003	6	4238
43	2003	7	4250
44	2003	8	4242
45	2003	9	4231
46	2003	10	4239
47	2003	11	4217
48	2003	12	4235
49	2004	1	4267
50	2004	2	4189

INDIANA MICHIGAN POWER COMPANY - INDIANA
INDUSTRIAL CUSTOMERS
ENDOGENOUS VARIABLES

Obs	YEAR	MONTH	ci_imi
51	2004	3	4265
52	2004	4	4227
53	2004	5	4211
54	2004	6	4207
55	2004	7	4206
56	2004	8	4187
57	2004	9	4193
58	2004	10	4098
59	2004	11	4178
60	2004	12	4201
61	2005	1	4105
62	2005	2	4251
63	2005	3	4200
64	2005	4	4160
65	2005	5	4156
66	2005	6	4134
67	2005	7	4136
68	2005	8	4164
69	2005	9	4134
70	2005	10	4137
71	2005	11	4026
72	2005	12	4206
73	2006	1	4163
74	2006	2	4066
75	2006	3	4177
76	2006	4	4101
77	2006	5	4120
78	2006	6	4126
79	2006	7	4111
80	2006	8	4126
81	2006	9	4102
82	2006	10	4110
83	2006	11	4081
84	2006	12	4084
85	2007	1	4109
86	2007	2	4099
87	2007	3	4159
88	2007	4	4120
89	2007	5	4053
90	2007	6	4123
91	2007	7	4132
92	2007	8	4106
93	2007	9	4112
94	2007	10	4079
95	2007	11	4100
96	2007	12	4087
97	2008	1	4113
98	2008	2	4168
99	2008	3	4153
100	2008	4	4161

INDIANA MICHIGAN POWER COMPANY - INDIANA
INDUSTRIAL CUSTOMERS
ENDOGENOUS VARIABLES

Obs	YEAR	MONTH	ci_imi
101	2008	5	4186
102	2008	6	4189
103	2008	7	4177
104	2008	8	4168
105	2008	9	4178
106	2008	10	4186
107	2008	11	4157
108	2008	12	4100
109	2009	1	4237
110	2009	2	4196
111	2009	3	4280
112	2009	4	4200
113	2009	5	4186
114	2009	6	4196
115	2009	7	4207
116	2009	8	4190
117	2009	9	4178
118	2009	10	4207
119	2009	11	4158
120	2009	12	4076
121	2010	1	4145
122	2010	2	3883
123	2010	3	4438
124	2010	4	4132
125	2010	5	4114
126	2010	6	4124
127	2010	7	4160
128	2010	8	4093
129	2010	9	4065
130	2010	10	4149
131	2010	11	4125
132	2010	12	3993
133	2011	1	4121
134	2011	2	3819
135	2011	3	4444
136	2011	4	4101
137	2011	5	4106
138	2011	6	4102
139	2011	7	4080
140	2011	8	4116
141	2011	9	4107
142	2011	10	4115
143	2011	11	4095
144	2011	12	4086
145	2012	1	4119
146	2012	2	4100
147	2012	3	4100
148	2012	4	4091
149	2012	5	4102
150	2012	6	4093

INDIANA MICHIGAN POWER COMPANY - INDIANA
INDUSTRIAL CUSTOMERS
ENDOGENOUS VARIABLES

Obs	YEAR	MONTH	ci_imi
151	2012	7	4092
152	2012	8	4106
153	2012	9	4107
154	2012	10	4108
155	2012	11	4087
156	2012	12	4071
157	2013	1	4112
158	2013	2	4080
159	2013	3	4052
160	2013	4	4119
161	2013	5	4068
162	2013	6	4067
163	2013	7	4077
164	2013	8	4076
165	2013	9	4077
166	2013	10	4082
167	2013	11	4050
168	2013	12	4047
169	2014	1	4037
170	2014	2	4045
171	2014	3	4047
172	2014	4	4032
173	2014	5	4041
174	2014	6	4036
175	2014	7	4029
176	2014	8	4027
177	2014	9	4030
178	2014	10	4017
179	2014	11	4025
180	2014	12	4010
181	2015	1	4011
182	2015	2	4010
183	2015	3	4057
184	2015	4	4042
185	2015	5	3976
186	2015	6	4020
187	2015	7	4010
188	2015	8	3998
189	2015	9	4008
190	2015	10	4050
191	2015	11	4024
192	2015	12	3995
193	2016	1	3994
194	2016	2	4020
195	2016	3	4022
196	2016	4	4002
197	2016	5	3987
198	2016	6	3987
199	2016	7	3978
200	2016	8	4013

INDIANA MICHIGAN POWER COMPANY - INDIANA
INDUSTRIAL CUSTOMERS
ENDOGENOUS VARIABLES

Obs	YEAR	MONTH	ci_imi
201	2016	9	3992
202	2016	10	3988
203	2016	11	3993
204	2016	12	3990
205	2017	1	4085
206	2017	2	4078
207	2017	3	4106
208	2017	4	4078
209	2017	5	4092
210	2017	6	4092
211	2017	7	4079
212	2017	8	4080
213	2017	9	4076
214	2017	10	4085
215	2017	11	4084
216	2017	12	4070
217	2018	1	4082
218	2018	2	4072
219	2018	3	4063
220	2018	4	4067
221	2018	5	4070
222	2018	6	4061
223	2018	7	4103
224	2018	8	4101
225	2018	9	4086
226	2018	10	4089
227	2018	11	4086
228	2018	12	4062
229	2019	1	4065
230	2019	2	4054
231	2019	3	4061
232	2019	4	4062
233	2019	5	4088
234	2019	6	4092
235	2019	7	4117
236	2019	8	4099
237	2019	9	4090
238	2019	10	4088
239	2019	11	4082
240	2019	12	4094
241	2020	1	4078
242	2020	2	4058
243	2020	3	4067
244	2020	4	4064
245	2020	5	4056
246	2020	6	4072
247	2020	7	4059
248	2020	8	4054
249	2020	9	4067
250	2020	10	4057

INDIANA MICHIGAN POWER COMPANY - INDIANA
INDUSTRIAL CUSTOMERS
ENDOGENOUS VARIABLES

Obs	YEAR	MONTH	ci_imi
251	2020	11	4050
252	2020	12	4039
253	2021	1	.
254	2021	2	.
255	2021	3	.
256	2021	4	.
257	2021	5	.
258	2021	6	.
259	2021	7	.
260	2021	8	.
261	2021	9	.
262	2021	10	.
263	2021	11	.
264	2021	12	.
265	2022	1	.
266	2022	2	.
267	2022	3	.
268	2022	4	.
269	2022	5	.
270	2022	6	.
271	2022	7	.
272	2022	8	.
273	2022	9	.
274	2022	10	.
275	2022	11	.
276	2022	12	.
277	2023	1	.
278	2023	2	.
279	2023	3	.
280	2023	4	.
281	2023	5	.
282	2023	6	.
283	2023	7	.
284	2023	8	.
285	2023	9	.
286	2023	10	.
287	2023	11	.
288	2023	12	.
289	2024	1	.
290	2024	2	.
291	2024	3	.
292	2024	4	.
293	2024	5	.
294	2024	6	.
295	2024	7	.
296	2024	8	.
297	2024	9	.
298	2024	10	.
299	2024	11	.
300	2024	12	.

INDIANA MICHIGAN POWER COMPANY - INDIANA
INDUSTRIAL CUSTOMERS
ENDOGENOUS VARIABLES

Obs	YEAR	MONTH	ci_imi
301	2025	1	.
302	2025	2	.
303	2025	3	.
304	2025	4	.
305	2025	5	.
306	2025	6	.
307	2025	7	.
308	2025	8	.
309	2025	9	.
310	2025	10	.
311	2025	11	.
312	2025	12	.
313	2026	1	.
314	2026	2	.
315	2026	3	.
316	2026	4	.
317	2026	5	.
318	2026	6	.
319	2026	7	.
320	2026	8	.
321	2026	9	.
322	2026	10	.
323	2026	11	.
324	2026	12	.
325	2027	1	.
326	2027	2	.
327	2027	3	.
328	2027	4	.
329	2027	5	.
330	2027	6	.
331	2027	7	.
332	2027	8	.
333	2027	9	.
334	2027	10	.
335	2027	11	.
336	2027	12	.
337	2028	1	.
338	2028	2	.
339	2028	3	.
340	2028	4	.
341	2028	5	.
342	2028	6	.
343	2028	7	.
344	2028	8	.
345	2028	9	.
346	2028	10	.
347	2028	11	.
348	2028	12	.
349	2029	1	.
350	2029	2	.

INDIANA MICHIGAN POWER COMPANY - INDIANA
INDUSTRIAL CUSTOMERS
ENDOGENOUS VARIABLES

Obs	YEAR	MONTH	ci_imi
351	2029	3	.
352	2029	4	.
353	2029	5	.
354	2029	6	.
355	2029	7	.
356	2029	8	.
357	2029	9	.
358	2029	10	.
359	2029	11	.
360	2029	12	.
361	2030	1	.
362	2030	2	.
363	2030	3	.
364	2030	4	.
365	2030	5	.
366	2030	6	.
367	2030	7	.
368	2030	8	.
369	2030	9	.
370	2030	10	.
371	2030	11	.
372	2030	12	.
373	2031	1	.
374	2031	2	.
375	2031	3	.
376	2031	4	.
377	2031	5	.
378	2031	6	.
379	2031	7	.
380	2031	8	.
381	2031	9	.
382	2031	10	.
383	2031	11	.
384	2031	12	.
385	2032	1	.
386	2032	2	.
387	2032	3	.
388	2032	4	.
389	2032	5	.
390	2032	6	.
391	2032	7	.
392	2032	8	.
393	2032	9	.
394	2032	10	.
395	2032	11	.
396	2032	12	.
397	2033	1	.
398	2033	2	.
399	2033	3	.
400	2033	4	.

INDIANA MICHIGAN POWER COMPANY - INDIANA
INDUSTRIAL CUSTOMERS
ENDOGENOUS VARIABLES

Obs	YEAR	MONTH	ci_imi
401	2033	5	.
402	2033	6	.
403	2033	7	.
404	2033	8	.
405	2033	9	.
406	2033	10	.
407	2033	11	.
408	2033	12	.
409	2034	1	.
410	2034	2	.
411	2034	3	.
412	2034	4	.
413	2034	5	.
414	2034	6	.
415	2034	7	.
416	2034	8	.
417	2034	9	.
418	2034	10	.
419	2034	11	.
420	2034	12	.
421	2035	1	.
422	2035	2	.
423	2035	3	.
424	2035	4	.
425	2035	5	.
426	2035	6	.
427	2035	7	.
428	2035	8	.
429	2035	9	.
430	2035	10	.
431	2035	11	.
432	2035	12	.
433	2036	1	.
434	2036	2	.
435	2036	3	.
436	2036	4	.
437	2036	5	.
438	2036	6	.
439	2036	7	.
440	2036	8	.
441	2036	9	.
442	2036	10	.
443	2036	11	.
444	2036	12	.
445	2037	1	.
446	2037	2	.
447	2037	3	.
448	2037	4	.
449	2037	5	.
450	2037	6	.

INDIANA MICHIGAN POWER COMPANY - INDIANA
INDUSTRIAL CUSTOMERS
ENDOGENOUS VARIABLES

Obs	YEAR	MONTH	ci_imi
451	2037	7	.
452	2037	8	.
453	2037	9	.
454	2037	10	.
455	2037	11	.
456	2037	12	.
457	2038	1	.
458	2038	2	.
459	2038	3	.
460	2038	4	.
461	2038	5	.
462	2038	6	.
463	2038	7	.
464	2038	8	.
465	2038	9	.
466	2038	10	.
467	2038	11	.
468	2038	12	.
469	2039	1	.
470	2039	2	.
471	2039	3	.
472	2039	4	.
473	2039	5	.
474	2039	6	.
475	2039	7	.
476	2039	8	.
477	2039	9	.
478	2039	10	.
479	2039	11	.
480	2039	12	.
481	2040	1	.
482	2040	2	.
483	2040	3	.
484	2040	4	.
485	2040	5	.
486	2040	6	.
487	2040	7	.
488	2040	8	.
489	2040	9	.
490	2040	10	.
491	2040	11	.
492	2040	12	.
493	2041	1	.
494	2041	2	.
495	2041	3	.
496	2041	4	.
497	2041	5	.
498	2041	6	.
499	2041	7	.
500	2041	8	.

INDIANA MICHIGAN POWER COMPANY - INDIANA
INDUSTRIAL CUSTOMERS
ENDOGENOUS VARIABLES

Obs	YEAR	MONTH	ci_imi
501	2041	9	.
502	2041	10	.
503	2041	11	.
504	2041	12	.
505	2042	1	.
506	2042	2	.
507	2042	3	.
508	2042	4	.
509	2042	5	.
510	2042	6	.
511	2042	7	.
512	2042	8	.
513	2042	9	.
514	2042	10	.
515	2042	11	.
516	2042	12	.
517	2043	1	.
518	2043	2	.
519	2043	3	.
520	2043	4	.
521	2043	5	.
522	2043	6	.
523	2043	7	.
524	2043	8	.
525	2043	9	.
526	2043	10	.
527	2043	11	.
528	2043	12	.
529	2044	1	.
530	2044	2	.
531	2044	3	.
532	2044	4	.
533	2044	5	.
534	2044	6	.
535	2044	7	.
536	2044	8	.
537	2044	9	.
538	2044	10	.
539	2044	11	.
540	2044	12	.
541	2045	1	.
542	2045	2	.
543	2045	3	.
544	2045	4	.
545	2045	5	.
546	2045	6	.
547	2045	7	.
548	2045	8	.
549	2045	9	.
550	2045	10	.

INDIANA MICHIGAN POWER COMPANY - INDIANA
INDUSTRIAL CUSTOMERS
ENDOGENOUS VARIABLES

Obs	YEAR	MONTH	ci_imi
551	2045	11	.
552	2045	12	.
553	2046	1	.
554	2046	2	.
555	2046	3	.
556	2046	4	.
557	2046	5	.
558	2046	6	.
559	2046	7	.
560	2046	8	.
561	2046	9	.
562	2046	10	.
563	2046	11	.
564	2046	12	.
565	2047	1	.
566	2047	2	.
567	2047	3	.
568	2047	4	.
569	2047	5	.
570	2047	6	.
571	2047	7	.
572	2047	8	.
573	2047	9	.
574	2047	10	.
575	2047	11	.
576	2047	12	.
577	2048	1	.
578	2048	2	.
579	2048	3	.
580	2048	4	.
581	2048	5	.
582	2048	6	.
583	2048	7	.
584	2048	8	.
585	2048	9	.
586	2048	10	.
587	2048	11	.
588	2048	12	.
589	2049	1	.
590	2049	2	.
591	2049	3	.
592	2049	4	.
593	2049	5	.
594	2049	6	.
595	2049	7	.
596	2049	8	.
597	2049	9	.
598	2049	10	.
599	2049	11	.
600	2049	12	.

INDIANA MICHIGAN POWER COMPANY - INDIANA
INDUSTRIAL CUSTOMERS
ENDOGENOUS VARIABLES

Obs	YEAR	MONTH	ci_imi
601	2050	1	.
602	2050	2	.
603	2050	3	.
604	2050	4	.
605	2050	5	.
606	2050	6	.
607	2050	7	.
608	2050	8	.
609	2050	9	.
610	2050	10	.
611	2050	11	.
612	2050	12	.
613	2051	1	.
614	2051	2	.
615	2051	3	.
616	2051	4	.
617	2051	5	.
618	2051	6	.
619	2051	7	.
620	2051	8	.
621	2051	9	.
622	2051	10	.
623	2051	11	.
624	2051	12	.
625	2052	1	.
626	2052	2	.
627	2052	3	.
628	2052	4	.
629	2052	5	.
630	2052	6	.
631	2052	7	.
632	2052	8	.
633	2052	9	.
634	2052	10	.
635	2052	11	.
636	2052	12	.
637	2053	1	.
638	2053	2	.
639	2053	3	.
640	2053	4	.
641	2053	5	.
642	2053	6	.
643	2053	7	.
644	2053	8	.
645	2053	9	.
646	2053	10	.
647	2053	11	.
648	2053	12	.
649	2054	1	.
650	2054	2	.

INDIANA MICHIGAN POWER COMPANY - INDIANA
INDUSTRIAL CUSTOMERS
ENDOGENOUS VARIABLES

Obs	YEAR	MONTH	ci_imi
651	2054	3	.
652	2054	4	.
653	2054	5	.
654	2054	6	.
655	2054	7	.
656	2054	8	.
657	2054	9	.
658	2054	10	.
659	2054	11	.
660	2054	12	.
661	2055	1	.
662	2055	2	.
663	2055	3	.
664	2055	4	.
665	2055	5	.
666	2055	6	.
667	2055	7	.
668	2055	8	.
669	2055	9	.
670	2055	10	.
671	2055	11	.
672	2055	12	.
673	2056	1	.
674	2056	2	.
675	2056	3	.
676	2056	4	.
677	2056	5	.
678	2056	6	.
679	2056	7	.
680	2056	8	.
681	2056	9	.
682	2056	10	.
683	2056	11	.
684	2056	12	.
685	2057	1	.
686	2057	2	.
687	2057	3	.
688	2057	4	.
689	2057	5	.
690	2057	6	.
691	2057	7	.
692	2057	8	.
693	2057	9	.
694	2057	10	.
695	2057	11	.
696	2057	12	.

INDIANA MICHIGAN POWER COMPANY - INDIANA
INDUSTRIAL CUSTOMERS
EXOGENOUS VARIABLES

The MEANS Procedure

Variable	Label	Mean
YEAR	YEAR	2028.50
MONTH	MONTH	6.5000000
d05on	Binary Variable-2005 On	0.9137931
d13on	Binary Variable-2013 On	0.7758621
feb16on	Binary Variable-February 2016 On	0.7227011
TRND	Trend	50.5000000
d14on	Binary Variable-2014 On	0.7586207
mar17on	Binary Variable-March 2017 On	0.7040230
may19on	Binary Variable-May 2019 On	0.6666667
feb20on	Binary Variable-February 2020 On	0.6537356

Obs	YEAR	MONTH	d05on	d13on	feb16on	TRND	d14on	mar17on	may19on	feb20on
1	2000	1	0	0	0	22	0	0	0	0
2	2000	2	0	0	0	22	0	0	0	0
3	2000	3	0	0	0	22	0	0	0	0
4	2000	4	0	0	0	22	0	0	0	0
5	2000	5	0	0	0	22	0	0	0	0
6	2000	6	0	0	0	22	0	0	0	0
7	2000	7	0	0	0	22	0	0	0	0
8	2000	8	0	0	0	22	0	0	0	0
9	2000	9	0	0	0	22	0	0	0	0
10	2000	10	0	0	0	22	0	0	0	0
11	2000	11	0	0	0	22	0	0	0	0
12	2000	12	0	0	0	22	0	0	0	0
13	2001	1	0	0	0	23	0	0	0	0
14	2001	2	0	0	0	23	0	0	0	0
15	2001	3	0	0	0	23	0	0	0	0
16	2001	4	0	0	0	23	0	0	0	0
17	2001	5	0	0	0	23	0	0	0	0
18	2001	6	0	0	0	23	0	0	0	0
19	2001	7	0	0	0	23	0	0	0	0
20	2001	8	0	0	0	23	0	0	0	0
21	2001	9	0	0	0	23	0	0	0	0
22	2001	10	0	0	0	23	0	0	0	0
23	2001	11	0	0	0	23	0	0	0	0
24	2001	12	0	0	0	23	0	0	0	0
25	2002	1	0	0	0	24	0	0	0	0
26	2002	2	0	0	0	24	0	0	0	0
27	2002	3	0	0	0	24	0	0	0	0
28	2002	4	0	0	0	24	0	0	0	0
29	2002	5	0	0	0	24	0	0	0	0
30	2002	6	0	0	0	24	0	0	0	0
31	2002	7	0	0	0	24	0	0	0	0
32	2002	8	0	0	0	24	0	0	0	0
33	2002	9	0	0	0	24	0	0	0	0
34	2002	10	0	0	0	24	0	0	0	0
35	2002	11	0	0	0	24	0	0	0	0
36	2002	12	0	0	0	24	0	0	0	0
37	2003	1	0	0	0	25	0	0	0	0
38	2003	2	0	0	0	25	0	0	0	0
39	2003	3	0	0	0	25	0	0	0	0
40	2003	4	0	0	0	25	0	0	0	0
41	2003	5	0	0	0	25	0	0	0	0
42	2003	6	0	0	0	25	0	0	0	0
43	2003	7	0	0	0	25	0	0	0	0
44	2003	8	0	0	0	25	0	0	0	0
45	2003	9	0	0	0	25	0	0	0	0
46	2003	10	0	0	0	25	0	0	0	0
47	2003	11	0	0	0	25	0	0	0	0
48	2003	12	0	0	0	25	0	0	0	0
49	2004	1	0	0	0	26	0	0	0	0
50	2004	2	0	0	0	26	0	0	0	0

Obs	YEAR	MONTH	d05on	d13on	feb16on	TRND	d14on	mar17on	may19on	feb20on
51	2004	3	0	0	0	26	0	0	0	0
52	2004	4	0	0	0	26	0	0	0	0
53	2004	5	0	0	0	26	0	0	0	0
54	2004	6	0	0	0	26	0	0	0	0
55	2004	7	0	0	0	26	0	0	0	0
56	2004	8	0	0	0	26	0	0	0	0
57	2004	9	0	0	0	26	0	0	0	0
58	2004	10	0	0	0	26	0	0	0	0
59	2004	11	0	0	0	26	0	0	0	0
60	2004	12	0	0	0	26	0	0	0	0
61	2005	1	1	0	0	27	0	0	0	0
62	2005	2	1	0	0	27	0	0	0	0
63	2005	3	1	0	0	27	0	0	0	0
64	2005	4	1	0	0	27	0	0	0	0
65	2005	5	1	0	0	27	0	0	0	0
66	2005	6	1	0	0	27	0	0	0	0
67	2005	7	1	0	0	27	0	0	0	0
68	2005	8	1	0	0	27	0	0	0	0
69	2005	9	1	0	0	27	0	0	0	0
70	2005	10	1	0	0	27	0	0	0	0
71	2005	11	1	0	0	27	0	0	0	0
72	2005	12	1	0	0	27	0	0	0	0
73	2006	1	1	0	0	28	0	0	0	0
74	2006	2	1	0	0	28	0	0	0	0
75	2006	3	1	0	0	28	0	0	0	0
76	2006	4	1	0	0	28	0	0	0	0
77	2006	5	1	0	0	28	0	0	0	0
78	2006	6	1	0	0	28	0	0	0	0
79	2006	7	1	0	0	28	0	0	0	0
80	2006	8	1	0	0	28	0	0	0	0
81	2006	9	1	0	0	28	0	0	0	0
82	2006	10	1	0	0	28	0	0	0	0
83	2006	11	1	0	0	28	0	0	0	0
84	2006	12	1	0	0	28	0	0	0	0
85	2007	1	1	0	0	29	0	0	0	0
86	2007	2	1	0	0	29	0	0	0	0
87	2007	3	1	0	0	29	0	0	0	0
88	2007	4	1	0	0	29	0	0	0	0
89	2007	5	1	0	0	29	0	0	0	0
90	2007	6	1	0	0	29	0	0	0	0
91	2007	7	1	0	0	29	0	0	0	0
92	2007	8	1	0	0	29	0	0	0	0
93	2007	9	1	0	0	29	0	0	0	0
94	2007	10	1	0	0	29	0	0	0	0
95	2007	11	1	0	0	29	0	0	0	0
96	2007	12	1	0	0	29	0	0	0	0
97	2008	1	1	0	0	30	0	0	0	0
98	2008	2	1	0	0	30	0	0	0	0
99	2008	3	1	0	0	30	0	0	0	0
100	2008	4	1	0	0	30	0	0	0	0

Obs	YEAR	MONTH	d05on	d13on	feb16on	TRND	d14on	mar17on	may19on	feb20on
101	2008	5	1	0	0	30	0	0	0	0
102	2008	6	1	0	0	30	0	0	0	0
103	2008	7	1	0	0	30	0	0	0	0
104	2008	8	1	0	0	30	0	0	0	0
105	2008	9	1	0	0	30	0	0	0	0
106	2008	10	1	0	0	30	0	0	0	0
107	2008	11	1	0	0	30	0	0	0	0
108	2008	12	1	0	0	30	0	0	0	0
109	2009	1	1	0	0	31	0	0	0	0
110	2009	2	1	0	0	31	0	0	0	0
111	2009	3	1	0	0	31	0	0	0	0
112	2009	4	1	0	0	31	0	0	0	0
113	2009	5	1	0	0	31	0	0	0	0
114	2009	6	1	0	0	31	0	0	0	0
115	2009	7	1	0	0	31	0	0	0	0
116	2009	8	1	0	0	31	0	0	0	0
117	2009	9	1	0	0	31	0	0	0	0
118	2009	10	1	0	0	31	0	0	0	0
119	2009	11	1	0	0	31	0	0	0	0
120	2009	12	1	0	0	31	0	0	0	0
121	2010	1	1	0	0	32	0	0	0	0
122	2010	2	1	0	0	32	0	0	0	0
123	2010	3	1	0	0	32	0	0	0	0
124	2010	4	1	0	0	32	0	0	0	0
125	2010	5	1	0	0	32	0	0	0	0
126	2010	6	1	0	0	32	0	0	0	0
127	2010	7	1	0	0	32	0	0	0	0
128	2010	8	1	0	0	32	0	0	0	0
129	2010	9	1	0	0	32	0	0	0	0
130	2010	10	1	0	0	32	0	0	0	0
131	2010	11	1	0	0	32	0	0	0	0
132	2010	12	1	0	0	32	0	0	0	0
133	2011	1	1	0	0	33	0	0	0	0
134	2011	2	1	0	0	33	0	0	0	0
135	2011	3	1	0	0	33	0	0	0	0
136	2011	4	1	0	0	33	0	0	0	0
137	2011	5	1	0	0	33	0	0	0	0
138	2011	6	1	0	0	33	0	0	0	0
139	2011	7	1	0	0	33	0	0	0	0
140	2011	8	1	0	0	33	0	0	0	0
141	2011	9	1	0	0	33	0	0	0	0
142	2011	10	1	0	0	33	0	0	0	0
143	2011	11	1	0	0	33	0	0	0	0
144	2011	12	1	0	0	33	0	0	0	0
145	2012	1	1	0	0	34	0	0	0	0
146	2012	2	1	0	0	34	0	0	0	0
147	2012	3	1	0	0	34	0	0	0	0
148	2012	4	1	0	0	34	0	0	0	0
149	2012	5	1	0	0	34	0	0	0	0
150	2012	6	1	0	0	34	0	0	0	0

Obs	YEAR	MONTH	d05on	d13on	feb16on	TRND	d14on	mar17on	may19on	feb20on
151	2012	7	1	0	0	34	0	0	0	0
152	2012	8	1	0	0	34	0	0	0	0
153	2012	9	1	0	0	34	0	0	0	0
154	2012	10	1	0	0	34	0	0	0	0
155	2012	11	1	0	0	34	0	0	0	0
156	2012	12	1	0	0	34	0	0	0	0
157	2013	1	1	1	0	35	0	0	0	0
158	2013	2	1	1	0	35	0	0	0	0
159	2013	3	1	1	0	35	0	0	0	0
160	2013	4	1	1	0	35	0	0	0	0
161	2013	5	1	1	0	35	0	0	0	0
162	2013	6	1	1	0	35	0	0	0	0
163	2013	7	1	1	0	35	0	0	0	0
164	2013	8	1	1	0	35	0	0	0	0
165	2013	9	1	1	0	35	0	0	0	0
166	2013	10	1	1	0	35	0	0	0	0
167	2013	11	1	1	0	35	0	0	0	0
168	2013	12	1	1	0	35	0	0	0	0
169	2014	1	1	1	0	36	1	0	0	0
170	2014	2	1	1	0	36	1	0	0	0
171	2014	3	1	1	0	36	1	0	0	0
172	2014	4	1	1	0	36	1	0	0	0
173	2014	5	1	1	0	36	1	0	0	0
174	2014	6	1	1	0	36	1	0	0	0
175	2014	7	1	1	0	36	1	0	0	0
176	2014	8	1	1	0	36	1	0	0	0
177	2014	9	1	1	0	36	1	0	0	0
178	2014	10	1	1	0	36	1	0	0	0
179	2014	11	1	1	0	36	1	0	0	0
180	2014	12	1	1	0	36	1	0	0	0
181	2015	1	1	1	0	37	1	0	0	0
182	2015	2	1	1	0	37	1	0	0	0
183	2015	3	1	1	0	37	1	0	0	0
184	2015	4	1	1	0	37	1	0	0	0
185	2015	5	1	1	0	37	1	0	0	0
186	2015	6	1	1	0	37	1	0	0	0
187	2015	7	1	1	0	37	1	0	0	0
188	2015	8	1	1	0	37	1	0	0	0
189	2015	9	1	1	0	37	1	0	0	0
190	2015	10	1	1	0	37	1	0	0	0
191	2015	11	1	1	0	37	1	0	0	0
192	2015	12	1	1	0	37	1	0	0	0
193	2016	1	1	1	0	38	1	0	0	0
194	2016	2	1	1	1	38	1	0	0	0
195	2016	3	1	1	1	38	1	0	0	0
196	2016	4	1	1	1	38	1	0	0	0
197	2016	5	1	1	1	38	1	0	0	0
198	2016	6	1	1	1	38	1	0	0	0
199	2016	7	1	1	1	38	1	0	0	0
200	2016	8	1	1	1	38	1	0	0	0

Obs	YEAR	MONTH	d05on	d13on	feb16on	TRND	d14on	mar17on	may19on	feb20on
201	2016	9	1	1	1	38	1	0	0	0
202	2016	10	1	1	1	38	1	0	0	0
203	2016	11	1	1	1	38	1	0	0	0
204	2016	12	1	1	1	38	1	0	0	0
205	2017	1	1	1	1	39	1	0	0	0
206	2017	2	1	1	1	39	1	0	0	0
207	2017	3	1	1	1	39	1	1	0	0
208	2017	4	1	1	1	39	1	1	0	0
209	2017	5	1	1	1	39	1	1	0	0
210	2017	6	1	1	1	39	1	1	0	0
211	2017	7	1	1	1	39	1	1	0	0
212	2017	8	1	1	1	39	1	1	0	0
213	2017	9	1	1	1	39	1	1	0	0
214	2017	10	1	1	1	39	1	1	0	0
215	2017	11	1	1	1	39	1	1	0	0
216	2017	12	1	1	1	39	1	1	0	0
217	2018	1	1	1	1	40	1	1	0	0
218	2018	2	1	1	1	40	1	1	0	0
219	2018	3	1	1	1	40	1	1	0	0
220	2018	4	1	1	1	40	1	1	0	0
221	2018	5	1	1	1	40	1	1	0	0
222	2018	6	1	1	1	40	1	1	0	0
223	2018	7	1	1	1	40	1	1	0	0
224	2018	8	1	1	1	40	1	1	0	0
225	2018	9	1	1	1	40	1	1	0	0
226	2018	10	1	1	1	40	1	1	0	0
227	2018	11	1	1	1	40	1	1	0	0
228	2018	12	1	1	1	40	1	1	0	0
229	2019	1	1	1	1	41	1	1	0	0
230	2019	2	1	1	1	41	1	1	0	0
231	2019	3	1	1	1	41	1	1	0	0
232	2019	4	1	1	1	41	1	1	0	0
233	2019	5	1	1	1	41	1	1	1	0
234	2019	6	1	1	1	41	1	1	1	0
235	2019	7	1	1	1	41	1	1	1	0
236	2019	8	1	1	1	41	1	1	1	0
237	2019	9	1	1	1	41	1	1	1	0
238	2019	10	1	1	1	41	1	1	1	0
239	2019	11	1	1	1	41	1	1	1	0
240	2019	12	1	1	1	41	1	1	1	0
241	2020	1	1	1	1	42	1	1	1	0
242	2020	2	1	1	1	42	1	1	1	1
243	2020	3	1	1	1	42	1	1	1	1
244	2020	4	1	1	1	42	1	1	1	1
245	2020	5	1	1	1	42	1	1	1	1
246	2020	6	1	1	1	42	1	1	1	1
247	2020	7	1	1	1	42	1	1	1	1
248	2020	8	1	1	1	42	1	1	1	1
249	2020	9	1	1	1	42	1	1	1	1
250	2020	10	1	1	1	42	1	1	1	1

Obs	YEAR	MONTH	d05on	d13on	feb16on	TRND	d14on	mar17on	may19on	feb20on
251	2020	11	1	1	1	42	1	1	1	1
252	2020	12	1	1	1	42	1	1	1	1
253	2021	1	1	1	1	43	1	1	1	1
254	2021	2	1	1	1	43	1	1	1	1
255	2021	3	1	1	1	43	1	1	1	1
256	2021	4	1	1	1	43	1	1	1	1
257	2021	5	1	1	1	43	1	1	1	1
258	2021	6	1	1	1	43	1	1	1	1
259	2021	7	1	1	1	43	1	1	1	1
260	2021	8	1	1	1	43	1	1	1	1
261	2021	9	1	1	1	43	1	1	1	1
262	2021	10	1	1	1	43	1	1	1	1
263	2021	11	1	1	1	43	1	1	1	1
264	2021	12	1	1	1	43	1	1	1	1
265	2022	1	1	1	1	44	1	1	1	1
266	2022	2	1	1	1	44	1	1	1	1
267	2022	3	1	1	1	44	1	1	1	1
268	2022	4	1	1	1	44	1	1	1	1
269	2022	5	1	1	1	44	1	1	1	1
270	2022	6	1	1	1	44	1	1	1	1
271	2022	7	1	1	1	44	1	1	1	1
272	2022	8	1	1	1	44	1	1	1	1
273	2022	9	1	1	1	44	1	1	1	1
274	2022	10	1	1	1	44	1	1	1	1
275	2022	11	1	1	1	44	1	1	1	1
276	2022	12	1	1	1	44	1	1	1	1
277	2023	1	1	1	1	45	1	1	1	1
278	2023	2	1	1	1	45	1	1	1	1
279	2023	3	1	1	1	45	1	1	1	1
280	2023	4	1	1	1	45	1	1	1	1
281	2023	5	1	1	1	45	1	1	1	1
282	2023	6	1	1	1	45	1	1	1	1
283	2023	7	1	1	1	45	1	1	1	1
284	2023	8	1	1	1	45	1	1	1	1
285	2023	9	1	1	1	45	1	1	1	1
286	2023	10	1	1	1	45	1	1	1	1
287	2023	11	1	1	1	45	1	1	1	1
288	2023	12	1	1	1	45	1	1	1	1
289	2024	1	1	1	1	46	1	1	1	1
290	2024	2	1	1	1	46	1	1	1	1
291	2024	3	1	1	1	46	1	1	1	1
292	2024	4	1	1	1	46	1	1	1	1
293	2024	5	1	1	1	46	1	1	1	1
294	2024	6	1	1	1	46	1	1	1	1
295	2024	7	1	1	1	46	1	1	1	1
296	2024	8	1	1	1	46	1	1	1	1
297	2024	9	1	1	1	46	1	1	1	1
298	2024	10	1	1	1	46	1	1	1	1
299	2024	11	1	1	1	46	1	1	1	1
300	2024	12	1	1	1	46	1	1	1	1

Obs	YEAR	MONTH	d05on	d13on	feb16on	TRND	d14on	mar17on	may19on	feb20on
301	2025	1	1	1	1	47	1	1	1	1
302	2025	2	1	1	1	47	1	1	1	1
303	2025	3	1	1	1	47	1	1	1	1
304	2025	4	1	1	1	47	1	1	1	1
305	2025	5	1	1	1	47	1	1	1	1
306	2025	6	1	1	1	47	1	1	1	1
307	2025	7	1	1	1	47	1	1	1	1
308	2025	8	1	1	1	47	1	1	1	1
309	2025	9	1	1	1	47	1	1	1	1
310	2025	10	1	1	1	47	1	1	1	1
311	2025	11	1	1	1	47	1	1	1	1
312	2025	12	1	1	1	47	1	1	1	1
313	2026	1	1	1	1	48	1	1	1	1
314	2026	2	1	1	1	48	1	1	1	1
315	2026	3	1	1	1	48	1	1	1	1
316	2026	4	1	1	1	48	1	1	1	1
317	2026	5	1	1	1	48	1	1	1	1
318	2026	6	1	1	1	48	1	1	1	1
319	2026	7	1	1	1	48	1	1	1	1
320	2026	8	1	1	1	48	1	1	1	1
321	2026	9	1	1	1	48	1	1	1	1
322	2026	10	1	1	1	48	1	1	1	1
323	2026	11	1	1	1	48	1	1	1	1
324	2026	12	1	1	1	48	1	1	1	1
325	2027	1	1	1	1	49	1	1	1	1
326	2027	2	1	1	1	49	1	1	1	1
327	2027	3	1	1	1	49	1	1	1	1
328	2027	4	1	1	1	49	1	1	1	1
329	2027	5	1	1	1	49	1	1	1	1
330	2027	6	1	1	1	49	1	1	1	1
331	2027	7	1	1	1	49	1	1	1	1
332	2027	8	1	1	1	49	1	1	1	1
333	2027	9	1	1	1	49	1	1	1	1
334	2027	10	1	1	1	49	1	1	1	1
335	2027	11	1	1	1	49	1	1	1	1
336	2027	12	1	1	1	49	1	1	1	1
337	2028	1	1	1	1	50	1	1	1	1
338	2028	2	1	1	1	50	1	1	1	1
339	2028	3	1	1	1	50	1	1	1	1
340	2028	4	1	1	1	50	1	1	1	1
341	2028	5	1	1	1	50	1	1	1	1
342	2028	6	1	1	1	50	1	1	1	1
343	2028	7	1	1	1	50	1	1	1	1
344	2028	8	1	1	1	50	1	1	1	1
345	2028	9	1	1	1	50	1	1	1	1
346	2028	10	1	1	1	50	1	1	1	1
347	2028	11	1	1	1	50	1	1	1	1
348	2028	12	1	1	1	50	1	1	1	1
349	2029	1	1	1	1	51	1	1	1	1
350	2029	2	1	1	1	51	1	1	1	1

Obs	YEAR	MONTH	d05on	d13on	feb16on	TRND	d14on	mar17on	may19on	feb20on
351	2029	3	1	1	1	51	1	1	1	1
352	2029	4	1	1	1	51	1	1	1	1
353	2029	5	1	1	1	51	1	1	1	1
354	2029	6	1	1	1	51	1	1	1	1
355	2029	7	1	1	1	51	1	1	1	1
356	2029	8	1	1	1	51	1	1	1	1
357	2029	9	1	1	1	51	1	1	1	1
358	2029	10	1	1	1	51	1	1	1	1
359	2029	11	1	1	1	51	1	1	1	1
360	2029	12	1	1	1	51	1	1	1	1
361	2030	1	1	1	1	52	1	1	1	1
362	2030	2	1	1	1	52	1	1	1	1
363	2030	3	1	1	1	52	1	1	1	1
364	2030	4	1	1	1	52	1	1	1	1
365	2030	5	1	1	1	52	1	1	1	1
366	2030	6	1	1	1	52	1	1	1	1
367	2030	7	1	1	1	52	1	1	1	1
368	2030	8	1	1	1	52	1	1	1	1
369	2030	9	1	1	1	52	1	1	1	1
370	2030	10	1	1	1	52	1	1	1	1
371	2030	11	1	1	1	52	1	1	1	1
372	2030	12	1	1	1	52	1	1	1	1
373	2031	1	1	1	1	53	1	1	1	1
374	2031	2	1	1	1	53	1	1	1	1
375	2031	3	1	1	1	53	1	1	1	1
376	2031	4	1	1	1	53	1	1	1	1
377	2031	5	1	1	1	53	1	1	1	1
378	2031	6	1	1	1	53	1	1	1	1
379	2031	7	1	1	1	53	1	1	1	1
380	2031	8	1	1	1	53	1	1	1	1
381	2031	9	1	1	1	53	1	1	1	1
382	2031	10	1	1	1	53	1	1	1	1
383	2031	11	1	1	1	53	1	1	1	1
384	2031	12	1	1	1	53	1	1	1	1
385	2032	1	1	1	1	54	1	1	1	1
386	2032	2	1	1	1	54	1	1	1	1
387	2032	3	1	1	1	54	1	1	1	1
388	2032	4	1	1	1	54	1	1	1	1
389	2032	5	1	1	1	54	1	1	1	1
390	2032	6	1	1	1	54	1	1	1	1
391	2032	7	1	1	1	54	1	1	1	1
392	2032	8	1	1	1	54	1	1	1	1
393	2032	9	1	1	1	54	1	1	1	1
394	2032	10	1	1	1	54	1	1	1	1
395	2032	11	1	1	1	54	1	1	1	1
396	2032	12	1	1	1	54	1	1	1	1
397	2033	1	1	1	1	55	1	1	1	1
398	2033	2	1	1	1	55	1	1	1	1
399	2033	3	1	1	1	55	1	1	1	1
400	2033	4	1	1	1	55	1	1	1	1

Obs	YEAR	MONTH	d05on	d13on	feb16on	TRND	d14on	mar17on	may19on	feb20on
401	2033	5	1	1	1	55	1	1	1	1
402	2033	6	1	1	1	55	1	1	1	1
403	2033	7	1	1	1	55	1	1	1	1
404	2033	8	1	1	1	55	1	1	1	1
405	2033	9	1	1	1	55	1	1	1	1
406	2033	10	1	1	1	55	1	1	1	1
407	2033	11	1	1	1	55	1	1	1	1
408	2033	12	1	1	1	55	1	1	1	1
409	2034	1	1	1	1	56	1	1	1	1
410	2034	2	1	1	1	56	1	1	1	1
411	2034	3	1	1	1	56	1	1	1	1
412	2034	4	1	1	1	56	1	1	1	1
413	2034	5	1	1	1	56	1	1	1	1
414	2034	6	1	1	1	56	1	1	1	1
415	2034	7	1	1	1	56	1	1	1	1
416	2034	8	1	1	1	56	1	1	1	1
417	2034	9	1	1	1	56	1	1	1	1
418	2034	10	1	1	1	56	1	1	1	1
419	2034	11	1	1	1	56	1	1	1	1
420	2034	12	1	1	1	56	1	1	1	1
421	2035	1	1	1	1	57	1	1	1	1
422	2035	2	1	1	1	57	1	1	1	1
423	2035	3	1	1	1	57	1	1	1	1
424	2035	4	1	1	1	57	1	1	1	1
425	2035	5	1	1	1	57	1	1	1	1
426	2035	6	1	1	1	57	1	1	1	1
427	2035	7	1	1	1	57	1	1	1	1
428	2035	8	1	1	1	57	1	1	1	1
429	2035	9	1	1	1	57	1	1	1	1
430	2035	10	1	1	1	57	1	1	1	1
431	2035	11	1	1	1	57	1	1	1	1
432	2035	12	1	1	1	57	1	1	1	1
433	2036	1	1	1	1	58	1	1	1	1
434	2036	2	1	1	1	58	1	1	1	1
435	2036	3	1	1	1	58	1	1	1	1
436	2036	4	1	1	1	58	1	1	1	1
437	2036	5	1	1	1	58	1	1	1	1
438	2036	6	1	1	1	58	1	1	1	1
439	2036	7	1	1	1	58	1	1	1	1
440	2036	8	1	1	1	58	1	1	1	1
441	2036	9	1	1	1	58	1	1	1	1
442	2036	10	1	1	1	58	1	1	1	1
443	2036	11	1	1	1	58	1	1	1	1
444	2036	12	1	1	1	58	1	1	1	1
445	2037	1	1	1	1	59	1	1	1	1
446	2037	2	1	1	1	59	1	1	1	1
447	2037	3	1	1	1	59	1	1	1	1
448	2037	4	1	1	1	59	1	1	1	1
449	2037	5	1	1	1	59	1	1	1	1
450	2037	6	1	1	1	59	1	1	1	1

Obs	YEAR	MONTH	d05on	d13on	feb16on	TRND	d14on	mar17on	may19on	feb20on
451	2037	7	1	1	1	59	1	1	1	1
452	2037	8	1	1	1	59	1	1	1	1
453	2037	9	1	1	1	59	1	1	1	1
454	2037	10	1	1	1	59	1	1	1	1
455	2037	11	1	1	1	59	1	1	1	1
456	2037	12	1	1	1	59	1	1	1	1
457	2038	1	1	1	1	60	1	1	1	1
458	2038	2	1	1	1	60	1	1	1	1
459	2038	3	1	1	1	60	1	1	1	1
460	2038	4	1	1	1	60	1	1	1	1
461	2038	5	1	1	1	60	1	1	1	1
462	2038	6	1	1	1	60	1	1	1	1
463	2038	7	1	1	1	60	1	1	1	1
464	2038	8	1	1	1	60	1	1	1	1
465	2038	9	1	1	1	60	1	1	1	1
466	2038	10	1	1	1	60	1	1	1	1
467	2038	11	1	1	1	60	1	1	1	1
468	2038	12	1	1	1	60	1	1	1	1
469	2039	1	1	1	1	61	1	1	1	1
470	2039	2	1	1	1	61	1	1	1	1
471	2039	3	1	1	1	61	1	1	1	1
472	2039	4	1	1	1	61	1	1	1	1
473	2039	5	1	1	1	61	1	1	1	1
474	2039	6	1	1	1	61	1	1	1	1
475	2039	7	1	1	1	61	1	1	1	1
476	2039	8	1	1	1	61	1	1	1	1
477	2039	9	1	1	1	61	1	1	1	1
478	2039	10	1	1	1	61	1	1	1	1
479	2039	11	1	1	1	61	1	1	1	1
480	2039	12	1	1	1	61	1	1	1	1
481	2040	1	1	1	1	62	1	1	1	1
482	2040	2	1	1	1	62	1	1	1	1
483	2040	3	1	1	1	62	1	1	1	1
484	2040	4	1	1	1	62	1	1	1	1
485	2040	5	1	1	1	62	1	1	1	1
486	2040	6	1	1	1	62	1	1	1	1
487	2040	7	1	1	1	62	1	1	1	1
488	2040	8	1	1	1	62	1	1	1	1
489	2040	9	1	1	1	62	1	1	1	1
490	2040	10	1	1	1	62	1	1	1	1
491	2040	11	1	1	1	62	1	1	1	1
492	2040	12	1	1	1	62	1	1	1	1
493	2041	1	1	1	1	63	1	1	1	1
494	2041	2	1	1	1	63	1	1	1	1
495	2041	3	1	1	1	63	1	1	1	1
496	2041	4	1	1	1	63	1	1	1	1
497	2041	5	1	1	1	63	1	1	1	1
498	2041	6	1	1	1	63	1	1	1	1
499	2041	7	1	1	1	63	1	1	1	1
500	2041	8	1	1	1	63	1	1	1	1

Obs	YEAR	MONTH	d05on	d13on	feb16on	TRND	d14on	mar17on	may19on	feb20on
501	2041	9	1	1	1	63	1	1	1	1
502	2041	10	1	1	1	63	1	1	1	1
503	2041	11	1	1	1	63	1	1	1	1
504	2041	12	1	1	1	63	1	1	1	1
505	2042	1	1	1	1	64	1	1	1	1
506	2042	2	1	1	1	64	1	1	1	1
507	2042	3	1	1	1	64	1	1	1	1
508	2042	4	1	1	1	64	1	1	1	1
509	2042	5	1	1	1	64	1	1	1	1
510	2042	6	1	1	1	64	1	1	1	1
511	2042	7	1	1	1	64	1	1	1	1
512	2042	8	1	1	1	64	1	1	1	1
513	2042	9	1	1	1	64	1	1	1	1
514	2042	10	1	1	1	64	1	1	1	1
515	2042	11	1	1	1	64	1	1	1	1
516	2042	12	1	1	1	64	1	1	1	1
517	2043	1	1	1	1	65	1	1	1	1
518	2043	2	1	1	1	65	1	1	1	1
519	2043	3	1	1	1	65	1	1	1	1
520	2043	4	1	1	1	65	1	1	1	1
521	2043	5	1	1	1	65	1	1	1	1
522	2043	6	1	1	1	65	1	1	1	1
523	2043	7	1	1	1	65	1	1	1	1
524	2043	8	1	1	1	65	1	1	1	1
525	2043	9	1	1	1	65	1	1	1	1
526	2043	10	1	1	1	65	1	1	1	1
527	2043	11	1	1	1	65	1	1	1	1
528	2043	12	1	1	1	65	1	1	1	1
529	2044	1	1	1	1	66	1	1	1	1
530	2044	2	1	1	1	66	1	1	1	1
531	2044	3	1	1	1	66	1	1	1	1
532	2044	4	1	1	1	66	1	1	1	1
533	2044	5	1	1	1	66	1	1	1	1
534	2044	6	1	1	1	66	1	1	1	1
535	2044	7	1	1	1	66	1	1	1	1
536	2044	8	1	1	1	66	1	1	1	1
537	2044	9	1	1	1	66	1	1	1	1
538	2044	10	1	1	1	66	1	1	1	1
539	2044	11	1	1	1	66	1	1	1	1
540	2044	12	1	1	1	66	1	1	1	1
541	2045	1	1	1	1	67	1	1	1	1
542	2045	2	1	1	1	67	1	1	1	1
543	2045	3	1	1	1	67	1	1	1	1
544	2045	4	1	1	1	67	1	1	1	1
545	2045	5	1	1	1	67	1	1	1	1
546	2045	6	1	1	1	67	1	1	1	1
547	2045	7	1	1	1	67	1	1	1	1
548	2045	8	1	1	1	67	1	1	1	1
549	2045	9	1	1	1	67	1	1	1	1
550	2045	10	1	1	1	67	1	1	1	1

Obs	YEAR	MONTH	d05on	d13on	feb16on	TRND	d14on	mar17on	may19on	feb20on
551	2045	11	1	1	1	67	1	1	1	1
552	2045	12	1	1	1	67	1	1	1	1
553	2046	1	1	1	1	68	1	1	1	1
554	2046	2	1	1	1	68	1	1	1	1
555	2046	3	1	1	1	68	1	1	1	1
556	2046	4	1	1	1	68	1	1	1	1
557	2046	5	1	1	1	68	1	1	1	1
558	2046	6	1	1	1	68	1	1	1	1
559	2046	7	1	1	1	68	1	1	1	1
560	2046	8	1	1	1	68	1	1	1	1
561	2046	9	1	1	1	68	1	1	1	1
562	2046	10	1	1	1	68	1	1	1	1
563	2046	11	1	1	1	68	1	1	1	1
564	2046	12	1	1	1	68	1	1	1	1
565	2047	1	1	1	1	69	1	1	1	1
566	2047	2	1	1	1	69	1	1	1	1
567	2047	3	1	1	1	69	1	1	1	1
568	2047	4	1	1	1	69	1	1	1	1
569	2047	5	1	1	1	69	1	1	1	1
570	2047	6	1	1	1	69	1	1	1	1
571	2047	7	1	1	1	69	1	1	1	1
572	2047	8	1	1	1	69	1	1	1	1
573	2047	9	1	1	1	69	1	1	1	1
574	2047	10	1	1	1	69	1	1	1	1
575	2047	11	1	1	1	69	1	1	1	1
576	2047	12	1	1	1	69	1	1	1	1
577	2048	1	1	1	1	70	1	1	1	1
578	2048	2	1	1	1	70	1	1	1	1
579	2048	3	1	1	1	70	1	1	1	1
580	2048	4	1	1	1	70	1	1	1	1
581	2048	5	1	1	1	70	1	1	1	1
582	2048	6	1	1	1	70	1	1	1	1
583	2048	7	1	1	1	70	1	1	1	1
584	2048	8	1	1	1	70	1	1	1	1
585	2048	9	1	1	1	70	1	1	1	1
586	2048	10	1	1	1	70	1	1	1	1
587	2048	11	1	1	1	70	1	1	1	1
588	2048	12	1	1	1	70	1	1	1	1
589	2049	1	1	1	1	71	1	1	1	1
590	2049	2	1	1	1	71	1	1	1	1
591	2049	3	1	1	1	71	1	1	1	1
592	2049	4	1	1	1	71	1	1	1	1
593	2049	5	1	1	1	71	1	1	1	1
594	2049	6	1	1	1	71	1	1	1	1
595	2049	7	1	1	1	71	1	1	1	1
596	2049	8	1	1	1	71	1	1	1	1
597	2049	9	1	1	1	71	1	1	1	1
598	2049	10	1	1	1	71	1	1	1	1
599	2049	11	1	1	1	71	1	1	1	1
600	2049	12	1	1	1	71	1	1	1	1

Obs	YEAR	MONTH	d05on	d13on	feb16on	TRND	d14on	mar17on	may19on	feb20on
601	2050	1	1	1	1	72	1	1	1	1
602	2050	2	1	1	1	72	1	1	1	1
603	2050	3	1	1	1	72	1	1	1	1
604	2050	4	1	1	1	72	1	1	1	1
605	2050	5	1	1	1	72	1	1	1	1
606	2050	6	1	1	1	72	1	1	1	1
607	2050	7	1	1	1	72	1	1	1	1
608	2050	8	1	1	1	72	1	1	1	1
609	2050	9	1	1	1	72	1	1	1	1
610	2050	10	1	1	1	72	1	1	1	1
611	2050	11	1	1	1	72	1	1	1	1
612	2050	12	1	1	1	72	1	1	1	1
613	2051	1	1	1	1	73	1	1	1	1
614	2051	2	1	1	1	73	1	1	1	1
615	2051	3	1	1	1	73	1	1	1	1
616	2051	4	1	1	1	73	1	1	1	1
617	2051	5	1	1	1	73	1	1	1	1
618	2051	6	1	1	1	73	1	1	1	1
619	2051	7	1	1	1	73	1	1	1	1
620	2051	8	1	1	1	73	1	1	1	1
621	2051	9	1	1	1	73	1	1	1	1
622	2051	10	1	1	1	73	1	1	1	1
623	2051	11	1	1	1	73	1	1	1	1
624	2051	12	1	1	1	73	1	1	1	1
625	2052	1	1	1	1	74	1	1	1	1
626	2052	2	1	1	1	74	1	1	1	1
627	2052	3	1	1	1	74	1	1	1	1
628	2052	4	1	1	1	74	1	1	1	1
629	2052	5	1	1	1	74	1	1	1	1
630	2052	6	1	1	1	74	1	1	1	1
631	2052	7	1	1	1	74	1	1	1	1
632	2052	8	1	1	1	74	1	1	1	1
633	2052	9	1	1	1	74	1	1	1	1
634	2052	10	1	1	1	74	1	1	1	1
635	2052	11	1	1	1	74	1	1	1	1
636	2052	12	1	1	1	74	1	1	1	1
637	2053	1	1	1	1	75	1	1	1	1
638	2053	2	1	1	1	75	1	1	1	1
639	2053	3	1	1	1	75	1	1	1	1
640	2053	4	1	1	1	75	1	1	1	1
641	2053	5	1	1	1	75	1	1	1	1
642	2053	6	1	1	1	75	1	1	1	1
643	2053	7	1	1	1	75	1	1	1	1
644	2053	8	1	1	1	75	1	1	1	1
645	2053	9	1	1	1	75	1	1	1	1
646	2053	10	1	1	1	75	1	1	1	1
647	2053	11	1	1	1	75	1	1	1	1
648	2053	12	1	1	1	75	1	1	1	1
649	2054	1	1	1	1	76	1	1	1	1
650	2054	2	1	1	1	76	1	1	1	1

Obs	YEAR	MONTH	d05on	d13on	feb16on	TRND	d14on	mar17on	may19on	feb20on
651	2054	3	1	1	1	76	1	1	1	1
652	2054	4	1	1	1	76	1	1	1	1
653	2054	5	1	1	1	76	1	1	1	1
654	2054	6	1	1	1	76	1	1	1	1
655	2054	7	1	1	1	76	1	1	1	1
656	2054	8	1	1	1	76	1	1	1	1
657	2054	9	1	1	1	76	1	1	1	1
658	2054	10	1	1	1	76	1	1	1	1
659	2054	11	1	1	1	76	1	1	1	1
660	2054	12	1	1	1	76	1	1	1	1
661	2055	1	1	1	1	77	1	1	1	1
662	2055	2	1	1	1	77	1	1	1	1
663	2055	3	1	1	1	77	1	1	1	1
664	2055	4	1	1	1	77	1	1	1	1
665	2055	5	1	1	1	77	1	1	1	1
666	2055	6	1	1	1	77	1	1	1	1
667	2055	7	1	1	1	77	1	1	1	1
668	2055	8	1	1	1	77	1	1	1	1
669	2055	9	1	1	1	77	1	1	1	1
670	2055	10	1	1	1	77	1	1	1	1
671	2055	11	1	1	1	77	1	1	1	1
672	2055	12	1	1	1	77	1	1	1	1
673	2056	1	1	1	1	78	1	1	1	1
674	2056	2	1	1	1	78	1	1	1	1
675	2056	3	1	1	1	78	1	1	1	1
676	2056	4	1	1	1	78	1	1	1	1
677	2056	5	1	1	1	78	1	1	1	1
678	2056	6	1	1	1	78	1	1	1	1
679	2056	7	1	1	1	78	1	1	1	1
680	2056	8	1	1	1	78	1	1	1	1
681	2056	9	1	1	1	78	1	1	1	1
682	2056	10	1	1	1	78	1	1	1	1
683	2056	11	1	1	1	78	1	1	1	1
684	2056	12	1	1	1	78	1	1	1	1
685	2057	1	1	1	1	79	1	1	1	1
686	2057	2	1	1	1	79	1	1	1	1
687	2057	3	1	1	1	79	1	1	1	1
688	2057	4	1	1	1	79	1	1	1	1
689	2057	5	1	1	1	79	1	1	1	1
690	2057	6	1	1	1	79	1	1	1	1
691	2057	7	1	1	1	79	1	1	1	1
692	2057	8	1	1	1	79	1	1	1	1
693	2057	9	1	1	1	79	1	1	1	1
694	2057	10	1	1	1	79	1	1	1	1
695	2057	11	1	1	1	79	1	1	1	1
696	2057	12	1	1	1	79	1	1	1	1

INDIANA MICHIGAN POWER COMPANY - INDIANA
INDUSTRIAL CUSTOMERS
MODEL ESTIMATION

The SYSLIN Procedure
Ordinary Least Squares Estimation

Model	ci_imi
Dependent Variable	ci_imi
Label	Industrial Customers

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	8	1458913	182364.1	69.37	<.0001
Error	243	638853.3	2629.026		
Corrected Total	251	2097766			

Root MSE	51.27403	R-Square	0.69546
Dependent Mean	4128.39683	Adj R-Sq	0.68543
Coeff Var	1.24198		

Parameter Estimates

Variable	DF	Parameter Estimate	Standard Error	t Value	Pr > |t|	Variable Label
Intercept	1	4401.573	48.81651	90.17	<.0001	Intercept
TRND	1	-6.55511	2.015235	-3.25	0.0013	Trend
d05on	1	-70.4856	15.58163	-4.52	<.0001	Binary Variable-2005 On
d13on	1	-26.0749	18.13036	-1.44	0.1517	Binary Variable-2013 On
d14on	1	-42.5174	18.27922	-2.33	0.0208	Binary Variable-2014 On
feb16on	1	-2.00755	17.82444	-0.11	0.9104	Binary Variable-February 2016 On
mar17on	1	78.12748	17.71854	4.41	<.0001	Binary Variable-March 2017 On
may19on	1	22.87309	20.01357	1.14	0.2542	Binary Variable-May 2019 On
feb20on	1	-27.7187	23.11547	-1.20	0.2316	Binary Variable-February 2020 On

Durbin-Watson	2.213842
Number of Observations	252
First-Order Autocorrelation	-0.10782

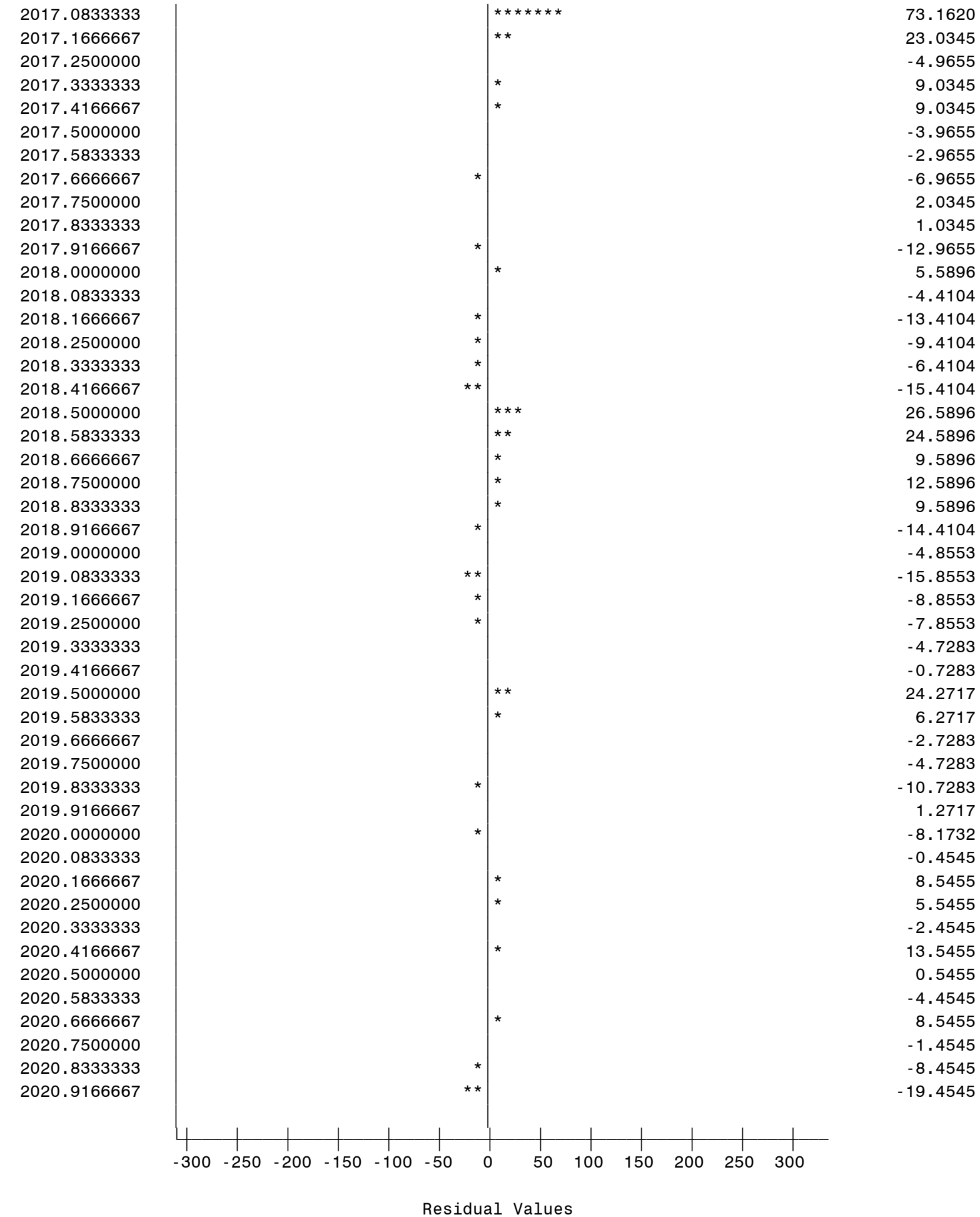
time			Residual Values Sum
2000.0000000		***	27.6398
2000.0833333		*****	51.6398
2000.1666667		***	32.6398
2000.2500000		**	21.6398
2000.3333333		***	29.6398
2000.4166667		*	12.6398
2000.5000000			2.6398
2000.5833333		*	11.6398
2000.6666667		*	9.6398
2000.7500000		*	9.6398
2000.8333333			4.6398
2000.9166667		**	16.6398
2001.0000000		***	25.1949
2001.0833333			-4.8051
2001.1666667		****	36.1949
2001.2500000		**	18.1949
2001.3333333		**	22.1949
2001.4166667		**	17.1949
2001.5000000			0.1949
2001.5833333		**	24.1949
2001.6666667			-0.8051
2001.7500000			-2.8051
2001.8333333		*	13.1949
2001.9166667	*		-10.8051
2002.0000000			-3.2500
2002.0833333		*	10.7500
2002.1666667	*		-7.2500
2002.2500000			4.7500
2002.3333333		*	6.7500
2002.4166667		*	6.7500
2002.5000000		*****	54.7500
2002.5833333	***		-29.2500
2002.6666667	*		-7.2500
2002.7500000	**		-16.2500
2002.8333333			-1.2500
2002.9166667	*		-11.2500
2003.0000000			-3.6949
2003.0833333			3.3051
2003.1666667	*		-13.6949
2003.2500000			-3.6949
2003.3333333			-1.6949
2003.4166667			0.3051
2003.5000000		*	12.3051
2003.5833333			4.3051
2003.6666667	*		-6.6949
2003.7500000			1.3051
2003.8333333	**		-20.6949
2003.9166667			-2.6949
2004.0000000		****	35.8602

2004.0833333	****		-42.1398
2004.1666667		***	33.8602
2004.2500000			-4.1398
2004.3333333	**		-20.1398
2004.4166667	**		-24.1398
2004.5000000	***		-25.1398
2004.5833333	****		-44.1398
2004.6666667	****		-38.1398
2004.7500000	**********		-133.1398
2004.8333333	*****		-53.1398
2004.9166667	***		-30.1398
2005.0000000	*****		-49.0991
2005.0833333		**********	96.9009
2005.1666667		*****	45.9009
2005.2500000		*	5.9009
2005.3333333			1.9009
2005.4166667	**		-20.0991
2005.5000000	**		-18.0991
2005.5833333		*	9.9009
2005.6666667	**		-20.0991
2005.7500000	**		-17.0991
2005.8333333	**********		-128.0991
2005.9166667		*****	51.9009
2006.0000000		**	15.4560
2006.0833333	********		-81.5440
2006.1666667		***	29.4560
2006.2500000	*****		-46.5440
2006.3333333	***		-27.5440
2006.4166667	**		-21.5440
2006.5000000	****		-36.5440
2006.5833333	**		-21.5440
2006.6666667	*****		-45.5440
2006.7500000	****		-37.5440
2006.8333333	*******		-66.5440
2006.9166667	******		-63.5440
2007.0000000	***		-31.9889
2007.0833333	****		-41.9889
2007.1666667		**	18.0111
2007.2500000	**		-20.9889
2007.3333333	*********		-87.9889
2007.4166667	**		-17.9889
2007.5000000	*		-8.9889
2007.5833333	***		-34.9889
2007.6666667	***		-28.9889
2007.7500000	******		-61.9889
2007.8333333	****		-40.9889
2007.9166667	*****		-53.9889
2008.0000000	**		-21.4338
2008.0833333		***	33.5662
2008.1666667		**	18.5662
2008.2500000		***	26.5662
2008.3333333		*****	51.5662

2008.4166667		*****	54.5662
2008.5000000		****	42.5662
2008.5833333		***	33.5662
2008.6666667		****	43.5662
2008.7500000		*****	51.5662
2008.8333333		**	22.5662
2008.9166667	***		-34.4338
2009.0000000		**********	109.1213
2009.0833333		*******	68.1213
2009.1666667		**********	152.1213
2009.2500000		*******	72.1213
2009.3333333		******	58.1213
2009.4166667		*******	68.1213
2009.5000000		********	79.1213
2009.5833333		******	62.1213
2009.6666667		*****	50.1213
2009.7500000		********	79.1213
2009.8333333		***	30.1213
2009.9166667	*****		-51.8787
2010.0000000		**	23.6764
2010.0833333	**********		-238.3236
2010.1666667		**********	316.6764
2010.2500000		*	10.6764
2010.3333333	*		-7.3236
2010.4166667			2.6764
2010.5000000		****	38.6764
2010.5833333	***		-28.3236
2010.6666667	******		-56.3236
2010.7500000		***	27.6764
2010.8333333			3.6764
2010.9166667	**********		-128.3236
2011.0000000		*	6.2315
2011.0833333	**********		-295.7685
2011.1666667		**********	329.2315
2011.2500000	*		-13.7685
2011.3333333	*		-8.7685
2011.4166667	*		-12.7685
2011.5000000	***		-34.7685
2011.5833333			1.2315
2011.6666667	*		-7.7685
2011.7500000			0.2315
2011.8333333	**		-19.7685
2011.9166667	***		-28.7685
2012.0000000		*	10.7866
2012.0833333	*		-8.2134
2012.1666667	*		-8.2134
2012.2500000	**		-17.2134
2012.3333333	*		-6.2134
2012.4166667	**		-15.2134
2012.5000000	**		-16.2134
2012.5833333			-2.2134
2012.6666667			-1.2134

2012.7500000			-0.2134
2012.8333333	**		-21.2134
2012.9166667	****		-37.2134
2013.0000000		****	36.4167
2013.0833333			4.4167
2013.1666667	**		-23.5833
2013.2500000		****	43.4167
2013.3333333	*		-7.5833
2013.4166667	*		-8.5833
2013.5000000			1.4167
2013.5833333			0.4167
2013.6666667			1.4167
2013.7500000		*	6.4167
2013.8333333	***		-25.5833
2013.9166667	***		-28.5833
2014.0000000		*	10.4891
2014.0833333		**	18.4891
2014.1666667		**	20.4891
2014.2500000		*	5.4891
2014.3333333		*	14.4891
2014.4166667		*	9.4891
2014.5000000			2.4891
2014.5833333			0.4891
2014.6666667			3.4891
2014.7500000	*		-9.5109
2014.8333333			-1.5109
2014.9166667	**		-16.5109
2015.0000000	*		-8.9558
2015.0833333	*		-9.9558
2015.1666667		****	37.0442
2015.2500000		**	22.0442
2015.3333333	****		-43.9558
2015.4166667			0.0442
2015.5000000	*		-9.9558
2015.5833333	**		-21.9558
2015.6666667	*		-11.9558
2015.7500000		***	30.0442
2015.8333333			4.0442
2015.9166667	**		-24.9558
2016.0000000	**		-19.4006
2016.0833333		*	8.6069
2016.1666667		*	10.6069
2016.2500000	*		-9.3931
2016.3333333	**		-24.3931
2016.4166667	**		-24.3931
2016.5000000	***		-33.3931
2016.5833333			1.6069
2016.6666667	**		-19.3931
2016.7500000	**		-23.3931
2016.8333333	**		-18.3931
2016.9166667	**		-21.3931
2017.0000000		********	80.1620

INDIANA MICHIGAN POWER COMPANY - INDIANA
INDUSTRIAL CUSTOMERS
MODEL RESIDUALS



INDIANA MICHIGAN POWER COMPANY - INDIANA
INDUSTRIAL CUSTOMERS
ACTUAL AND FORECAST

YEAR	CUSTOMERS	GROWTH RATE
2000	4276.583	.
2001	4262.25	-0.3
2002	4244.917	-0.4
2003	4235.083	-0.2
2004	4202.417	-0.8
2005	4150.75	-1.2
2006	4113.917	-0.9
2007	4106.583	-0.2
2008	4161.333	1.3
2009	4192.583	0.8
2010	4118.417	-1.8
2011	4107.667	-0.3
2012	4098	-0.2
2013	4075.583	-0.5
2014	4031.333	-1.1
2015	4016.75	-0.4
2016	3997.167	-0.5
2017	4083.75	2.2
2018	4078.5	-0.1
2019	4082.667	0.1
2020	4060.083	-0.6
2021	4051.899	-0.2
2022	4045.344	-0.2
2023	4038.789	-0.2
2024	4032.234	-0.2
2025	4025.679	-0.2
2026	4019.124	-0.2
2027	4012.569	-0.2
2028	4006.014	-0.2
2029	3999.459	-0.2
2030	3992.903	-0.2
2031	3986.348	-0.2
2032	3979.793	-0.2
2033	3973.238	-0.2
2034	3966.683	-0.2
2035	3960.128	-0.2
2036	3953.573	-0.2
2037	3947.018	-0.2
2038	3940.463	-0.2
2039	3933.908	-0.2
2040	3927.352	-0.2
2041	3920.797	-0.2
2042	3914.242	-0.2
2043	3907.687	-0.2
2044	3901.132	-0.2
2045	3894.577	-0.2
2046	3888.022	-0.2
2047	3881.467	-0.2
2048	3874.912	-0.2

INDIANA MICHIGAN POWER COMPANY - INDIANA
INDUSTRIAL CUSTOMERS
ACTUAL AND FORECAST

YEAR	CUSTOMERS	GROWTH RATE
2049	3868.356	-0.2
2050	3861.801	-0.2
2051	3855.246	-0.2
2052	3848.691	-0.2
2053	3842.136	-0.2
2054	3835.581	-0.2
2055	3829.026	-0.2
2056	3822.471	-0.2
2057	3815.916	-0.2

INDIANA MICHIGAN POWER COMPANY - INDIANA
OTHER ULTIMATE CUSTOMERS
ENDOGENOUS VARIABLES

The MEANS Procedure

Variable	Label	Mean
YEAR	YEAR	2028.50
MONTH	MONTH	6.5000000
cu_imi	Other Retail Customers	1654.01

INDIANA MICHIGAN POWER COMPANY - INDIANA
OTHER ULTIMATE CUSTOMERS
ENDOGENOUS VARIABLES

Obs	YEAR	MONTH	cu_imi
1	2000	1	1652
2	2000	2	1653
3	2000	3	1651
4	2000	4	1648
5	2000	5	1647
6	2000	6	1648
7	2000	7	1655
8	2000	8	1647
9	2000	9	1647
10	2000	10	1652
11	2000	11	1648
12	2000	12	1648
13	2001	1	1648
14	2001	2	1655
15	2001	3	1658
16	2001	4	1678
17	2001	5	1663
18	2001	6	1670
19	2001	7	1671
20	2001	8	1670
21	2001	9	1676
22	2001	10	1680
23	2001	11	1687
24	2001	12	1685
25	2002	1	1691
26	2002	2	1686
27	2002	3	1675
28	2002	4	1689
29	2002	5	1680
30	2002	6	1679
31	2002	7	1682
32	2002	8	1683
33	2002	9	1679
34	2002	10	1682
35	2002	11	1681
36	2002	12	1690
37	2003	1	1683
38	2003	2	1681
39	2003	3	1683
40	2003	4	1691
41	2003	5	1687
42	2003	6	1688
43	2003	7	1689
44	2003	8	1694
45	2003	9	1692
46	2003	10	1695
47	2003	11	1695
48	2003	12	1709
49	2004	1	1718
50	2004	2	1716

INDIANA MICHIGAN POWER COMPANY - INDIANA
OTHER ULTIMATE CUSTOMERS
ENDOGENOUS VARIABLES

Obs	YEAR	MONTH	cu_imi
51	2004	3	1716
52	2004	4	1708
53	2004	5	1707
54	2004	6	1711
55	2004	7	1714
56	2004	8	1722
57	2004	9	1713
58	2004	10	1730
59	2004	11	1740
60	2004	12	1742
61	2005	1	1740
62	2005	2	1742
63	2005	3	1735
64	2005	4	1725
65	2005	5	1732
66	2005	6	1731
67	2005	7	1733
68	2005	8	1738
69	2005	9	1730
70	2005	10	1728
71	2005	11	1728
72	2005	12	1725
73	2006	1	1741
74	2006	2	1735
75	2006	3	1734
76	2006	4	1733
77	2006	5	1730
78	2006	6	1733
79	2006	7	1728
80	2006	8	1731
81	2006	9	1726
82	2006	10	1727
83	2006	11	1727
84	2006	12	1736
85	2007	1	1735
86	2007	2	1736
87	2007	3	1727
88	2007	4	1723
89	2007	5	1718
90	2007	6	1718
91	2007	7	1711
92	2007	8	1715
93	2007	9	1696
94	2007	10	1674
95	2007	11	1700
96	2007	12	1707
97	2008	1	1711
98	2008	2	1708
99	2008	3	1697
100	2008	4	1701

INDIANA MICHIGAN POWER COMPANY - INDIANA
OTHER ULTIMATE CUSTOMERS
ENDOGENOUS VARIABLES

Obs	YEAR	MONTH	cu_imi
101	2008	5	1696
102	2008	6	1701
103	2008	7	1687
104	2008	8	1690
105	2008	9	1688
106	2008	10	1690
107	2008	11	1694
108	2008	12	1705
109	2009	1	1711
110	2009	2	1710
111	2009	3	1704
112	2009	4	1692
113	2009	5	1696
114	2009	6	1692
115	2009	7	1705
116	2009	8	1702
117	2009	9	1700
118	2009	10	1698
119	2009	11	1711
120	2009	12	1702
121	2010	1	1712
122	2010	2	1668
123	2010	3	1738
124	2010	4	1690
125	2010	5	1685
126	2010	6	1683
127	2010	7	1683
128	2010	8	1676
129	2010	9	1670
130	2010	10	1666
131	2010	11	1679
132	2010	12	1663
133	2011	1	1682
134	2011	2	1622
135	2011	3	1703
136	2011	4	1659
137	2011	5	1660
138	2011	6	1660
139	2011	7	1657
140	2011	8	1655
141	2011	9	1521
142	2011	10	1792
143	2011	11	1663
144	2011	12	1662
145	2012	1	1669
146	2012	2	1655
147	2012	3	1495
148	2012	4	1817
149	2012	5	1655
150	2012	6	1655

INDIANA MICHIGAN POWER COMPANY - INDIANA
OTHER ULTIMATE CUSTOMERS
ENDOGENOUS VARIABLES

Obs	YEAR	MONTH	cu_imi
151	2012	7	1654
152	2012	8	1656
153	2012	9	1649
154	2012	10	1644
155	2012	11	1657
156	2012	12	1655
157	2013	1	1654
158	2013	2	1720
159	2013	3	1537
160	2013	4	1666
161	2013	5	1640
162	2013	6	1639
163	2013	7	1641
164	2013	8	1637
165	2013	9	1636
166	2013	10	1657
167	2013	11	1646
168	2013	12	1645
169	2014	1	1645
170	2014	2	1634
171	2014	3	1640
172	2014	4	1615
173	2014	5	1622
174	2014	6	1621
175	2014	7	1621
176	2014	8	1598
177	2014	9	1594
178	2014	10	1590
179	2014	11	1610
180	2014	12	1600
181	2015	1	1595
182	2015	2	1600
183	2015	3	1604
184	2015	4	1589
185	2015	5	1582
186	2015	6	1591
187	2015	7	1587
188	2015	8	1589
189	2015	9	1588
190	2015	10	1590
191	2015	11	1604
192	2015	12	1602
193	2016	1	1632
194	2016	2	1598
195	2016	3	1594
196	2016	4	1591
197	2016	5	1589
198	2016	6	1588
199	2016	7	1585
200	2016	8	1588

INDIANA MICHIGAN POWER COMPANY - INDIANA
OTHER ULTIMATE CUSTOMERS
ENDOGENOUS VARIABLES

Obs	YEAR	MONTH	cu_imi
201	2016	9	1588
202	2016	10	1588
203	2016	11	1597
204	2016	12	1606
205	2017	1	1596
206	2017	2	1590
207	2017	3	1601
208	2017	4	1602
209	2017	5	1585
210	2017	6	1583
211	2017	7	1595
212	2017	8	1582
213	2017	9	1580
214	2017	10	1580
215	2017	11	1592
216	2017	12	1589
217	2018	1	1591
218	2018	2	1578
219	2018	3	1579
220	2018	4	1575
221	2018	5	1572
222	2018	6	1400
223	2018	7	1739
224	2018	8	1569
225	2018	9	1566
226	2018	10	1567
227	2018	11	1575
228	2018	12	1575
229	2019	1	1578
230	2019	2	1566
231	2019	3	1564
232	2019	4	1564
233	2019	5	1570
234	2019	6	1560
235	2019	7	1572
236	2019	8	1563
237	2019	9	1565
238	2019	10	1563
239	2019	11	1570
240	2019	12	1569
241	2020	1	1569
242	2020	2	1564
243	2020	3	1573
244	2020	4	1570
245	2020	5	1563
246	2020	6	1572
247	2020	7	1562
248	2020	8	1561
249	2020	9	1562
250	2020	10	1564

INDIANA MICHIGAN POWER COMPANY - INDIANA
OTHER ULTIMATE CUSTOMERS
ENDOGENOUS VARIABLES

Obs	YEAR	MONTH	cu_imi
251	2020	11	1562
252	2020	12	1564
253	2021	1	.
254	2021	2	.
255	2021	3	.
256	2021	4	.
257	2021	5	.
258	2021	6	.
259	2021	7	.
260	2021	8	.
261	2021	9	.
262	2021	10	.
263	2021	11	.
264	2021	12	.
265	2022	1	.
266	2022	2	.
267	2022	3	.
268	2022	4	.
269	2022	5	.
270	2022	6	.
271	2022	7	.
272	2022	8	.
273	2022	9	.
274	2022	10	.
275	2022	11	.
276	2022	12	.
277	2023	1	.
278	2023	2	.
279	2023	3	.
280	2023	4	.
281	2023	5	.
282	2023	6	.
283	2023	7	.
284	2023	8	.
285	2023	9	.
286	2023	10	.
287	2023	11	.
288	2023	12	.
289	2024	1	.
290	2024	2	.
291	2024	3	.
292	2024	4	.
293	2024	5	.
294	2024	6	.
295	2024	7	.
296	2024	8	.
297	2024	9	.
298	2024	10	.
299	2024	11	.
300	2024	12	.

INDIANA MICHIGAN POWER COMPANY - INDIANA
OTHER ULTIMATE CUSTOMERS
ENDOGENOUS VARIABLES

Obs	YEAR	MONTH	cu_imi
301	2025	1	.
302	2025	2	.
303	2025	3	.
304	2025	4	.
305	2025	5	.
306	2025	6	.
307	2025	7	.
308	2025	8	.
309	2025	9	.
310	2025	10	.
311	2025	11	.
312	2025	12	.
313	2026	1	.
314	2026	2	.
315	2026	3	.
316	2026	4	.
317	2026	5	.
318	2026	6	.
319	2026	7	.
320	2026	8	.
321	2026	9	.
322	2026	10	.
323	2026	11	.
324	2026	12	.
325	2027	1	.
326	2027	2	.
327	2027	3	.
328	2027	4	.
329	2027	5	.
330	2027	6	.
331	2027	7	.
332	2027	8	.
333	2027	9	.
334	2027	10	.
335	2027	11	.
336	2027	12	.
337	2028	1	.
338	2028	2	.
339	2028	3	.
340	2028	4	.
341	2028	5	.
342	2028	6	.
343	2028	7	.
344	2028	8	.
345	2028	9	.
346	2028	10	.
347	2028	11	.
348	2028	12	.
349	2029	1	.
350	2029	2	.

INDIANA MICHIGAN POWER COMPANY - INDIANA
OTHER ULTIMATE CUSTOMERS
ENDOGENOUS VARIABLES

Obs	YEAR	MONTH	cu_imi
351	2029	3	.
352	2029	4	.
353	2029	5	.
354	2029	6	.
355	2029	7	.
356	2029	8	.
357	2029	9	.
358	2029	10	.
359	2029	11	.
360	2029	12	.
361	2030	1	.
362	2030	2	.
363	2030	3	.
364	2030	4	.
365	2030	5	.
366	2030	6	.
367	2030	7	.
368	2030	8	.
369	2030	9	.
370	2030	10	.
371	2030	11	.
372	2030	12	.
373	2031	1	.
374	2031	2	.
375	2031	3	.
376	2031	4	.
377	2031	5	.
378	2031	6	.
379	2031	7	.
380	2031	8	.
381	2031	9	.
382	2031	10	.
383	2031	11	.
384	2031	12	.
385	2032	1	.
386	2032	2	.
387	2032	3	.
388	2032	4	.
389	2032	5	.
390	2032	6	.
391	2032	7	.
392	2032	8	.
393	2032	9	.
394	2032	10	.
395	2032	11	.
396	2032	12	.
397	2033	1	.
398	2033	2	.
399	2033	3	.
400	2033	4	.

INDIANA MICHIGAN POWER COMPANY - INDIANA
OTHER ULTIMATE CUSTOMERS
ENDOGENOUS VARIABLES

Obs	YEAR	MONTH	cu_imi
401	2033	5	.
402	2033	6	.
403	2033	7	.
404	2033	8	.
405	2033	9	.
406	2033	10	.
407	2033	11	.
408	2033	12	.
409	2034	1	.
410	2034	2	.
411	2034	3	.
412	2034	4	.
413	2034	5	.
414	2034	6	.
415	2034	7	.
416	2034	8	.
417	2034	9	.
418	2034	10	.
419	2034	11	.
420	2034	12	.
421	2035	1	.
422	2035	2	.
423	2035	3	.
424	2035	4	.
425	2035	5	.
426	2035	6	.
427	2035	7	.
428	2035	8	.
429	2035	9	.
430	2035	10	.
431	2035	11	.
432	2035	12	.
433	2036	1	.
434	2036	2	.
435	2036	3	.
436	2036	4	.
437	2036	5	.
438	2036	6	.
439	2036	7	.
440	2036	8	.
441	2036	9	.
442	2036	10	.
443	2036	11	.
444	2036	12	.
445	2037	1	.
446	2037	2	.
447	2037	3	.
448	2037	4	.
449	2037	5	.
450	2037	6	.

INDIANA MICHIGAN POWER COMPANY - INDIANA
OTHER ULTIMATE CUSTOMERS
ENDOGENOUS VARIABLES

Obs	YEAR	MONTH	cu_imi
451	2037	7	.
452	2037	8	.
453	2037	9	.
454	2037	10	.
455	2037	11	.
456	2037	12	.
457	2038	1	.
458	2038	2	.
459	2038	3	.
460	2038	4	.
461	2038	5	.
462	2038	6	.
463	2038	7	.
464	2038	8	.
465	2038	9	.
466	2038	10	.
467	2038	11	.
468	2038	12	.
469	2039	1	.
470	2039	2	.
471	2039	3	.
472	2039	4	.
473	2039	5	.
474	2039	6	.
475	2039	7	.
476	2039	8	.
477	2039	9	.
478	2039	10	.
479	2039	11	.
480	2039	12	.
481	2040	1	.
482	2040	2	.
483	2040	3	.
484	2040	4	.
485	2040	5	.
486	2040	6	.
487	2040	7	.
488	2040	8	.
489	2040	9	.
490	2040	10	.
491	2040	11	.
492	2040	12	.
493	2041	1	.
494	2041	2	.
495	2041	3	.
496	2041	4	.
497	2041	5	.
498	2041	6	.
499	2041	7	.
500	2041	8	.

INDIANA MICHIGAN POWER COMPANY - INDIANA
OTHER ULTIMATE CUSTOMERS
ENDOGENOUS VARIABLES

Obs	YEAR	MONTH	cu_imi
501	2041	9	.
502	2041	10	.
503	2041	11	.
504	2041	12	.
505	2042	1	.
506	2042	2	.
507	2042	3	.
508	2042	4	.
509	2042	5	.
510	2042	6	.
511	2042	7	.
512	2042	8	.
513	2042	9	.
514	2042	10	.
515	2042	11	.
516	2042	12	.
517	2043	1	.
518	2043	2	.
519	2043	3	.
520	2043	4	.
521	2043	5	.
522	2043	6	.
523	2043	7	.
524	2043	8	.
525	2043	9	.
526	2043	10	.
527	2043	11	.
528	2043	12	.
529	2044	1	.
530	2044	2	.
531	2044	3	.
532	2044	4	.
533	2044	5	.
534	2044	6	.
535	2044	7	.
536	2044	8	.
537	2044	9	.
538	2044	10	.
539	2044	11	.
540	2044	12	.
541	2045	1	.
542	2045	2	.
543	2045	3	.
544	2045	4	.
545	2045	5	.
546	2045	6	.
547	2045	7	.
548	2045	8	.
549	2045	9	.
550	2045	10	.

INDIANA MICHIGAN POWER COMPANY - INDIANA
OTHER ULTIMATE CUSTOMERS
ENDOGENOUS VARIABLES

Obs	YEAR	MONTH	cu_imi
551	2045	11	.
552	2045	12	.
553	2046	1	.
554	2046	2	.
555	2046	3	.
556	2046	4	.
557	2046	5	.
558	2046	6	.
559	2046	7	.
560	2046	8	.
561	2046	9	.
562	2046	10	.
563	2046	11	.
564	2046	12	.
565	2047	1	.
566	2047	2	.
567	2047	3	.
568	2047	4	.
569	2047	5	.
570	2047	6	.
571	2047	7	.
572	2047	8	.
573	2047	9	.
574	2047	10	.
575	2047	11	.
576	2047	12	.
577	2048	1	.
578	2048	2	.
579	2048	3	.
580	2048	4	.
581	2048	5	.
582	2048	6	.
583	2048	7	.
584	2048	8	.
585	2048	9	.
586	2048	10	.
587	2048	11	.
588	2048	12	.
589	2049	1	.
590	2049	2	.
591	2049	3	.
592	2049	4	.
593	2049	5	.
594	2049	6	.
595	2049	7	.
596	2049	8	.
597	2049	9	.
598	2049	10	.
599	2049	11	.
600	2049	12	.

INDIANA MICHIGAN POWER COMPANY - INDIANA
OTHER ULTIMATE CUSTOMERS
ENDOGENOUS VARIABLES

Obs	YEAR	MONTH	cu_imi
601	2050	1	.
602	2050	2	.
603	2050	3	.
604	2050	4	.
605	2050	5	.
606	2050	6	.
607	2050	7	.
608	2050	8	.
609	2050	9	.
610	2050	10	.
611	2050	11	.
612	2050	12	.
613	2051	1	.
614	2051	2	.
615	2051	3	.
616	2051	4	.
617	2051	5	.
618	2051	6	.
619	2051	7	.
620	2051	8	.
621	2051	9	.
622	2051	10	.
623	2051	11	.
624	2051	12	.
625	2052	1	.
626	2052	2	.
627	2052	3	.
628	2052	4	.
629	2052	5	.
630	2052	6	.
631	2052	7	.
632	2052	8	.
633	2052	9	.
634	2052	10	.
635	2052	11	.
636	2052	12	.
637	2053	1	.
638	2053	2	.
639	2053	3	.
640	2053	4	.
641	2053	5	.
642	2053	6	.
643	2053	7	.
644	2053	8	.
645	2053	9	.
646	2053	10	.
647	2053	11	.
648	2053	12	.
649	2054	1	.
650	2054	2	.

INDIANA MICHIGAN POWER COMPANY - INDIANA
OTHER ULTIMATE CUSTOMERS
ENDOGENOUS VARIABLES

Obs	YEAR	MONTH	cu_imi
651	2054	3	.
652	2054	4	.
653	2054	5	.
654	2054	6	.
655	2054	7	.
656	2054	8	.
657	2054	9	.
658	2054	10	.
659	2054	11	.
660	2054	12	.
661	2055	1	.
662	2055	2	.
663	2055	3	.
664	2055	4	.
665	2055	5	.
666	2055	6	.
667	2055	7	.
668	2055	8	.
669	2055	9	.
670	2055	10	.
671	2055	11	.
672	2055	12	.
673	2056	1	.
674	2056	2	.
675	2056	3	.
676	2056	4	.
677	2056	5	.
678	2056	6	.
679	2056	7	.
680	2056	8	.
681	2056	9	.
682	2056	10	.
683	2056	11	.
684	2056	12	.
685	2057	1	.
686	2057	2	.
687	2057	3	.
688	2057	4	.
689	2057	5	.
690	2057	6	.
691	2057	7	.
692	2057	8	.
693	2057	9	.
694	2057	10	.
695	2057	11	.
696	2057	12	.

INDIANA MICHIGAN POWER COMPANY - INDIANA
OTHER ULTIMATE CUSTOMERS
ACTUAL AND FORECAST

YEAR	CUSTOMERS	GROWTH RATE
2000	1649.67	.
2001	1670.08	1.2
2002	1683.08	0.8
2003	1690.58	0.4
2004	1719.75	1.7
2005	1732.25	0.7
2006	1731.75	0.0
2007	1713.33	-1.1
2008	1697.33	-0.9
2009	1701.92	0.3
2010	1684.42	-1.0
2011	1661.33	-1.4
2012	1655.08	-0.4
2013	1643.17	-0.7
2014	1615.83	-1.7
2015	1593.42	-1.4
2016	1595.33	0.1
2017	1589.58	-0.4
2018	1573.83	-1.0
2019	1567.00	-0.4
2020	1565.50	-0.1
2021	1564.00	-0.1
2022	1564.00	0.0
2023	1564.00	0.0
2024	1564.00	0.0
2025	1564.00	0.0
2026	1564.00	0.0
2027	1564.00	0.0
2028	1564.00	0.0
2029	1564.00	0.0
2030	1564.00	0.0
2031	1564.00	0.0
2032	1564.00	0.0
2033	1564.00	0.0
2034	1564.00	0.0
2035	1564.00	0.0
2036	1564.00	0.0
2037	1564.00	0.0
2038	1564.00	0.0
2039	1564.00	0.0
2040	1564.00	0.0
2041	1564.00	0.0
2042	1564.00	0.0
2043	1564.00	0.0
2044	1564.00	0.0
2045	1564.00	0.0
2046	1564.00	0.0
2047	1564.00	0.0
2048	1564.00	0.0

INDIANA MICHIGAN POWER COMPANY - INDIANA
OTHER ULTIMATE CUSTOMERS
ACTUAL AND FORECAST

YEAR	CUSTOMERS	GROWTH RATE
2049	1564	0
2050	1564	0
2051	1564	0
2052	1564	0
2053	1564	0
2054	1564	0
2055	1564	0
2056	1564	0
2057	1564	0

Indiana Michigan Power Company - Michigan
Residential Customers
Endogenous Variables

The MEANS Procedure

Variable	Label	Mean
YEAR	YEAR	2028.50
MONTH	MONTH	6.5000000
cr_imm	Residential Customers	108426.08

Indiana Michigan Power Company - Michigan
Residential Customers
Endogenous Variables

Obs	YEAR	MONTH	cr_imm
1	2000	1	104486
2	2000	2	104522
3	2000	3	104570
4	2000	4	104351
5	2000	5	104357
6	2000	6	104551
7	2000	7	104688
8	2000	8	104726
9	2000	9	104684
10	2000	10	104722
11	2000	11	104759
12	2000	12	104829
13	2001	1	105067
14	2001	2	105015
15	2001	3	105108
16	2001	4	104880
17	2001	5	102778
18	2001	6	105070
19	2001	7	105042
20	2001	8	105229
21	2001	9	105127
22	2001	10	105115
23	2001	11	105196
24	2001	12	105242
25	2002	1	105532
26	2002	2	105630
27	2002	3	105450
28	2002	4	104079
29	2002	5	105681
30	2002	6	105617
31	2002	7	105623
32	2002	8	105801
33	2002	9	105920
34	2002	10	105882
35	2002	11	105858
36	2002	12	106057
37	2003	1	106335
38	2003	2	109269
39	2003	3	106356
40	2003	4	106220
41	2003	5	106335
42	2003	6	106227
43	2003	7	106284
44	2003	8	106347
45	2003	9	106262
46	2003	10	106388
47	2003	11	106378
48	2003	12	106568
49	2004	1	106759

Indiana Michigan Power Company - Michigan
Residential Customers
Endogenous Variables

Obs	YEAR	MONTH	cr_imm
50	2004	2	106753
51	2004	3	106991
52	2004	4	106898
53	2004	5	106805
54	2004	6	107004
55	2004	7	106965
56	2004	8	107227
57	2004	9	107146
58	2004	10	107418
59	2004	11	107457
60	2004	12	107544
61	2005	1	107514
62	2005	2	106548
63	2005	3	108451
64	2005	4	107970
65	2005	5	107575
66	2005	6	107694
67	2005	7	107582
68	2005	8	107891
69	2005	9	107703
70	2005	10	107924
71	2005	11	107714
72	2005	12	108111
73	2006	1	108242
74	2006	2	107012
75	2006	3	109786
76	2006	4	108167
77	2006	5	108298
78	2006	6	108242
79	2006	7	108233
80	2006	8	108580
81	2006	9	108384
82	2006	10	108611
83	2006	11	108473
84	2006	12	108570
85	2007	1	108726
86	2007	2	108783
87	2007	3	109082
88	2007	4	108933
89	2007	5	108793
90	2007	6	108971
91	2007	7	108912
92	2007	8	109055
93	2007	9	108881
94	2007	10	109002
95	2007	11	108911
96	2007	12	109064
97	2008	1	109268
98	2008	2	109458

Indiana Michigan Power Company - Michigan
Residential Customers
Endogenous Variables

Obs	YEAR	MONTH	cr_imm
99	2008	3	109390
100	2008	4	109143
101	2008	5	109112
102	2008	6	109096
103	2008	7	109198
104	2008	8	109218
105	2008	9	109231
106	2008	10	109267
107	2008	11	109005
108	2008	12	109312
109	2009	1	109390
110	2009	2	108999
111	2009	3	110263
112	2009	4	109396
113	2009	5	109271
114	2009	6	109196
115	2009	7	109210
116	2009	8	109190
117	2009	9	109188
118	2009	10	109179
119	2009	11	109133
120	2009	12	109351
121	2010	1	109502
122	2010	2	107628
123	2010	3	111530
124	2010	4	109314
125	2010	5	109185
126	2010	6	109369
127	2010	7	109296
128	2010	8	109234
129	2010	9	109234
130	2010	10	109301
131	2010	11	109407
132	2010	12	109347
133	2011	1	109413
134	2011	2	107045
135	2011	3	112172
136	2011	4	109171
137	2011	5	109140
138	2011	6	109123
139	2011	7	108972
140	2011	8	109114
141	2011	9	108938
142	2011	10	108876
143	2011	11	109025
144	2011	12	108957
145	2012	1	109081
146	2012	2	109153
147	2012	3	109049

Indiana Michigan Power Company - Michigan
Residential Customers
Endogenous Variables

Obs	YEAR	MONTH	cr_imm
148	2012	4	108969
149	2012	5	109017
150	2012	6	108904
151	2012	7	109030
152	2012	8	109118
153	2012	9	108946
154	2012	10	109002
155	2012	11	108982
156	2012	12	108980
157	2013	1	109296
158	2013	2	109178
159	2013	3	109165
160	2013	4	109180
161	2013	5	109031
162	2013	6	109093
163	2013	7	109068
164	2013	8	109052
165	2013	9	108990
166	2013	10	108976
167	2013	11	109066
168	2013	12	109240
169	2014	1	109268
170	2014	2	109199
171	2014	3	109302
172	2014	4	109104
173	2014	5	108922
174	2014	6	108819
175	2014	7	108747
176	2014	8	108711
177	2014	9	108724
178	2014	10	108701
179	2014	11	108741
180	2014	12	108921
181	2015	1	109065
182	2015	2	109122
183	2015	3	109206
184	2015	4	108928
185	2015	5	108836
186	2015	6	108787
187	2015	7	108858
188	2015	8	108851
189	2015	9	108902
190	2015	10	108873
191	2015	11	108944
192	2015	12	108989
193	2016	1	109076
194	2016	2	109220
195	2016	3	109237
196	2016	4	106935

Indiana Michigan Power Company - Michigan
Residential Customers
Endogenous Variables

Obs	YEAR	MONTH	cr_imm
197	2016	5	109078
198	2016	6	109117
199	2016	7	109188
200	2016	8	109210
201	2016	9	109231
202	2016	10	109112
203	2016	11	109312
204	2016	12	109486
205	2017	1	109592
206	2017	2	109638
207	2017	3	109792
208	2017	4	109560
209	2017	5	109583
210	2017	6	109645
211	2017	7	109668
212	2017	8	109688
213	2017	9	109782
214	2017	10	109793
215	2017	11	109862
216	2017	12	110013
217	2018	1	110159
218	2018	2	110173
219	2018	3	110147
220	2018	4	110146
221	2018	5	110088
222	2018	6	110071
223	2018	7	110277
224	2018	8	110224
225	2018	9	110154
226	2018	10	110280
227	2018	11	110164
228	2018	12	110207
229	2019	1	110381
230	2019	2	110410
231	2019	3	110475
232	2019	4	110226
233	2019	5	110382
234	2019	6	110131
235	2019	7	110274
236	2019	8	110296
237	2019	9	110259
238	2019	10	110231
239	2019	11	110283
240	2019	12	110464
241	2020	1	110627
242	2020	2	110659
243	2020	3	110630
244	2020	4	110628
245	2020	5	111045

Indiana Michigan Power Company - Michigan
Residential Customers
Endogenous Variables

Obs	YEAR	MONTH	cr_imm
246	2020	6	110905
247	2020	7	110974
248	2020	8	110992
249	2020	9	111000
250	2020	10	110809
251	2020	11	110931
252	2020	12	111041
253	2021	1	.
254	2021	2	.
255	2021	3	.
256	2021	4	.
257	2021	5	.
258	2021	6	.
259	2021	7	.
260	2021	8	.
261	2021	9	.
262	2021	10	.
263	2021	11	.
264	2021	12	.
265	2022	1	.
266	2022	2	.
267	2022	3	.
268	2022	4	.
269	2022	5	.
270	2022	6	.
271	2022	7	.
272	2022	8	.
273	2022	9	.
274	2022	10	.
275	2022	11	.
276	2022	12	.
277	2023	1	.
278	2023	2	.
279	2023	3	.
280	2023	4	.
281	2023	5	.
282	2023	6	.
283	2023	7	.
284	2023	8	.
285	2023	9	.
286	2023	10	.
287	2023	11	.
288	2023	12	.
289	2024	1	.
290	2024	2	.
291	2024	3	.
292	2024	4	.
293	2024	5	.
294	2024	6	.

Indiana Michigan Power Company - Michigan
Residential Customers
Endogenous Variables

Obs	YEAR	MONTH	cr_imm
295	2024	7	.
296	2024	8	.
297	2024	9	.
298	2024	10	.
299	2024	11	.
300	2024	12	.
301	2025	1	.
302	2025	2	.
303	2025	3	.
304	2025	4	.
305	2025	5	.
306	2025	6	.
307	2025	7	.
308	2025	8	.
309	2025	9	.
310	2025	10	.
311	2025	11	.
312	2025	12	.
313	2026	1	.
314	2026	2	.
315	2026	3	.
316	2026	4	.
317	2026	5	.
318	2026	6	.
319	2026	7	.
320	2026	8	.
321	2026	9	.
322	2026	10	.
323	2026	11	.
324	2026	12	.
325	2027	1	.
326	2027	2	.
327	2027	3	.
328	2027	4	.
329	2027	5	.
330	2027	6	.
331	2027	7	.
332	2027	8	.
333	2027	9	.
334	2027	10	.
335	2027	11	.
336	2027	12	.
337	2028	1	.
338	2028	2	.
339	2028	3	.
340	2028	4	.
341	2028	5	.
342	2028	6	.
343	2028	7	.

Indiana Michigan Power Company - Michigan
Residential Customers
Endogenous Variables

Obs	YEAR	MONTH	cr_imm
344	2028	8	.
345	2028	9	.
346	2028	10	.
347	2028	11	.
348	2028	12	.
349	2029	1	.
350	2029	2	.
351	2029	3	.
352	2029	4	.
353	2029	5	.
354	2029	6	.
355	2029	7	.
356	2029	8	.
357	2029	9	.
358	2029	10	.
359	2029	11	.
360	2029	12	.
361	2030	1	.
362	2030	2	.
363	2030	3	.
364	2030	4	.
365	2030	5	.
366	2030	6	.
367	2030	7	.
368	2030	8	.
369	2030	9	.
370	2030	10	.
371	2030	11	.
372	2030	12	.
373	2031	1	.
374	2031	2	.
375	2031	3	.
376	2031	4	.
377	2031	5	.
378	2031	6	.
379	2031	7	.
380	2031	8	.
381	2031	9	.
382	2031	10	.
383	2031	11	.
384	2031	12	.
385	2032	1	.
386	2032	2	.
387	2032	3	.
388	2032	4	.
389	2032	5	.
390	2032	6	.
391	2032	7	.
392	2032	8	.

Indiana Michigan Power Company - Michigan
Residential Customers
Endogenous Variables

Obs	YEAR	MONTH	cr_imm
393	2032	9	.
394	2032	10	.
395	2032	11	.
396	2032	12	.
397	2033	1	.
398	2033	2	.
399	2033	3	.
400	2033	4	.
401	2033	5	.
402	2033	6	.
403	2033	7	.
404	2033	8	.
405	2033	9	.
406	2033	10	.
407	2033	11	.
408	2033	12	.
409	2034	1	.
410	2034	2	.
411	2034	3	.
412	2034	4	.
413	2034	5	.
414	2034	6	.
415	2034	7	.
416	2034	8	.
417	2034	9	.
418	2034	10	.
419	2034	11	.
420	2034	12	.
421	2035	1	.
422	2035	2	.
423	2035	3	.
424	2035	4	.
425	2035	5	.
426	2035	6	.
427	2035	7	.
428	2035	8	.
429	2035	9	.
430	2035	10	.
431	2035	11	.
432	2035	12	.
433	2036	1	.
434	2036	2	.
435	2036	3	.
436	2036	4	.
437	2036	5	.
438	2036	6	.
439	2036	7	.
440	2036	8	.
441	2036	9	.

Indiana Michigan Power Company - Michigan
Residential Customers
Endogenous Variables

Obs	YEAR	MONTH	cr_imm
442	2036	10	.
443	2036	11	.
444	2036	12	.
445	2037	1	.
446	2037	2	.
447	2037	3	.
448	2037	4	.
449	2037	5	.
450	2037	6	.
451	2037	7	.
452	2037	8	.
453	2037	9	.
454	2037	10	.
455	2037	11	.
456	2037	12	.
457	2038	1	.
458	2038	2	.
459	2038	3	.
460	2038	4	.
461	2038	5	.
462	2038	6	.
463	2038	7	.
464	2038	8	.
465	2038	9	.
466	2038	10	.
467	2038	11	.
468	2038	12	.
469	2039	1	.
470	2039	2	.
471	2039	3	.
472	2039	4	.
473	2039	5	.
474	2039	6	.
475	2039	7	.
476	2039	8	.
477	2039	9	.
478	2039	10	.
479	2039	11	.
480	2039	12	.
481	2040	1	.
482	2040	2	.
483	2040	3	.
484	2040	4	.
485	2040	5	.
486	2040	6	.
487	2040	7	.
488	2040	8	.
489	2040	9	.
490	2040	10	.

Indiana Michigan Power Company - Michigan
Residential Customers
Endogenous Variables

Obs	YEAR	MONTH	cr_imm
491	2040	11	.
492	2040	12	.
493	2041	1	.
494	2041	2	.
495	2041	3	.
496	2041	4	.
497	2041	5	.
498	2041	6	.
499	2041	7	.
500	2041	8	.
501	2041	9	.
502	2041	10	.
503	2041	11	.
504	2041	12	.
505	2042	1	.
506	2042	2	.
507	2042	3	.
508	2042	4	.
509	2042	5	.
510	2042	6	.
511	2042	7	.
512	2042	8	.
513	2042	9	.
514	2042	10	.
515	2042	11	.
516	2042	12	.
517	2043	1	.
518	2043	2	.
519	2043	3	.
520	2043	4	.
521	2043	5	.
522	2043	6	.
523	2043	7	.
524	2043	8	.
525	2043	9	.
526	2043	10	.
527	2043	11	.
528	2043	12	.
529	2044	1	.
530	2044	2	.
531	2044	3	.
532	2044	4	.
533	2044	5	.
534	2044	6	.
535	2044	7	.
536	2044	8	.
537	2044	9	.
538	2044	10	.
539	2044	11	.

Indiana Michigan Power Company - Michigan
Residential Customers
Endogenous Variables

Obs	YEAR	MONTH	cr_imm
540	2044	12	.
541	2045	1	.
542	2045	2	.
543	2045	3	.
544	2045	4	.
545	2045	5	.
546	2045	6	.
547	2045	7	.
548	2045	8	.
549	2045	9	.
550	2045	10	.
551	2045	11	.
552	2045	12	.
553	2046	1	.
554	2046	2	.
555	2046	3	.
556	2046	4	.
557	2046	5	.
558	2046	6	.
559	2046	7	.
560	2046	8	.
561	2046	9	.
562	2046	10	.
563	2046	11	.
564	2046	12	.
565	2047	1	.
566	2047	2	.
567	2047	3	.
568	2047	4	.
569	2047	5	.
570	2047	6	.
571	2047	7	.
572	2047	8	.
573	2047	9	.
574	2047	10	.
575	2047	11	.
576	2047	12	.
577	2048	1	.
578	2048	2	.
579	2048	3	.
580	2048	4	.
581	2048	5	.
582	2048	6	.
583	2048	7	.
584	2048	8	.
585	2048	9	.
586	2048	10	.
587	2048	11	.
588	2048	12	.

Indiana Michigan Power Company - Michigan
Residential Customers
Endogenous Variables

Obs	YEAR	MONTH	cr_imm
589	2049	1	.
590	2049	2	.
591	2049	3	.
592	2049	4	.
593	2049	5	.
594	2049	6	.
595	2049	7	.
596	2049	8	.
597	2049	9	.
598	2049	10	.
599	2049	11	.
600	2049	12	.
601	2050	1	.
602	2050	2	.
603	2050	3	.
604	2050	4	.
605	2050	5	.
606	2050	6	.
607	2050	7	.
608	2050	8	.
609	2050	9	.
610	2050	10	.
611	2050	11	.
612	2050	12	.
613	2051	1	.
614	2051	2	.
615	2051	3	.
616	2051	4	.
617	2051	5	.
618	2051	6	.
619	2051	7	.
620	2051	8	.
621	2051	9	.
622	2051	10	.
623	2051	11	.
624	2051	12	.
625	2052	1	.
626	2052	2	.
627	2052	3	.
628	2052	4	.
629	2052	5	.
630	2052	6	.
631	2052	7	.
632	2052	8	.
633	2052	9	.
634	2052	10	.
635	2052	11	.
636	2052	12	.
637	2053	1	.

Indiana Michigan Power Company - Michigan
Residential Customers
Endogenous Variables

Obs	YEAR	MONTH	cr_imm
638	2053	2	.
639	2053	3	.
640	2053	4	.
641	2053	5	.
642	2053	6	.
643	2053	7	.
644	2053	8	.
645	2053	9	.
646	2053	10	.
647	2053	11	.
648	2053	12	.
649	2054	1	.
650	2054	2	.
651	2054	3	.
652	2054	4	.
653	2054	5	.
654	2054	6	.
655	2054	7	.
656	2054	8	.
657	2054	9	.
658	2054	10	.
659	2054	11	.
660	2054	12	.
661	2055	1	.
662	2055	2	.
663	2055	3	.
664	2055	4	.
665	2055	5	.
666	2055	6	.
667	2055	7	.
668	2055	8	.
669	2055	9	.
670	2055	10	.
671	2055	11	.
672	2055	12	.
673	2056	1	.
674	2056	2	.
675	2056	3	.
676	2056	4	.
677	2056	5	.
678	2056	6	.
679	2056	7	.
680	2056	8	.
681	2056	9	.
682	2056	10	.
683	2056	11	.
684	2056	12	.
685	2057	1	.
686	2057	2	.

Indiana Michigan Power Company - Michigan
Residential Customers
Endogenous Variables

Obs	YEAR	MONTH	cr_imm
687	2057	3	.
688	2057	4	.
689	2057	5	.
690	2057	6	.
691	2057	7	.
692	2057	8	.
693	2057	9	.
694	2057	10	.
695	2057	11	.
696	2057	12	.

Indiana Michigan Power Company - Michigan
Residential Customers
Exogenous Variables

The MEANS Procedure

Variable	Label	Mean
YEAR	YEAR	2028.50
MONTH	MONTH	6.5000000
hh_imm	Service Area Households	137.7393383
hs_imm	Service Area Housing Starts	178.9701179
d3	Binary Variable - March	0.0833333
d5	Binary Variable - May	0.0833333
d6	Binary Variable - June	0.0833333
d7	Binary Variable - July	0.0833333
d8	Binary Varaible - August	0.0833333
d9	Binary Variable - September	0.0833333
d10	Binary Variable - October	0.0833333
d11	Binary Variable - November	0.0833333
dfeb03	Binary Variable - February 2003	0.0014368
dmar03	Binary Variable - March 2003	0.0014368
dmar05	Binary Variable - March 2005	0.0014368
d04on	Binary Variable - 2004 On	0.9310345
dfeb06	Binary Variable - February 2006	0.0014368
dmar06	Binary Variable - March 2006	0.0014368
dapr06	Binary Variable - April 2006	0.0014368
dfeb10	Binary Variable - February 2010	0.0014368
dmar10	Binary Variable - March 2010	0.0014368
dapr10	Binary Variable - April 2010	0.0014368
dmar11	Binary Variable - March 2011	0.0014368
dfeb11	Binary Variable - February 2011	0.0014368
jul11on	Binary Variable - July 2011 On	0.8017241
may01	Binary Variable - May 2001	0.0014368
apr16	Binary Variable - April 2016	0.0014368
may16	Binary Variable - May 2016	0.0014368
d07on	Binary Variable - 2007 On	0.8793103
d14on	Binary Variable - 2014 On	0.7586207
dec14on	Binary Variable - December 2014 On	0.7428161
d17on	Binary Variable - 2017 On	0.7068966
feb19on	Binary Variable - February 2019 On	0.6709770

Obs	YEAR	MONTH	hh_im	hs_im	d3	d5	d6	d7	d8	d9	d10	d11	d13	d33	d05	d04on	d06	d66	d60	f01	f02	f11	f16	f66	f0nn	dec_nn	dec_nn	feb_nn
1	2000	1	134.865	157.763	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	2000	2	134.890	157.869	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	2000	3	134.911	157.978	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	2000	4	134.929	158.090	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	2000	5	134.942	158.203	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6	2000	6	134.950	158.319	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7	2000	7	134.955	158.437	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	2000	8	134.955	158.558	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9	2000	9	134.950	158.680	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10	2000	10	134.945	158.802	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11	2000	11	134.940	158.925	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12	2000	12	134.934	159.049	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13	2001	1	134.930	159.173	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14	2001	2	134.927	159.292	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15	2001	3	134.930	159.409	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16	2001	4	134.937	159.528	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17	2001	5	134.950	159.645	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18	2001	6	134.970	159.761	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19	2001	7	134.998	159.872	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20	2001	8	135.036	159.984	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21	2001	9	135.080	160.092	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22	2001	10	135.133	160.196	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23	2001	11	135.190	160.300	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24	2001	12	135.252	160.402	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25	2002	1	135.319	160.504	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
26	2002	2	135.385	160.601	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27	2002	3	135.455	160.698	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
28	2002	4	135.528	160.798	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29	2002	5	135.601	160.901	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30	2002	6	135.674	161.003	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
31	2002	7	135.746	161.108	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
32	2002	8	135.817	161.216	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
33	2002	9	135.884	161.323	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
34	2002	10	135.948	161.433	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
35	2002	11	136.011	161.543	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
36	2002	12	136.071	161.655	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
37	2003	1	136.128	161.769	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
38	2003	2	136.180	161.878	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
39	2003	3	136.230	161.987	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
40	2003	4	136.276	162.100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
41	2003	5	136.319	162.214	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
42	2003	6	136.357	162.327	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
43	2003	7	136.392	162.440	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Obs	YEAR	MONTH	hh_im	hs_im	d3	d5	d6	d7	d8	d9	d01	d13	dfeb33	dmar35	dmar04	dfeb06	dmar06	dapr06	dfeb07	dmar07	dapr07	dmay07	dfeb11	djul16	dmar16	dapr16	dmay16	ded07	ded14	dfeb44	dfeb47	dfeb19
44	2003	8	136.424	162.553	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
45	2003	9	136.451	162.666	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
46	2003	10	136.475	162.777	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
47	2003	11	136.498	162.888	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
48	2003	12	136.517	162.999	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
49	2004	1	136.534	163.112	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
50	2004	2	136.551	163.220	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
51	2004	3	136.568	163.328	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
52	2004	4	136.584	163.438	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
53	2004	5	136.600	163.548	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
54	2004	6	136.619	163.656	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
55	2004	7	136.637	163.767	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
56	2004	8	136.658	163.876	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
57	2004	9	136.678	163.985	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
58	2004	10	136.697	164.094	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
59	2004	11	136.714	164.203	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
60	2004	12	136.729	164.312	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
61	2005	1	136.740	164.423	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
62	2005	2	136.748	164.526	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
63	2005	3	136.749	164.631	1	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
64	2005	4	136.746	164.740	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
65	2005	5	136.734	164.847	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
66	2005	6	136.716	164.956	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
67	2005	7	136.686	165.062	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
68	2005	8	136.647	165.173	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
69	2005	9	136.604	165.280	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
70	2005	10	136.556	165.386	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
71	2005	11	136.502	165.492	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
72	2005	12	136.449	165.595	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
73	2006	1	136.394	165.699	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
74	2006	2	136.345	165.795	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
75	2006	3	136.299	165.889	1	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
76	2006	4	136.258	165.985	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
77	2006	5	136.224	166.075	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
78	2006	6	136.201	166.164	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
79	2006	7	136.188	166.248	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
80	2006	8	136.187	166.330	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
81	2006	9	136.198	166.407	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
82	2006	10	136.218	166.479	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
83	2006	11	136.247	166.550	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
84	2006	12	136.283	166.616	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
85	2007	1	136.327	166.682	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
86	2007	2	136.374	166.740	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0

Obs	YEAR	MONTH	hh_im	hs_im	d3	d5	d6	d7	d8	d9	d01	d13	d03	d05	dfeb04on	dfeb06	dmar06	dapr06	dfeb07on	dmar07	dapr07	dmay07	dfeb08on	dmar08	dapr08	dmay08	djul16	dmar16	dapr16	dmay16	dec07on	dec11on	dec14on	dec17on	dec19on
87	2007	3	136.425	166.797	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
88	2007	4	136.482	166.853	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
89	2007	5	136.542	166.906	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
90	2007	6	136.601	166.958	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
91	2007	7	136.662	167.007	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
92	2007	8	136.724	167.055	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
93	2007	9	136.782	167.099	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
94	2007	10	136.839	167.144	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
95	2007	11	136.894	167.185	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
96	2007	12	136.944	167.224	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
97	2008	1	136.990	167.263	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
98	2008	2	137.029	167.298	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
99	2008	3	137.063	167.331	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
100	2008	4	137.091	167.363	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
101	2008	5	137.109	167.390	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
102	2008	6	137.120	167.419	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
103	2008	7	137.122	167.444	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
104	2008	8	137.114	167.466	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
105	2008	9	137.097	167.488	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
106	2008	10	137.070	167.508	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
107	2008	11	137.036	167.525	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
108	2008	12	136.995	167.542	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
109	2009	1	136.943	167.558	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
110	2009	2	136.889	167.572	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
111	2009	3	136.827	167.584	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
112	2009	4	136.757	167.599	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
113	2009	5	136.683	167.611	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
114	2009	6	136.602	167.625	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
115	2009	7	136.516	167.636	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
116	2009	8	136.424	167.649	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
117	2009	9	136.333	167.662	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
118	2009	10	136.242	167.675	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
119	2009	11	136.154	167.689	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
120	2009	12	136.070	167.703	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
121	2010	1	135.990	167.717	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
122	2010	2	135.924	167.730	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0
123	2010	3	135.867	167.747	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0
124	2010	4	135.821	167.761	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0
125	2010	5	135.790	167.778	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
126	2010	6	135.778	167.796	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
127	2010	7	135.782	167.814	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
128	2010	8	135.806	167.833	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
129	2010	9	135.846	167.852	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0

Obs	YEAR	MONTH	hh_im	hs_im	d3	d5	d6	d7	d8	d9	d01	d13	ddm33	ddm55	ddm04	dfeb06	dmar06	dapr06	dfeb60	dmar60	dapr60	dmay60	djun01	dmar16	dapr16	dmay16	dec74	dec44	dec47	dec99
130	2010	10	135.897	167.872	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
131	2010	11	135.959	167.892	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
132	2010	12	136.027	167.914	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
133	2011	1	136.099	167.937	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
134	2011	2	136.169	167.959	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0
135	2011	3	136.236	167.982	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0
136	2011	4	136.299	168.006	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
137	2011	5	136.353	168.029	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
138	2011	6	136.396	168.054	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
139	2011	7	136.424	168.078	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0
140	2011	8	136.437	168.105	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0
141	2011	9	136.435	168.130	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0
142	2011	10	136.423	168.157	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0
143	2011	11	136.402	168.183	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0
144	2011	12	136.374	168.209	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0
145	2012	1	136.339	168.234	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0
146	2012	2	136.303	168.261	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0
147	2012	3	136.268	168.287	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0
148	2012	4	136.233	168.312	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0
149	2012	5	136.201	168.338	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0
150	2012	6	136.177	168.363	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0
151	2012	7	136.160	168.389	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0
152	2012	8	136.150	168.413	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0
153	2012	9	136.151	168.437	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0
154	2012	10	136.160	168.462	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0
155	2012	11	136.176	168.486	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0
156	2012	12	136.198	168.510	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0
157	2013	1	136.228	168.535	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0
158	2013	2	136.263	168.558	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0
159	2013	3	136.302	168.582	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0
160	2013	4	136.347	168.606	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0
161	2013	5	136.396	168.631	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0
162	2013	6	136.451	168.657	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0
163	2013	7	136.508	168.685	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0
164	2013	8	136.569	168.712	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0
165	2013	9	136.630	168.739	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0
166	2013	10	136.692	168.768	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0
167	2013	11	136.751	168.796	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0
168	2013	12	136.806	168.826	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0
169	2014	1	136.857	168.857	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	1	0	0	0
170	2014	2	136.900	168.888	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	1	0	0	0
171	2014	3	136.937	168.917	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	1	0	0	0
172	2014	4	136.965	168.949	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	1	0	0	0

Obs	YEAR	MONTH	hh_im	hs_im	d3	d5	d6	d7	d8	d9	d01	d13	d33	d05	dn6	dm6	da6	df0	dm0	da0	dp0	dj01	dl1	dm1	da1	dm1	df1	de4	dd4	fe47	eb9
173	2014	5	136.983	168.982	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0	0
174	2014	6	136.987	169.016	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0	0
175	2014	7	136.981	169.048	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0	0
176	2014	8	136.959	169.085	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0	0
177	2014	9	136.928	169.119	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0	0
178	2014	10	136.887	169.154	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0	0
179	2014	11	136.842	169.191	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0	0
180	2014	12	136.792	169.227	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	0	0
181	2015	1	136.741	169.265	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	0	0
182	2015	2	136.694	169.301	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	0	0
183	2015	3	136.649	169.338	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	0	0
184	2015	4	136.609	169.377	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	0	0
185	2015	5	136.577	169.414	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	0	0
186	2015	6	136.558	169.454	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	0	0
187	2015	7	136.550	169.493	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	0	0
188	2015	8	136.555	169.533	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	0	0
189	2015	9	136.573	169.574	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	0	0
190	2015	10	136.600	169.615	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	0	0
191	2015	11	136.633	169.657	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	0	0
192	2015	12	136.672	169.699	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	0	0
193	2016	1	136.715	169.745	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	0	0
194	2016	2	136.756	169.790	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	0	0
195	2016	3	136.795	169.837	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	0	0
196	2016	4	136.833	169.885	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	1	0	1	1	1	0	0
197	2016	5	136.864	169.936	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	1	1	1	1	0	0
198	2016	6	136.888	169.989	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	0	0
199	2016	7	136.901	170.043	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	0	0
200	2016	8	136.904	170.102	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	0	0
201	2016	9	136.899	170.162	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	0	0
202	2016	10	136.888	170.223	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	0	0
203	2016	11	136.873	170.286	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	0	0
204	2016	12	136.856	170.349	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	0	0
205	2017	1	136.837	170.415	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	0
206	2017	2	136.821	170.477	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	0
207	2017	3	136.810	170.541	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	0
208	2017	4	136.802	170.606	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	0
209	2017	5	136.802	170.672	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	0
210	2017	6	136.812	170.735	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	0
211	2017	7	136.833	170.799	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	0
212	2017	8	136.867	170.863	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	0
213	2017	9	136.910	170.925	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	0
214	2017	10	136.960	170.985	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	0
215	2017	11	137.014	171.046	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	0

Obs	YEAR	MONTH	hhm	hsm	d3	d5	d6	d7	d8	d9	d01	d13	ddm33	ddm55	ddm04	dfeb06	dfmar06	dfapr06	dfeb07	dfmar07	dfapr07	dfmay07	dfeb11	dfmar11	dfapr11	dfmay11	dfjun11	dfjul11	dmay16	dapr16	dmay16	ddec07	d01jan14	dfeb14	dmar14	dapr14
216	2017	12	137.072	171.106	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	0
217	2018	1	137.131	171.167	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	0
218	2018	2	137.188	171.224	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	0
219	2018	3	137.240	171.282	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	0
220	2018	4	137.287	171.342	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	0
221	2018	5	137.329	171.401	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	0
222	2018	6	137.359	171.461	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	0
223	2018	7	137.378	171.521	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	0
224	2018	8	137.385	171.583	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	0
225	2018	9	137.383	171.644	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	0
226	2018	10	137.374	171.704	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	0
227	2018	11	137.361	171.766	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	0
228	2018	12	137.348	171.828	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	0
229	2019	1	137.335	171.890	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	0
230	2019	2	137.327	171.950	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
231	2019	3	137.326	172.009	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
232	2019	4	137.335	172.071	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
233	2019	5	137.354	172.130	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
234	2019	6	137.389	172.190	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
235	2019	7	137.443	172.251	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
236	2019	8	137.514	172.310	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
237	2019	9	137.598	172.367	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
238	2019	10	137.694	172.426	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
239	2019	11	137.798	172.483	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
240	2019	12	137.908	172.538	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
241	2020	1	138.022	172.595	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
242	2020	2	138.131	172.649	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
243	2020	3	138.236	172.701	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
244	2020	4	138.336	172.752	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
245	2020	5	138.427	172.804	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
246	2020	6	138.503	172.854	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
247	2020	7	138.565	172.904	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
248	2020	8	138.609	172.953	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
249	2020	9	138.639	173.001	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
250	2020	10	138.655	173.049	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
251	2020	11	138.661	173.095	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
252	2020	12	138.659	173.142	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
253	2021	1	138.651	173.190	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
254	2021	2	138.638	173.237	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
255	2021	3	138.623	173.283	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
256	2021	4	138.607	173.333	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
257	2021	5	138.594	173.385	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
258	2021	6	138.586	173.436	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1

Obs	YEAR	MONTH	hh_im	hs_im	d3	d5	d6	d7	d8	d9	d01	d13	d33	d05	d04	d06	d66	d60	d00	d11	d11	dju1n	dma16	dma16	dde0n	dde4n	dde4n	dde7n	dfeb9
259	2021	7	138.582	173.490	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	1	1	1
260	2021	8	138.586	173.547	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	1	1	1
261	2021	9	138.596	173.604	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	1	1	1
262	2021	10	138.611	173.665	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	1	1	1
263	2021	11	138.631	173.726	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	1	0	0	0	1	1	1	1
264	2021	12	138.655	173.789	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	1	1	1
265	2022	1	138.681	173.857	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	1	1	1
266	2022	2	138.710	173.921	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	1	1	1
267	2022	3	138.741	173.988	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	1	1	1
268	2022	4	138.772	174.061	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	1	1	1
269	2022	5	138.805	174.132	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	1	1	1
270	2022	6	138.836	174.207	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	1	1	1
271	2022	7	138.866	174.285	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	1	1	1
272	2022	8	138.896	174.364	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	1	1	1
273	2022	9	138.924	174.444	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	1	1	1
274	2022	10	138.950	174.526	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	1	1	1
275	2022	11	138.976	174.609	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	1	0	0	0	1	1	1	1
276	2022	12	139.000	174.693	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	1	1	1
277	2023	1	139.024	174.780	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	1	1	1
278	2023	2	139.048	174.860	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	1	1	1
279	2023	3	139.071	174.942	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	1	1	1
280	2023	4	139.095	175.028	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	1	1	1
281	2023	5	139.118	175.112	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	1	1	1
282	2023	6	139.142	175.196	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	1	1	1
283	2023	7	139.167	175.280	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	1	1	1
284	2023	8	139.193	175.364	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	1	1	1
285	2023	9	139.220	175.447	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	1	1	1
286	2023	10	139.246	175.528	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	1	1	1
287	2023	11	139.275	175.610	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	1	0	0	0	1	1	1	1
288	2023	12	139.302	175.691	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	1	1	1
289	2024	1	139.331	175.772	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	1	1	1
290	2024	2	139.360	175.851	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	1	1	1
291	2024	3	139.389	175.930	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	1	1	1
292	2024	4	139.419	176.010	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	1	1	1
293	2024	5	139.449	176.090	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	1	1	1
294	2024	6	139.481	176.170	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	1	1	1
295	2024	7	139.512	176.250	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	1	1	1
296	2024	8	139.544	176.332	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	1	1	1
297	2024	9	139.576	176.413	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	1	1	1
298	2024	10	139.608	176.494	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	1	1	1
299	2024	11	139.640	176.576	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	1	0	0	0	1	1	1	1
300	2024	12	139.673	176.656	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	1	1	1
301	2025	1	139.705	176.741	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	1	1	1

Obs	YEAR	MONTH	hhm	hsm	d3	d5	d6	d7	d8	d9	d01	d13	d33	d05	dn	df06	dm06	da06	df01	dm00	da00	dp00	de01	dm11	da11	dp11	de11	dj1on	dma01	dap16	dm16	dd07	de04	de44	df77	df99
302	2025	2	139.737	176.820	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
303	2025	3	139.768	176.900	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
304	2025	4	139.799	176.981	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
305	2025	5	139.830	177.064	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
306	2025	6	139.862	177.148	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
307	2025	7	139.892	177.231	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
308	2025	8	139.923	177.316	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
309	2025	9	139.953	177.399	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
310	2025	10	139.983	177.484	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
311	2025	11	140.012	177.568	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
312	2025	12	140.039	177.650	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
313	2026	1	140.067	177.736	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
314	2026	2	140.092	177.816	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
315	2026	3	140.118	177.897	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
316	2026	4	140.141	177.979	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
317	2026	5	140.164	178.062	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
318	2026	6	140.186	178.143	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
319	2026	7	140.207	178.224	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
320	2026	8	140.227	178.306	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
321	2026	9	140.246	178.386	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
322	2026	10	140.263	178.466	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
323	2026	11	140.280	178.543	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
324	2026	12	140.296	178.623	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
325	2027	1	140.312	178.700	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
326	2027	2	140.326	178.775	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
327	2027	3	140.340	178.849	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
328	2027	4	140.354	178.924	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
329	2027	5	140.367	178.999	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
330	2027	6	140.380	179.073	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
331	2027	7	140.393	179.147	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
332	2027	8	140.406	179.222	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
333	2027	9	140.419	179.294	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
334	2027	10	140.432	179.366	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
335	2027	11	140.445	179.437	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
336	2027	12	140.456	179.507	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
337	2028	1	140.470	179.578	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
338	2028	2	140.482	179.647	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
339	2028	3	140.495	179.713	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
340	2028	4	140.507	179.781	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
341	2028	5	140.520	179.850	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
342	2028	6	140.531	179.916	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
343	2028	7	140.545	179.982	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
344	2028	8	140.557	180.048	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1

Obs	YEAR	MONTH	hhm	hsm	d3	d5	d6	d7	d8	d9	d01	d11	d03	d04	d05	d06	d07	d08	d09	d10	d11	d12	d13	d14	d15	d16	d17	d18	d19	d20	d21	d22	d23	d24	d25	d26	d27	d28	d29	d30	d31
345	2028	9	140.570	180.112	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1
346	2028	10	140.583	180.176	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1
347	2028	11	140.597	180.239	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1
348	2028	12	140.609	180.303	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1
349	2029	1	140.623	180.365	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1
350	2029	2	140.635	180.426	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1
351	2029	3	140.649	180.485	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1
352	2029	4	140.662	180.546	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1
353	2029	5	140.678	180.607	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1
354	2029	6	140.691	180.667	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1
355	2029	7	140.705	180.727	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1
356	2029	8	140.721	180.788	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1
357	2029	9	140.736	180.848	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1
358	2029	10	140.751	180.907	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1
359	2029	11	140.767	180.966	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1
360	2029	12	140.782	181.025	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1
361	2030	1	140.798	181.083	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1
362	2030	2	140.812	181.139	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1
363	2030	3	140.827	181.195	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1
364	2030	4	140.843	181.253	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1
365	2030	5	140.857	181.309	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1
366	2030	6	140.873	181.367	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1
367	2030	7	140.887	181.423	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1
368	2030	8	140.901	181.480	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1
369	2030	9	140.916	181.536	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1
370	2030	10	140.929	181.591	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1
371	2030	11	140.942	181.647	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1
372	2030	12	140.954	181.703	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1
373	2031	1	140.966	181.758	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1
374	2031	2	140.979	181.811	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1
375	2031	3	140.988	181.864	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1
376	2031	4	141.000	181.918	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1
377	2031	5	141.009	181.972	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1
378	2031	6	141.018	182.026	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1
379	2031	7	141.027	182.080	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1
380	2031	8	141.034	182.134	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1
381	2031	9	141.042	182.188	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1
382	2031	10	141.047	182.241	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1
383	2031	11	141.055	182.293	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1
384	2031	12	141.059	182.347	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1
385	2032	1	141.066	182.400	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1
386	2032	2	141.070	182.452	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1
387	2032	3	141.074	182.502	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1

Obs	YEAR	MONTH	hh_im	hs_im	d3	d5	d6	d7	d8	d9	d01	d13	d33	d05	d_n	d06	d06	d06	d00	d00	d00	d11	d11	dol_n	j_un16	dma16	dap66	dry6	de_70	d11_nn	d44_nn	d47_nn	fe_99
388	2032	4	141.081	182.555	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	1
389	2032	5	141.085	182.607	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	1
390	2032	6	141.091	182.657	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	1
391	2032	7	141.096	182.709	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	1
392	2032	8	141.101	182.762	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	1
393	2032	9	141.105	182.811	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	1
394	2032	10	141.112	182.863	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	1
395	2032	11	141.116	182.912	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	1
396	2032	12	141.121	182.964	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	1
397	2033	1	141.125	183.015	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	1
398	2033	2	141.128	183.064	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	1
399	2033	3	141.131	183.111	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	1
400	2033	4	141.133	183.160	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	1
401	2033	5	141.133	183.210	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	1
402	2033	6	141.131	183.260	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	1
403	2033	7	141.130	183.309	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	1
404	2033	8	141.125	183.358	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	1
405	2033	9	141.120	183.407	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	1
406	2033	10	141.114	183.455	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	1
407	2033	11	141.106	183.503	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	1
408	2033	12	141.099	183.552	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	1
409	2034	1	141.092	183.601	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	1
410	2034	2	141.083	183.647	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	1
411	2034	3	141.076	183.694	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	1
412	2034	4	141.066	183.741	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	1
413	2034	5	141.057	183.787	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	1
414	2034	6	141.049	183.836	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	1
415	2034	7	141.042	183.883	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	1
416	2034	8	141.034	183.931	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	1
417	2034	9	141.027	183.977	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	1
418	2034	10	141.021	184.023	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	1
419	2034	11	141.015	184.071	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	1
420	2034	12	141.010	184.117	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	1
421	2035	1	141.004	184.163	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	1
422	2035	2	140.998	184.209	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	1
423	2035	3	140.992	184.254	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	1
424	2035	4	140.987	184.301	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	1
425	2035	5	140.981	184.347	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	1
426	2035	6	140.974	184.394	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	1
427	2035	7	140.967	184.440	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	1
428	2035	8	140.961	184.487	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	1
429	2035	9	140.952	184.534	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	1
430	2035	10	140.944	184.580	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	1

Obs	YEAR	MONTH	hhm	hsm	d3	d5	d6	d7	d8	d9	d01	d13	dm3	dm5	dn6	dm6	dm6	dm0	dm0	dm1	dm1	dm1	dm1	jun1	mar1	apr6	may6	dec0	d14n	dec4n	d7n	f9n
431	2035	11	140.936	184.628	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
432	2035	12	140.926	184.673	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
433	2036	1	140.916	184.721	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
434	2036	2	140.907	184.768	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
435	2036	3	140.897	184.813	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
436	2036	4	140.888	184.860	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
437	2036	5	140.879	184.907	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
438	2036	6	140.868	184.953	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
439	2036	7	140.859	185.000	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
440	2036	8	140.847	185.047	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
441	2036	9	140.837	185.095	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
442	2036	10	140.827	185.141	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
443	2036	11	140.815	185.187	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
444	2036	12	140.804	185.234	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
445	2037	1	140.792	185.282	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
446	2037	2	140.780	185.326	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
447	2037	3	140.766	185.372	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
448	2037	4	140.753	185.419	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
449	2037	5	140.738	185.465	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
450	2037	6	140.723	185.511	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
451	2037	7	140.706	185.558	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
452	2037	8	140.688	185.604	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
453	2037	9	140.669	185.650	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
454	2037	10	140.650	185.698	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
455	2037	11	140.630	185.743	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
456	2037	12	140.609	185.790	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
457	2038	1	140.589	185.836	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
458	2038	2	140.565	185.880	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
459	2038	3	140.544	185.925	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
460	2038	4	140.520	185.971	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
461	2038	5	140.499	186.018	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
462	2038	6	140.474	186.064	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
463	2038	7	140.451	186.108	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
464	2038	8	140.426	186.155	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
465	2038	9	140.401	186.201	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
466	2038	10	140.377	186.247	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
467	2038	11	140.354	186.293	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
468	2038	12	140.328	186.338	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
469	2039	1	140.304	186.385	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
470	2039	2	140.279	186.428	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
471	2039	3	140.255	186.473	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
472	2039	4	140.230	186.518	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
473	2039	5	140.206	186.564	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1

Obs	YEAR	MONTH	hhm	hsm	d3	d5	d6	d7	d8	d9	d01	d13	d33	d05	dfeb04	dmar06	dapr06	dfeb06	dmar00	dapr00	dmay00	djun01	dmar01	dapr16	dmay16	ddec01	ddec74	def44	ddec47	def99
474	2039	6	140.181	186.608	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
475	2039	7	140.157	186.654	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
476	2039	8	140.130	186.700	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
477	2039	9	140.106	186.746	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
478	2039	10	140.082	186.791	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
479	2039	11	140.057	186.835	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
480	2039	12	140.033	186.880	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
481	2040	1	140.007	186.926	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
482	2040	2	139.982	186.970	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
483	2040	3	139.957	187.015	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
484	2040	4	139.933	187.059	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
485	2040	5	139.906	187.104	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
486	2040	6	139.881	187.148	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
487	2040	7	139.854	187.193	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
488	2040	8	139.826	187.238	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
489	2040	9	139.798	187.283	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
490	2040	10	139.770	187.327	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
491	2040	11	139.742	187.371	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
492	2040	12	139.714	187.416	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
493	2041	1	139.685	187.461	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
494	2041	2	139.658	187.504	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
495	2041	3	139.629	187.547	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
496	2041	4	139.599	187.590	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
497	2041	5	139.571	187.634	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
498	2041	6	139.539	187.680	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
499	2041	7	139.510	187.722	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
500	2041	8	139.479	187.767	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
501	2041	9	139.449	187.811	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
502	2041	10	139.419	187.854	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
503	2041	11	139.387	187.897	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
504	2041	12	139.356	187.941	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
505	2042	1	139.324	187.985	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
506	2042	2	139.294	188.026	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
507	2042	3	139.263	188.068	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
508	2042	4	139.230	188.110	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
509	2042	5	139.197	188.153	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
510	2042	6	139.165	188.196	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
511	2042	7	139.131	188.238	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
512	2042	8	139.097	188.281	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
513	2042	9	139.063	188.323	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
514	2042	10	139.029	188.365	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
515	2042	11	138.992	188.407	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
516	2042	12	138.957	188.448	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1

Obs	YEAR	MONTH	hh_im	hs_im	d3	d5	d6	d7	d8	d9	d01	d13	d33	d05	dfeb04	dmar06	dapr06	dfeb06	dmar00	dapr00	dmay00	djun01	djul01	dmar16	dapr16	dmay16	ded07	ded14	dfeb44	dfeb47	dfeb19
517	2043	1	138.922	188.491	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
518	2043	2	138.888	188.532	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
519	2043	3	138.851	188.571	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
520	2043	4	138.816	188.612	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
521	2043	5	138.779	188.653	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
522	2043	6	138.742	188.695	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
523	2043	7	138.706	188.736	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
524	2043	8	138.669	188.776	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
525	2043	9	138.631	188.817	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
526	2043	10	138.594	188.858	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
527	2043	11	138.558	188.897	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
528	2043	12	138.520	188.936	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
529	2044	1	138.482	188.977	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
530	2044	2	138.448	189.017	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
531	2044	3	138.412	189.056	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
532	2044	4	138.377	189.095	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
533	2044	5	138.342	189.134	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
534	2044	6	138.308	189.173	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
535	2044	7	138.273	189.211	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
536	2044	8	138.240	189.250	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
537	2044	9	138.208	189.290	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
538	2044	10	138.176	189.328	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
539	2044	11	138.145	189.366	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
540	2044	12	138.114	189.403	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
541	2045	1	138.083	189.443	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
542	2045	2	138.053	189.478	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
543	2045	3	138.023	189.515	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
544	2045	4	137.993	189.553	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
545	2045	5	137.963	189.590	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
546	2045	6	137.932	189.626	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
547	2045	7	137.902	189.664	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
548	2045	8	137.870	189.702	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
549	2045	9	137.838	189.739	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
550	2045	10	137.806	189.776	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
551	2045	11	137.775	189.811	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
552	2045	12	137.742	189.847	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
553	2046	1	137.709	189.886	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
554	2046	2	137.677	189.920	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
555	2046	3	137.645	189.956	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
556	2046	4	137.610	189.992	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
557	2046	5	137.576	190.028	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
558	2046	6	137.542	190.063	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
559	2046	7	137.507	190.100	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1

Obs	YEAR	MONTH	hhm_im	hhs_im	d3	d5	d6	d7	d8	d9	d01	d13	d03	d05	d04on	d06	d06	d06	d001	d001	d001	d11	djulno	d01no	dmar16	dapr16	dmay16	d07no	ded1no	ded4no	d47no	fdb1no
560	2046	8	137.471	190.136	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
561	2046	9	137.434	190.171	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
562	2046	10	137.398	190.209	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
563	2046	11	137.363	190.244	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
564	2046	12	137.326	190.279	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
565	2047	1	137.288	190.315	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
566	2047	2	137.253	190.350	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
567	2047	3	137.218	190.384	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
568	2047	4	137.180	190.419	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
569	2047	5	137.143	190.454	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
570	2047	6	137.108	190.490	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
571	2047	7	137.069	190.524	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
572	2047	8	137.033	190.560	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
573	2047	9	136.996	190.595	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
574	2047	10	136.960	190.629	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
575	2047	11	136.924	190.663	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
576	2047	12	136.889	190.697	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
577	2048	1	136.850	190.732	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
578	2048	2	136.815	190.766	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
579	2048	3	136.780	190.798	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
580	2048	4	136.743	190.832	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
581	2048	5	136.707	190.866	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
582	2048	6	136.672	190.900	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
583	2048	7	136.635	190.934	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
584	2048	8	136.599	190.967	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
585	2048	9	136.562	191.001	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
586	2048	10	136.524	191.033	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
587	2048	11	136.488	191.066	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
588	2048	12	136.453	191.100	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
589	2049	1	136.415	191.134	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
590	2049	2	136.381	191.165	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
591	2049	3	136.345	191.196	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
592	2049	4	136.308	191.228	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
593	2049	5	136.273	191.262	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
594	2049	6	136.236	191.294	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
595	2049	7	136.201	191.326	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
596	2049	8	136.163	191.358	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
597	2049	9	136.128	191.390	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
598	2049	10	136.091	191.422	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
599	2049	11	136.055	191.455	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
600	2049	12	136.018	191.485	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
601	2050	1	135.982	191.518	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
602	2050	2	135.949	191.549	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1

Obs	YEAR	MONTH	hhi_mm	hhs_mm	d3	d5	d6	d7	d8	d9	d01	d13	d33	d05	dfeb04	dmar06	dapr06	dfeb06	dmar00	dapr00	dmay00	djun01	dmar01	dapr01	dmay07	ddec04	dec47	dec49	feb1
603	2050	3	135.913	191.579	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	1	1	1
604	2050	4	135.878	191.611	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	1	1	1
605	2050	5	135.843	191.643	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	1	1	1
606	2050	6	135.808	191.674	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	1	1	1
607	2050	7	135.772	191.705	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	1	1	1
608	2050	8	135.738	191.736	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	1	1	1
609	2050	9	135.704	191.767	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	1	1	1
610	2050	10	135.669	191.798	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	1	1	1
611	2050	11	135.635	191.828	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	1	0	0	0	1	1	1	1
612	2050	12	135.602	191.859	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	1	1	1
613	2051	1	135.551	191.903	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	1	1	1
614	2051	2	135.519	191.934	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	1	1	1
615	2051	3	135.483	191.963	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	1	1	1
616	2051	4	135.450	191.995	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	1	1	1
617	2051	5	135.415	192.025	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	1	1	1
618	2051	6	135.382	192.055	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	1	1	1
619	2051	7	135.345	192.085	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	1	1	1
620	2051	8	135.315	192.115	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	1	1	1
621	2051	9	135.282	192.145	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	1	1	1
622	2051	10	135.249	192.175	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	1	1	1
623	2051	11	135.217	192.202	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	1	0	0	0	1	1	1	1
624	2051	12	135.188	192.234	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	1	1	1
625	2052	1	135.123	192.288	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	1	1	1
626	2052	2	135.092	192.319	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	1	1	1
627	2052	3	135.056	192.347	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	1	1	1
628	2052	4	135.024	192.379	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	1	1	1
629	2052	5	134.990	192.407	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	1	1	1
630	2052	6	134.958	192.436	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	1	1	1
631	2052	7	134.920	192.465	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	1	1	1
632	2052	8	134.894	192.494	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	1	1	1
633	2052	9	134.862	192.523	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	1	1	1
634	2052	10	134.831	192.552	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	1	1	1
635	2052	11	134.801	192.576	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	1	0	0	0	1	1	1	1
636	2052	12	134.776	192.609	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	1	1	1
637	2053	1	134.696	192.675	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	1	1	1
638	2053	2	134.666	192.706	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	1	1	1
639	2053	3	134.630	192.733	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	1	1	1
640	2053	4	134.601	192.765	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	1	1	1
641	2053	5	134.566	192.791	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	1	1	1
642	2053	6	134.537	192.819	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	1	1	1
643	2053	7	134.498	192.847	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	1	1	1
644	2053	8	134.476	192.875	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	1	1	1
645	2053	9	134.445	192.903	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	1	1	1

Obs	YEAR	MONTH	hhmm	hsmm	d3	d5	d6	d7	d8	d9	d01	d13	d33	d05	dn6	dm6	da6	df0	dm0	da0	dp0	de1	da1	dm1	da1	df1	dj1o	dm0	da1	dm1	da1	de0	dc0	de1	df1	db1
646	2053	10	134.416	192.931	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
647	2053	11	134.388	192.952	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
648	2053	12	134.366	192.986	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
649	2054	1	134.272	193.062	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
650	2054	2	134.243	193.093	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
651	2054	3	134.207	193.119	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
652	2054	4	134.180	193.151	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
653	2054	5	134.145	193.175	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
654	2054	6	134.117	193.202	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
655	2054	7	134.078	193.229	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
656	2054	8	134.059	193.256	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
657	2054	9	134.029	193.283	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
658	2054	10	134.002	193.310	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
659	2054	11	133.976	193.328	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
660	2054	12	133.959	193.363	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
661	2055	1	133.850	193.450	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
662	2055	2	133.822	193.481	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
663	2055	3	133.785	193.506	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
664	2055	4	133.760	193.538	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
665	2055	5	133.725	193.560	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
666	2055	6	133.700	193.586	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
667	2055	7	133.659	193.612	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
668	2055	8	133.645	193.638	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
669	2055	9	133.616	193.664	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
670	2055	10	133.591	193.690	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
671	2055	11	133.566	193.705	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
672	2055	12	133.553	193.741	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
673	2056	1	133.430	193.839	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
674	2056	2	133.402	193.870	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
675	2056	3	133.366	193.894	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
676	2056	4	133.343	193.926	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
677	2056	5	133.308	193.946	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
678	2056	6	133.285	193.971	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
679	2056	7	133.243	193.996	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
680	2056	8	133.233	194.021	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
681	2056	9	133.204	194.046	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
682	2056	10	133.181	194.071	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
683	2056	11	133.159	194.083	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
684	2056	12	133.149	194.120	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
685	2057	1	133.012	194.229	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
686	2057	2	132.985	194.260	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
687	2057	3	132.949	194.283	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
688	2057	4	132.928	194.315	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1

Indiana Michigan Power Company - Michigan
Residential Customers
Exogenous Variables

Obs	YEAR	MONTH	hh_imm	hs_imm	d3	d5	d6	d7	d8	d9	d10	d11	dfeb03	dmar03	dmar05	d04on	dfeb06	dmar06	dapr06	dfeb10	dmar10	dapr10	dmar11	dfeb11	jul11on	may01	apr16	may16	d07on	d14on	dec14on	d17on	feb19on
689	2057	5	132.893	194.333	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
690	2057	6	132.872	194.357	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
691	2057	7	132.829	194.381	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
692	2057	8	132.822	194.405	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
693	2057	9	132.795	194.428	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
694	2057	10	132.774	194.452	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
695	2057	11	132.753	194.461	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1
696	2057	12	132.748	194.499	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1

Indiana Michigan Power Company - Michigan
Residential Customers
Model Estimation

The SYSLIN Procedure
Ordinary Least Squares Estimation

Model	cr_imm
Dependent Variable	cr_imm
Label	Residential Customers

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	31	7.5406E8	24324392	345.28	<.0001
Error	220	15498660	70448.46		
Corrected Total	251	7.6955E8			

Root MSE	265.42128	R-Square	0.97986
Dependent Mean	108426.079	Adj R-Sq	0.97702
Coeff Var	0.24479		

Parameter Estimates

Variable	DF	Parameter Estimate	Standard Error	t Value	Pr > |t|	Variable Label
Intercept	1	9056.690	6031.487	1.50	0.1346	Intercept
cr1	1	0.498427	0.041526	12.00	<.0001	Residential Customers, Lagged
hshhindx	1	44288.70	7078.515	6.26	<.0001	Service Area Housing Starts and Household Index
d3	1	135.9507	73.32528	1.85	0.0651	Binary Variable - March
d5	1	54.95842	68.25679	0.81	0.4216	Binary Variable - May
d6	1	71.79644	65.67124	1.09	0.2755	Binary Variable - June
d7	1	27.61349	65.40485	0.42	0.6733	Binary Variable - July
d8	1	81.67101	65.42686	1.25	0.2133	Binary Varaible - August
d9	1	-24.2553	65.47307	-0.37	0.7114	Binary Variable - September
d10	1	21.05504	65.74086	0.32	0.7491	Binary Variable - October
d11	1	-9.48203	66.01974	-0.14	0.8859	Binary Variable - November

Indiana Michigan Power Company - Michigan
Residential Customers
Model Estimation

The SYSLIN Procedure
Ordinary Least Squares Estimation

Parameter Estimates

Variable	DF	Parameter Estimate	Standard Error	t Value	Pr > |t|	Variable Label
dfeb03	1	3160.183	272.4173	11.60	<.0001	Binary Variable - February 2003
dmar03	1	-1365.59	314.5033	-4.34	<.0001	Binary Variable - March 2003
d04on	1	665.8621	105.8360	6.29	<.0001	Binary Variable - 2004 On
dmar05	1	1197.361	282.3715	4.24	<.0001	Binary Variable - March 2005
dfeb06	1	-866.716	272.0766	-3.19	0.0017	Binary Variable - February 2006
dmar06	1	2398.415	278.5752	8.61	<.0001	Binary Variable - March 2006
dapr06	1	-455.821	286.3062	-1.59	0.1128	Binary Variable - April 2006
d07on	1	670.8376	85.55289	7.84	<.0001	Binary Variable - 2007 On
dfeb10	1	-1478.95	271.5941	-5.45	<.0001	Binary Variable - February 2010
dmar10	1	3240.483	281.1696	11.53	<.0001	Binary Variable - March 2010
dapr10	1	-769.281	293.1923	-2.62	0.0093	Binary Variable - April 2010
dmar11	1	4059.187	288.3336	14.08	<.0001	Binary Variable - March 2011
dfeb11	1	-2095.16	270.0704	-7.76	<.0001	Binary Variable - February 2011
jul11on	1	-22.1247	62.04734	-0.36	0.7217	Binary Variable - July 2011 On
may01	1	-2237.59	275.8064	-8.11	<.0001	Binary Variable - May 2001
d14on	1	-261.851	98.13561	-2.67	0.0082	Binary Variable - 2014 On
dec14on	1	146.1620	97.58934	1.50	0.1356	Binary Variable - December 2014 On
apr16	1	-2219.66	272.2808	-8.15	<.0001	Binary Variable - April 2016
may16	1	1004.817	291.3832	3.45	0.0007	Binary Variable - May 2016
d17on	1	303.7122	83.28036	3.65	0.0003	Binary Variable - 2017 On
feb19on	1	9.194021	87.04691	0.11	0.9160	Binary Variable - February 2019 On

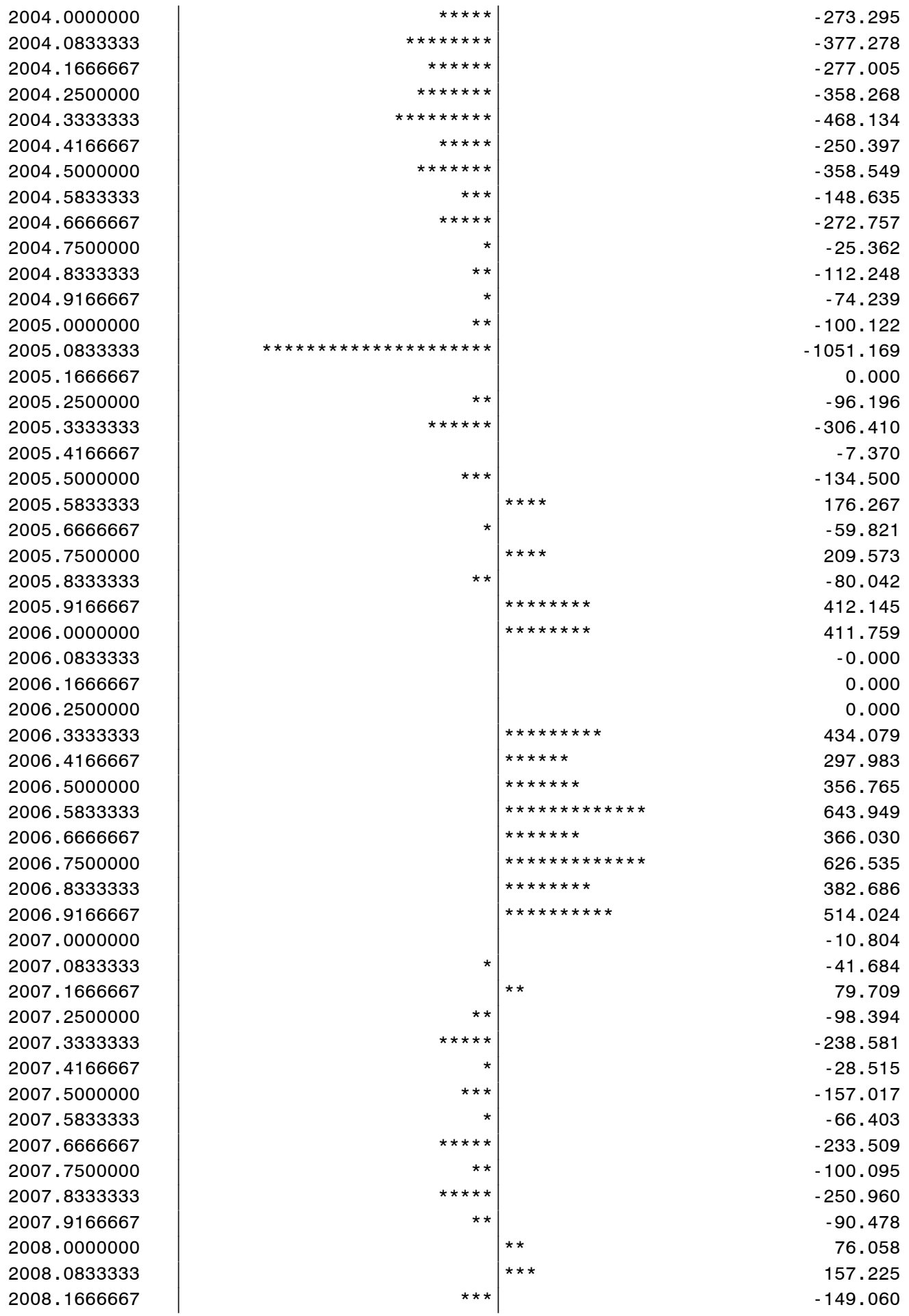
Indiana Michigan Power Company - Michigan
Residential Customers
Model Estimation

The SYSLIN Procedure
Ordinary Least Squares Estimation

Durbin-Watson	1.67993
Number of Observations	252
First-Order Autocorrelation	0.158684

Indiana Michigan Power Company - Michigan
Residential Customers
Model Residuals

time			Residual Values Sum
2000.0000000		****	199.589
2000.0833333	****		-181.293
2000.1666667	******		-293.242
2000.2500000	********		-406.525
2000.3333333	*******		-353.846
2000.4166667	****		-187.492
2000.5000000	**		-113.534
2000.5833333	****		-209.496
2000.6666667	****		-175.959
2000.7500000	****		-175.259
2000.8333333	***		-141.353
2000.9166667	**		-113.500
2001.0000000		***	141.000
2001.0833333	*		-26.969
2001.1666667	*		-45.001
2001.2500000	****		-186.670
2001.3333333			-0.000
2001.4166667		**********	1073.978
2001.5000000	*		-69.261
2001.5833333		*	55.197
2001.6666667	*		-59.437
2001.7500000	**		-95.268
2001.8333333			-10.034
2001.9166667	*		-47.394
2002.0000000		*****	250.904
2002.0833333		****	187.525
2002.1666667	****		-197.239
2002.2500000	**********		-1364.544
2002.3333333		**********	841.133
2002.4166667	*		-64.556
2002.5000000			-12.193
2002.5833333		**	76.759
2002.6666667		****	180.876
2002.7500000			5.460
2002.8333333			-3.333
2002.9166667		***	164.887
2003.0000000		********	377.788
2003.0833333			-0.000
2003.1666667			-0.000
2003.2500000		*	71.845
2003.3333333		****	183.417
2003.4166667			-15.205
2003.5000000		**	120.643
2003.5833333		**	80.388
2003.6666667		*	49.302
2003.7500000		***	151.179
2003.8333333		**	86.260
2003.9166667		*****	250.473

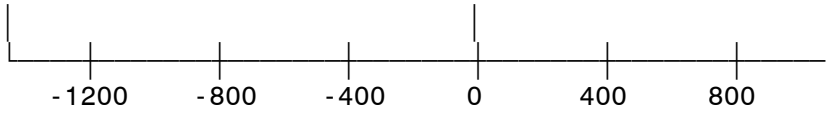

2004.0000000 | ***** | -273.295
2004.0833333 | ******** | -377.278
2004.1666667 | ****** | -277.005
2004.2500000 | ******* | -358.268
2004.3333333 | ********* | -468.134
2004.4166667 | ***** | -250.397
2004.5000000 | ******* | -358.549
2004.5833333 | *** | -148.635
2004.6666667 | ***** | -272.757
2004.7500000 | * | -25.362
2004.8333333 | ** | -112.248
2004.9166667 | * | -74.239
2005.0000000 | ** | -100.122
2005.0833333 | ********** | -1051.169
2005.1666667 | | 0.000
2005.2500000 | ** | -96.196
2005.3333333 | ****** | -306.410
2005.4166667 | | -7.370
2005.5000000 | *** | -134.500
2005.5833333 | **** | 176.267
2005.6666667 | * | -59.821
2005.7500000 | **** | 209.573
2005.8333333 | ** | -80.042
2005.9166667 | ******** | 412.145
2006.0000000 | ******** | 411.759
2006.0833333 | | -0.000
2006.1666667 | | 0.000
2006.2500000 | | 0.000
2006.3333333 | ********* | 434.079
2006.4166667 | ****** | 297.983
2006.5000000 | ******* | 356.765
2006.5833333 | ********** | 643.949
2006.6666667 | ******* | 366.030
2006.7500000 | ********** | 626.535
2006.8333333 | ******** | 382.686
2006.9166667 | ********** | 514.024
2007.0000000 | | -10.804
2007.0833333 | * | -41.684
2007.1666667 | ** | 79.709
2007.2500000 | ** | -98.394
2007.3333333 | ***** | -238.581
2007.4166667 | * | -28.515
2007.5000000 | *** | -157.017
2007.5833333 | * | -66.403
2007.6666667 | ***** | -233.509
2007.7500000 | ** | -100.095
2007.8333333 | ***** | -250.960
2007.9166667 | ** | -90.478
2008.0000000 | ** | 76.058
2008.0833333 | *** | 157.225
2008.1666667 | *** | -149.060

2008.2500000		*****	-233.137
2008.3333333		****	-202.543
2008.4166667		*****	-226.206
2008.5000000		**	-79.190
2008.5833333		***	-170.736
2008.6666667		*	-67.091
2008.7500000		**	-86.720
2008.8333333		*******	-339.608
2008.9166667			** 87.266
2009.0000000			** 80.202
2009.0833333		*******	-329.151
2009.1666667			********** 1014.701
2009.2500000		******	-324.251
2009.3333333		*	-51.397
2009.4166667		*	-59.963
2009.5000000			* 54.535
2009.5833333			-8.352
2009.6666667			** 122.131
2009.7500000			** 83.928
2009.8333333			** 85.417
2009.9166667			******* 328.375
2010.0000000			********* 446.281
2010.0833333			-0.000
2010.1666667			0.000
2010.2500000			-0.000
2010.3333333			*** 159.309
2010.4166667			******** 391.550
2010.5000000			***** 263.577
2010.5833333			*** 168.120
2010.6666667			****** 283.211
2010.7500000			****** 278.428
2010.8333333			******* 350.118
2010.9166667			**** 194.724
2011.0000000			****** 321.575
2011.0833333			-0.000
2011.1666667			-0.000
2011.2500000	**********		-1378.189
2011.3333333			14.718
2011.4166667			-19.127
2011.5000000		**	-109.986
2011.5833333			* 40.379
2011.6666667		**	-110.167
2011.7500000		***	-138.080
2011.8333333			* 64.927
2011.9166667		**	-92.009
2012.0000000			*** 128.127
2012.0833333			*** 153.250
2012.1666667		**	-109.905
2012.2500000			9.536
2012.3333333			* 50.533
2012.4166667		**	-99.142

2012.5000000		***	125.812
2012.5833333		**	90.930
2012.6666667	*		-29.518
2012.7500000		*	52.533
2012.8333333			17.010
2012.9166667			-4.213
2013.0000000		*******	355.912
2013.0833333		*	74.753
2013.1666667			-24.213
2013.2500000		**	121.585
2013.3333333	**		-105.352
2013.4166667			-4.899
2013.5000000	*		-39.815
2013.5833333	**		-124.250
2013.6666667	**		-100.483
2013.7500000	***		-158.880
2013.8333333	*		-62.232
2013.9166667		*	27.857
2014.0000000		*****	268.144
2014.0833333		****	177.001
2014.1666667		***	170.068
2014.2500000		*	49.790
2014.3333333	**		-95.169
2014.4166667	***		-128.630
2014.5000000	**		-110.070
2014.5833333	***		-167.168
2014.6666667	*		-31.804
2014.7500000	**		-106.704
2014.8333333	*		-25.458
2014.9166667			-20.100
2015.0000000		**	100.805
2015.0833333		**	103.948
2015.1666667		*	38.906
2015.2500000	***		-132.260
2015.3333333	***		-132.860
2015.4166667	***		-150.611
2015.5000000			-15.536
2015.5833333	**		-122.821
2015.6666667			21.647
2015.7500000	**		-98.157
2015.8333333			-5.790
2015.9166667	*		-30.850
2016.0000000		*	72.561
2016.0833333		***	165.230
2016.1666667	*		-34.920
2016.2500000			-0.000
2016.3333333			0.000
2016.4166667	*		-51.807
2016.5000000		*	32.869
2016.5833333	*		-45.362
2016.6666667		*	60.832

2016.7500000		**	-123.487
2016.8333333		***	156.170
2016.9166667		****	211.594
2017.0000000			-16.479
2017.0833333			-15.111
2017.1666667			-15.286
2017.2500000		****	-185.348
2017.3333333		**	-103.967
2017.4166667		**	-77.096
2017.5000000		*	-54.468
2017.5833333		**	-119.932
2017.6666667		*	46.216
2017.7500000		*	-62.254
2017.8333333			1.517
2017.9166667		**	77.402
2018.0000000		****	181.892
2018.0833333		**	110.198
2018.1666667		*	-72.216
2018.2500000		*	62.552
2018.3333333		*	-64.259
2018.4166667		**	-81.773
2018.5000000		***	163.899
2018.5833333		*	-57.880
2018.6666667			-6.224
2018.7500000		**	99.233
2018.8333333		*	-59.813
2018.9166667			20.941
2019.0000000		*****	228.257
2019.0833333		***	167.294
2019.1666667		**	83.838
2019.2500000		*	-63.716
2019.3333333		***	153.800
2019.4166667		****	-205.824
2019.5000000		**	83.257
2019.5833333		*	-50.701
2019.6666667		*	-28.414
2019.7500000		**	-124.037
2019.8333333		*	-72.380
2019.9166667		*	26.856
2020.0000000		**	117.716
2020.0833333		*	40.511
2020.1666667		***	-169.135
2020.2500000		*	-49.060
2020.3333333		******	285.529
2020.4166667		**	-104.898
2020.5000000		*	52.760
2020.5833333		*	-40.252
2020.6666667		*	44.937
2020.7500000		****	-212.565
2020.8333333			19.146
2020.9166667		*	45.337

Indiana Michigan Power Company - Michigan
Residential Customers
Model Residuals



Residual Values

Indiana Michigan Power Company - Michigan
Residential Customers
Model Simulation

The SIMLIN Procedure

Inverse Coefficient Matrix for Endogenous Variables

Variable	cr_imm
cr_imm	1.0000

Reduced Form for Lagged Endogenous Variables

Variable	cr1
cr_imm	0.4984

Reduced Form for Exogenous Variables

Variable	hshhindx	d3	d5	d6	d7	d8	d9	d10
cr_imm	44289	135.9507	54.9584	71.7964	27.6135	81.6710	-24.2553	21.0550

Reduced Form for Exogenous Variables

Variable	d11	dfeb03	dmar03	d04on	dmar05	dfeb06	dmar06	dapr06
cr_imm	-9.4820	3160	-1366	665.8621	1197	-866.7165	2398	-455.8205

Reduced Form for Exogenous Variables

Variable	d07on	dfeb10	dmar10	dapr10	dfeb11	dmar11	jul11on	may01
cr_imm	670.8376	-1479	3240	-769.2811	-2095	4059	-22.1247	-2238

Reduced Form for Exogenous Variables

Variable	d14on	dec14on	apr16	may16	d17on	feb19on	Intercept
cr_imm	-261.8507	146.1620	-2220	1005	303.7122	9.1940	9057

Indiana Michigan Power Company - Michigan
Residential Customers
Model Simulation

The SIMLIN Procedure

Fit Statistics

Variable	N	Mean Error	Mean Pct Error	Mean Abs Error	Mean Abs Pct Error	RMS Error	RMS Pct Error
cr_imm	252	-0.0273	-0.000889	230.6798	0.21364	329.9530	0.3065

Indiana Michigan Power Company - Michigan
Residential Customers
Actual and Forecast

YEAR	Residential Customers	Growth Rate
2000	104603.75	.
2001	104905.75	0.3
2002	105594.17	0.7
2003	106580.75	0.9
2004	107080.58	0.5
2005	107723.08	0.6
2006	108383.17	0.6
2007	108926.08	0.5
2008	109224.83	0.3
2009	109313.83	0.1
2010	109362.25	0.0
2011	109162.17	-0.2
2012	109019.25	-0.1
2013	109111.25	0.1
2014	108929.92	-0.2
2015	108946.75	0.0
2016	109016.83	0.1
2017	109718.00	0.6
2018	110174.17	0.4
2019	110317.67	0.1
2020	110853.42	0.5
2021	110569.03	-0.3
2022	110578.34	0.0
2023	110813.53	0.2
2024	111060.49	0.2
2025	111331.69	0.2
2026	111573.00	0.2
2027	111741.45	0.2
2028	111876.25	0.1
2029	112009.63	0.1
2030	112150.61	0.1
2031	112270.68	0.1
2032	112350.23	0.1
2033	112403.32	0.0
2034	112394.29	0.0
2035	112377.73	0.0
2036	112347.62	0.0
2037	112291.48	0.0
2038	112181.16	-0.1
2039	112041.30	-0.1
2040	111894.24	-0.1
2041	111726.39	-0.2
2042	111536.03	-0.2
2043	111319.18	-0.2
2044	111094.08	-0.2
2045	110896.25	-0.2
2046	110692.80	-0.2
2047	110464.97	-0.2

Indiana Michigan Power Company - Michigan
Residential Customers
Actual and Forecast

YEAR	Residential Customers	Growth Rate
2048	110233.27	-0.2
2049	110001.65	-0.2
2050	109773.10	-0.2
2051	109546.42	-0.2
2052	109321.03	-0.2
2053	109096.92	-0.2
2054	108874.09	-0.2
2055	108652.52	-0.2
2056	108432.22	-0.2
2057	108213.18	-0.2

INDIANA MICHIGAN POWER COMPANY - MICHIGAN
COMMERCIAL CUSTOMERS
ENDOGENOUS VARIABLES

The MEANS Procedure

Variable	Label	Mean
YEAR	Year	2027.50
MONTH	Month	6.5000000
cc_imm	Commercial Customers	16676.92

INDIANA MICHIGAN POWER COMPANY - MICHIGAN
COMMERCIAL CUSTOMERS
ENDOGENOUS VARIABLES

Obs	YEAR	MONTH	cc_imm
1	1998	1	14223
2	1998	2	14090
3	1998	3	14205
4	1998	4	14229
5	1998	5	14160
6	1998	6	14270
7	1998	7	14240
8	1998	8	14230
9	1998	9	14297
10	1998	10	14367
11	1998	11	14273
12	1998	12	14497
13	1999	1	14343
14	1999	2	14298
15	1999	3	14514
16	1999	4	14453
17	1999	5	14508
18	1999	6	14544
19	1999	7	14610
20	1999	8	14593
21	1999	9	14574
22	1999	10	14626
23	1999	11	14643
24	1999	12	14468
25	2000	1	14637
26	2000	2	14673
27	2000	3	14721
28	2000	4	14730
29	2000	5	14737
30	2000	6	14791
31	2000	7	14815
32	2000	8	14914
33	2000	9	14911
34	2000	10	14890
35	2000	11	14910
36	2000	12	14952
37	2001	1	14961
38	2001	2	14943
39	2001	3	14981
40	2001	4	14930
41	2001	5	14742
42	2001	6	15145
43	2001	7	15120
44	2001	8	15202
45	2001	9	15185
46	2001	10	15188
47	2001	11	15203
48	2001	12	15207
49	2002	1	15180
50	2002	2	15230

INDIANA MICHIGAN POWER COMPANY - MICHIGAN
COMMERCIAL CUSTOMERS
ENDOGENOUS VARIABLES

Obs	YEAR	MONTH	cc_imm
51	2002	3	15098
52	2002	4	15114
53	2002	5	15316
54	2002	6	15356
55	2002	7	15388
56	2002	8	15485
57	2002	9	15468
58	2002	10	15418
59	2002	11	15462
60	2002	12	15445
61	2003	1	15422
62	2003	2	15812
63	2003	3	15529
64	2003	4	15536
65	2003	5	15646
66	2003	6	15675
67	2003	7	15688
68	2003	8	15776
69	2003	9	15742
70	2003	10	15767
71	2003	11	15778
72	2003	12	15802
73	2004	1	15870
74	2004	2	15816
75	2004	3	16049
76	2004	4	15988
77	2004	5	15997
78	2004	6	16060
79	2004	7	16121
80	2004	8	16128
81	2004	9	16143
82	2004	10	16234
83	2004	11	16107
84	2004	12	16187
85	2005	1	16129
86	2005	2	16101
87	2005	3	16339
88	2005	4	16481
89	2005	5	16387
90	2005	6	16473
91	2005	7	16472
92	2005	8	16616
93	2005	9	16504
94	2005	10	16606
95	2005	11	16515
96	2005	12	16616
97	2006	1	16671
98	2006	2	16478
99	2006	3	16847
100	2006	4	16657

INDIANA MICHIGAN POWER COMPANY - MICHIGAN
COMMERCIAL CUSTOMERS
ENDOGENOUS VARIABLES

Obs	YEAR	MONTH	cc_imm
101	2006	5	16764
102	2006	6	16717
103	2006	7	16749
104	2006	8	16863
105	2006	9	16798
106	2006	10	16853
107	2006	11	16845
108	2006	12	16815
109	2007	1	16841
110	2007	2	16701
111	2007	3	17023
112	2007	4	16889
113	2007	5	16870
114	2007	6	16902
115	2007	7	16973
116	2007	8	16999
117	2007	9	16995
118	2007	10	17032
119	2007	11	16970
120	2007	12	16936
121	2008	1	16965
122	2008	2	17023
123	2008	3	16977
124	2008	4	17020
125	2008	5	17016
126	2008	6	17082
127	2008	7	17101
128	2008	8	17077
129	2008	9	17176
130	2008	10	17154
131	2008	11	17038
132	2008	12	17076
133	2009	1	17085
134	2009	2	17043
135	2009	3	17264
136	2009	4	17089
137	2009	5	17088
138	2009	6	17172
139	2009	7	17190
140	2009	8	17195
141	2009	9	17185
142	2009	10	17208
143	2009	11	17179
144	2009	12	17196
145	2010	1	17161
146	2010	2	16856
147	2010	3	17563
148	2010	4	17190
149	2010	5	17135
150	2010	6	17374

INDIANA MICHIGAN POWER COMPANY - MICHIGAN
COMMERCIAL CUSTOMERS
ENDOGENOUS VARIABLES

Obs	YEAR	MONTH	cc_imm
151	2010	7	17240
152	2010	8	17362
153	2010	9	17249
154	2010	10	17321
155	2010	11	17348
156	2010	12	17115
157	2011	1	17168
158	2011	2	16952
159	2011	3	17999
160	2011	4	17307
161	2011	5	17340
162	2011	6	17379
163	2011	7	17310
164	2011	8	17509
165	2011	9	17387
166	2011	10	17368
167	2011	11	17367
168	2011	12	17350
169	2012	1	17408
170	2012	2	17360
171	2012	3	17346
172	2012	4	17341
173	2012	5	17381
174	2012	6	17416
175	2012	7	17425
176	2012	8	17455
177	2012	9	17454
178	2012	10	17456
179	2012	11	17450
180	2012	12	17431
181	2013	1	17501
182	2013	2	17441
183	2013	3	17423
184	2013	4	17439
185	2013	5	17443
186	2013	6	17464
187	2013	7	17509
188	2013	8	17516
189	2013	9	17516
190	2013	10	17511
191	2013	11	17523
192	2013	12	17535
193	2014	1	17516
194	2014	2	17491
195	2014	3	17488
196	2014	4	17465
197	2014	5	17478
198	2014	6	17516
199	2014	7	17521
200	2014	8	17544

INDIANA MICHIGAN POWER COMPANY - MICHIGAN
COMMERCIAL CUSTOMERS
ENDOGENOUS VARIABLES

Obs	YEAR	MONTH	cc_imm
201	2014	9	17544
202	2014	10	17513
203	2014	11	17484
204	2014	12	17446
205	2015	1	17608
206	2015	2	17520
207	2015	3	17533
208	2015	4	17528
209	2015	5	17515
210	2015	6	17568
211	2015	7	17593
212	2015	8	17577
213	2015	9	17607
214	2015	10	17589
215	2015	11	17583
216	2015	12	17541
217	2016	1	17527
218	2016	2	17568
219	2016	3	17608
220	2016	4	17162
221	2016	5	17580
222	2016	6	17637
223	2016	7	17625
224	2016	8	17674
225	2016	9	17670
226	2016	10	17675
227	2016	11	17652
228	2016	12	17653
229	2017	1	17682
230	2017	2	17630
231	2017	3	17641
232	2017	4	17613
233	2017	5	17642
234	2017	6	17677
235	2017	7	17668
236	2017	8	17700
237	2017	9	17724
238	2017	10	17657
239	2017	11	17640
240	2017	12	17630
241	2018	1	17638
242	2018	2	17676
243	2018	3	17622
244	2018	4	19024
245	2018	5	19884
246	2018	6	17697
247	2018	7	17719
248	2018	8	17742
249	2018	9	17711
250	2018	10	17824

INDIANA MICHIGAN POWER COMPANY - MICHIGAN
COMMERCIAL CUSTOMERS
ENDOGENOUS VARIABLES

Obs	YEAR	MONTH	cc_imm
251	2018	11	17730
252	2018	12	17700
253	2019	1	17620
254	2019	2	17829
255	2019	3	17756
256	2019	4	17726
257	2019	5	17766
258	2019	6	17830
259	2019	7	17827
260	2019	8	17829
261	2019	9	17843
262	2019	10	17874
263	2019	11	17844
264	2019	12	17820
265	2020	1	17873
266	2020	2	17872
267	2020	3	17908
268	2020	4	17906
269	2020	5	17984
270	2020	6	17892
271	2020	7	17962
272	2020	8	17876
273	2020	9	17901
274	2020	10	17885
275	2020	11	17916
276	2020	12	17925
277	2021	1	.
278	2021	2	.
279	2021	3	.
280	2021	4	.
281	2021	5	.
282	2021	6	.
283	2021	7	.
284	2021	8	.
285	2021	9	.
286	2021	10	.
287	2021	11	.
288	2021	12	.
289	2022	1	.
290	2022	2	.
291	2022	3	.
292	2022	4	.
293	2022	5	.
294	2022	6	.
295	2022	7	.
296	2022	8	.
297	2022	9	.
298	2022	10	.
299	2022	11	.
300	2022	12	.

INDIANA MICHIGAN POWER COMPANY - MICHIGAN
COMMERCIAL CUSTOMERS
ENDOGENOUS VARIABLES

Obs	YEAR	MONTH	cc_imm
301	2023	1	.
302	2023	2	.
303	2023	3	.
304	2023	4	.
305	2023	5	.
306	2023	6	.
307	2023	7	.
308	2023	8	.
309	2023	9	.
310	2023	10	.
311	2023	11	.
312	2023	12	.
313	2024	1	.
314	2024	2	.
315	2024	3	.
316	2024	4	.
317	2024	5	.
318	2024	6	.
319	2024	7	.
320	2024	8	.
321	2024	9	.
322	2024	10	.
323	2024	11	.
324	2024	12	.
325	2025	1	.
326	2025	2	.
327	2025	3	.
328	2025	4	.
329	2025	5	.
330	2025	6	.
331	2025	7	.
332	2025	8	.
333	2025	9	.
334	2025	10	.
335	2025	11	.
336	2025	12	.
337	2026	1	.
338	2026	2	.
339	2026	3	.
340	2026	4	.
341	2026	5	.
342	2026	6	.
343	2026	7	.
344	2026	8	.
345	2026	9	.
346	2026	10	.
347	2026	11	.
348	2026	12	.
349	2027	1	.
350	2027	2	.

INDIANA MICHIGAN POWER COMPANY - MICHIGAN
COMMERCIAL CUSTOMERS
ENDOGENOUS VARIABLES

Obs	YEAR	MONTH	cc_imm
351	2027	3	.
352	2027	4	.
353	2027	5	.
354	2027	6	.
355	2027	7	.
356	2027	8	.
357	2027	9	.
358	2027	10	.
359	2027	11	.
360	2027	12	.
361	2028	1	.
362	2028	2	.
363	2028	3	.
364	2028	4	.
365	2028	5	.
366	2028	6	.
367	2028	7	.
368	2028	8	.
369	2028	9	.
370	2028	10	.
371	2028	11	.
372	2028	12	.
373	2029	1	.
374	2029	2	.
375	2029	3	.
376	2029	4	.
377	2029	5	.
378	2029	6	.
379	2029	7	.
380	2029	8	.
381	2029	9	.
382	2029	10	.
383	2029	11	.
384	2029	12	.
385	2030	1	.
386	2030	2	.
387	2030	3	.
388	2030	4	.
389	2030	5	.
390	2030	6	.
391	2030	7	.
392	2030	8	.
393	2030	9	.
394	2030	10	.
395	2030	11	.
396	2030	12	.
397	2031	1	.
398	2031	2	.
399	2031	3	.
400	2031	4	.

INDIANA MICHIGAN POWER COMPANY - MICHIGAN
COMMERCIAL CUSTOMERS
ENDOGENOUS VARIABLES

Obs	YEAR	MONTH	cc_imm
401	2031	5	.
402	2031	6	.
403	2031	7	.
404	2031	8	.
405	2031	9	.
406	2031	10	.
407	2031	11	.
408	2031	12	.
409	2032	1	.
410	2032	2	.
411	2032	3	.
412	2032	4	.
413	2032	5	.
414	2032	6	.
415	2032	7	.
416	2032	8	.
417	2032	9	.
418	2032	10	.
419	2032	11	.
420	2032	12	.
421	2033	1	.
422	2033	2	.
423	2033	3	.
424	2033	4	.
425	2033	5	.
426	2033	6	.
427	2033	7	.
428	2033	8	.
429	2033	9	.
430	2033	10	.
431	2033	11	.
432	2033	12	.
433	2034	1	.
434	2034	2	.
435	2034	3	.
436	2034	4	.
437	2034	5	.
438	2034	6	.
439	2034	7	.
440	2034	8	.
441	2034	9	.
442	2034	10	.
443	2034	11	.
444	2034	12	.
445	2035	1	.
446	2035	2	.
447	2035	3	.
448	2035	4	.
449	2035	5	.
450	2035	6	.

INDIANA MICHIGAN POWER COMPANY - MICHIGAN
COMMERCIAL CUSTOMERS
ENDOGENOUS VARIABLES

Obs	YEAR	MONTH	cc_imm
451	2035	7	.
452	2035	8	.
453	2035	9	.
454	2035	10	.
455	2035	11	.
456	2035	12	.
457	2036	1	.
458	2036	2	.
459	2036	3	.
460	2036	4	.
461	2036	5	.
462	2036	6	.
463	2036	7	.
464	2036	8	.
465	2036	9	.
466	2036	10	.
467	2036	11	.
468	2036	12	.
469	2037	1	.
470	2037	2	.
471	2037	3	.
472	2037	4	.
473	2037	5	.
474	2037	6	.
475	2037	7	.
476	2037	8	.
477	2037	9	.
478	2037	10	.
479	2037	11	.
480	2037	12	.
481	2038	1	.
482	2038	2	.
483	2038	3	.
484	2038	4	.
485	2038	5	.
486	2038	6	.
487	2038	7	.
488	2038	8	.
489	2038	9	.
490	2038	10	.
491	2038	11	.
492	2038	12	.
493	2039	1	.
494	2039	2	.
495	2039	3	.
496	2039	4	.
497	2039	5	.
498	2039	6	.
499	2039	7	.
500	2039	8	.

INDIANA MICHIGAN POWER COMPANY - MICHIGAN
COMMERCIAL CUSTOMERS
ENDOGENOUS VARIABLES

Obs	YEAR	MONTH	cc_imm
501	2039	9	.
502	2039	10	.
503	2039	11	.
504	2039	12	.
505	2040	1	.
506	2040	2	.
507	2040	3	.
508	2040	4	.
509	2040	5	.
510	2040	6	.
511	2040	7	.
512	2040	8	.
513	2040	9	.
514	2040	10	.
515	2040	11	.
516	2040	12	.
517	2041	1	.
518	2041	2	.
519	2041	3	.
520	2041	4	.
521	2041	5	.
522	2041	6	.
523	2041	7	.
524	2041	8	.
525	2041	9	.
526	2041	10	.
527	2041	11	.
528	2041	12	.
529	2042	1	.
530	2042	2	.
531	2042	3	.
532	2042	4	.
533	2042	5	.
534	2042	6	.
535	2042	7	.
536	2042	8	.
537	2042	9	.
538	2042	10	.
539	2042	11	.
540	2042	12	.
541	2043	1	.
542	2043	2	.
543	2043	3	.
544	2043	4	.
545	2043	5	.
546	2043	6	.
547	2043	7	.
548	2043	8	.
549	2043	9	.
550	2043	10	.

INDIANA MICHIGAN POWER COMPANY - MICHIGAN
COMMERCIAL CUSTOMERS
ENDOGENOUS VARIABLES

Obs	YEAR	MONTH	cc_imm
551	2043	11	.
552	2043	12	.
553	2044	1	.
554	2044	2	.
555	2044	3	.
556	2044	4	.
557	2044	5	.
558	2044	6	.
559	2044	7	.
560	2044	8	.
561	2044	9	.
562	2044	10	.
563	2044	11	.
564	2044	12	.
565	2045	1	.
566	2045	2	.
567	2045	3	.
568	2045	4	.
569	2045	5	.
570	2045	6	.
571	2045	7	.
572	2045	8	.
573	2045	9	.
574	2045	10	.
575	2045	11	.
576	2045	12	.
577	2046	1	.
578	2046	2	.
579	2046	3	.
580	2046	4	.
581	2046	5	.
582	2046	6	.
583	2046	7	.
584	2046	8	.
585	2046	9	.
586	2046	10	.
587	2046	11	.
588	2046	12	.
589	2047	1	.
590	2047	2	.
591	2047	3	.
592	2047	4	.
593	2047	5	.
594	2047	6	.
595	2047	7	.
596	2047	8	.
597	2047	9	.
598	2047	10	.
599	2047	11	.
600	2047	12	.

INDIANA MICHIGAN POWER COMPANY - MICHIGAN
COMMERCIAL CUSTOMERS
ENDOGENOUS VARIABLES

Obs	YEAR	MONTH	cc_imm
601	2048	1	.
602	2048	2	.
603	2048	3	.
604	2048	4	.
605	2048	5	.
606	2048	6	.
607	2048	7	.
608	2048	8	.
609	2048	9	.
610	2048	10	.
611	2048	11	.
612	2048	12	.
613	2049	1	.
614	2049	2	.
615	2049	3	.
616	2049	4	.
617	2049	5	.
618	2049	6	.
619	2049	7	.
620	2049	8	.
621	2049	9	.
622	2049	10	.
623	2049	11	.
624	2049	12	.
625	2050	1	.
626	2050	2	.
627	2050	3	.
628	2050	4	.
629	2050	5	.
630	2050	6	.
631	2050	7	.
632	2050	8	.
633	2050	9	.
634	2050	10	.
635	2050	11	.
636	2050	12	.
637	2051	1	.
638	2051	2	.
639	2051	3	.
640	2051	4	.
641	2051	5	.
642	2051	6	.
643	2051	7	.
644	2051	8	.
645	2051	9	.
646	2051	10	.
647	2051	11	.
648	2051	12	.
649	2052	1	.
650	2052	2	.

INDIANA MICHIGAN POWER COMPANY - MICHIGAN
COMMERCIAL CUSTOMERS
ENDOGENOUS VARIABLES

Obs	YEAR	MONTH	cc_imm
651	2052	3	.
652	2052	4	.
653	2052	5	.
654	2052	6	.
655	2052	7	.
656	2052	8	.
657	2052	9	.
658	2052	10	.
659	2052	11	.
660	2052	12	.
661	2053	1	.
662	2053	2	.
663	2053	3	.
664	2053	4	.
665	2053	5	.
666	2053	6	.
667	2053	7	.
668	2053	8	.
669	2053	9	.
670	2053	10	.
671	2053	11	.
672	2053	12	.
673	2054	1	.
674	2054	2	.
675	2054	3	.
676	2054	4	.
677	2054	5	.
678	2054	6	.
679	2054	7	.
680	2054	8	.
681	2054	9	.
682	2054	10	.
683	2054	11	.
684	2054	12	.
685	2055	1	.
686	2055	2	.
687	2055	3	.
688	2055	4	.
689	2055	5	.
690	2055	6	.
691	2055	7	.
692	2055	8	.
693	2055	9	.
694	2055	10	.
695	2055	11	.
696	2055	12	.
697	2056	1	.
698	2056	2	.
699	2056	3	.
700	2056	4	.

INDIANA MICHIGAN POWER COMPANY - MICHIGAN
COMMERCIAL CUSTOMERS
ENDOGENOUS VARIABLES

Obs	YEAR	MONTH	cc_imm
701	2056	5	.
702	2056	6	.
703	2056	7	.
704	2056	8	.
705	2056	9	.
706	2056	10	.
707	2056	11	.
708	2056	12	.
709	2057	1	.
710	2057	2	.
711	2057	3	.
712	2057	4	.
713	2057	5	.
714	2057	6	.
715	2057	7	.
716	2057	8	.
717	2057	9	.
718	2057	10	.
719	2057	11	.
720	2057	12	.

INDIANA MICHIGAN POWER COMPANY - MICHIGAN
COMMERCIAL CUSTOMERS
EXOGENOUS VARIABLES

The MEANS Procedure

Variable	Label	Mean
YEAR	Year	2027.50
MONTH	Month	6.5000000
N_IMM	Service Area Population	328.6480886
gdp_imm	Service Area Gross Regional Product	14422.43
d02on	Binary Variable - 2002 On	0.9333333
d05on	Binary Variable - 2005 On	0.8833333
d06on	Binary Variable - 2006 On	0.8666667
d08on	Binary Variable - 2008 On	0.8333333
d09on	Binary Variable - 2009 On	0.8166667
dmar11	Binary Variable - March 2011	0.0013889
feb19on	Binary Variable - February 2019 On	0.6486111
d3	Binary Variable - March	0.0833333
d4	Binary Variable - April	0.0833333
d5	Binary Variable - May	0.0833333
d6	Binary Variable - June	0.0833333
d7	Binary Variable - July	0.0833333
d8	Binary Varaible - August	0.0833333
d9	Binary Variable - September	0.0833333
d10	Binary Variable - October	0.0833333
d11	Binary Variable - November	0.0833333
dec19on	Binary Variable - December 2019 On	0.6347222
d12on	Binary Variable - 2012 On	0.7666667
d15on	Binary Variable - 2015 On	0.7166667
djan13on	Binary Variable - 2013 On Januarys	0.0625000
dfeb13on	Binary Variable - 2013 On Februarys	0.0625000
apr16	Binary Variable - April 2016	0.0013889
d17on	Binary Variable - 2017 On	0.6833333
may18	Binary Variable - May 2018	0.0013889
apr18	Binary Variable - April 2018	0.0013889

Obs	YEAR	MONTH	N_IMM	gdp_im	d02nn	d05nn	d06nn	d08nn	d09nn	dma1r1	dfeb19n	dec19no	dd11no	dd12no	dd15no	djan33no	dfeb33no	dapr16n	dmay17n	dapr18n
1	1998	1	349.866	10660.91	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	1998	2	349.903	10646.52	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	1998	3	349.939	10640.38	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
4	1998	4	349.980	10644.97	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
5	1998	5	350.022	10663.44	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
6	1998	6	350.064	10698.24	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
7	1998	7	350.105	10751.99	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
8	1998	8	350.148	10825.97	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
9	1998	9	350.191	10915.30	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
10	1998	10	350.238	11018.45	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
11	1998	11	350.290	11132.56	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
12	1998	12	350.346	11255.02	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13	1999	1	350.411	11385.19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14	1999	2	350.482	11511.83	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15	1999	3	350.562	11638.68	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
16	1999	4	350.658	11767.45	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
17	1999	5	350.766	11891.08	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
18	1999	6	350.888	12006.92	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
19	1999	7	351.029	12112.26	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
20	1999	8	351.184	12207.06	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
21	1999	9	351.349	12287.90	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
22	1999	10	351.519	12356.07	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
23	1999	11	351.689	12411.45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
24	1999	12	351.856	12453.68	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25	2000	1	352.018	12482.96	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
26	2000	2	352.161	12498.01	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27	2000	3	352.286	12499.54	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
28	2000	4	352.390	12487.27	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
29	2000	5	352.470	12460.61	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
30	2000	6	352.517	12419.48	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
31	2000	7	352.527	12363.60	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
32	2000	8	352.501	12293.20	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
33	2000	9	352.444	12213.42	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
34	2000	10	352.360	12126.17	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
35	2000	11	352.255	12034.53	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
36	2000	12	352.135	11941.48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
37	2001	1	351.999	11848.55	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
38	2001	2	351.865	11764.49	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
39	2001	3	351.728	11687.61	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
40	2001	4	351.590	11618.37	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
41	2001	5	351.461	11562.68	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
42	2001	6	351.345	11523.39	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
43	2001	7	351.248	11503.50	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0

Obs	YEAR	MONTH	N_IMM	gdp_imm	d02non	d05non	d06non	d08non	d09non	dma1r1	dfeb19on	d03	d04	d05	d06	d07	d08	d09	d10	d11	dec19on	d12	d15	djan13on	dfeb13on	dapr16	dday17	dmay18	dapr18
44	2001	8	351.169	11503.26	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
45	2001	9	351.108	11520.19	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
46	2001	10	351.066	11551.48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
47	2001	11	351.038	11594.21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
48	2001	12	351.022	11645.74	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
49	2002	1	351.018	11704.20	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
50	2002	2	351.023	11762.92	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
51	2002	3	351.035	11822.11	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
52	2002	4	351.053	11881.14	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
53	2002	5	351.076	11935.20	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
54	2002	6	351.100	11981.60	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
55	2002	7	351.126	12017.61	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
56	2002	8	351.152	12042.95	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
57	2002	9	351.176	12058.17	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
58	2002	10	351.201	12065.26	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
59	2002	11	351.227	12065.88	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
60	2002	12	351.255	12061.55	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
61	2003	1	351.283	12053.73	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
62	2003	2	351.312	12044.57	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
63	2003	3	351.342	12035.20	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
64	2003	4	351.375	12026.77	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
65	2003	5	351.411	12021.22	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
66	2003	6	351.451	12020.08	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
67	2003	7	351.492	12024.88	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
68	2003	8	351.538	12036.21	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
69	2003	9	351.581	12052.88	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
70	2003	10	351.626	12074.15	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
71	2003	11	351.664	12099.04	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
72	2003	12	351.698	12126.68	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
73	2004	1	351.724	12156.60	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
74	2004	2	351.740	12186.42	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
75	2004	3	351.745	12216.20	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
76	2004	4	351.737	12245.52	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
77	2004	5	351.712	12272.97	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
78	2004	6	351.671	12297.63	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
79	2004	7	351.610	12318.61	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
80	2004	8	351.528	12335.88	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
81	2004	9	351.430	12349.22	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
82	2004	10	351.318	12359.29	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
83	2004	11	351.195	12366.52	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
84	2004	12	351.060	12371.24	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
85	2005	1	350.917	12373.91	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
86	2005	2	350.774	12374.80	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Obs	YEAR	MONTH	N_IMM	gdp_imm	d02on	d05on	d06on	d08on	d09on	dmar1	dfeb19	d01on	d03on	d04on	d05on	d06on	d07on	d08on	d09on	d10on	d11on	dec12on	d11on	d25on	djan13on	dfeb13on	dfeb19	dapr16	dad17on	dmay18	dapr18
87	2005	3	350.630	12374.43	1	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
88	2005	4	350.481	12373.10	1	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
89	2005	5	350.332	12371.19	1	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
90	2005	6	350.189	12369.07	1	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
91	2005	7	350.052	12367.13	1	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
92	2005	8	349.920	12365.67	1	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
93	2005	9	349.799	12364.99	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
94	2005	10	349.686	12365.33	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
95	2005	11	349.581	12366.91	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
96	2005	12	349.482	12370.00	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
97	2006	1	349.391	12374.95	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
98	2006	2	349.310	12381.56	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
99	2006	3	349.238	12390.31	1	1	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
100	2006	4	349.170	12401.80	1	1	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
101	2006	5	349.110	12416.04	1	1	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
102	2006	6	349.057	12433.26	1	1	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
103	2006	7	349.012	12453.71	1	1	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
104	2006	8	348.973	12477.63	1	1	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
105	2006	9	348.943	12503.71	1	1	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
106	2006	10	348.917	12531.75	1	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
107	2006	11	348.897	12561.16	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
108	2006	12	348.884	12591.35	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
109	2007	1	348.874	12622.25	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
110	2007	2	348.868	12651.31	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
111	2007	3	348.866	12679.49	1	1	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
112	2007	4	348.866	12707.15	1	1	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
113	2007	5	348.870	12732.72	1	1	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
114	2007	6	348.876	12755.66	1	1	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
115	2007	7	348.882	12775.32	1	1	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
116	2007	8	348.890	12790.93	1	1	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
117	2007	9	348.896	12800.56	1	1	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
118	2007	10	348.901	12802.97	1	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
119	2007	11	348.905	12796.78	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
120	2007	12	348.903	12780.42	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
121	2008	1	348.896	12751.95	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
122	2008	2	348.884	12711.62	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
123	2008	3	348.863	12657.09	1	1	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
124	2008	4	348.833	12585.93	1	1	1	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
125	2008	5	348.794	12497.25	1	1	1	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
126	2008	6	348.745	12389.77	1	1	1	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
127	2008	7	348.682	12262.06	1	1	1	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
128	2008	8	348.607	12113.48	1	1	1	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
129	2008	9	348.521	11953.67	1	1	1	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0

Obs	YEAR	MONTH	N_IMM	gdp_imm	dd0200n	dd0500n	dd0600n	dd0800n	dd0900n	dmar11n	dfeb19	dd1203n	dd1304n	dd1405n	dd1506n	dd1607n	dd1708n	dd1809n	dd1910n	dec1101n	dd1202n	dd1303n	dd1404n	dd1505n	djan1603n	dfeb1703n	dbap1706n	dadr1707n	dmay1808n	dapr1918n
130	2008	10	348.427	11785.39	1	1	1	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
131	2008	11	348.322	11613.84	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
132	2008	12	348.211	11444.09	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
133	2009	1	348.093	11278.68	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
134	2009	2	347.976	11132.67	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
135	2009	3	347.854	11002.87	1	1	1	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
136	2009	4	347.728	10890.15	1	1	1	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
137	2009	5	347.600	10804.67	1	1	1	1	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
138	2009	6	347.474	10751.22	1	1	1	1	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
139	2009	7	347.349	10734.91	1	1	1	1	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
140	2009	8	347.225	10756.22	1	1	1	1	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
141	2009	9	347.107	10809.58	1	1	1	1	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
142	2009	10	346.993	10889.90	1	1	1	1	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
143	2009	11	346.885	10991.56	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
144	2009	12	346.784	11109.40	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
145	2010	1	346.689	11240.11	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
146	2010	2	346.608	11369.66	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
147	2010	3	346.534	11499.32	1	1	1	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
148	2010	4	346.469	11628.36	1	1	1	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
149	2010	5	346.415	11746.91	1	1	1	1	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
150	2010	6	346.372	11849.77	1	1	1	1	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
151	2010	7	346.344	11931.64	1	1	1	1	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
152	2010	8	346.329	11991.73	1	1	1	1	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
153	2010	9	346.323	12030.00	1	1	1	1	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
154	2010	10	346.323	12049.67	1	1	1	1	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
155	2010	11	346.327	12053.18	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
156	2010	12	346.332	12042.61	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
157	2011	1	346.336	12019.87	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
158	2011	2	346.335	11989.15	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
159	2011	3	346.325	11951.48	1	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
160	2011	4	346.307	11907.56	1	1	1	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
161	2011	5	346.273	11860.73	1	1	1	1	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
162	2011	6	346.225	11813.24	1	1	1	1	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
163	2011	7	346.157	11767.27	1	1	1	1	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
164	2011	8	346.068	11723.42	1	1	1	1	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
165	2011	9	345.965	11683.42	1	1	1	1	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
166	2011	10	345.847	11646.81	1	1	1	1	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
167	2011	11	345.717	11613.77	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
168	2011	12	345.580	11584.57	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
169	2012	1	345.434	11559.04	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
170	2012	2	345.288	11538.53	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
171	2012	3	345.143	11522.42	1	1	1	1	1	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
172	2012	4	344.999	11510.71	1	1	1	1	1	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0

Obs	YEAR	MONTH	NIMM	gdp_imm	dd0205	dd0206	dd0208	dd0209	dd0210	dmarr1	dfeb19	dd03	dd04	dd05	dd06	dd07	dd08	dd09	dd10	dd11	dec1on	dd12on	dd25on	djan13on	dfeb13on	dapr16	dday17	dmay18	dapr18
173	2012	5	344.858	11504.00	1	1	1	1	1	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
174	2012	6	344.725	11502.45	1	1	1	1	1	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0
175	2012	7	344.601	11506.33	1	1	1	1	1	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0
176	2012	8	344.489	11515.55	1	1	1	1	1	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0
177	2012	9	344.389	11529.18	1	1	1	1	1	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0
178	2012	10	344.299	11546.66	1	1	1	1	1	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0
179	2012	11	344.221	11567.28	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0
180	2012	12	344.154	11590.37	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
181	2013	1	344.098	11615.65	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0
182	2013	2	344.054	11640.75	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0
183	2013	3	344.019	11666.24	1	1	1	1	1	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
184	2013	4	343.994	11692.34	1	1	1	1	1	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
185	2013	5	343.978	11717.49	1	1	1	1	1	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
186	2013	6	343.973	11741.04	1	1	1	1	1	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0
187	2013	7	343.979	11762.29	1	1	1	1	1	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0
188	2013	8	343.992	11781.38	1	1	1	1	1	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0
189	2013	9	344.011	11798.00	1	1	1	1	1	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0
190	2013	10	344.033	11812.82	1	1	1	1	1	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0
191	2013	11	344.053	11826.22	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0
192	2013	12	344.070	11838.55	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
193	2014	1	344.082	11850.37	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0
194	2014	2	344.084	11861.28	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0
195	2014	3	344.075	11872.22	1	1	1	1	1	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
196	2014	4	344.049	11883.88	1	1	1	1	1	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
197	2014	5	344.007	11896.27	1	1	1	1	1	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
198	2014	6	343.944	11909.74	1	1	1	1	1	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0
199	2014	7	343.858	11924.65	1	1	1	1	1	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0
200	2014	8	343.745	11941.37	1	1	1	1	1	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0
201	2014	9	343.615	11959.21	1	1	1	1	1	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0
202	2014	10	343.469	11978.27	1	1	1	1	1	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0
203	2014	11	343.311	11998.34	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0
204	2014	12	343.145	12019.27	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
205	2015	1	342.970	12041.24	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0
206	2015	2	342.805	12062.61	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	0	0
207	2015	3	342.643	12084.29	1	1	1	1	1	0	0	1	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0
208	2015	4	342.483	12106.84	1	1	1	1	1	0	0	0	1	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0
209	2015	5	342.332	12129.38	1	1	1	1	1	0	0	0	0	1	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0
210	2015	6	342.196	12151.70	1	1	1	1	1	0	0	0	0	0	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0
211	2015	7	342.080	12173.66	1	1	1	1	1	0	0	0	0	0	0	1	0	0	0	0	0	1	1	0	0	0	0	0	0
212	2015	8	341.981	12195.52	1	1	1	1	1	0	0	0	0	0	0	0	1	0	0	0	0	1	1	0	0	0	0	0	0
213	2015	9	341.902	12216.62	1	1	1	1	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0	0	0	0	0
214	2015	10	341.839	12237.37	1	1	1	1	1	0	0	0	0	0	0	0	0	0	1	0	0	1	1	0	0	0	0	0	0
215	2015	11	341.790	12257.82	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	1	0	1	1	0	0	0	0	0	0

Obs	YEAR	MONTH	NIMM	gdp_imm	d02nn	d05nn	d06nn	d08nn	d09nn	dma1r1	feb19on	dd3nn	dd4nn	dd5nn	dd6nn	dd7nn	dd8nn	dd9nn	de1o10	dec1nn	dd1nn	dd2nn	dd5nn	dja3no	dfeb3o	dd1nn	dap16r	dma7n	dap18y	a1r8
216	2015	12	341.752	12278.02	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0
217	2016	1	341.724	12298.34	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0
218	2016	2	341.706	12317.86	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	0	0	0	0
219	2016	3	341.693	12337.27	1	1	1	1	1	0	0	1	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0
220	2016	4	341.683	12356.97	1	1	1	1	1	0	0	0	1	0	0	0	0	0	0	0	1	1	0	0	1	0	0	0	0	0
221	2016	5	341.677	12376.66	1	1	1	1	1	0	0	0	0	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0
222	2016	6	341.671	12396.40	1	1	1	1	1	0	0	0	0	0	1	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0
223	2016	7	341.664	12416.22	1	1	1	1	1	0	0	0	0	0	0	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0
224	2016	8	341.654	12436.31	1	1	1	1	1	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0
225	2016	9	341.642	12455.69	1	1	1	1	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0
226	2016	10	341.630	12474.33	1	1	1	1	1	0	0	0	0	0	0	0	0	0	1	0	0	1	1	0	0	0	0	0	0	0
227	2016	11	341.617	12491.91	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	1	0	1	1	0	0	0	0	0	0	0
228	2016	12	341.606	12508.06	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0
229	2017	1	341.596	12522.67	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	1	0	0	0
230	2017	2	341.588	12534.57	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	1	0	0	0
231	2017	3	341.583	12544.15	1	1	1	1	1	0	0	1	0	0	0	0	0	0	0	0	0	1	1	0	0	0	1	0	0	0
232	2017	4	341.580	12551.35	1	1	1	1	1	0	0	0	1	0	0	0	0	0	0	0	0	1	1	0	0	0	1	0	0	0
233	2017	5	341.583	12555.41	1	1	1	1	1	0	0	0	0	1	0	0	0	0	0	0	0	1	1	0	0	0	1	0	0	0
234	2017	6	341.588	12556.03	1	1	1	1	1	0	0	0	0	0	1	0	0	0	0	0	0	1	1	0	0	0	1	0	0	0
235	2017	7	341.600	12552.87	1	1	1	1	1	0	0	0	0	0	0	1	0	0	0	0	0	1	1	0	0	0	1	0	0	0
236	2017	8	341.617	12546.09	1	1	1	1	1	0	0	0	0	0	0	0	1	0	0	0	0	1	1	0	0	0	1	0	0	0
237	2017	9	341.640	12536.79	1	1	1	1	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0	0	1	0	0	0
238	2017	10	341.667	12525.82	1	1	1	1	1	0	0	0	0	0	0	0	0	0	1	0	0	1	1	0	0	0	1	0	0	0
239	2017	11	341.696	12514.12	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	1	0	1	1	0	0	0	1	0	0	0
240	2017	12	341.727	12502.65	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	1	0	0	0
241	2018	1	341.760	12492.17	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	1	0	0	0
242	2018	2	341.792	12484.19	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	1	0	0	0
243	2018	3	341.825	12479.08	1	1	1	1	1	0	0	1	0	0	0	0	0	0	0	0	0	1	1	0	0	0	1	0	0	0
244	2018	4	341.857	12477.63	1	1	1	1	1	0	0	0	1	0	0	0	0	0	0	0	0	1	1	0	0	0	1	0	1	0
245	2018	5	341.887	12481.08	1	1	1	1	1	0	0	0	0	1	0	0	0	0	0	0	0	1	1	0	0	0	1	1	0	0
246	2018	6	341.915	12490.31	1	1	1	1	1	0	0	0	0	0	1	0	0	0	0	0	0	1	1	0	0	0	1	0	0	0
247	2018	7	341.938	12506.22	1	1	1	1	1	0	0	0	0	0	0	1	0	0	0	0	0	1	1	0	0	0	1	0	0	0
248	2018	8	341.960	12528.62	1	1	1	1	1	0	0	0	0	0	0	0	1	0	0	0	0	1	1	0	0	0	1	0	0	0
249	2018	9	341.976	12554.75	1	1	1	1	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0	0	1	0	0	0
250	2018	10	341.987	12582.78	1	1	1	1	1	0	0	0	0	0	0	0	0	0	1	0	0	1	1	0	0	0	1	0	0	0
251	2018	11	341.994	12610.53	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	1	0	1	1	0	0	0	1	0	0	0
252	2018	12	341.995	12635.82	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	1	0	0	0
253	2019	1	341.993	12656.78	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	1	0	0	0
254	2019	2	341.983	12670.29	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	1	0	0	0
255	2019	3	341.969	12675.30	1	1	1	1	1	0	1	1	0	0	0	0	0	0	0	0	0	1	1	0	0	0	1	0	0	0
256	2019	4	341.948	12669.73	1	1	1	1	1	0	1	0	1	0	0	0	0	0	0	0	0	1	1	0	0	0	1	0	0	0
257	2019	5	341.919	12650.89	1	1	1	1	1	0	1	0	0	1	0	0	0	0	0	0	0	1	1	0	0	0	1	0	0	0
258	2019	6	341.886	12616.78	1	1	1	1	1	0	1	0	0	0	1	0	0	0	0	0	0	1	1	0	0	0	1	0	0	0

Obs	YEAR	MONTH	NIMM	gdp_imm	dd0205n	dd0605n	dd0805n	dd0905n	dma1r1	fdeb19	dd0305n	dd0405n	dd0505n	dd0605n	dd0705n	dd0805n	dd0905n	dec1d01	dd1d02	dd1d05	dd1d09	dd1d03	dd1d03	dfeb1r16	dadn7o	dma1y8	dap1r8
259	2019	7	341.844	12565.23	1	1	1	1	1	0	1	0	0	0	0	1	0	0	0	0	0	1	1	0	0	0	1	0	0
260	2019	8	341.796	12495.64	1	1	1	1	1	0	1	0	0	0	0	0	1	0	0	0	0	1	1	0	0	0	1	0	0
261	2019	9	341.743	12413.41	1	1	1	1	1	0	1	0	0	0	0	0	0	1	0	0	0	1	1	0	0	0	1	0	0
262	2019	10	341.687	12320.91	1	1	1	1	1	0	1	0	0	0	0	0	0	0	1	0	0	1	1	0	0	0	1	0	0
263	2019	11	341.626	12221.65	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	1	0	1	1	0	0	0	1	0	0
264	2019	12	341.565	12119.01	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	1	0	0
265	2020	1	341.503	12014.77	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	1	1	1	1	0	0	1	0	0
266	2020	2	341.442	11917.31	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	1	1	1	0	1	0	1	0	0
267	2020	3	341.385	11826.61	1	1	1	1	1	0	1	1	0	0	0	0	0	0	0	0	1	1	1	0	0	0	1	0	0
268	2020	4	341.329	11744.55	1	1	1	1	1	0	1	0	1	0	0	0	0	0	0	0	1	1	1	0	0	0	1	0	0
269	2020	5	341.279	11676.27	1	1	1	1	1	0	1	0	0	1	0	0	0	0	0	0	1	1	1	0	0	0	1	0	0
270	2020	6	341.233	11625.04	1	1	1	1	1	0	1	0	0	0	1	0	0	0	0	0	1	1	1	0	0	0	1	0	0
271	2020	7	341.193	11594.27	1	1	1	1	1	0	1	0	0	0	0	1	0	0	0	0	1	1	1	0	0	0	1	0	0
272	2020	8	341.162	11584.40	1	1	1	1	1	0	1	0	0	0	0	0	1	0	0	0	1	1	1	0	0	0	1	0	0
273	2020	9	341.136	11593.60	1	1	1	1	1	0	1	0	0	0	0	0	0	1	0	0	1	1	1	0	0	0	1	0	0
274	2020	10	341.113	11619.27	1	1	1	1	1	0	1	0	0	0	0	0	0	0	1	0	1	1	1	0	0	0	1	0	0
275	2020	11	341.096	11658.85	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	1	1	1	1	0	0	0	1	0	0
276	2020	12	341.076	11710.08	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	1	0	0
277	2021	1	341.060	11771.51	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	1	1	1	1	0	0	1	0	0
278	2021	2	341.042	11836.45	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	1	1	1	0	1	0	1	0	0
279	2021	3	341.022	11905.59	1	1	1	1	1	0	1	1	0	0	0	0	0	0	0	0	1	1	1	0	0	0	1	0	0
280	2021	4	340.997	11979.08	1	1	1	1	1	0	1	0	1	0	0	0	0	0	0	0	1	1	1	0	0	0	1	0	0
281	2021	5	340.968	12052.27	1	1	1	1	1	0	1	0	0	1	0	0	0	0	0	0	1	1	1	0	0	0	1	0	0
282	2021	6	340.932	12122.78	1	1	1	1	1	0	1	0	0	0	1	0	0	0	0	0	1	1	1	0	0	0	1	0	0
283	2021	7	340.889	12188.27	1	1	1	1	1	0	1	0	0	0	0	1	0	0	0	0	1	1	1	0	0	0	1	0	0
284	2021	8	340.837	12248.69	1	1	1	1	1	0	1	0	0	0	0	0	1	0	0	0	1	1	1	0	0	0	1	0	0
285	2021	9	340.778	12302.52	1	1	1	1	1	0	1	0	0	0	0	0	0	1	0	0	1	1	1	0	0	0	1	0	0
286	2021	10	340.715	12351.27	1	1	1	1	1	0	1	0	0	0	0	0	0	0	1	0	1	1	1	0	0	0	1	0	0
287	2021	11	340.645	12395.55	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	1	1	1	1	0	0	0	1	0	0
288	2021	12	340.570	12435.85	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	1	0	0
289	2022	1	340.492	12473.32	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	1	1	1	1	0	0	1	0	0
290	2022	2	340.414	12506.26	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	1	1	1	0	1	0	1	0	0
291	2022	3	340.336	12536.98	1	1	1	1	1	0	1	1	0	0	0	0	0	0	0	0	1	1	1	0	0	0	1	0	0
292	2022	4	340.253	12567.01	1	1	1	1	1	0	1	0	1	0	0	0	0	0	0	0	1	1	1	0	0	0	1	0	0
293	2022	5	340.170	12595.77	1	1	1	1	1	0	1	0	0	1	0	0	0	0	0	0	1	1	1	0	0	0	1	0	0
294	2022	6	340.091	12623.83	1	1	1	1	1	0	1	0	0	0	1	0	0	0	0	0	1	1	1	0	0	0	1	0	0
295	2022	7	340.011	12651.71	1	1	1	1	1	0	1	0	0	0	0	1	0	0	0	0	1	1	1	0	0	0	1	0	0
296	2022	8	339.932	12680.10	1	1	1	1	1	0	1	0	0	0	0	0	1	0	0	0	1	1	1	0	0	0	1	0	0
297	2022	9	339.857	12708.01	1	1	1	1	1	0	1	0	0	0	0	0	0	1	0	0	1	1	1	0	0	0	1	0	0
298	2022	10	339.785	12735.80	1	1	1	1	1	0	1	0	0	0	0	0	0	0	1	0	1	1	1	0	0	0	1	0	0
299	2022	11	339.712	12763.38	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	1	1	1	1	0	0	0	1	0	0
300	2022	12	339.642	12790.62	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	1	0	0
301	2023	1	339.570	12817.88	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	1	1	1	1	0	0	1	0	0

Obs	YEAR	MONTH	N_IMM	gdp_imm	d02nn	d05nn	d06nn	d08nn	d09nn	dma1r1	feb19	dec1no	dec2no	dec5no	djan3no	dfeb3no	dap1r6	dap7no	dma1y8	dap1r8
302	2023	2	339.502	12843.32	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	1	1	1	0	1	0	1	0	0
303	2023	3	339.433	12868.15	1	1	1	1	1	0	1	1	0	0	0	0	0	0	0	0	1	1	1	0	0	0	1	0	0
304	2023	4	339.363	12893.12	1	1	1	1	1	0	1	0	1	0	0	0	0	0	0	0	1	1	1	0	0	0	1	0	0
305	2023	5	339.291	12917.25	1	1	1	1	1	0	1	0	0	1	0	0	0	0	0	0	1	1	1	0	0	0	1	0	0
306	2023	6	339.217	12940.45	1	1	1	1	1	0	1	0	0	0	1	0	0	0	0	0	1	1	1	0	0	0	1	0	0
307	2023	7	339.145	12962.62	1	1	1	1	1	0	1	0	0	0	0	1	0	0	0	0	1	1	1	0	0	0	1	0	0
308	2023	8	339.066	12984.09	1	1	1	1	1	0	1	0	0	0	0	0	1	0	0	0	1	1	1	0	0	0	1	0	0
309	2023	9	338.988	13004.26	1	1	1	1	1	0	1	0	0	0	0	0	0	1	0	0	1	1	1	0	0	0	1	0	0
310	2023	10	338.911	13023.57	1	1	1	1	1	0	1	0	0	0	0	0	0	0	1	0	1	1	1	0	0	0	1	0	0
311	2023	11	338.830	13042.12	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	1	1	1	1	0	0	0	1	0	0
312	2023	12	338.750	13060.01	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	1	0	0
313	2024	1	338.668	13077.60	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	1	1	1	1	0	0	1	0	0
314	2024	2	338.587	13094.17	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	1	1	1	0	1	0	1	0	0
315	2024	3	338.507	13110.37	1	1	1	1	1	0	1	1	0	0	0	0	0	0	0	0	1	1	1	0	0	0	1	0	0
316	2024	4	338.426	13126.56	1	1	1	1	1	0	1	0	1	0	0	0	0	0	0	0	1	1	1	0	0	0	1	0	0
317	2024	5	338.344	13142.57	1	1	1	1	1	0	1	0	0	1	0	0	0	0	0	0	1	1	1	0	0	0	1	0	0
318	2024	6	338.263	13158.48	1	1	1	1	1	0	1	0	0	0	1	0	0	0	0	0	1	1	1	0	0	0	1	0	0
319	2024	7	338.183	13174.38	1	1	1	1	1	0	1	0	0	0	0	1	0	0	0	0	1	1	1	0	0	0	1	0	0
320	2024	8	338.102	13190.58	1	1	1	1	1	0	1	0	0	0	0	0	1	0	0	0	1	1	1	0	0	0	1	0	0
321	2024	9	338.022	13206.51	1	1	1	1	1	0	1	0	0	0	0	0	0	1	0	0	1	1	1	0	0	0	1	0	0
322	2024	10	337.944	13222.38	1	1	1	1	1	0	1	0	0	0	0	0	0	0	1	0	1	1	1	0	0	0	1	0	0
323	2024	11	337.866	13238.17	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	1	1	1	1	0	0	0	1	0	0
324	2024	12	337.788	13253.82	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	1	0	0
325	2025	1	337.708	13269.56	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	1	1	1	1	0	0	1	0	0
326	2025	2	337.633	13284.32	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	1	1	1	0	1	0	1	0	0
327	2025	3	337.559	13298.85	1	1	1	1	1	0	1	1	0	0	0	0	0	0	0	0	1	1	1	0	0	0	1	0	0
328	2025	4	337.482	13313.58	1	1	1	1	1	0	1	0	1	0	0	0	0	0	0	0	1	1	1	0	0	0	1	0	0
329	2025	5	337.406	13327.97	1	1	1	1	1	0	1	0	0	1	0	0	0	0	0	0	1	1	1	0	0	0	1	0	0
330	2025	6	337.327	13341.98	1	1	1	1	1	0	1	0	0	0	1	0	0	0	0	0	1	1	1	0	0	0	1	0	0
331	2025	7	337.250	13355.58	1	1	1	1	1	0	1	0	0	0	0	1	0	0	0	0	1	1	1	0	0	0	1	0	0
332	2025	8	337.172	13369.00	1	1	1	1	1	0	1	0	0	0	0	0	1	0	0	0	1	1	1	0	0	0	1	0	0
333	2025	9	337.095	13381.90	1	1	1	1	1	0	1	0	0	0	0	0	0	1	0	0	1	1	1	0	0	0	1	0	0
334	2025	10	337.016	13394.58	1	1	1	1	1	0	1	0	0	0	0	0	0	0	1	0	1	1	1	0	0	0	1	0	0
335	2025	11	336.939	13407.13	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	1	1	1	1	0	0	0	1	0	0
336	2025	12	336.859	13419.66	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	1	0	0
337	2026	1	336.779	13432.45	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	1	1	1	1	0	0	1	0	0
338	2026	2	336.703	13444.76	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	1	1	1	0	1	0	1	0	0
339	2026	3	336.625	13457.30	1	1	1	1	1	0	1	1	0	0	0	0	0	0	0	0	1	1	1	0	0	0	1	0	0
340	2026	4	336.544	13470.59	1	1	1	1	1	0	1	0	1	0	0	0	0	0	0	0	1	1	1	0	0	0	1	0	0
341	2026	5	336.462	13484.30	1	1	1	1	1	0	1	0	0	1	0	0	0	0	0	0	1	1	1	0	0	0	1	0	0
342	2026	6	336.379	13498.53	1	1	1	1	1	0	1	0	0	0	1	0	0	0	0	0	1	1	1	0	0	0	1	0	0
343	2026	7	336.296	13513.35	1	1	1	1	1	0	1	0	0	0	0	1	0	0	0	0	1	1	1	0	0	0	1	0	0
344	2026	8	336.211	13529.05	1	1	1	1	1	0	1	0	0	0	0	0	1	0	0	0	1	1	1	0	0	0	1	0	0

Obs	YEAR	MONTH	NIMM	gdp_imm	dd0205n	dd0605n	dd0805n	dd0905n	dmar11n	feb19on	dd0134n	dd0234n	dd0534n	dd0634n	dd0734n	dd0834n	dd0934n	dd1034n	dec19on	dd1234n	dd1534n	dd1634n	dja13on	dfeb13on	dd1726n	dap18n	dmay18n	dap18n
345	2026	9	336.125	13545.09	1	1	1	1	1	0	1	0	0	0	0	0	0	1	0	0	1	1	1	0	0	0	1	0	0
346	2026	10	336.041	13561.66	1	1	1	1	1	0	1	0	0	0	0	0	0	0	1	0	1	1	1	0	0	0	1	0	0
347	2026	11	335.954	13578.72	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	1	1	1	1	0	0	0	1	0	0
348	2026	12	335.869	13596.23	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	1	0	0
349	2027	1	335.779	13614.42	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	1	1	1	1	0	0	1	0	0
350	2027	2	335.694	13632.07	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	1	1	1	0	1	0	1	0	0
351	2027	3	335.609	13650.00	1	1	1	1	1	0	1	1	0	0	0	0	0	0	0	0	1	1	1	0	0	0	1	0	0
352	2027	4	335.521	13668.78	1	1	1	1	1	0	1	0	1	0	0	0	0	0	0	0	1	1	1	0	0	0	1	0	0
353	2027	5	335.433	13687.78	1	1	1	1	1	0	1	0	0	1	0	0	0	0	0	0	1	1	1	0	0	0	1	0	0
354	2027	6	335.343	13706.93	1	1	1	1	1	0	1	0	0	0	1	0	0	0	0	0	1	1	1	0	0	0	1	0	0
355	2027	7	335.256	13726.21	1	1	1	1	1	0	1	0	0	0	0	1	0	0	0	0	1	1	1	0	0	0	1	0	0
356	2027	8	335.167	13745.87	1	1	1	1	1	0	1	0	0	0	0	0	1	0	0	0	1	1	1	0	0	0	1	0	0
357	2027	9	335.077	13765.27	1	1	1	1	1	0	1	0	0	0	0	0	0	1	0	0	1	1	1	0	0	0	1	0	0
358	2027	10	334.990	13784.68	1	1	1	1	1	0	1	0	0	0	0	0	0	0	1	0	1	1	1	0	0	0	1	0	0
359	2027	11	334.900	13804.09	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	1	1	1	1	0	0	0	1	0	0
360	2027	12	334.812	13823.46	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	1	0	0
361	2028	1	334.721	13843.09	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	1	1	1	1	0	0	1	0	0
362	2028	2	334.635	13862.00	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	1	1	1	0	1	0	1	0	0
363	2028	3	334.547	13880.79	1	1	1	1	1	0	1	1	0	0	0	0	0	0	0	0	1	1	1	0	0	0	1	0	0
364	2028	4	334.458	13899.75	1	1	1	1	1	0	1	0	1	0	0	0	0	0	0	0	1	1	1	0	0	0	1	0	0
365	2028	5	334.369	13918.53	1	1	1	1	1	0	1	0	0	1	0	0	0	0	0	0	1	1	1	0	0	0	1	0	0
366	2028	6	334.279	13937.12	1	1	1	1	1	0	1	0	0	0	1	0	0	0	0	0	1	1	1	0	0	0	1	0	0
367	2028	7	334.190	13955.48	1	1	1	1	1	0	1	0	0	0	0	1	0	0	0	0	1	1	1	0	0	0	1	0	0
368	2028	8	334.098	13973.90	1	1	1	1	1	0	1	0	0	0	0	0	1	0	0	0	1	1	1	0	0	0	1	0	0
369	2028	9	334.008	13991.79	1	1	1	1	1	0	1	0	0	0	0	0	0	1	0	0	1	1	1	0	0	0	1	0	0
370	2028	10	333.919	14009.46	1	1	1	1	1	0	1	0	0	0	0	0	0	0	1	0	1	1	1	0	0	0	1	0	0
371	2028	11	333.828	14026.92	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	1	1	1	1	0	0	0	1	0	0
372	2028	12	333.738	14044.17	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	1	0	0
373	2029	1	333.646	14061.51	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	1	1	1	1	0	0	1	0	0
374	2029	2	333.558	14077.83	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	1	1	1	0	1	0	1	0	0
375	2029	3	333.471	14093.99	1	1	1	1	1	0	1	1	0	0	0	0	0	0	0	0	1	1	1	0	0	0	1	0	0
376	2029	4	333.379	14110.53	1	1	1	1	1	0	1	0	1	0	0	0	0	0	0	0	1	1	1	0	0	0	1	0	0
377	2029	5	333.289	14126.90	1	1	1	1	1	0	1	0	0	1	0	0	0	0	0	0	1	1	1	0	0	0	1	0	0
378	2029	6	333.199	14143.13	1	1	1	1	1	0	1	0	0	0	1	0	0	0	0	0	1	1	1	0	0	0	1	0	0
379	2029	7	333.107	14159.21	1	1	1	1	1	0	1	0	0	0	0	1	0	0	0	0	1	1	1	0	0	0	1	0	0
380	2029	8	333.015	14175.43	1	1	1	1	1	0	1	0	0	0	0	0	1	0	0	0	1	1	1	0	0	0	1	0	0
381	2029	9	332.925	14191.27	1	1	1	1	1	0	1	0	0	0	0	0	0	1	0	0	1	1	1	0	0	0	1	0	0
382	2029	10	332.833	14207.02	1	1	1	1	1	0	1	0	0	0	0	0	0	0	1	0	1	1	1	0	0	0	1	0	0
383	2029	11	332.743	14222.70	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	1	1	1	1	0	0	0	1	0	0
384	2029	12	332.652	14238.33	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	1	0	0
385	2030	1	332.561	14254.17	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	1	1	1	1	0	0	1	0	0
386	2030	2	332.475	14269.24	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	1	1	1	0	1	0	1	0	0
387	2030	3	332.388	14284.30	1	1	1	1	1	0	1	1	0	0	0	0	0	0	0	0	1	1	1	0	0	0	1	0	0

Obs	YEAR	MONTH	N_IMM	gdp_imm	d02nn	d05nn	d06nn	d08nn	d09nn	dma1r1	feb19	d01nn	d03nn	d04nn	d05nn	d06nn	d07nn	d08nn	d09nn	d10nn	d11nn	dec19on	d12on	d25on	djan13on	dfeb13on	dap16on	dma17on	day18on
388	2030	4	332.298	14299.90	1	1	1	1	1	0	1	0	1	0	0	0	0	0	0	0	1	1	1	0	0	0	1	0	0
389	2030	5	332.208	14315.54	1	1	1	1	1	0	1	0	0	1	0	0	0	0	0	0	1	1	1	0	0	0	1	0	0
390	2030	6	332.120	14331.24	1	1	1	1	1	0	1	0	0	0	1	0	0	0	0	0	1	1	1	0	0	0	1	0	0
391	2030	7	332.032	14347.01	1	1	1	1	1	0	1	0	0	0	0	1	0	0	0	0	1	1	1	0	0	0	1	0	0
392	2030	8	331.943	14363.13	1	1	1	1	1	0	1	0	0	0	0	0	1	0	0	0	1	1	1	0	0	0	1	0	0
393	2030	9	331.854	14379.05	1	1	1	1	1	0	1	0	0	0	0	0	0	1	0	0	1	1	1	0	0	0	1	0	0
394	2030	10	331.766	14395.04	1	1	1	1	1	0	1	0	0	0	0	0	0	0	1	0	1	1	1	0	0	0	1	0	0
395	2030	11	331.678	14411.07	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	1	1	1	1	0	0	0	1	0	0
396	2030	12	331.591	14427.13	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	1	0	0
397	2031	1	331.499	14443.48	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	1	1	1	1	0	0	1	0	0
398	2031	2	331.414	14459.05	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	1	1	1	0	1	0	1	0	0
399	2031	3	331.327	14474.61	1	1	1	1	1	0	1	1	0	0	0	0	0	0	0	0	1	1	1	0	0	0	1	0	0
400	2031	4	331.238	14490.69	1	1	1	1	1	0	1	0	1	0	0	0	0	0	0	0	1	1	1	0	0	0	1	0	0
401	2031	5	331.145	14506.74	1	1	1	1	1	0	1	0	0	1	0	0	0	0	0	0	1	1	1	0	0	0	1	0	0
402	2031	6	331.054	14522.76	1	1	1	1	1	0	1	0	0	0	1	0	0	0	0	0	1	1	1	0	0	0	1	0	0
403	2031	7	330.962	14538.72	1	1	1	1	1	0	1	0	0	0	0	1	0	0	0	0	1	1	1	0	0	0	1	0	0
404	2031	8	330.866	14554.90	1	1	1	1	1	0	1	0	0	0	0	0	1	0	0	0	1	1	1	0	0	0	1	0	0
405	2031	9	330.772	14570.77	1	1	1	1	1	0	1	0	0	0	0	0	0	1	0	0	1	1	1	0	0	0	1	0	0
406	2031	10	330.677	14586.61	1	1	1	1	1	0	1	0	0	0	0	0	0	0	1	0	1	1	1	0	0	0	1	0	0
407	2031	11	330.580	14602.44	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	1	1	1	1	0	0	0	1	0	0
408	2031	12	330.483	14618.25	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	1	0	0
409	2032	1	330.382	14634.34	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	1	1	1	1	0	0	1	0	0
410	2032	2	330.286	14649.92	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	1	1	1	0	1	0	1	0	0
411	2032	3	330.189	14665.52	1	1	1	1	1	0	1	1	0	0	0	0	0	0	0	0	1	1	1	0	0	0	1	0	0
412	2032	4	330.089	14681.43	1	1	1	1	1	0	1	0	1	0	0	0	0	0	0	0	1	1	1	0	0	0	1	0	0
413	2032	5	329.988	14697.38	1	1	1	1	1	0	1	0	0	1	0	0	0	0	0	0	1	1	1	0	0	0	1	0	0
414	2032	6	329.889	14713.39	1	1	1	1	1	0	1	0	0	0	1	0	0	0	0	0	1	1	1	0	0	0	1	0	0
415	2032	7	329.788	14729.48	1	1	1	1	1	0	1	0	0	0	0	1	0	0	0	0	1	1	1	0	0	0	1	0	0
416	2032	8	329.686	14745.91	1	1	1	1	1	0	1	0	0	0	0	0	1	0	0	0	1	1	1	0	0	0	1	0	0
417	2032	9	329.585	14762.14	1	1	1	1	1	0	1	0	0	0	0	0	0	1	0	0	1	1	1	0	0	0	1	0	0
418	2032	10	329.483	14778.43	1	1	1	1	1	0	1	0	0	0	0	0	0	0	1	0	1	1	1	0	0	0	1	0	0
419	2032	11	329.381	14794.77	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	1	1	1	1	0	0	0	1	0	0
420	2032	12	329.280	14811.17	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	1	0	0
421	2033	1	329.175	14827.88	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	1	1	1	1	0	0	1	0	0
422	2033	2	329.076	14843.81	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	1	1	1	0	1	0	1	0	0
423	2033	3	328.974	14859.77	1	1	1	1	1	0	1	1	0	0	0	0	0	0	0	0	1	1	1	0	0	0	1	0	0
424	2033	4	328.871	14876.30	1	1	1	1	1	0	1	0	1	0	0	0	0	0	0	0	1	1	1	0	0	0	1	0	0
425	2033	5	328.765	14892.84	1	1	1	1	1	0	1	0	0	1	0	0	0	0	0	0	1	1	1	0	0	0	1	0	0
426	2033	6	328.660	14909.38	1	1	1	1	1	0	1	0	0	0	1	0	0	0	0	0	1	1	1	0	0	0	1	0	0
427	2033	7	328.554	14925.94	1	1	1	1	1	0	1	0	0	0	0	1	0	0	0	0	1	1	1	0	0	0	1	0	0
428	2033	8	328.443	14942.76	1	1	1	1	1	0	1	0	0	0	0	0	1	0	0	0	1	1	1	0	0	0	1	0	0
429	2033	9	328.335	14959.32	1	1	1	1	1	0	1	0	0	0	0	0	0	1	0	0	1	1	1	0	0	0	1	0	0
430	2033	10	328.226	14975.88	1	1	1	1	1	0	1	0	0	0	0	0	0	0	1	0	1	1	1	0	0	0	1	0	0

Obs	YEAR	MONTH	N_IMM	gdp_imm	dd02nn	dd05nn	dd06nn	dd08nn	dd09nn	dma1r1	dfeb19	dd03nn	dd04nn	dd05nn	dd06nn	dd07nn	dd08nn	dd09nn	dd10nn	dd11nn	dec19on	dd12nn	dd15nn	dja1n1	dfeb13	dap16n	dad17o	dma1y8	dap18
431	2033	11	328.116	14992.44	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	1	1	1	1	0	0	0	1	0	0
432	2033	12	328.008	15009.01	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	1	0	0
433	2034	1	327.894	15025.85	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	1	1	1	1	0	0	1	0	0
434	2034	2	327.785	15041.90	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	1	1	1	0	1	0	1	0	0
435	2034	3	327.678	15057.95	1	1	1	1	1	0	1	1	0	0	0	0	0	0	0	0	1	1	1	0	0	0	1	0	0
436	2034	4	327.567	15074.55	1	1	1	1	1	0	1	0	1	0	0	0	0	0	0	0	1	1	1	0	0	0	1	0	0
437	2034	5	327.453	15091.17	1	1	1	1	1	0	1	0	0	1	0	0	0	0	0	0	1	1	1	0	0	0	1	0	0
438	2034	6	327.339	15107.81	1	1	1	1	1	0	1	0	0	0	1	0	0	0	0	0	1	1	1	0	0	0	1	0	0
439	2034	7	327.227	15124.46	1	1	1	1	1	0	1	0	0	0	0	1	0	0	0	0	1	1	1	0	0	0	1	0	0
440	2034	8	327.111	15141.40	1	1	1	1	1	0	1	0	0	0	0	0	1	0	0	0	1	1	1	0	0	0	1	0	0
441	2034	9	326.996	15158.07	1	1	1	1	1	0	1	0	0	0	0	0	0	1	0	0	1	1	1	0	0	0	1	0	0
442	2034	10	326.882	15174.73	1	1	1	1	1	0	1	0	0	0	0	0	0	0	1	0	1	1	1	0	0	0	1	0	0
443	2034	11	326.766	15191.38	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	1	1	1	1	0	0	0	1	0	0
444	2034	12	326.650	15208.02	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	1	0	0
445	2035	1	326.533	15224.89	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	1	1	1	1	0	0	1	0	0
446	2035	2	326.419	15240.92	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	1	1	1	0	1	0	1	0	0
447	2035	3	326.306	15256.90	1	1	1	1	1	0	1	1	0	0	0	0	0	0	0	0	1	1	1	0	0	0	1	0	0
448	2035	4	326.189	15273.37	1	1	1	1	1	0	1	0	1	0	0	0	0	0	0	0	1	1	1	0	0	0	1	0	0
449	2035	5	326.071	15289.77	1	1	1	1	1	0	1	0	0	1	0	0	0	0	0	0	1	1	1	0	0	0	1	0	0
450	2035	6	325.954	15306.11	1	1	1	1	1	0	1	0	0	0	1	0	0	0	0	0	1	1	1	0	0	0	1	0	0
451	2035	7	325.835	15322.37	1	1	1	1	1	0	1	0	0	0	0	1	0	0	0	0	1	1	1	0	0	0	1	0	0
452	2035	8	325.714	15338.80	1	1	1	1	1	0	1	0	0	0	0	0	1	0	0	0	1	1	1	0	0	0	1	0	0
453	2035	9	325.594	15354.88	1	1	1	1	1	0	1	0	0	0	0	0	0	1	0	0	1	1	1	0	0	0	1	0	0
454	2035	10	325.476	15370.86	1	1	1	1	1	0	1	0	0	0	0	0	0	0	1	0	1	1	1	0	0	0	1	0	0
455	2035	11	325.356	15386.74	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	1	1	1	1	0	0	0	1	0	0
456	2035	12	325.234	15402.52	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	1	0	0
457	2036	1	325.112	15418.43	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	1	1	1	1	0	0	1	0	0
458	2036	2	324.992	15433.72	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	1	1	1	0	1	0	1	0	0
459	2036	3	324.873	15448.88	1	1	1	1	1	0	1	1	0	0	0	0	0	0	0	0	1	1	1	0	0	0	1	0	0
460	2036	4	324.752	15464.18	1	1	1	1	1	0	1	0	1	0	0	0	0	0	0	0	1	1	1	0	0	0	1	0	0
461	2036	5	324.630	15479.33	1	1	1	1	1	0	1	0	0	1	0	0	0	0	0	0	1	1	1	0	0	0	1	0	0
462	2036	6	324.509	15494.35	1	1	1	1	1	0	1	0	0	0	1	0	0	0	0	0	1	1	1	0	0	0	1	0	0
463	2036	7	324.386	15509.22	1	1	1	1	1	0	1	0	0	0	0	1	0	0	0	0	1	1	1	0	0	0	1	0	0
464	2036	8	324.262	15524.20	1	1	1	1	1	0	1	0	0	0	0	0	1	0	0	0	1	1	1	0	0	0	1	0	0
465	2036	9	324.139	15538.81	1	1	1	1	1	0	1	0	0	0	0	0	0	1	0	0	1	1	1	0	0	0	1	0	0
466	2036	10	324.017	15553.32	1	1	1	1	1	0	1	0	0	0	0	0	0	0	1	0	1	1	1	0	0	0	1	0	0
467	2036	11	323.893	15567.73	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	1	1	1	1	0	0	0	1	0	0
468	2036	12	323.769	15582.08	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	1	0	0
469	2037	1	323.644	15596.60	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	1	1	1	1	0	0	1	0	0
470	2037	2	323.525	15610.39	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	1	1	1	0	1	0	1	0	0
471	2037	3	323.403	15624.16	1	1	1	1	1	0	1	1	0	0	0	0	0	0	0	0	1	1	1	0	0	0	1	0	0
472	2037	4	323.278	15638.39	1	1	1	1	1	0	1	0	1	0	0	0	0	0	0	0	1	1	1	0	0	0	1	0	0
473	2037	5	323.152	15652.63	1	1	1	1	1	0	1	0	0	1	0	0	0	0	0	0	1	1	1	0	0	0	1	0	0

Obs	YEAR	MONTH	N_IMM	gdp_imm	dd02non	dd05non	dd06non	dd08non	dd09non	dma1r1	dfeb19	ddd1on	ddd2non	ddd3non	ddd4non	ddd5non	ddd6non	ddd7non	ddd8non	ddd9non	dde1on	dde2non	dde5non	ddjan1non	ddfeb1non	dpar16	dad17on	dmay18	dap18
474	2037	6	323.026	15666.90	1	1	1	1	1	0	1	0	0	0	1	0	0	0	0	1	1	1	0	0	0	1	0	0
475	2037	7	322.899	15681.22	1	1	1	1	1	0	1	0	0	0	0	1	0	0	0	0	1	1	1	0	0	0	1	0	0
476	2037	8	322.770	15695.82	1	1	1	1	1	0	1	0	0	0	0	0	1	0	0	0	1	1	1	0	0	0	1	0	0
477	2037	9	322.641	15710.23	1	1	1	1	1	0	1	0	0	0	0	0	0	1	0	0	1	1	1	0	0	0	1	0	0
478	2037	10	322.513	15724.68	1	1	1	1	1	0	1	0	0	0	0	0	0	0	1	0	1	1	1	0	0	0	1	0	0
479	2037	11	322.383	15739.16	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	1	1	1	1	0	0	0	1	0	0
480	2037	12	322.254	15753.66	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	1	0	0
481	2038	1	322.121	15768.41	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	1	1	1	1	0	0	1	0	0
482	2038	2	321.994	15782.45	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	1	1	1	0	1	0	1	0	0
483	2038	3	321.867	15796.49	1	1	1	1	1	0	1	1	0	0	0	0	0	0	0	0	1	1	1	0	0	0	1	0	0
484	2038	4	321.734	15810.99	1	1	1	1	1	0	1	0	1	0	0	0	0	0	0	0	1	1	1	0	0	0	1	0	0
485	2038	5	321.602	15825.47	1	1	1	1	1	0	1	0	0	1	0	0	0	0	0	0	1	1	1	0	0	0	1	0	0
486	2038	6	321.470	15839.93	1	1	1	1	1	0	1	0	0	0	1	0	0	0	0	0	1	1	1	0	0	0	1	0	0
487	2038	7	321.335	15854.35	1	1	1	1	1	0	1	0	0	0	0	1	0	0	0	0	1	1	1	0	0	0	1	0	0
488	2038	8	321.200	15868.98	1	1	1	1	1	0	1	0	0	0	0	0	1	0	0	0	1	1	1	0	0	0	1	0	0
489	2038	9	321.065	15883.35	1	1	1	1	1	0	1	0	0	0	0	0	0	1	0	0	1	1	1	0	0	0	1	0	0
490	2038	10	320.931	15897.71	1	1	1	1	1	0	1	0	0	0	0	0	0	0	1	0	1	1	1	0	0	0	1	0	0
491	2038	11	320.797	15912.08	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	1	1	1	1	0	0	0	1	0	0
492	2038	12	320.662	15926.46	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	1	0	0
493	2039	1	320.523	15941.12	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	1	1	1	1	0	0	1	0	0
494	2039	2	320.391	15955.10	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	1	1	1	0	1	0	1	0	0
495	2039	3	320.259	15969.13	1	1	1	1	1	0	1	1	0	0	0	0	0	0	0	0	1	1	1	0	0	0	1	0	0
496	2039	4	320.123	15983.71	1	1	1	1	1	0	1	0	1	0	0	0	0	0	0	0	1	1	1	0	0	0	1	0	0
497	2039	5	319.984	15998.37	1	1	1	1	1	0	1	0	0	1	0	0	0	0	0	0	1	1	1	0	0	0	1	0	0
498	2039	6	319.847	16013.12	1	1	1	1	1	0	1	0	0	0	1	0	0	0	0	0	1	1	1	0	0	0	1	0	0
499	2039	7	319.709	16027.97	1	1	1	1	1	0	1	0	0	0	0	1	0	0	0	0	1	1	1	0	0	0	1	0	0
500	2039	8	319.567	16043.17	1	1	1	1	1	0	1	0	0	0	0	0	1	0	0	0	1	1	1	0	0	0	1	0	0
501	2039	9	319.428	16058.20	1	1	1	1	1	0	1	0	0	0	0	0	0	1	0	0	1	1	1	0	0	0	1	0	0
502	2039	10	319.289	16073.30	1	1	1	1	1	0	1	0	0	0	0	0	0	0	1	0	1	1	1	0	0	0	1	0	0
503	2039	11	319.149	16088.42	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	1	1	1	1	0	0	0	1	0	0
504	2039	12	319.008	16103.57	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	1	0	0
505	2040	1	318.865	16118.95	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	1	1	1	1	0	0	1	0	0
506	2040	2	318.727	16133.81	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	1	1	1	0	1	0	1	0	0
507	2040	3	318.588	16148.62	1	1	1	1	1	0	1	1	0	0	0	0	0	0	0	0	1	1	1	0	0	0	1	0	0
508	2040	4	318.446	16163.60	1	1	1	1	1	0	1	0	1	0	0	0	0	0	0	0	1	1	1	0	0	0	1	0	0
509	2040	5	318.305	16178.49	1	1	1	1	1	0	1	0	0	1	0	0	0	0	0	0	1	1	1	0	0	0	1	0	0
510	2040	6	318.162	16193.27	1	1	1	1	1	0	1	0	0	0	1	0	0	0	0	0	1	1	1	0	0	0	1	0	0
511	2040	7	318.020	16207.91	1	1	1	1	1	0	1	0	0	0	0	1	0	0	0	0	1	1	1	0	0	0	1	0	0
512	2040	8	317.875	16222.64	1	1	1	1	1	0	1	0	0	0	0	0	1	0	0	0	1	1	1	0	0	0	1	0	0
513	2040	9	317.732	16237.01	1	1	1	1	1	0	1	0	0	0	0	0	0	1	0	0	1	1	1	0	0	0	1	0	0
514	2040	10	317.590	16251.27	1	1	1	1	1	0	1	0	0	0	0	0	0	0	1	0	1	1	1	0	0	0	1	0	0
515	2040	11	317.446	16265.43	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	1	1	1	1	0	0	0	1	0	0
516	2040	12	317.302	16279.50	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	1	0	0

Obs	YEAR	MONTH	N_IMM	gdp_imm	dd02non	dd05non	dd06non	dd08non	dd09non	dma1r1	fdeb19	dd01non	dd02non	dd03non	dd04non	dd05non	dd06non	dd07non	dd08non	dd09non	dec1on	dd11non	dd12non	dd15non	dja1n3o	dfeb3o	dd1r1p6	dd7n1o	dma1y8	ap1r8
517	2041	1	317.156	16293.73	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	1	1	1	1	0	0	1	0	0
518	2041	2	317.017	16307.22	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	1	1	1	0	1	0	1	0	0
519	2041	3	316.878	16320.67	1	1	1	1	1	0	1	1	0	0	0	0	0	0	0	0	1	1	1	0	0	0	1	0	0
520	2041	4	316.733	16334.54	1	1	1	1	1	0	1	0	1	0	0	0	0	0	0	0	1	1	1	0	0	0	1	0	0
521	2041	5	316.588	16348.40	1	1	1	1	1	0	1	0	0	1	0	0	0	0	0	0	1	1	1	0	0	0	1	0	0
522	2041	6	316.443	16362.26	1	1	1	1	1	0	1	0	0	0	1	0	0	0	0	0	1	1	1	0	0	0	1	0	0
523	2041	7	316.297	16376.14	1	1	1	1	1	0	1	0	0	0	0	1	0	0	0	0	1	1	1	0	0	0	1	0	0
524	2041	8	316.148	16390.26	1	1	1	1	1	0	1	0	0	0	0	0	1	0	0	0	1	1	1	0	0	0	1	0	0
525	2041	9	316.002	16404.16	1	1	1	1	1	0	1	0	0	0	0	0	0	1	0	0	1	1	1	0	0	0	1	0	0
526	2041	10	315.854	16418.06	1	1	1	1	1	0	1	0	0	0	0	0	0	0	1	0	1	1	1	0	0	0	1	0	0
527	2041	11	315.707	16431.96	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	1	1	1	1	0	0	1	0	0
528	2041	12	315.559	16445.85	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	1	0	0
529	2042	1	315.407	16459.94	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	1	1	1	1	0	0	1	0	0
530	2042	2	315.264	16473.32	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	1	1	1	0	1	0	1	0	0
531	2042	3	315.120	16486.66	1	1	1	1	1	0	1	1	0	0	0	0	0	0	0	0	1	1	1	0	0	0	1	0	0
532	2042	4	314.969	16500.42	1	1	1	1	1	0	1	0	1	0	0	0	0	0	0	0	1	1	1	0	0	0	1	0	0
533	2042	5	314.820	16514.12	1	1	1	1	1	0	1	0	0	1	0	0	0	0	0	0	1	1	1	0	0	0	1	0	0
534	2042	6	314.670	16527.76	1	1	1	1	1	0	1	0	0	0	1	0	0	0	0	0	1	1	1	0	0	0	1	0	0
535	2042	7	314.517	16541.34	1	1	1	1	1	0	1	0	0	0	0	1	0	0	0	0	1	1	1	0	0	0	1	0	0
536	2042	8	314.364	16555.07	1	1	1	1	1	0	1	0	0	0	0	0	1	0	0	0	1	1	1	0	0	0	1	0	0
537	2042	9	314.212	16568.53	1	1	1	1	1	0	1	0	0	0	0	0	0	1	0	0	1	1	1	0	0	0	1	0	0
538	2042	10	314.059	16581.97	1	1	1	1	1	0	1	0	0	0	0	0	0	0	1	0	1	1	1	0	0	0	1	0	0
539	2042	11	313.906	16595.39	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	1	1	1	1	0	0	1	0	0
540	2042	12	313.753	16608.83	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	1	0	0
541	2043	1	313.597	16622.50	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	1	1	1	1	0	0	1	0	0
542	2043	2	313.450	16635.55	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	1	1	1	0	1	0	1	0	0
543	2043	3	313.302	16648.66	1	1	1	1	1	0	1	1	0	0	0	0	0	0	0	0	1	1	1	0	0	0	1	0	0
544	2043	4	313.148	16662.29	1	1	1	1	1	0	1	0	1	0	0	0	0	0	0	0	1	1	1	0	0	0	1	0	0
545	2043	5	312.994	16676.01	1	1	1	1	1	0	1	0	0	1	0	0	0	0	0	0	1	1	1	0	0	0	1	0	0
546	2043	6	312.841	16689.84	1	1	1	1	1	0	1	0	0	0	1	0	0	0	0	0	1	1	1	0	0	0	1	0	0
547	2043	7	312.687	16703.80	1	1	1	1	1	0	1	0	0	0	0	1	0	0	0	0	1	1	1	0	0	0	1	0	0
548	2043	8	312.532	16718.12	1	1	1	1	1	0	1	0	0	0	0	0	1	0	0	0	1	1	1	0	0	0	1	0	0
549	2043	9	312.379	16732.31	1	1	1	1	1	0	1	0	0	0	0	0	0	1	0	0	1	1	1	0	0	0	1	0	0
550	2043	10	312.227	16746.60	1	1	1	1	1	0	1	0	0	0	0	0	0	0	1	0	1	1	1	0	0	0	1	0	0
551	2043	11	312.074	16760.95	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	1	1	1	1	0	0	1	0	0
552	2043	12	311.922	16775.36	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	1	0	0
553	2044	1	311.767	16790.04	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	1	1	1	1	0	0	1	0	0
554	2044	2	311.616	16804.25	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	1	1	1	0	1	0	1	0	0
555	2044	3	311.465	16818.46	1	1	1	1	1	0	1	1	0	0	0	0	0	0	0	0	1	1	1	0	0	0	1	0	0
556	2044	4	311.312	16832.88	1	1	1	1	1	0	1	0	1	0	0	0	0	0	0	0	1	1	1	0	0	0	1	0	0
557	2044	5	311.159	16847.25	1	1	1	1	1	0	1	0	0	1	0	0	0	0	0	0	1	1	1	0	0	0	1	0	0
558	2044	6	311.004	16861.56	1	1	1	1	1	0	1	0	0	0	1	0	0	0	0	0	1	1	1	0	0	0	1	0	0
559	2044	7	310.849	16875.78	1	1	1	1	1	0	1	0	0	0	0	1	0	0	0	0	1	1	1	0	0	0	1	0	0

Obs	YEAR	MONTH	N_IMM	gdp_imm	dd02nn	dd05nn	dd06nn	dd08nn	dd09nn	dma1r1	dfeb19	dd03no	dd04no	dd05no	dd06no	dd07no	dd08no	dd09no	dd10no	dd11no	dec19no	dd12no	dd25no	djan13no	dfeb13no	dapr16no	dmay17no	dapr18no
560	2044	8	310.691	16890.15	1	1	1	1	1	0	1	0	0	0	0	0	1	0	0	0	1	1	1	0	0	0	1	0	0
561	2044	9	310.535	16904.21	1	1	1	1	1	0	1	0	0	0	0	0	0	1	0	0	1	1	1	0	0	0	1	0	0
562	2044	10	310.380	16918.21	1	1	1	1	1	0	1	0	0	0	0	0	0	0	1	0	1	1	1	0	0	0	1	0	0
563	2044	11	310.224	16932.15	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	1	1	1	1	0	0	0	1	0	0
564	2044	12	310.068	16946.05	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	1	0	0
565	2045	1	309.909	16960.15	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	1	1	1	1	0	0	1	0	0
566	2045	2	309.758	16973.55	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	1	1	1	0	1	0	1	0	0
567	2045	3	309.607	16986.95	1	1	1	1	1	0	1	1	0	0	0	0	0	0	0	0	1	1	1	0	0	0	1	0	0
568	2045	4	309.450	17000.80	1	1	1	1	1	0	1	0	1	0	0	0	0	0	0	0	1	1	1	0	0	0	1	0	0
569	2045	5	309.296	17014.68	1	1	1	1	1	0	1	0	0	1	0	0	0	0	0	0	1	1	1	0	0	0	1	0	0
570	2045	6	309.139	17028.58	1	1	1	1	1	0	1	0	0	0	1	0	0	0	0	0	1	1	1	0	0	0	1	0	0
571	2045	7	308.983	17042.53	1	1	1	1	1	0	1	0	0	0	0	1	0	0	0	0	1	1	1	0	0	0	1	0	0
572	2045	8	308.826	17056.74	1	1	1	1	1	0	1	0	0	0	0	0	1	0	0	0	1	1	1	0	0	0	1	0	0
573	2045	9	308.670	17070.78	1	1	1	1	1	0	1	0	0	0	0	0	0	1	0	0	1	1	1	0	0	0	1	0	0
574	2045	10	308.515	17084.84	1	1	1	1	1	0	1	0	0	0	0	0	0	0	1	0	1	1	1	0	0	0	1	0	0
575	2045	11	308.362	17098.94	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	1	1	1	1	0	0	0	1	0	0
576	2045	12	308.205	17113.06	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	1	0	0
577	2046	1	308.046	17127.44	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	1	1	1	1	0	0	1	0	0
578	2046	2	307.895	17141.13	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	1	1	1	0	1	0	1	0	0
579	2046	3	307.745	17154.84	1	1	1	1	1	0	1	1	0	0	0	0	0	0	0	0	1	1	1	0	0	0	1	0	0
580	2046	4	307.587	17169.02	1	1	1	1	1	0	1	0	1	0	0	0	0	0	0	0	1	1	1	0	0	0	1	0	0
581	2046	5	307.429	17183.20	1	1	1	1	1	0	1	0	0	1	0	0	0	0	0	0	1	1	1	0	0	0	1	0	0
582	2046	6	307.269	17197.37	1	1	1	1	1	0	1	0	0	0	1	0	0	0	0	0	1	1	1	0	0	0	1	0	0
583	2046	7	307.107	17211.53	1	1	1	1	1	0	1	0	0	0	0	1	0	0	0	0	1	1	1	0	0	0	1	0	0
584	2046	8	306.944	17225.92	1	1	1	1	1	0	1	0	0	0	0	0	1	0	0	0	1	1	1	0	0	0	1	0	0
585	2046	9	306.779	17240.05	1	1	1	1	1	0	1	0	0	0	0	0	0	1	0	0	1	1	1	0	0	0	1	0	0
586	2046	10	306.615	17254.16	1	1	1	1	1	0	1	0	0	0	0	0	0	0	1	0	1	1	1	0	0	0	1	0	0
587	2046	11	306.450	17268.25	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	1	1	1	1	0	0	0	1	0	0
588	2046	12	306.284	17282.31	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	1	0	0
589	2047	1	306.117	17296.56	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	1	1	1	1	0	0	1	0	0
590	2047	2	305.956	17310.09	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	1	1	1	0	1	0	1	0	0
591	2047	3	305.797	17323.58	1	1	1	1	1	0	1	1	0	0	0	0	0	0	0	0	1	1	1	0	0	0	1	0	0
592	2047	4	305.630	17337.48	1	1	1	1	1	0	1	0	1	0	0	0	0	0	0	0	1	1	1	0	0	0	1	0	0
593	2047	5	305.464	17351.33	1	1	1	1	1	0	1	0	0	1	0	0	0	0	0	0	1	1	1	0	0	0	1	0	0
594	2047	6	305.300	17365.13	1	1	1	1	1	0	1	0	0	0	1	0	0	0	0	0	1	1	1	0	0	0	1	0	0
595	2047	7	305.135	17378.87	1	1	1	1	1	0	1	0	0	0	0	1	0	0	0	0	1	1	1	0	0	0	1	0	0
596	2047	8	304.969	17392.78	1	1	1	1	1	0	1	0	0	0	0	0	1	0	0	0	1	1	1	0	0	0	1	0	0
597	2047	9	304.807	17406.42	1	1	1	1	1	0	1	0	0	0	0	0	0	1	0	0	1	1	1	0	0	0	1	0	0
598	2047	10	304.643	17420.02	1	1	1	1	1	0	1	0	0	0	0	0	0	0	1	0	1	1	1	0	0	0	1	0	0
599	2047	11	304.482	17433.60	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	1	1	1	1	0	0	0	1	0	0
600	2047	12	304.321	17447.15	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	1	0	0
601	2048	1	304.156	17460.91	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	1	1	1	1	0	0	1	0	0
602	2048	2	303.999	17474.22	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	1	1	1	0	1	0	1	0	0

Obs	YEAR	MONTH	NIMM	gdp_imm	dd0205n	dd0506n	dd0608n	dd0809n	dd0910n	dmarr11n	fe1bo1n	dd3n	dd4n	dd5n	dd6n	dd7n	dd8n	dd9n	dd10n	dd11n	dec1on	dd2on	dd5on	dd3on	dfeb3on	djan3on	dfeb3on	dad16r	dma17n	aay18y	apr18
603	2048	3	303.842	17487.54	1	1	1	1	1	0	1	1	0	0	0	0	0	0	0	0	1	1	1	0	0	0	1	0	0
604	2048	4	303.680	17501.10	1	1	1	1	1	0	1	0	1	0	0	0	0	0	0	0	1	1	1	0	0	0	1	0	0
605	2048	5	303.520	17514.68	1	1	1	1	1	0	1	0	0	1	0	0	0	0	0	0	1	1	1	0	0	0	1	0	0
606	2048	6	303.359	17528.29	1	1	1	1	1	0	1	0	0	0	1	0	0	0	0	0	1	1	1	0	0	0	1	0	0
607	2048	7	303.200	17541.95	1	1	1	1	1	0	1	0	0	0	0	1	0	0	0	0	1	1	1	0	0	0	1	0	0
608	2048	8	303.036	17555.87	1	1	1	1	1	0	1	0	0	0	0	0	1	0	0	0	1	1	1	0	0	0	1	0	0
609	2048	9	302.875	17569.61	1	1	1	1	1	0	1	0	0	0	0	0	0	1	0	0	1	1	1	0	0	0	1	0	0
610	2048	10	302.715	17583.39	1	1	1	1	1	0	1	0	0	0	0	0	0	0	1	0	1	1	1	0	0	0	1	0	0
611	2048	11	302.553	17597.21	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	1	1	1	1	0	0	0	1	0	0
612	2048	12	302.392	17611.07	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	1	0	0
613	2049	1	302.228	17625.20	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	1	1	1	1	0	0	1	0	0
614	2049	2	302.074	17638.67	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	1	1	1	0	1	0	1	0	0
615	2049	3	301.918	17652.18	1	1	1	1	1	0	1	1	0	0	0	0	0	0	0	0	1	1	1	0	0	0	1	0	0
616	2049	4	301.757	17666.18	1	1	1	1	1	0	1	0	1	0	0	0	0	0	0	0	1	1	1	0	0	0	1	0	0
617	2049	5	301.597	17680.21	1	1	1	1	1	0	1	0	0	1	0	0	0	0	0	0	1	1	1	0	0	0	1	0	0
618	2049	6	301.435	17694.27	1	1	1	1	1	0	1	0	0	0	1	0	0	0	0	0	1	1	1	0	0	0	1	0	0
619	2049	7	301.274	17708.35	1	1	1	1	1	0	1	0	0	0	0	1	0	0	0	0	1	1	1	0	0	0	1	0	0
620	2049	8	301.112	17722.69	1	1	1	1	1	0	1	0	0	0	0	0	1	0	0	0	1	1	1	0	0	0	1	0	0
621	2049	9	300.951	17736.83	1	1	1	1	1	0	1	0	0	0	0	0	0	1	0	0	1	1	1	0	0	0	1	0	0
622	2049	10	300.792	17750.99	1	1	1	1	1	0	1	0	0	0	0	0	0	0	1	0	1	1	1	0	0	0	1	0	0
623	2049	11	300.633	17765.17	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	1	1	1	1	0	0	0	1	0	0
624	2049	12	300.472	17779.37	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	1	0	0
625	2050	1	300.311	17793.83	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	1	1	1	1	0	0	1	0	0
626	2050	2	300.157	17807.60	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	1	1	1	0	1	0	1	0	0
627	2050	3	300.003	17821.38	1	1	1	1	1	0	1	1	0	0	0	0	0	0	0	0	1	1	1	0	0	0	1	0	0
628	2050	4	299.845	17835.65	1	1	1	1	1	0	1	0	1	0	0	0	0	0	0	0	1	1	1	0	0	0	1	0	0
629	2050	5	299.687	17849.93	1	1	1	1	1	0	1	0	0	1	0	0	0	0	0	0	1	1	1	0	0	0	1	0	0
630	2050	6	299.530	17864.22	1	1	1	1	1	0	1	0	0	0	1	0	0	0	0	0	1	1	1	0	0	0	1	0	0
631	2050	7	299.373	17878.51	1	1	1	1	1	0	1	0	0	0	0	1	0	0	0	0	1	1	1	0	0	0	1	0	0
632	2050	8	299.214	17893.05	1	1	1	1	1	0	1	0	0	0	0	0	1	0	0	0	1	1	1	0	0	0	1	0	0
633	2050	9	299.058	17907.37	1	1	1	1	1	0	1	0	0	0	0	0	0	1	0	0	1	1	1	0	0	0	1	0	0
634	2050	10	298.902	17921.68	1	1	1	1	1	0	1	0	0	0	0	0	0	0	1	0	1	1	1	0	0	0	1	0	0
635	2050	11	298.747	17936.00	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	1	1	1	1	0	0	0	1	0	0
636	2050	12	298.593	17950.33	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	1	0	0
637	2051	1	298.408	17964.21	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	1	1	1	1	0	0	1	0	0
638	2051	2	298.254	17978.28	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	1	1	1	0	1	0	1	0	0
639	2051	3	298.102	17992.35	1	1	1	1	1	0	1	1	0	0	0	0	0	0	0	0	1	1	1	0	0	0	1	0	0
640	2051	4	297.947	18006.89	1	1	1	1	1	0	1	0	1	0	0	0	0	0	0	0	1	1	1	0	0	0	1	0	0
641	2051	5	297.791	18021.43	1	1	1	1	1	0	1	0	0	1	0	0	0	0	0	0	1	1	1	0	0	0	1	0	0
642	2051	6	297.638	18035.95	1	1	1	1	1	0	1	0	0	0	1	0	0	0	0	0	1	1	1	0	0	0	1	0	0
643	2051	7	297.485	18050.47	1	1	1	1	1	0	1	0	0	0	0	1	0	0	0	0	1	1	1	0	0	0	1	0	0
644	2051	8	297.329	18065.21	1	1	1	1	1	0	1	0	0	0	0	0	1	0	0	0	1	1	1	0	0	0	1	0	0
645	2051	9	297.178	18079.70	1	1	1	1	1	0	1	0	0	0	0	0	0	1	0	0	1	1	1	0	0	0	1	0	0

Obs	YEAR	MONTH	NIMM	gdp_imm	d02nn	d05nn	d06nn	d08nn	d09nn	dma1r1	feb19on	dd3nn	dd4nn	dd5nn	dd6nn	dd7nn	dd8nn	dd9nn	dec1nn	dd10nn	dd11nn	dd12nn	dja1n3o	dfeb3o	dd1p16	dad7n	dma1y8	dap1r8
646	2051	10	297.025	18094.18	1	1	1	1	1	0	1	0	0	0	0	0	0	0	1	0	1	1	1	0	0	0	1	0	0
647	2051	11	296.874	18108.65	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	1	1	1	1	0	0	0	1	0	0
648	2051	12	296.727	18123.09	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	1	0	0
649	2052	1	296.518	18136.37	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	1	1	1	1	0	0	1	0	0
650	2052	2	296.364	18150.75	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	1	1	1	0	1	0	1	0	0
651	2052	3	296.214	18165.11	1	1	1	1	1	0	1	1	0	0	0	0	0	0	0	0	1	1	1	0	0	0	1	0	0
652	2052	4	296.062	18179.93	1	1	1	1	1	0	1	0	1	0	0	0	0	0	0	0	1	1	1	0	0	0	1	0	0
653	2052	5	295.908	18194.73	1	1	1	1	1	0	1	0	0	1	0	0	0	0	0	0	1	1	1	0	0	0	1	0	0
654	2052	6	295.760	18209.50	1	1	1	1	1	0	1	0	0	0	1	0	0	0	0	0	1	1	1	0	0	0	1	0	0
655	2052	7	295.611	18224.24	1	1	1	1	1	0	1	0	0	0	0	1	0	0	0	0	1	1	1	0	0	0	1	0	0
656	2052	8	295.458	18239.19	1	1	1	1	1	0	1	0	0	0	0	0	1	0	0	0	1	1	1	0	0	0	1	0	0
657	2052	9	295.312	18253.87	1	1	1	1	1	0	1	0	0	0	0	0	0	1	0	0	1	1	1	0	0	0	1	0	0
658	2052	10	295.162	18268.51	1	1	1	1	1	0	1	0	0	0	0	0	0	0	1	0	1	1	1	0	0	0	1	0	0
659	2052	11	295.015	18283.12	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	1	1	1	1	0	0	0	1	0	0
660	2052	12	294.875	18297.70	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	1	0	0
661	2053	1	294.641	18310.33	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	1	1	1	1	0	0	1	0	0
662	2053	2	294.487	18325.03	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	1	1	1	0	1	0	1	0	0
663	2053	3	294.339	18339.68	1	1	1	1	1	0	1	1	0	0	0	0	0	0	0	0	1	1	1	0	0	0	1	0	0
664	2053	4	294.190	18354.79	1	1	1	1	1	0	1	0	1	0	0	0	0	0	0	0	1	1	1	0	0	0	1	0	0
665	2053	5	294.038	18369.85	1	1	1	1	1	0	1	0	0	1	0	0	0	0	0	0	1	1	1	0	0	0	1	0	0
666	2053	6	293.896	18384.87	1	1	1	1	1	0	1	0	0	0	1	0	0	0	0	0	1	1	1	0	0	0	1	0	0
667	2053	7	293.750	18399.84	1	1	1	1	1	0	1	0	0	0	0	1	0	0	0	0	1	1	1	0	0	0	1	0	0
668	2053	8	293.600	18415.00	1	1	1	1	1	0	1	0	0	0	0	0	1	0	0	0	1	1	1	0	0	0	1	0	0
669	2053	9	293.459	18429.87	1	1	1	1	1	0	1	0	0	0	0	0	0	1	0	0	1	1	1	0	0	0	1	0	0
670	2053	10	293.312	18444.68	1	1	1	1	1	0	1	0	0	0	0	0	0	0	1	0	1	1	1	0	0	0	1	0	0
671	2053	11	293.168	18459.45	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	1	1	1	1	0	0	0	1	0	0
672	2053	12	293.035	18474.16	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	1	0	0
673	2054	1	292.778	18486.10	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	1	1	1	1	0	0	1	0	0
674	2054	2	292.624	18501.12	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	1	1	1	0	1	0	1	0	0
675	2054	3	292.478	18516.08	1	1	1	1	1	0	1	1	0	0	0	0	0	0	0	0	1	1	1	0	0	0	1	0	0
676	2054	4	292.332	18531.48	1	1	1	1	1	0	1	0	1	0	0	0	0	0	0	0	1	1	1	0	0	0	1	0	0
677	2054	5	292.181	18546.82	1	1	1	1	1	0	1	0	0	1	0	0	0	0	0	0	1	1	1	0	0	0	1	0	0
678	2054	6	292.044	18562.09	1	1	1	1	1	0	1	0	0	0	1	0	0	0	0	0	1	1	1	0	0	0	1	0	0
679	2054	7	291.902	18577.30	1	1	1	1	1	0	1	0	0	0	0	1	0	0	0	0	1	1	1	0	0	0	1	0	0
680	2054	8	291.755	18592.68	1	1	1	1	1	0	1	0	0	0	0	0	1	0	0	0	1	1	1	0	0	0	1	0	0
681	2054	9	291.619	18607.74	1	1	1	1	1	0	1	0	0	0	0	0	0	1	0	0	1	1	1	0	0	0	1	0	0
682	2054	10	291.474	18622.73	1	1	1	1	1	0	1	0	0	0	0	0	0	0	1	0	1	1	1	0	0	0	1	0	0
683	2054	11	291.335	18637.65	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	1	1	1	1	0	0	0	1	0	0
684	2054	12	291.208	18652.50	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	1	0	0
685	2055	1	290.928	18663.71	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	1	1	1	1	0	0	1	0	0
686	2055	2	290.774	18679.06	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	1	1	1	0	1	0	1	0	0
687	2055	3	290.630	18694.33	1	1	1	1	1	0	1	1	0	0	0	0	0	0	0	0	1	1	1	0	0	0	1	0	0
688	2055	4	290.486	18710.02	1	1	1	1	1	0	1	0	1	0	0	0	0	0	0	0	1	1	1	0	0	0	1	0	0

Obs	YEAR	MONTH	NIMM	gdp_imm	dd0	dd25	dd6	dd8	dd9	dma1	dfeb19	dd11	dd12	dd13	dd14	dd15	dd16	dd17	dd18	dd19	dd20	dd21	dd22	dd23	dd24	dd25	dd26	dd27	dd28	dd29	dd30	dd31	dja1	dfeb1	dap16	dma17	dap18
689	2055	5	290.338	18725.65	1	1	1	1	1	0	1	0	0	1	0	0	0	0	0	0	1	1	1	0	0	0	1	0	0	0	0	0	0	1	0	0
690	2055	6	290.205	18741.18	1	1	1	1	1	0	1	0	0	0	1	0	0	0	0	0	1	1	1	0	0	0	1	0	0	0	0	0	0	1	0	0
691	2055	7	290.068	18756.64	1	1	1	1	1	0	1	0	0	0	0	1	0	0	0	0	1	1	1	0	0	0	1	0	0	0	0	0	0	1	0	0
692	2055	8	289.923	18772.23	1	1	1	1	1	0	1	0	0	0	0	0	1	0	0	0	1	1	1	0	0	0	1	0	0	0	0	0	0	1	0	0
693	2055	9	289.791	18787.50	1	1	1	1	1	0	1	0	0	0	0	0	0	1	0	0	1	1	1	0	0	0	1	0	0	0	0	0	0	1	0	0
694	2055	10	289.650	18802.67	1	1	1	1	1	0	1	0	0	0	0	0	0	0	1	0	1	1	1	0	0	0	1	0	0	0	0	0	0	1	0	0
695	2055	11	289.514	18817.75	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	1	1	1	1	0	0	0	1	0	0	0	0	0	0	1	0	0
696	2055	12	289.394	18832.75	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	1	0	0	0	0	0	0	1	0	0
697	2056	1	289.091	18843.18	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	1	1	1	1	0	0	1	0	0	0	0	0	0	1	0	0
698	2056	2	288.937	18858.86	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	1	1	1	0	1	0	1	0	0	0	0	0	0	1	0	0
699	2056	3	288.795	18874.45	1	1	1	1	1	0	1	1	0	0	0	0	0	0	0	0	1	1	1	0	0	0	1	0	0	0	0	0	0	1	0	0
700	2056	4	288.654	18890.45	1	1	1	1	1	0	1	0	1	0	0	0	0	0	0	0	1	1	1	0	0	0	1	0	0	0	0	0	0	1	0	0
701	2056	5	288.508	18906.37	1	1	1	1	1	0	1	0	0	1	0	0	0	0	0	0	1	1	1	0	0	0	1	0	0	0	0	0	0	1	0	0
702	2056	6	288.380	18922.16	1	1	1	1	1	0	1	0	0	0	1	0	0	0	0	0	1	1	1	0	0	0	1	0	0	0	0	0	0	1	0	0
703	2056	7	288.246	18937.87	1	1	1	1	1	0	1	0	0	0	0	1	0	0	0	0	1	1	1	0	0	0	1	0	0	0	0	0	0	1	0	0
704	2056	8	288.105	18953.69	1	1	1	1	1	0	1	0	0	0	0	0	1	0	0	0	1	1	1	0	0	0	1	0	0	0	0	0	0	1	0	0
705	2056	9	287.977	18969.16	1	1	1	1	1	0	1	0	0	0	0	0	0	1	0	0	1	1	1	0	0	0	1	0	0	0	0	0	0	1	0	0
706	2056	10	287.839	18984.52	1	1	1	1	1	0	1	0	0	0	0	0	0	0	1	0	1	1	1	0	0	0	1	0	0	0	0	0	0	1	0	0
707	2056	11	287.707	18999.77	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	1	1	1	1	0	0	0	1	0	0	0	0	0	0	1	0	0
708	2056	12	287.593	19014.91	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	1	0	0	0	0	0	0	1	0	0
709	2057	1	287.268	19024.52	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	1	1	1	1	0	0	1	0	0	0	0	0	0	1	0	0
710	2057	2	287.114	19040.55	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	1	1	1	0	1	0	1	0	0	0	0	0	0	1	0	0
711	2057	3	286.973	19056.46	1	1	1	1	1	0	1	1	0	0	0	0	0	0	0	0	1	1	1	0	0	0	1	0	0	0	0	0	0	1	0	0
712	2057	4	286.835	19072.77	1	1	1	1	1	0	1	0	1	0	0	0	0	0	0	0	1	1	1	0	0	0	1	0	0	0	0	0	0	1	0	0
713	2057	5	286.691	19088.98	1	1	1	1	1	0	1	0	0	1	0	0	0	0	0	0	1	1	1	0	0	0	1	0	0	0	0	0	0	1	0	0
714	2057	6	286.567	19105.06	1	1	1	1	1	0	1	0	0	0	1	0	0	0	0	0	1	1	1	0	0	0	1	0	0	0	0	0	0	1	0	0
715	2057	7	286.437	19121.01	1	1	1	1	1	0	1	0	0	0	0	1	0	0	0	0	1	1	1	0	0	0	1	0	0	0	0	0	0	1	0	0
716	2057	8	286.298	19137.07	1	1	1	1	1	0	1	0	0	0	0	0	1	0	0	0	1	1	1	0	0	0	1	0	0	0	0	0	0	1	0	0
717	2057	9	286.176	19152.76	1	1	1	1	1	0	1	0	0	0	0	0	0	1	0	0	1	1	1	0	0	0	1	0	0	0	0	0	0	1	0	0
718	2057	10	286.040	19168.30	1	1	1	1	1	0	1	0	0	0	0	0	0	0	1	0	1	1	1	0	0	0	1	0	0	0	0	0	0	1	0	0
719	2057	11	285.912	19183.73	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	1	1	1	1	0	0	0	1	0	0	0	0	0	0	1	0	0
720	2057	12	285.805	19199.02	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	1	0	0	0	0	0	0	1	0	0

INDIANA MICHIGAN POWER COMPANY - MICHIGAN
COMMERCIAL CUSTOMERS
MODEL ESTIMATION

The SYSLIN Procedure
Ordinary Least Squares Estimation

Model	cc_imm
Dependent Variable	cc_imm
Label	Commercial Customers

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	26	3.618E8	13915425	446.73	<.0001
Error	249	7756259	31149.63		
Corrected Total	275	3.6956E8			

Root MSE	176.49258	R-Square	0.97901
Dependent Mean	16676.9203	Adj R-Sq	0.97682
Coeff Var	1.05830		

Parameter Estimates

Variable	DF	Parameter Estimate	Standard Error	t Value	Pr > |t|	Variable Label
Intercept	1	8536.366	755.0470	11.31	<.0001	Intercept
ngdpindx	1	6219.305	774.4812	8.03	<.0001	Service Area Population and Gross Regional Product Index
d02on	1	924.2125	41.02258	22.53	<.0001	Binary Variable - 2002 On
d05on	1	689.1097	59.26754	11.63	<.0001	Binary Variable - 2005 On
d06on	1	356.9781	62.68052	5.70	<.0001	Binary Variable - 2006 On
d08on	1	313.5659	63.53399	4.94	<.0001	Binary Variable - 2008 On
d09on	1	379.9580	64.27002	5.91	<.0001	Binary Variable - 2009 On
d3	1	59.57439	45.10445	1.32	0.1878	Binary Variable - March
d4	1	13.55804	45.66376	0.30	0.7668	Binary Variable - April
d5	1	26.23275	44.96603	0.58	0.5602	Binary Variable - May
d6	1	90.79794	44.32405	2.05	0.0416	Binary Variable - June

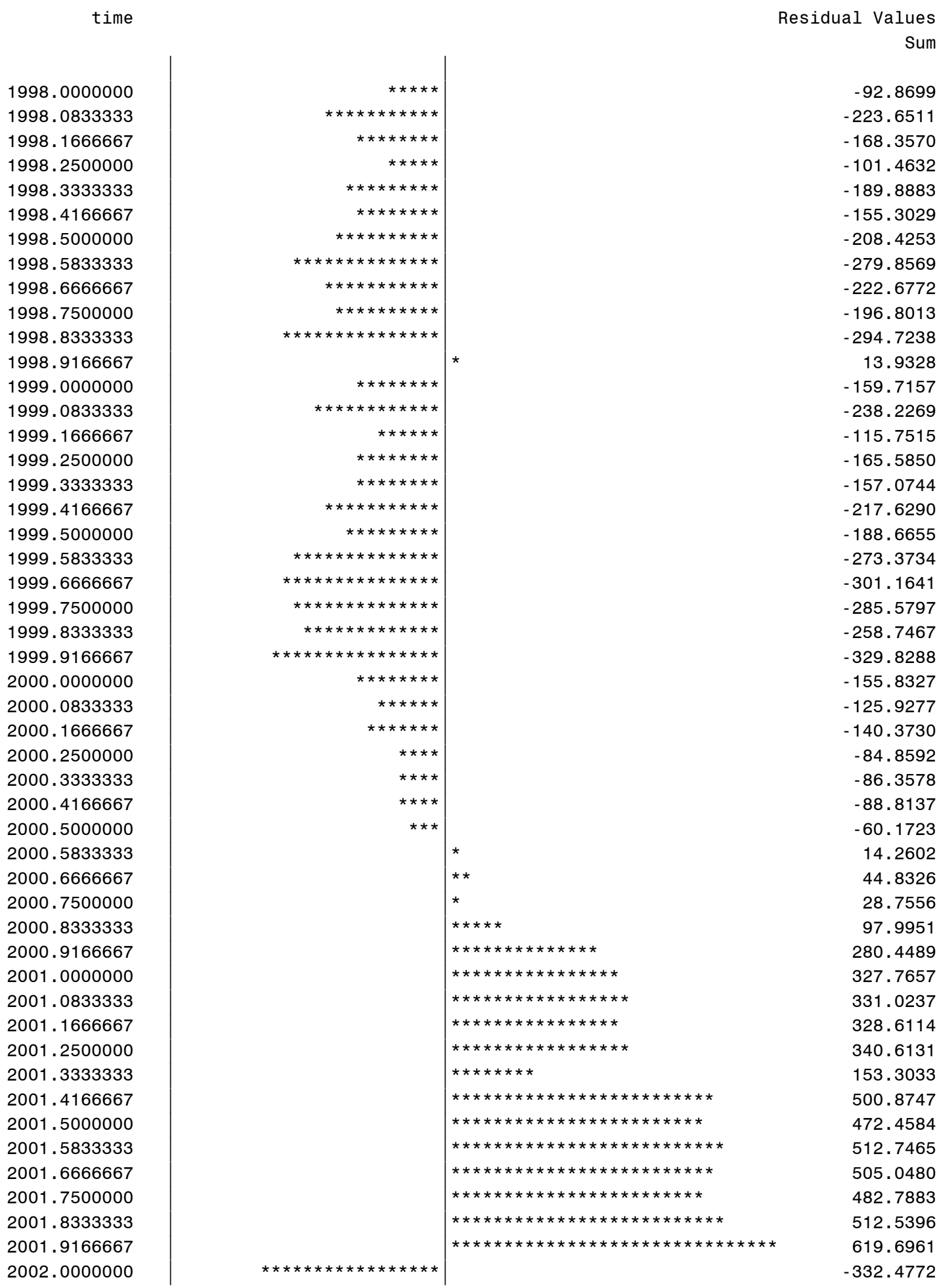
INDIANA MICHIGAN POWER COMPANY - MICHIGAN
COMMERCIAL CUSTOMERS
MODEL ESTIMATION

The SYSLIN Procedure
Ordinary Least Squares Estimation

Parameter Estimates

Variable	DF	Parameter Estimate	Standard Error	t Value	Pr > |t|	Variable Label
d7	1	98.40251	44.32349	2.22	0.0273	Binary Variable - July
d8	1	139.3568	44.32486	3.14	0.0019	Binary Varaible - August
d9	1	125.1017	44.32783	2.82	0.0052	Binary Variable - September
d10	1	141.9367	44.33191	3.20	0.0015	Binary Variable - October
d11	1	116.1227	44.33637	2.62	0.0094	Binary Variable - November
dmar11	1	664.3955	183.4401	3.62	0.0004	Binary Variable - March 2011
d12on	1	183.8478	42.63193	4.31	<.0001	Binary Variable - 2012 On
djan13on	1	72.88477	70.06242	1.04	0.2992	Binary Variable - 2013 On Januarys
dfeb13on	1	63.35580	69.68626	0.91	0.3641	Binary Variable - 2013 On Februarys
apr16	1	-375.423	184.4753	-2.04	0.0429	Binary Variable - April 2016
d15on	1	2.637874	49.48859	0.05	0.9575	Binary Variable - 2015 On
d17on	1	19.01637	52.74993	0.36	0.7188	Binary Variable - 2017 On
apr18	1	1435.691	184.5640	7.78	<.0001	Binary Variable - April 2018
may18	1	2280.107	184.3767	12.37	<.0001	Binary Variable - May 2018
feb19on	1	133.3106	67.49377	1.98	0.0494	Binary Variable - February 2019 On
dec19on	1	305.8797	78.67635	3.89	0.0001	Binary Variable - December 2019 On

Durbin-Watson	0.588083
Number of Observations	276
First-Order Autocorrelation	0.704738


time
Residual Values
Sum
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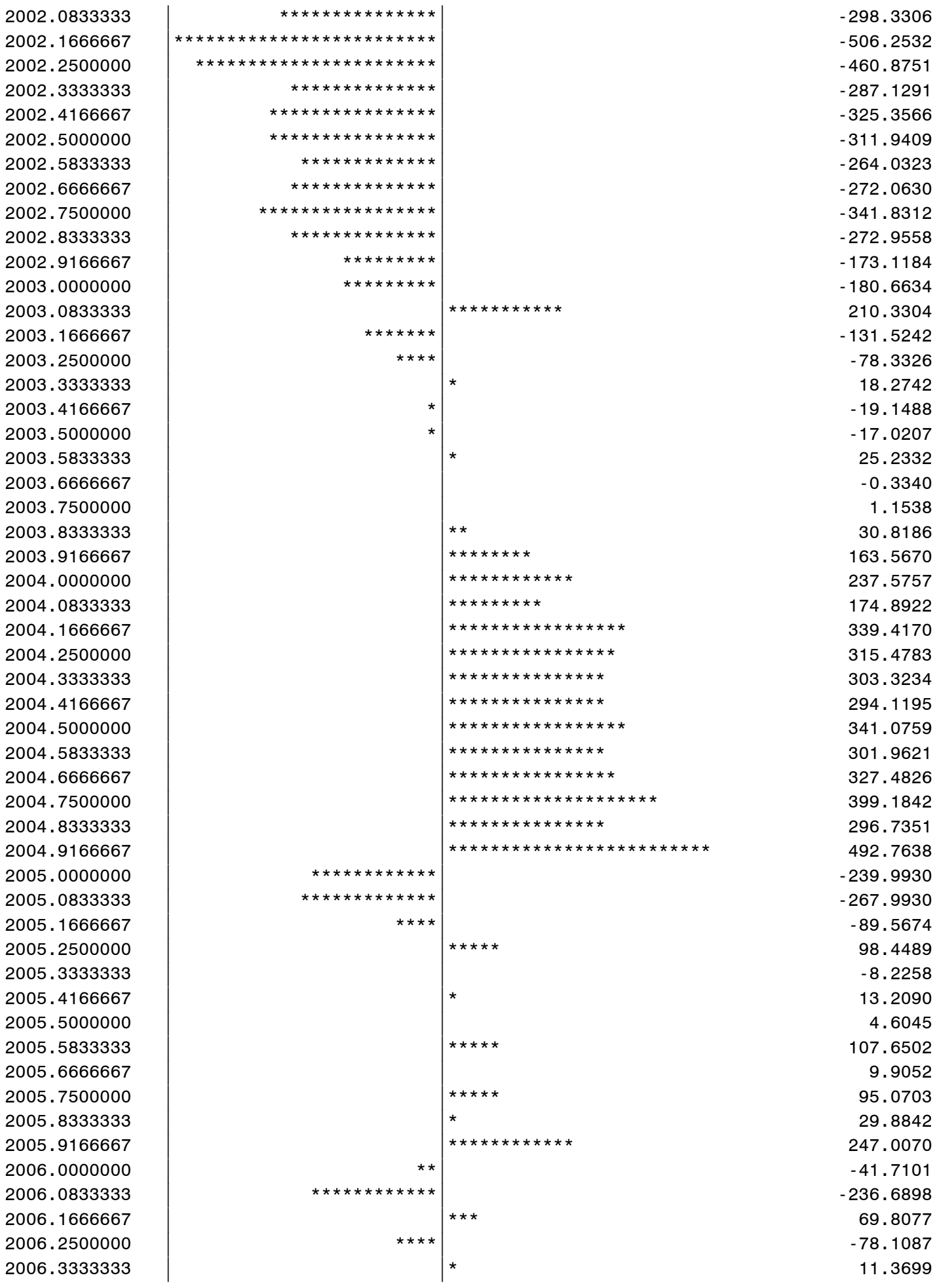
1998.1666667 -168.3570
1998.2500000 -101.4632
1998.3333333 -189.8883
1998.4166667 -155.3029
1998.5000000 -208.4253
1998.5833333 -279.8569
1998.6666667 -222.6772
1998.7500000 -196.8013
1998.8333333 -294.7238
1998.9166667 13.9328
1999.0000000 -159.7157
1999.0833333 -238.2269
1999.1666667 -115.7515
1999.2500000 -165.5850
1999.3333333 -157.0744
1999.4166667 -217.6290
1999.5000000 -188.6655
1999.5833333 -273.3734
1999.6666667 -301.1641
1999.7500000 -285.5797
1999.8333333 -258.7467
1999.9166667 -329.8288
2000.0000000 -155.8327
2000.0833333 -125.9277
2000.1666667 -140.3730
2000.2500000 -84.8592
2000.3333333 -86.3578
2000.4166667 -88.8137
2000.5000000 -60.1723
2000.5833333 14.2602
2000.6666667 44.8326
2000.7500000 28.7556
2000.8333333 97.9951
2000.9166667 280.4489
2001.0000000 327.7657
2001.0833333 331.0237
2001.1666667 328.6114
2001.2500000 340.6131
2001.3333333 153.3033
2001.4166667 500.8747
2001.5000000 472.4584
2001.5833333 512.7465
2001.6666667 505.0480
2001.7500000 482.7883
2001.8333333 512.5396
2001.9166667 619.6961
2002.0000000 -332.4772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2002.3333333 -287.1291
2002.4166667 -325.3566
2002.5000000 -311.9409
2002.5833333 -264.0323
2002.6666667 -272.0630
2002.7500000 -341.8312
2002.8333333 -272.9558
2002.9166667 -173.1184
2003.0000000 -180.6634
2003.0833333 210.3304
2003.1666667 -131.5242
2003.2500000 -78.3326
2003.3333333 18.2742
2003.4166667 -19.1488
2003.5000000 -17.0207
2003.5833333 25.2332
2003.6666667 -0.3340
2003.7500000 1.1538
2003.8333333 30.8186
2003.9166667 163.5670
2004.0000000 237.5757
2004.0833333 174.8922
2004.1666667 339.4170
2004.2500000 315.4783
2004.3333333 303.3234
2004.4166667 294.1195
2004.5000000 341.0759
2004.5833333 301.9621
2004.6666667 327.4826
2004.7500000 399.1842
2004.8333333 296.7351
2004.9166667 492.7638
2005.0000000 -239.9930
2005.0833333 -267.9930
2005.1666667 -89.5674
2005.2500000 98.4489
2005.3333333 -8.2258
2005.4166667 13.2090
2005.5000000 4.6045
2005.5833333 107.6502
2005.6666667 9.9052
2005.7500000 95.0703
2005.8333333 29.8842
2005.9166667 247.0070
2006.0000000 -41.7101
2006.0833333 -236.6898
2006.1666667 69.8077
2006.2500000 -78.1087
2006.3333333 11.3699

2006.4166667	*****		-105.8527
2006.5000000	****		-87.9035
2006.5833333	*		-22.0670
2006.6666667	****		-80.3498
2006.7500000	**		-49.9229
2006.8333333	**		-39.8532
2006.9166667		**	38.7057
2007.0000000		****	70.7218
2007.0833333	****		-77.5581
2007.1666667		*********	176.4392
2007.2500000		****	79.8466
2007.3333333		**	39.8970
2007.4166667			-0.3000
2007.5000000		***	56.3840
2007.5833333		**	35.8839
2007.6666667		**	42.4144
2007.7500000		***	61.0125
2007.8333333		*	25.8268
2007.9166667		******	112.0062
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2008.0833333	****		-84.4201
2008.1666667	*********		-177.4720
2008.2500000	****		-71.9625
2008.3333333	***		-67.8055
2008.4166667	**		-40.7154
2008.5000000			1.6508
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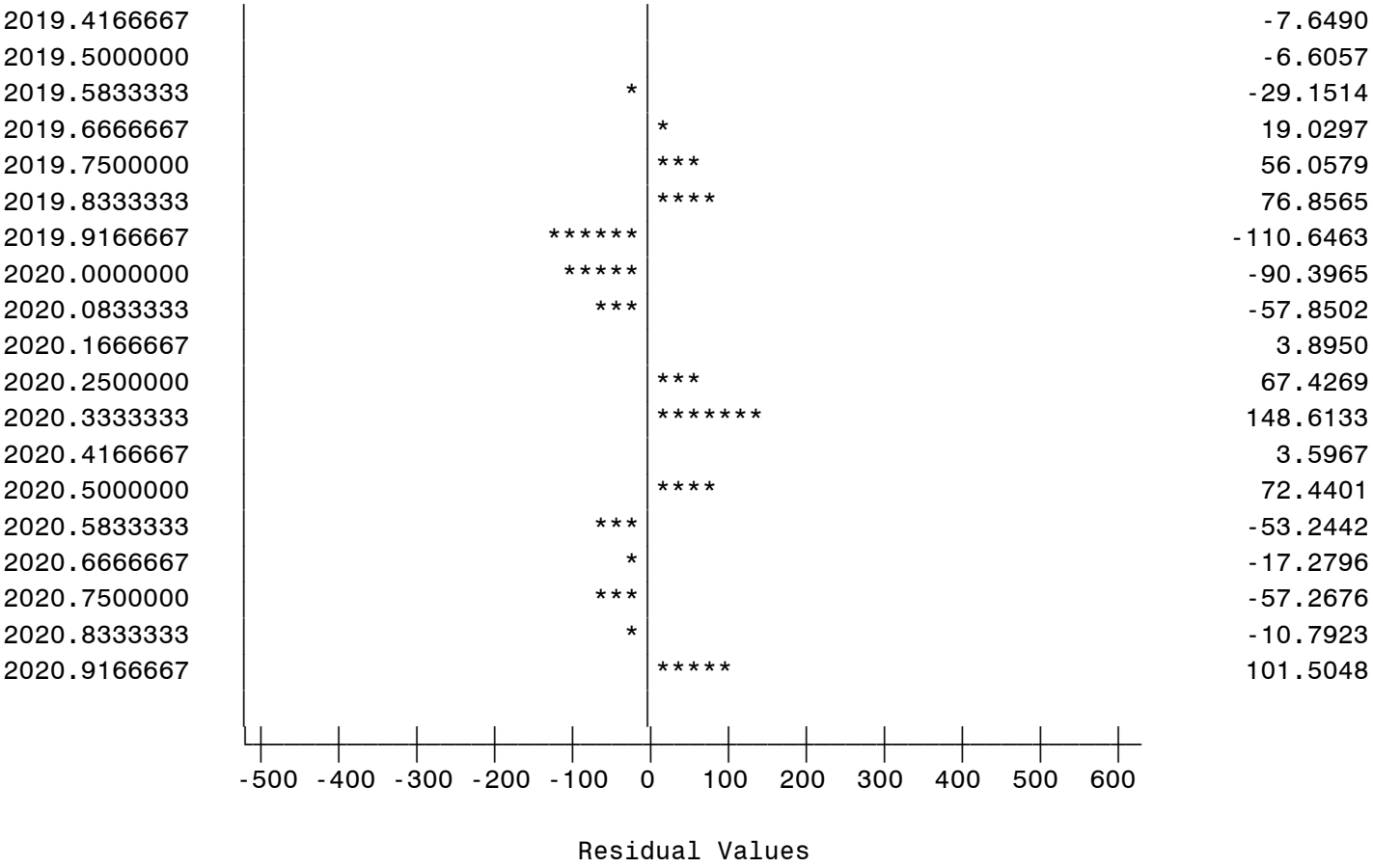
2008.6666667		******	126.1662
2008.7500000		******	129.5648
2008.8333333		****	82.8989
2008.9166667		**********	280.5333
2009.0000000	**		-34.2316
2009.0833333	**		-39.5548
2009.1666667		********	154.2175
2009.2500000		***	53.0743
2009.3333333		***	60.2869
2009.4166667		*****	92.5541
2009.5000000		*****	106.5289
2009.5833333		***	64.8346
2009.6666667		***	55.5035
2009.7500000		**	41.5594
2009.8333333		*	13.1952
2009.9166667		******	117.4097
2010.0000000		***	63.9018
2010.0833333	**********		-273.9818
2010.1666667		**********	340.1687
2010.2500000	*		-20.2847
2010.3333333	******		-119.0397
2010.4166667		*	28.1576
2010.5000000	*******		-135.4561
2010.5833333	****		-70.9038
2010.6666667	*********		-180.4481

2010.7500000	*******		-131.1429
2010.8333333	****		-79.7852
2010.9166667	**********		-194.1645
2011.0000000	******		-121.9281
2011.0833333	**********		-331.2329
2011.1666667			-0.0000
2011.2500000		*	27.9813
2011.3333333		***	58.6109
2011.4166667		**	43.6463
2011.5000000	*		-22.4645
2011.5833333		*******	145.8908
2011.6666667		**	47.8943
2011.7500000		*	21.4015
2011.8333333		***	55.1301
2011.9166667		********	162.6714
2012.0000000		***	58.0260
2012.0833333		*	15.4389
2012.1666667	***		-54.1481
2012.2500000	*		-10.5225
2012.3333333		*	17.9923
2012.4166667	*		-11.7469
2012.5000000	*		-11.8759
2012.5833333	*		-25.6511
2012.6666667	*		-16.1528
2012.7500000	**		-35.4958
2012.8333333	*		-20.7203
2012.9166667		****	71.0541
2013.0000000		****	75.7547
2013.0833333		*	18.3357
2013.1666667			-3.3198
2013.2500000		***	50.7473
2013.3333333		**	34.1386
2013.4166667	*		-17.0513
2013.5000000		*	13.2877
2013.5833333	*		-27.0849
2013.6666667	*		-18.3976
2013.7500000	**		-45.0635
2013.8333333	*		-11.3362
2013.9166667		******	113.4127
2014.0000000		**	31.9102
2014.0833333		*	12.6509
2014.1666667			9.4217
2014.2500000		*	28.1210
2014.3333333		*	23.9443
2014.4166667			-7.2063
2014.5000000	*		-14.4605
2014.5833333	**		-37.1222
2014.6666667	*		-27.4204
2014.7500000	****		-79.6551
2014.8333333	****		-87.0164
2014.9166667	*		-12.7884
2015.0000000		****	83.1595

2015.0833333			-0.2387
2015.1666667		*	11.1914
2015.2500000		**	46.3409
2015.3333333		*	14.5797
2015.4166667			-3.1532
2015.5000000			8.0840
2015.5833333	***		-54.9962
2015.6666667	*		-16.5659
2015.7500000	***		-56.9583
2015.8333333	**		-42.3700
2015.9166667		*	26.9240
2016.0000000	***		-51.4106
2016.0833333			-6.6370
2016.1666667		**	31.0419
2016.2500000			-0.0000
2016.3333333		*	23.2365
2016.4166667			8.9917
2016.5000000	*		-17.2114
2016.5833333	*		-15.6428
2016.6666667	*		-11.3766
2016.7500000	*		-28.6908
2016.8333333	**		-30.6919
2016.9166667		****	82.3939
2017.0000000		*	29.3312
2017.0833333	*		-17.0656
2017.1666667			-5.9867
2017.2500000			8.6211
2017.3333333		*	22.1214
2017.4166667			-9.4213
2017.5000000	*		-27.0200
2017.5833333	**		-35.9377
2017.6666667			3.2278
2017.7500000	****		-78.9840
2017.8333333	***		-67.9975
2017.9166667		**	40.6614
2018.0000000			-8.4574
2018.0833333		**	39.7871
2018.1666667	*		-10.7798
2018.2500000			0.0000
2018.3333333			0.0000
2018.4166667		*	24.1973
2018.5000000		**	32.7081
2018.5833333			7.4087
2018.6666667	*		-17.2754
2018.7500000		****	70.8449
2018.8333333			-4.8908
2018.9166667		****	74.7981
2019.0000000	***		-69.8911
2019.0833333		*	11.0178
2019.1666667	***		-60.6787
2019.2500000	**		-44.7061
2019.3333333	*		-14.1710

INDIANA MICHIGAN POWER COMPANY - MICHIGAN
COMMERCIAL CUSTOMERS
MODEL RESIDUALS



INDIANA MICHIGAN POWER COMPANY - MICHIGAN
COMMERCIAL CUSTOMERS
ACTUAL AND FORECAST

YEAR	CUSTOMERS	GROWTH RATE
1998	14256.75	.
1999	14514.5	1.8
2000	14806.75	2.0
2001	15067.25	1.8
2002	15330	1.7
2003	15681.08	2.3
2004	16058.33	2.4
2005	16436.58	2.4
2006	16754.75	1.9
2007	16927.58	1.0
2008	17058.75	0.8
2009	17157.83	0.6
2010	17242.83	0.5
2011	17369.67	0.7
2012	17410.25	0.2
2013	17485.08	0.4
2014	17500.5	0.1
2015	17563.5	0.4
2016	17585.92	0.1
2017	17658.67	0.4
2018	17997.25	1.9
2019	17797	-1.1
2020	17908.33	0.6
2021	18001.08	0.5
2022	18120.44	0.7
2023	18190.59	0.4
2024	18237.46	0.3
2025	18274.56	0.2
2026	18306.88	0.2
2027	18350.03	0.2
2028	18397.82	0.3
2029	18439.86	0.2
2030	18477.84	0.2
2031	18516.32	0.2
2032	18554.04	0.2
2033	18592.33	0.2
2034	18630.5	0.2
2035	18667.83	0.2
2036	18702.05	0.2
2037	18732.4	0.2
2038	18761.98	0.2
2039	18791.3	0.2
2040	18821.28	0.2
2041	18848.57	0.1
2042	18874.27	0.1
2043	18899.09	0.1
2044	18925.67	0.1
2045	18951.25	0.1
2046	18976.94	0.1

INDIANA MICHIGAN POWER COMPANY - MICHIGAN
COMMERCIAL CUSTOMERS
ACTUAL AND FORECAST

YEAR	CUSTOMERS	GROWTH RATE
2047	19001.59	0.1
2048	19025.47	0.1
2049	19050.16	0.1
2050	19076	0.1
2051	19102.4	0.1
2052	19129.38	0.1
2053	19156.93	0.1
2054	19185.07	0.1
2055	19213.79	0.1
2056	19243.1	0.2
2057	19273.01	0.2

INDIANA MICHIGAN POWER COMPANY - MICHIGAN
INDUSTRIAL CUSTOMERS
ENDOGENOUS VARIABLES

The MEANS Procedure

Variable	Label	Mean
YEAR	Year	2027.50
MONTH	Month	6.5000000
ci_imm	Industrial Customers	1018.05

INDIANA MICHIGAN POWER COMPANY - MICHIGAN
INDUSTRIAL CUSTOMERS
ENDOGENOUS VARIABLES

Obs	YEAR	MONTH	ci_imm
1	1998	1	1166
2	1998	2	1126
3	1998	3	1130
4	1998	4	1153
5	1998	5	1137
6	1998	6	1144
7	1998	7	1138
8	1998	8	1117
9	1998	9	1143
10	1998	10	1140
11	1998	11	1130
12	1998	12	1153
13	1999	1	1136
14	1999	2	1138
15	1999	3	1145
16	1999	4	1136
17	1999	5	1152
18	1999	6	1153
19	1999	7	1142
20	1999	8	1142
21	1999	9	1141
22	1999	10	1137
23	1999	11	1135
24	1999	12	1131
25	2000	1	1145
26	2000	2	1138
27	2000	3	1136
28	2000	4	1136
29	2000	5	1137
30	2000	6	1138
31	2000	7	1133
32	2000	8	1143
33	2000	9	1147
34	2000	10	1146
35	2000	11	1141
36	2000	12	1137
37	2001	1	1140
38	2001	2	1143
39	2001	3	1134
40	2001	4	1130
41	2001	5	1126
42	2001	6	1132
43	2001	7	1132
44	2001	8	1137
45	2001	9	1131
46	2001	10	1133
47	2001	11	1129
48	2001	12	1134
49	2002	1	1128
50	2002	2	1128

INDIANA MICHIGAN POWER COMPANY - MICHIGAN
INDUSTRIAL CUSTOMERS
ENDOGENOUS VARIABLES

Obs	YEAR	MONTH	ci_imm
51	2002	3	1126
52	2002	4	1140
53	2002	5	1125
54	2002	6	1128
55	2002	7	1125
56	2002	8	1131
57	2002	9	1127
58	2002	10	1124
59	2002	11	1122
60	2002	12	1119
61	2003	1	1136
62	2003	2	1126
63	2003	3	1121
64	2003	4	1112
65	2003	5	1105
66	2003	6	1114
67	2003	7	1130
68	2003	8	1122
69	2003	9	1109
70	2003	10	1110
71	2003	11	1108
72	2003	12	1109
73	2004	1	1107
74	2004	2	1108
75	2004	3	1112
76	2004	4	1110
77	2004	5	1113
78	2004	6	1111
79	2004	7	1110
80	2004	8	1104
81	2004	9	1097
82	2004	10	1100
83	2004	11	1092
84	2004	12	1092
85	2005	1	1099
86	2005	2	1080
87	2005	3	1099
88	2005	4	1096
89	2005	5	1089
90	2005	6	1087
91	2005	7	1078
92	2005	8	1087
93	2005	9	1079
94	2005	10	1078
95	2005	11	1068
96	2005	12	1072
97	2006	1	1081
98	2006	2	1073
99	2006	3	1079
100	2006	4	1066

INDIANA MICHIGAN POWER COMPANY - MICHIGAN
INDUSTRIAL CUSTOMERS
ENDOGENOUS VARIABLES

Obs	YEAR	MONTH	ci_imm
101	2006	5	1070
102	2006	6	1062
103	2006	7	1064
104	2006	8	1061
105	2006	9	1062
106	2006	10	1060
107	2006	11	1058
108	2006	12	1058
109	2007	1	1053
110	2007	2	1043
111	2007	3	1063
112	2007	4	1051
113	2007	5	1040
114	2007	6	1054
115	2007	7	1045
116	2007	8	1043
117	2007	9	1040
118	2007	10	1041
119	2007	11	1039
120	2007	12	1029
121	2008	1	1026
122	2008	2	1027
123	2008	3	1021
124	2008	4	1023
125	2008	5	1025
126	2008	6	1019
127	2008	7	1019
128	2008	8	1010
129	2008	9	1015
130	2008	10	1003
131	2008	11	999
132	2008	12	1014
133	2009	1	1019
134	2009	2	1018
135	2009	3	1010
136	2009	4	1007
137	2009	5	998
138	2009	6	1005
139	2009	7	1009
140	2009	8	1002
141	2009	9	1004
142	2009	10	995
143	2009	11	991
144	2009	12	985
145	2010	1	989
146	2010	2	984
147	2010	3	998
148	2010	4	982
149	2010	5	977
150	2010	6	985

INDIANA MICHIGAN POWER COMPANY - MICHIGAN
INDUSTRIAL CUSTOMERS
ENDOGENOUS VARIABLES

Obs	YEAR	MONTH	ci_imm
151	2010	7	978
152	2010	8	1005
153	2010	9	976
154	2010	10	989
155	2010	11	978
156	2010	12	972
157	2011	1	963
158	2011	2	953
159	2011	3	1043
160	2011	4	986
161	2011	5	986
162	2011	6	979
163	2011	7	979
164	2011	8	986
165	2011	9	988
166	2011	10	985
167	2011	11	981
168	2011	12	976
169	2012	1	998
170	2012	2	980
171	2012	3	978
172	2012	4	973
173	2012	5	969
174	2012	6	972
175	2012	7	965
176	2012	8	974
177	2012	9	980
178	2012	10	973
179	2012	11	968
180	2012	12	967
181	2013	1	980
182	2013	2	967
183	2013	3	972
184	2013	4	968
185	2013	5	967
186	2013	6	980
187	2013	7	971
188	2013	8	970
189	2013	9	969
190	2013	10	965
191	2013	11	967
192	2013	12	967
193	2014	1	969
194	2014	2	966
195	2014	3	969
196	2014	4	963
197	2014	5	965
198	2014	6	964
199	2014	7	971
200	2014	8	969

INDIANA MICHIGAN POWER COMPANY - MICHIGAN
INDUSTRIAL CUSTOMERS
ENDOGENOUS VARIABLES

Obs	YEAR	MONTH	ci_imm
201	2014	9	966
202	2014	10	962
203	2014	11	964
204	2014	12	945
205	2015	1	975
206	2015	2	957
207	2015	3	961
208	2015	4	953
209	2015	5	952
210	2015	6	957
211	2015	7	953
212	2015	8	949
213	2015	9	949
214	2015	10	947
215	2015	11	945
216	2015	12	942
217	2016	1	947
218	2016	2	941
219	2016	3	947
220	2016	4	930
221	2016	5	941
222	2016	6	941
223	2016	7	940
224	2016	8	941
225	2016	9	938
226	2016	10	939
227	2016	11	941
228	2016	12	942
229	2017	1	923
230	2017	2	938
231	2017	3	920
232	2017	4	912
233	2017	5	913
234	2017	6	911
235	2017	7	908
236	2017	8	906
237	2017	9	901
238	2017	10	902
239	2017	11	905
240	2017	12	900
241	2018	1	900
242	2018	2	899
243	2018	3	892
244	2018	4	927
245	2018	5	936
246	2018	6	886
247	2018	7	889
248	2018	8	887
249	2018	9	884
250	2018	10	887

INDIANA MICHIGAN POWER COMPANY - MICHIGAN
INDUSTRIAL CUSTOMERS
ENDOGENOUS VARIABLES

Obs	YEAR	MONTH	ci_imm
251	2018	11	890
252	2018	12	886
253	2019	1	883
254	2019	2	879
255	2019	3	886
256	2019	4	887
257	2019	5	871
258	2019	6	870
259	2019	7	873
260	2019	8	872
261	2019	9	866
262	2019	10	866
263	2019	11	864
264	2019	12	861
265	2020	1	856
266	2020	2	846
267	2020	3	847
268	2020	4	850
269	2020	5	846
270	2020	6	842
271	2020	7	843
272	2020	8	845
273	2020	9	842
274	2020	10	841
275	2020	11	832
276	2020	12	838
277	2021	1	.
278	2021	2	.
279	2021	3	.
280	2021	4	.
281	2021	5	.
282	2021	6	.
283	2021	7	.
284	2021	8	.
285	2021	9	.
286	2021	10	.
287	2021	11	.
288	2021	12	.
289	2022	1	.
290	2022	2	.
291	2022	3	.
292	2022	4	.
293	2022	5	.
294	2022	6	.
295	2022	7	.
296	2022	8	.
297	2022	9	.
298	2022	10	.
299	2022	11	.
300	2022	12	.

INDIANA MICHIGAN POWER COMPANY - MICHIGAN
INDUSTRIAL CUSTOMERS
ENDOGENOUS VARIABLES

Obs	YEAR	MONTH	ci_imm
301	2023	1	.
302	2023	2	.
303	2023	3	.
304	2023	4	.
305	2023	5	.
306	2023	6	.
307	2023	7	.
308	2023	8	.
309	2023	9	.
310	2023	10	.
311	2023	11	.
312	2023	12	.
313	2024	1	.
314	2024	2	.
315	2024	3	.
316	2024	4	.
317	2024	5	.
318	2024	6	.
319	2024	7	.
320	2024	8	.
321	2024	9	.
322	2024	10	.
323	2024	11	.
324	2024	12	.
325	2025	1	.
326	2025	2	.
327	2025	3	.
328	2025	4	.
329	2025	5	.
330	2025	6	.
331	2025	7	.
332	2025	8	.
333	2025	9	.
334	2025	10	.
335	2025	11	.
336	2025	12	.
337	2026	1	.
338	2026	2	.
339	2026	3	.
340	2026	4	.
341	2026	5	.
342	2026	6	.
343	2026	7	.
344	2026	8	.
345	2026	9	.
346	2026	10	.
347	2026	11	.
348	2026	12	.
349	2027	1	.
350	2027	2	.

INDIANA MICHIGAN POWER COMPANY - MICHIGAN
INDUSTRIAL CUSTOMERS
ENDOGENOUS VARIABLES

Obs	YEAR	MONTH	ci_imm
351	2027	3	.
352	2027	4	.
353	2027	5	.
354	2027	6	.
355	2027	7	.
356	2027	8	.
357	2027	9	.
358	2027	10	.
359	2027	11	.
360	2027	12	.
361	2028	1	.
362	2028	2	.
363	2028	3	.
364	2028	4	.
365	2028	5	.
366	2028	6	.
367	2028	7	.
368	2028	8	.
369	2028	9	.
370	2028	10	.
371	2028	11	.
372	2028	12	.
373	2029	1	.
374	2029	2	.
375	2029	3	.
376	2029	4	.
377	2029	5	.
378	2029	6	.
379	2029	7	.
380	2029	8	.
381	2029	9	.
382	2029	10	.
383	2029	11	.
384	2029	12	.
385	2030	1	.
386	2030	2	.
387	2030	3	.
388	2030	4	.
389	2030	5	.
390	2030	6	.
391	2030	7	.
392	2030	8	.
393	2030	9	.
394	2030	10	.
395	2030	11	.
396	2030	12	.
397	2031	1	.
398	2031	2	.
399	2031	3	.
400	2031	4	.

INDIANA MICHIGAN POWER COMPANY - MICHIGAN
INDUSTRIAL CUSTOMERS
ENDOGENOUS VARIABLES

Obs	YEAR	MONTH	ci_imm
401	2031	5	.
402	2031	6	.
403	2031	7	.
404	2031	8	.
405	2031	9	.
406	2031	10	.
407	2031	11	.
408	2031	12	.
409	2032	1	.
410	2032	2	.
411	2032	3	.
412	2032	4	.
413	2032	5	.
414	2032	6	.
415	2032	7	.
416	2032	8	.
417	2032	9	.
418	2032	10	.
419	2032	11	.
420	2032	12	.
421	2033	1	.
422	2033	2	.
423	2033	3	.
424	2033	4	.
425	2033	5	.
426	2033	6	.
427	2033	7	.
428	2033	8	.
429	2033	9	.
430	2033	10	.
431	2033	11	.
432	2033	12	.
433	2034	1	.
434	2034	2	.
435	2034	3	.
436	2034	4	.
437	2034	5	.
438	2034	6	.
439	2034	7	.
440	2034	8	.
441	2034	9	.
442	2034	10	.
443	2034	11	.
444	2034	12	.
445	2035	1	.
446	2035	2	.
447	2035	3	.
448	2035	4	.
449	2035	5	.
450	2035	6	.

INDIANA MICHIGAN POWER COMPANY - MICHIGAN
INDUSTRIAL CUSTOMERS
ENDOGENOUS VARIABLES

Obs	YEAR	MONTH	ci_imm
451	2035	7	.
452	2035	8	.
453	2035	9	.
454	2035	10	.
455	2035	11	.
456	2035	12	.
457	2036	1	.
458	2036	2	.
459	2036	3	.
460	2036	4	.
461	2036	5	.
462	2036	6	.
463	2036	7	.
464	2036	8	.
465	2036	9	.
466	2036	10	.
467	2036	11	.
468	2036	12	.
469	2037	1	.
470	2037	2	.
471	2037	3	.
472	2037	4	.
473	2037	5	.
474	2037	6	.
475	2037	7	.
476	2037	8	.
477	2037	9	.
478	2037	10	.
479	2037	11	.
480	2037	12	.
481	2038	1	.
482	2038	2	.
483	2038	3	.
484	2038	4	.
485	2038	5	.
486	2038	6	.
487	2038	7	.
488	2038	8	.
489	2038	9	.
490	2038	10	.
491	2038	11	.
492	2038	12	.
493	2039	1	.
494	2039	2	.
495	2039	3	.
496	2039	4	.
497	2039	5	.
498	2039	6	.
499	2039	7	.
500	2039	8	.

INDIANA MICHIGAN POWER COMPANY - MICHIGAN
INDUSTRIAL CUSTOMERS
ENDOGENOUS VARIABLES

Obs	YEAR	MONTH	ci_imm
501	2039	9	.
502	2039	10	.
503	2039	11	.
504	2039	12	.
505	2040	1	.
506	2040	2	.
507	2040	3	.
508	2040	4	.
509	2040	5	.
510	2040	6	.
511	2040	7	.
512	2040	8	.
513	2040	9	.
514	2040	10	.
515	2040	11	.
516	2040	12	.
517	2041	1	.
518	2041	2	.
519	2041	3	.
520	2041	4	.
521	2041	5	.
522	2041	6	.
523	2041	7	.
524	2041	8	.
525	2041	9	.
526	2041	10	.
527	2041	11	.
528	2041	12	.
529	2042	1	.
530	2042	2	.
531	2042	3	.
532	2042	4	.
533	2042	5	.
534	2042	6	.
535	2042	7	.
536	2042	8	.
537	2042	9	.
538	2042	10	.
539	2042	11	.
540	2042	12	.
541	2043	1	.
542	2043	2	.
543	2043	3	.
544	2043	4	.
545	2043	5	.
546	2043	6	.
547	2043	7	.
548	2043	8	.
549	2043	9	.
550	2043	10	.

INDIANA MICHIGAN POWER COMPANY - MICHIGAN
INDUSTRIAL CUSTOMERS
ENDOGENOUS VARIABLES

Obs	YEAR	MONTH	ci_imm
551	2043	11	.
552	2043	12	.
553	2044	1	.
554	2044	2	.
555	2044	3	.
556	2044	4	.
557	2044	5	.
558	2044	6	.
559	2044	7	.
560	2044	8	.
561	2044	9	.
562	2044	10	.
563	2044	11	.
564	2044	12	.
565	2045	1	.
566	2045	2	.
567	2045	3	.
568	2045	4	.
569	2045	5	.
570	2045	6	.
571	2045	7	.
572	2045	8	.
573	2045	9	.
574	2045	10	.
575	2045	11	.
576	2045	12	.
577	2046	1	.
578	2046	2	.
579	2046	3	.
580	2046	4	.
581	2046	5	.
582	2046	6	.
583	2046	7	.
584	2046	8	.
585	2046	9	.
586	2046	10	.
587	2046	11	.
588	2046	12	.
589	2047	1	.
590	2047	2	.
591	2047	3	.
592	2047	4	.
593	2047	5	.
594	2047	6	.
595	2047	7	.
596	2047	8	.
597	2047	9	.
598	2047	10	.
599	2047	11	.
600	2047	12	.

INDIANA MICHIGAN POWER COMPANY - MICHIGAN
INDUSTRIAL CUSTOMERS
ENDOGENOUS VARIABLES

Obs	YEAR	MONTH	ci_imm
601	2048	1	.
602	2048	2	.
603	2048	3	.
604	2048	4	.
605	2048	5	.
606	2048	6	.
607	2048	7	.
608	2048	8	.
609	2048	9	.
610	2048	10	.
611	2048	11	.
612	2048	12	.
613	2049	1	.
614	2049	2	.
615	2049	3	.
616	2049	4	.
617	2049	5	.
618	2049	6	.
619	2049	7	.
620	2049	8	.
621	2049	9	.
622	2049	10	.
623	2049	11	.
624	2049	12	.
625	2050	1	.
626	2050	2	.
627	2050	3	.
628	2050	4	.
629	2050	5	.
630	2050	6	.
631	2050	7	.
632	2050	8	.
633	2050	9	.
634	2050	10	.
635	2050	11	.
636	2050	12	.
637	2051	1	.
638	2051	2	.
639	2051	3	.
640	2051	4	.
641	2051	5	.
642	2051	6	.
643	2051	7	.
644	2051	8	.
645	2051	9	.
646	2051	10	.
647	2051	11	.
648	2051	12	.
649	2052	1	.
650	2052	2	.

INDIANA MICHIGAN POWER COMPANY - MICHIGAN
INDUSTRIAL CUSTOMERS
ENDOGENOUS VARIABLES

Obs	YEAR	MONTH	ci_imm
651	2052	3	.
652	2052	4	.
653	2052	5	.
654	2052	6	.
655	2052	7	.
656	2052	8	.
657	2052	9	.
658	2052	10	.
659	2052	11	.
660	2052	12	.
661	2053	1	.
662	2053	2	.
663	2053	3	.
664	2053	4	.
665	2053	5	.
666	2053	6	.
667	2053	7	.
668	2053	8	.
669	2053	9	.
670	2053	10	.
671	2053	11	.
672	2053	12	.
673	2054	1	.
674	2054	2	.
675	2054	3	.
676	2054	4	.
677	2054	5	.
678	2054	6	.
679	2054	7	.
680	2054	8	.
681	2054	9	.
682	2054	10	.
683	2054	11	.
684	2054	12	.
685	2055	1	.
686	2055	2	.
687	2055	3	.
688	2055	4	.
689	2055	5	.
690	2055	6	.
691	2055	7	.
692	2055	8	.
693	2055	9	.
694	2055	10	.
695	2055	11	.
696	2055	12	.
697	2056	1	.
698	2056	2	.
699	2056	3	.
700	2056	4	.

INDIANA MICHIGAN POWER COMPANY - MICHIGAN
INDUSTRIAL CUSTOMERS
ENDOGENOUS VARIABLES

Obs	YEAR	MONTH	ci_imm
701	2056	5	.
702	2056	6	.
703	2056	7	.
704	2056	8	.
705	2056	9	.
706	2056	10	.
707	2056	11	.
708	2056	12	.
709	2057	1	.
710	2057	2	.
711	2057	3	.
712	2057	4	.
713	2057	5	.
714	2057	6	.
715	2057	7	.
716	2057	8	.
717	2057	9	.
718	2057	10	.
719	2057	11	.
720	2057	12	.

INDIANA MICHIGAN POWER COMPANY - MICHIGAN
INDUSTRIAL CUSTOMERS
EXOGENOUS VARIABLES

The MEANS Procedure

Variable	Label	Mean
YEAR	Year	2027.50
MONTH	Month	6.5000000
time	Trend	2027.96
d1	Binary Variable - January	0.0833333
d2	Binary Variable - February	0.0833333
d3	Binary Variable - March	0.0833333
d4	Binary Variable - April	0.0833333
d5	Binary Variable - May	0.0833333
d6	Binary Variable - June	0.0833333
d7	Binary Variable - July	0.0833333
d8	Binary Varaible - August	0.0833333
d9	Binary Variable - September	0.0833333
d10	Binary Variable - October	0.0833333
d11	Binary Variable - November	0.0833333
sep12on	Binary Variable - September 2012 On	0.7555556
feb15on	Binary Variable - February 2015 On	0.7152778
may18on	Binary Variable - May 2018 On	0.6611111
may19on	Binary Variable - May 2019 On	0.6444444
jan20on	Binary Variable - January 2020 On	0.6333333
d14on	Binary Variable - 2014 On	0.7333333
d16on	Binary Variable - 2016 On	0.7000000

Obs	YEAR	MONTH	time	d1	d2	d3	d4	d5	d6	d7	d8	d9	d10	d11	sep12on	feb15on	may18on	may19on	jan20on	d14on	d16on
1	1998	1	1998.00	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	1998	2	1998.08	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	1998	3	1998.17	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	1998	4	1998.25	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	1998	5	1998.33	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
6	1998	6	1998.42	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
7	1998	7	1998.50	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
8	1998	8	1998.58	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
9	1998	9	1998.67	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
10	1998	10	1998.75	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
11	1998	11	1998.83	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
12	1998	12	1998.92	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13	1999	1	1999.00	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14	1999	2	1999.08	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15	1999	3	1999.17	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16	1999	4	1999.25	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17	1999	5	1999.33	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
18	1999	6	1999.42	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
19	1999	7	1999.50	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
20	1999	8	1999.58	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
21	1999	9	1999.67	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
22	1999	10	1999.75	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
23	1999	11	1999.83	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
24	1999	12	1999.92	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25	2000	1	2000.00	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
26	2000	2	2000.08	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27	2000	3	2000.17	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
28	2000	4	2000.25	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29	2000	5	2000.33	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
30	2000	6	2000.42	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
31	2000	7	2000.50	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
32	2000	8	2000.58	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
33	2000	9	2000.67	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
34	2000	10	2000.75	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
35	2000	11	2000.83	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
36	2000	12	2000.92	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
37	2001	1	2001.00	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
38	2001	2	2001.08	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
39	2001	3	2001.17	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
40	2001	4	2001.25	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
41	2001	5	2001.33	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
42	2001	6	2001.42	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
43	2001	7	2001.50	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
44	2001	8	2001.58	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0

Obs	YEAR	MONTH	time	d1	d2	d3	d4	d5	d6	d7	d8	d9	d10	d11	sep12on	feb15on	may18on	may19on	jan20on	d14on	d16on
45	2001	9	2001.67	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
46	2001	10	2001.75	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
47	2001	11	2001.83	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
48	2001	12	2001.92	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
49	2002	1	2002.00	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
50	2002	2	2002.08	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
51	2002	3	2002.17	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
52	2002	4	2002.25	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
53	2002	5	2002.33	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
54	2002	6	2002.42	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
55	2002	7	2002.50	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
56	2002	8	2002.58	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
57	2002	9	2002.67	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
58	2002	10	2002.75	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
59	2002	11	2002.83	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
60	2002	12	2002.92	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
61	2003	1	2003.00	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
62	2003	2	2003.08	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
63	2003	3	2003.17	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
64	2003	4	2003.25	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
65	2003	5	2003.33	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
66	2003	6	2003.42	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
67	2003	7	2003.50	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
68	2003	8	2003.58	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
69	2003	9	2003.67	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
70	2003	10	2003.75	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
71	2003	11	2003.83	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
72	2003	12	2003.92	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
73	2004	1	2004.00	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
74	2004	2	2004.08	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
75	2004	3	2004.17	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
76	2004	4	2004.25	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
77	2004	5	2004.33	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
78	2004	6	2004.42	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
79	2004	7	2004.50	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
80	2004	8	2004.58	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
81	2004	9	2004.67	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
82	2004	10	2004.75	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
83	2004	11	2004.83	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
84	2004	12	2004.92	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
85	2005	1	2005.00	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
86	2005	2	2005.08	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
87	2005	3	2005.17	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
88	2005	4	2005.25	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Obs	YEAR	MONTH	time	d1	d2	d3	d4	d5	d6	d7	d8	d9	d10	d11	sep12on	feb15on	may18on	may19on	jan20on	d14on	d16on
89	2005	5	2005.33	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
90	2005	6	2005.42	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
91	2005	7	2005.50	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
92	2005	8	2005.58	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
93	2005	9	2005.67	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
94	2005	10	2005.75	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
95	2005	11	2005.83	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
96	2005	12	2005.92	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
97	2006	1	2006.00	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
98	2006	2	2006.08	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
99	2006	3	2006.17	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
100	2006	4	2006.25	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
101	2006	5	2006.33	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
102	2006	6	2006.42	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
103	2006	7	2006.50	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
104	2006	8	2006.58	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
105	2006	9	2006.67	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
106	2006	10	2006.75	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
107	2006	11	2006.83	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
108	2006	12	2006.92	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
109	2007	1	2007.00	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
110	2007	2	2007.08	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
111	2007	3	2007.17	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
112	2007	4	2007.25	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
113	2007	5	2007.33	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
114	2007	6	2007.42	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
115	2007	7	2007.50	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
116	2007	8	2007.58	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
117	2007	9	2007.67	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
118	2007	10	2007.75	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
119	2007	11	2007.83	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
120	2007	12	2007.92	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
121	2008	1	2008.00	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
122	2008	2	2008.08	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
123	2008	3	2008.17	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
124	2008	4	2008.25	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
125	2008	5	2008.33	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
126	2008	6	2008.42	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
127	2008	7	2008.50	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
128	2008	8	2008.58	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
129	2008	9	2008.67	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
130	2008	10	2008.75	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
131	2008	11	2008.83	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
132	2008	12	2008.92	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Obs	YEAR	MONTH	time	d1	d2	d3	d4	d5	d6	d7	d8	d9	d10	d11	sep12on	feb15on	may18on	may19on	jan20on	d14on	d16on
133	2009	1	2009.00	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
134	2009	2	2009.08	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
135	2009	3	2009.17	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
136	2009	4	2009.25	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
137	2009	5	2009.33	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
138	2009	6	2009.42	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
139	2009	7	2009.50	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
140	2009	8	2009.58	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
141	2009	9	2009.67	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
142	2009	10	2009.75	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
143	2009	11	2009.83	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
144	2009	12	2009.92	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
145	2010	1	2010.00	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
146	2010	2	2010.08	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
147	2010	3	2010.17	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
148	2010	4	2010.25	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
149	2010	5	2010.33	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
150	2010	6	2010.42	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
151	2010	7	2010.50	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
152	2010	8	2010.58	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
153	2010	9	2010.67	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
154	2010	10	2010.75	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
155	2010	11	2010.83	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
156	2010	12	2010.92	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
157	2011	1	2011.00	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
158	2011	2	2011.08	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
159	2011	3	2011.17	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
160	2011	4	2011.25	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
161	2011	5	2011.33	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
162	2011	6	2011.42	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
163	2011	7	2011.50	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
164	2011	8	2011.58	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
165	2011	9	2011.67	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
166	2011	10	2011.75	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
167	2011	11	2011.83	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
168	2011	12	2011.92	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
169	2012	1	2012.00	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
170	2012	2	2012.08	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
171	2012	3	2012.17	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
172	2012	4	2012.25	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
173	2012	5	2012.33	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
174	2012	6	2012.42	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
175	2012	7	2012.50	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
176	2012	8	2012.58	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0

Obs	YEAR	MONTH	time	d1	d2	d3	d4	d5	d6	d7	d8	d9	d10	d11	sep12on	feb15on	may18on	may19on	jan20on	d14on	d16on
177	2012	9	2012.67	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0
178	2012	10	2012.75	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0
179	2012	11	2012.83	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0
180	2012	12	2012.92	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
181	2013	1	2013.00	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
182	2013	2	2013.08	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
183	2013	3	2013.17	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
184	2013	4	2013.25	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0
185	2013	5	2013.33	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0
186	2013	6	2013.42	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0
187	2013	7	2013.50	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0
188	2013	8	2013.58	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0
189	2013	9	2013.67	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0
190	2013	10	2013.75	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0
191	2013	11	2013.83	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0
192	2013	12	2013.92	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
193	2014	1	2014.00	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0
194	2014	2	2014.08	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0
195	2014	3	2014.17	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0
196	2014	4	2014.25	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	1	0
197	2014	5	2014.33	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	1	0
198	2014	6	2014.42	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	1	0
199	2014	7	2014.50	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	1	0
200	2014	8	2014.58	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	1	0
201	2014	9	2014.67	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	1	0
202	2014	10	2014.75	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1	0
203	2014	11	2014.83	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	1	0
204	2014	12	2014.92	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0
205	2015	1	2015.00	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0
206	2015	2	2015.08	0	1	0	0	0	0	0	0	0	0	0	1	1	0	0	0	1	0
207	2015	3	2015.17	0	0	1	0	0	0	0	0	0	0	0	1	1	0	0	0	1	0
208	2015	4	2015.25	0	0	0	1	0	0	0	0	0	0	0	1	1	0	0	0	1	0
209	2015	5	2015.33	0	0	0	0	1	0	0	0	0	0	0	1	1	0	0	0	1	0
210	2015	6	2015.42	0	0	0	0	0	1	0	0	0	0	0	1	1	0	0	0	1	0
211	2015	7	2015.50	0	0	0	0	0	0	1	0	0	0	0	1	1	0	0	0	1	0
212	2015	8	2015.58	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0	0	1	0
213	2015	9	2015.67	0	0	0	0	0	0	0	0	1	0	0	1	1	0	0	0	1	0
214	2015	10	2015.75	0	0	0	0	0	0	0	0	0	1	0	1	1	0	0	0	1	0
215	2015	11	2015.83	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	1	0
216	2015	12	2015.92	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	1	0
217	2016	1	2016.00	1	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	1	1
218	2016	2	2016.08	0	1	0	0	0	0	0	0	0	0	0	1	1	0	0	0	1	1
219	2016	3	2016.17	0	0	1	0	0	0	0	0	0	0	0	1	1	0	0	0	1	1
220	2016	4	2016.25	0	0	0	1	0	0	0	0	0	0	0	1	1	0	0	0	1	1

Obs	YEAR	MONTH	time	d1	d2	d3	d4	d5	d6	d7	d8	d9	d10	d11	sep12on	feb15on	may18on	may19on	jan20on	d14on	d16on
221	2016	5	2016.33	0	0	0	0	1	0	0	0	0	0	0	1	1	0	0	0	1	1
222	2016	6	2016.42	0	0	0	0	0	1	0	0	0	0	0	1	1	0	0	0	1	1
223	2016	7	2016.50	0	0	0	0	0	0	1	0	0	0	0	1	1	0	0	0	1	1
224	2016	8	2016.58	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0	0	1	1
225	2016	9	2016.67	0	0	0	0	0	0	0	0	1	0	0	1	1	0	0	0	1	1
226	2016	10	2016.75	0	0	0	0	0	0	0	0	0	1	0	1	1	0	0	0	1	1
227	2016	11	2016.83	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	1	1
228	2016	12	2016.92	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	1	1
229	2017	1	2017.00	1	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	1	1
230	2017	2	2017.08	0	1	0	0	0	0	0	0	0	0	0	1	1	0	0	0	1	1
231	2017	3	2017.17	0	0	1	0	0	0	0	0	0	0	0	1	1	0	0	0	1	1
232	2017	4	2017.25	0	0	0	1	0	0	0	0	0	0	0	1	1	0	0	0	1	1
233	2017	5	2017.33	0	0	0	0	1	0	0	0	0	0	0	1	1	0	0	0	1	1
234	2017	6	2017.42	0	0	0	0	0	1	0	0	0	0	0	1	1	0	0	0	1	1
235	2017	7	2017.50	0	0	0	0	0	0	1	0	0	0	0	1	1	0	0	0	1	1
236	2017	8	2017.58	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0	0	1	1
237	2017	9	2017.67	0	0	0	0	0	0	0	0	1	0	0	1	1	0	0	0	1	1
238	2017	10	2017.75	0	0	0	0	0	0	0	0	0	1	0	1	1	0	0	0	1	1
239	2017	11	2017.83	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	1	1
240	2017	12	2017.92	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	1	1
241	2018	1	2018.00	1	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	1	1
242	2018	2	2018.08	0	1	0	0	0	0	0	0	0	0	0	1	1	0	0	0	1	1
243	2018	3	2018.17	0	0	1	0	0	0	0	0	0	0	0	1	1	0	0	0	1	1
244	2018	4	2018.25	0	0	0	1	0	0	0	0	0	0	0	1	1	0	0	0	1	1
245	2018	5	2018.33	0	0	0	0	1	0	0	0	0	0	0	1	1	1	0	0	1	1
246	2018	6	2018.42	0	0	0	0	0	1	0	0	0	0	0	1	1	1	0	0	1	1
247	2018	7	2018.50	0	0	0	0	0	0	1	0	0	0	0	1	1	1	0	0	1	1
248	2018	8	2018.58	0	0	0	0	0	0	0	1	0	0	0	1	1	1	0	0	1	1
249	2018	9	2018.67	0	0	0	0	0	0	0	0	1	0	0	1	1	1	0	0	1	1
250	2018	10	2018.75	0	0	0	0	0	0	0	0	0	1	0	1	1	1	0	0	1	1
251	2018	11	2018.83	0	0	0	0	0	0	0	0	0	0	1	1	1	1	0	0	1	1
252	2018	12	2018.92	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	1	1
253	2019	1	2019.00	1	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	1	1
254	2019	2	2019.08	0	1	0	0	0	0	0	0	0	0	0	1	1	1	0	0	1	1
255	2019	3	2019.17	0	0	1	0	0	0	0	0	0	0	0	1	1	1	0	0	1	1
256	2019	4	2019.25	0	0	0	1	0	0	0	0	0	0	0	1	1	1	0	0	1	1
257	2019	5	2019.33	0	0	0	0	1	0	0	0	0	0	0	1	1	1	1	0	1	1
258	2019	6	2019.42	0	0	0	0	0	1	0	0	0	0	0	1	1	1	1	0	1	1
259	2019	7	2019.50	0	0	0	0	0	0	1	0	0	0	0	1	1	1	1	0	1	1
260	2019	8	2019.58	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	0	1	1
261	2019	9	2019.67	0	0	0	0	0	0	0	0	1	0	0	1	1	1	1	0	1	1
262	2019	10	2019.75	0	0	0	0	0	0	0	0	0	1	0	1	1	1	1	0	1	1
263	2019	11	2019.83	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	0	1	1
264	2019	12	2019.92	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	0	1	1

Obs	YEAR	MONTH	time	d1	d2	d3	d4	d5	d6	d7	d8	d9	d10	d11	sep12on	feb15on	may18on	may19on	jan20on	d14on	d16on
265	2020	1	2020.00	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
266	2020	2	2020.08	0	1	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
267	2020	3	2020.17	0	0	1	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
268	2020	4	2020.25	0	0	0	1	0	0	0	0	0	0	0	1	1	1	1	1	1	1
269	2020	5	2020.33	0	0	0	0	1	0	0	0	0	0	0	1	1	1	1	1	1	1
270	2020	6	2020.42	0	0	0	0	0	1	0	0	0	0	0	1	1	1	1	1	1	1
271	2020	7	2020.50	0	0	0	0	0	0	1	0	0	0	0	1	1	1	1	1	1	1
272	2020	8	2020.58	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	1	1
273	2020	9	2020.67	0	0	0	0	0	0	0	0	1	0	0	1	1	1	1	1	1	1
274	2020	10	2020.75	0	0	0	0	0	0	0	0	0	1	0	1	1	1	1	1	1	1
275	2020	11	2020.83	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1
276	2020	12	2020.92	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
277	2021	1	2021.00	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
278	2021	2	2021.08	0	1	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
279	2021	3	2021.17	0	0	1	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
280	2021	4	2021.25	0	0	0	1	0	0	0	0	0	0	0	1	1	1	1	1	1	1
281	2021	5	2021.33	0	0	0	0	1	0	0	0	0	0	0	1	1	1	1	1	1	1
282	2021	6	2021.42	0	0	0	0	0	1	0	0	0	0	0	1	1	1	1	1	1	1
283	2021	7	2021.50	0	0	0	0	0	0	1	0	0	0	0	1	1	1	1	1	1	1
284	2021	8	2021.58	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	1	1
285	2021	9	2021.67	0	0	0	0	0	0	0	0	1	0	0	1	1	1	1	1	1	1
286	2021	10	2021.75	0	0	0	0	0	0	0	0	0	1	0	1	1	1	1	1	1	1
287	2021	11	2021.83	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1
288	2021	12	2021.92	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
289	2022	1	2022.00	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
290	2022	2	2022.08	0	1	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
291	2022	3	2022.17	0	0	1	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
292	2022	4	2022.25	0	0	0	1	0	0	0	0	0	0	0	1	1	1	1	1	1	1
293	2022	5	2022.33	0	0	0	0	1	0	0	0	0	0	0	1	1	1	1	1	1	1
294	2022	6	2022.42	0	0	0	0	0	1	0	0	0	0	0	1	1	1	1	1	1	1
295	2022	7	2022.50	0	0	0	0	0	0	1	0	0	0	0	1	1	1	1	1	1	1
296	2022	8	2022.58	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	1	1
297	2022	9	2022.67	0	0	0	0	0	0	0	0	1	0	0	1	1	1	1	1	1	1
298	2022	10	2022.75	0	0	0	0	0	0	0	0	0	1	0	1	1	1	1	1	1	1
299	2022	11	2022.83	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1
300	2022	12	2022.92	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
301	2023	1	2023.00	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
302	2023	2	2023.08	0	1	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
303	2023	3	2023.17	0	0	1	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
304	2023	4	2023.25	0	0	0	1	0	0	0	0	0	0	0	1	1	1	1	1	1	1
305	2023	5	2023.33	0	0	0	0	1	0	0	0	0	0	0	1	1	1	1	1	1	1
306	2023	6	2023.42	0	0	0	0	0	1	0	0	0	0	0	1	1	1	1	1	1	1
307	2023	7	2023.50	0	0	0	0	0	0	1	0	0	0	0	1	1	1	1	1	1	1
308	2023	8	2023.58	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	1	1

Obs	YEAR	MONTH	time	d1	d2	d3	d4	d5	d6	d7	d8	d9	d10	d11	sep12on	feb15on	may18on	may19on	jan20on	d14on	d16on
309	2023	9	2023.67	0	0	0	0	0	0	0	0	1	0	0	1	1	1	1	1	1	1
310	2023	10	2023.75	0	0	0	0	0	0	0	0	0	1	0	1	1	1	1	1	1	1
311	2023	11	2023.83	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1
312	2023	12	2023.92	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
313	2024	1	2024.00	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
314	2024	2	2024.08	0	1	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
315	2024	3	2024.17	0	0	1	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
316	2024	4	2024.25	0	0	0	1	0	0	0	0	0	0	0	1	1	1	1	1	1	1
317	2024	5	2024.33	0	0	0	0	1	0	0	0	0	0	0	1	1	1	1	1	1	1
318	2024	6	2024.42	0	0	0	0	0	1	0	0	0	0	0	1	1	1	1	1	1	1
319	2024	7	2024.50	0	0	0	0	0	0	1	0	0	0	0	1	1	1	1	1	1	1
320	2024	8	2024.58	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	1	1
321	2024	9	2024.67	0	0	0	0	0	0	0	0	1	0	0	1	1	1	1	1	1	1
322	2024	10	2024.75	0	0	0	0	0	0	0	0	0	1	0	1	1	1	1	1	1	1
323	2024	11	2024.83	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1
324	2024	12	2024.92	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
325	2025	1	2025.00	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
326	2025	2	2025.08	0	1	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
327	2025	3	2025.17	0	0	1	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
328	2025	4	2025.25	0	0	0	1	0	0	0	0	0	0	0	1	1	1	1	1	1	1
329	2025	5	2025.33	0	0	0	0	1	0	0	0	0	0	0	1	1	1	1	1	1	1
330	2025	6	2025.42	0	0	0	0	0	1	0	0	0	0	0	1	1	1	1	1	1	1
331	2025	7	2025.50	0	0	0	0	0	0	1	0	0	0	0	1	1	1	1	1	1	1
332	2025	8	2025.58	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	1	1
333	2025	9	2025.67	0	0	0	0	0	0	0	0	1	0	0	1	1	1	1	1	1	1
334	2025	10	2025.75	0	0	0	0	0	0	0	0	0	1	0	1	1	1	1	1	1	1
335	2025	11	2025.83	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1
336	2025	12	2025.92	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
337	2026	1	2026.00	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
338	2026	2	2026.08	0	1	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
339	2026	3	2026.17	0	0	1	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
340	2026	4	2026.25	0	0	0	1	0	0	0	0	0	0	0	1	1	1	1	1	1	1
341	2026	5	2026.33	0	0	0	0	1	0	0	0	0	0	0	1	1	1	1	1	1	1
342	2026	6	2026.42	0	0	0	0	0	1	0	0	0	0	0	1	1	1	1	1	1	1
343	2026	7	2026.50	0	0	0	0	0	0	1	0	0	0	0	1	1	1	1	1	1	1
344	2026	8	2026.58	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	1	1
345	2026	9	2026.67	0	0	0	0	0	0	0	0	1	0	0	1	1	1	1	1	1	1
346	2026	10	2026.75	0	0	0	0	0	0	0	0	0	1	0	1	1	1	1	1	1	1
347	2026	11	2026.83	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1
348	2026	12	2026.92	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
349	2027	1	2027.00	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
350	2027	2	2027.08	0	1	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
351	2027	3	2027.17	0	0	1	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
352	2027	4	2027.25	0	0	0	1	0	0	0	0	0	0	0	1	1	1	1	1	1	1

Obs	YEAR	MONTH	time	d1	d2	d3	d4	d5	d6	d7	d8	d9	d10	d11	sep12on	feb15on	may18on	may19on	jan20on	d14on	d16on
353	2027	5	2027.33	0	0	0	0	1	0	0	0	0	0	0	1	1	1	1	1	1	1
354	2027	6	2027.42	0	0	0	0	0	1	0	0	0	0	0	1	1	1	1	1	1	1
355	2027	7	2027.50	0	0	0	0	0	0	1	0	0	0	0	1	1	1	1	1	1	1
356	2027	8	2027.58	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	1	1
357	2027	9	2027.67	0	0	0	0	0	0	0	0	1	0	0	1	1	1	1	1	1	1
358	2027	10	2027.75	0	0	0	0	0	0	0	0	0	1	0	1	1	1	1	1	1	1
359	2027	11	2027.83	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1
360	2027	12	2027.92	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
361	2028	1	2028.00	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
362	2028	2	2028.08	0	1	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
363	2028	3	2028.17	0	0	1	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
364	2028	4	2028.25	0	0	0	1	0	0	0	0	0	0	0	1	1	1	1	1	1	1
365	2028	5	2028.33	0	0	0	0	1	0	0	0	0	0	0	1	1	1	1	1	1	1
366	2028	6	2028.42	0	0	0	0	0	1	0	0	0	0	0	1	1	1	1	1	1	1
367	2028	7	2028.50	0	0	0	0	0	0	1	0	0	0	0	1	1	1	1	1	1	1
368	2028	8	2028.58	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	1	1
369	2028	9	2028.67	0	0	0	0	0	0	0	0	1	0	0	1	1	1	1	1	1	1
370	2028	10	2028.75	0	0	0	0	0	0	0	0	0	1	0	1	1	1	1	1	1	1
371	2028	11	2028.83	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1
372	2028	12	2028.92	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
373	2029	1	2029.00	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
374	2029	2	2029.08	0	1	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
375	2029	3	2029.17	0	0	1	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
376	2029	4	2029.25	0	0	0	1	0	0	0	0	0	0	0	1	1	1	1	1	1	1
377	2029	5	2029.33	0	0	0	0	1	0	0	0	0	0	0	1	1	1	1	1	1	1
378	2029	6	2029.42	0	0	0	0	0	1	0	0	0	0	0	1	1	1	1	1	1	1
379	2029	7	2029.50	0	0	0	0	0	0	1	0	0	0	0	1	1	1	1	1	1	1
380	2029	8	2029.58	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	1	1
381	2029	9	2029.67	0	0	0	0	0	0	0	0	1	0	0	1	1	1	1	1	1	1
382	2029	10	2029.75	0	0	0	0	0	0	0	0	0	1	0	1	1	1	1	1	1	1
383	2029	11	2029.83	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1
384	2029	12	2029.92	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
385	2030	1	2030.00	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
386	2030	2	2030.08	0	1	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
387	2030	3	2030.17	0	0	1	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
388	2030	4	2030.25	0	0	0	1	0	0	0	0	0	0	0	1	1	1	1	1	1	1
389	2030	5	2030.33	0	0	0	0	1	0	0	0	0	0	0	1	1	1	1	1	1	1
390	2030	6	2030.42	0	0	0	0	0	1	0	0	0	0	0	1	1	1	1	1	1	1
391	2030	7	2030.50	0	0	0	0	0	0	1	0	0	0	0	1	1	1	1	1	1	1
392	2030	8	2030.58	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	1	1
393	2030	9	2030.67	0	0	0	0	0	0	0	0	1	0	0	1	1	1	1	1	1	1
394	2030	10	2030.75	0	0	0	0	0	0	0	0	0	1	0	1	1	1	1	1	1	1
395	2030	11	2030.83	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1
396	2030	12	2030.92	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1

Obs	YEAR	MONTH	time	d1	d2	d3	d4	d5	d6	d7	d8	d9	d10	d11	sep12on	feb15on	may18on	may19on	jan20on	d14on	d16on
397	2031	1	2031.00	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
398	2031	2	2031.08	0	1	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
399	2031	3	2031.17	0	0	1	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
400	2031	4	2031.25	0	0	0	1	0	0	0	0	0	0	0	1	1	1	1	1	1	1
401	2031	5	2031.33	0	0	0	0	1	0	0	0	0	0	0	1	1	1	1	1	1	1
402	2031	6	2031.42	0	0	0	0	0	1	0	0	0	0	0	1	1	1	1	1	1	1
403	2031	7	2031.50	0	0	0	0	0	0	1	0	0	0	0	1	1	1	1	1	1	1
404	2031	8	2031.58	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	1	1
405	2031	9	2031.67	0	0	0	0	0	0	0	0	1	0	0	1	1	1	1	1	1	1
406	2031	10	2031.75	0	0	0	0	0	0	0	0	0	1	0	1	1	1	1	1	1	1
407	2031	11	2031.83	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1
408	2031	12	2031.92	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
409	2032	1	2032.00	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
410	2032	2	2032.08	0	1	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
411	2032	3	2032.17	0	0	1	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
412	2032	4	2032.25	0	0	0	1	0	0	0	0	0	0	0	1	1	1	1	1	1	1
413	2032	5	2032.33	0	0	0	0	1	0	0	0	0	0	0	1	1	1	1	1	1	1
414	2032	6	2032.42	0	0	0	0	0	1	0	0	0	0	0	1	1	1	1	1	1	1
415	2032	7	2032.50	0	0	0	0	0	0	1	0	0	0	0	1	1	1	1	1	1	1
416	2032	8	2032.58	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	1	1
417	2032	9	2032.67	0	0	0	0	0	0	0	0	1	0	0	1	1	1	1	1	1	1
418	2032	10	2032.75	0	0	0	0	0	0	0	0	0	1	0	1	1	1	1	1	1	1
419	2032	11	2032.83	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1
420	2032	12	2032.92	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
421	2033	1	2033.00	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
422	2033	2	2033.08	0	1	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
423	2033	3	2033.17	0	0	1	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
424	2033	4	2033.25	0	0	0	1	0	0	0	0	0	0	0	1	1	1	1	1	1	1
425	2033	5	2033.33	0	0	0	0	1	0	0	0	0	0	0	1	1	1	1	1	1	1
426	2033	6	2033.42	0	0	0	0	0	1	0	0	0	0	0	1	1	1	1	1	1	1
427	2033	7	2033.50	0	0	0	0	0	0	1	0	0	0	0	1	1	1	1	1	1	1
428	2033	8	2033.58	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	1	1
429	2033	9	2033.67	0	0	0	0	0	0	0	0	1	0	0	1	1	1	1	1	1	1
430	2033	10	2033.75	0	0	0	0	0	0	0	0	0	1	0	1	1	1	1	1	1	1
431	2033	11	2033.83	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1
432	2033	12	2033.92	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
433	2034	1	2034.00	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
434	2034	2	2034.08	0	1	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
435	2034	3	2034.17	0	0	1	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
436	2034	4	2034.25	0	0	0	1	0	0	0	0	0	0	0	1	1	1	1	1	1	1
437	2034	5	2034.33	0	0	0	0	1	0	0	0	0	0	0	1	1	1	1	1	1	1
438	2034	6	2034.42	0	0	0	0	0	1	0	0	0	0	0	1	1	1	1	1	1	1
439	2034	7	2034.50	0	0	0	0	0	0	1	0	0	0	0	1	1	1	1	1	1	1
440	2034	8	2034.58	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	1	1

Obs	YEAR	MONTH	time	d1	d2	d3	d4	d5	d6	d7	d8	d9	d10	d11	sep12on	feb15on	may18on	may19on	jan20on	d14on	d16on
441	2034	9	2034.67	0	0	0	0	0	0	0	0	1	0	0	1	1	1	1	1	1	1
442	2034	10	2034.75	0	0	0	0	0	0	0	0	0	1	0	1	1	1	1	1	1	1
443	2034	11	2034.83	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1
444	2034	12	2034.92	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
445	2035	1	2035.00	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
446	2035	2	2035.08	0	1	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
447	2035	3	2035.17	0	0	1	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
448	2035	4	2035.25	0	0	0	1	0	0	0	0	0	0	0	1	1	1	1	1	1	1
449	2035	5	2035.33	0	0	0	0	1	0	0	0	0	0	0	1	1	1	1	1	1	1
450	2035	6	2035.42	0	0	0	0	0	1	0	0	0	0	0	1	1	1	1	1	1	1
451	2035	7	2035.50	0	0	0	0	0	0	1	0	0	0	0	1	1	1	1	1	1	1
452	2035	8	2035.58	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	1	1
453	2035	9	2035.67	0	0	0	0	0	0	0	0	1	0	0	1	1	1	1	1	1	1
454	2035	10	2035.75	0	0	0	0	0	0	0	0	0	1	0	1	1	1	1	1	1	1
455	2035	11	2035.83	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1
456	2035	12	2035.92	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
457	2036	1	2036.00	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
458	2036	2	2036.08	0	1	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
459	2036	3	2036.17	0	0	1	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
460	2036	4	2036.25	0	0	0	1	0	0	0	0	0	0	0	1	1	1	1	1	1	1
461	2036	5	2036.33	0	0	0	0	1	0	0	0	0	0	0	1	1	1	1	1	1	1
462	2036	6	2036.42	0	0	0	0	0	1	0	0	0	0	0	1	1	1	1	1	1	1
463	2036	7	2036.50	0	0	0	0	0	0	1	0	0	0	0	1	1	1	1	1	1	1
464	2036	8	2036.58	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	1	1
465	2036	9	2036.67	0	0	0	0	0	0	0	0	1	0	0	1	1	1	1	1	1	1
466	2036	10	2036.75	0	0	0	0	0	0	0	0	0	1	0	1	1	1	1	1	1	1
467	2036	11	2036.83	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1
468	2036	12	2036.92	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
469	2037	1	2037.00	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
470	2037	2	2037.08	0	1	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
471	2037	3	2037.17	0	0	1	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
472	2037	4	2037.25	0	0	0	1	0	0	0	0	0	0	0	1	1	1	1	1	1	1
473	2037	5	2037.33	0	0	0	0	1	0	0	0	0	0	0	1	1	1	1	1	1	1
474	2037	6	2037.42	0	0	0	0	0	1	0	0	0	0	0	1	1	1	1	1	1	1
475	2037	7	2037.50	0	0	0	0	0	0	1	0	0	0	0	1	1	1	1	1	1	1
476	2037	8	2037.58	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	1	1
477	2037	9	2037.67	0	0	0	0	0	0	0	0	1	0	0	1	1	1	1	1	1	1
478	2037	10	2037.75	0	0	0	0	0	0	0	0	0	1	0	1	1	1	1	1	1	1
479	2037	11	2037.83	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1
480	2037	12	2037.92	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
481	2038	1	2038.00	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
482	2038	2	2038.08	0	1	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
483	2038	3	2038.17	0	0	1	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
484	2038	4	2038.25	0	0	0	1	0	0	0	0	0	0	0	1	1	1	1	1	1	1

Obs	YEAR	MONTH	time	d1	d2	d3	d4	d5	d6	d7	d8	d9	d10	d11	sep12on	feb15on	may18on	may19on	jan20on	d14on	d16on
485	2038	5	2038.33	0	0	0	0	1	0	0	0	0	0	0	1	1	1	1	1	1	1
486	2038	6	2038.42	0	0	0	0	0	1	0	0	0	0	0	1	1	1	1	1	1	1
487	2038	7	2038.50	0	0	0	0	0	0	1	0	0	0	0	1	1	1	1	1	1	1
488	2038	8	2038.58	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	1	1
489	2038	9	2038.67	0	0	0	0	0	0	0	0	1	0	0	1	1	1	1	1	1	1
490	2038	10	2038.75	0	0	0	0	0	0	0	0	0	1	0	1	1	1	1	1	1	1
491	2038	11	2038.83	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1
492	2038	12	2038.92	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
493	2039	1	2039.00	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
494	2039	2	2039.08	0	1	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
495	2039	3	2039.17	0	0	1	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
496	2039	4	2039.25	0	0	0	1	0	0	0	0	0	0	0	1	1	1	1	1	1	1
497	2039	5	2039.33	0	0	0	0	1	0	0	0	0	0	0	1	1	1	1	1	1	1
498	2039	6	2039.42	0	0	0	0	0	1	0	0	0	0	0	1	1	1	1	1	1	1
499	2039	7	2039.50	0	0	0	0	0	0	1	0	0	0	0	1	1	1	1	1	1	1
500	2039	8	2039.58	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	1	1
501	2039	9	2039.67	0	0	0	0	0	0	0	0	1	0	0	1	1	1	1	1	1	1
502	2039	10	2039.75	0	0	0	0	0	0	0	0	0	1	0	1	1	1	1	1	1	1
503	2039	11	2039.83	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1
504	2039	12	2039.92	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
505	2040	1	2040.00	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
506	2040	2	2040.08	0	1	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
507	2040	3	2040.17	0	0	1	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
508	2040	4	2040.25	0	0	0	1	0	0	0	0	0	0	0	1	1	1	1	1	1	1
509	2040	5	2040.33	0	0	0	0	1	0	0	0	0	0	0	1	1	1	1	1	1	1
510	2040	6	2040.42	0	0	0	0	0	1	0	0	0	0	0	1	1	1	1	1	1	1
511	2040	7	2040.50	0	0	0	0	0	0	1	0	0	0	0	1	1	1	1	1	1	1
512	2040	8	2040.58	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	1	1
513	2040	9	2040.67	0	0	0	0	0	0	0	0	1	0	0	1	1	1	1	1	1	1
514	2040	10	2040.75	0	0	0	0	0	0	0	0	0	1	0	1	1	1	1	1	1	1
515	2040	11	2040.83	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1
516	2040	12	2040.92	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
517	2041	1	2041.00	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
518	2041	2	2041.08	0	1	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
519	2041	3	2041.17	0	0	1	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
520	2041	4	2041.25	0	0	0	1	0	0	0	0	0	0	0	1	1	1	1	1	1	1
521	2041	5	2041.33	0	0	0	0	1	0	0	0	0	0	0	1	1	1	1	1	1	1
522	2041	6	2041.42	0	0	0	0	0	1	0	0	0	0	0	1	1	1	1	1	1	1
523	2041	7	2041.50	0	0	0	0	0	0	1	0	0	0	0	1	1	1	1	1	1	1
524	2041	8	2041.58	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	1	1
525	2041	9	2041.67	0	0	0	0	0	0	0	0	1	0	0	1	1	1	1	1	1	1
526	2041	10	2041.75	0	0	0	0	0	0	0	0	0	1	0	1	1	1	1	1	1	1
527	2041	11	2041.83	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1
528	2041	12	2041.92	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1

Obs	YEAR	MONTH	time	d1	d2	d3	d4	d5	d6	d7	d8	d9	d10	d11	sep12on	feb15on	may18on	may19on	jan20on	d14on	d16on
529	2042	1	2042.00	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
530	2042	2	2042.08	0	1	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
531	2042	3	2042.17	0	0	1	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
532	2042	4	2042.25	0	0	0	1	0	0	0	0	0	0	0	1	1	1	1	1	1	1
533	2042	5	2042.33	0	0	0	0	1	0	0	0	0	0	0	1	1	1	1	1	1	1
534	2042	6	2042.42	0	0	0	0	0	1	0	0	0	0	0	1	1	1	1	1	1	1
535	2042	7	2042.50	0	0	0	0	0	0	1	0	0	0	0	1	1	1	1	1	1	1
536	2042	8	2042.58	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	1	1
537	2042	9	2042.67	0	0	0	0	0	0	0	0	1	0	0	1	1	1	1	1	1	1
538	2042	10	2042.75	0	0	0	0	0	0	0	0	0	1	0	1	1	1	1	1	1	1
539	2042	11	2042.83	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1
540	2042	12	2042.92	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
541	2043	1	2043.00	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
542	2043	2	2043.08	0	1	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
543	2043	3	2043.17	0	0	1	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
544	2043	4	2043.25	0	0	0	1	0	0	0	0	0	0	0	1	1	1	1	1	1	1
545	2043	5	2043.33	0	0	0	0	1	0	0	0	0	0	0	1	1	1	1	1	1	1
546	2043	6	2043.42	0	0	0	0	0	1	0	0	0	0	0	1	1	1	1	1	1	1
547	2043	7	2043.50	0	0	0	0	0	0	1	0	0	0	0	1	1	1	1	1	1	1
548	2043	8	2043.58	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	1	1
549	2043	9	2043.67	0	0	0	0	0	0	0	0	1	0	0	1	1	1	1	1	1	1
550	2043	10	2043.75	0	0	0	0	0	0	0	0	0	1	0	1	1	1	1	1	1	1
551	2043	11	2043.83	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1
552	2043	12	2043.92	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
553	2044	1	2044.00	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
554	2044	2	2044.08	0	1	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
555	2044	3	2044.17	0	0	1	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
556	2044	4	2044.25	0	0	0	1	0	0	0	0	0	0	0	1	1	1	1	1	1	1
557	2044	5	2044.33	0	0	0	0	1	0	0	0	0	0	0	1	1	1	1	1	1	1
558	2044	6	2044.42	0	0	0	0	0	1	0	0	0	0	0	1	1	1	1	1	1	1
559	2044	7	2044.50	0	0	0	0	0	0	1	0	0	0	0	1	1	1	1	1	1	1
560	2044	8	2044.58	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	1	1
561	2044	9	2044.67	0	0	0	0	0	0	0	0	1	0	0	1	1	1	1	1	1	1
562	2044	10	2044.75	0	0	0	0	0	0	0	0	0	1	0	1	1	1	1	1	1	1
563	2044	11	2044.83	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1
564	2044	12	2044.92	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
565	2045	1	2045.00	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
566	2045	2	2045.08	0	1	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
567	2045	3	2045.17	0	0	1	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
568	2045	4	2045.25	0	0	0	1	0	0	0	0	0	0	0	1	1	1	1	1	1	1
569	2045	5	2045.33	0	0	0	0	1	0	0	0	0	0	0	1	1	1	1	1	1	1
570	2045	6	2045.42	0	0	0	0	0	1	0	0	0	0	0	1	1	1	1	1	1	1
571	2045	7	2045.50	0	0	0	0	0	0	1	0	0	0	0	1	1	1	1	1	1	1
572	2045	8	2045.58	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	1	1

Obs	YEAR	MONTH	time	d1	d2	d3	d4	d5	d6	d7	d8	d9	d10	d11	sep12on	feb15on	may18on	may19on	jan20on	d14on	d16on
573	2045	9	2045.67	0	0	0	0	0	0	0	0	1	0	0	1	1	1	1	1	1	1
574	2045	10	2045.75	0	0	0	0	0	0	0	0	0	1	0	1	1	1	1	1	1	1
575	2045	11	2045.83	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1
576	2045	12	2045.92	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
577	2046	1	2046.00	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
578	2046	2	2046.08	0	1	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
579	2046	3	2046.17	0	0	1	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
580	2046	4	2046.25	0	0	0	1	0	0	0	0	0	0	0	1	1	1	1	1	1	1
581	2046	5	2046.33	0	0	0	0	1	0	0	0	0	0	0	1	1	1	1	1	1	1
582	2046	6	2046.42	0	0	0	0	0	1	0	0	0	0	0	1	1	1	1	1	1	1
583	2046	7	2046.50	0	0	0	0	0	0	1	0	0	0	0	1	1	1	1	1	1	1
584	2046	8	2046.58	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	1	1
585	2046	9	2046.67	0	0	0	0	0	0	0	0	1	0	0	1	1	1	1	1	1	1
586	2046	10	2046.75	0	0	0	0	0	0	0	0	0	1	0	1	1	1	1	1	1	1
587	2046	11	2046.83	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1
588	2046	12	2046.92	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
589	2047	1	2047.00	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
590	2047	2	2047.08	0	1	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
591	2047	3	2047.17	0	0	1	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
592	2047	4	2047.25	0	0	0	1	0	0	0	0	0	0	0	1	1	1	1	1	1	1
593	2047	5	2047.33	0	0	0	0	1	0	0	0	0	0	0	1	1	1	1	1	1	1
594	2047	6	2047.42	0	0	0	0	0	1	0	0	0	0	0	1	1	1	1	1	1	1
595	2047	7	2047.50	0	0	0	0	0	0	1	0	0	0	0	1	1	1	1	1	1	1
596	2047	8	2047.58	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	1	1
597	2047	9	2047.67	0	0	0	0	0	0	0	0	1	0	0	1	1	1	1	1	1	1
598	2047	10	2047.75	0	0	0	0	0	0	0	0	0	1	0	1	1	1	1	1	1	1
599	2047	11	2047.83	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1
600	2047	12	2047.92	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
601	2048	1	2048.00	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
602	2048	2	2048.08	0	1	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
603	2048	3	2048.17	0	0	1	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
604	2048	4	2048.25	0	0	0	1	0	0	0	0	0	0	0	1	1	1	1	1	1	1
605	2048	5	2048.33	0	0	0	0	1	0	0	0	0	0	0	1	1	1	1	1	1	1
606	2048	6	2048.42	0	0	0	0	0	1	0	0	0	0	0	1	1	1	1	1	1	1
607	2048	7	2048.50	0	0	0	0	0	0	1	0	0	0	0	1	1	1	1	1	1	1
608	2048	8	2048.58	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	1	1
609	2048	9	2048.67	0	0	0	0	0	0	0	0	1	0	0	1	1	1	1	1	1	1
610	2048	10	2048.75	0	0	0	0	0	0	0	0	0	1	0	1	1	1	1	1	1	1
611	2048	11	2048.83	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1
612	2048	12	2048.92	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
613	2049	1	2049.00	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
614	2049	2	2049.08	0	1	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
615	2049	3	2049.17	0	0	1	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
616	2049	4	2049.25	0	0	0	1	0	0	0	0	0	0	0	1	1	1	1	1	1	1

Obs	YEAR	MONTH	time	d1	d2	d3	d4	d5	d6	d7	d8	d9	d10	d11	sep12on	feb15on	may18on	may19on	jan20on	d14on	d16on
617	2049	5	2049.33	0	0	0	0	1	0	0	0	0	0	0	1	1	1	1	1	1	1
618	2049	6	2049.42	0	0	0	0	0	1	0	0	0	0	0	1	1	1	1	1	1	1
619	2049	7	2049.50	0	0	0	0	0	0	1	0	0	0	0	1	1	1	1	1	1	1
620	2049	8	2049.58	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	1	1
621	2049	9	2049.67	0	0	0	0	0	0	0	0	1	0	0	1	1	1	1	1	1	1
622	2049	10	2049.75	0	0	0	0	0	0	0	0	0	1	0	1	1	1	1	1	1	1
623	2049	11	2049.83	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1
624	2049	12	2049.92	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
625	2050	1	2050.00	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
626	2050	2	2050.08	0	1	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
627	2050	3	2050.17	0	0	1	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
628	2050	4	2050.25	0	0	0	1	0	0	0	0	0	0	0	1	1	1	1	1	1	1
629	2050	5	2050.33	0	0	0	0	1	0	0	0	0	0	0	1	1	1	1	1	1	1
630	2050	6	2050.42	0	0	0	0	0	1	0	0	0	0	0	1	1	1	1	1	1	1
631	2050	7	2050.50	0	0	0	0	0	0	1	0	0	0	0	1	1	1	1	1	1	1
632	2050	8	2050.58	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	1	1
633	2050	9	2050.67	0	0	0	0	0	0	0	0	1	0	0	1	1	1	1	1	1	1
634	2050	10	2050.75	0	0	0	0	0	0	0	0	0	1	0	1	1	1	1	1	1	1
635	2050	11	2050.83	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1
636	2050	12	2050.92	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
637	2051	1	2051.00	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
638	2051	2	2051.08	0	1	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
639	2051	3	2051.17	0	0	1	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
640	2051	4	2051.25	0	0	0	1	0	0	0	0	0	0	0	1	1	1	1	1	1	1
641	2051	5	2051.33	0	0	0	0	1	0	0	0	0	0	0	1	1	1	1	1	1	1
642	2051	6	2051.42	0	0	0	0	0	1	0	0	0	0	0	1	1	1	1	1	1	1
643	2051	7	2051.50	0	0	0	0	0	0	1	0	0	0	0	1	1	1	1	1	1	1
644	2051	8	2051.58	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	1	1
645	2051	9	2051.67	0	0	0	0	0	0	0	0	1	0	0	1	1	1	1	1	1	1
646	2051	10	2051.75	0	0	0	0	0	0	0	0	0	1	0	1	1	1	1	1	1	1
647	2051	11	2051.83	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1
648	2051	12	2051.92	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
649	2052	1	2052.00	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
650	2052	2	2052.08	0	1	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
651	2052	3	2052.17	0	0	1	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
652	2052	4	2052.25	0	0	0	1	0	0	0	0	0	0	0	1	1	1	1	1	1	1
653	2052	5	2052.33	0	0	0	0	1	0	0	0	0	0	0	1	1	1	1	1	1	1
654	2052	6	2052.42	0	0	0	0	0	1	0	0	0	0	0	1	1	1	1	1	1	1
655	2052	7	2052.50	0	0	0	0	0	0	1	0	0	0	0	1	1	1	1	1	1	1
656	2052	8	2052.58	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	1	1
657	2052	9	2052.67	0	0	0	0	0	0	0	0	1	0	0	1	1	1	1	1	1	1
658	2052	10	2052.75	0	0	0	0	0	0	0	0	0	1	0	1	1	1	1	1	1	1
659	2052	11	2052.83	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1
660	2052	12	2052.92	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1

Obs	YEAR	MONTH	time	d1	d2	d3	d4	d5	d6	d7	d8	d9	d10	d11	sep12on	feb15on	may18on	may19on	jan20on	d14on	d16on
661	2053	1	2053.00	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
662	2053	2	2053.08	0	1	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
663	2053	3	2053.17	0	0	1	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
664	2053	4	2053.25	0	0	0	1	0	0	0	0	0	0	0	1	1	1	1	1	1	1
665	2053	5	2053.33	0	0	0	0	1	0	0	0	0	0	0	1	1	1	1	1	1	1
666	2053	6	2053.42	0	0	0	0	0	1	0	0	0	0	0	1	1	1	1	1	1	1
667	2053	7	2053.50	0	0	0	0	0	0	1	0	0	0	0	1	1	1	1	1	1	1
668	2053	8	2053.58	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	1	1
669	2053	9	2053.67	0	0	0	0	0	0	0	0	1	0	0	1	1	1	1	1	1	1
670	2053	10	2053.75	0	0	0	0	0	0	0	0	0	1	0	1	1	1	1	1	1	1
671	2053	11	2053.83	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1
672	2053	12	2053.92	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
673	2054	1	2054.00	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
674	2054	2	2054.08	0	1	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
675	2054	3	2054.17	0	0	1	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
676	2054	4	2054.25	0	0	0	1	0	0	0	0	0	0	0	1	1	1	1	1	1	1
677	2054	5	2054.33	0	0	0	0	1	0	0	0	0	0	0	1	1	1	1	1	1	1
678	2054	6	2054.42	0	0	0	0	0	1	0	0	0	0	0	1	1	1	1	1	1	1
679	2054	7	2054.50	0	0	0	0	0	0	1	0	0	0	0	1	1	1	1	1	1	1
680	2054	8	2054.58	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	1	1
681	2054	9	2054.67	0	0	0	0	0	0	0	0	1	0	0	1	1	1	1	1	1	1
682	2054	10	2054.75	0	0	0	0	0	0	0	0	0	1	0	1	1	1	1	1	1	1
683	2054	11	2054.83	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1
684	2054	12	2054.92	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
685	2055	1	2055.00	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
686	2055	2	2055.08	0	1	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
687	2055	3	2055.17	0	0	1	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
688	2055	4	2055.25	0	0	0	1	0	0	0	0	0	0	0	1	1	1	1	1	1	1
689	2055	5	2055.33	0	0	0	0	1	0	0	0	0	0	0	1	1	1	1	1	1	1
690	2055	6	2055.42	0	0	0	0	0	1	0	0	0	0	0	1	1	1	1	1	1	1
691	2055	7	2055.50	0	0	0	0	0	0	1	0	0	0	0	1	1	1	1	1	1	1
692	2055	8	2055.58	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	1	1
693	2055	9	2055.67	0	0	0	0	0	0	0	0	1	0	0	1	1	1	1	1	1	1
694	2055	10	2055.75	0	0	0	0	0	0	0	0	0	1	0	1	1	1	1	1	1	1
695	2055	11	2055.83	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1
696	2055	12	2055.92	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
697	2056	1	2056.00	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
698	2056	2	2056.08	0	1	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
699	2056	3	2056.17	0	0	1	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
700	2056	4	2056.25	0	0	0	1	0	0	0	0	0	0	0	1	1	1	1	1	1	1
701	2056	5	2056.33	0	0	0	0	1	0	0	0	0	0	0	1	1	1	1	1	1	1
702	2056	6	2056.42	0	0	0	0	0	1	0	0	0	0	0	1	1	1	1	1	1	1
703	2056	7	2056.50	0	0	0	0	0	0	1	0	0	0	0	1	1	1	1	1	1	1
704	2056	8	2056.58	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	1	1

Obs	YEAR	MONTH	time	d1	d2	d3	d4	d5	d6	d7	d8	d9	d10	d11	sep1 2on	feb15 on	may18 on	may19 on	jan20 on	d14 on	d16 on
705	2056	9	2056.67	0	0	0	0	0	0	0	0	1	0	0	1	1	1	1	1	1	1
706	2056	10	2056.75	0	0	0	0	0	0	0	0	0	1	0	1	1	1	1	1	1	1
707	2056	11	2056.83	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1
708	2056	12	2056.92	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
709	2057	1	2057.00	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
710	2057	2	2057.08	0	1	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
711	2057	3	2057.17	0	0	1	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
712	2057	4	2057.25	0	0	0	1	0	0	0	0	0	0	0	1	1	1	1	1	1	1
713	2057	5	2057.33	0	0	0	0	1	0	0	0	0	0	0	1	1	1	1	1	1	1
714	2057	6	2057.42	0	0	0	0	0	1	0	0	0	0	0	1	1	1	1	1	1	1
715	2057	7	2057.50	0	0	0	0	0	0	1	0	0	0	0	1	1	1	1	1	1	1
716	2057	8	2057.58	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	1	1
717	2057	9	2057.67	0	0	0	0	0	0	0	0	1	0	0	1	1	1	1	1	1	1
718	2057	10	2057.75	0	0	0	0	0	0	0	0	0	1	0	1	1	1	1	1	1	1
719	2057	11	2057.83	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1
720	2057	12	2057.92	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1

INDIANA MICHIGAN POWER COMPANY - MICHIGAN INDUSTRIAL CUSTOMERS
MODEL ESTIMATION

The SYSLIN Procedure
Ordinary Least Squares Estimation

Model	lci
Dependent Variable	lci

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	19	0.327712	0.017248	126.75	<.0001
Error	112	0.015241	0.000136		
Corrected Total	131	0.342953			

Root MSE	0.01167	R-Square	0.95556
Dependent Mean	6.84045	Adj R-Sq	0.94802
Coeff Var	0.17053		

Parameter Estimates

Variable	DF	Parameter Estimate	Standard Error	t Value	Pr > |t|	Variable Label
Intercept	1	200.8624	29.77295	6.75	<.0001	Intercept
ltime	1	-25.5014	3.914059	-6.52	<.0001	Trend,Log
sep12on	1	0.014414	0.005238	2.75	0.0069	Binary Variable - September 2012 On
d14on	1	0.009131	0.005017	1.82	0.0714	Binary Variable - 2014 On
feb15on	1	-0.00162	0.005170	-0.31	0.7553	Binary Variable - February 2015 On
d16on	1	-0.01002	0.005270	-1.90	0.0598	Binary Variable - 2016 On
may18on	1	-0.01525	0.005147	-2.96	0.0037	Binary Variable - May 2018 On
may19on	1	-0.01429	0.005582	-2.56	0.0118	Binary Variable - May 2019 On
jan20on	1	-0.01763	0.005645	-3.12	0.0023	Binary Variable - January 2020 On
d1	1	0.005156	0.005093	1.01	0.3136	Binary Variable - January
d2	1	-0.00059	0.005075	-0.12	0.9074	Binary Variable - February
d3	1	0.009830	0.005051	1.95	0.0541	Binary Variable - March
d4	1	0.003622	0.005031	0.72	0.4730	Binary Variable - April

INDIANA MICHIGAN POWER COMPANY - MICHIGAN
INDUSTRIAL CUSTOMERS
MODEL ESTIMATION

The SYSLIN Procedure
Ordinary Least Squares Estimation

Parameter Estimates

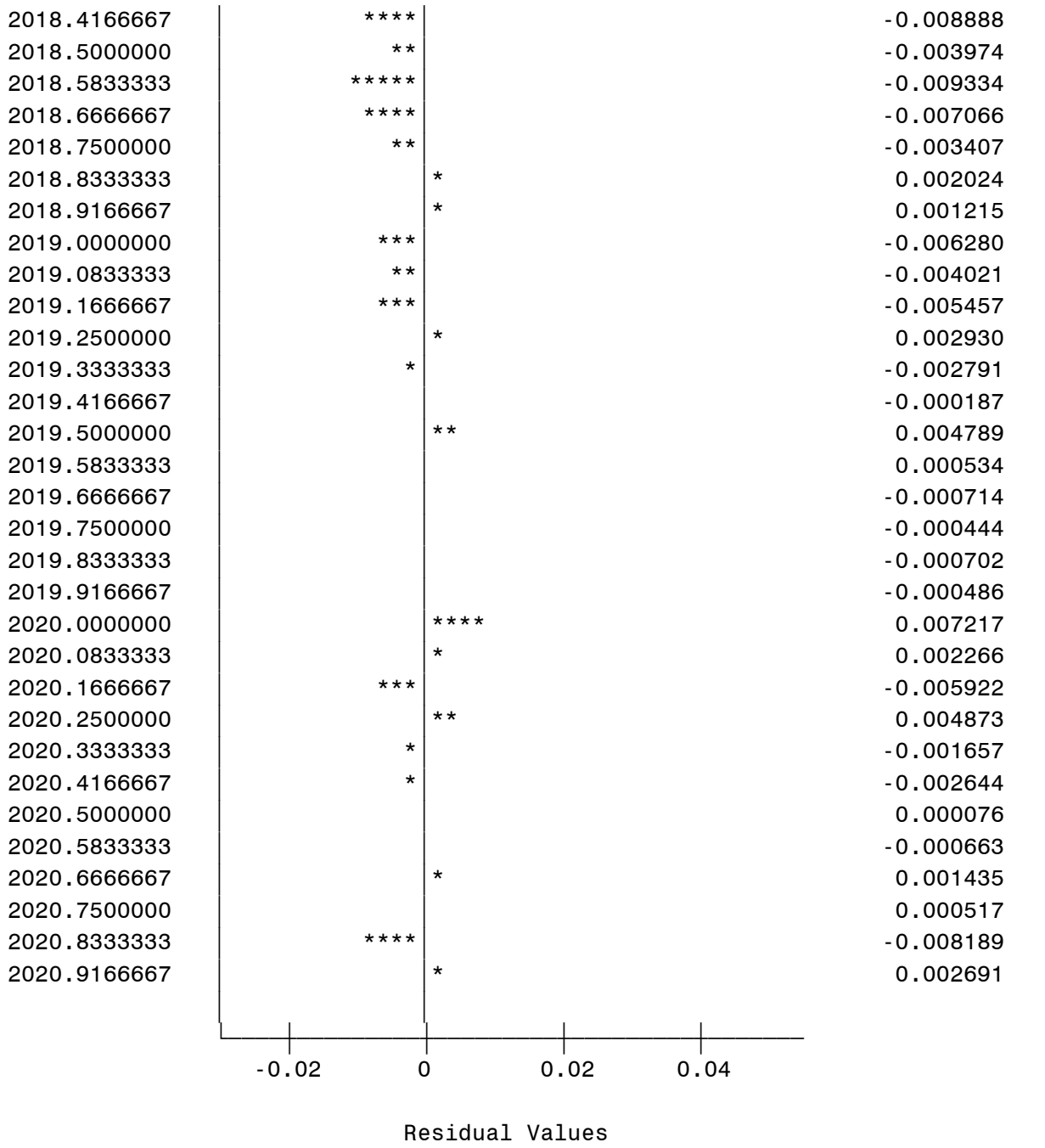
Variable	DF	Parameter Estimate	Standard Error	t Value	Pr > |t|	Variable Label
d5	1	0.006486	0.005047	1.29	0.2013	Binary Variable - May
d6	1	0.003786	0.005024	0.75	0.4527	Binary Variable - June
d7	1	0.003305	0.005006	0.66	0.5105	Binary Variable - July
d8	1	0.007466	0.004994	1.49	0.1377	Binary Varaible - August
d9	1	0.002862	0.004998	0.57	0.5680	Binary Variable - September
d10	1	0.003644	0.004985	0.73	0.4663	Binary Variable - October
d11	1	0.002642	0.004977	0.53	0.5966	Binary Variable - November

Durbin-Watson	1.50271
Number of Observations	132
First-Order Autocorrelation	0.245006

Trend			Residual Values Sum
2010.0000000	*****		-0.010182
2010.0833333	****		-0.008446
2010.1666667	**		-0.003682
2010.2500000	******		-0.012580
2010.3333333	**********		-0.019491
2010.4166667	****		-0.007579
2010.5000000	*******		-0.013173
2010.5833333		*****	0.010957
2010.6666667	******		-0.012663
2010.7500000			0.000844
2010.8333333	****		-0.008282
2010.9166667	*****		-0.010737
2011.0000000	**********		-0.024138
2011.0833333	**********		-0.027773
2011.1666667		**********	0.053104
2011.2500000		**	0.004168
2011.3333333		*	0.002360
2011.4166667	*		-0.001007
2011.5000000			0.000530
2011.5833333		**	0.004550
2011.6666667		******	0.012237
2011.7500000		*****	0.009470
2011.8333333		****	0.007460
2011.9166667		***	0.006048
2012.0000000		**********	0.024239
2012.0833333		******	0.012842
2012.1666667		*	0.001434
2012.2500000		**	0.003572
2012.3333333	*		-0.002356
2012.4166667		**	0.004492
2012.5000000	*		-0.001199
2012.5833333		**	0.004980
2012.6666667		*	0.002366
2012.7500000	**		-0.004529
2012.8333333	****		-0.007623
2012.9166667	**		-0.004958
2013.0000000		**	0.004296
2013.0833333	*		-0.002256
2013.1666667	***		-0.006464
2013.2500000	**		-0.003325
2013.3333333	***		-0.006167
2013.4166667		*****	0.010943
2013.5000000		**	0.003254
2013.5833333			-0.000882
2013.6666667		**	0.003745
2013.7500000			-0.000118
2013.8333333		**	0.004010
2013.9166667		****	0.007707
2014.0000000	**		-0.003458

2014.0833333			0.000243
2014.1666667	***		-0.006022
2014.2500000	**		-0.004971
2014.3333333	**		-0.004705
2014.4166667	*		-0.001987
2014.5000000		***	0.006784
2014.5833333		*	0.001617
2014.6666667		**	0.004174
2014.7500000			0.000298
2014.8333333		**	0.004432
2014.9166667	******		-0.011778
2015.0000000		********	0.015373
2015.0833333		***	0.005156
2015.1666667			-0.000039
2015.2500000	*		-0.001137
2015.3333333	**		-0.003996
2015.4166667		**	0.004997
2015.5000000		*	0.002344
2015.5833333	**		-0.004969
2015.6666667			0.000689
2015.7500000	*		-0.001148
2015.8333333	*		-0.001206
2015.9166667			-0.000690
2016.0000000		*****	0.010525
2016.0833333		*****	0.010970
2016.1666667		****	0.007959
2016.2500000	*		-0.002894
2016.3333333		****	0.007054
2016.4166667		*****	0.010808
2016.5000000		******	0.011280
2016.5833333		*****	0.009236
2016.6666667		******	0.011700
2016.7500000		*******	0.013038
2016.8333333		*********	0.017221
2016.9166667		**********	0.021979
2017.0000000	*		-0.002499
2017.0833333		**********	0.020423
2017.1666667	****		-0.008321
2017.2500000	*****		-0.009794
2017.3333333	*****		-0.010509
2017.4166667	****		-0.008948
2017.5000000	*****		-0.010712
2017.5833333	********		-0.016025
2017.6666667	********		-0.015902
2017.7500000	*******		-0.014521
2017.8333333	*****		-0.009146
2017.9166667	*****		-0.010991
2018.0000000	********		-0.015093
2018.0833333	*****		-0.009405
2018.1666667	**********		-0.026590
2018.2500000		**********	0.019158
2018.3333333		**********	0.042257

INDIANA MICHIGAN POWER COMPANY - MICHIGAN
INDUSTRIAL CUSTOMERS
MODEL RESIDUALS



INDIANA MICHIGAN POWER COMPANY - MICHIGAN
INDUSTRIAL CUSTOMERS
ACTUAL AND FORECAST

YEAR	CUSTOMERS	GROWTH RATE	BASE CUSTOMERS	ADD FACTOR
1998	1139.75	.	1139.75	0
1999	1140.667	0.1	1140.67	0
2000	1139.75	-0.1	1139.75	0
2001	1133.417	-0.6	1133.42	0
2002	1126.917	-0.6	1126.92	0
2003	1116.833	-0.9	1116.83	0
2004	1104.667	-1.1	1104.67	0
2005	1084.333	-1.8	1084.33	0
2006	1066.167	-1.7	1066.17	0
2007	1045.083	-2.0	1045.08	0
2008	1016.75	-2.7	1016.75	0
2009	1003.583	-1.3	1003.58	0
2010	984.4167	-1.9	984.42	0
2011	983.75	-0.1	983.75	0
2012	974.75	-0.9	974.75	0
2013	970.25	-0.5	970.25	0
2014	964.4167	-0.6	964.42	0
2015	953.3333	-1.1	953.33	0
2016	940.6667	-1.3	940.67	0
2017	911.5833	-3.1	911.58	0
2018	896.9167	-1.6	896.92	0
2019	873.1667	-2.6	873.17	0
2020	844	-3.3	844.00	0
2021	833.409	-1.3	833.41	0
2022	822.9638	-1.3	822.96	0
2023	812.6548	-1.3	812.65	0
2024	802.4798	-1.3	802.48	0
2025	792.4371	-1.3	792.44	0
2026	782.5248	-1.3	782.52	0
2027	772.7414	-1.3	772.74	0
2028	763.0851	-1.2	763.09	0
2029	753.5542	-1.2	753.55	0
2030	744.1467	-1.2	744.15	0
2031	734.8616	-1.2	734.86	0
2032	725.6967	-1.2	725.70	0
2033	716.6503	-1.2	716.65	0
2034	707.7211	-1.2	707.72	0
2035	698.9078	-1.2	698.91	0
2036	690.2081	-1.2	690.21	0
2037	681.6208	-1.2	681.62	0
2038	673.1448	-1.2	673.14	0
2039	664.7783	-1.2	664.78	0
2040	656.5195	-1.2	656.52	0
2041	648.3674	-1.2	648.37	0
2042	640.3205	-1.2	640.32	0
2043	632.3773	-1.2	632.38	0
2044	624.5364	-1.2	624.54	0
2045	616.7966	-1.2	616.80	0
2046	609.1564	-1.2	609.16	0

INDIANA MICHIGAN POWER COMPANY - MICHIGAN
INDUSTRIAL CUSTOMERS
ACTUAL AND FORECAST

YEAR	CUSTOMERS	GROWTH RATE	BASE CUSTOMERS	ADD FACTOR
2047	601.6145	-1.2	601.615	0
2048	594.1697	-1.2	594.170	0
2049	586.8204	-1.2	586.820	0
2050	579.5656	-1.2	579.566	0
2051	572.4041	-1.2	572.404	0
2052	565.3343	-1.2	565.334	0
2053	558.3552	-1.2	558.355	0
2054	551.4658	-1.2	551.466	0
2055	544.6645	-1.2	544.665	0
2056	537.9505	-1.2	537.951	0
2057	531.3223	-1.2	531.322	0

INDIANA MICHIGAN POWER COMPANY - MICHIGAN
OTHER ULTIMATE CUSTOMERS
ENDOGENOUS VARIABLES

The MEANS Procedure

Variable	Label	Mean
YEAR	Year	2027.50
MONTH	Month	6.5000000
cu_imm	Other Retail Customers	339.9637681

INDIANA MICHIGAN POWER COMPANY - MICHIGAN
OTHER ULTIMATE CUSTOMERS
ENDOGENOUS VARIABLES

Obs	YEAR	MONTH	cu_imm
1	1998	1	461
2	1998	2	321
3	1998	3	324
4	1998	4	326
5	1998	5	323
6	1998	6	328
7	1998	7	325
8	1998	8	323
9	1998	9	328
10	1998	10	323
11	1998	11	318
12	1998	12	321
13	1999	1	319
14	1999	2	319
15	1999	3	324
16	1999	4	319
17	1999	5	319
18	1999	6	324
19	1999	7	320
20	1999	8	324
21	1999	9	324
22	1999	10	327
23	1999	11	326
24	1999	12	323
25	2000	1	326
26	2000	2	328
27	2000	3	325
28	2000	4	326
29	2000	5	325
30	2000	6	324
31	2000	7	324
32	2000	8	324
33	2000	9	324
34	2000	10	324
35	2000	11	324
36	2000	12	325
37	2001	1	325
38	2001	2	325
39	2001	3	325
40	2001	4	325
41	2001	5	326
42	2001	6	326
43	2001	7	333
44	2001	8	328
45	2001	9	323
46	2001	10	336
47	2001	11	331
48	2001	12	332
49	2002	1	331
50	2002	2	330

INDIANA MICHIGAN POWER COMPANY - MICHIGAN
OTHER ULTIMATE CUSTOMERS
ENDOGENOUS VARIABLES

Obs	YEAR	MONTH	cu_imm
51	2002	3	339
52	2002	4	331
53	2002	5	332
54	2002	6	335
55	2002	7	335
56	2002	8	335
57	2002	9	336
58	2002	10	336
59	2002	11	335
60	2002	12	335
61	2003	1	335
62	2003	2	334
63	2003	3	336
64	2003	4	335
65	2003	5	334
66	2003	6	336
67	2003	7	335
68	2003	8	335
69	2003	9	337
70	2003	10	337
71	2003	11	337
72	2003	12	337
73	2004	1	337
74	2004	2	336
75	2004	3	339
76	2004	4	337
77	2004	5	337
78	2004	6	345
79	2004	7	338
80	2004	8	338
81	2004	9	339
82	2004	10	338
83	2004	11	342
84	2004	12	339
85	2005	1	359
86	2005	2	342
87	2005	3	340
88	2005	4	344
89	2005	5	343
90	2005	6	341
91	2005	7	341
92	2005	8	342
93	2005	9	344
94	2005	10	342
95	2005	11	341
96	2005	12	343
97	2006	1	342
98	2006	2	341
99	2006	3	342
100	2006	4	349

INDIANA MICHIGAN POWER COMPANY - MICHIGAN
OTHER ULTIMATE CUSTOMERS
ENDOGENOUS VARIABLES

Obs	YEAR	MONTH	cu_imm
101	2006	5	343
102	2006	6	342
103	2006	7	342
104	2006	8	340
105	2006	9	342
106	2006	10	341
107	2006	11	341
108	2006	12	341
109	2007	1	340
110	2007	2	339
111	2007	3	341
112	2007	4	343
113	2007	5	348
114	2007	6	348
115	2007	7	348
116	2007	8	349
117	2007	9	349
118	2007	10	350
119	2007	11	351
120	2007	12	349
121	2008	1	349
122	2008	2	351
123	2008	3	350
124	2008	4	349
125	2008	5	348
126	2008	6	348
127	2008	7	348
128	2008	8	347
129	2008	9	346
130	2008	10	345
131	2008	11	345
132	2008	12	341
133	2009	1	347
134	2009	2	343
135	2009	3	345
136	2009	4	343
137	2009	5	347
138	2009	6	346
139	2009	7	346
140	2009	8	343
141	2009	9	343
142	2009	10	342
143	2009	11	342
144	2009	12	342
145	2010	1	341
146	2010	2	339
147	2010	3	347
148	2010	4	344
149	2010	5	343
150	2010	6	341

INDIANA MICHIGAN POWER COMPANY - MICHIGAN
OTHER ULTIMATE CUSTOMERS
ENDOGENOUS VARIABLES

Obs	YEAR	MONTH	cu_imm
151	2010	7	342
152	2010	8	345
153	2010	9	340
154	2010	10	341
155	2010	11	342
156	2010	12	339
157	2011	1	339
158	2011	2	334
159	2011	3	348
160	2011	4	340
161	2011	5	340
162	2011	6	339
163	2011	7	339
164	2011	8	341
165	2011	9	339
166	2011	10	339
167	2011	11	339
168	2011	12	339
169	2012	1	340
170	2012	2	339
171	2012	3	339
172	2012	4	339
173	2012	5	341
174	2012	6	338
175	2012	7	345
176	2012	8	341
177	2012	9	341
178	2012	10	341
179	2012	11	341
180	2012	12	341
181	2013	1	340
182	2013	2	339
183	2013	3	341
184	2013	4	341
185	2013	5	340
186	2013	6	340
187	2013	7	340
188	2013	8	340
189	2013	9	340
190	2013	10	357
191	2013	11	341
192	2013	12	342
193	2014	1	341
194	2014	2	341
195	2014	3	339
196	2014	4	340
197	2014	5	341
198	2014	6	341
199	2014	7	341
200	2014	8	342

INDIANA MICHIGAN POWER COMPANY - MICHIGAN
OTHER ULTIMATE CUSTOMERS
ENDOGENOUS VARIABLES

Obs	YEAR	MONTH	cu_imm
201	2014	9	342
202	2014	10	343
203	2014	11	343
204	2014	12	342
205	2015	1	344
206	2015	2	343
207	2015	3	343
208	2015	4	343
209	2015	5	343
210	2015	6	343
211	2015	7	343
212	2015	8	343
213	2015	9	342
214	2015	10	342
215	2015	11	343
216	2015	12	342
217	2016	1	342
218	2016	2	341
219	2016	3	343
220	2016	4	341
221	2016	5	343
222	2016	6	343
223	2016	7	343
224	2016	8	343
225	2016	9	343
226	2016	10	343
227	2016	11	343
228	2016	12	344
229	2017	1	344
230	2017	2	344
231	2017	3	344
232	2017	4	344
233	2017	5	344
234	2017	6	344
235	2017	7	344
236	2017	8	344
237	2017	9	344
238	2017	10	344
239	2017	11	344
240	2017	12	346
241	2018	1	345
242	2018	2	344
243	2018	3	346
244	2018	4	219
245	2018	5	514
246	2018	6	345
247	2018	7	345
248	2018	8	345
249	2018	9	345
250	2018	10	345

INDIANA MICHIGAN POWER COMPANY - MICHIGAN
OTHER ULTIMATE CUSTOMERS
ENDOGENOUS VARIABLES

Obs	YEAR	MONTH	cu_imm
251	2018	11	345
252	2018	12	345
253	2019	1	346
254	2019	2	346
255	2019	3	346
256	2019	4	346
257	2019	5	345
258	2019	6	345
259	2019	7	345
260	2019	8	344
261	2019	9	344
262	2019	10	344
263	2019	11	354
264	2019	12	349
265	2020	1	351
266	2020	2	349
267	2020	3	349
268	2020	4	350
269	2020	5	349
270	2020	6	347
271	2020	7	349
272	2020	8	347
273	2020	9	343
274	2020	10	343
275	2020	11	346
276	2020	12	346
277	2021	1	.
278	2021	2	.
279	2021	3	.
280	2021	4	.
281	2021	5	.
282	2021	6	.
283	2021	7	.
284	2021	8	.
285	2021	9	.
286	2021	10	.
287	2021	11	.
288	2021	12	.
289	2022	1	.
290	2022	2	.
291	2022	3	.
292	2022	4	.
293	2022	5	.
294	2022	6	.
295	2022	7	.
296	2022	8	.
297	2022	9	.
298	2022	10	.
299	2022	11	.
300	2022	12	.

INDIANA MICHIGAN POWER COMPANY - MICHIGAN
OTHER ULTIMATE CUSTOMERS
ENDOGENOUS VARIABLES

Obs	YEAR	MONTH	cu_imm
301	2023	1	.
302	2023	2	.
303	2023	3	.
304	2023	4	.
305	2023	5	.
306	2023	6	.
307	2023	7	.
308	2023	8	.
309	2023	9	.
310	2023	10	.
311	2023	11	.
312	2023	12	.
313	2024	1	.
314	2024	2	.
315	2024	3	.
316	2024	4	.
317	2024	5	.
318	2024	6	.
319	2024	7	.
320	2024	8	.
321	2024	9	.
322	2024	10	.
323	2024	11	.
324	2024	12	.
325	2025	1	.
326	2025	2	.
327	2025	3	.
328	2025	4	.
329	2025	5	.
330	2025	6	.
331	2025	7	.
332	2025	8	.
333	2025	9	.
334	2025	10	.
335	2025	11	.
336	2025	12	.
337	2026	1	.
338	2026	2	.
339	2026	3	.
340	2026	4	.
341	2026	5	.
342	2026	6	.
343	2026	7	.
344	2026	8	.
345	2026	9	.
346	2026	10	.
347	2026	11	.
348	2026	12	.
349	2027	1	.
350	2027	2	.

INDIANA MICHIGAN POWER COMPANY - MICHIGAN
OTHER ULTIMATE CUSTOMERS
ENDOGENOUS VARIABLES

Obs	YEAR	MONTH	cu_imm
351	2027	3	.
352	2027	4	.
353	2027	5	.
354	2027	6	.
355	2027	7	.
356	2027	8	.
357	2027	9	.
358	2027	10	.
359	2027	11	.
360	2027	12	.
361	2028	1	.
362	2028	2	.
363	2028	3	.
364	2028	4	.
365	2028	5	.
366	2028	6	.
367	2028	7	.
368	2028	8	.
369	2028	9	.
370	2028	10	.
371	2028	11	.
372	2028	12	.
373	2029	1	.
374	2029	2	.
375	2029	3	.
376	2029	4	.
377	2029	5	.
378	2029	6	.
379	2029	7	.
380	2029	8	.
381	2029	9	.
382	2029	10	.
383	2029	11	.
384	2029	12	.
385	2030	1	.
386	2030	2	.
387	2030	3	.
388	2030	4	.
389	2030	5	.
390	2030	6	.
391	2030	7	.
392	2030	8	.
393	2030	9	.
394	2030	10	.
395	2030	11	.
396	2030	12	.
397	2031	1	.
398	2031	2	.
399	2031	3	.
400	2031	4	.

INDIANA MICHIGAN POWER COMPANY - MICHIGAN
OTHER ULTIMATE CUSTOMERS
ENDOGENOUS VARIABLES

Obs	YEAR	MONTH	cu_imm
401	2031	5	.
402	2031	6	.
403	2031	7	.
404	2031	8	.
405	2031	9	.
406	2031	10	.
407	2031	11	.
408	2031	12	.
409	2032	1	.
410	2032	2	.
411	2032	3	.
412	2032	4	.
413	2032	5	.
414	2032	6	.
415	2032	7	.
416	2032	8	.
417	2032	9	.
418	2032	10	.
419	2032	11	.
420	2032	12	.
421	2033	1	.
422	2033	2	.
423	2033	3	.
424	2033	4	.
425	2033	5	.
426	2033	6	.
427	2033	7	.
428	2033	8	.
429	2033	9	.
430	2033	10	.
431	2033	11	.
432	2033	12	.
433	2034	1	.
434	2034	2	.
435	2034	3	.
436	2034	4	.
437	2034	5	.
438	2034	6	.
439	2034	7	.
440	2034	8	.
441	2034	9	.
442	2034	10	.
443	2034	11	.
444	2034	12	.
445	2035	1	.
446	2035	2	.
447	2035	3	.
448	2035	4	.
449	2035	5	.
450	2035	6	.

INDIANA MICHIGAN POWER COMPANY - MICHIGAN
OTHER ULTIMATE CUSTOMERS
ENDOGENOUS VARIABLES

Obs	YEAR	MONTH	cu_imm
451	2035	7	.
452	2035	8	.
453	2035	9	.
454	2035	10	.
455	2035	11	.
456	2035	12	.
457	2036	1	.
458	2036	2	.
459	2036	3	.
460	2036	4	.
461	2036	5	.
462	2036	6	.
463	2036	7	.
464	2036	8	.
465	2036	9	.
466	2036	10	.
467	2036	11	.
468	2036	12	.
469	2037	1	.
470	2037	2	.
471	2037	3	.
472	2037	4	.
473	2037	5	.
474	2037	6	.
475	2037	7	.
476	2037	8	.
477	2037	9	.
478	2037	10	.
479	2037	11	.
480	2037	12	.
481	2038	1	.
482	2038	2	.
483	2038	3	.
484	2038	4	.
485	2038	5	.
486	2038	6	.
487	2038	7	.
488	2038	8	.
489	2038	9	.
490	2038	10	.
491	2038	11	.
492	2038	12	.
493	2039	1	.
494	2039	2	.
495	2039	3	.
496	2039	4	.
497	2039	5	.
498	2039	6	.
499	2039	7	.
500	2039	8	.

INDIANA MICHIGAN POWER COMPANY - MICHIGAN
OTHER ULTIMATE CUSTOMERS
ENDOGENOUS VARIABLES

Obs	YEAR	MONTH	cu_imm
501	2039	9	.
502	2039	10	.
503	2039	11	.
504	2039	12	.
505	2040	1	.
506	2040	2	.
507	2040	3	.
508	2040	4	.
509	2040	5	.
510	2040	6	.
511	2040	7	.
512	2040	8	.
513	2040	9	.
514	2040	10	.
515	2040	11	.
516	2040	12	.
517	2041	1	.
518	2041	2	.
519	2041	3	.
520	2041	4	.
521	2041	5	.
522	2041	6	.
523	2041	7	.
524	2041	8	.
525	2041	9	.
526	2041	10	.
527	2041	11	.
528	2041	12	.
529	2042	1	.
530	2042	2	.
531	2042	3	.
532	2042	4	.
533	2042	5	.
534	2042	6	.
535	2042	7	.
536	2042	8	.
537	2042	9	.
538	2042	10	.
539	2042	11	.
540	2042	12	.
541	2043	1	.
542	2043	2	.
543	2043	3	.
544	2043	4	.
545	2043	5	.
546	2043	6	.
547	2043	7	.
548	2043	8	.
549	2043	9	.
550	2043	10	.

INDIANA MICHIGAN POWER COMPANY - MICHIGAN
OTHER ULTIMATE CUSTOMERS
ENDOGENOUS VARIABLES

Obs	YEAR	MONTH	cu_imm
551	2043	11	.
552	2043	12	.
553	2044	1	.
554	2044	2	.
555	2044	3	.
556	2044	4	.
557	2044	5	.
558	2044	6	.
559	2044	7	.
560	2044	8	.
561	2044	9	.
562	2044	10	.
563	2044	11	.
564	2044	12	.
565	2045	1	.
566	2045	2	.
567	2045	3	.
568	2045	4	.
569	2045	5	.
570	2045	6	.
571	2045	7	.
572	2045	8	.
573	2045	9	.
574	2045	10	.
575	2045	11	.
576	2045	12	.
577	2046	1	.
578	2046	2	.
579	2046	3	.
580	2046	4	.
581	2046	5	.
582	2046	6	.
583	2046	7	.
584	2046	8	.
585	2046	9	.
586	2046	10	.
587	2046	11	.
588	2046	12	.
589	2047	1	.
590	2047	2	.
591	2047	3	.
592	2047	4	.
593	2047	5	.
594	2047	6	.
595	2047	7	.
596	2047	8	.
597	2047	9	.
598	2047	10	.
599	2047	11	.
600	2047	12	.

INDIANA MICHIGAN POWER COMPANY - MICHIGAN
OTHER ULTIMATE CUSTOMERS
ENDOGENOUS VARIABLES

Obs	YEAR	MONTH	cu_imm
601	2048	1	.
602	2048	2	.
603	2048	3	.
604	2048	4	.
605	2048	5	.
606	2048	6	.
607	2048	7	.
608	2048	8	.
609	2048	9	.
610	2048	10	.
611	2048	11	.
612	2048	12	.
613	2049	1	.
614	2049	2	.
615	2049	3	.
616	2049	4	.
617	2049	5	.
618	2049	6	.
619	2049	7	.
620	2049	8	.
621	2049	9	.
622	2049	10	.
623	2049	11	.
624	2049	12	.
625	2050	1	.
626	2050	2	.
627	2050	3	.
628	2050	4	.
629	2050	5	.
630	2050	6	.
631	2050	7	.
632	2050	8	.
633	2050	9	.
634	2050	10	.
635	2050	11	.
636	2050	12	.
637	2051	1	.
638	2051	2	.
639	2051	3	.
640	2051	4	.
641	2051	5	.
642	2051	6	.
643	2051	7	.
644	2051	8	.
645	2051	9	.
646	2051	10	.
647	2051	11	.
648	2051	12	.
649	2052	1	.
650	2052	2	.

INDIANA MICHIGAN POWER COMPANY - MICHIGAN
OTHER ULTIMATE CUSTOMERS
ENDOGENOUS VARIABLES

Obs	YEAR	MONTH	cu_imm
651	2052	3	.
652	2052	4	.
653	2052	5	.
654	2052	6	.
655	2052	7	.
656	2052	8	.
657	2052	9	.
658	2052	10	.
659	2052	11	.
660	2052	12	.
661	2053	1	.
662	2053	2	.
663	2053	3	.
664	2053	4	.
665	2053	5	.
666	2053	6	.
667	2053	7	.
668	2053	8	.
669	2053	9	.
670	2053	10	.
671	2053	11	.
672	2053	12	.
673	2054	1	.
674	2054	2	.
675	2054	3	.
676	2054	4	.
677	2054	5	.
678	2054	6	.
679	2054	7	.
680	2054	8	.
681	2054	9	.
682	2054	10	.
683	2054	11	.
684	2054	12	.
685	2055	1	.
686	2055	2	.
687	2055	3	.
688	2055	4	.
689	2055	5	.
690	2055	6	.
691	2055	7	.
692	2055	8	.
693	2055	9	.
694	2055	10	.
695	2055	11	.
696	2055	12	.
697	2056	1	.
698	2056	2	.
699	2056	3	.
700	2056	4	.

INDIANA MICHIGAN POWER COMPANY - MICHIGAN
OTHER ULTIMATE CUSTOMERS
ENDOGENOUS VARIABLES

Obs	YEAR	MONTH	cu_imm
701	2056	5	.
702	2056	6	.
703	2056	7	.
704	2056	8	.
705	2056	9	.
706	2056	10	.
707	2056	11	.
708	2056	12	.
709	2057	1	.
710	2057	2	.
711	2057	3	.
712	2057	4	.
713	2057	5	.
714	2057	6	.
715	2057	7	.
716	2057	8	.
717	2057	9	.
718	2057	10	.
719	2057	11	.
720	2057	12	.

INDIANA MICHIGAN POWER COMPANY - MICHIGAN
OTHER ULTIMATE CUSTOMERS
EXOGENOUS VARIABLES

The MEANS Procedure

Variable	Label	Mean
YEAR	Year	2027.50
MONTH	Month	6.5000000
N_IMM	Service Area Population	328.6480886
gdp_imm	Service Area Gross Regional Product	14422.43
d04on	Binary Variable - 2004 On	0.9000000
d07on	Binary Variable - 2007 On	0.8500000
oct13	Binary Varible - October 2013	0.0013889
nov13	Binary Variable - November 2013	0.0013889
jan98	Binary Variable - January 1998	0.0013889
nov19on	Binary Variable - November 2019 On	0.6361111
d12on	Binary Variable - 2012 On	0.7666667
d17on	Binary Variable - 2017 On	0.6833333
may18	Binary Variable - May 2018	0.0013889
apr18	Binary Variable - April 2018	0.0013889

Obs	YEAR	MONTH	N_IMM	gdp_imm	d04on	d07on	oct13	nov13	jan98	nov19on	d12on	d17on	may18	apr18
1	1998	1	349.866	10660.91	0	0	0	0	1	0	0	0	0	0
2	1998	2	349.903	10646.52	0	0	0	0	0	0	0	0	0	0
3	1998	3	349.939	10640.38	0	0	0	0	0	0	0	0	0	0
4	1998	4	349.980	10644.97	0	0	0	0	0	0	0	0	0	0
5	1998	5	350.022	10663.44	0	0	0	0	0	0	0	0	0	0
6	1998	6	350.064	10698.24	0	0	0	0	0	0	0	0	0	0
7	1998	7	350.105	10751.99	0	0	0	0	0	0	0	0	0	0
8	1998	8	350.148	10825.97	0	0	0	0	0	0	0	0	0	0
9	1998	9	350.191	10915.30	0	0	0	0	0	0	0	0	0	0
10	1998	10	350.238	11018.45	0	0	0	0	0	0	0	0	0	0
11	1998	11	350.290	11132.56	0	0	0	0	0	0	0	0	0	0
12	1998	12	350.346	11255.02	0	0	0	0	0	0	0	0	0	0
13	1999	1	350.411	11385.19	0	0	0	0	0	0	0	0	0	0
14	1999	2	350.482	11511.83	0	0	0	0	0	0	0	0	0	0
15	1999	3	350.562	11638.68	0	0	0	0	0	0	0	0	0	0
16	1999	4	350.658	11767.45	0	0	0	0	0	0	0	0	0	0
17	1999	5	350.766	11891.08	0	0	0	0	0	0	0	0	0	0
18	1999	6	350.888	12006.92	0	0	0	0	0	0	0	0	0	0
19	1999	7	351.029	12112.26	0	0	0	0	0	0	0	0	0	0
20	1999	8	351.184	12207.06	0	0	0	0	0	0	0	0	0	0
21	1999	9	351.349	12287.90	0	0	0	0	0	0	0	0	0	0
22	1999	10	351.519	12356.07	0	0	0	0	0	0	0	0	0	0
23	1999	11	351.689	12411.45	0	0	0	0	0	0	0	0	0	0
24	1999	12	351.856	12453.68	0	0	0	0	0	0	0	0	0	0
25	2000	1	352.018	12482.96	0	0	0	0	0	0	0	0	0	0
26	2000	2	352.161	12498.01	0	0	0	0	0	0	0	0	0	0
27	2000	3	352.286	12499.54	0	0	0	0	0	0	0	0	0	0
28	2000	4	352.390	12487.27	0	0	0	0	0	0	0	0	0	0
29	2000	5	352.470	12460.61	0	0	0	0	0	0	0	0	0	0
30	2000	6	352.517	12419.48	0	0	0	0	0	0	0	0	0	0
31	2000	7	352.527	12363.60	0	0	0	0	0	0	0	0	0	0
32	2000	8	352.501	12293.20	0	0	0	0	0	0	0	0	0	0
33	2000	9	352.444	12213.42	0	0	0	0	0	0	0	0	0	0
34	2000	10	352.360	12126.17	0	0	0	0	0	0	0	0	0	0
35	2000	11	352.255	12034.53	0	0	0	0	0	0	0	0	0	0
36	2000	12	352.135	11941.48	0	0	0	0	0	0	0	0	0	0
37	2001	1	351.999	11848.55	0	0	0	0	0	0	0	0	0	0
38	2001	2	351.865	11764.49	0	0	0	0	0	0	0	0	0	0
39	2001	3	351.728	11687.61	0	0	0	0	0	0	0	0	0	0
40	2001	4	351.590	11618.37	0	0	0	0	0	0	0	0	0	0
41	2001	5	351.461	11562.68	0	0	0	0	0	0	0	0	0	0
42	2001	6	351.345	11523.39	0	0	0	0	0	0	0	0	0	0
43	2001	7	351.248	11503.50	0	0	0	0	0	0	0	0	0	0
44	2001	8	351.169	11503.26	0	0	0	0	0	0	0	0	0	0
45	2001	9	351.108	11520.19	0	0	0	0	0	0	0	0	0	0
46	2001	10	351.066	11551.48	0	0	0	0	0	0	0	0	0	0
47	2001	11	351.038	11594.21	0	0	0	0	0	0	0	0	0	0
48	2001	12	351.022	11645.74	0	0	0	0	0	0	0	0	0	0
49	2002	1	351.018	11704.20	0	0	0	0	0	0	0	0	0	0
50	2002	2	351.023	11762.92	0	0	0	0	0	0	0	0	0	0

Obs	YEAR	MONTH	N_IMM	gdp_imm	d04on	d07on	oct13	nov13	jan98	nov19on	d12on	d17on	may18	apr18
51	2002	3	351.035	11822.11	0	0	0	0	0	0	0	0	0	0
52	2002	4	351.053	11881.14	0	0	0	0	0	0	0	0	0	0
53	2002	5	351.076	11935.20	0	0	0	0	0	0	0	0	0	0
54	2002	6	351.100	11981.60	0	0	0	0	0	0	0	0	0	0
55	2002	7	351.126	12017.61	0	0	0	0	0	0	0	0	0	0
56	2002	8	351.152	12042.95	0	0	0	0	0	0	0	0	0	0
57	2002	9	351.176	12058.17	0	0	0	0	0	0	0	0	0	0
58	2002	10	351.201	12065.26	0	0	0	0	0	0	0	0	0	0
59	2002	11	351.227	12065.88	0	0	0	0	0	0	0	0	0	0
60	2002	12	351.255	12061.55	0	0	0	0	0	0	0	0	0	0
61	2003	1	351.283	12053.73	0	0	0	0	0	0	0	0	0	0
62	2003	2	351.312	12044.57	0	0	0	0	0	0	0	0	0	0
63	2003	3	351.342	12035.20	0	0	0	0	0	0	0	0	0	0
64	2003	4	351.375	12026.77	0	0	0	0	0	0	0	0	0	0
65	2003	5	351.411	12021.22	0	0	0	0	0	0	0	0	0	0
66	2003	6	351.451	12020.08	0	0	0	0	0	0	0	0	0	0
67	2003	7	351.492	12024.88	0	0	0	0	0	0	0	0	0	0
68	2003	8	351.538	12036.21	0	0	0	0	0	0	0	0	0	0
69	2003	9	351.581	12052.88	0	0	0	0	0	0	0	0	0	0
70	2003	10	351.626	12074.15	0	0	0	0	0	0	0	0	0	0
71	2003	11	351.664	12099.04	0	0	0	0	0	0	0	0	0	0
72	2003	12	351.698	12126.68	0	0	0	0	0	0	0	0	0	0
73	2004	1	351.724	12156.60	1	0	0	0	0	0	0	0	0	0
74	2004	2	351.740	12186.42	1	0	0	0	0	0	0	0	0	0
75	2004	3	351.745	12216.20	1	0	0	0	0	0	0	0	0	0
76	2004	4	351.737	12245.52	1	0	0	0	0	0	0	0	0	0
77	2004	5	351.712	12272.97	1	0	0	0	0	0	0	0	0	0
78	2004	6	351.671	12297.63	1	0	0	0	0	0	0	0	0	0
79	2004	7	351.610	12318.61	1	0	0	0	0	0	0	0	0	0
80	2004	8	351.528	12335.88	1	0	0	0	0	0	0	0	0	0
81	2004	9	351.430	12349.22	1	0	0	0	0	0	0	0	0	0
82	2004	10	351.318	12359.29	1	0	0	0	0	0	0	0	0	0
83	2004	11	351.195	12366.52	1	0	0	0	0	0	0	0	0	0
84	2004	12	351.060	12371.24	1	0	0	0	0	0	0	0	0	0
85	2005	1	350.917	12373.91	1	0	0	0	0	0	0	0	0	0
86	2005	2	350.774	12374.80	1	0	0	0	0	0	0	0	0	0
87	2005	3	350.630	12374.43	1	0	0	0	0	0	0	0	0	0
88	2005	4	350.481	12373.10	1	0	0	0	0	0	0	0	0	0
89	2005	5	350.332	12371.19	1	0	0	0	0	0	0	0	0	0
90	2005	6	350.189	12369.07	1	0	0	0	0	0	0	0	0	0
91	2005	7	350.052	12367.13	1	0	0	0	0	0	0	0	0	0
92	2005	8	349.920	12365.67	1	0	0	0	0	0	0	0	0	0
93	2005	9	349.799	12364.99	1	0	0	0	0	0	0	0	0	0
94	2005	10	349.686	12365.33	1	0	0	0	0	0	0	0	0	0
95	2005	11	349.581	12366.91	1	0	0	0	0	0	0	0	0	0
96	2005	12	349.482	12370.00	1	0	0	0	0	0	0	0	0	0
97	2006	1	349.391	12374.95	1	0	0	0	0	0	0	0	0	0
98	2006	2	349.310	12381.56	1	0	0	0	0	0	0	0	0	0
99	2006	3	349.238	12390.31	1	0	0	0	0	0	0	0	0	0
100	2006	4	349.170	12401.80	1	0	0	0	0	0	0	0	0	0

Obs	YEAR	MONTH	N_IMM	gdp_imm	d04on	d07on	oct13	nov13	jan98	nov19on	d12on	d17on	may18	apr18
101	2006	5	349.110	12416.04	1	0	0	0	0	0	0	0	0	0
102	2006	6	349.057	12433.26	1	0	0	0	0	0	0	0	0	0
103	2006	7	349.012	12453.71	1	0	0	0	0	0	0	0	0	0
104	2006	8	348.973	12477.63	1	0	0	0	0	0	0	0	0	0
105	2006	9	348.943	12503.71	1	0	0	0	0	0	0	0	0	0
106	2006	10	348.917	12531.75	1	0	0	0	0	0	0	0	0	0
107	2006	11	348.897	12561.16	1	0	0	0	0	0	0	0	0	0
108	2006	12	348.884	12591.35	1	0	0	0	0	0	0	0	0	0
109	2007	1	348.874	12622.25	1	1	0	0	0	0	0	0	0	0
110	2007	2	348.868	12651.31	1	1	0	0	0	0	0	0	0	0
111	2007	3	348.866	12679.49	1	1	0	0	0	0	0	0	0	0
112	2007	4	348.866	12707.15	1	1	0	0	0	0	0	0	0	0
113	2007	5	348.870	12732.72	1	1	0	0	0	0	0	0	0	0
114	2007	6	348.876	12755.66	1	1	0	0	0	0	0	0	0	0
115	2007	7	348.882	12775.32	1	1	0	0	0	0	0	0	0	0
116	2007	8	348.890	12790.93	1	1	0	0	0	0	0	0	0	0
117	2007	9	348.896	12800.56	1	1	0	0	0	0	0	0	0	0
118	2007	10	348.901	12802.97	1	1	0	0	0	0	0	0	0	0
119	2007	11	348.905	12796.78	1	1	0	0	0	0	0	0	0	0
120	2007	12	348.903	12780.42	1	1	0	0	0	0	0	0	0	0
121	2008	1	348.896	12751.95	1	1	0	0	0	0	0	0	0	0
122	2008	2	348.884	12711.62	1	1	0	0	0	0	0	0	0	0
123	2008	3	348.863	12657.09	1	1	0	0	0	0	0	0	0	0
124	2008	4	348.833	12585.93	1	1	0	0	0	0	0	0	0	0
125	2008	5	348.794	12497.25	1	1	0	0	0	0	0	0	0	0
126	2008	6	348.745	12389.77	1	1	0	0	0	0	0	0	0	0
127	2008	7	348.682	12262.06	1	1	0	0	0	0	0	0	0	0
128	2008	8	348.607	12113.48	1	1	0	0	0	0	0	0	0	0
129	2008	9	348.521	11953.67	1	1	0	0	0	0	0	0	0	0
130	2008	10	348.427	11785.39	1	1	0	0	0	0	0	0	0	0
131	2008	11	348.322	11613.84	1	1	0	0	0	0	0	0	0	0
132	2008	12	348.211	11444.09	1	1	0	0	0	0	0	0	0	0
133	2009	1	348.093	11278.68	1	1	0	0	0	0	0	0	0	0
134	2009	2	347.976	11132.67	1	1	0	0	0	0	0	0	0	0
135	2009	3	347.854	11002.87	1	1	0	0	0	0	0	0	0	0
136	2009	4	347.728	10890.15	1	1	0	0	0	0	0	0	0	0
137	2009	5	347.600	10804.67	1	1	0	0	0	0	0	0	0	0
138	2009	6	347.474	10751.22	1	1	0	0	0	0	0	0	0	0
139	2009	7	347.349	10734.91	1	1	0	0	0	0	0	0	0	0
140	2009	8	347.225	10756.22	1	1	0	0	0	0	0	0	0	0
141	2009	9	347.107	10809.58	1	1	0	0	0	0	0	0	0	0
142	2009	10	346.993	10889.90	1	1	0	0	0	0	0	0	0	0
143	2009	11	346.885	10991.56	1	1	0	0	0	0	0	0	0	0
144	2009	12	346.784	11109.40	1	1	0	0	0	0	0	0	0	0
145	2010	1	346.689	11240.11	1	1	0	0	0	0	0	0	0	0
146	2010	2	346.608	11369.66	1	1	0	0	0	0	0	0	0	0
147	2010	3	346.534	11499.32	1	1	0	0	0	0	0	0	0	0
148	2010	4	346.469	11628.36	1	1	0	0	0	0	0	0	0	0
149	2010	5	346.415	11746.91	1	1	0	0	0	0	0	0	0	0
150	2010	6	346.372	11849.77	1	1	0	0	0	0	0	0	0	0

Obs	YEAR	MONTH	N_IMM	gdp_imm	d04on	d07on	oct13	nov13	jan98	nov19on	d12on	d17on	may18	apr18
151	2010	7	346.344	11931.64	1	1	0	0	0	0	0	0	0	0
152	2010	8	346.329	11991.73	1	1	0	0	0	0	0	0	0	0
153	2010	9	346.323	12030.00	1	1	0	0	0	0	0	0	0	0
154	2010	10	346.323	12049.67	1	1	0	0	0	0	0	0	0	0
155	2010	11	346.327	12053.18	1	1	0	0	0	0	0	0	0	0
156	2010	12	346.332	12042.61	1	1	0	0	0	0	0	0	0	0
157	2011	1	346.336	12019.87	1	1	0	0	0	0	0	0	0	0
158	2011	2	346.335	11989.15	1	1	0	0	0	0	0	0	0	0
159	2011	3	346.325	11951.48	1	1	0	0	0	0	0	0	0	0
160	2011	4	346.307	11907.56	1	1	0	0	0	0	0	0	0	0
161	2011	5	346.273	11860.73	1	1	0	0	0	0	0	0	0	0
162	2011	6	346.225	11813.24	1	1	0	0	0	0	0	0	0	0
163	2011	7	346.157	11767.27	1	1	0	0	0	0	0	0	0	0
164	2011	8	346.068	11723.42	1	1	0	0	0	0	0	0	0	0
165	2011	9	345.965	11683.42	1	1	0	0	0	0	0	0	0	0
166	2011	10	345.847	11646.81	1	1	0	0	0	0	0	0	0	0
167	2011	11	345.717	11613.77	1	1	0	0	0	0	0	0	0	0
168	2011	12	345.580	11584.57	1	1	0	0	0	0	0	0	0	0
169	2012	1	345.434	11559.04	1	1	0	0	0	0	1	0	0	0
170	2012	2	345.288	11538.53	1	1	0	0	0	0	1	0	0	0
171	2012	3	345.143	11522.42	1	1	0	0	0	0	1	0	0	0
172	2012	4	344.999	11510.71	1	1	0	0	0	0	1	0	0	0
173	2012	5	344.858	11504.00	1	1	0	0	0	0	1	0	0	0
174	2012	6	344.725	11502.45	1	1	0	0	0	0	1	0	0	0
175	2012	7	344.601	11506.33	1	1	0	0	0	0	1	0	0	0
176	2012	8	344.489	11515.55	1	1	0	0	0	0	1	0	0	0
177	2012	9	344.389	11529.18	1	1	0	0	0	0	1	0	0	0
178	2012	10	344.299	11546.66	1	1	0	0	0	0	1	0	0	0
179	2012	11	344.221	11567.28	1	1	0	0	0	0	1	0	0	0
180	2012	12	344.154	11590.37	1	1	0	0	0	0	1	0	0	0
181	2013	1	344.098	11615.65	1	1	0	0	0	0	1	0	0	0
182	2013	2	344.054	11640.75	1	1	0	0	0	0	1	0	0	0
183	2013	3	344.019	11666.24	1	1	0	0	0	0	1	0	0	0
184	2013	4	343.994	11692.34	1	1	0	0	0	0	1	0	0	0
185	2013	5	343.978	11717.49	1	1	0	0	0	0	1	0	0	0
186	2013	6	343.973	11741.04	1	1	0	0	0	0	1	0	0	0
187	2013	7	343.979	11762.29	1	1	0	0	0	0	1	0	0	0
188	2013	8	343.992	11781.38	1	1	0	0	0	0	1	0	0	0
189	2013	9	344.011	11798.00	1	1	0	0	0	0	1	0	0	0
190	2013	10	344.033	11812.82	1	1	1	0	0	0	1	0	0	0
191	2013	11	344.053	11826.22	1	1	0	1	0	0	1	0	0	0
192	2013	12	344.070	11838.55	1	1	0	0	0	0	1	0	0	0
193	2014	1	344.082	11850.37	1	1	0	0	0	0	1	0	0	0
194	2014	2	344.084	11861.28	1	1	0	0	0	0	1	0	0	0
195	2014	3	344.075	11872.22	1	1	0	0	0	0	1	0	0	0
196	2014	4	344.049	11883.88	1	1	0	0	0	0	1	0	0	0
197	2014	5	344.007	11896.27	1	1	0	0	0	0	1	0	0	0
198	2014	6	343.944	11909.74	1	1	0	0	0	0	1	0	0	0
199	2014	7	343.858	11924.65	1	1	0	0	0	0	1	0	0	0
200	2014	8	343.745	11941.37	1	1	0	0	0	0	1	0	0	0

Obs	YEAR	MONTH	N_IMM	gdp_imm	d04on	d07on	oct13	nov13	jan98	nov19on	d12on	d17on	may18	apr18
201	2014	9	343.615	11959.21	1	1	0	0	0	0	1	0	0	0
202	2014	10	343.469	11978.27	1	1	0	0	0	0	1	0	0	0
203	2014	11	343.311	11998.34	1	1	0	0	0	0	1	0	0	0
204	2014	12	343.145	12019.27	1	1	0	0	0	0	1	0	0	0
205	2015	1	342.970	12041.24	1	1	0	0	0	0	1	0	0	0
206	2015	2	342.805	12062.61	1	1	0	0	0	0	1	0	0	0
207	2015	3	342.643	12084.29	1	1	0	0	0	0	1	0	0	0
208	2015	4	342.483	12106.84	1	1	0	0	0	0	1	0	0	0
209	2015	5	342.332	12129.38	1	1	0	0	0	0	1	0	0	0
210	2015	6	342.196	12151.70	1	1	0	0	0	0	1	0	0	0
211	2015	7	342.080	12173.66	1	1	0	0	0	0	1	0	0	0
212	2015	8	341.981	12195.52	1	1	0	0	0	0	1	0	0	0
213	2015	9	341.902	12216.62	1	1	0	0	0	0	1	0	0	0
214	2015	10	341.839	12237.37	1	1	0	0	0	0	1	0	0	0
215	2015	11	341.790	12257.82	1	1	0	0	0	0	1	0	0	0
216	2015	12	341.752	12278.02	1	1	0	0	0	0	1	0	0	0
217	2016	1	341.724	12298.34	1	1	0	0	0	0	1	0	0	0
218	2016	2	341.706	12317.86	1	1	0	0	0	0	1	0	0	0
219	2016	3	341.693	12337.27	1	1	0	0	0	0	1	0	0	0
220	2016	4	341.683	12356.97	1	1	0	0	0	0	1	0	0	0
221	2016	5	341.677	12376.66	1	1	0	0	0	0	1	0	0	0
222	2016	6	341.671	12396.40	1	1	0	0	0	0	1	0	0	0
223	2016	7	341.664	12416.22	1	1	0	0	0	0	1	0	0	0
224	2016	8	341.654	12436.31	1	1	0	0	0	0	1	0	0	0
225	2016	9	341.642	12455.69	1	1	0	0	0	0	1	0	0	0
226	2016	10	341.630	12474.33	1	1	0	0	0	0	1	0	0	0
227	2016	11	341.617	12491.91	1	1	0	0	0	0	1	0	0	0
228	2016	12	341.606	12508.06	1	1	0	0	0	0	1	0	0	0
229	2017	1	341.596	12522.67	1	1	0	0	0	0	1	1	0	0
230	2017	2	341.588	12534.57	1	1	0	0	0	0	1	1	0	0
231	2017	3	341.583	12544.15	1	1	0	0	0	0	1	1	0	0
232	2017	4	341.580	12551.35	1	1	0	0	0	0	1	1	0	0
233	2017	5	341.583	12555.41	1	1	0	0	0	0	1	1	0	0
234	2017	6	341.588	12556.03	1	1	0	0	0	0	1	1	0	0
235	2017	7	341.600	12552.87	1	1	0	0	0	0	1	1	0	0
236	2017	8	341.617	12546.09	1	1	0	0	0	0	1	1	0	0
237	2017	9	341.640	12536.79	1	1	0	0	0	0	1	1	0	0
238	2017	10	341.667	12525.82	1	1	0	0	0	0	1	1	0	0
239	2017	11	341.696	12514.12	1	1	0	0	0	0	1	1	0	0
240	2017	12	341.727	12502.65	1	1	0	0	0	0	1	1	0	0
241	2018	1	341.760	12492.17	1	1	0	0	0	0	1	1	0	0
242	2018	2	341.792	12484.19	1	1	0	0	0	0	1	1	0	0
243	2018	3	341.825	12479.08	1	1	0	0	0	0	1	1	0	0
244	2018	4	341.857	12477.63	1	1	0	0	0	0	1	1	0	1
245	2018	5	341.887	12481.08	1	1	0	0	0	0	1	1	1	0
246	2018	6	341.915	12490.31	1	1	0	0	0	0	1	1	0	0
247	2018	7	341.938	12506.22	1	1	0	0	0	0	1	1	0	0
248	2018	8	341.960	12528.62	1	1	0	0	0	0	1	1	0	0
249	2018	9	341.976	12554.75	1	1	0	0	0	0	1	1	0	0
250	2018	10	341.987	12582.78	1	1	0	0	0	0	1	1	0	0

Obs	YEAR	MONTH	N_IMM	gdp_imm	d04on	d07on	oct13	nov13	jan98	nov19on	d12on	d17on	may18	apr18
251	2018	11	341.994	12610.53	1	1	0	0	0	0	1	1	0	0
252	2018	12	341.995	12635.82	1	1	0	0	0	0	1	1	0	0
253	2019	1	341.993	12656.78	1	1	0	0	0	0	1	1	0	0
254	2019	2	341.983	12670.29	1	1	0	0	0	0	1	1	0	0
255	2019	3	341.969	12675.30	1	1	0	0	0	0	1	1	0	0
256	2019	4	341.948	12669.73	1	1	0	0	0	0	1	1	0	0
257	2019	5	341.919	12650.89	1	1	0	0	0	0	1	1	0	0
258	2019	6	341.886	12616.78	1	1	0	0	0	0	1	1	0	0
259	2019	7	341.844	12565.23	1	1	0	0	0	0	1	1	0	0
260	2019	8	341.796	12495.64	1	1	0	0	0	0	1	1	0	0
261	2019	9	341.743	12413.41	1	1	0	0	0	0	1	1	0	0
262	2019	10	341.687	12320.91	1	1	0	0	0	0	1	1	0	0
263	2019	11	341.626	12221.65	1	1	0	0	0	1	1	1	0	0
264	2019	12	341.565	12119.01	1	1	0	0	0	1	1	1	0	0
265	2020	1	341.503	12014.77	1	1	0	0	0	1	1	1	0	0
266	2020	2	341.442	11917.31	1	1	0	0	0	1	1	1	0	0
267	2020	3	341.385	11826.61	1	1	0	0	0	1	1	1	0	0
268	2020	4	341.329	11744.55	1	1	0	0	0	1	1	1	0	0
269	2020	5	341.279	11676.27	1	1	0	0	0	1	1	1	0	0
270	2020	6	341.233	11625.04	1	1	0	0	0	1	1	1	0	0
271	2020	7	341.193	11594.27	1	1	0	0	0	1	1	1	0	0
272	2020	8	341.162	11584.40	1	1	0	0	0	1	1	1	0	0
273	2020	9	341.136	11593.60	1	1	0	0	0	1	1	1	0	0
274	2020	10	341.113	11619.27	1	1	0	0	0	1	1	1	0	0
275	2020	11	341.096	11658.85	1	1	0	0	0	1	1	1	0	0
276	2020	12	341.076	11710.08	1	1	0	0	0	1	1	1	0	0
277	2021	1	341.060	11771.51	1	1	0	0	0	1	1	1	0	0
278	2021	2	341.042	11836.45	1	1	0	0	0	1	1	1	0	0
279	2021	3	341.022	11905.59	1	1	0	0	0	1	1	1	0	0
280	2021	4	340.997	11979.08	1	1	0	0	0	1	1	1	0	0
281	2021	5	340.968	12052.27	1	1	0	0	0	1	1	1	0	0
282	2021	6	340.932	12122.78	1	1	0	0	0	1	1	1	0	0
283	2021	7	340.889	12188.27	1	1	0	0	0	1	1	1	0	0
284	2021	8	340.837	12248.69	1	1	0	0	0	1	1	1	0	0
285	2021	9	340.778	12302.52	1	1	0	0	0	1	1	1	0	0
286	2021	10	340.715	12351.27	1	1	0	0	0	1	1	1	0	0
287	2021	11	340.645	12395.55	1	1	0	0	0	1	1	1	0	0
288	2021	12	340.570	12435.85	1	1	0	0	0	1	1	1	0	0
289	2022	1	340.492	12473.32	1	1	0	0	0	1	1	1	0	0
290	2022	2	340.414	12506.26	1	1	0	0	0	1	1	1	0	0
291	2022	3	340.336	12536.98	1	1	0	0	0	1	1	1	0	0
292	2022	4	340.253	12567.01	1	1	0	0	0	1	1	1	0	0
293	2022	5	340.170	12595.77	1	1	0	0	0	1	1	1	0	0
294	2022	6	340.091	12623.83	1	1	0	0	0	1	1	1	0	0
295	2022	7	340.011	12651.71	1	1	0	0	0	1	1	1	0	0
296	2022	8	339.932	12680.10	1	1	0	0	0	1	1	1	0	0
297	2022	9	339.857	12708.01	1	1	0	0	0	1	1	1	0	0
298	2022	10	339.785	12735.80	1	1	0	0	0	1	1	1	0	0
299	2022	11	339.712	12763.38	1	1	0	0	0	1	1	1	0	0
300	2022	12	339.642	12790.62	1	1	0	0	0	1	1	1	0	0

Obs	YEAR	MONTH	N_IMM	gdp_imm	d04on	d07on	oct13	nov13	jan98	nov19on	d12on	d17on	may18	apr18
301	2023	1	339.570	12817.88	1	1	0	0	0	1	1	1	0	0
302	2023	2	339.502	12843.32	1	1	0	0	0	1	1	1	0	0
303	2023	3	339.433	12868.15	1	1	0	0	0	1	1	1	0	0
304	2023	4	339.363	12893.12	1	1	0	0	0	1	1	1	0	0
305	2023	5	339.291	12917.25	1	1	0	0	0	1	1	1	0	0
306	2023	6	339.217	12940.45	1	1	0	0	0	1	1	1	0	0
307	2023	7	339.145	12962.62	1	1	0	0	0	1	1	1	0	0
308	2023	8	339.066	12984.09	1	1	0	0	0	1	1	1	0	0
309	2023	9	338.988	13004.26	1	1	0	0	0	1	1	1	0	0
310	2023	10	338.911	13023.57	1	1	0	0	0	1	1	1	0	0
311	2023	11	338.830	13042.12	1	1	0	0	0	1	1	1	0	0
312	2023	12	338.750	13060.01	1	1	0	0	0	1	1	1	0	0
313	2024	1	338.668	13077.60	1	1	0	0	0	1	1	1	0	0
314	2024	2	338.587	13094.17	1	1	0	0	0	1	1	1	0	0
315	2024	3	338.507	13110.37	1	1	0	0	0	1	1	1	0	0
316	2024	4	338.426	13126.56	1	1	0	0	0	1	1	1	0	0
317	2024	5	338.344	13142.57	1	1	0	0	0	1	1	1	0	0
318	2024	6	338.263	13158.48	1	1	0	0	0	1	1	1	0	0
319	2024	7	338.183	13174.38	1	1	0	0	0	1	1	1	0	0
320	2024	8	338.102	13190.58	1	1	0	0	0	1	1	1	0	0
321	2024	9	338.022	13206.51	1	1	0	0	0	1	1	1	0	0
322	2024	10	337.944	13222.38	1	1	0	0	0	1	1	1	0	0
323	2024	11	337.866	13238.17	1	1	0	0	0	1	1	1	0	0
324	2024	12	337.788	13253.82	1	1	0	0	0	1	1	1	0	0
325	2025	1	337.708	13269.56	1	1	0	0	0	1	1	1	0	0
326	2025	2	337.633	13284.32	1	1	0	0	0	1	1	1	0	0
327	2025	3	337.559	13298.85	1	1	0	0	0	1	1	1	0	0
328	2025	4	337.482	13313.58	1	1	0	0	0	1	1	1	0	0
329	2025	5	337.406	13327.97	1	1	0	0	0	1	1	1	0	0
330	2025	6	337.327	13341.98	1	1	0	0	0	1	1	1	0	0
331	2025	7	337.250	13355.58	1	1	0	0	0	1	1	1	0	0
332	2025	8	337.172	13369.00	1	1	0	0	0	1	1	1	0	0
333	2025	9	337.095	13381.90	1	1	0	0	0	1	1	1	0	0
334	2025	10	337.016	13394.58	1	1	0	0	0	1	1	1	0	0
335	2025	11	336.939	13407.13	1	1	0	0	0	1	1	1	0	0
336	2025	12	336.859	13419.66	1	1	0	0	0	1	1	1	0	0
337	2026	1	336.779	13432.45	1	1	0	0	0	1	1	1	0	0
338	2026	2	336.703	13444.76	1	1	0	0	0	1	1	1	0	0
339	2026	3	336.625	13457.30	1	1	0	0	0	1	1	1	0	0
340	2026	4	336.544	13470.59	1	1	0	0	0	1	1	1	0	0
341	2026	5	336.462	13484.30	1	1	0	0	0	1	1	1	0	0
342	2026	6	336.379	13498.53	1	1	0	0	0	1	1	1	0	0
343	2026	7	336.296	13513.35	1	1	0	0	0	1	1	1	0	0
344	2026	8	336.211	13529.05	1	1	0	0	0	1	1	1	0	0
345	2026	9	336.125	13545.09	1	1	0	0	0	1	1	1	0	0
346	2026	10	336.041	13561.66	1	1	0	0	0	1	1	1	0	0
347	2026	11	335.954	13578.72	1	1	0	0	0	1	1	1	0	0
348	2026	12	335.869	13596.23	1	1	0	0	0	1	1	1	0	0
349	2027	1	335.779	13614.42	1	1	0	0	0	1	1	1	0	0
350	2027	2	335.694	13632.07	1	1	0	0	0	1	1	1	0	0

Obs	YEAR	MONTH	N_IMM	gdp_imm	d04on	d07on	oct13	nov13	jan98	nov19on	d12on	d17on	may18	apr18
351	2027	3	335.609	13650.00	1	1	0	0	0	1	1	1	0	0
352	2027	4	335.521	13668.78	1	1	0	0	0	1	1	1	0	0
353	2027	5	335.433	13687.78	1	1	0	0	0	1	1	1	0	0
354	2027	6	335.343	13706.93	1	1	0	0	0	1	1	1	0	0
355	2027	7	335.256	13726.21	1	1	0	0	0	1	1	1	0	0
356	2027	8	335.167	13745.87	1	1	0	0	0	1	1	1	0	0
357	2027	9	335.077	13765.27	1	1	0	0	0	1	1	1	0	0
358	2027	10	334.990	13784.68	1	1	0	0	0	1	1	1	0	0
359	2027	11	334.900	13804.09	1	1	0	0	0	1	1	1	0	0
360	2027	12	334.812	13823.46	1	1	0	0	0	1	1	1	0	0
361	2028	1	334.721	13843.09	1	1	0	0	0	1	1	1	0	0
362	2028	2	334.635	13862.00	1	1	0	0	0	1	1	1	0	0
363	2028	3	334.547	13880.79	1	1	0	0	0	1	1	1	0	0
364	2028	4	334.458	13899.75	1	1	0	0	0	1	1	1	0	0
365	2028	5	334.369	13918.53	1	1	0	0	0	1	1	1	0	0
366	2028	6	334.279	13937.12	1	1	0	0	0	1	1	1	0	0
367	2028	7	334.190	13955.48	1	1	0	0	0	1	1	1	0	0
368	2028	8	334.098	13973.90	1	1	0	0	0	1	1	1	0	0
369	2028	9	334.008	13991.79	1	1	0	0	0	1	1	1	0	0
370	2028	10	333.919	14009.46	1	1	0	0	0	1	1	1	0	0
371	2028	11	333.828	14026.92	1	1	0	0	0	1	1	1	0	0
372	2028	12	333.738	14044.17	1	1	0	0	0	1	1	1	0	0
373	2029	1	333.646	14061.51	1	1	0	0	0	1	1	1	0	0
374	2029	2	333.558	14077.83	1	1	0	0	0	1	1	1	0	0
375	2029	3	333.471	14093.99	1	1	0	0	0	1	1	1	0	0
376	2029	4	333.379	14110.53	1	1	0	0	0	1	1	1	0	0
377	2029	5	333.289	14126.90	1	1	0	0	0	1	1	1	0	0
378	2029	6	333.199	14143.13	1	1	0	0	0	1	1	1	0	0
379	2029	7	333.107	14159.21	1	1	0	0	0	1	1	1	0	0
380	2029	8	333.015	14175.43	1	1	0	0	0	1	1	1	0	0
381	2029	9	332.925	14191.27	1	1	0	0	0	1	1	1	0	0
382	2029	10	332.833	14207.02	1	1	0	0	0	1	1	1	0	0
383	2029	11	332.743	14222.70	1	1	0	0	0	1	1	1	0	0
384	2029	12	332.652	14238.33	1	1	0	0	0	1	1	1	0	0
385	2030	1	332.561	14254.17	1	1	0	0	0	1	1	1	0	0
386	2030	2	332.475	14269.24	1	1	0	0	0	1	1	1	0	0
387	2030	3	332.388	14284.30	1	1	0	0	0	1	1	1	0	0
388	2030	4	332.298	14299.90	1	1	0	0	0	1	1	1	0	0
389	2030	5	332.208	14315.54	1	1	0	0	0	1	1	1	0	0
390	2030	6	332.120	14331.24	1	1	0	0	0	1	1	1	0	0
391	2030	7	332.032	14347.01	1	1	0	0	0	1	1	1	0	0
392	2030	8	331.943	14363.13	1	1	0	0	0	1	1	1	0	0
393	2030	9	331.854	14379.05	1	1	0	0	0	1	1	1	0	0
394	2030	10	331.766	14395.04	1	1	0	0	0	1	1	1	0	0
395	2030	11	331.678	14411.07	1	1	0	0	0	1	1	1	0	0
396	2030	12	331.591	14427.13	1	1	0	0	0	1	1	1	0	0
397	2031	1	331.499	14443.48	1	1	0	0	0	1	1	1	0	0
398	2031	2	331.414	14459.05	1	1	0	0	0	1	1	1	0	0
399	2031	3	331.327	14474.61	1	1	0	0	0	1	1	1	0	0
400	2031	4	331.238	14490.69	1	1	0	0	0	1	1	1	0	0

Obs	YEAR	MONTH	N_IMM	gdp_imm	d04on	d07on	oct13	nov13	jan98	nov19on	d12on	d17on	may18	apr18
401	2031	5	331.145	14506.74	1	1	0	0	0	1	1	1	0	0
402	2031	6	331.054	14522.76	1	1	0	0	0	1	1	1	0	0
403	2031	7	330.962	14538.72	1	1	0	0	0	1	1	1	0	0
404	2031	8	330.866	14554.90	1	1	0	0	0	1	1	1	0	0
405	2031	9	330.772	14570.77	1	1	0	0	0	1	1	1	0	0
406	2031	10	330.677	14586.61	1	1	0	0	0	1	1	1	0	0
407	2031	11	330.580	14602.44	1	1	0	0	0	1	1	1	0	0
408	2031	12	330.483	14618.25	1	1	0	0	0	1	1	1	0	0
409	2032	1	330.382	14634.34	1	1	0	0	0	1	1	1	0	0
410	2032	2	330.286	14649.92	1	1	0	0	0	1	1	1	0	0
411	2032	3	330.189	14665.52	1	1	0	0	0	1	1	1	0	0
412	2032	4	330.089	14681.43	1	1	0	0	0	1	1	1	0	0
413	2032	5	329.988	14697.38	1	1	0	0	0	1	1	1	0	0
414	2032	6	329.889	14713.39	1	1	0	0	0	1	1	1	0	0
415	2032	7	329.788	14729.48	1	1	0	0	0	1	1	1	0	0
416	2032	8	329.686	14745.91	1	1	0	0	0	1	1	1	0	0
417	2032	9	329.585	14762.14	1	1	0	0	0	1	1	1	0	0
418	2032	10	329.483	14778.43	1	1	0	0	0	1	1	1	0	0
419	2032	11	329.381	14794.77	1	1	0	0	0	1	1	1	0	0
420	2032	12	329.280	14811.17	1	1	0	0	0	1	1	1	0	0
421	2033	1	329.175	14827.88	1	1	0	0	0	1	1	1	0	0
422	2033	2	329.076	14843.81	1	1	0	0	0	1	1	1	0	0
423	2033	3	328.974	14859.77	1	1	0	0	0	1	1	1	0	0
424	2033	4	328.871	14876.30	1	1	0	0	0	1	1	1	0	0
425	2033	5	328.765	14892.84	1	1	0	0	0	1	1	1	0	0
426	2033	6	328.660	14909.38	1	1	0	0	0	1	1	1	0	0
427	2033	7	328.554	14925.94	1	1	0	0	0	1	1	1	0	0
428	2033	8	328.443	14942.76	1	1	0	0	0	1	1	1	0	0
429	2033	9	328.335	14959.32	1	1	0	0	0	1	1	1	0	0
430	2033	10	328.226	14975.88	1	1	0	0	0	1	1	1	0	0
431	2033	11	328.116	14992.44	1	1	0	0	0	1	1	1	0	0
432	2033	12	328.008	15009.01	1	1	0	0	0	1	1	1	0	0
433	2034	1	327.894	15025.85	1	1	0	0	0	1	1	1	0	0
434	2034	2	327.785	15041.90	1	1	0	0	0	1	1	1	0	0
435	2034	3	327.678	15057.95	1	1	0	0	0	1	1	1	0	0
436	2034	4	327.567	15074.55	1	1	0	0	0	1	1	1	0	0
437	2034	5	327.453	15091.17	1	1	0	0	0	1	1	1	0	0
438	2034	6	327.339	15107.81	1	1	0	0	0	1	1	1	0	0
439	2034	7	327.227	15124.46	1	1	0	0	0	1	1	1	0	0
440	2034	8	327.111	15141.40	1	1	0	0	0	1	1	1	0	0
441	2034	9	326.996	15158.07	1	1	0	0	0	1	1	1	0	0
442	2034	10	326.882	15174.73	1	1	0	0	0	1	1	1	0	0
443	2034	11	326.766	15191.38	1	1	0	0	0	1	1	1	0	0
444	2034	12	326.650	15208.02	1	1	0	0	0	1	1	1	0	0
445	2035	1	326.533	15224.89	1	1	0	0	0	1	1	1	0	0
446	2035	2	326.419	15240.92	1	1	0	0	0	1	1	1	0	0
447	2035	3	326.306	15256.90	1	1	0	0	0	1	1	1	0	0
448	2035	4	326.189	15273.37	1	1	0	0	0	1	1	1	0	0
449	2035	5	326.071	15289.77	1	1	0	0	0	1	1	1	0	0
450	2035	6	325.954	15306.11	1	1	0	0	0	1	1	1	0	0

Obs	YEAR	MONTH	N_IMM	gdp_imm	d04on	d07on	oct13	nov13	jan98	nov19on	d12on	d17on	may18	apr18
451	2035	7	325.835	15322.37	1	1	0	0	0	1	1	1	0	0
452	2035	8	325.714	15338.80	1	1	0	0	0	1	1	1	0	0
453	2035	9	325.594	15354.88	1	1	0	0	0	1	1	1	0	0
454	2035	10	325.476	15370.86	1	1	0	0	0	1	1	1	0	0
455	2035	11	325.356	15386.74	1	1	0	0	0	1	1	1	0	0
456	2035	12	325.234	15402.52	1	1	0	0	0	1	1	1	0	0
457	2036	1	325.112	15418.43	1	1	0	0	0	1	1	1	0	0
458	2036	2	324.992	15433.72	1	1	0	0	0	1	1	1	0	0
459	2036	3	324.873	15448.88	1	1	0	0	0	1	1	1	0	0
460	2036	4	324.752	15464.18	1	1	0	0	0	1	1	1	0	0
461	2036	5	324.630	15479.33	1	1	0	0	0	1	1	1	0	0
462	2036	6	324.509	15494.35	1	1	0	0	0	1	1	1	0	0
463	2036	7	324.386	15509.22	1	1	0	0	0	1	1	1	0	0
464	2036	8	324.262	15524.20	1	1	0	0	0	1	1	1	0	0
465	2036	9	324.139	15538.81	1	1	0	0	0	1	1	1	0	0
466	2036	10	324.017	15553.32	1	1	0	0	0	1	1	1	0	0
467	2036	11	323.893	15567.73	1	1	0	0	0	1	1	1	0	0
468	2036	12	323.769	15582.08	1	1	0	0	0	1	1	1	0	0
469	2037	1	323.644	15596.60	1	1	0	0	0	1	1	1	0	0
470	2037	2	323.525	15610.39	1	1	0	0	0	1	1	1	0	0
471	2037	3	323.403	15624.16	1	1	0	0	0	1	1	1	0	0
472	2037	4	323.278	15638.39	1	1	0	0	0	1	1	1	0	0
473	2037	5	323.152	15652.63	1	1	0	0	0	1	1	1	0	0
474	2037	6	323.026	15666.90	1	1	0	0	0	1	1	1	0	0
475	2037	7	322.899	15681.22	1	1	0	0	0	1	1	1	0	0
476	2037	8	322.770	15695.82	1	1	0	0	0	1	1	1	0	0
477	2037	9	322.641	15710.23	1	1	0	0	0	1	1	1	0	0
478	2037	10	322.513	15724.68	1	1	0	0	0	1	1	1	0	0
479	2037	11	322.383	15739.16	1	1	0	0	0	1	1	1	0	0
480	2037	12	322.254	15753.66	1	1	0	0	0	1	1	1	0	0
481	2038	1	322.121	15768.41	1	1	0	0	0	1	1	1	0	0
482	2038	2	321.994	15782.45	1	1	0	0	0	1	1	1	0	0
483	2038	3	321.867	15796.49	1	1	0	0	0	1	1	1	0	0
484	2038	4	321.734	15810.99	1	1	0	0	0	1	1	1	0	0
485	2038	5	321.602	15825.47	1	1	0	0	0	1	1	1	0	0
486	2038	6	321.470	15839.93	1	1	0	0	0	1	1	1	0	0
487	2038	7	321.335	15854.35	1	1	0	0	0	1	1	1	0	0
488	2038	8	321.200	15868.98	1	1	0	0	0	1	1	1	0	0
489	2038	9	321.065	15883.35	1	1	0	0	0	1	1	1	0	0
490	2038	10	320.931	15897.71	1	1	0	0	0	1	1	1	0	0
491	2038	11	320.797	15912.08	1	1	0	0	0	1	1	1	0	0
492	2038	12	320.662	15926.46	1	1	0	0	0	1	1	1	0	0
493	2039	1	320.523	15941.12	1	1	0	0	0	1	1	1	0	0
494	2039	2	320.391	15955.10	1	1	0	0	0	1	1	1	0	0
495	2039	3	320.259	15969.13	1	1	0	0	0	1	1	1	0	0
496	2039	4	320.123	15983.71	1	1	0	0	0	1	1	1	0	0
497	2039	5	319.984	15998.37	1	1	0	0	0	1	1	1	0	0
498	2039	6	319.847	16013.12	1	1	0	0	0	1	1	1	0	0
499	2039	7	319.709	16027.97	1	1	0	0	0	1	1	1	0	0
500	2039	8	319.567	16043.17	1	1	0	0	0	1	1	1	0	0

Obs	YEAR	MONTH	N_IMM	gdp_imm	d04on	d07on	oct13	nov13	jan98	nov19on	d12on	d17on	may18	apr18
501	2039	9	319.428	16058.20	1	1	0	0	0	1	1	1	0	0
502	2039	10	319.289	16073.30	1	1	0	0	0	1	1	1	0	0
503	2039	11	319.149	16088.42	1	1	0	0	0	1	1	1	0	0
504	2039	12	319.008	16103.57	1	1	0	0	0	1	1	1	0	0
505	2040	1	318.865	16118.95	1	1	0	0	0	1	1	1	0	0
506	2040	2	318.727	16133.81	1	1	0	0	0	1	1	1	0	0
507	2040	3	318.588	16148.62	1	1	0	0	0	1	1	1	0	0
508	2040	4	318.446	16163.60	1	1	0	0	0	1	1	1	0	0
509	2040	5	318.305	16178.49	1	1	0	0	0	1	1	1	0	0
510	2040	6	318.162	16193.27	1	1	0	0	0	1	1	1	0	0
511	2040	7	318.020	16207.91	1	1	0	0	0	1	1	1	0	0
512	2040	8	317.875	16222.64	1	1	0	0	0	1	1	1	0	0
513	2040	9	317.732	16237.01	1	1	0	0	0	1	1	1	0	0
514	2040	10	317.590	16251.27	1	1	0	0	0	1	1	1	0	0
515	2040	11	317.446	16265.43	1	1	0	0	0	1	1	1	0	0
516	2040	12	317.302	16279.50	1	1	0	0	0	1	1	1	0	0
517	2041	1	317.156	16293.73	1	1	0	0	0	1	1	1	0	0
518	2041	2	317.017	16307.22	1	1	0	0	0	1	1	1	0	0
519	2041	3	316.878	16320.67	1	1	0	0	0	1	1	1	0	0
520	2041	4	316.733	16334.54	1	1	0	0	0	1	1	1	0	0
521	2041	5	316.588	16348.40	1	1	0	0	0	1	1	1	0	0
522	2041	6	316.443	16362.26	1	1	0	0	0	1	1	1	0	0
523	2041	7	316.297	16376.14	1	1	0	0	0	1	1	1	0	0
524	2041	8	316.148	16390.26	1	1	0	0	0	1	1	1	0	0
525	2041	9	316.002	16404.16	1	1	0	0	0	1	1	1	0	0
526	2041	10	315.854	16418.06	1	1	0	0	0	1	1	1	0	0
527	2041	11	315.707	16431.96	1	1	0	0	0	1	1	1	0	0
528	2041	12	315.559	16445.85	1	1	0	0	0	1	1	1	0	0
529	2042	1	315.407	16459.94	1	1	0	0	0	1	1	1	0	0
530	2042	2	315.264	16473.32	1	1	0	0	0	1	1	1	0	0
531	2042	3	315.120	16486.66	1	1	0	0	0	1	1	1	0	0
532	2042	4	314.969	16500.42	1	1	0	0	0	1	1	1	0	0
533	2042	5	314.820	16514.12	1	1	0	0	0	1	1	1	0	0
534	2042	6	314.670	16527.76	1	1	0	0	0	1	1	1	0	0
535	2042	7	314.517	16541.34	1	1	0	0	0	1	1	1	0	0
536	2042	8	314.364	16555.07	1	1	0	0	0	1	1	1	0	0
537	2042	9	314.212	16568.53	1	1	0	0	0	1	1	1	0	0
538	2042	10	314.059	16581.97	1	1	0	0	0	1	1	1	0	0
539	2042	11	313.906	16595.39	1	1	0	0	0	1	1	1	0	0
540	2042	12	313.753	16608.83	1	1	0	0	0	1	1	1	0	0
541	2043	1	313.597	16622.50	1	1	0	0	0	1	1	1	0	0
542	2043	2	313.450	16635.55	1	1	0	0	0	1	1	1	0	0
543	2043	3	313.302	16648.66	1	1	0	0	0	1	1	1	0	0
544	2043	4	313.148	16662.29	1	1	0	0	0	1	1	1	0	0
545	2043	5	312.994	16676.01	1	1	0	0	0	1	1	1	0	0
546	2043	6	312.841	16689.84	1	1	0	0	0	1	1	1	0	0
547	2043	7	312.687	16703.80	1	1	0	0	0	1	1	1	0	0
548	2043	8	312.532	16718.12	1	1	0	0	0	1	1	1	0	0
549	2043	9	312.379	16732.31	1	1	0	0	0	1	1	1	0	0
550	2043	10	312.227	16746.60	1	1	0	0	0	1	1	1	0	0

Obs	YEAR	MONTH	N_IMM	gdp_imm	d04on	d07on	oct13	nov13	jan98	nov19on	d12on	d17on	may18	apr18
551	2043	11	312.074	16760.95	1	1	0	0	0	1	1	1	0	0
552	2043	12	311.922	16775.36	1	1	0	0	0	1	1	1	0	0
553	2044	1	311.767	16790.04	1	1	0	0	0	1	1	1	0	0
554	2044	2	311.616	16804.25	1	1	0	0	0	1	1	1	0	0
555	2044	3	311.465	16818.46	1	1	0	0	0	1	1	1	0	0
556	2044	4	311.312	16832.88	1	1	0	0	0	1	1	1	0	0
557	2044	5	311.159	16847.25	1	1	0	0	0	1	1	1	0	0
558	2044	6	311.004	16861.56	1	1	0	0	0	1	1	1	0	0
559	2044	7	310.849	16875.78	1	1	0	0	0	1	1	1	0	0
560	2044	8	310.691	16890.15	1	1	0	0	0	1	1	1	0	0
561	2044	9	310.535	16904.21	1	1	0	0	0	1	1	1	0	0
562	2044	10	310.380	16918.21	1	1	0	0	0	1	1	1	0	0
563	2044	11	310.224	16932.15	1	1	0	0	0	1	1	1	0	0
564	2044	12	310.068	16946.05	1	1	0	0	0	1	1	1	0	0
565	2045	1	309.909	16960.15	1	1	0	0	0	1	1	1	0	0
566	2045	2	309.758	16973.55	1	1	0	0	0	1	1	1	0	0
567	2045	3	309.607	16986.95	1	1	0	0	0	1	1	1	0	0
568	2045	4	309.450	17000.80	1	1	0	0	0	1	1	1	0	0
569	2045	5	309.296	17014.68	1	1	0	0	0	1	1	1	0	0
570	2045	6	309.139	17028.58	1	1	0	0	0	1	1	1	0	0
571	2045	7	308.983	17042.53	1	1	0	0	0	1	1	1	0	0
572	2045	8	308.826	17056.74	1	1	0	0	0	1	1	1	0	0
573	2045	9	308.670	17070.78	1	1	0	0	0	1	1	1	0	0
574	2045	10	308.515	17084.84	1	1	0	0	0	1	1	1	0	0
575	2045	11	308.362	17098.94	1	1	0	0	0	1	1	1	0	0
576	2045	12	308.205	17113.06	1	1	0	0	0	1	1	1	0	0
577	2046	1	308.046	17127.44	1	1	0	0	0	1	1	1	0	0
578	2046	2	307.895	17141.13	1	1	0	0	0	1	1	1	0	0
579	2046	3	307.745	17154.84	1	1	0	0	0	1	1	1	0	0
580	2046	4	307.587	17169.02	1	1	0	0	0	1	1	1	0	0
581	2046	5	307.429	17183.20	1	1	0	0	0	1	1	1	0	0
582	2046	6	307.269	17197.37	1	1	0	0	0	1	1	1	0	0
583	2046	7	307.107	17211.53	1	1	0	0	0	1	1	1	0	0
584	2046	8	306.944	17225.92	1	1	0	0	0	1	1	1	0	0
585	2046	9	306.779	17240.05	1	1	0	0	0	1	1	1	0	0
586	2046	10	306.615	17254.16	1	1	0	0	0	1	1	1	0	0
587	2046	11	306.450	17268.25	1	1	0	0	0	1	1	1	0	0
588	2046	12	306.284	17282.31	1	1	0	0	0	1	1	1	0	0
589	2047	1	306.117	17296.56	1	1	0	0	0	1	1	1	0	0
590	2047	2	305.956	17310.09	1	1	0	0	0	1	1	1	0	0
591	2047	3	305.797	17323.58	1	1	0	0	0	1	1	1	0	0
592	2047	4	305.630	17337.48	1	1	0	0	0	1	1	1	0	0
593	2047	5	305.464	17351.33	1	1	0	0	0	1	1	1	0	0
594	2047	6	305.300	17365.13	1	1	0	0	0	1	1	1	0	0
595	2047	7	305.135	17378.87	1	1	0	0	0	1	1	1	0	0
596	2047	8	304.969	17392.78	1	1	0	0	0	1	1	1	0	0
597	2047	9	304.807	17406.42	1	1	0	0	0	1	1	1	0	0
598	2047	10	304.643	17420.02	1	1	0	0	0	1	1	1	0	0
599	2047	11	304.482	17433.60	1	1	0	0	0	1	1	1	0	0
600	2047	12	304.321	17447.15	1	1	0	0	0	1	1	1	0	0

Obs	YEAR	MONTH	N_IMM	gdp_imm	d04on	d07on	oct13	nov13	jan98	nov19on	d12on	d17on	may18	apr18
601	2048	1	304.156	17460.91	1	1	0	0	0	1	1	1	0	0
602	2048	2	303.999	17474.22	1	1	0	0	0	1	1	1	0	0
603	2048	3	303.842	17487.54	1	1	0	0	0	1	1	1	0	0
604	2048	4	303.680	17501.10	1	1	0	0	0	1	1	1	0	0
605	2048	5	303.520	17514.68	1	1	0	0	0	1	1	1	0	0
606	2048	6	303.359	17528.29	1	1	0	0	0	1	1	1	0	0
607	2048	7	303.200	17541.95	1	1	0	0	0	1	1	1	0	0
608	2048	8	303.036	17555.87	1	1	0	0	0	1	1	1	0	0
609	2048	9	302.875	17569.61	1	1	0	0	0	1	1	1	0	0
610	2048	10	302.715	17583.39	1	1	0	0	0	1	1	1	0	0
611	2048	11	302.553	17597.21	1	1	0	0	0	1	1	1	0	0
612	2048	12	302.392	17611.07	1	1	0	0	0	1	1	1	0	0
613	2049	1	302.228	17625.20	1	1	0	0	0	1	1	1	0	0
614	2049	2	302.074	17638.67	1	1	0	0	0	1	1	1	0	0
615	2049	3	301.918	17652.18	1	1	0	0	0	1	1	1	0	0
616	2049	4	301.757	17666.18	1	1	0	0	0	1	1	1	0	0
617	2049	5	301.597	17680.21	1	1	0	0	0	1	1	1	0	0
618	2049	6	301.435	17694.27	1	1	0	0	0	1	1	1	0	0
619	2049	7	301.274	17708.35	1	1	0	0	0	1	1	1	0	0
620	2049	8	301.112	17722.69	1	1	0	0	0	1	1	1	0	0
621	2049	9	300.951	17736.83	1	1	0	0	0	1	1	1	0	0
622	2049	10	300.792	17750.99	1	1	0	0	0	1	1	1	0	0
623	2049	11	300.633	17765.17	1	1	0	0	0	1	1	1	0	0
624	2049	12	300.472	17779.37	1	1	0	0	0	1	1	1	0	0
625	2050	1	300.311	17793.83	1	1	0	0	0	1	1	1	0	0
626	2050	2	300.157	17807.60	1	1	0	0	0	1	1	1	0	0
627	2050	3	300.003	17821.38	1	1	0	0	0	1	1	1	0	0
628	2050	4	299.845	17835.65	1	1	0	0	0	1	1	1	0	0
629	2050	5	299.687	17849.93	1	1	0	0	0	1	1	1	0	0
630	2050	6	299.530	17864.22	1	1	0	0	0	1	1	1	0	0
631	2050	7	299.373	17878.51	1	1	0	0	0	1	1	1	0	0
632	2050	8	299.214	17893.05	1	1	0	0	0	1	1	1	0	0
633	2050	9	299.058	17907.37	1	1	0	0	0	1	1	1	0	0
634	2050	10	298.902	17921.68	1	1	0	0	0	1	1	1	0	0
635	2050	11	298.747	17936.00	1	1	0	0	0	1	1	1	0	0
636	2050	12	298.593	17950.33	1	1	0	0	0	1	1	1	0	0
637	2051	1	298.408	17964.21	1	1	0	0	0	1	1	1	0	0
638	2051	2	298.254	17978.28	1	1	0	0	0	1	1	1	0	0
639	2051	3	298.102	17992.35	1	1	0	0	0	1	1	1	0	0
640	2051	4	297.947	18006.89	1	1	0	0	0	1	1	1	0	0
641	2051	5	297.791	18021.43	1	1	0	0	0	1	1	1	0	0
642	2051	6	297.638	18035.95	1	1	0	0	0	1	1	1	0	0
643	2051	7	297.485	18050.47	1	1	0	0	0	1	1	1	0	0
644	2051	8	297.329	18065.21	1	1	0	0	0	1	1	1	0	0
645	2051	9	297.178	18079.70	1	1	0	0	0	1	1	1	0	0
646	2051	10	297.025	18094.18	1	1	0	0	0	1	1	1	0	0
647	2051	11	296.874	18108.65	1	1	0	0	0	1	1	1	0	0
648	2051	12	296.727	18123.09	1	1	0	0	0	1	1	1	0	0
649	2052	1	296.518	18136.37	1	1	0	0	0	1	1	1	0	0
650	2052	2	296.364	18150.75	1	1	0	0	0	1	1	1	0	0

Obs	YEAR	MONTH	N_IMM	gdp_imm	d04on	d07on	oct13	nov13	jan98	nov19on	d12on	d17on	may18	apr18
651	2052	3	296.214	18165.11	1	1	0	0	0	1	1	1	0	0
652	2052	4	296.062	18179.93	1	1	0	0	0	1	1	1	0	0
653	2052	5	295.908	18194.73	1	1	0	0	0	1	1	1	0	0
654	2052	6	295.760	18209.50	1	1	0	0	0	1	1	1	0	0
655	2052	7	295.611	18224.24	1	1	0	0	0	1	1	1	0	0
656	2052	8	295.458	18239.19	1	1	0	0	0	1	1	1	0	0
657	2052	9	295.312	18253.87	1	1	0	0	0	1	1	1	0	0
658	2052	10	295.162	18268.51	1	1	0	0	0	1	1	1	0	0
659	2052	11	295.015	18283.12	1	1	0	0	0	1	1	1	0	0
660	2052	12	294.875	18297.70	1	1	0	0	0	1	1	1	0	0
661	2053	1	294.641	18310.33	1	1	0	0	0	1	1	1	0	0
662	2053	2	294.487	18325.03	1	1	0	0	0	1	1	1	0	0
663	2053	3	294.339	18339.68	1	1	0	0	0	1	1	1	0	0
664	2053	4	294.190	18354.79	1	1	0	0	0	1	1	1	0	0
665	2053	5	294.038	18369.85	1	1	0	0	0	1	1	1	0	0
666	2053	6	293.896	18384.87	1	1	0	0	0	1	1	1	0	0
667	2053	7	293.750	18399.84	1	1	0	0	0	1	1	1	0	0
668	2053	8	293.600	18415.00	1	1	0	0	0	1	1	1	0	0
669	2053	9	293.459	18429.87	1	1	0	0	0	1	1	1	0	0
670	2053	10	293.312	18444.68	1	1	0	0	0	1	1	1	0	0
671	2053	11	293.168	18459.45	1	1	0	0	0	1	1	1	0	0
672	2053	12	293.035	18474.16	1	1	0	0	0	1	1	1	0	0
673	2054	1	292.778	18486.10	1	1	0	0	0	1	1	1	0	0
674	2054	2	292.624	18501.12	1	1	0	0	0	1	1	1	0	0
675	2054	3	292.478	18516.08	1	1	0	0	0	1	1	1	0	0
676	2054	4	292.332	18531.48	1	1	0	0	0	1	1	1	0	0
677	2054	5	292.181	18546.82	1	1	0	0	0	1	1	1	0	0
678	2054	6	292.044	18562.09	1	1	0	0	0	1	1	1	0	0
679	2054	7	291.902	18577.30	1	1	0	0	0	1	1	1	0	0
680	2054	8	291.755	18592.68	1	1	0	0	0	1	1	1	0	0
681	2054	9	291.619	18607.74	1	1	0	0	0	1	1	1	0	0
682	2054	10	291.474	18622.73	1	1	0	0	0	1	1	1	0	0
683	2054	11	291.335	18637.65	1	1	0	0	0	1	1	1	0	0
684	2054	12	291.208	18652.50	1	1	0	0	0	1	1	1	0	0
685	2055	1	290.928	18663.71	1	1	0	0	0	1	1	1	0	0
686	2055	2	290.774	18679.06	1	1	0	0	0	1	1	1	0	0
687	2055	3	290.630	18694.33	1	1	0	0	0	1	1	1	0	0
688	2055	4	290.486	18710.02	1	1	0	0	0	1	1	1	0	0
689	2055	5	290.338	18725.65	1	1	0	0	0	1	1	1	0	0
690	2055	6	290.205	18741.18	1	1	0	0	0	1	1	1	0	0
691	2055	7	290.068	18756.64	1	1	0	0	0	1	1	1	0	0
692	2055	8	289.923	18772.23	1	1	0	0	0	1	1	1	0	0
693	2055	9	289.791	18787.50	1	1	0	0	0	1	1	1	0	0
694	2055	10	289.650	18802.67	1	1	0	0	0	1	1	1	0	0
695	2055	11	289.514	18817.75	1	1	0	0	0	1	1	1	0	0
696	2055	12	289.394	18832.75	1	1	0	0	0	1	1	1	0	0
697	2056	1	289.091	18843.18	1	1	0	0	0	1	1	1	0	0
698	2056	2	288.937	18858.86	1	1	0	0	0	1	1	1	0	0
699	2056	3	288.795	18874.45	1	1	0	0	0	1	1	1	0	0
700	2056	4	288.654	18890.45	1	1	0	0	0	1	1	1	0	0

Obs	YEAR	MONTH	N_IMM	gdp_imm	d04on	d07on	oct13	nov13	jan98	nov19on	d12on	d17on	may18	apr18
701	2056	5	288.508	18906.37	1	1	0	0	0	1	1	1	0	0
702	2056	6	288.380	18922.16	1	1	0	0	0	1	1	1	0	0
703	2056	7	288.246	18937.87	1	1	0	0	0	1	1	1	0	0
704	2056	8	288.105	18953.69	1	1	0	0	0	1	1	1	0	0
705	2056	9	287.977	18969.16	1	1	0	0	0	1	1	1	0	0
706	2056	10	287.839	18984.52	1	1	0	0	0	1	1	1	0	0
707	2056	11	287.707	18999.77	1	1	0	0	0	1	1	1	0	0
708	2056	12	287.593	19014.91	1	1	0	0	0	1	1	1	0	0
709	2057	1	287.268	19024.52	1	1	0	0	0	1	1	1	0	0
710	2057	2	287.114	19040.55	1	1	0	0	0	1	1	1	0	0
711	2057	3	286.973	19056.46	1	1	0	0	0	1	1	1	0	0
712	2057	4	286.835	19072.77	1	1	0	0	0	1	1	1	0	0
713	2057	5	286.691	19088.98	1	1	0	0	0	1	1	1	0	0
714	2057	6	286.567	19105.06	1	1	0	0	0	1	1	1	0	0
715	2057	7	286.437	19121.01	1	1	0	0	0	1	1	1	0	0
716	2057	8	286.298	19137.07	1	1	0	0	0	1	1	1	0	0
717	2057	9	286.176	19152.76	1	1	0	0	0	1	1	1	0	0
718	2057	10	286.040	19168.30	1	1	0	0	0	1	1	1	0	0
719	2057	11	285.912	19183.73	1	1	0	0	0	1	1	1	0	0
720	2057	12	285.805	19199.02	1	1	0	0	0	1	1	1	0	0

INDIANA MICHIGAN POWER COMPANY - MICHIGAN
OTHER ULTIMATE CUSTOMERS
MODEL ESTIMATION

The SYSLIN Procedure
Ordinary Least Squares Estimation

Model	cu_imm
Dependent Variable	cu_imm
Label	Other Retail Customers

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	11	72913.78	6628.525	472.46	<.0001
Error	264	3703.859	14.02977		
Corrected Total	275	76617.64			

Root MSE	3.74563	R-Square	0.95166
Dependent Mean	339.96377	Adj R-Sq	0.94964
Coeff Var	1.10177		

Parameter Estimates

Variable	DF	Parameter Estimate	Standard Error	t Value	Pr > |t|	Variable Label
Intercept	1	260.3038	12.57059	20.71	<.0001	Intercept
ngdpindx	1	69.32783	12.83348	5.40	<.0001	Service Area Population and Gross Regional Product Index
jan98	1	136.2709	3.825291	35.62	<.0001	Binary Variable - January 1998
d04on	1	11.82100	0.814003	14.52	<.0001	Binary Variable - 2004 On
d07on	1	3.985862	0.843894	4.72	<.0001	Binary Variable - 2007 On
d12on	1	-2.02999	0.691290	-2.94	0.0036	Binary Variable - 2012 On
oct13	1	15.70069	3.778115	4.16	<.0001	Binary Varible - October 2013
nov13	1	-0.34487	3.778013	-0.09	0.9273	Binary Variable - November 2013
d17on	1	1.639716	0.870897	1.88	0.0608	Binary Variable - 2017 On
apr18	1	-125.488	3.803948	-32.99	<.0001	Binary Variable - April 2018
may18	1	169.4794	3.803886	44.55	<.0001	Binary Variable - May 2018

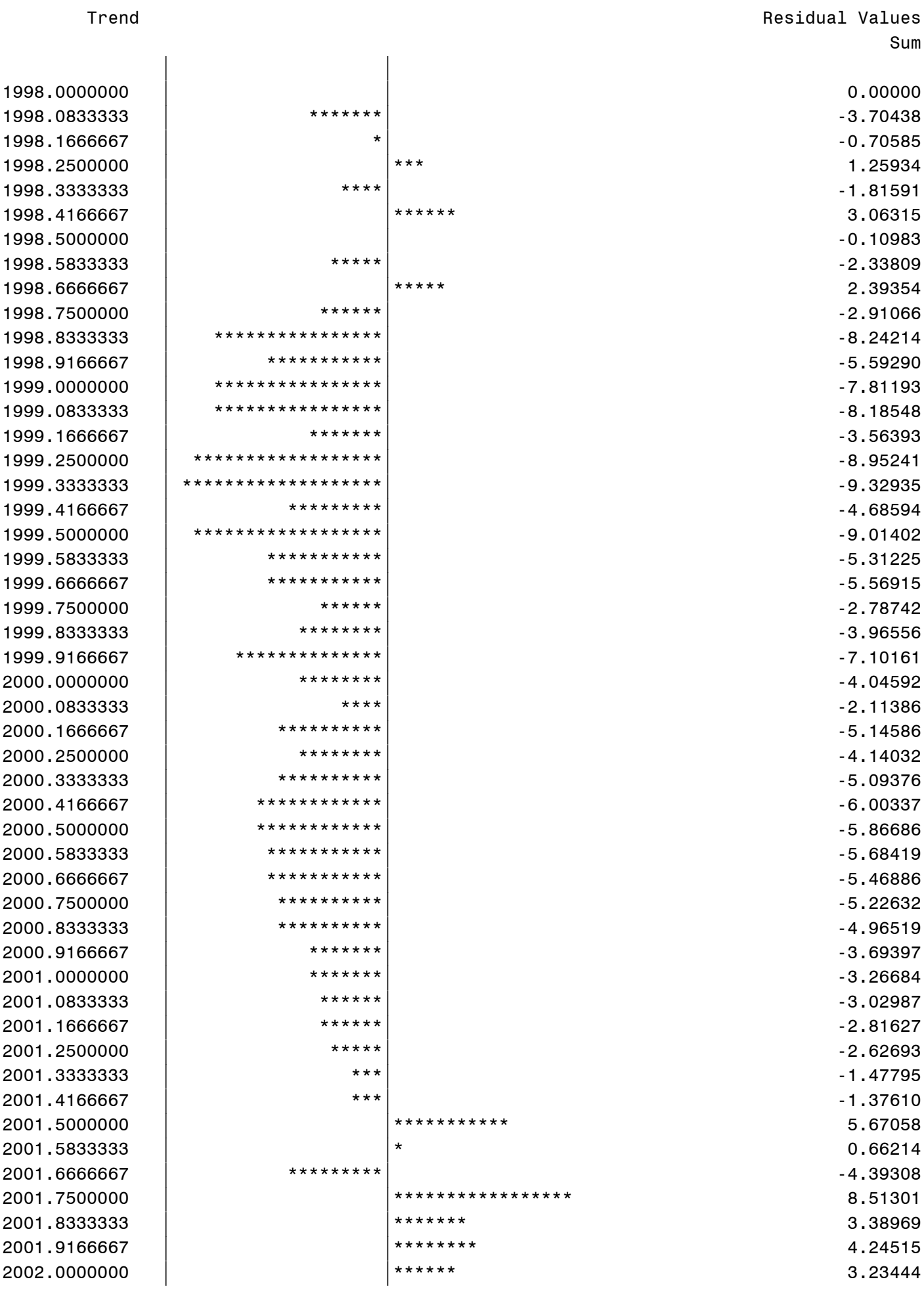
INDIANA MICHIGAN POWER COMPANY - MICHIGAN
OTHER ULTIMATE CUSTOMERS
MODEL ESTIMATION

The SYSLIN Procedure
Ordinary Least Squares Estimation

Parameter Estimates

Variable	DF	Parameter Estimate	Standard Error	t Value	Pr > |t|	Variable Label
nov19on	1	5.475030	1.267072	4.32	<.0001	Binary Variable - November 2019 On

Durbin-Watson	0.743182
Number of Observations	276
First-Order Autocorrelation	0.627952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Residual Values
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1998.1666667 -0.70585
1998.2500000 1.25934
1998.3333333 -1.81591
1998.4166667 3.06315
1998.5000000 -0.10983
1998.5833333 -2.33809
1998.6666667 2.39354
1998.7500000 -2.91066
1998.8333333 -8.24214
1998.9166667 -5.59290
1999.0000000 -7.81193
1999.0833333 -8.18548
1999.1666667 -3.56393
1999.2500000 -8.95241
1999.3333333 -9.32935
1999.4166667 -4.68594
1999.5000000 -9.01402
1999.5833333 -5.31225
1999.6666667 -5.56915
1999.7500000 -2.78742
1999.8333333 -3.96556
1999.9166667 -7.10161
2000.0000000 -4.04592
2000.0833333 -2.11386
2000.1666667 -5.14586
2000.2500000 -4.14032
2000.3333333 -5.09376
2000.4166667 -6.00337
2000.5000000 -5.86686
2000.5833333 -5.68419
2000.6666667 -5.46886
2000.7500000 -5.22632
2000.8333333 -4.96519
2000.9166667 -3.69397
2001.0000000 -3.26684
2001.0833333 -3.02987
2001.1666667 -2.81627
2001.2500000 -2.62693
2001.3333333 -1.47795
2001.4166667 -1.37610
2001.5000000 5.67058
2001.5833333 0.66214
2001.6666667 -4.39308
2001.7500000 8.51301
2001.8333333 3.38969
2001.9166667 4.24515
2002.0000000 3.23444

2002.0833333		****	2.05772
2002.1666667		**********	10.87549
2002.2500000		*****	2.69002
2002.3333333		*******	3.51635
2002.4166667		**********	6.36405
2002.5000000		**********	6.24166
2002.5833333		**********	6.15095
2002.6666667		**********	7.09203
2002.7500000		**********	7.05934
2002.8333333		**********	6.04887
2002.9166667		**********	6.05684
2003.0000000		**********	6.22912
2003.0833333		**********	5.24020
2003.1666667		**********	7.24822
2003.2500000		**********	6.25017
2003.3333333		**********	5.24216
2003.4166667		**********	7.22146
2003.5000000		**********	6.18503
2003.5833333		**********	6.13162
2003.6666667		**********	8.06672
2003.7500000		**********	7.99228
2003.8333333		**********	7.91259
2003.9166667		**********	7.83039
2004.0000000	********		-3.92363
2004.0833333	**********		-5.02043
2004.1666667	****		-2.11965
2004.2500000	********		-4.21947
2004.3333333	*********		-4.31400
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2004.5833333	*******		-3.52845
2004.6666667	*****		-2.57008
2004.7500000	*******		-3.59754
2004.8333333		*	0.38838
2004.9166667	*****		-2.61266
2005.0000000		**********	17.54733
2005.0833333		*	0.54733
2005.1666667	***		-1.45267
2005.2500000		*****	2.54733
2005.3333333		***	1.54733
2005.4166667	*		-0.45267
2005.5000000	*		-0.45267
2005.5833333		*	0.54733
2005.6666667		*****	2.54733
2005.7500000		*	0.54733
2005.8333333	*		-0.45267
2005.9166667		***	1.54733
2006.0000000		*	0.69515
2006.0833333	*		-0.32691
2006.1666667		*	0.64044
2006.2500000		**********	7.59660
2006.3333333		***	1.54258

2006.4166667		*	0.47951
2006.5000000		*	0.40766
2006.5833333	***		-1.67271
2006.6666667			0.24327
2006.7500000	**		-0.84299
2006.8333333	**		-0.92932
2006.9166667	**		-1.01363
2007.0000000	**********		-5.93243
2007.0833333	**********		-7.02473
2007.1666667	**********		-5.11868
2007.2500000	******		-3.21465
2007.3333333		***	1.69311
2007.4166667		***	1.60804
2007.5000000		***	1.53322
2007.5833333		*****	2.47140
2007.6666667		*****	2.42988
2007.7500000		*******	3.41242
2007.8333333		*********	4.42357
2007.9166667		*****	2.46879
2008.0000000		*****	2.70207
2008.0833333		**********	4.80476
2008.1666667		********	3.94435
2008.2500000		******	3.12820
2008.3333333		*****	2.36042
2008.4166667		*****	2.64640
2008.5000000		******	2.99164
2008.5833333		*****	2.39848
2008.6666667		****	1.84122
2008.7500000		***	1.31201
2008.8333333		****	1.79713
2008.9166667	***		-1.71783
2009.0000000		**********	4.90856
2009.0833333		***	1.31741
2009.1666667		*******	3.67798
2009.2500000		****	1.98833
2009.3333333		**********	6.22116
2009.4166667		**********	5.36421
2009.5000000		**********	5.40411
2009.5833333		*****	2.34012
2009.6666667		****	2.18867
2009.7500000		**	0.96451
2009.8333333		*	0.68385
2009.9166667		*	0.36160
2010.0000000	**		-0.84471
2010.0833333	******		-3.21127
2010.1666667		*********	4.41781
2010.2500000		**	1.04471
2010.3333333	*		-0.30175
2010.4166667	*****		-2.60537
2010.5000000	****		-1.85071
2010.5833333		**	0.96543
2010.6666667	********		-4.15495

2010.7500000	******		-3.22027
2010.8333333	****		-2.23650
2010.9166667	**********		-5.20866
2011.0000000	**********		-4.99422
2011.0833333	**********		-9.91959
2011.1666667		********	4.17185
2011.2500000	*******		-3.72148
2011.3333333	*******		-3.60662
2011.4166667	*********		-4.48845
2011.5000000	*********		-4.37147
2011.5833333	*****		-2.25655
2011.6666667	********		-4.14788
2011.7500000	********		-4.04374
2011.8333333	********		-3.94437
2011.9166667	********		-3.85053
2012.0000000	*		-0.58419
2012.0833333	***		-1.52385
2012.1666667	***		-1.47940
2012.2500000	***		-1.45031
2012.3333333		*	0.56295
2012.4166667	*****		-2.43899
2012.5000000		*********	4.54401
2012.5833333		*	0.51257
2012.6666667		*	0.47069
2012.7500000		*	0.42044
2012.8333333		*	0.36427
2012.9166667		*	0.30465
2013.0000000	*		-0.61079
2013.0833333	***		-1.68824
2013.1666667			0.22886
2013.2500000			0.14025
2013.3333333	**		-0.94820
2013.4166667	**		-1.03319
2013.5000000	**		-1.11185
2013.5833333	**		-1.18339
2013.6666667	**		-1.24546
2013.7500000			-0.00000
2013.8333333			0.00000
2013.9166667		*	0.61753
2014.0000000	*		-0.26674
2014.0833333	*		-0.30897
2014.1666667	*****		-2.35368
2014.2500000	***		-1.40180
2014.3333333	*		-0.45198
2014.4166667	*		-0.50310
2014.5000000	*		-0.55493
2014.5833333		*	0.39260
2014.6666667		*	0.34184
2014.7500000		***	1.29279
2014.8333333		**	1.24625
2014.9166667			0.20284
2015.0000000		*****	2.30841

2015.0833333		***	1.25348
2015.1666667		**	1.19383
2015.2500000		**	1.12843
2015.3333333		**	1.06058
2015.4166667		**	0.99183
2015.5000000		**	0.92319
2015.5833333		**	0.85490
2015.6666667			-0.21003
2015.7500000	*		-0.27198
2015.8333333		*	0.66977
2015.9166667	*		-0.38406
2016.0000000	*		-0.28875
2016.0833333	***		-1.35291
2016.1666667		*	0.57907
2016.2500000	***		-1.49318
2016.3333333		*	0.43252
2016.4166667		*	0.35806
2016.5000000		*	0.28450
2016.5833333			0.21230
2016.6666667			0.14554
2016.7500000			0.08446
2016.8333333			0.03079
2016.9166667		**	0.98579
2017.0000000	*		-0.54426
2017.0833333	*		-0.58802
2017.1666667	*		-0.62929
2017.2500000	*		-0.66729
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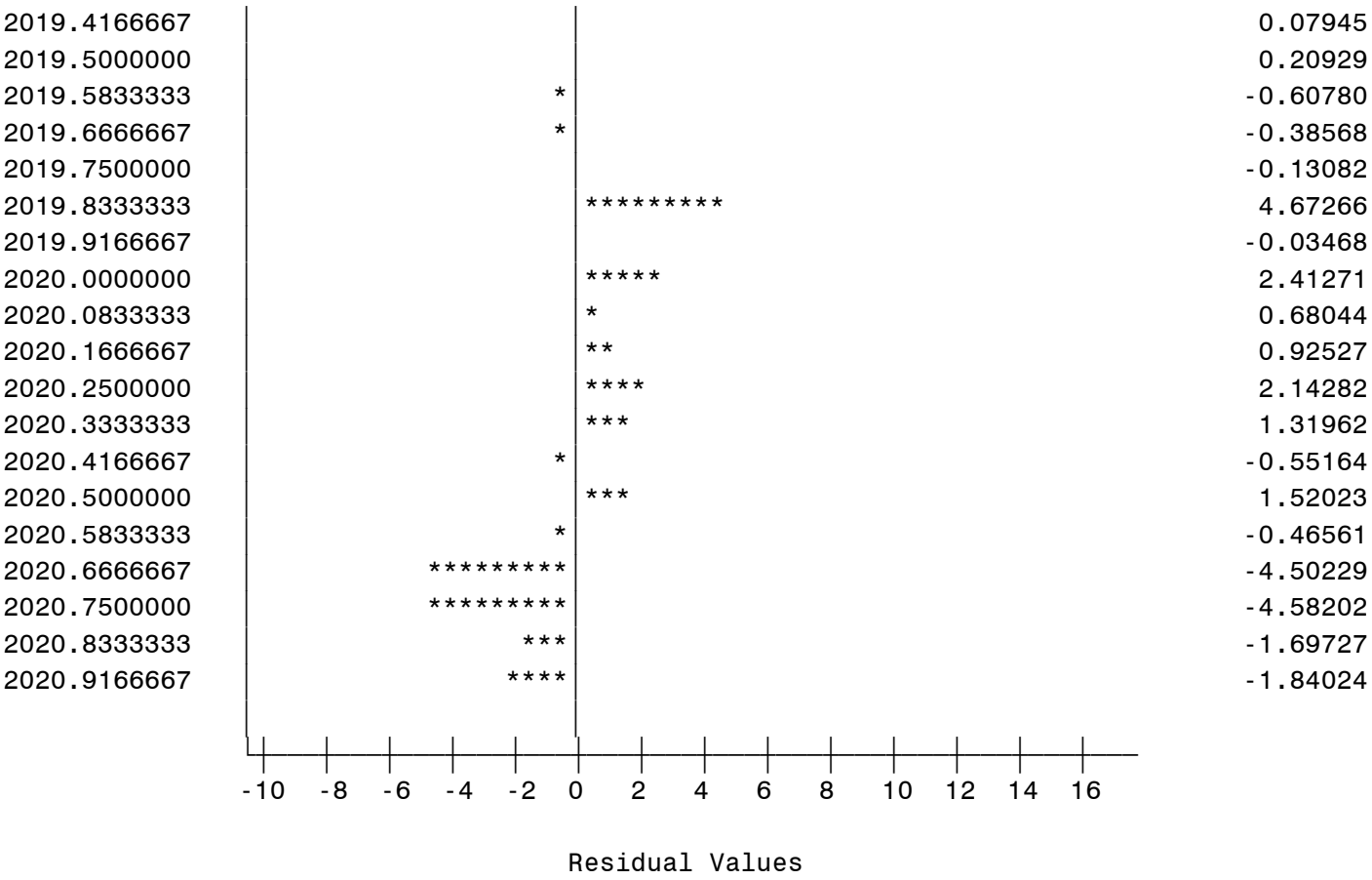
2017.4166667	*		-0.72082
2017.5000000	*		-0.73190
2017.5833333	*		-0.73150
2017.6666667	*		-0.72135
2017.7500000	*		-0.70325
2017.8333333	*		-0.67903
2017.9166667		***	1.34924
2018.0000000		*	0.52498
2018.0833333	*		-0.46704
2018.1666667		***	1.52908
2018.2500000			-0.00000
2018.3333333			0.00000
2018.4166667		*	0.43099
2018.5000000		*	0.36539
2018.5833333		*	0.28351
2018.6666667			0.19501
2018.7500000			0.10534
2018.8333333			0.02118
2018.9166667			-0.05054
2019.0000000		**	1.04082
2019.0833333		**	0.99278
2019.1666667		**	0.96516
2019.2500000		**	0.96467
2019.3333333			0.00045

INDIANA MICHIGAN POWER COMPANY - MICHIGAN
OTHER ULTIMATE CUSTOMERS
MODEL RESIDUALS



INDIANA MICHIGAN POWER COMPANY - MICHIGAN
OTHER ULTIMATE CUSTOMERS
ACTUAL AND FORECAST

YEAR	CUSTOMERS	GROWTH RATE
1998	335.083	.
1999	322.333	-3.8
2000	324.917	0.8
2001	327.917	0.9
2002	334.167	1.9
2003	335.667	0.4
2004	338.750	0.9
2005	343.500	1.4
2006	342.167	-0.4
2007	346.250	1.2
2008	347.250	0.3
2009	344.083	-0.9
2010	342.000	-0.6
2011	339.667	-0.7
2012	340.500	0.2
2013	341.750	0.4
2014	341.333	-0.1
2015	342.833	0.4
2016	342.667	0.0
2017	344.167	0.4
2018	348.583	1.3
2019	346.167	-0.7
2020	347.417	0.4
2021	348.940	0.4
2022	350.270	0.4
2023	351.052	0.2
2024	351.575	0.1
2025	351.988	0.1
2026	352.349	0.1
2027	352.830	0.1
2028	353.362	0.2
2029	353.831	0.1
2030	354.254	0.1
2031	354.683	0.1
2032	355.104	0.1
2033	355.531	0.1
2034	355.956	0.1
2035	356.372	0.1
2036	356.754	0.1
2037	357.092	0.1
2038	357.422	0.1
2039	357.749	0.1
2040	358.083	0.1
2041	358.387	0.1
2042	358.673	0.1
2043	358.950	0.1
2044	359.246	0.1
2045	359.532	0.1
2046	359.818	0.1

INDIANA MICHIGAN POWER COMPANY - MICHIGAN
OTHER ULTIMATE CUSTOMERS
ACTUAL AND FORECAST

YEAR	CUSTOMERS	GROWTH RATE
2047	360.093	0.1
2048	360.359	0.1
2049	360.634	0.1
2050	360.922	0.1
2051	361.216	0.1
2052	361.517	0.1
2053	361.824	0.1
2054	362.138	0.1
2055	362.458	0.1
2056	362.785	0.1
2057	363.118	0.1

RESIDENTIAL ENERGY

Indiana Michigan Power Company-Indiana
Residential Energy Model Inputs

Year	Month	SalesPerHH	XHeat	XCool	XOther	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	JanD06on	FebD06on
1998	1	1,128,807,578.39	506.63	0.00	496.63	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1998	2	924,727,569.72	515.13	0.00	439.14	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1998	3	897,003,923.26	423.76	0.00	430.75	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1998	4	793,305,322.29	266.57	11.10	422.24	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1998	5	693,987,488.99	60.87	49.72	417.12	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1998	6	785,266,303.20	3.36	292.54	430.70	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1998	7	1,035,958,636.33	1.20	644.01	413.01	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
1998	8	995,719,762.15	0.00	512.34	392.94	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
1998	9	933,979,452.72	0.00	442.29	417.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00
1998	10	766,870,207.12	16.76	219.04	412.34	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00
1998	11	729,664,307.62	148.86	13.97	414.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
1998	12	917,954,652.24	266.44	0.00	478.96	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1999	1	1,175,756,719.08	685.70	0.00	503.82	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1999	2	1,045,025,543.65	581.69	0.00	445.77	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1999	3	943,768,635.62	546.09	0.00	438.09	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1999	4	811,991,330.82	321.36	0.00	429.84	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1999	5	658,445,490.23	76.77	28.76	423.32	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1999	6	790,698,900.92	4.31	291.28	436.53	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1999	7	1,062,558,033.46	0.00	697.27	419.24	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
1999	8	1,127,959,276.73	0.00	877.39	398.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
1999	9	896,307,850.40	0.20	342.20	425.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00
1999	10	705,118,301.89	36.70	107.39	418.56	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00
1999	11	702,650,153.76	144.31	2.75	420.62	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
1999	12	944,507,931.73	318.62	0.00	487.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2000	1	1,165,999,262.68	557.85	0.00	512.20	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2000	2	1,037,856,201.38	735.69	0.00	453.07	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2000	3	869,176,809.64	351.77	0.00	443.63	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2000	4	767,318,560.07	215.57	0.00	436.59	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2000	5	717,294,935.56	76.29	98.25	430.33	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2000	6	771,108,002.28	5.70	231.20	443.04	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2000	7	928,795,528.35	0.21	504.85	425.91	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
2000	8	934,010,772.63	0.00	533.80	404.88	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
2000	9	948,174,702.47	0.64	458.83	431.81	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00

Indiana Michigan Power Company-Indiana
Residential Energy Model Inputs

Year	Month	SalesPerHH	XHeat	XCool	XOther	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	JanD06on	FebD06on
2000	10	744,094,577.73	33.97	105.67	425.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00
2000	11	709,589,282.70	118.02	14.11	427.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
2000	12	1,051,144,998.41	533.33	0.00	495.22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2001	1	1,320,784,368.28	818.84	0.00	520.41	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2001	2	1,057,441,042.46	615.13	0.00	460.49	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2001	3	951,330,133.81	491.20	0.00	451.19	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2001	4	836,233,902.72	327.42	19.75	443.79	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2001	5	698,801,377.48	65.48	105.67	436.63	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2001	6	753,141,473.46	7.08	176.94	449.75	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2001	7	971,790,816.86	1.24	520.18	432.55	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
2001	8	1,100,570,835.54	0.00	784.51	411.39	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
2001	9	925,794,065.28	0.31	435.87	438.19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00
2001	10	714,363,585.24	36.72	59.18	431.66	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00
2001	11	734,687,442.18	129.73	1.90	434.28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
2001	12	910,422,653.17	218.25	0.00	501.93	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2002	1	1,170,728,314.26	526.64	0.00	526.49	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2002	2	955,762,741.01	447.86	0.00	465.39	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2002	3	944,739,700.17	441.50	0.00	456.62	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2002	4	895,370,606.81	335.22	36.06	449.05	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2002	5	733,321,280.58	105.78	84.51	441.56	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2002	6	811,363,558.80	39.60	206.29	454.68	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2002	7	1,131,322,462.14	0.00	811.41	437.58	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
2002	8	1,164,616,753.41	0.00	899.16	416.35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
2002	9	1,037,162,315.42	0.17	576.63	443.73	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00
2002	10	780,089,665.62	35.86	223.49	437.21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00
2002	11	801,729,870.49	242.70	14.50	439.86	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
2002	12	1,077,298,616.77	489.22	0.00	508.35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2003	1	1,246,048,951.72	623.90	0.00	530.96	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2003	2	1,137,796,271.91	804.44	0.00	469.50	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2003	3	1,050,867,408.35	681.72	0.00	461.42	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2003	4	812,684,841.75	276.61	0.97	453.07	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2003	5	723,932,608.60	99.89	10.07	446.53	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2003	6	719,067,313.66	11.78	56.04	458.78	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Indiana Michigan Power Company-Indiana
Residential Energy Model Inputs

Year	Month	SalesPerHH	XHeat	XCool	XOther	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	JanD06on	FebD06on
2003	7	955,717,350.79	0.12	459.76	439.93	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
2003	8	979,389,983.16	0.00	533.29	422.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
2003	9	1,001,408,291.79	0.02	470.71	456.76	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00
2003	10	730,763,666.78	60.22	50.26	434.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00
2003	11	733,496,861.56	166.97	2.30	437.54	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
2003	12	1,034,717,393.28	383.73	0.35	514.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2004	1	1,229,931,326.87	576.42	0.00	537.50	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2004	2	1,153,242,163.60	813.02	0.00	473.76	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2004	3	989,686,999.47	518.32	0.00	465.06	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2004	4	833,878,684.98	260.22	9.41	459.34	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2004	5	731,915,305.67	78.07	104.76	450.30	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2004	6	831,106,406.74	6.84	259.26	464.68	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2004	7	957,123,852.86	0.00	406.79	445.80	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
2004	8	893,763,723.23	0.00	365.37	421.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
2004	9	901,623,071.74	0.00	325.54	450.81	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00
2004	10	766,876,147.00	35.87	113.43	447.16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00
2004	11	735,296,041.17	121.80	7.24	447.56	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
2004	12	1,027,305,281.53	356.71	0.52	523.70	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2005	1	1,222,104,189.70	631.55	0.00	539.29	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2005	2	1,104,677,456.17	714.58	0.00	480.22	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2005	3	1,027,179,471.54	567.76	0.00	469.60	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2005	4	864,178,503.18	303.94	2.26	472.79	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2005	5	737,439,247.43	125.48	26.48	450.29	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2005	6	842,535,974.44	20.88	205.84	469.15	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2005	7	1,154,990,162.86	0.00	668.51	458.37	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
2005	8	1,166,756,969.35	0.00	752.17	427.98	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
2005	9	1,042,947,645.99	0.00	460.53	457.46	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00
2005	10	808,878,202.76	17.25	213.49	455.83	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00
2005	11	770,586,960.83	151.81	17.26	460.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
2005	12	1,113,492,084.97	538.51	0.00	517.51	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2006	1	1,261,765,924.71	570.53	0.00	542.38	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2006	2	1,029,995,482.57	467.84	0.00	480.20	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00
2006	3	1,010,864,730.82	522.40	0.00	470.83	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Indiana Michigan Power Company-Indiana
Residential Energy Model Inputs

Year	Month	SalesPerHH	XHeat	XCool	XOther	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	JanD06on	FebD06on
2006	4	827,744,586.94	293.83	2.33	452.66	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2006	5	708,201,048.18	62.55	4.50	463.14	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2006	6	851,210,986.07	24.22	202.93	470.14	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2006	7	1,020,497,358.73	0.00	470.83	450.99	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
2006	8	1,168,596,592.07	0.00	705.04	435.98	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
2006	9	940,085,420.20	1.38	292.25	456.37	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00
2006	10	715,642,943.38	47.56	26.85	447.55	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00
2006	11	850,916,498.38	248.93	2.46	466.32	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
2006	12	1,079,823,341.38	366.46	0.00	523.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2007	1	1,171,404,713.32	419.53	0.00	539.63	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2007	2	1,256,888,620.08	762.38	0.00	490.82	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00
2007	3	1,120,964,281.52	698.86	0.16	473.11	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2007	4	867,673,200.49	262.16	9.75	471.01	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2007	5	757,499,019.57	99.53	49.12	459.58	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2007	6	893,106,273.56	6.85	348.40	466.19	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2007	7	1,050,550,772.61	0.00	510.71	453.79	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
2007	8	1,101,282,504.46	0.00	604.41	439.56	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
2007	9	1,066,945,212.77	1.21	505.13	458.82	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00
2007	10	844,860,283.49	12.28	250.47	465.68	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00
2007	11	811,138,056.16	148.27	52.67	468.97	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
2007	12	1,116,535,807.00	471.36	0.00	521.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2008	1	1,307,785,885.66	587.57	0.00	544.67	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2008	2	1,222,297,719.24	701.46	0.00	485.74	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00
2008	3	1,135,098,446.67	665.74	0.00	476.74	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2008	4	917,562,635.63	350.22	0.58	466.38	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2008	5	715,066,773.91	85.00	22.85	454.57	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2008	6	813,217,764.20	19.69	226.73	470.62	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2008	7	993,689,713.73	0.03	440.08	459.11	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
2008	8	1,048,238,839.09	0.00	555.58	434.76	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
2008	9	956,267,613.08	0.00	413.19	453.35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00
2008	10	761,156,739.74	22.47	111.78	456.75	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00
2008	11	812,214,857.65	181.02	7.26	470.38	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
2008	12	1,180,788,748.00	544.21	0.00	528.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Indiana Michigan Power Company-Indiana
Residential Energy Model Inputs

Year	Month	SalesPerHH	XHeat	XCool	XOther	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	JanD06on	FebD06on
2009	1	1,421,423,301.17	706.70	0.00	546.29	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2009	2	1,290,897,327.19	836.45	0.00	488.96	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00
2009	3	1,042,256,079.61	503.33	0.00	471.99	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2009	4	869,439,326.63	258.80	1.27	469.60	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2009	5	736,305,248.00	99.87	63.47	456.58	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2009	6	766,368,128.69	10.78	159.99	463.07	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2009	7	979,413,814.25	0.00	453.24	465.54	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
2009	8	915,594,702.87	0.00	364.42	431.88	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
2009	9	884,971,974.90	0.00	261.35	455.55	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00
2009	10	782,179,201.11	57.85	79.23	469.83	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00
2009	11	804,218,572.79	157.11	0.00	463.32	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
2009	12	1,087,856,595.28	365.92	0.00	528.37	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2010	1	1,403,274,674.46	686.55	0.00	547.41	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2010	2	1,214,391,091.73	710.24	0.00	483.64	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00
2010	3	1,019,431,759.76	528.29	0.00	462.77	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2010	4	797,057,545.26	178.99	19.67	479.05	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2010	5	690,513,687.94	41.92	45.50	459.29	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2010	6	911,343,274.18	8.57	418.29	470.60	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2010	7	1,151,883,770.02	0.00	751.35	458.49	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
2010	8	1,222,852,139.88	0.00	845.72	445.28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
2010	9	1,045,503,908.61	0.00	515.47	459.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00
2010	10	737,567,231.96	19.61	149.93	454.34	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00
2010	11	758,500,340.97	151.48	13.42	464.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
2010	12	1,112,507,867.77	494.90	0.00	528.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2011	1	1,373,172,391.46	729.65	0.00	545.23	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2011	2	1,241,975,465.29	797.33	0.00	500.01	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00
2011	3	997,269,207.56	531.86	0.00	467.83	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2011	4	836,996,084.64	312.12	4.85	454.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2011	5	778,458,985.35	96.16	39.54	484.15	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2011	6	896,131,113.02	13.46	358.33	489.16	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2011	7	1,091,681,552.26	0.00	663.81	469.54	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
2011	8	1,275,079,505.35	0.00	953.33	460.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
2011	9	971,145,601.54	2.06	447.25	471.35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00

Indiana Michigan Power Company-Indiana
Residential Energy Model Inputs

Year	Month	SalesPerHH	XHeat	XCool	XOther	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	JanD06on	FebD06on
2011	10	718,245,424.50	24.62	59.88	467.94	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00
2011	11	760,696,342.55	138.66	1.85	463.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
2011	12	1,052,862,076.68	329.52	0.00	537.70	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2012	1	1,214,977,952.49	495.71	0.00	558.45	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2012	2	1,070,040,784.88	566.30	0.00	491.44	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00
2012	3	945,646,395.63	398.46	15.21	491.18	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2012	4	744,681,042.13	105.17	49.02	498.09	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2012	5	723,657,308.62	79.67	62.82	481.73	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2012	6	893,124,134.36	2.65	356.65	491.50	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2012	7	1,215,282,155.58	0.25	859.46	479.87	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
2012	8	1,198,260,046.56	0.00	749.96	466.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
2012	9	942,094,552.35	1.72	368.39	477.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00
2012	10	710,696,286.21	56.99	54.26	473.19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00
2012	11	799,154,387.77	211.18	5.31	488.39	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
2012	12	1,001,514,048.70	357.49	0.00	532.23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2013	1	1,214,942,085.08	561.97	0.00	554.26	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2013	2	1,134,587,813.91	647.39	0.00	496.15	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00
2013	3	1,091,217,289.65	579.14	0.00	493.50	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2013	4	935,730,649.74	393.01	0.00	488.20	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2013	5	735,105,296.01	100.85	50.48	474.45	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2013	6	799,977,333.75	10.38	268.95	488.57	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2013	7	997,913,948.06	0.00	545.54	471.24	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
2013	8	954,792,503.24	0.00	431.34	461.28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
2013	9	962,594,429.17	0.48	423.26	475.42	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00
2013	10	742,848,782.25	16.18	153.43	470.39	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00
2013	11	787,187,654.69	200.78	13.73	482.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
2013	12	1,098,703,351.25	502.70	0.00	534.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2014	1	1,397,111,585.66	755.99	0.00	571.54	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2014	2	1,292,194,502.82	927.01	0.00	493.39	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00
2014	3	1,153,516,893.19	804.64	0.00	491.72	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2014	4	898,404,068.91	414.45	0.00	483.59	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2014	5	720,151,202.22	101.45	35.76	489.29	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2014	6	817,030,693.29	20.59	275.31	488.72	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Indiana Michigan Power Company-Indiana
Residential Energy Model Inputs

Year	Month	SalesPerHH	XHeat	XCool	XOther	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	JanD06on	FebD06on
2014	7	955,052,765.46	0.00	516.01	478.69	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
2014	8	860,465,247.71	0.00	329.01	457.45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
2014	9	930,511,419.36	1.32	412.14	479.35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00
2014	10	684,307,912.46	36.53	42.81	471.14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00
2014	11	764,853,592.81	221.95	0.82	478.88	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
2014	12	1,116,787,413.42	527.15	0.00	546.28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2015	1	1,242,620,178.99	681.39	0.00	550.28	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2015	2	1,143,773,825.06	818.43	0.00	485.23	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00
2015	3	1,118,221,165.59	849.35	0.00	484.09	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2015	4	832,491,138.85	348.34	0.00	493.63	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2015	5	685,196,349.92	92.55	70.13	478.49	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2015	6	778,631,130.65	9.33	289.33	479.38	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2015	7	895,000,775.90	0.07	379.47	478.85	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
2015	8	971,906,079.07	0.00	533.44	450.98	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
2015	9	910,855,832.00	0.00	417.12	475.55	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00
2015	10	710,581,491.69	17.78	137.52	469.85	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00
2015	11	670,159,659.03	115.18	3.64	474.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
2015	12	941,868,865.62	321.69	0.00	554.74	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2016	1	1,104,782,673.75	485.02	0.00	557.76	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2016	2	1,053,799,146.75	673.46	0.00	499.72	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00
2016	3	890,847,862.62	460.57	0.00	493.52	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2016	4	769,544,117.50	246.78	0.00	500.01	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2016	5	653,378,542.33	99.82	4.18	479.24	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2016	6	814,516,167.53	17.68	303.20	499.77	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2016	7	983,451,672.82	0.00	508.59	485.47	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
2016	8	1,112,863,207.36	0.00	752.37	466.87	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
2016	9	1,019,460,491.29	0.00	565.57	486.45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00
2016	10	757,062,372.30	6.00	219.51	483.34	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00
2016	11	658,408,576.19	98.05	36.83	483.71	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
2016	12	994,599,588.76	436.80	1.47	553.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2017	1	1,192,319,124.85	651.78	0.00	567.25	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2017	2	943,620,575.59	495.05	0.00	501.02	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00
2017	3	831,175,342.11	377.92	0.00	493.61	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Indiana Michigan Power Company-Indiana
Residential Energy Model Inputs

Year	Month	SalesPerHH	XHeat	XCool	XOther	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	JanD06on	FebD06on
2017	4	751,248,739.52	266.45	9.31	495.85	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2017	5	634,787,439.46	69.42	61.45	480.76	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2017	6	751,366,703.39	13.62	235.13	500.47	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2017	7	945,004,114.97	0.00	515.03	498.32	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
2017	8	959,412,522.00	0.00	481.20	476.82	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
2017	9	810,174,366.19	0.00	230.70	491.69	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00
2017	10	754,236,976.77	3.18	242.74	491.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00
2017	11	705,242,951.47	189.03	26.08	485.26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
2017	12	981,869,135.95	403.95	0.00	558.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2018	1	1,280,605,433.17	805.39	0.00	555.07	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2018	2	1,029,735,502.58	672.46	0.00	491.99	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00
2018	3	894,658,259.26	462.02	0.00	487.26	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2018	4	866,915,658.86	407.01	0.93	496.18	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2018	5	687,171,742.59	140.14	51.79	482.13	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2018	6	855,053,624.72	1.49	412.24	500.77	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2018	7	1,040,114,324.19	0.00	657.74	483.26	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
2018	8	982,331,840.75	0.00	549.85	471.26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
2018	9	984,968,430.53	0.00	567.66	486.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00
2018	10	755,741,075.53	30.66	282.56	477.95	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00
2018	11	752,128,106.30	238.15	39.84	486.51	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
2018	12	1,017,147,120.23	473.85	0.00	542.59	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2019	1	1,058,983,087.13	480.86	0.00	542.17	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2019	2	1,105,190,996.13	702.17	0.00	489.23	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00
2019	3	965,314,899.74	583.32	0.00	472.79	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2019	4	768,319,115.62	302.32	0.00	475.98	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2019	5	655,405,844.44	88.92	13.50	489.60	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2019	6	701,017,875.00	15.03	216.32	493.15	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2019	7	985,375,726.02	0.00	662.20	476.79	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
2019	8	1,021,296,292.21	0.00	629.53	463.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
2019	9	855,475,204.30	0.00	348.87	478.14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00
2019	10	733,845,220.81	17.45	220.14	470.69	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00
2019	11	702,312,098.72	230.57	12.83	473.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
2019	12	956,124,731.71	473.46	0.00	532.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Indiana Michigan Power Company-Indiana
Residential Energy Model Inputs

Year	Month	SalesPerHH	XHeat	XCool	XOther	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	JanD06on	FebD06on
2020	1	1,020,977,690.89	470.45	0.00	549.88	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2020	2	916,070,175.65	544.40	0.00	478.27	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00
2020	3	859,588,153.06	509.73	0.00	472.89	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2020	4	775,495,420.65	272.30	0.00	483.95	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2020	5	697,024,675.71	156.67	8.20	478.30	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2020	6	793,650,230.90	26.64	272.51	481.59	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2020	7	1,060,349,413.31	0.00	637.50	473.97	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
2020	8	1,039,614,588.84	0.00	595.80	458.83	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
2020	9	931,715,322.39	0.61	383.85	467.72	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00
2020	10	665,355,977.92	36.60	48.54	471.72	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00
2020	11	672,001,682.14	162.43	4.95	472.62	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
2020	12	901,886,227.79	353.50	1.96	529.61	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2021	1	1,071,285,735.70	526.93	0.00	535.19	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2021	2		675.36	0.00	479.54	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00
2021	3		536.62	0.47	473.16	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2021	4		296.48	5.42	475.94	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2021	5		94.70	39.32	470.61	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2021	6		13.51	226.56	483.60	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2021	7		0.14	517.72	474.70	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
2021	8		0.00	542.39	455.24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
2021	9		0.53	375.89	471.34	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00
2021	10		31.10	115.46	464.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00
2021	11		175.95	10.53	465.65	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
2021	12		413.90	0.13	525.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2022	1		599.86	0.00	536.67	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2022	2		669.48	0.00	478.25	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00
2022	3		531.88	0.47	471.88	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2022	4		293.50	5.38	473.98	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2022	5		93.74	39.02	468.68	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2022	6		13.37	224.82	481.60	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2022	7		0.14	513.70	472.78	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
2022	8		0.00	538.16	453.38	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
2022	9		0.52	372.95	469.35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00

Indiana Michigan Power Company-Indiana
Residential Energy Model Inputs

Year	Month	SalesPerHH	XHeat	XCool	XOther	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	JanD06on	FebD06on
2022	10		30.78	114.55	462.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00
2022	11		174.12	10.45	463.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
2022	12		409.64	0.13	522.62	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2023	1		599.29	0.00	537.42	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2023	2		669.02	0.00	478.99	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00
2023	3		531.69	0.47	472.70	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2023	4		293.51	5.34	474.95	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2023	5		93.78	38.75	469.74	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2023	6		13.38	223.33	482.78	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2023	7		0.14	510.45	474.05	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
2023	8		0.00	534.87	454.68	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
2023	9		0.52	370.75	470.77	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00
2023	10		30.84	113.90	463.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00
2023	11		174.52	10.40	464.98	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
2023	12		410.66	0.13	524.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2024	1		597.02	0.00	537.29	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2024	2		666.57	0.00	478.92	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00
2024	3		529.74	0.46	472.65	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2024	4		292.40	5.31	474.92	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2024	5		93.42	38.54	469.71	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2024	6		13.33	222.11	482.73	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2024	7		0.14	507.63	474.04	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
2024	8		0.00	531.95	454.69	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
2024	9		0.52	368.74	470.78	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00
2024	10		30.72	113.29	463.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00
2024	11		173.87	10.34	464.93	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
2024	12		409.13	0.13	524.19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2025	1		595.06	0.00	537.47	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2025	2		664.43	0.00	479.11	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00
2025	3		528.10	0.46	472.90	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2025	4		291.55	5.29	475.26	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2025	5		93.16	38.38	470.08	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2025	6		13.30	221.21	483.14	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Indiana Michigan Power Company-Indiana
Residential Energy Model Inputs

Year	Month	SalesPerHH	XHeat	XCool	XOther	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	JanD06on	FebD06on
2025	7		0.14	505.62	474.53	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
2025	8		0.00	529.84	455.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
2025	9		0.52	367.27	471.28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00
2025	10		30.64	112.84	463.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00
2025	11		173.41	10.30	465.32	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
2025	12		408.09	0.13	524.57	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2026	1		593.21	0.00	537.72	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2026	2		662.36	0.00	479.35	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00
2026	3		526.44	0.46	473.15	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2026	4		290.63	5.27	475.56	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2026	5		92.86	38.23	470.39	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2026	6		13.25	220.32	483.45	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2026	7		0.14	503.59	474.88	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
2026	8		0.00	527.73	455.53	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
2026	9		0.52	365.82	471.65	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00
2026	10		30.55	112.39	464.23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00
2026	11		172.89	10.26	465.64	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
2026	12		406.89	0.13	524.88	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2027	1		590.74	0.00	538.06	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2027	2		659.60	0.00	479.68	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00
2027	3		524.28	0.46	473.51	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2027	4		289.42	5.25	475.95	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2027	5		92.48	38.09	470.79	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2027	6		13.20	219.51	483.86	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2027	7		0.14	501.74	475.34	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
2027	8		0.00	525.80	456.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
2027	9		0.52	364.52	472.16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00
2027	10		30.42	112.00	464.70	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00
2027	11		172.21	10.22	466.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
2027	12		405.30	0.13	525.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2028	1		588.76	0.00	538.76	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2028	2		657.43	0.00	480.34	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00
2028	3		522.59	0.46	474.20	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Indiana Michigan Power Company-Indiana
Residential Energy Model Inputs

Year	Month	SalesPerHH	XHeat	XCool	XOther	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	JanD06on	FebD06on
2028	4		288.52	5.24	476.72	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2028	5		92.19	37.99	471.57	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2028	6		13.16	218.96	484.65	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2028	7		0.14	500.51	476.19	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
2028	8		0.00	524.55	456.86	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
2028	9		0.52	363.65	473.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00
2028	10		30.34	111.73	465.53	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00
2028	11		171.72	10.20	466.89	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
2028	12		404.16	0.13	526.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2029	1		587.19	0.00	539.73	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2029	2		655.75	0.00	481.25	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00
2029	3		521.31	0.46	475.15	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2029	4		287.85	5.23	477.75	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2029	5		91.99	37.93	472.63	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2029	6		13.13	218.62	485.76	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2029	7		0.14	499.75	477.34	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
2029	8		0.00	523.75	457.98	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
2029	9		0.51	363.10	474.21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00
2029	10		30.28	111.57	466.66	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00
2029	11		171.40	10.18	468.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
2029	12		403.39	0.13	527.38	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2030	1		586.16	0.00	539.85	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2030	2		654.56	0.00	481.39	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00
2030	3		520.30	0.45	475.31	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2030	4		287.29	5.22	478.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2030	5		91.82	37.90	472.97	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2030	6		13.11	218.43	486.23	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2030	7		0.14	499.34	477.89	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
2030	8		0.00	523.34	458.51	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
2030	9		0.51	362.85	474.72	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00
2030	10		30.23	111.50	467.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00
2030	11		171.16	10.18	468.35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
2030	12		402.87	0.13	527.68	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Indiana Michigan Power Company-Indiana
Residential Energy Model Inputs

Year	Month	SalesPerHH	XHeat	XCool	XOther	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	JanD06on	FebD06on
2031	1		585.96	0.00	540.98	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2031	2		654.40	0.00	482.47	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00
2031	3		520.24	0.46	476.45	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2031	4		287.26	5.23	479.22	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2031	5		91.81	37.93	474.24	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2031	6		13.11	218.65	487.59	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2031	7		0.14	499.85	479.29	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
2031	8		0.00	523.90	459.86	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
2031	9		0.51	363.24	476.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00
2031	10		30.23	111.62	468.34	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00
2031	11		171.16	10.19	469.55	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
2031	12		402.90	0.13	528.95	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2032	1		585.57	0.00	542.69	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2032	2		653.97	0.00	484.02	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00
2032	3		519.90	0.46	478.02	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2032	4		287.08	5.23	480.85	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2032	5		91.75	37.97	475.88	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2032	6		13.10	218.90	489.31	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2032	7		0.14	500.42	481.02	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
2032	8		0.00	524.49	461.52	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
2032	9		0.51	363.66	477.80	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00
2032	10		30.22	111.75	469.97	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00
2032	11		171.07	10.20	471.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
2032	12		402.68	0.13	530.67	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2033	1		585.48	0.00	545.10	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2033	2		653.81	0.00	486.15	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00
2033	3		519.71	0.46	480.11	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2033	4		286.94	5.25	482.95	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2033	5		91.70	38.05	477.94	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2033	6		13.09	219.32	491.39	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2033	7		0.14	501.34	483.08	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
2033	8		0.00	525.42	463.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
2033	9		0.51	364.27	479.79	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00

Indiana Michigan Power Company-Indiana
Residential Energy Model Inputs

Year	Month	SalesPerHH	XHeat	XCool	XOther	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	JanD06on	FebD06on
2033	10		30.18	111.93	471.86	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00
2033	11		170.86	10.22	472.97	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
2033	12		402.14	0.13	532.65	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2034	1		584.63	0.00	547.40	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2034	2		652.84	0.00	488.21	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00
2034	3		518.94	0.46	482.15	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2034	4		286.51	5.26	485.04	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2034	5		91.56	38.13	480.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2034	6		13.07	219.75	493.50	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2034	7		0.14	502.33	485.17	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
2034	8		0.00	526.45	465.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
2034	9		0.51	364.98	481.88	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00
2034	10		30.13	112.15	473.88	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00
2034	11		170.58	10.24	474.96	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
2034	12		401.48	0.13	534.84	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2035	1		583.79	0.00	549.95	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2035	2		651.90	0.00	490.49	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00
2035	3		518.18	0.46	484.41	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2035	4		286.09	5.27	487.33	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2035	5		91.42	38.22	482.27	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2035	6		13.05	220.31	495.80	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2035	7		0.14	503.61	487.47	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
2035	8		0.00	527.78	467.70	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
2035	9		0.51	365.90	484.16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00
2035	10		30.09	112.43	476.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00
2035	11		170.31	10.26	477.16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
2035	12		400.83	0.13	537.27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2036	1		583.05	0.00	552.69	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2036	2		651.06	0.00	492.94	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00
2036	3		517.52	0.46	486.84	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2036	4		285.72	5.29	489.79	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2036	5		91.30	38.35	484.70	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2036	6		13.03	221.01	498.29	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Indiana Michigan Power Company-Indiana
Residential Energy Model Inputs

Year	Month	SalesPerHH	XHeat	XCool	XOther	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	JanD06on	FebD06on
2036	7		0.14	505.20	489.94	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
2036	8		0.00	529.44	470.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
2036	9		0.51	367.05	486.64	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00
2036	10		30.05	112.78	478.51	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00
2036	11		170.08	10.30	479.56	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
2036	12		400.31	0.13	539.94	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2037	1		582.26	0.00	555.60	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2037	2		650.19	0.00	495.54	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00
2037	3		516.82	0.46	489.41	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2037	4		285.34	5.31	492.41	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2037	5		91.18	38.49	487.29	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2037	6		13.02	221.84	500.94	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2037	7		0.14	507.09	492.57	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
2037	8		0.00	531.43	472.62	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
2037	9		0.51	368.43	489.28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00
2037	10		30.01	113.21	481.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00
2037	11		169.87	10.33	482.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
2037	12		399.79	0.13	542.80	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2038	1		581.12	0.00	558.55	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2038	2		648.92	0.00	498.18	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00
2038	3		515.81	0.46	492.03	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2038	4		284.78	5.32	495.07	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2038	5		91.01	38.61	489.92	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2038	6		12.99	222.51	503.63	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2038	7		0.14	508.63	495.23	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
2038	8		0.00	533.04	475.19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
2038	9		0.51	369.55	491.94	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00
2038	10		29.95	113.55	483.69	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00
2038	11		169.54	10.37	484.73	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
2038	12		399.03	0.13	545.70	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2039	1		580.57	0.00	561.55	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2039	2		648.31	0.00	500.87	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00
2039	3		515.34	0.47	494.69	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Indiana Michigan Power Company-Indiana
Residential Energy Model Inputs

Year	Month	SalesPerHH	XHeat	XCool	XOther	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	JanD06on	FebD06on
2039	4		284.52	5.34	497.77	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2039	5		90.92	38.76	492.59	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2039	6		12.98	223.38	506.37	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2039	7		0.14	510.61	497.95	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
2039	8		0.00	535.12	477.81	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
2039	9		0.51	370.99	494.66	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00
2039	10		29.92	114.00	486.35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00
2039	11		169.39	10.41	487.39	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
2039	12		398.69	0.13	548.66	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2040	1		580.32	0.00	564.32	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2040	2		648.04	0.00	503.35	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00
2040	3		515.13	0.47	497.17	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2040	4		284.41	5.36	500.29	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2040	5		90.89	38.91	495.11	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2040	6		12.97	224.29	508.98	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2040	7		0.14	512.69	500.54	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
2040	8		0.00	537.31	480.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
2040	9		0.51	372.51	497.23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00
2040	10		29.91	114.46	488.84	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00
2040	11		169.33	10.45	489.86	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
2040	12		398.55	0.13	551.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2041	1		579.74	0.00	567.11	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2041	2		647.39	0.00	505.85	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00
2041	3		514.60	0.47	499.66	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2041	4		284.12	5.38	502.82	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2041	5		90.79	39.04	497.64	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2041	6		12.96	225.03	511.59	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2041	7		0.14	514.38	503.14	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
2041	8		0.00	539.08	482.79	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
2041	9		0.51	373.74	499.80	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00
2041	10		29.88	114.84	491.33	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00
2041	11		169.16	10.48	492.32	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
2041	12		398.14	0.13	554.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Indiana Michigan Power Company-Indiana
Residential Energy Model Inputs

Year	Month	SalesPerHH	XHeat	XCool	XOther	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	JanD06on	FebD06on
2042	1		579.61	0.00	569.89	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2042	2		647.25	0.00	508.35	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00
2042	3		514.50	0.47	502.14	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2042	4		284.06	5.40	505.35	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2042	5		90.78	39.20	500.16	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2042	6		12.96	225.93	514.20	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2042	7		0.14	516.46	505.73	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
2042	8		0.00	541.25	485.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
2042	9		0.51	375.25	502.36	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00
2042	10		29.88	115.30	493.83	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00
2042	11		169.13	10.53	494.78	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
2042	12		398.06	0.13	556.86	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2043	1		579.77	0.00	572.77	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2043	2		647.42	0.00	510.93	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00
2043	3		514.64	0.47	504.71	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2043	4		284.14	5.43	507.96	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2043	5		90.80	39.37	502.76	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2043	6		12.96	226.91	516.89	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2043	7		0.14	518.69	508.41	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
2043	8		0.00	543.60	487.86	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
2043	9		0.51	376.88	505.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00
2043	10		29.89	115.80	496.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00
2043	11		169.18	10.57	497.35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
2043	12		398.19	0.13	559.71	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2044	1		580.02	0.00	575.64	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2044	2		647.71	0.00	513.51	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00
2044	3		514.86	0.47	507.27	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2044	4		284.26	5.45	510.57	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2044	5		90.84	39.54	505.36	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2044	6		12.97	227.90	519.58	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2044	7		0.14	520.95	511.09	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
2044	8		0.00	545.97	490.44	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
2044	9		0.51	378.52	507.67	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00

Indiana Michigan Power Company-Indiana
Residential Energy Model Inputs

Year	Month	SalesPerHH	XHeat	XCool	XOther	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	JanD06on	FebD06on
2044	10		29.90	116.31	498.98	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00
2044	11		169.25	10.62	499.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
2044	12		398.36	0.14	562.54	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2045	1		580.29	0.00	578.44	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2045	2		648.00	0.00	516.02	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00
2045	3		515.09	0.48	509.76	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2045	4		284.39	5.47	513.10	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2045	5		90.88	39.71	507.89	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2045	6		12.97	228.87	522.19	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2045	7		0.14	523.17	513.68	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
2045	8		0.00	548.29	492.94	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
2045	9		0.51	380.12	510.24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00
2045	10		29.91	116.80	501.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00
2045	11		169.32	10.66	502.36	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
2045	12		398.53	0.14	565.27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2046	1		580.57	0.00	581.17	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2046	2		648.30	0.00	518.48	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00
2046	3		515.33	0.48	512.20	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2046	4		284.52	5.50	515.59	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2046	5		90.92	39.87	510.36	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2046	6		12.98	229.82	524.74	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2046	7		0.14	525.33	516.23	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
2046	8		0.00	550.55	495.38	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
2046	9		0.51	381.69	512.74	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00
2046	10		29.92	117.28	503.89	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00
2046	11		169.39	10.71	504.74	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
2046	12		398.67	0.14	567.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2047	1		580.90	0.00	583.87	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2047	2		648.67	0.00	520.89	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00
2047	3		515.61	0.48	514.59	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2047	4		284.67	5.52	518.02	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2047	5		90.97	40.03	512.78	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2047	6		12.99	230.74	527.24	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Indiana Michigan Power Company-Indiana
Residential Energy Model Inputs

Year	Month	SalesPerHH	XHeat	XCool	XOther	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	JanD06on	FebD06on
2047	7		0.14	527.45	518.71	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
2047	8		0.00	552.76	497.77	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
2047	9		0.51	383.22	515.19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00
2047	10		29.94	117.75	506.27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00
2047	11		169.46	10.75	507.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
2047	12		398.85	0.14	570.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2048	1		581.29	0.00	586.52	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2048	2		649.10	0.00	523.27	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00
2048	3		515.96	0.48	516.96	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2048	4		284.86	5.54	520.44	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2048	5		91.03	40.19	515.19	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2048	6		12.99	231.65	529.74	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2048	7		0.14	529.52	521.21	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
2048	8		0.00	554.94	500.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
2048	9		0.51	384.73	517.66	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00
2048	10		29.96	118.21	508.66	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00
2048	11		169.57	10.79	509.46	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
2048	12		399.09	0.14	573.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2049	1		581.97	0.00	589.29	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2049	2		649.86	0.00	525.76	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00
2049	3		516.55	0.48	519.44	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2049	4		285.18	5.56	522.95	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2049	5		91.13	40.36	517.70	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2049	6		13.01	232.61	532.33	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2049	7		0.14	531.71	523.79	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
2049	8		0.00	557.23	502.65	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
2049	9		0.51	386.31	520.21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00
2049	10		29.99	118.70	511.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00
2049	11		169.75	10.84	511.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
2049	12		399.53	0.14	575.82	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2050	1		582.80	0.00	592.13	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2050	2		650.78	0.00	528.30	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00
2050	3		517.28	0.49	521.96	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Indiana Michigan Power Company-Indiana
Residential Energy Model Inputs

Year	Month	SalesPerHH	XHeat	XCool	XOther	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	JanD06on	FebD06on
2050	4		285.58	5.59	525.52	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2050	5		91.26	40.52	520.26	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2050	6		13.03	233.57	534.97	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2050	7		0.14	533.90	526.42	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
2050	8		0.00	559.52	505.19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
2050	9		0.51	387.90	522.81	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00
2050	10		30.03	119.19	513.66	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00
2050	11		169.99	10.88	514.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
2050	12		400.08	0.14	578.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2051	1		583.29	0.00	594.90	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2051	2		651.32	0.00	530.79	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00
2051	3		517.71	0.49	524.44	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2051	4		285.82	5.61	528.05	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2051	5		91.34	40.69	522.77	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2051	6		13.04	234.50	537.58	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2051	7		0.14	536.03	529.02	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
2051	8		0.00	561.75	507.69	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
2051	9		0.51	389.45	525.38	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00
2051	10		30.05	119.66	516.16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00
2051	11		170.13	10.92	516.88	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
2051	12		400.40	0.14	581.34	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2052	1		583.78	0.00	597.67	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2052	2		651.86	0.00	533.28	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00
2052	3		518.14	0.49	526.91	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2052	4		286.06	5.63	530.57	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2052	5		91.41	40.85	525.29	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2052	6		13.05	235.44	540.19	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2052	7		0.14	538.17	531.63	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
2052	8		0.00	563.99	510.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
2052	9		0.51	391.00	527.96	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00
2052	10		30.08	120.14	518.66	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00
2052	11		170.27	10.97	519.36	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
2052	12		400.73	0.14	584.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Indiana Michigan Power Company-Indiana
Residential Energy Model Inputs

Year	Month	SalesPerHH	XHeat	XCool	XOther	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	JanD06on	FebD06on
2053	1		584.27	0.00	600.44	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2053	2		652.41	0.00	535.77	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00
2053	3		518.58	0.49	529.39	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2053	4		286.30	5.65	533.10	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2053	5		91.49	41.01	527.82	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2053	6		13.06	236.37	542.80	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2053	7		0.14	540.30	534.23	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
2053	8		0.00	566.22	512.71	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
2053	9		0.51	392.55	530.54	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00
2053	10		30.10	120.62	521.16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00
2053	11		170.41	11.01	521.84	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
2053	12		401.06	0.14	586.83	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2054	1		584.76	0.00	603.22	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2054	2		652.96	0.00	538.26	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00
2054	3		519.01	0.49	531.87	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2054	4		286.54	5.68	535.63	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2054	5		91.56	41.17	530.34	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2054	6		13.07	237.30	545.41	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2054	7		0.14	542.42	536.84	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
2054	8		0.00	568.45	515.23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
2054	9		0.51	394.09	533.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00
2054	10		30.13	121.09	523.67	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00
2054	11		170.55	11.05	524.32	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
2054	12		401.39	0.14	589.58	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2055	1		585.25	0.00	606.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2055	2		653.51	0.00	540.76	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00
2055	3		519.45	0.50	534.37	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2055	4		286.78	5.70	538.17	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2055	5		91.64	41.33	532.88	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2055	6		13.08	238.23	548.04	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2055	7		0.14	544.56	539.47	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
2055	8		0.00	570.70	517.76	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
2055	9		0.51	395.65	535.73	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00

Indiana Michigan Power Company-Indiana
Residential Energy Model Inputs

Year	Month	SalesPerHH	XHeat	XCool	XOther	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	JanD06on	FebD06on
2055	10		30.16	121.57	526.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00
2055	11		170.70	11.10	526.82	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
2055	12		401.75	0.14	592.35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2056	1		585.78	0.00	608.81	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2056	2		654.10	0.00	543.29	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00
2056	3		519.93	0.50	536.88	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2056	4		287.04	5.72	540.74	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2056	5		91.73	41.50	535.44	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2056	6		13.09	239.18	550.69	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2056	7		0.14	546.72	542.12	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
2056	8		0.00	572.96	520.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
2056	9		0.51	397.22	538.35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00
2056	10		30.18	122.05	528.75	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00
2056	11		170.86	11.14	529.35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
2056	12		402.13	0.14	595.16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2057	1		586.35	0.00	611.65	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2057	2		654.75	0.00	545.84	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00
2057	3		520.44	0.50	539.42	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2057	4		287.33	5.74	543.33	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2057	5		91.82	41.66	538.02	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2057	6		13.11	240.13	553.37	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2057	7		0.14	548.91	544.80	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
2057	8		0.00	575.26	522.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
2057	9		0.51	398.81	541.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00
2057	10		30.22	122.54	531.33	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00
2057	11		171.04	11.19	531.91	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
2057	12		402.54	0.14	597.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Indiana Michigan Power Company-Indiana
Residential Energy Model Inputs

Year	Month	may13on	11-Sep	d1112	DJuly10on	D19onjan	nov16on	NovD16on	DecD16on	D16onJan	d15onjan	d2020on	XMissing
1998	1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
1998	2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
1998	3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
1998	4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
1998	5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
1998	6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
1998	7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
1998	8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
1998	9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
1998	10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
1998	11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
1998	12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
1999	1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
1999	2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
1999	3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
1999	4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
1999	5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
1999	6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
1999	7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
1999	8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
1999	9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
1999	10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
1999	11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
1999	12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
2000	1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
2000	2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
2000	3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
2000	4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
2000	5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
2000	6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
2000	7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
2000	8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
2000	9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0

Indiana Michigan Power Company-Indiana
Residential Energy Model Inputs

Year	Month	may13on	11-Sep	d1112	DJuly10on	D19onjan	nov16on	NovD16on	DecD16on	D16onJan	d15onjan	d2020on	XMissing
2000	10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
2000	11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
2000	12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
2001	1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
2001	2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
2001	3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
2001	4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
2001	5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
2001	6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
2001	7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
2001	8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
2001	9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
2001	10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
2001	11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
2001	12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
2002	1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
2002	2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
2002	3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
2002	4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
2002	5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
2002	6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
2002	7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
2002	8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
2002	9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
2002	10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
2002	11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
2002	12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
2003	1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
2003	2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
2003	3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
2003	4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
2003	5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
2003	6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0

Indiana Michigan Power Company-Indiana
Residential Energy Model Inputs

Year	Month	may13on	11-Sep	d1112	DJuly10on	D19onjan	nov16on	NovD16on	DecD16on	D16onJan	d15onjan	d2020on	XMissing
2003	7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
2003	8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
2003	9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
2003	10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
2003	11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
2003	12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
2004	1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
2004	2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
2004	3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
2004	4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
2004	5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
2004	6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
2004	7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
2004	8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
2004	9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
2004	10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
2004	11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
2004	12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
2005	1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
2005	2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
2005	3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
2005	4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
2005	5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
2005	6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
2005	7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
2005	8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
2005	9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
2005	10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
2005	11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
2005	12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
2006	1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
2006	2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
2006	3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0

Indiana Michigan Power Company-Indiana
Residential Energy Model Inputs

Year	Month	may13on	11-Sep	d1112	DJuly10on	D19onjan	nov16on	NovD16on	DecD16on	D16onJan	d15onjan	d2020on	XMissing
2006	4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
2006	5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
2006	6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
2006	7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
2006	8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
2006	9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
2006	10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
2006	11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
2006	12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
2007	1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
2007	2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
2007	3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
2007	4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
2007	5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
2007	6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
2007	7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
2007	8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
2007	9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
2007	10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
2007	11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
2007	12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
2008	1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
2008	2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
2008	3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
2008	4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
2008	5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
2008	6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
2008	7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
2008	8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
2008	9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
2008	10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
2008	11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
2008	12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0

Indiana Michigan Power Company-Indiana
Residential Energy Model Inputs

Year	Month	may13on	11-Sep	d1112	DJuly10on	D19onjan	nov16on	NovD16on	DecD16on	D16onJan	d15onjan	d2020on	XMissing
2009	1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
2009	2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
2009	3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
2009	4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
2009	5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
2009	6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
2009	7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
2009	8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
2009	9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
2009	10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
2009	11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
2009	12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
2010	1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
2010	2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
2010	3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
2010	4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
2010	5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
2010	6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
2010	7	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
2010	8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
2010	9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
2010	10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
2010	11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
2010	12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
2011	1	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
2011	2	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
2011	3	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
2011	4	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
2011	5	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
2011	6	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
2011	7	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
2011	8	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
2011	9	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0

Indiana Michigan Power Company-Indiana
Residential Energy Model Inputs

Year	Month	may13on	11-Sep	d1112	DJuly10on	D19onjan	nov16on	NovD16on	DecD16on	D16onJan	d15onjan	d2020on	XMissing
2011	10	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
2011	11	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
2011	12	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
2012	1	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
2012	2	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
2012	3	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
2012	4	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
2012	5	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
2012	6	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
2012	7	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
2012	8	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
2012	9	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
2012	10	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
2012	11	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
2012	12	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
2013	1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
2013	2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
2013	3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
2013	4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
2013	5	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
2013	6	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
2013	7	1.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
2013	8	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
2013	9	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
2013	10	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
2013	11	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
2013	12	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
2014	1	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
2014	2	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
2014	3	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
2014	4	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
2014	5	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
2014	6	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0

Indiana Michigan Power Company-Indiana
Residential Energy Model Inputs

Year	Month	may13on	11-Sep	d1112	DJuly10on	D19onjan	nov16on	NovD16on	DecD16on	D16onJan	d15onjan	d2020on	XMissing
2014	7	1.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
2014	8	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
2014	9	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
2014	10	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
2014	11	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
2014	12	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
2015	1	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0
2015	2	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0
2015	3	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0
2015	4	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0
2015	5	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0
2015	6	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0
2015	7	1.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0
2015	8	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0
2015	9	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0
2015	10	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0
2015	11	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0
2015	12	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0
2016	1	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00	0
2016	2	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0
2016	3	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0
2016	4	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0
2016	5	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0
2016	6	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0
2016	7	1.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0
2016	8	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0
2016	9	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0
2016	10	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0
2016	11	1.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0
2016	12	1.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00	0
2017	1	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0
2017	2	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0.00	0
2017	3	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0.00	0

Indiana Michigan Power Company-Indiana
Residential Energy Model Inputs

Year	Month	may13on	11-Sep	d1112	DJuly10on	D19onjan	nov16on	NovD16on	DecD16on	D16onJan	d15onjan	d2020on	XMissing
2017	4	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0.00	0
2017	5	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0.00	0
2017	6	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0.00	0
2017	7	1.00	0.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	1.00	0.00	0
2017	8	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0.00	0
2017	9	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0.00	0
2017	10	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0.00	0
2017	11	1.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0
2017	12	1.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00	0
2018	1	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0
2018	2	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0.00	0
2018	3	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0.00	0
2018	4	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0.00	0
2018	5	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0.00	0
2018	6	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0.00	0
2018	7	1.00	0.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	1.00	0.00	0
2018	8	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0.00	0
2018	9	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0.00	0
2018	10	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0.00	0
2018	11	1.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0
2018	12	1.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00	0
2019	1	1.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	0.00	0
2019	2	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0.00	0
2019	3	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0.00	0
2019	4	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0.00	0
2019	5	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0.00	0
2019	6	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0.00	0
2019	7	1.00	0.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	1.00	0.00	0
2019	8	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0.00	0
2019	9	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0.00	0
2019	10	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0.00	0
2019	11	1.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0
2019	12	1.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00	0

Indiana Michigan Power Company-Indiana
Residential Energy Model Inputs

Year	Month	may13on	11-Sep	d1112	DJuly10on	D19onjan	nov16on	NovD16on	DecD16on	D16onJan	d15onjan	d2020on	XMissing
2020	1	1.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0
2020	2	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2020	3	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2020	4	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2020	5	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2020	6	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2020	7	1.00	0.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2020	8	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2020	9	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2020	10	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2020	11	1.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	0
2020	12	1.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00	1.00	0
2021	1	1.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0
2021	2	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2021	3	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2021	4	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2021	5	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2021	6	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2021	7	1.00	0.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2021	8	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2021	9	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2021	10	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2021	11	1.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	0
2021	12	1.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00	1.00	0
2022	1	1.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0
2022	2	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2022	3	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2022	4	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2022	5	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2022	6	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2022	7	1.00	0.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2022	8	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2022	9	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0

Indiana Michigan Power Company-Indiana
Residential Energy Model Inputs

Year	Month	may13on	11-Sep	d1112	DJuly10on	D19onjan	nov16on	NovD16on	DecD16on	D16onJan	d15onjan	d2020on	XMissing
2022	10	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2022	11	1.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	0
2022	12	1.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00	1.00	0
2023	1	1.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0
2023	2	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2023	3	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2023	4	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2023	5	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2023	6	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2023	7	1.00	0.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2023	8	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2023	9	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2023	10	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2023	11	1.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	0
2023	12	1.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00	1.00	0
2024	1	1.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0
2024	2	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2024	3	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2024	4	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2024	5	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2024	6	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2024	7	1.00	0.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2024	8	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2024	9	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2024	10	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2024	11	1.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	0
2024	12	1.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00	1.00	0
2025	1	1.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0
2025	2	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2025	3	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2025	4	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2025	5	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2025	6	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0

Indiana Michigan Power Company-Indiana
Residential Energy Model Inputs

Year	Month	may13on	11-Sep	d1112	DJuly10on	D19onjan	nov16on	NovD16on	DecD16on	D16onJan	d15onjan	d2020on	XMissing
2025	7	1.00	0.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2025	8	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2025	9	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2025	10	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2025	11	1.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	0
2025	12	1.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00	1.00	0
2026	1	1.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0
2026	2	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2026	3	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2026	4	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2026	5	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2026	6	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2026	7	1.00	0.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2026	8	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2026	9	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2026	10	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2026	11	1.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	0
2026	12	1.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00	1.00	0
2027	1	1.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0
2027	2	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2027	3	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2027	4	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2027	5	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2027	6	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2027	7	1.00	0.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2027	8	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2027	9	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2027	10	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2027	11	1.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	0
2027	12	1.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00	1.00	0
2028	1	1.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0
2028	2	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2028	3	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0

Indiana Michigan Power Company-Indiana
Residential Energy Model Inputs

Year	Month	may13on	11-Sep	d1112	DJuly10on	D19onjan	nov16on	NovD16on	DecD16on	D16onJan	d15onjan	d2020on	XMissing
2028	4	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2028	5	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2028	6	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2028	7	1.00	0.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2028	8	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2028	9	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2028	10	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2028	11	1.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	0
2028	12	1.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00	1.00	0
2029	1	1.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0
2029	2	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2029	3	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2029	4	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2029	5	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2029	6	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2029	7	1.00	0.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2029	8	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2029	9	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2029	10	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2029	11	1.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	0
2029	12	1.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00	1.00	0
2030	1	1.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0
2030	2	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2030	3	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2030	4	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2030	5	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2030	6	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2030	7	1.00	0.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2030	8	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2030	9	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2030	10	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2030	11	1.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	0
2030	12	1.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00	1.00	0

Indiana Michigan Power Company-Indiana
Residential Energy Model Inputs

Year	Month	may13on	11-Sep	d1112	DJuly10on	D19onjan	nov16on	NovD16on	DecD16on	D16onJan	d15onjan	d2020on	XMissing
2031	1	1.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0
2031	2	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2031	3	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2031	4	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2031	5	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2031	6	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2031	7	1.00	0.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2031	8	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2031	9	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2031	10	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2031	11	1.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	0
2031	12	1.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00	1.00	0
2032	1	1.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0
2032	2	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2032	3	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2032	4	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2032	5	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2032	6	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2032	7	1.00	0.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2032	8	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2032	9	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2032	10	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2032	11	1.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	0
2032	12	1.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00	1.00	0
2033	1	1.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0
2033	2	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2033	3	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2033	4	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2033	5	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2033	6	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2033	7	1.00	0.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2033	8	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2033	9	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0

Indiana Michigan Power Company-Indiana
Residential Energy Model Inputs

Year	Month	may13on	11-Sep	d1112	DJuly10on	D19onjan	nov16on	NovD16on	DecD16on	D16onJan	d15onjan	d2020on	XMissing
2033	10	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2033	11	1.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	0
2033	12	1.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00	1.00	0
2034	1	1.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0
2034	2	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2034	3	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2034	4	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2034	5	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2034	6	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2034	7	1.00	0.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2034	8	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2034	9	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2034	10	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2034	11	1.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	0
2034	12	1.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00	1.00	0
2035	1	1.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0
2035	2	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2035	3	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2035	4	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2035	5	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2035	6	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2035	7	1.00	0.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2035	8	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2035	9	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2035	10	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2035	11	1.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	0
2035	12	1.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00	1.00	0
2036	1	1.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0
2036	2	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2036	3	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2036	4	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2036	5	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2036	6	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0

Indiana Michigan Power Company-Indiana
Residential Energy Model Inputs

Year	Month	may13on	11-Sep	d1112	DJuly10on	D19onjan	nov16on	NovD16on	DecD16on	D16onJan	d15onjan	d2020on	XMissing
2036	7	1.00	0.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2036	8	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2036	9	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2036	10	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2036	11	1.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	0
2036	12	1.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00	1.00	0
2037	1	1.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0
2037	2	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2037	3	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2037	4	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2037	5	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2037	6	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2037	7	1.00	0.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2037	8	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2037	9	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2037	10	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2037	11	1.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	0
2037	12	1.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00	1.00	0
2038	1	1.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0
2038	2	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2038	3	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2038	4	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2038	5	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2038	6	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2038	7	1.00	0.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2038	8	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2038	9	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2038	10	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2038	11	1.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	0
2038	12	1.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00	1.00	0
2039	1	1.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0
2039	2	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2039	3	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0

Indiana Michigan Power Company-Indiana
Residential Energy Model Inputs

Year	Month	may13on	11-Sep	d1112	DJuly10on	D19onjan	nov16on	NovD16on	DecD16on	D16onJan	d15onjan	d2020on	XMissing
2039	4	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2039	5	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2039	6	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2039	7	1.00	0.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2039	8	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2039	9	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2039	10	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2039	11	1.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	0
2039	12	1.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00	1.00	0
2040	1	1.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0
2040	2	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2040	3	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2040	4	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2040	5	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2040	6	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2040	7	1.00	0.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2040	8	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2040	9	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2040	10	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2040	11	1.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	0
2040	12	1.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00	1.00	0
2041	1	1.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0
2041	2	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2041	3	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2041	4	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2041	5	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2041	6	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2041	7	1.00	0.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2041	8	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2041	9	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2041	10	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2041	11	1.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	0
2041	12	1.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00	1.00	0

Indiana Michigan Power Company-Indiana
Residential Energy Model Inputs

Year	Month	may13on	11-Sep	d1112	DJuly10on	D19onjan	nov16on	NovD16on	DecD16on	D16onJan	d15onjan	d2020on	XMissing
2042	1	1.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0
2042	2	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2042	3	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2042	4	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2042	5	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2042	6	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2042	7	1.00	0.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2042	8	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2042	9	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2042	10	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2042	11	1.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	0
2042	12	1.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00	1.00	0
2043	1	1.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0
2043	2	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2043	3	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2043	4	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2043	5	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2043	6	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2043	7	1.00	0.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2043	8	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2043	9	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2043	10	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2043	11	1.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	0
2043	12	1.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00	1.00	0
2044	1	1.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0
2044	2	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2044	3	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2044	4	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2044	5	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2044	6	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2044	7	1.00	0.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2044	8	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2044	9	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0

Indiana Michigan Power Company-Indiana
Residential Energy Model Inputs

Year	Month	may13on	11-Sep	d1112	DJuly10on	D19onjan	nov16on	NovD16on	DecD16on	D16onJan	d15onjan	d2020on	XMissing
2044	10	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2044	11	1.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	0
2044	12	1.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00	1.00	0
2045	1	1.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0
2045	2	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2045	3	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2045	4	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2045	5	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2045	6	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2045	7	1.00	0.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2045	8	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2045	9	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2045	10	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2045	11	1.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	0
2045	12	1.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00	1.00	0
2046	1	1.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0
2046	2	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2046	3	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2046	4	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2046	5	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2046	6	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2046	7	1.00	0.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2046	8	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2046	9	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2046	10	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2046	11	1.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	0
2046	12	1.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00	1.00	0
2047	1	1.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0
2047	2	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2047	3	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2047	4	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2047	5	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2047	6	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0

Indiana Michigan Power Company-Indiana
Residential Energy Model Inputs

Year	Month	may13on	11-Sep	d1112	DJuly10on	D19onjan	nov16on	NovD16on	DecD16on	D16onJan	d15onjan	d2020on	XMissing
2047	7	1.00	0.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2047	8	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2047	9	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2047	10	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2047	11	1.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	0
2047	12	1.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00	1.00	0
2048	1	1.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0
2048	2	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2048	3	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2048	4	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2048	5	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2048	6	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2048	7	1.00	0.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2048	8	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2048	9	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2048	10	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2048	11	1.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	0
2048	12	1.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00	1.00	0
2049	1	1.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0
2049	2	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2049	3	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2049	4	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2049	5	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2049	6	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2049	7	1.00	0.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2049	8	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2049	9	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2049	10	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2049	11	1.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	0
2049	12	1.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00	1.00	0
2050	1	1.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0
2050	2	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2050	3	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0

Indiana Michigan Power Company-Indiana
Residential Energy Model Inputs

Year	Month	may13on	11-Sep	d1112	DJuly10on	D19onjan	nov16on	NovD16on	DecD16on	D16onJan	d15onjan	d2020on	XMissing
2050	4	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2050	5	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2050	6	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2050	7	1.00	0.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2050	8	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2050	9	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2050	10	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2050	11	1.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	0
2050	12	1.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00	1.00	0
2051	1	1.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0
2051	2	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2051	3	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2051	4	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2051	5	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2051	6	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2051	7	1.00	0.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2051	8	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2051	9	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2051	10	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2051	11	1.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	0
2051	12	1.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00	1.00	0
2052	1	1.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0
2052	2	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2052	3	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2052	4	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2052	5	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2052	6	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2052	7	1.00	0.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2052	8	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2052	9	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2052	10	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2052	11	1.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	0
2052	12	1.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00	1.00	0

Indiana Michigan Power Company-Indiana
Residential Energy Model Inputs

Year	Month	may13on	11-Sep	d1112	DJuly10on	D19onjan	nov16on	NovD16on	DecD16on	D16onJan	d15onjan	d2020on	XMissing
2053	1	1.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0
2053	2	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2053	3	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2053	4	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2053	5	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2053	6	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2053	7	1.00	0.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2053	8	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2053	9	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2053	10	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2053	11	1.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	0
2053	12	1.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00	1.00	0
2054	1	1.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0
2054	2	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2054	3	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2054	4	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2054	5	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2054	6	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2054	7	1.00	0.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2054	8	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2054	9	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2054	10	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2054	11	1.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	0
2054	12	1.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00	1.00	0
2055	1	1.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0
2055	2	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2055	3	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2055	4	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2055	5	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2055	6	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2055	7	1.00	0.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2055	8	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2055	9	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0

Indiana Michigan Power Company-Indiana
Residential Energy Model Inputs

Year	Month	may13on	11-Sep	d1112	DJuly10on	D19onjan	nov16on	NovD16on	DecD16on	D16onJan	d15onjan	d2020on	XMissing
2055	10	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2055	11	1.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	0
2055	12	1.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00	1.00	0
2056	1	1.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0
2056	2	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2056	3	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2056	4	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2056	5	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2056	6	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2056	7	1.00	0.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2056	8	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2056	9	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2056	10	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2056	11	1.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	0
2056	12	1.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00	1.00	0
2057	1	1.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0
2057	2	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2057	3	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2057	4	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2057	5	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2057	6	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2057	7	1.00	0.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2057	8	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2057	9	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2057	10	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0
2057	11	1.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	0
2057	12	1.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00	1.00	0

Indiana Michigan Power Company-Indiana
Residential Energy Model Inputs

Year	Month	YMissing
1998	1	0
1998	2	0
1998	3	0
1998	4	0
1998	5	0
1998	6	0
1998	7	0
1998	8	0
1998	9	0
1998	10	0
1998	11	0
1998	12	0
1999	1	0
1999	2	0
1999	3	0
1999	4	0
1999	5	0
1999	6	0
1999	7	0
1999	8	0
1999	9	0
1999	10	0
1999	11	0
1999	12	0
2000	1	0
2000	2	0
2000	3	0
2000	4	0
2000	5	0
2000	6	0
2000	7	0
2000	8	0
2000	9	0

Indiana Michigan Power Company-Indiana
Residential Energy Model Inputs

Year	Month	YMissing
2000	10	0
2000	11	0
2000	12	0
2001	1	0
2001	2	0
2001	3	0
2001	4	0
2001	5	0
2001	6	0
2001	7	0
2001	8	0
2001	9	0
2001	10	0
2001	11	0
2001	12	0
2002	1	0
2002	2	0
2002	3	0
2002	4	0
2002	5	0
2002	6	0
2002	7	0
2002	8	0
2002	9	0
2002	10	0
2002	11	0
2002	12	0
2003	1	0
2003	2	0
2003	3	0
2003	4	0
2003	5	0
2003	6	0

Indiana Michigan Power Company-Indiana
Residential Energy Model Inputs

Year	Month	YMissing
2003	7	0
2003	8	0
2003	9	0
2003	10	0
2003	11	0
2003	12	0
2004	1	0
2004	2	0
2004	3	0
2004	4	0
2004	5	0
2004	6	0
2004	7	0
2004	8	0
2004	9	0
2004	10	0
2004	11	0
2004	12	0
2005	1	0
2005	2	0
2005	3	0
2005	4	0
2005	5	0
2005	6	0
2005	7	0
2005	8	0
2005	9	0
2005	10	0
2005	11	0
2005	12	0
2006	1	0
2006	2	0
2006	3	0

Indiana Michigan Power Company-Indiana
Residential Energy Model Inputs

Year	Month	YMissing
2006	4	0
2006	5	0
2006	6	0
2006	7	0
2006	8	0
2006	9	0
2006	10	0
2006	11	0
2006	12	0
2007	1	0
2007	2	0
2007	3	0
2007	4	0
2007	5	0
2007	6	0
2007	7	0
2007	8	0
2007	9	0
2007	10	0
2007	11	0
2007	12	0
2008	1	0
2008	2	0
2008	3	0
2008	4	0
2008	5	0
2008	6	0
2008	7	0
2008	8	0
2008	9	0
2008	10	0
2008	11	0
2008	12	0

Indiana Michigan Power Company-Indiana
Residential Energy Model Inputs

Year	Month	YMissing
2009	1	0
2009	2	0
2009	3	0
2009	4	0
2009	5	0
2009	6	0
2009	7	0
2009	8	0
2009	9	0
2009	10	0
2009	11	0
2009	12	0
2010	1	0
2010	2	0
2010	3	0
2010	4	0
2010	5	0
2010	6	0
2010	7	0
2010	8	0
2010	9	0
2010	10	0
2010	11	0
2010	12	0
2011	1	0
2011	2	0
2011	3	0
2011	4	0
2011	5	0
2011	6	0
2011	7	0
2011	8	0
2011	9	0

Indiana Michigan Power Company-Indiana
Residential Energy Model Inputs

Year	Month	YMissing
2011	10	0
2011	11	0
2011	12	0
2012	1	0
2012	2	0
2012	3	0
2012	4	0
2012	5	0
2012	6	0
2012	7	0
2012	8	0
2012	9	0
2012	10	0
2012	11	0
2012	12	0
2013	1	0
2013	2	0
2013	3	0
2013	4	0
2013	5	0
2013	6	0
2013	7	0
2013	8	0
2013	9	0
2013	10	0
2013	11	0
2013	12	0
2014	1	0
2014	2	0
2014	3	0
2014	4	0
2014	5	0
2014	6	0

Indiana Michigan Power Company-Indiana
Residential Energy Model Inputs

Year	Month	YMissing
2014	7	0
2014	8	0
2014	9	0
2014	10	0
2014	11	0
2014	12	0
2015	1	0
2015	2	0
2015	3	0
2015	4	0
2015	5	0
2015	6	0
2015	7	0
2015	8	0
2015	9	0
2015	10	0
2015	11	0
2015	12	0
2016	1	0
2016	2	0
2016	3	0
2016	4	0
2016	5	0
2016	6	0
2016	7	0
2016	8	0
2016	9	0
2016	10	0
2016	11	0
2016	12	0
2017	1	0
2017	2	0
2017	3	0

Indiana Michigan Power Company-Indiana
Residential Energy Model Inputs

Year	Month	YMissing
2017	4	0
2017	5	0
2017	6	0
2017	7	0
2017	8	0
2017	9	0
2017	10	0
2017	11	0
2017	12	0
2018	1	0
2018	2	0
2018	3	0
2018	4	0
2018	5	0
2018	6	0
2018	7	0
2018	8	0
2018	9	0
2018	10	0
2018	11	0
2018	12	0
2019	1	0
2019	2	0
2019	3	0
2019	4	0
2019	5	0
2019	6	0
2019	7	0
2019	8	0
2019	9	0
2019	10	0
2019	11	0
2019	12	0

Indiana Michigan Power Company-Indiana
Residential Energy Model Inputs

Year	Month	YMissing
2020	1	0
2020	2	0
2020	3	0
2020	4	0
2020	5	0
2020	6	0
2020	7	0
2020	8	0
2020	9	0
2020	10	0
2020	11	0
2020	12	0
2021	1	0
2021	2	1
2021	3	1
2021	4	1
2021	5	1
2021	6	1
2021	7	1
2021	8	1
2021	9	1
2021	10	1
2021	11	1
2021	12	1
2022	1	1
2022	2	1
2022	3	1
2022	4	1
2022	5	1
2022	6	1
2022	7	1
2022	8	1
2022	9	1

Indiana Michigan Power Company-Indiana
Residential Energy Model Inputs

Year	Month	YMissing
2022	10	1
2022	11	1
2022	12	1
2023	1	1
2023	2	1
2023	3	1
2023	4	1
2023	5	1
2023	6	1
2023	7	1
2023	8	1
2023	9	1
2023	10	1
2023	11	1
2023	12	1
2024	1	1
2024	2	1
2024	3	1
2024	4	1
2024	5	1
2024	6	1
2024	7	1
2024	8	1
2024	9	1
2024	10	1
2024	11	1
2024	12	1
2025	1	1
2025	2	1
2025	3	1
2025	4	1
2025	5	1
2025	6	1

Indiana Michigan Power Company-Indiana
Residential Energy Model Inputs

Year	Month	YMissing
2025	7	1
2025	8	1
2025	9	1
2025	10	1
2025	11	1
2025	12	1
2026	1	1
2026	2	1
2026	3	1
2026	4	1
2026	5	1
2026	6	1
2026	7	1
2026	8	1
2026	9	1
2026	10	1
2026	11	1
2026	12	1
2027	1	1
2027	2	1
2027	3	1
2027	4	1
2027	5	1
2027	6	1
2027	7	1
2027	8	1
2027	9	1
2027	10	1
2027	11	1
2027	12	1
2028	1	1
2028	2	1
2028	3	1

Indiana Michigan Power Company-Indiana
Residential Energy Model Inputs

Year	Month	YMissing
2028	4	1
2028	5	1
2028	6	1
2028	7	1
2028	8	1
2028	9	1
2028	10	1
2028	11	1
2028	12	1
2029	1	1
2029	2	1
2029	3	1
2029	4	1
2029	5	1
2029	6	1
2029	7	1
2029	8	1
2029	9	1
2029	10	1
2029	11	1
2029	12	1
2030	1	1
2030	2	1
2030	3	1
2030	4	1
2030	5	1
2030	6	1
2030	7	1
2030	8	1
2030	9	1
2030	10	1
2030	11	1
2030	12	1

Indiana Michigan Power Company-Indiana
Residential Energy Model Inputs

Year	Month	YMissing
2031	1	1
2031	2	1
2031	3	1
2031	4	1
2031	5	1
2031	6	1
2031	7	1
2031	8	1
2031	9	1
2031	10	1
2031	11	1
2031	12	1
2032	1	1
2032	2	1
2032	3	1
2032	4	1
2032	5	1
2032	6	1
2032	7	1
2032	8	1
2032	9	1
2032	10	1
2032	11	1
2032	12	1
2033	1	1
2033	2	1
2033	3	1
2033	4	1
2033	5	1
2033	6	1
2033	7	1
2033	8	1
2033	9	1

Indiana Michigan Power Company-Indiana
Residential Energy Model Inputs

Year	Month	YMissing
2033	10	1
2033	11	1
2033	12	1
2034	1	1
2034	2	1
2034	3	1
2034	4	1
2034	5	1
2034	6	1
2034	7	1
2034	8	1
2034	9	1
2034	10	1
2034	11	1
2034	12	1
2035	1	1
2035	2	1
2035	3	1
2035	4	1
2035	5	1
2035	6	1
2035	7	1
2035	8	1
2035	9	1
2035	10	1
2035	11	1
2035	12	1
2036	1	1
2036	2	1
2036	3	1
2036	4	1
2036	5	1
2036	6	1

Indiana Michigan Power Company-Indiana
Residential Energy Model Inputs

Year	Month	YMissing
2036	7	1
2036	8	1
2036	9	1
2036	10	1
2036	11	1
2036	12	1
2037	1	1
2037	2	1
2037	3	1
2037	4	1
2037	5	1
2037	6	1
2037	7	1
2037	8	1
2037	9	1
2037	10	1
2037	11	1
2037	12	1
2038	1	1
2038	2	1
2038	3	1
2038	4	1
2038	5	1
2038	6	1
2038	7	1
2038	8	1
2038	9	1
2038	10	1
2038	11	1
2038	12	1
2039	1	1
2039	2	1
2039	3	1

Indiana Michigan Power Company-Indiana
Residential Energy Model Inputs

Year	Month	YMissing
2039	4	1
2039	5	1
2039	6	1
2039	7	1
2039	8	1
2039	9	1
2039	10	1
2039	11	1
2039	12	1
2040	1	1
2040	2	1
2040	3	1
2040	4	1
2040	5	1
2040	6	1
2040	7	1
2040	8	1
2040	9	1
2040	10	1
2040	11	1
2040	12	1
2041	1	1
2041	2	1
2041	3	1
2041	4	1
2041	5	1
2041	6	1
2041	7	1
2041	8	1
2041	9	1
2041	10	1
2041	11	1
2041	12	1

Indiana Michigan Power Company-Indiana
Residential Energy Model Inputs

Year	Month	YMissing
2042	1	1
2042	2	1
2042	3	1
2042	4	1
2042	5	1
2042	6	1
2042	7	1
2042	8	1
2042	9	1
2042	10	1
2042	11	1
2042	12	1
2043	1	1
2043	2	1
2043	3	1
2043	4	1
2043	5	1
2043	6	1
2043	7	1
2043	8	1
2043	9	1
2043	10	1
2043	11	1
2043	12	1
2044	1	1
2044	2	1
2044	3	1
2044	4	1
2044	5	1
2044	6	1
2044	7	1
2044	8	1
2044	9	1

Indiana Michigan Power Company-Indiana
Residential Energy Model Inputs

Year	Month	YMissing
2044	10	1
2044	11	1
2044	12	1
2045	1	1
2045	2	1
2045	3	1
2045	4	1
2045	5	1
2045	6	1
2045	7	1
2045	8	1
2045	9	1
2045	10	1
2045	11	1
2045	12	1
2046	1	1
2046	2	1
2046	3	1
2046	4	1
2046	5	1
2046	6	1
2046	7	1
2046	8	1
2046	9	1
2046	10	1
2046	11	1
2046	12	1
2047	1	1
2047	2	1
2047	3	1
2047	4	1
2047	5	1
2047	6	1

Indiana Michigan Power Company-Indiana
Residential Energy Model Inputs

Year	Month	YMissing
2047	7	1
2047	8	1
2047	9	1
2047	10	1
2047	11	1
2047	12	1
2048	1	1
2048	2	1
2048	3	1
2048	4	1
2048	5	1
2048	6	1
2048	7	1
2048	8	1
2048	9	1
2048	10	1
2048	11	1
2048	12	1
2049	1	1
2049	2	1
2049	3	1
2049	4	1
2049	5	1
2049	6	1
2049	7	1
2049	8	1
2049	9	1
2049	10	1
2049	11	1
2049	12	1
2050	1	1
2050	2	1
2050	3	1

Indiana Michigan Power Company-Indiana
Residential Energy Model Inputs

Year	Month	YMissing
2050	4	1
2050	5	1
2050	6	1
2050	7	1
2050	8	1
2050	9	1
2050	10	1
2050	11	1
2050	12	1
2051	1	1
2051	2	1
2051	3	1
2051	4	1
2051	5	1
2051	6	1
2051	7	1
2051	8	1
2051	9	1
2051	10	1
2051	11	1
2051	12	1
2052	1	1
2052	2	1
2052	3	1
2052	4	1
2052	5	1
2052	6	1
2052	7	1
2052	8	1
2052	9	1
2052	10	1
2052	11	1
2052	12	1

Indiana Michigan Power Company-Indiana
Residential Energy Model Inputs

Year	Month	YMissing
2053	1	1
2053	2	1
2053	3	1
2053	4	1
2053	5	1
2053	6	1
2053	7	1
2053	8	1
2053	9	1
2053	10	1
2053	11	1
2053	12	1
2054	1	1
2054	2	1
2054	3	1
2054	4	1
2054	5	1
2054	6	1
2054	7	1
2054	8	1
2054	9	1
2054	10	1
2054	11	1
2054	12	1
2055	1	1
2055	2	1
2055	3	1
2055	4	1
2055	5	1
2055	6	1
2055	7	1
2055	8	1
2055	9	1

Indiana Michigan Power Company-Indiana
Residential Energy Model Inputs

Year	Month	YMissing
2055	10	1
2055	11	1
2055	12	1
2056	1	1
2056	2	1
2056	3	1
2056	4	1
2056	5	1
2056	6	1
2056	7	1
2056	8	1
2056	9	1
2056	10	1
2056	11	1
2056	12	1
2057	1	1
2057	2	1
2057	3	1
2057	4	1
2057	5	1
2057	6	1
2057	7	1
2057	8	1
2057	9	1
2057	10	1
2057	11	1
2057	12	1

Indiana Michigan Power Company-Indiana
Long-Term Residential Model Coefficients

Variable	Coefficient	StdErr	T-Stat	P-Value	Definition
ResidentialVars.XHeat	624295.243	20532.435	30.405	0.00%	Residential Heating Component
ResidentialVars.XCool	547524.885	18507.746	29.584	0.00%	Residential Cooling Component
ResidentialVars.XOther	1554706.982	19361.306	80.300	0.00%	Residential Other Component
BinaryVars.Jan	13124033.795	10626470.633	1.235	21.80%	January
BinaryVars.Feb	-72463515.830	11135345.941	-6.508	0.00%	February
BinaryVars.Mar	-47885860.518	7730245.437	-6.195	0.00%	March
BinaryVars.Apr	-51624249.613	6922053.201	-7.458	0.00%	April
BinaryVars.May	-55761839.844	8702293.613	-6.408	0.00%	May
BinaryVars.Jun	-39429489.925	11106822.066	-3.550	0.05%	June
BinaryVars.Jul	32582666.358	14865498.033	2.192	2.93%	July
BinaryVars.Aug	63621435.528	15072191.414	4.221	0.00%	August
BinaryVars.Sep	43424423.870	12729211.941	3.411	0.08%	September
BinaryVars.Oct	-24043445.590	9791933.048	-2.455	1.47%	October
BinaryVars.Nov	-38366247.544	8131804.687	-4.718	0.00%	November
BinaryVars.JanD06on	68448442.345	10893779.110	6.283	0.00%	Binary Variable-2006 On Januarys
BinaryVars.FebD06on	62253427.558	10155473.298	6.130	0.00%	Binary Variable-2006 On Ferbruarys
BinaryVars.may13on	-64665171.704	5651794.254	-11.442	0.00%	Binary Variable-May 2013 On
BinaryVars.Sep11	-21083788.942	23768040.478	-0.887	37.59%	Binary Variable-September 2011
BinaryVars.d1112	-30164611.906	5330980.478	-5.658	0.00%	Binary Variable-2011 and 2012
BinaryVars.DJuly10on	-2445676.233	9987560.324	-0.245	80.68%	Binary Variable-July 2010 On
BinaryVars.D19onjan	-25671029.702	19410851.884	-1.323	18.72%	Binary Variable-2019 On Januarys
BinaryVars.nov16on	-17316023.933	6383863.910	-2.712	0.71%	Binary Variable-November 2016 On
BinaryVars.NovD16on	-23527117.029	12280730.769	-1.916	5.65%	Binary Variable-2016 On Novembers
BinaryVars.DecD16on	-27275412.793	12264795.794	-2.224	2.70%	Binary Variable-2016 On Decembers
BinaryVars.D16onJan	-51085811.564	15418028.572	-3.313	0.11%	Binary Variable-2016 On Januarys
BinaryVars.d15onjan	-36555156.980	7190937.884	-5.084	0.00%	Binary Variable-2015 On Januarys
BinaryVars.d2020on	19835337.085	7571219.397	2.620	0.93%	Binary Variable-2020 On

Indiana Michigan Power Company-Indiana
Long-Term Residential Energy Model Statistics

Model Statistics	
Iterations	1
Adjusted Observations	277
Deg. of Freedom for Error	250
R-Squared	0.985
Adjusted R-Squared	0.983
AIC	33.973
BIC	34.327
F-Statistic	#NA
Prob (F-Statistic)	#NA
Log-Likelihood	-5,071.36
Model Sum of Squares	8,427,298,334,292,430,000.00
Sum of Squared Errors	129,495,829,666,413,000.00
Mean Squared Error	517,983,318,665,652.00
Std. Error of Regression	22,759,246.88
Mean Abs. Dev. (MAD)	16,778,773.01
Mean Abs. % Err. (MAPE)	1.77%
Durbin-Watson Statistic	1.223
Durbin-H Statistic	#NA
Ljung-Box Statistic	81.92
Prob (Ljung-Box)	0.0000
Skewness	-0.174
Kurtosis	3.367
Jarque-Bera	2.953
Prob (Jarque-Bera)	0.2284

Forecast Statistics	
Forecast Observations	0
Mean Abs. Dev. (MAD)	0.00
Mean Abs. % Err. (MAPE)	0.00%
Avg. Forecast Error	0.00
Mean % Error	0.00%
Root Mean-Square Error	0.00
Theil's Inequality Coefficient	0.0000
-- Bias Proportion	0.00%
-- Variance Proportion	0.00%
-- Covariance Proportion	0.00%

Indiana Michigan Power Company-Indiana
Long-Term Residential Energy Model Output

Year	Month	Pred	XHeat	XCool	XOther	Jan	Feb	Mar
1998	1	1,101,534,500.388	316,288,567.683	0.000	772,121,898.909	13,124,033.795	0.000	0.000
1998	2	931,858,016.687	321,593,919.909	0.000	682,727,612.608	0.000	-72,463,515.830	0.000
1998	3	886,353,742.986	264,553,820.603	0.000	669,685,782.901	0.000	0.000	-47,885,860.518
1998	4	777,335,357.910	166,415,656.911	6,078,241.123	656,465,709.489	0.000	0.000	0.000
1998	5	657,958,067.688	37,997,919.451	27,221,818.385	648,500,169.697	0.000	0.000	0.000
1998	6	792,457,092.170	2,097,566.854	160,170,338.168	669,618,677.073	0.000	0.000	0.000
1998	7	1,028,049,151.997	746,626.434	352,610,549.589	642,109,309.615	0.000	0.000	0.000
1998	8	955,047,336.793	0.000	280,517,989.993	610,907,911.272	0.000	0.000	0.000
1998	9	935,306,964.188	0.000	242,166,068.462	649,716,471.856	0.000	0.000	0.000
1998	10	747,411,065.246	10,462,386.135	119,931,558.762	641,060,565.940	0.000	0.000	0.000
1998	11	706,348,674.310	92,932,638.919	7,646,765.737	644,135,517.198	0.000	0.000	0.000
1998	12	910,970,103.011	166,334,828.041	0.000	744,635,274.971	0.000	0.000	0.000
1999	1	1,224,487,206.843	428,078,256.746	0.000	783,284,916.302	13,124,033.795	0.000	0.000
1999	2	983,719,405.940	363,143,529.208	0.000	693,039,392.562	0.000	-72,463,515.830	0.000
1999	3	974,142,602.754	340,923,367.727	0.000	681,105,095.545	0.000	0.000	-47,885,860.518
1999	4	817,272,329.427	200,620,437.805	0.000	668,276,141.234	0.000	0.000	0.000
1999	5	666,048,525.433	47,926,501.801	15,744,645.500	658,139,217.976	0.000	0.000	0.000
1999	6	801,421,268.445	2,693,138.875	159,484,071.357	678,673,548.139	0.000	0.000	0.000
1999	7	1,066,141,530.775	0.000	381,770,422.347	651,788,442.069	0.000	0.000	0.000
1999	8	1,163,270,893.345	0.000	480,391,826.757	619,257,631.059	0.000	0.000	0.000
1999	9	891,760,271.296	124,346.288	187,364,307.395	660,847,193.744	0.000	0.000	0.000
1999	10	708,402,732.153	22,912,437.047	58,797,789.197	650,735,951.500	0.000	0.000	0.000
1999	11	707,172,428.245	90,093,094.346	1,503,651.586	653,941,929.857	0.000	0.000	0.000
1999	12	956,175,507.416	198,914,026.108	0.000	757,261,481.309	0.000	0.000	0.000
2000	1	1,157,707,596.230	348,262,855.017	0.000	796,320,707.418	13,124,033.795	0.000	0.000
2000	2	1,091,218,135.660	459,287,640.030	0.000	704,394,011.460	0.000	-72,463,515.830	0.000
2000	3	861,438,789.589	219,606,725.408	0.000	689,717,924.699	0.000	0.000	-47,885,860.518
2000	4	761,716,162.616	134,576,554.481	0.000	678,763,857.748	0.000	0.000	0.000
2000	5	714,696,894.144	47,627,438.535	53,792,560.177	669,038,735.276	0.000	0.000	0.000
2000	6	779,519,196.072	3,555,619.047	126,589,596.530	688,803,470.420	0.000	0.000	0.000
2000	7	971,292,280.649	132,236.104	276,417,163.093	662,160,215.093	0.000	0.000	0.000
2000	8	985,368,568.202	0.000	292,270,657.624	629,476,475.050	0.000	0.000	0.000
2000	9	966,374,737.079	396,859.805	251,223,202.412	671,330,250.992	0.000	0.000	0.000

Indiana Michigan Power Company-Indiana
Long-Term Residential Energy Model Output

Year	Month	Pred	XHeat	XCool	XOther	Jan	Feb	Mar
2000	10	716,005,514.881	21,204,817.325	57,855,428.006	660,988,715.140	0.000	0.000	0.000
2000	11	707,082,823.137	73,676,629.619	7,726,306.949	664,046,134.113	0.000	0.000	0.000
2000	12	1,102,876,968.831	332,955,628.225	0.000	769,921,340.606	0.000	0.000	0.000
2001	1	1,333,408,404.587	511,199,013.930	0.000	809,085,356.862	13,124,033.795	0.000	0.000
2001	2	1,027,477,015.829	384,020,343.628	0.000	715,920,188.031	0.000	-72,463,515.830	0.000
2001	3	960,245,453.421	306,655,842.219	0.000	701,475,471.720	0.000	0.000	-47,885,860.518
2001	4	853,555,886.820	204,406,695.176	10,813,682.881	689,959,758.377	0.000	0.000	0.000
2001	5	721,803,769.449	40,880,092.843	57,856,677.947	678,828,838.503	0.000	0.000	0.000
2001	6	761,096,848.779	4,423,066.771	96,877,641.297	699,225,630.636	0.000	0.000	0.000
2001	7	990,655,517.497	775,431.845	284,810,207.408	672,487,211.886	0.000	0.000	0.000
2001	8	1,132,746,843.480	0.000	429,539,794.675	639,585,613.277	0.000	0.000	0.000
2001	9	963,522,525.512	193,634.744	238,648,596.005	681,255,870.893	0.000	0.000	0.000
2001	10	702,388,796.044	22,927,097.516	32,403,699.590	671,101,444.529	0.000	0.000	0.000
2001	11	718,838,894.570	80,990,077.964	1,041,157.867	675,173,906.282	0.000	0.000	0.000
2001	12	916,611,577.919	136,254,288.476	0.000	780,357,289.442	0.000	0.000	0.000
2002	1	1,160,446,591.987	328,778,295.288	0.000	818,544,262.905	13,124,033.795	0.000	0.000
2002	2	930,675,943.616	279,598,123.701	0.000	723,541,335.744	0.000	-72,463,515.830	0.000
2002	3	937,655,128.982	275,625,602.525	0.000	709,915,386.974	0.000	0.000	-47,885,860.518
2002	4	875,530,407.943	209,276,216.350	19,741,381.729	698,137,059.478	0.000	0.000	0.000
2002	5	743,033,453.885	66,035,434.313	46,268,901.985	686,490,957.430	0.000	0.000	0.000
2002	6	805,132,297.901	24,723,772.470	112,949,141.301	706,888,874.055	0.000	0.000	0.000
2002	7	1,157,156,509.627	0.000	444,268,557.523	680,305,285.745	0.000	0.000	0.000
2002	8	1,203,243,302.054	0.000	492,312,948.198	647,308,918.328	0.000	0.000	0.000
2002	9	1,049,124,993.979	105,835.787	315,721,528.822	689,873,205.501	0.000	0.000	0.000
2002	10	800,450,072.138	22,389,284.521	122,365,462.013	679,738,771.195	0.000	0.000	0.000
2002	11	804,945,641.949	151,517,191.837	7,939,953.428	683,854,744.228	0.000	0.000	0.000
2002	12	1,095,755,590.187	305,415,715.139	0.000	790,339,875.048	0.000	0.000	0.000
2003	1	1,228,110,801.719	389,499,643.749	0.000	825,487,124.175	13,124,033.795	0.000	0.000
2003	2	1,159,682,615.047	502,208,477.115	0.000	729,937,653.762	0.000	-72,463,515.830	0.000
2003	3	1,095,088,441.334	425,594,320.867	0.000	717,379,980.984	0.000	0.000	-47,885,860.518
2003	4	825,981,911.254	172,687,303.317	531,916.339	704,386,941.211	0.000	0.000	0.000
2003	5	706,327,934.083	62,360,760.840	5,510,840.968	694,218,172.118	0.000	0.000	0.000
2003	6	711,872,434.122	7,351,635.310	30,683,720.192	713,266,568.545	0.000	0.000	0.000

Indiana Michigan Power Company-Indiana
Long-Term Residential Energy Model Output

Year	Month	Pred	XHeat	XCool	XOther	Jan	Feb	Mar
2003	7	968,353,817.089	76,525.437	251,730,278.031	683,964,347.262	0.000	0.000	0.000
2003	8	1,012,465,241.292	0.000	291,987,520.845	656,856,284.919	0.000	0.000	0.000
2003	9	1,011,288,952.717	15,322.277	257,723,973.576	710,125,232.994	0.000	0.000	0.000
2003	10	716,539,864.670	37,595,483.182	27,521,333.566	675,466,493.513	0.000	0.000	0.000
2003	11	747,369,512.424	104,236,630.379	1,256,850.633	680,242,278.956	0.000	0.000	0.000
2003	12	1,038,879,276.097	239,559,457.237	194,087.804	799,125,731.056	0.000	0.000	0.000
2004	1	1,208,628,637.768	359,856,963.915	0.000	835,647,640.058	13,124,033.795	0.000	0.000
2004	2	1,171,656,861.636	507,563,486.618	0.000	736,556,890.848	0.000	-72,463,515.830	0.000
2004	3	998,724,516.141	323,581,993.971	0.000	723,028,382.688	0.000	0.000	-47,885,860.518
2004	4	830,121,020.447	162,454,105.555	5,150,023.904	714,141,140.601	0.000	0.000	0.000
2004	5	750,422,652.599	48,736,331.914	57,356,963.629	700,091,196.900	0.000	0.000	0.000
2004	6	829,226,811.920	4,269,965.127	141,949,927.678	722,436,409.041	0.000	0.000	0.000
2004	7	948,403,866.270	0.000	222,727,728.004	693,093,471.908	0.000	0.000	0.000
2004	8	918,330,573.863	0.000	200,049,969.740	654,659,168.595	0.000	0.000	0.000
2004	9	922,543,331.319	0.000	178,240,088.787	700,878,818.662	0.000	0.000	0.000
2004	10	755,646,975.626	22,390,807.736	62,103,694.250	695,195,919.230	0.000	0.000	0.000
2004	11	737,462,458.808	76,039,750.016	3,966,345.401	695,822,610.935	0.000	0.000	0.000
2004	12	1,037,175,292.439	222,695,455.369	284,619.964	814,195,217.106	0.000	0.000	0.000
2005	1	1,245,836,971.462	394,274,267.685	0.000	838,438,669.982	13,124,033.795	0.000	0.000
2005	2	1,120,240,995.503	446,105,895.383	0.000	746,598,615.950	0.000	-72,463,515.830	0.000
2005	3	1,036,660,837.972	354,449,483.906	0.000	730,097,214.583	0.000	0.000	-47,885,860.518
2005	4	874,410,622.973	189,746,255.841	1,240,073.435	735,048,543.311	0.000	0.000	0.000
2005	5	737,146,519.616	78,338,015.214	14,500,034.856	700,070,309.390	0.000	0.000	0.000
2005	6	815,707,446.272	13,036,835.406	112,702,430.178	729,397,670.613	0.000	0.000	0.000
2005	7	1,111,234,729.679	0.000	366,024,166.355	712,627,896.966	0.000	0.000	0.000
2005	8	1,140,834,393.772	0.000	411,831,632.075	665,381,326.169	0.000	0.000	0.000
2005	9	1,006,788,121.155	0.000	252,151,428.549	711,212,268.735	0.000	0.000	0.000
2005	10	812,289,270.541	10,767,977.827	116,888,766.375	708,675,971.930	0.000	0.000	0.000
2005	11	781,113,961.763	94,776,343.096	9,451,586.963	715,252,279.248	0.000	0.000	0.000
2005	12	1,140,766,888.839	336,189,895.513	0.000	804,576,993.326	0.000	0.000	0.000
2006	1	1,280,990,082.858	356,178,620.115	0.000	843,238,986.602	13,124,033.795	0.000	0.000
2006	2	1,028,439,228.773	292,071,342.081	0.000	746,577,974.964	0.000	-72,463,515.830	0.000
2006	3	1,010,242,831.879	326,129,569.628	0.000	731,999,122.768	0.000	0.000	-47,885,860.518

Indiana Michigan Power Company-Indiana
Long-Term Residential Energy Model Output

Year	Month	Pred	XHeat	XCool	XOther	Jan	Feb	Mar
2006	4	836,836,208.025	183,433,881.698	1,277,862.467	703,748,713.473	0.000	0.000	0.000
2006	5	705,799,590.471	39,049,506.782	2,466,251.693	720,045,671.840	0.000	0.000	0.000
2006	6	817,729,941.084	15,121,359.497	111,110,954.832	730,927,116.679	0.000	0.000	0.000
2006	7	991,536,056.625	0.000	257,793,178.845	701,160,211.422	0.000	0.000	0.000
2006	8	1,127,471,384.161	0.000	386,025,658.267	677,824,290.366	0.000	0.000	0.000
2006	9	913,825,431.841	864,068.325	160,016,704.057	709,520,235.589	0.000	0.000	0.000
2006	10	716,156,652.857	29,690,397.722	14,702,389.220	695,807,311.506	0.000	0.000	0.000
2006	11	843,380,764.237	155,405,924.685	1,346,112.941	724,994,974.155	0.000	0.000	0.000
2006	12	1,041,884,654.441	228,777,518.945	0.000	813,107,135.496	0.000	0.000	0.000
2007	1	1,182,445,090.078	261,910,542.636	0.000	838,962,071.302	13,124,033.795	0.000	0.000
2007	2	1,228,825,885.831	475,950,883.185	0.000	763,085,090.918	0.000	-72,463,515.830	0.000
2007	3	1,124,047,476.768	436,294,163.357	84,892.634	735,554,281.294	0.000	0.000	-47,885,860.518
2007	4	849,666,864.164	163,666,027.704	5,338,046.856	732,287,039.217	0.000	0.000	0.000
2007	5	747,783,098.750	62,135,314.973	26,892,568.790	714,517,054.831	0.000	0.000	0.000
2007	6	880,397,444.914	4,278,327.305	190,754,999.175	724,793,608.359	0.000	0.000	0.000
2007	7	1,017,720,527.842	0.000	279,623,743.914	705,514,117.570	0.000	0.000	0.000
2007	8	1,077,933,876.155	0.000	330,927,801.839	683,384,638.788	0.000	0.000	0.000
2007	9	1,034,084,274.527	754,006.608	276,570,238.908	713,335,605.141	0.000	0.000	0.000
2007	10	844,760,706.240	7,669,309.626	137,136,485.161	723,998,357.043	0.000	0.000	0.000
2007	11	812,152,813.211	92,564,214.911	28,839,352.195	729,115,493.649	0.000	0.000	0.000
2007	12	1,104,658,623.516	294,265,734.276	0.000	810,392,889.239	0.000	0.000	0.000
2008	1	1,295,187,178.883	366,816,326.300	0.000	846,798,376.442	13,124,033.795	0.000	0.000
2008	2	1,182,889,057.175	437,915,482.241	0.000	755,183,663.206	0.000	-72,463,515.830	0.000
2008	3	1,108,929,315.046	415,618,600.092	0.000	741,196,575.472	0.000	0.000	-47,885,860.518
2008	4	892,417,347.052	218,641,323.736	317,795.929	725,082,477.001	0.000	0.000	0.000
2008	5	716,535,289.402	53,067,499.913	12,510,057.434	706,719,571.899	0.000	0.000	0.000
2008	6	828,672,176.928	12,291,276.409	124,137,744.923	731,672,645.520	0.000	0.000	0.000
2008	7	987,340,104.817	15,870.910	240,955,597.073	713,785,970.475	0.000	0.000	0.000
2008	8	1,043,731,793.697	0.000	304,192,096.917	675,918,261.251	0.000	0.000	0.000
2008	9	974,489,910.799	0.000	226,233,410.270	704,832,076.659	0.000	0.000	0.000
2008	10	761,302,754.480	14,026,597.826	61,200,328.355	710,119,273.889	0.000	0.000	0.000
2008	11	809,925,174.444	113,011,238.066	3,974,879.498	731,305,304.423	0.000	0.000	0.000
2008	12	1,160,724,945.937	339,745,614.710	0.000	820,979,331.227	0.000	0.000	0.000

Indiana Michigan Power Company-Indiana
Long-Term Residential Energy Model Output

Year	Month	Pred	XHeat	XCool	XOther	Jan	Feb	Mar
2009	1	1,372,082,505.680	441,191,969.041	0.000	849,318,060.500	13,124,033.795	0.000	0.000
2009	2	1,272,174,467.205	522,194,352.515	0.000	760,190,202.962	0.000	-72,463,515.830	0.000
2009	3	1,000,143,081.415	314,227,482.925	0.000	733,801,459.007	0.000	0.000	-47,885,860.518
2009	4	840,725,796.635	161,566,551.167	694,190.418	730,089,304.663	0.000	0.000	0.000
2009	5	751,180,807.362	62,351,109.714	34,750,980.952	709,840,556.540	0.000	0.000	0.000
2009	6	774,835,607.062	6,727,635.832	87,599,630.502	719,937,830.653	0.000	0.000	0.000
2009	7	1,004,524,410.106	0.000	248,161,750.334	723,779,993.413	0.000	0.000	0.000
2009	8	934,599,482.229	0.000	199,528,069.812	671,449,976.888	0.000	0.000	0.000
2009	9	894,768,500.226	0.000	143,097,081.963	708,246,994.394	0.000	0.000	0.000
2009	10	785,897,445.801	36,117,563.790	43,379,536.904	730,443,790.697	0.000	0.000	0.000
2009	11	780,040,190.132	98,080,604.018	0.000	720,325,833.658	0.000	0.000	0.000
2009	12	1,049,898,533.340	228,444,589.376	0.000	821,453,943.964	0.000	0.000	0.000
2010	1	1,361,250,396.157	428,610,832.368	0.000	851,067,087.649	13,124,033.795	0.000	0.000
2010	2	1,185,114,500.396	443,401,946.602	0.000	751,922,642.067	0.000	-72,463,515.830	0.000
2010	3	1,001,403,644.541	329,810,990.718	0.000	719,478,514.341	0.000	0.000	-47,885,860.518
2010	4	815,672,887.402	111,745,501.364	10,767,085.061	744,784,550.591	0.000	0.000	0.000
2010	5	709,386,357.175	26,169,591.570	24,912,713.946	714,065,891.502	0.000	0.000	0.000
2010	6	926,594,051.649	5,348,768.995	229,025,994.723	731,648,777.856	0.000	0.000	0.000
2010	7	1,154,342,345.680	0.000	411,383,854.629	712,821,500.926	0.000	0.000	0.000
2010	8	1,218,954,843.121	0.000	463,052,760.780	692,280,646.813	0.000	0.000	0.000
2010	9	1,039,355,990.092	0.000	282,233,877.179	713,697,689.043	0.000	0.000	0.000
2010	10	776,653,495.460	12,243,749.435	82,092,951.535	706,360,240.081	0.000	0.000	0.000
2010	11	785,192,736.249	94,567,890.701	7,345,836.488	721,645,256.604	0.000	0.000	0.000
2010	12	1,130,022,910.639	308,961,446.344	0.000	821,061,464.294	0.000	0.000	0.000
2011	1	1,354,597,262.817	455,517,374.240	0.000	847,672,024.343	13,124,033.795	0.000	0.000
2011	2	1,234,756,331.661	497,768,332.920	0.000	777,362,698.919	0.000	-72,463,515.830	0.000
2011	3	981,324,025.521	332,039,395.268	0.000	727,335,102.677	0.000	0.000	-47,885,860.518
2011	4	821,550,941.483	194,853,417.318	2,656,162.136	705,830,223.548	0.000	0.000	0.000
2011	5	748,468,648.321	60,029,939.177	21,650,733.542	752,714,427.352	0.000	0.000	0.000
2011	6	895,496,563.841	8,402,668.236	196,193,342.421	760,494,655.015	0.000	0.000	0.000
2011	7	1,093,415,780.567	0.000	363,453,677.587	729,989,724.760	0.000	0.000	0.000
2011	8	1,270,680,385.738	0.000	521,974,577.490	715,248,984.627	0.000	0.000	0.000
2011	9	971,145,601.536	1,287,405.313	244,878,141.550	732,804,031.651	0.000	0.000	0.000

Indiana Michigan Power Company-Indiana
Long-Term Residential Energy Model Output

Year	Month	Pred	XHeat	XCool	XOther	Jan	Feb	Mar
2011	10	721,466,856.756	15,370,520.173	32,787,547.012	727,516,847.068	0.000	0.000	0.000
2011	11	739,017,575.982	86,564,711.429	1,012,420.863	719,971,303.141	0.000	0.000	0.000
2011	12	1,011,521,271.649	205,718,042.167	0.000	835,967,841.389	0.000	0.000	0.000
2012	1	1,229,108,659.394	309,468,927.300	0.000	868,231,867.860	13,124,033.795	0.000	0.000
2012	2	1,077,214,096.328	353,535,899.010	0.000	764,052,897.497	0.000	-72,463,515.830	0.000
2012	3	942,669,121.124	248,757,400.142	8,327,910.295	763,634,283.110	0.000	0.000	-47,885,860.518
2012	4	785,095,628.401	65,655,935.230	26,840,993.774	774,387,560.917	0.000	0.000	0.000
2012	5	747,160,990.817	49,735,099.340	34,396,335.176	748,956,008.051	0.000	0.000	0.000
2012	6	891,472,555.179	1,657,466.188	195,274,962.418	764,134,228.405	0.000	0.000	0.000
2012	7	1,216,758,188.585	156,169.464	470,577,487.328	746,052,153.574	0.000	0.000	0.000
2012	8	1,168,615,152.178	0.000	410,623,201.607	724,535,126.950	0.000	0.000	0.000
2012	9	958,558,123.557	1,072,998.511	201,701,461.974	742,523,851.108	0.000	0.000	0.000
2012	10	746,747,920.846	35,576,789.245	29,708,711.436	735,670,477.662	0.000	0.000	0.000
2012	11	825,523,190.247	131,835,583.511	2,907,867.725	759,310,598.462	0.000	0.000	0.000
2012	12	1,020,477,972.944	223,178,374.970	0.000	827,464,209.880	0.000	0.000	0.000
2013	1	1,294,110,529.425	350,833,768.423	0.000	861,704,284.862	13,124,033.795	0.000	0.000
2013	2	1,165,317,605.277	404,160,290.157	0.000	771,367,403.392	0.000	-72,463,515.830	0.000
2013	3	1,080,921,005.252	361,554,269.428	0.000	767,252,596.342	0.000	0.000	-47,885,860.518
2013	4	952,733,965.400	245,356,653.623	0.000	759,001,561.390	0.000	0.000	0.000
2013	5	707,806,762.475	62,962,058.372	27,640,851.512	737,630,864.138	0.000	0.000	0.000
2013	6	809,229,717.587	6,478,454.922	147,256,008.297	759,589,915.997	0.000	0.000	0.000
2013	7	996,814,380.899	0.000	298,697,830.890	732,644,731.588	0.000	0.000	0.000
2013	8	952,283,665.504	0.000	236,169,362.267	717,158,039.414	0.000	0.000	0.000
2013	9	949,941,009.155	301,223.888	231,745,144.531	739,135,388.570	0.000	0.000	0.000
2013	10	736,711,701.702	10,101,960.611	84,007,401.030	731,310,957.356	0.000	0.000	0.000
2013	11	779,236,686.008	125,345,853.057	7,519,671.678	749,402,580.520	0.000	0.000	0.000
2013	12	1,080,790,760.718	313,836,275.817	0.000	831,619,656.605	0.000	0.000	0.000
2014	1	1,377,446,489.173	471,962,243.395	0.000	888,576,941.342	13,124,033.795	0.000	0.000
2014	2	1,270,937,966.412	578,729,886.339	0.000	767,083,340.049	0.000	-72,463,515.830	0.000
2014	3	1,154,257,285.865	502,334,907.356	0.000	764,473,410.730	0.000	0.000	-47,885,860.518
2014	4	894,282,986.482	258,736,082.573	0.000	751,836,325.226	0.000	0.000	0.000
2014	5	723,192,913.519	63,332,634.500	19,580,903.362	760,706,387.205	0.000	0.000	0.000
2014	6	819,321,491.399	12,856,953.705	150,740,547.197	759,818,652.125	0.000	0.000	0.000

Indiana Michigan Power Company-Indiana
Long-Term Residential Energy Model Output

Year	Month	Pred	XHeat	XCool	XOther	Jan	Feb	Mar
2014	7	992,213,499.831	0.000	282,526,297.205	744,215,384.204	0.000	0.000	0.000
2014	8	890,297,731.483	0.000	180,139,032.771	711,202,434.888	0.000	0.000	0.000
2014	9	950,489,828.570	822,006.423	225,656,238.348	745,252,331.633	0.000	0.000	0.000
2014	10	690,020,732.706	22,803,355.777	23,438,582.920	732,487,411.303	0.000	0.000	0.000
2014	11	780,496,134.570	138,563,867.359	449,559.741	744,514,126.719	0.000	0.000	0.000
2014	12	1,113,738,851.664	329,099,789.967	0.000	849,304,233.401	0.000	0.000	0.000
2015	1	1,261,260,498.530	425,389,478.214	0.000	855,518,872.860	13,124,033.795	0.000	0.000
2015	2	1,153,907,887.568	510,944,709.895	0.000	754,393,594.629	0.000	-72,463,515.830	0.000
2015	3	1,133,753,845.920	530,246,107.671	0.000	752,613,927.451	0.000	0.000	-47,885,860.518
2015	4	832,078,059.347	217,468,216.633	0.000	767,454,421.011	0.000	0.000	0.000
2015	5	683,110,116.809	57,779,038.473	38,396,216.854	743,917,030.010	0.000	0.000	0.000
2015	6	768,888,164.333	5,826,613.505	158,414,342.482	745,297,026.953	0.000	0.000	0.000
2015	7	881,202,800.758	41,634.202	207,770,077.366	744,474,427.748	0.000	0.000	0.000
2015	8	955,614,921.698	0.000	292,071,795.950	701,142,018.904	0.000	0.000	0.000
2015	9	909,933,253.453	0.000	228,385,924.534	739,343,233.733	0.000	0.000	0.000
2015	10	691,621,162.403	11,103,001.462	75,296,165.720	730,485,769.495	0.000	0.000	0.000
2015	11	671,441,222.828	71,907,825.755	1,991,724.053	737,128,249.247	0.000	0.000	0.000
2015	12	962,072,913.445	200,828,553.594	0.000	862,464,688.535	0.000	0.000	0.000
2016	1	1,099,213,635.664	302,793,416.679	0.000	867,153,883.093	13,124,033.795	0.000	0.000
2016	2	1,085,919,619.251	420,438,617.744	0.000	776,911,418.463	0.000	-72,463,515.830	0.000
2016	3	905,699,169.210	287,531,114.504	0.000	767,274,243.907	0.000	0.000	-47,885,860.518
2016	4	778,587,981.430	154,065,503.516	0.000	777,367,056.211	0.000	0.000	0.000
2016	5	652,708,026.900	62,319,934.018	2,286,377.595	745,083,883.815	0.000	0.000	0.000
2016	6	813,386,158.511	11,040,274.056	166,006,817.251	776,988,885.812	0.000	0.000	0.000
2016	7	962,147,123.015	0.000	278,465,430.705	754,765,030.869	0.000	0.000	0.000
2016	8	1,100,188,678.507	0.000	411,942,755.815	725,844,815.848	0.000	0.000	0.000
2016	9	1,008,158,375.552	0.000	309,666,070.515	756,288,209.851	0.000	0.000	0.000
2016	10	750,119,131.495	3,742,769.500	120,184,894.515	751,455,241.754	0.000	0.000	0.000
2016	11	652,980,468.361	61,211,512.256	20,166,409.240	752,032,264.055	0.000	0.000	0.000
2016	12	987,721,877.878	272,690,548.311	804,864.037	860,038,230.940	0.000	0.000	0.000
2017	1	1,200,765,656.843	406,900,577.793	0.000	881,914,767.091	13,124,033.795	0.000	0.000
2017	2	959,253,503.285	309,055,927.068	0.000	778,944,017.106	0.000	-72,463,515.830	0.000
2017	3	836,923,119.835	235,930,610.001	0.000	767,414,722.969	0.000	0.000	-47,885,860.518

Indiana Michigan Power Company-Indiana
Long-Term Residential Energy Model Output

Year	Month	Pred	XHeat	XCool	XOther	Jan	Feb	Mar
2017	4	772,184,053.262	166,345,408.099	5,094,774.928	770,904,472.466	0.000	0.000	0.000
2017	5	650,132,077.022	43,340,309.308	33,643,391.607	747,446,568.567	0.000	0.000	0.000
2017	6	757,357,991.955	8,503,176.236	128,737,504.710	778,083,153.551	0.000	0.000	0.000
2017	7	968,339,021.129	0.000	281,989,324.288	774,749,059.332	0.000	0.000	0.000
2017	8	949,870,566.016	0.000	263,467,792.449	741,317,690.656	0.000	0.000	0.000
2017	9	815,640,215.880	0.000	126,315,925.093	764,436,219.535	0.000	0.000	0.000
2017	10	755,740,285.057	1,986,570.296	132,905,627.120	763,427,885.849	0.000	0.000	0.000
2017	11	706,295,171.230	118,009,593.370	14,280,450.938	754,434,844.112	0.000	0.000	0.000
2017	12	974,099,476.115	252,181,890.099	0.000	867,729,351.426	0.000	0.000	0.000
2018	1	1,277,727,939.253	502,802,734.983	0.000	862,974,892.312	13,124,033.795	0.000	0.000
2018	2	1,055,968,239.799	419,815,243.871	0.000	764,899,436.817	0.000	-72,463,515.830	0.000
2018	3	879,568,428.033	288,439,640.626	0.000	757,551,000.542	0.000	0.000	-47,885,860.518
2018	4	855,858,755.325	254,096,523.664	509,824.335	771,413,009.557	0.000	0.000	0.000
2018	5	691,123,497.871	87,487,009.649	28,356,678.183	749,578,002.499	0.000	0.000	0.000
2018	6	847,223,868.773	927,346.393	225,711,767.277	778,550,597.645	0.000	0.000	0.000
2018	7	1,023,059,760.151	0.000	360,127,268.304	751,331,854.338	0.000	0.000	0.000
2018	8	978,805,417.036	0.000	301,054,013.129	732,666,320.996	0.000	0.000	0.000
2018	9	991,348,473.032	0.000	310,810,443.026	755,649,958.753	0.000	0.000	0.000
2018	10	774,346,777.852	19,140,031.653	154,707,831.616	743,078,712.790	0.000	0.000	0.000
2018	11	746,442,830.005	148,674,823.175	21,813,035.302	756,384,688.717	0.000	0.000	0.000
2018	12	993,574,202.724	295,820,503.364	0.000	843,565,464.771	0.000	0.000	0.000
2019	1	1,029,386,648.148	300,199,494.304	0.000	842,907,871.587	13,124,033.795	0.000	0.000
2019	2	1,070,221,222.377	438,363,416.691	0.000	760,604,246.575	0.000	-72,463,515.830	0.000
2019	3	932,793,474.311	364,162,261.910	0.000	735,053,425.536	0.000	0.000	-47,885,860.518
2019	4	758,581,384.188	188,739,508.012	0.000	740,002,478.407	0.000	0.000	0.000
2019	5	649,784,361.423	55,514,538.684	7,389,748.555	761,178,266.645	0.000	0.000	0.000
2019	6	736,559,745.244	9,381,891.560	118,440,681.153	766,703,015.073	0.000	0.000	0.000
2019	7	1,015,445,918.176	0.000	362,573,495.535	741,271,785.133	0.000	0.000	0.000
2019	8	1,010,536,757.067	0.000	344,684,658.765	720,767,015.391	0.000	0.000	0.000
2019	9	859,269,658.713	0.000	191,013,022.744	743,368,564.716	0.000	0.000	0.000
2019	10	720,628,257.838	10,893,993.970	120,532,450.228	731,781,611.848	0.000	0.000	0.000
2019	11	706,073,372.882	143,943,776.663	7,023,809.260	735,535,504.149	0.000	0.000	0.000
2019	12	977,065,893.661	295,578,418.439	0.000	827,299,240.633	0.000	0.000	0.000

Indiana Michigan Power Company-Indiana
Long-Term Residential Energy Model Output

Year	Month	Pred	XHeat	XCool	XOther	Jan	Feb	Mar
2020	1	1,054,721,653.911	293,698,053.088	0.000	854,908,981.481	13,124,033.795	0.000	0.000
2020	2	974,519,418.147	339,865,423.019	0.000	743,565,098.932	0.000	-72,463,515.830	0.000
2020	3	906,838,510.746	318,222,850.224	0.000	735,202,536.572	0.000	0.000	-47,885,860.518
2020	4	772,068,525.984	169,994,217.367	0.000	752,399,573.762	0.000	0.000	0.000
2020	5	691,450,543.562	97,808,019.443	4,491,342.985	743,614,036.509	0.000	0.000	0.000
2020	6	776,434,492.684	16,628,549.986	149,208,673.032	748,727,775.123	0.000	0.000	0.000
2020	7	1,017,371,399.800	0.000	349,047,910.294	736,887,514.913	0.000	0.000	0.000
2020	8	1,004,482,880.279	0.000	326,212,741.995	713,349,718.288	0.000	0.000	0.000
2020	9	882,448,630.313	383,498.499	210,169,089.192	727,172,634.285	0.000	0.000	0.000
2020	10	660,074,101.469	22,851,173.237	26,577,734.362	733,389,654.992	0.000	0.000	0.000
2020	11	678,301,572.334	101,403,950.169	2,708,982.605	734,783,019.664	0.000	0.000	0.000
2020	12	919,165,354.073	220,688,731.493	1,071,798.199	823,381,252.706	0.000	0.000	0.000
2021	1	1,067,138,211.656	328,961,073.711	0.000	832,062,518.603	13,124,033.795	0.000	0.000
2021	2	1,058,252,734.122	421,621,635.985	0.000	745,542,201.941	0.000	-72,463,515.830	0.000
2021	3	924,309,658.189	335,012,131.215	258,251.770	735,626,151.253	0.000	0.000	-47,885,860.518
2021	4	777,683,654.747	185,093,818.203	2,968,946.893	739,946,154.797	0.000	0.000	0.000
2021	5	657,854,105.858	59,120,020.831	21,530,047.014	731,666,893.389	0.000	0.000	0.000
2021	6	746,206,254.197	8,435,378.414	124,048,036.383	751,853,344.855	0.000	0.000	0.000
2021	7	953,011,421.149	90,124.405	283,465,136.503	738,020,185.647	0.000	0.000	0.000
2021	8	969,658,207.292	0.000	296,970,235.583	707,767,551.714	0.000	0.000	0.000
2021	9	883,656,830.399	330,200.767	205,809,198.888	732,794,022.406	0.000	0.000	0.000
2021	10	681,460,087.239	19,415,394.905	63,214,604.684	721,574,548.773	0.000	0.000	0.000
2021	11	678,967,305.426	109,846,975.123	5,768,131.651	723,946,578.756	0.000	0.000	0.000
2021	12	948,912,368.018	258,398,866.505	73,533.161	816,416,396.677	0.000	0.000	0.000
2022	1	1,114,970,398.759	374,487,316.914	0.000	834,368,462.504	13,124,033.795	0.000	0.000
2022	2	1,052,570,995.627	417,950,840.377	0.000	743,531,259.054	0.000	-72,463,515.830	0.000
2022	3	919,351,818.373	332,052,434.707	256,641.516	733,629,618.200	0.000	0.000	-47,885,860.518
2022	4	772,754,866.867	183,231,191.010	2,946,694.218	736,902,246.785	0.000	0.000	0.000
2022	5	654,080,439.914	58,519,127.147	21,366,423.784	728,657,744.359	0.000	0.000	0.000
2022	6	742,063,830.032	8,348,884.090	123,093,106.242	748,752,345.157	0.000	0.000	0.000
2022	7	947,824,996.687	89,194.048	281,265,227.866	735,034,600.179	0.000	0.000	0.000
2022	8	964,454,263.989	0.000	294,656,646.963	704,877,197.030	0.000	0.000	0.000
2022	9	878,950,113.818	326,768.438	204,201,505.518	729,698,431.523	0.000	0.000	0.000

Indiana Michigan Power Company-Indiana
Long-Term Residential Energy Model Output

Year	Month	Pred	XHeat	XCool	XOther	Jan	Feb	Mar
2022	10	677,557,815.960	19,213,109.347	62,720,523.373	718,368,644.363	0.000	0.000	0.000
2022	11	674,440,159.646	108,705,106.777	5,723,260.806	720,606,172.168	0.000	0.000	0.000
2022	12	942,356,873.565	255,737,061.580	72,968.398	812,523,271.913	0.000	0.000	0.000
2023	1	1,115,786,298.868	374,134,602.678	0.000	835,537,076.848	13,124,033.795	0.000	0.000
2023	2	1,053,445,582.609	417,667,212.394	0.000	744,689,474.019	0.000	-72,463,515.830	0.000
2023	3	920,515,290.307	331,932,347.378	254,697.425	734,915,121.553	0.000	0.000	-47,885,860.518
2023	4	774,235,154.928	183,234,033.873	2,925,268.327	738,401,117.874	0.000	0.000	0.000
2023	5	655,614,741.511	58,544,971.394	21,218,464.523	730,314,160.969	0.000	0.000	0.000
2023	6	743,088,933.154	8,355,622.010	122,279,106.196	750,584,710.404	0.000	0.000	0.000
2023	7	948,018,442.925	89,296.537	279,481,601.348	737,011,570.445	0.000	0.000	0.000
2023	8	964,666,887.013	0.000	292,857,077.530	706,889,389.487	0.000	0.000	0.000
2023	9	879,952,960.236	327,324.150	202,995,992.280	731,906,235.469	0.000	0.000	0.000
2023	10	679,470,603.877	19,251,626.155	62,364,145.326	720,599,293.519	0.000	0.000	0.000
2023	11	676,964,409.607	108,952,229.923	5,691,826.525	722,914,733.263	0.000	0.000	0.000
2023	12	945,625,477.611	256,374,204.751	72,578.189	815,155,122.996	0.000	0.000	0.000
2024	1	1,114,164,310.312	372,719,605.156	0.000	835,330,085.813	13,124,033.795	0.000	0.000
2024	2	1,051,806,884.909	416,135,641.890	0.000	744,582,346.823	0.000	-72,463,515.830	0.000
2024	3	919,217,594.208	330,711,135.015	253,349.689	734,839,985.553	0.000	0.000	-47,885,860.518
2024	4	773,485,215.687	182,542,742.536	2,909,555.932	738,358,182.364	0.000	0.000	0.000
2024	5	655,215,738.175	58,319,226.960	21,103,099.732	730,256,266.859	0.000	0.000	0.000
2024	6	742,302,273.130	8,322,859.970	121,609,905.248	750,500,013.369	0.000	0.000	0.000
2024	7	946,452,230.008	88,941.619	277,941,130.277	736,986,183.518	0.000	0.000	0.000
2024	8	963,083,856.006	0.000	291,255,280.246	706,908,155.764	0.000	0.000	0.000
2024	9	878,871,205.527	326,064.219	201,891,648.133	731,930,084.838	0.000	0.000	0.000
2024	10	679,021,412.217	19,178,482.363	62,026,734.428	720,560,656.548	0.000	0.000	0.000
2024	11	676,448,444.879	108,544,797.048	5,661,255.781	722,836,772.154	0.000	0.000	0.000
2024	12	944,471,866.533	255,416,573.655	72,188.996	814,959,532.207	0.000	0.000	0.000
2025	1	1,113,212,532.698	371,494,941.694	0.000	835,602,971.662	13,124,033.795	0.000	0.000
2025	2	1,050,774,588.933	414,802,612.640	0.000	744,883,080.097	0.000	-72,463,515.830	0.000
2025	3	918,570,237.241	329,688,787.106	252,243.208	735,216,082.977	0.000	0.000	-47,885,860.518
2025	4	773,465,965.842	182,011,270.219	2,897,220.082	738,882,740.686	0.000	0.000	0.000
2025	5	655,539,912.651	58,156,253.835	21,015,235.670	730,831,278.522	0.000	0.000	0.000
2025	6	742,430,508.218	8,301,010.721	121,116,705.474	751,143,297.480	0.000	0.000	0.000

Indiana Michigan Power Company-Indiana
Long-Term Residential Energy Model Output

Year	Month	Pred	XHeat	XCool	XOther	Jan	Feb	Mar
2025	7	946,114,784.663	88,719.223	276,840,914.537	737,749,176.309	0.000	0.000	0.000
2025	8	962,673,684.051	0.000	290,099,294.608	707,653,969.447	0.000	0.000	0.000
2025	9	878,837,022.116	325,237.278	201,091,902.627	732,696,473.872	0.000	0.000	0.000
2025	10	679,398,335.591	19,129,378.290	61,780,325.452	721,233,092.970	0.000	0.000	0.000
2025	11	676,744,108.840	108,262,039.273	5,638,586.256	723,437,863.415	0.000	0.000	0.000
2025	12	944,414,572.638	254,766,373.437	71,902.426	815,552,725.100	0.000	0.000	0.000
2026	1	1,112,444,345.332	370,338,038.000	0.000	835,991,687.990	13,124,033.795	0.000	0.000
2026	2	1,049,847,487.535	413,505,836.472	0.000	745,252,754.867	0.000	-72,463,515.830	0.000
2026	3	917,936,271.041	328,656,806.009	251,253.253	735,615,087.829	0.000	0.000	-47,885,860.518
2026	4	773,358,886.936	181,441,204.295	2,885,797.934	739,357,149.853	0.000	0.000	0.000
2026	5	655,765,758.231	57,975,097.881	20,932,260.853	731,321,254.873	0.000	0.000	0.000
2026	6	742,396,436.352	8,274,700.769	120,632,882.462	751,619,358.578	0.000	0.000	0.000
2026	7	945,548,729.355	88,435.030	275,729,855.294	738,294,464.438	0.000	0.000	0.000
2026	8	962,082,316.718	0.000	288,943,243.142	708,218,653.580	0.000	0.000	0.000
2026	9	878,622,394.522	324,212.270	200,296,701.862	733,278,072.053	0.000	0.000	0.000
2026	10	679,608,826.136	19,069,742.638	61,538,495.825	721,745,048.795	0.000	0.000	0.000
2026	11	676,898,296.845	107,937,004.409	5,617,031.577	723,938,640.964	0.000	0.000	0.000
2026	12	944,156,728.206	254,022,560.630	71,631.836	816,038,964.065	0.000	0.000	0.000
2027	1	1,111,427,568.385	368,794,772.819	0.000	836,518,176.223	13,124,033.795	0.000	0.000
2027	2	1,048,634,209.323	411,787,132.061	0.000	745,758,181.066	0.000	-72,463,515.830	0.000
2027	3	917,130,274.795	327,303,494.216	250,319.795	736,163,336.834	0.000	0.000	-47,885,860.518
2027	4	773,199,158.156	180,684,090.305	2,875,024.539	739,965,308.458	0.000	0.000	0.000
2027	5	656,066,543.379	57,733,314.288	20,854,396.900	731,941,687.567	0.000	0.000	0.000
2027	6	742,553,536.151	8,240,267.909	120,187,004.413	752,256,769.286	0.000	0.000	0.000
2027	7	945,253,752.967	88,068.111	274,715,693.890	739,014,016.372	0.000	0.000	0.000
2027	8	961,760,025.462	0.000	287,889,126.935	708,950,478.531	0.000	0.000	0.000
2027	9	878,698,692.203	322,910.517	199,583,079.768	734,069,293.580	0.000	0.000	0.000
2027	10	680,036,290.888	18,993,947.534	61,320,742.574	722,466,061.903	0.000	0.000	0.000
2027	11	677,139,289.183	107,512,961.424	5,597,333.634	724,623,374.229	0.000	0.000	0.000
2027	12	943,816,080.881	253,023,783.778	71,380.633	816,697,344.796	0.000	0.000	0.000
2028	1	1,111,294,327.444	367,562,007.621	0.000	837,617,700.481	13,124,033.795	0.000	0.000
2028	2	1,048,301,029.167	410,429,133.232	0.000	746,782,999.739	0.000	-72,463,515.830	0.000
2028	3	917,153,763.452	326,249,921.752	249,669.813	737,241,047.936	0.000	0.000	-47,885,860.518

Indiana Michigan Power Company-Indiana
Long-Term Residential Energy Model Output

Year	Month	Pred	XHeat	XCool	XOther	Jan	Feb	Mar
2028	4	773,825,831.928	180,122,644.144	2,867,740.302	741,160,712.628	0.000	0.000	0.000
2028	5	657,042,693.150	57,555,021.851	20,802,233.785	733,148,292.889	0.000	0.000	0.000
2028	6	743,460,263.369	8,214,908.321	119,887,178.457	753,488,682.048	0.000	0.000	0.000
2028	7	945,894,115.379	87,801.851	274,041,605.432	740,328,733.502	0.000	0.000	0.000
2028	8	962,403,263.299	0.000	287,203,172.836	710,279,670.467	0.000	0.000	0.000
2028	9	879,597,880.520	321,967.261	199,109,806.174	735,442,698.747	0.000	0.000	0.000
2028	10	681,135,453.538	18,939,023.110	61,176,695.849	723,764,195.701	0.000	0.000	0.000
2028	11	678,076,582.055	107,203,961.147	5,584,255.966	725,882,745.045	0.000	0.000	0.000
2028	12	944,453,409.767	252,312,761.982	71,217.806	818,045,858.304	0.000	0.000	0.000
2029	1	1,111,814,765.147	366,576,993.531	0.000	839,123,152.273	13,124,033.795	0.000	0.000
2029	2	1,048,671,432.753	409,379,389.003	0.000	748,203,147.553	0.000	-72,463,515.830	0.000
2029	3	917,827,994.427	325,448,262.504	249,214.928	738,717,393.044	0.000	0.000	-47,885,860.518
2029	4	775,002,272.011	179,700,330.978	2,862,775.046	742,764,431.133	0.000	0.000	0.000
2029	5	658,532,480.945	57,428,437.688	20,768,103.765	734,798,794.868	0.000	0.000	0.000
2029	6	744,982,227.342	8,197,726.016	119,700,154.564	755,214,852.218	0.000	0.000	0.000
2029	7	947,269,760.204	87,622.375	273,624,496.364	742,121,666.871	0.000	0.000	0.000
2029	8	963,705,532.451	0.000	286,764,092.092	712,021,020.363	0.000	0.000	0.000
2029	9	881,104,807.185	321,305.337	198,808,700.472	737,251,393.038	0.000	0.000	0.000
2029	10	682,769,776.719	18,901,927.123	61,088,751.947	725,523,558.771	0.000	0.000	0.000
2029	11	679,614,342.426	107,001,536.476	5,576,510.658	727,630,675.397	0.000	0.000	0.000
2029	12	945,846,265.106	251,836,768.207	71,118.799	819,914,806.425	0.000	0.000	0.000
2030	1	1,111,365,100.634	365,936,851.632	0.000	839,313,629.660	13,124,033.795	0.000	0.000
2030	2	1,048,147,962.637	408,636,553.103	0.000	748,422,513.337	0.000	-72,463,515.830	0.000
2030	3	917,457,506.158	324,821,899.291	248,973.967	738,973,508.950	0.000	0.000	-47,885,860.518
2030	4	775,046,207.040	179,355,184.875	2,859,992.698	743,156,294.612	0.000	0.000	0.000
2030	5	658,940,992.435	57,321,160.031	20,748,567.267	735,334,120.512	0.000	0.000	0.000
2030	6	745,595,133.100	8,183,254.731	119,596,697.690	755,945,686.135	0.000	0.000	0.000
2030	7	947,902,158.639	87,472.805	273,401,064.942	742,977,646.299	0.000	0.000	0.000
2030	8	964,314,188.869	0.000	286,544,395.493	712,849,373.379	0.000	0.000	0.000
2030	9	881,771,201.835	320,812.401	198,670,151.662	738,056,829.435	0.000	0.000	0.000
2030	10	683,349,690.156	18,874,246.876	61,049,474.225	726,170,430.177	0.000	0.000	0.000
2030	11	679,974,858.706	106,851,887.933	5,573,206.653	728,144,144.224	0.000	0.000	0.000
2030	12	945,983,152.585	251,508,426.926	71,081.758	820,380,072.227	0.000	0.000	0.000

Indiana Michigan Power Company-Indiana
Long-Term Residential Energy Model Output

Year	Month	Pred	XHeat	XCool	XOther	Jan	Feb	Mar
2031	1	1,112,987,235.418	365,810,087.173	0.000	841,062,528.902	13,124,033.795	0.000	0.000
2031	2	1,049,719,940.535	408,539,046.864	0.000	750,091,997.476	0.000	-72,463,515.830	0.000
2031	3	919,184,169.473	324,782,067.137	249,206.627	740,739,771.758	0.000	0.000	-47,885,860.518
2031	4	776,918,538.494	179,335,725.829	2,862,705.950	745,045,371.860	0.000	0.000	0.000
2031	5	660,926,797.875	57,316,599.151	20,768,801.540	737,304,252.560	0.000	0.000	0.000
2031	6	747,835,494.023	8,182,791.390	119,716,457.310	758,066,750.780	0.000	0.000	0.000
2031	7	950,365,372.048	87,469.770	273,682,217.171	745,159,710.513	0.000	0.000	0.000
2031	8	966,710,477.271	0.000	286,846,658.085	714,943,399.190	0.000	0.000	0.000
2031	9	884,110,331.428	320,814.900	198,884,800.460	740,181,307.729	0.000	0.000	0.000
2031	10	685,385,802.337	18,874,840.161	61,116,809.311	728,138,613.987	0.000	0.000	0.000
2031	11	681,847,809.009	106,857,490.863	5,579,455.682	730,005,242.569	0.000	0.000	0.000
2031	12	947,980,137.949	251,527,552.021	71,162.879	822,357,851.374	0.000	0.000	0.000
2032	1	1,115,409,005.724	365,566,402.145	0.000	843,727,984.237	13,124,033.795	0.000	0.000
2032	2	1,051,870,861.603	408,271,192.514	0.000	752,510,772.894	0.000	-72,463,515.830	0.000
2032	3	921,411,014.295	324,572,784.951	249,484.620	743,175,620.774	0.000	0.000	-47,885,860.518
2032	4	779,335,898.302	179,221,426.550	2,865,909.472	747,573,827.424	0.000	0.000	0.000
2032	5	663,465,369.936	57,280,519.735	20,792,131.798	739,855,573.778	0.000	0.000	0.000
2032	6	750,625,993.102	8,177,704.866	119,851,420.598	760,727,373.094	0.000	0.000	0.000
2032	7	953,360,511.975	87,416.195	273,992,187.440	747,844,933.746	0.000	0.000	0.000
2032	8	969,619,577.688	0.000	287,173,472.850	717,525,684.842	0.000	0.000	0.000
2032	9	886,990,941.799	320,626.309	199,113,154.187	742,833,752.964	0.000	0.000	0.000
2032	10	687,971,202.884	18,864,075.488	61,187,720.394	730,663,868.124	0.000	0.000	0.000
2032	11	684,256,542.099	106,798,612.236	5,586,005.466	732,466,304.501	0.000	0.000	0.000
2032	12	950,528,347.559	251,393,917.635	71,247.425	825,039,610.825	0.000	0.000	0.000
2033	1	1,119,101,426.810	365,513,014.386	0.000	847,473,793.082	13,124,033.795	0.000	0.000
2033	2	1,055,080,814.082	408,167,680.392	0.000	755,824,237.495	0.000	-72,463,515.830	0.000
2033	3	924,544,878.812	324,455,452.852	250,023.984	746,426,278.025	0.000	0.000	-47,885,860.518
2033	4	782,534,345.925	179,137,124.716	2,871,873.751	750,850,612.603	0.000	0.000	0.000
2033	5	666,681,113.418	57,247,192.797	20,833,683.312	743,063,092.685	0.000	0.000	0.000
2033	6	754,093,794.488	8,172,045.973	120,081,156.251	763,971,097.720	0.000	0.000	0.000
2033	7	957,061,982.882	87,346.346	274,495,575.762	751,043,086.181	0.000	0.000	0.000
2033	8	973,167,347.457	0.000	287,678,424.529	720,568,502.931	0.000	0.000	0.000
2033	9	890,427,444.074	320,300.510	199,446,893.699	745,936,841.528	0.000	0.000	0.000

Indiana Michigan Power Company-Indiana
Long-Term Residential Energy Model Output

Year	Month	Pred	XHeat	XCool	XOther	Jan	Feb	Mar
2033	10	690,993,979.212	18,842,702.737	61,284,982.289	733,610,755.308	0.000	0.000	0.000
2033	11	686,990,803.168	106,665,249.709	5,594,406.031	735,325,527.533	0.000	0.000	0.000
2033	12	953,268,717.041	251,052,335.095	71,348.767	828,121,461.505	0.000	0.000	0.000
2034	1	1,122,148,267.820	364,981,781.317	0.000	851,051,867.161	13,124,033.795	0.000	0.000
2034	2	1,057,682,034.943	407,567,443.849	0.000	759,025,694.898	0.000	-72,463,515.830	0.000
2034	3	927,240,456.616	323,973,060.925	250,531.640	749,603,740.100	0.000	0.000	-47,885,860.518
2034	4	785,508,550.193	178,867,534.611	2,877,664.419	754,088,616.308	0.000	0.000	0.000
2034	5	669,839,255.481	57,160,007.343	20,875,401.215	746,266,702.299	0.000	0.000	0.000
2034	6	757,592,688.790	8,159,451.777	120,319,895.781	767,243,846.689	0.000	0.000	0.000
2034	7	960,865,494.814	87,210.238	275,037,607.608	754,304,702.374	0.000	0.000	0.000
2034	8	976,872,719.150	0.000	288,242,964.398	723,709,334.756	0.000	0.000	0.000
2034	9	894,059,912.052	319,791.068	199,835,689.107	749,181,023.540	0.000	0.000	0.000
2034	10	694,216,137.668	18,812,420.636	61,403,673.237	736,744,504.916	0.000	0.000	0.000
2034	11	689,923,360.018	106,492,087.517	5,605,171.600	738,420,481.006	0.000	0.000	0.000
2034	12	956,257,968.632	250,641,027.445	71,485.267	831,521,884.245	0.000	0.000	0.000
2035	1	1,125,590,232.356	364,458,620.214	0.000	855,016,992.800	13,124,033.795	0.000	0.000
2035	2	1,060,631,891.514	406,976,119.918	0.000	762,566,875.400	0.000	-72,463,515.830	0.000
2035	3	930,271,791.701	323,497,536.873	251,181.162	753,109,949.716	0.000	0.000	-47,885,860.518
2035	4	788,812,533.028	178,601,971.281	2,885,087.656	757,650,739.236	0.000	0.000	0.000
2035	5	673,323,051.096	57,074,152.431	20,928,971.600	749,782,782.441	0.000	0.000	0.000
2035	6	761,472,171.837	8,147,055.278	120,627,022.235	770,828,599.782	0.000	0.000	0.000
2035	7	965,127,814.012	87,076.392	275,736,339.188	757,868,423.839	0.000	0.000	0.000
2035	8	981,033,228.226	0.000	288,971,649.222	727,141,159.008	0.000	0.000	0.000
2035	9	898,115,037.381	319,290.318	200,338,494.012	752,733,844.712	0.000	0.000	0.000
2035	10	697,786,203.834	18,782,637.805	61,557,338.274	740,190,688.877	0.000	0.000	0.000
2035	11	693,185,351.589	106,321,820.951	5,619,131.546	741,838,779.196	0.000	0.000	0.000
2035	12	959,625,834.697	250,236,458.011	71,662.467	835,294,142.545	0.000	0.000	0.000
2036	1	1,129,384,294.998	363,992,566.884	0.000	859,277,108.771	13,124,033.795	0.000	0.000
2036	2	1,063,920,860.053	406,455,162.429	0.000	766,376,801.428	0.000	-72,463,515.830	0.000
2036	3	933,635,620.785	323,083,164.075	251,977.969	756,887,354.790	0.000	0.000	-47,885,860.518
2036	4	792,426,727.925	178,372,202.884	2,894,226.272	761,485,563.914	0.000	0.000	0.000
2036	5	677,103,921.492	57,000,423.323	20,995,171.810	753,571,181.734	0.000	0.000	0.000
2036	6	765,712,800.959	8,136,500.830	121,008,234.536	774,698,571.051	0.000	0.000	0.000

Indiana Michigan Power Company-Indiana
Long-Term Residential Energy Model Output

Year	Month	Pred	XHeat	XCool	XOther	Jan	Feb	Mar
2036	7	969,842,369.223	86,963.247	276,606,882.322	761,712,549.059	0.000	0.000	0.000
2036	8	985,653,307.321	0.000	289,883,513.571	730,849,373.754	0.000	0.000	0.000
2036	9	902,595,769.208	318,873.879	200,970,299.298	756,583,187.692	0.000	0.000	0.000
2036	10	701,710,302.799	18,758,117.836	61,751,439.595	743,945,206.491	0.000	0.000	0.000
2036	11	696,804,808.782	106,182,857.715	5,636,844.423	745,579,486.749	0.000	0.000	0.000
2036	12	963,451,301.892	249,909,192.274	71,888.344	839,446,649.600	0.000	0.000	0.000
2037	1	1,133,409,102.232	363,500,978.750	0.000	863,793,504.140	13,124,033.795	0.000	0.000
2037	2	1,067,416,635.646	405,908,770.357	0.000	770,418,969.093	0.000	-72,463,515.830	0.000
2037	3	937,211,556.604	322,650,427.762	252,916.632	760,895,088.259	0.000	0.000	-47,885,860.518
2037	4	796,270,349.190	178,134,766.841	2,905,025.764	765,555,821.731	0.000	0.000	0.000
2037	5	681,135,588.966	56,925,027.910	21,073,646.624	757,599,769.808	0.000	0.000	0.000
2037	6	770,277,599.668	8,125,802.204	121,461,237.533	778,821,065.388	0.000	0.000	0.000
2037	7	974,969,700.989	86,849.476	277,643,691.769	765,803,185.150	0.000	0.000	0.000
2037	8	990,684,518.444	0.000	290,971,063.192	734,793,035.257	0.000	0.000	0.000
2037	9	907,449,227.356	318,460.336	201,725,151.261	760,682,207.420	0.000	0.000	0.000
2037	10	705,923,657.637	18,733,892.824	61,983,602.219	747,950,623.717	0.000	0.000	0.000
2037	11	700,686,876.568	106,046,262.943	5,658,055.369	749,576,938.360	0.000	0.000	0.000
2037	12	967,581,574.490	249,588,846.042	72,159.066	843,896,997.707	0.000	0.000	0.000
2038	1	1,137,293,367.319	362,789,563.829	0.000	868,389,184.148	13,124,033.795	0.000	0.000
2038	2	1,070,730,753.635	405,115,059.888	0.000	774,526,797.551	0.000	-72,463,515.830	0.000
2038	3	940,652,302.477	322,020,515.242	253,682.490	764,964,980.794	0.000	0.000	-47,885,860.518
2038	4	800,057,479.838	177,787,553.377	2,913,827.769	769,681,363.838	0.000	0.000	0.000
2038	5	685,168,627.184	56,814,242.167	21,137,532.494	761,679,707.899	0.000	0.000	0.000
2038	6	774,804,469.384	8,110,011.139	121,829,642.015	782,995,321.686	0.000	0.000	0.000
2038	7	979,947,194.526	86,680.989	278,486,411.932	769,938,127.012	0.000	0.000	0.000
2038	8	995,552,384.718	0.000	291,854,966.768	738,776,997.954	0.000	0.000	0.000
2038	9	912,200,231.888	317,844.792	202,338,405.537	764,820,573.221	0.000	0.000	0.000
2038	10	710,121,855.743	18,697,750.811	62,172,183.001	751,996,383.053	0.000	0.000	0.000
2038	11	704,539,564.353	105,842,141.827	5,675,287.601	753,616,515.029	0.000	0.000	0.000
2038	12	971,607,003.679	249,109,556.254	72,379.080	848,401,496.670	0.000	0.000	0.000
2039	1	1,141,616,777.727	362,449,721.447	0.000	873,052,436.938	13,124,033.795	0.000	0.000
2039	2	1,074,529,052.464	404,739,243.847	0.000	778,700,912.421	0.000	-72,463,515.830	0.000
2039	3	944,496,541.723	321,724,621.231	254,663.913	769,104,132.629	0.000	0.000	-47,885,860.518

Indiana Michigan Power Company-Indiana
Long-Term Residential Energy Model Output

Year	Month	Pred	XHeat	XCool	XOther	Jan	Feb	Mar
2039	4	804,106,459.154	177,625,780.096	2,925,119.361	773,880,824.842	0.000	0.000	0.000
2039	5	689,359,063.420	56,763,069.992	21,219,585.991	765,839,262.813	0.000	0.000	0.000
2039	6	779,535,873.001	8,102,784.905	122,303,443.159	787,260,150.393	0.000	0.000	0.000
2039	7	985,259,919.064	86,604.480	279,571,132.866	774,166,207.125	0.000	0.000	0.000
2039	8	1,000,766,051.398	0.000	292,993,502.490	742,852,128.912	0.000	0.000	0.000
2039	9	917,221,508.324	317,569.580	203,128,987.100	769,051,543.306	0.000	0.000	0.000
2039	10	714,487,459.197	18,681,724.617	62,415,500.117	756,134,695.586	0.000	0.000	0.000
2039	11	708,603,727.442	105,752,337.235	5,697,534.361	757,748,235.950	0.000	0.000	0.000
2039	12	976,005,743.868	248,900,193.329	72,663.224	853,009,315.641	0.000	0.000	0.000
2040	1	1,145,759,782.274	362,293,699.896	0.000	877,351,463.037	13,124,033.795	0.000	0.000
2040	2	1,078,222,193.489	404,568,718.781	0.000	782,564,578.512	0.000	-72,463,515.830	0.000
2040	3	948,213,200.881	321,592,171.097	255,698.999	772,952,206.835	0.000	0.000	-47,885,860.518
2040	4	807,967,636.494	177,553,532.380	2,937,018.118	777,802,351.142	0.000	0.000	0.000
2040	5	693,337,924.925	56,740,361.358	21,306,005.058	769,754,413.885	0.000	0.000	0.000
2040	6	784,083,176.211	8,099,598.864	122,802,116.601	791,311,966.202	0.000	0.000	0.000
2040	7	990,429,458.867	86,571.031	280,712,393.901	778,194,519.341	0.000	0.000	0.000
2040	8	1,005,835,827.697	0.000	294,191,144.992	746,724,262.709	0.000	0.000	0.000
2040	9	922,045,665.916	317,451.106	203,960,082.723	773,044,723.749	0.000	0.000	0.000
2040	10	718,611,288.087	18,674,881.651	62,671,180.453	760,009,687.106	0.000	0.000	0.000
2040	11	712,424,754.775	105,714,294.246	5,720,900.776	761,583,939.857	0.000	0.000	0.000
2040	12	980,175,240.362	248,812,317.799	72,961.573	857,266,389.315	0.000	0.000	0.000
2041	1	1,149,730,601.370	361,929,053.227	0.000	881,686,928.801	13,124,033.795	0.000	0.000
2041	2	1,081,703,160.326	404,159,477.614	0.000	786,454,786.516	0.000	-72,463,515.830	0.000
2041	3	951,752,502.147	321,264,962.386	256,543.618	776,817,872.192	0.000	0.000	-47,885,860.518
2041	4	811,732,964.448	177,372,423.780	2,946,714.330	781,739,091.484	0.000	0.000	0.000
2041	5	697,274,811.762	56,682,271.279	21,376,282.002	773,679,113.857	0.000	0.000	0.000
2041	6	788,537,656.855	8,091,277.986	123,206,841.621	795,370,042.705	0.000	0.000	0.000
2041	7	995,387,115.248	86,481.809	281,636,834.153	782,227,824.692	0.000	0.000	0.000
2041	8	1,010,678,681.560	0.000	295,159,334.159	750,598,927.405	0.000	0.000	0.000
2041	9	926,707,169.250	317,122.806	204,631,228.561	777,035,409.545	0.000	0.000	0.000
2041	10	722,668,411.181	18,655,544.973	62,877,346.047	763,879,981.283	0.000	0.000	0.000
2041	11	716,161,909.501	105,604,695.377	5,739,715.399	765,411,878.830	0.000	0.000	0.000
2041	12	984,159,452.426	248,553,804.910	73,201.404	861,508,874.437	0.000	0.000	0.000

Indiana Michigan Power Company-Indiana
Long-Term Residential Energy Model Output

Year	Month	Pred	XHeat	XCool	XOther	Jan	Feb	Mar
2042	1	1,153,972,889.414	361,850,102.792	0.000	886,008,167.280	13,124,033.795	0.000	0.000
2042	2	1,085,496,763.806	404,072,547.338	0.000	790,335,320.272	0.000	-72,463,515.830	0.000
2042	3	955,545,189.009	321,197,074.785	257,575.622	780,677,414.651	0.000	0.000	-47,885,860.518
2042	4	815,639,183.139	177,335,657.486	2,958,576.472	785,670,214.326	0.000	0.000	0.000
2042	5	701,270,711.791	56,670,758.514	21,462,394.095	777,600,414.558	0.000	0.000	0.000
2042	6	793,090,264.255	8,089,669.043	123,703,523.496	799,427,577.173	0.000	0.000	0.000
2042	7	1,000,560,445.624	86,464.974	282,773,007.262	786,264,998.795	0.000	0.000	0.000
2042	8	1,015,750,865.597	0.000	296,350,549.499	754,479,896.101	0.000	0.000	0.000
2042	9	931,525,663.698	317,062.807	205,457,363.845	781,027,828.708	0.000	0.000	0.000
2042	10	726,792,664.835	18,652,069.119	63,131,298.004	767,753,758.835	0.000	0.000	0.000
2042	11	719,998,582.933	105,585,400.514	5,762,910.927	769,244,651.596	0.000	0.000	0.000
2042	12	988,364,229.306	248,509,238.436	73,497.388	865,757,921.808	0.000	0.000	0.000
2043	1	1,158,547,070.482	361,946,969.536	0.000	890,485,481.604	13,124,033.795	0.000	0.000
2043	2	1,089,622,348.077	404,181,649.087	0.000	794,351,802.793	0.000	-72,463,515.830	0.000
2043	3	959,625,364.405	321,284,779.171	258,688.821	784,668,772.463	0.000	0.000	-47,885,860.518
2043	4	819,760,757.187	177,384,510.511	2,971,367.676	789,730,144.146	0.000	0.000	0.000
2043	5	705,424,633.988	56,686,581.321	21,555,247.232	781,645,660.811	0.000	0.000	0.000
2043	6	797,809,492.363	8,091,961.514	124,239,119.635	803,608,916.671	0.000	0.000	0.000
2043	7	1,005,945,340.598	86,489.842	283,998,312.292	790,424,563.870	0.000	0.000	0.000
2043	8	1,021,039,864.129	0.000	297,635,824.923	758,483,619.210	0.000	0.000	0.000
2043	9	936,545,436.066	317,156.991	206,349,337.349	785,155,533.387	0.000	0.000	0.000
2043	10	731,089,124.962	18,657,714.885	63,405,692.777	771,770,178.423	0.000	0.000	0.000
2043	11	724,041,112.914	105,617,991.469	5,787,988.896	773,229,512.652	0.000	0.000	0.000
2043	12	992,873,186.917	248,587,805.001	73,817.699	870,187,992.542	0.000	0.000	0.000
2044	1	1,163,172,006.556	362,104,245.972	0.000	894,953,141.241	13,124,033.795	0.000	0.000
2044	2	1,093,813,168.023	404,359,511.115	0.000	798,364,760.712	0.000	-72,463,515.830	0.000
2044	3	963,759,391.154	321,427,101.164	259,813.939	788,659,352.100	0.000	0.000	-47,885,860.518
2044	4	823,914,197.343	177,462,939.636	2,984,290.871	793,792,231.982	0.000	0.000	0.000
2044	5	709,591,700.503	56,711,613.371	21,648,998.193	785,693,944.315	0.000	0.000	0.000
2044	6	802,538,242.711	8,095,535.899	124,779,524.147	807,793,688.122	0.000	0.000	0.000
2044	7	1,011,344,297.122	86,528.078	285,233,707.473	794,588,086.978	0.000	0.000	0.000
2044	8	1,026,340,135.894	0.000	298,930,698.861	762,489,017.037	0.000	0.000	0.000
2044	9	941,564,280.087	317,297.184	207,246,876.263	789,276,698.303	0.000	0.000	0.000

Indiana Michigan Power Company-Indiana
Long-Term Residential Energy Model Output

Year	Month	Pred	XHeat	XCool	XOther	Jan	Feb	Mar
2044	10	735,374,737.503	18,665,933.110	63,681,384.087	775,771,881.428	0.000	0.000	0.000
2044	11	728,074,770.242	105,664,279.962	5,813,143.694	777,191,726.691	0.000	0.000	0.000
2044	12	997,374,022.243	248,695,896.481	74,138.286	874,580,415.802	0.000	0.000	0.000
2045	1	1,167,682,962.712	362,270,819.642	0.000	899,297,523.728	13,124,033.795	0.000	0.000
2045	2	1,097,889,594.231	404,541,877.658	0.000	802,258,820.378	0.000	-72,463,515.830	0.000
2045	3	967,770,037.573	321,569,646.734	260,922.436	792,526,344.453	0.000	0.000	-47,885,860.518
2045	4	827,940,561.407	177,540,983.639	2,997,014.726	797,727,828.187	0.000	0.000	0.000
2045	5	713,629,745.460	56,736,336.700	21,741,237.993	789,615,026.143	0.000	0.000	0.000
2045	6	807,126,567.195	8,099,030.336	125,310,776.358	811,847,265.957	0.000	0.000	0.000
2045	7	1,016,593,957.742	86,565.038	286,447,177.525	798,624,240.585	0.000	0.000	0.000
2045	8	1,031,494,474.862	0.000	300,201,776.620	766,372,278.246	0.000	0.000	0.000
2045	9	946,438,487.727	317,430.640	208,127,776.055	793,269,872.694	0.000	0.000	0.000
2045	10	739,528,711.977	18,673,722.177	63,951,942.264	779,647,508.658	0.000	0.000	0.000
2045	11	731,979,501.293	105,708,058.122	5,837,832.594	781,027,990.681	0.000	0.000	0.000
2045	12	1,001,730,233.033	248,798,473.781	74,453.120	878,833,734.457	0.000	0.000	0.000
2046	1	1,172,115,381.437	362,444,566.290	0.000	903,556,195.804	13,124,033.795	0.000	0.000
2046	2	1,101,901,374.698	404,732,808.321	0.000	806,079,670.181	0.000	-72,463,515.830	0.000
2046	3	971,717,834.052	321,718,914.935	262,009.035	796,323,786.131	0.000	0.000	-47,885,860.518
2046	4	831,898,640.693	177,621,717.566	3,009,475.313	801,592,712.960	0.000	0.000	0.000
2046	5	717,593,693.406	56,761,536.666	21,831,459.205	793,463,552.910	0.000	0.000	0.000
2046	6	811,624,727.429	8,102,538.058	125,829,721.150	815,822,973.677	0.000	0.000	0.000
2046	7	1,021,732,989.943	86,601.497	287,630,701.041	802,579,712.810	0.000	0.000	0.000
2046	8	1,036,527,846.114	0.000	301,438,905.140	770,168,520.979	0.000	0.000	0.000
2046	9	951,180,730.627	317,555.512	208,982,954.074	797,156,812.703	0.000	0.000	0.000
2046	10	743,554,034.612	18,680,777.963	64,213,900.154	783,403,817.618	0.000	0.000	0.000
2046	11	735,743,194.013	105,746,360.295	5,861,670.941	784,729,542.880	0.000	0.000	0.000
2046	12	1,005,899,763.270	248,884,906.660	74,756.222	882,916,528.714	0.000	0.000	0.000
2047	1	1,176,513,283.649	362,653,245.690	0.000	907,745,418.617	13,124,033.795	0.000	0.000
2047	2	1,105,877,656.740	404,959,882.966	0.000	809,828,877.579	0.000	-72,463,515.830	0.000
2047	3	975,611,329.083	321,894,523.999	263,075.805	800,040,605.329	0.000	0.000	-47,885,860.518
2047	4	835,781,793.745	177,715,968.342	3,021,691.676	805,369,398.872	0.000	0.000	0.000
2047	5	721,469,315.270	56,790,864.050	21,919,842.776	797,221,463.820	0.000	0.000	0.000
2047	6	816,017,963.549	8,106,614.126	126,337,800.123	819,704,054.757	0.000	0.000	0.000

Indiana Michigan Power Company-Indiana
Long-Term Residential Energy Model Output

Year	Month	Pred	XHeat	XCool	XOther	Jan	Feb	Mar
2047	7	1,026,760,247.894	86,644.175	288,789,964.042	806,447,665.083	0.000	0.000	0.000
2047	8	1,041,459,195.151	0.000	302,651,719.522	773,887,055.632	0.000	0.000	0.000
2047	9	955,836,460.182	317,706.455	209,822,718.192	800,972,627.197	0.000	0.000	0.000
2047	10	747,518,154.719	18,689,512.480	64,471,624.970	787,101,478.392	0.000	0.000	0.000
2047	11	739,471,137.667	105,795,014.505	5,885,171.370	788,385,331.896	0.000	0.000	0.000
2047	12	1,010,058,101.189	248,997,441.496	75,055.574	886,962,032.444	0.000	0.000	0.000
2048	1	1,180,878,651.071	362,897,749.932	0.000	911,866,281.797	13,124,033.795	0.000	0.000
2048	2	1,109,854,082.933	405,231,782.199	0.000	813,533,404.539	0.000	-72,463,515.830	0.000
2048	3	979,515,360.299	322,109,599.145	264,115.378	803,728,521.825	0.000	0.000	-47,885,860.518
2048	4	839,675,017.601	177,833,937.570	3,033,627.077	809,132,718.100	0.000	0.000	0.000
2048	5	725,348,193.672	56,828,228.168	22,006,350.372	800,976,470.508	0.000	0.000	0.000
2048	6	820,411,706.816	8,111,913.765	126,836,160.152	823,594,138.356	0.000	0.000	0.000
2048	7	1,031,779,947.408	86,700.304	289,928,035.231	810,329,237.279	0.000	0.000	0.000
2048	8	1,046,388,172.630	0.000	303,843,537.200	777,624,215.434	0.000	0.000	0.000
2048	9	960,498,149.794	317,908.650	210,648,100.556	804,808,732.250	0.000	0.000	0.000
2048	10	751,498,820.867	18,701,247.561	64,724,845.045	790,817,189.383	0.000	0.000	0.000
2048	11	743,231,200.844	105,860,590.023	5,908,252.900	792,056,738.026	0.000	0.000	0.000
2048	12	1,014,270,821.395	249,149,876.921	75,349.536	891,022,023.263	0.000	0.000	0.000
2049	1	1,185,616,143.434	363,322,338.990	0.000	916,179,185.102	13,124,033.795	0.000	0.000
2049	2	1,114,190,805.201	405,702,384.694	0.000	817,399,524.311	0.000	-72,463,515.830	0.000
2049	3	983,728,869.264	322,481,212.232	265,209.726	807,569,323.356	0.000	0.000	-47,885,860.518
2049	4	843,800,309.264	178,038,028.848	3,046,183.245	813,041,362.316	0.000	0.000	0.000
2049	5	729,397,115.122	56,893,101.174	22,097,338.260	804,869,531.063	0.000	0.000	0.000
2049	6	824,966,517.330	8,121,113.073	127,359,850.214	827,616,059.500	0.000	0.000	0.000
2049	7	1,036,983,600.808	86,798.107	291,123,884.137	814,336,943.971	0.000	0.000	0.000
2049	8	1,051,493,861.885	0.000	305,095,167.840	781,478,274.049	0.000	0.000	0.000
2049	9	965,323,066.205	318,262.931	211,514,820.126	808,766,574.809	0.000	0.000	0.000
2049	10	755,624,608.654	18,721,971.744	64,990,877.980	794,656,220.053	0.000	0.000	0.000
2049	11	747,169,068.195	105,977,149.363	5,932,506.430	795,853,792.506	0.000	0.000	0.000
2049	12	1,018,749,471.256	249,422,781.556	75,658.556	895,227,459.469	0.000	0.000	0.000
2050	1	1,190,539,869.583	363,840,073.005	0.000	920,585,177.235	13,124,033.795	0.000	0.000
2050	2	1,118,718,094.576	406,278,248.405	0.000	821,350,949.975	0.000	-72,463,515.830	0.000
2050	3	988,112,986.939	322,937,373.651	266,303.907	811,496,185.430	0.000	0.000	-47,885,860.518

Indiana Michigan Power Company-Indiana
Long-Term Residential Energy Model Output

Year	Month	Pred	XHeat	XCool	XOther	Jan	Feb	Mar
2050	4	848,059,146.078	178,288,816.910	3,058,738.449	817,036,855.864	0.000	0.000	0.000
2050	5	733,547,279.887	56,972,940.861	22,188,338.208	808,848,856.193	0.000	0.000	0.000
2050	6	829,614,248.427	8,132,468.319	127,883,906.968	831,728,378.597	0.000	0.000	0.000
2050	7	1,042,277,707.477	86,919.066	292,320,902.018	818,433,911.800	0.000	0.000	0.000
2050	8	1,056,691,293.444	0.000	306,348,825.168	785,422,048.280	0.000	0.000	0.000
2050	9	970,246,836.157	318,703.518	212,383,233.076	812,821,491.226	0.000	0.000	0.000
2050	10	759,856,399.923	18,747,810.090	65,257,548.234	798,595,502.722	0.000	0.000	0.000
2050	11	751,243,412.254	106,122,987.799	5,956,835.539	799,757,969.020	0.000	0.000	0.000
2050	12	1,023,422,186.070	249,764,956.255	75,968.636	899,557,689.505	0.000	0.000	0.000
2051	1	1,195,154,049.785	364,145,262.831	0.000	924,894,167.612	13,124,033.795	0.000	0.000
2051	2	1,122,926,592.381	406,617,862.462	0.000	825,219,833.723	0.000	-72,463,515.830	0.000
2051	3	992,232,466.818	323,206,612.239	267,371.075	815,345,359.554	0.000	0.000	-47,885,860.518
2051	4	852,142,140.255	178,436,884.787	3,070,989.830	820,959,530.783	0.000	0.000	0.000
2051	5	737,595,545.937	57,020,110.131	22,277,181.652	812,761,109.530	0.000	0.000	0.000
2051	6	834,181,802.571	8,139,181.968	128,395,808.299	835,777,317.761	0.000	0.000	0.000
2051	7	1,047,488,295.711	86,990.641	293,490,739.671	822,474,590.805	0.000	0.000	0.000
2051	8	1,061,808,777.682	0.000	307,574,622.375	789,313,735.311	0.000	0.000	0.000
2051	9	975,094,862.783	318,964.663	213,232,765.102	816,819,724.680	0.000	0.000	0.000
2051	10	764,013,255.922	18,763,141.918	65,518,551.183	802,476,023.944	0.000	0.000	0.000
2051	11	755,195,940.747	106,209,626.172	5,980,659.281	803,600,035.397	0.000	0.000	0.000
2051	12	1,027,882,483.703	249,968,411.778	76,272.415	903,814,227.836	0.000	0.000	0.000
2052	1	1,199,763,421.017	364,448,273.388	0.000	929,200,528.287	13,124,033.795	0.000	0.000
2052	2	1,127,132,498.386	406,955,837.886	0.000	829,087,764.304	0.000	-72,463,515.830	0.000
2052	3	996,351,644.573	323,475,158.873	268,435.477	819,194,926.273	0.000	0.000	-47,885,860.518
2052	4	856,227,021.788	178,584,907.193	3,083,213.954	824,884,165.786	0.000	0.000	0.000
2052	5	741,646,940.310	57,067,372.043	22,365,860.054	816,676,563.588	0.000	0.000	0.000
2052	6	838,753,136.251	8,145,923.713	128,906,942.569	839,830,775.426	0.000	0.000	0.000
2052	7	1,052,703,661.456	87,062.666	294,659,221.587	826,521,402.610	0.000	0.000	0.000
2052	8	1,066,932,294.548	0.000	308,799,405.507	793,212,469.044	0.000	0.000	0.000
2052	9	979,950,336.812	319,228.543	214,081,880.264	820,825,819.668	0.000	0.000	0.000
2052	10	768,178,537.354	18,778,668.054	65,779,516.588	806,364,813.833	0.000	0.000	0.000
2052	11	759,158,623.251	106,297,552.101	6,004,487.791	807,450,963.462	0.000	0.000	0.000
2052	12	1,032,356,532.383	250,175,314.461	76,576.354	908,081,069.893	0.000	0.000	0.000

Indiana Michigan Power Company-Indiana
Long-Term Residential Energy Model Output

Year	Month	Pred	XHeat	XCool	XOther	Jan	Feb	Mar
2053	1	1,204,386,134.951	364,755,550.912	0.000	933,515,964.697	13,124,033.795	0.000	0.000
2053	2	1,131,350,017.110	407,297,860.628	0.000	832,963,260.286	0.000	-72,463,515.830	0.000
2053	3	1,000,480,410.546	323,746,343.971	269,499.399	823,051,443.225	0.000	0.000	-47,885,860.518
2053	4	860,319,674.965	178,734,049.016	3,095,428.425	828,815,462.669	0.000	0.000	0.000
2053	5	745,704,467.440	57,114,880.339	22,454,437.427	820,598,005.050	0.000	0.000	0.000
2053	6	843,329,244.310	8,152,684.670	129,417,315.516	843,889,749.581	0.000	0.000	0.000
2053	7	1,057,922,316.603	87,134.733	295,825,570.039	830,573,637.237	0.000	0.000	0.000
2053	8	1,072,057,935.443	0.000	310,021,544.960	797,115,970.487	0.000	0.000	0.000
2053	9	984,807,366.580	319,491.358	214,928,866.851	824,835,600.033	0.000	0.000	0.000
2053	10	772,345,253.771	18,794,093.199	66,039,732.146	810,255,889.549	0.000	0.000	0.000
2053	11	763,121,400.591	106,384,691.875	6,028,239.222	811,302,849.598	0.000	0.000	0.000
2053	12	1,036,827,509.478	250,379,881.408	76,879.203	912,347,177.192	0.000	0.000	0.000
2054	1	1,209,005,401.456	365,059,914.699	0.000	937,830,867.414	13,124,033.795	0.000	0.000
2054	2	1,135,565,653.779	407,637,320.060	0.000	836,839,437.523	0.000	-72,463,515.830	0.000
2054	3	1,004,609,488.272	324,016,037.868	270,560.471	826,909,765.982	0.000	0.000	-47,885,860.518
2054	4	864,415,052.724	178,882,687.073	3,107,614.274	832,750,016.522	0.000	0.000	0.000
2054	5	749,766,163.276	57,162,334.780	22,542,838.648	824,523,845.225	0.000	0.000	0.000
2054	6	847,910,229.488	8,159,453.360	129,926,856.977	847,954,424.608	0.000	0.000	0.000
2054	7	1,063,146,757.867	87,207.039	296,990,421.043	834,633,155.190	0.000	0.000	0.000
2054	8	1,077,190,530.417	0.000	311,242,528.823	801,027,581.598	0.000	0.000	0.000
2054	9	989,672,763.148	319,756.201	215,775,343.611	828,854,254.997	0.000	0.000	0.000
2054	10	776,521,255.050	18,809,672.798	66,299,883.324	814,156,160.051	0.000	0.000	0.000
2054	11	767,094,982.450	106,472,904.484	6,051,993.192	815,164,464.879	0.000	0.000	0.000
2054	12	1,041,312,700.379	250,587,426.804	77,182.189	916,624,519.711	0.000	0.000	0.000
2055	1	1,213,642,664.168	365,369,648.562	0.000	942,158,396.264	13,124,033.795	0.000	0.000
2055	2	1,139,801,726.496	407,984,104.323	0.000	840,728,725.977	0.000	-72,463,515.830	0.000
2055	3	1,008,760,210.859	324,292,608.755	271,623.927	830,782,854.227	0.000	0.000	-47,885,860.518
2055	4	868,531,736.243	179,035,710.714	3,119,835.080	836,701,455.594	0.000	0.000	0.000
2055	5	753,848,213.653	57,211,380.073	22,631,548.843	828,468,140.113	0.000	0.000	0.000
2055	6	852,514,248.099	8,166,476.005	130,438,496.913	852,039,780.637	0.000	0.000	0.000
2055	7	1,068,399,095.234	87,282.337	298,160,769.324	838,715,068.979	0.000	0.000	0.000
2055	8	1,082,352,761.334	0.000	312,470,004.887	804,962,336.451	0.000	0.000	0.000
2055	9	994,568,543.983	320,034.067	216,626,846.847	832,898,254.731	0.000	0.000	0.000

Indiana Michigan Power Company-Indiana
Long-Term Residential Energy Model Output

Year	Month	Pred	XHeat	XCool	XOther	Jan	Feb	Mar
2055	10	780,726,077.804	18,826,082.818	66,561,747.329	818,082,708.780	0.000	0.000	0.000
2055	11	771,101,549.088	106,566,177.177	6,075,918.694	819,053,833.320	0.000	0.000	0.000
2055	12	1,045,843,159.097	250,807,681.590	77,487.546	920,934,418.286	0.000	0.000	0.000
2056	1	1,218,333,366.685	365,698,632.055	0.000	946,520,115.288	13,124,033.795	0.000	0.000
2056	2	1,144,092,021.735	408,353,329.030	0.000	844,649,796.510	0.000	-72,463,515.830	0.000
2056	3	1,012,962,181.106	324,587,762.637	272,697.090	834,688,597.429	0.000	0.000	-47,885,860.518
2056	4	872,693,526.962	179,199,426.305	3,132,173.000	840,687,192.802	0.000	0.000	0.000
2056	5	757,969,906.454	57,263,985.674	22,721,151.069	832,447,625.087	0.000	0.000	0.000
2056	6	857,161,551.928	8,174,027.452	130,955,524.907	856,162,505.025	0.000	0.000	0.000
2056	7	1,073,702,496.500	87,363.498	299,343,975.910	842,835,182.498	0.000	0.000	0.000
2056	8	1,087,566,932.032	0.000	313,711,517.343	808,934,994.693	0.000	0.000	0.000
2056	9	999,514,963.405	320,334.986	217,488,482.645	836,982,737.436	0.000	0.000	0.000
2056	10	784,976,491.046	18,843,897.539	66,826,853.486	822,050,201.144	0.000	0.000	0.000
2056	11	775,158,894.293	106,667,674.633	6,100,151.834	822,985,447.930	0.000	0.000	0.000
2056	12	1,050,442,301.088	251,047,906.601	77,796.967	925,293,025.845	0.000	0.000	0.000
2057	1	1,223,102,247.222	366,056,446.196	0.000	950,931,181.685	13,124,033.795	0.000	0.000
2057	2	1,148,458,225.632	408,754,575.415	0.000	848,614,754.021	0.000	-72,463,515.830	0.000
2057	3	1,017,232,718.260	324,908,230.975	273,784.289	838,637,579.046	0.000	0.000	-47,885,860.518
2057	4	876,912,851.596	179,377,038.016	3,144,671.204	844,716,407.521	0.000	0.000	0.000
2057	5	762,139,984.861	57,321,006.021	22,811,909.372	836,469,924.844	0.000	0.000	0.000
2057	6	861,859,823.269	8,182,205.421	131,479,179.227	860,328,944.078	0.000	0.000	0.000
2057	7	1,079,064,002.231	87,451.318	300,542,250.372	846,998,325.947	0.000	0.000	0.000
2057	8	1,092,838,086.120	0.000	314,968,739.319	812,948,926.805	0.000	0.000	0.000
2057	9	1,004,514,890.884	320,660.043	218,360,948.171	841,109,874.332	0.000	0.000	0.000
2057	10	789,273,295.243	18,863,123.236	67,095,266.829	826,059,366.301	0.000	0.000	0.000
2057	11	779,266,029.999	106,777,110.242	6,124,685.086	826,958,614.775	0.000	0.000	0.000
2057	12	1,055,106,385.346	251,306,709.384	78,110.195	929,697,994.093	0.000	0.000	0.000

Indiana Michigan Power Company-Indiana
Long-Term Residential Energy Model Output

Year	Month	Apr	May	Jun	Jul	Aug	Sep	Oct
1998	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1998	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1998	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1998	4	-51,624,249.613	0.000	0.000	0.000	0.000	0.000	0.000
1998	5	0.000	-55,761,839.844	0.000	0.000	0.000	0.000	0.000
1998	6	0.000	0.000	-39,429,489.925	0.000	0.000	0.000	0.000
1998	7	0.000	0.000	0.000	32,582,666.358	0.000	0.000	0.000
1998	8	0.000	0.000	0.000	0.000	63,621,435.528	0.000	0.000
1998	9	0.000	0.000	0.000	0.000	0.000	43,424,423.870	0.000
1998	10	0.000	0.000	0.000	0.000	0.000	0.000	-24,043,445.590
1998	11	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1998	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1999	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1999	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1999	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1999	4	-51,624,249.613	0.000	0.000	0.000	0.000	0.000	0.000
1999	5	0.000	-55,761,839.844	0.000	0.000	0.000	0.000	0.000
1999	6	0.000	0.000	-39,429,489.925	0.000	0.000	0.000	0.000
1999	7	0.000	0.000	0.000	32,582,666.358	0.000	0.000	0.000
1999	8	0.000	0.000	0.000	0.000	63,621,435.528	0.000	0.000
1999	9	0.000	0.000	0.000	0.000	0.000	43,424,423.870	0.000
1999	10	0.000	0.000	0.000	0.000	0.000	0.000	-24,043,445.590
1999	11	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1999	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2000	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2000	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2000	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2000	4	-51,624,249.613	0.000	0.000	0.000	0.000	0.000	0.000
2000	5	0.000	-55,761,839.844	0.000	0.000	0.000	0.000	0.000
2000	6	0.000	0.000	-39,429,489.925	0.000	0.000	0.000	0.000
2000	7	0.000	0.000	0.000	32,582,666.358	0.000	0.000	0.000
2000	8	0.000	0.000	0.000	0.000	63,621,435.528	0.000	0.000
2000	9	0.000	0.000	0.000	0.000	0.000	43,424,423.870	0.000

Indiana Michigan Power Company-Indiana
Long-Term Residential Energy Model Output

Year	Month	Apr	May	Jun	Jul	Aug	Sep	Oct
2000	10	0.000	0.000	0.000	0.000	0.000	0.000	-24,043,445.590
2000	11	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2000	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2001	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2001	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2001	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2001	4	-51,624,249.613	0.000	0.000	0.000	0.000	0.000	0.000
2001	5	0.000	-55,761,839.844	0.000	0.000	0.000	0.000	0.000
2001	6	0.000	0.000	-39,429,489.925	0.000	0.000	0.000	0.000
2001	7	0.000	0.000	0.000	32,582,666.358	0.000	0.000	0.000
2001	8	0.000	0.000	0.000	0.000	63,621,435.528	0.000	0.000
2001	9	0.000	0.000	0.000	0.000	0.000	43,424,423.870	0.000
2001	10	0.000	0.000	0.000	0.000	0.000	0.000	-24,043,445.590
2001	11	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2001	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2002	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2002	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2002	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2002	4	-51,624,249.613	0.000	0.000	0.000	0.000	0.000	0.000
2002	5	0.000	-55,761,839.844	0.000	0.000	0.000	0.000	0.000
2002	6	0.000	0.000	-39,429,489.925	0.000	0.000	0.000	0.000
2002	7	0.000	0.000	0.000	32,582,666.358	0.000	0.000	0.000
2002	8	0.000	0.000	0.000	0.000	63,621,435.528	0.000	0.000
2002	9	0.000	0.000	0.000	0.000	0.000	43,424,423.870	0.000
2002	10	0.000	0.000	0.000	0.000	0.000	0.000	-24,043,445.590
2002	11	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2002	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2003	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2003	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2003	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2003	4	-51,624,249.613	0.000	0.000	0.000	0.000	0.000	0.000
2003	5	0.000	-55,761,839.844	0.000	0.000	0.000	0.000	0.000
2003	6	0.000	0.000	-39,429,489.925	0.000	0.000	0.000	0.000

Indiana Michigan Power Company-Indiana
Long-Term Residential Energy Model Output

Year	Month	Apr	May	Jun	Jul	Aug	Sep	Oct
2003	7	0.000	0.000	0.000	32,582,666.358	0.000	0.000	0.000
2003	8	0.000	0.000	0.000	0.000	63,621,435.528	0.000	0.000
2003	9	0.000	0.000	0.000	0.000	0.000	43,424,423.870	0.000
2003	10	0.000	0.000	0.000	0.000	0.000	0.000	-24,043,445.590
2003	11	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2003	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2004	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2004	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2004	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2004	4	-51,624,249.613	0.000	0.000	0.000	0.000	0.000	0.000
2004	5	0.000	-55,761,839.844	0.000	0.000	0.000	0.000	0.000
2004	6	0.000	0.000	-39,429,489.925	0.000	0.000	0.000	0.000
2004	7	0.000	0.000	0.000	32,582,666.358	0.000	0.000	0.000
2004	8	0.000	0.000	0.000	0.000	63,621,435.528	0.000	0.000
2004	9	0.000	0.000	0.000	0.000	0.000	43,424,423.870	0.000
2004	10	0.000	0.000	0.000	0.000	0.000	0.000	-24,043,445.590
2004	11	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2004	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2005	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2005	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2005	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2005	4	-51,624,249.613	0.000	0.000	0.000	0.000	0.000	0.000
2005	5	0.000	-55,761,839.844	0.000	0.000	0.000	0.000	0.000
2005	6	0.000	0.000	-39,429,489.925	0.000	0.000	0.000	0.000
2005	7	0.000	0.000	0.000	32,582,666.358	0.000	0.000	0.000
2005	8	0.000	0.000	0.000	0.000	63,621,435.528	0.000	0.000
2005	9	0.000	0.000	0.000	0.000	0.000	43,424,423.870	0.000
2005	10	0.000	0.000	0.000	0.000	0.000	0.000	-24,043,445.590
2005	11	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2005	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2006	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2006	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2006	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Indiana Michigan Power Company-Indiana
Long-Term Residential Energy Model Output

Year	Month	Apr	May	Jun	Jul	Aug	Sep	Oct
2006	4	-51,624,249.613	0.000	0.000	0.000	0.000	0.000	0.000
2006	5	0.000	-55,761,839.844	0.000	0.000	0.000	0.000	0.000
2006	6	0.000	0.000	-39,429,489.925	0.000	0.000	0.000	0.000
2006	7	0.000	0.000	0.000	32,582,666.358	0.000	0.000	0.000
2006	8	0.000	0.000	0.000	0.000	63,621,435.528	0.000	0.000
2006	9	0.000	0.000	0.000	0.000	0.000	43,424,423.870	0.000
2006	10	0.000	0.000	0.000	0.000	0.000	0.000	-24,043,445.590
2006	11	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2006	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2007	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2007	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2007	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2007	4	-51,624,249.613	0.000	0.000	0.000	0.000	0.000	0.000
2007	5	0.000	-55,761,839.844	0.000	0.000	0.000	0.000	0.000
2007	6	0.000	0.000	-39,429,489.925	0.000	0.000	0.000	0.000
2007	7	0.000	0.000	0.000	32,582,666.358	0.000	0.000	0.000
2007	8	0.000	0.000	0.000	0.000	63,621,435.528	0.000	0.000
2007	9	0.000	0.000	0.000	0.000	0.000	43,424,423.870	0.000
2007	10	0.000	0.000	0.000	0.000	0.000	0.000	-24,043,445.590
2007	11	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2007	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2008	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2008	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2008	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2008	4	-51,624,249.613	0.000	0.000	0.000	0.000	0.000	0.000
2008	5	0.000	-55,761,839.844	0.000	0.000	0.000	0.000	0.000
2008	6	0.000	0.000	-39,429,489.925	0.000	0.000	0.000	0.000
2008	7	0.000	0.000	0.000	32,582,666.358	0.000	0.000	0.000
2008	8	0.000	0.000	0.000	0.000	63,621,435.528	0.000	0.000
2008	9	0.000	0.000	0.000	0.000	0.000	43,424,423.870	0.000
2008	10	0.000	0.000	0.000	0.000	0.000	0.000	-24,043,445.590
2008	11	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2008	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Indiana Michigan Power Company-Indiana
Long-Term Residential Energy Model Output

Year	Month	Apr	May	Jun	Jul	Aug	Sep	Oct
2009	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2009	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2009	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2009	4	-51,624,249.613	0.000	0.000	0.000	0.000	0.000	0.000
2009	5	0.000	-55,761,839.844	0.000	0.000	0.000	0.000	0.000
2009	6	0.000	0.000	-39,429,489.925	0.000	0.000	0.000	0.000
2009	7	0.000	0.000	0.000	32,582,666.358	0.000	0.000	0.000
2009	8	0.000	0.000	0.000	0.000	63,621,435.528	0.000	0.000
2009	9	0.000	0.000	0.000	0.000	0.000	43,424,423.870	0.000
2009	10	0.000	0.000	0.000	0.000	0.000	0.000	-24,043,445.590
2009	11	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2009	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2010	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2010	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2010	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2010	4	-51,624,249.613	0.000	0.000	0.000	0.000	0.000	0.000
2010	5	0.000	-55,761,839.844	0.000	0.000	0.000	0.000	0.000
2010	6	0.000	0.000	-39,429,489.925	0.000	0.000	0.000	0.000
2010	7	0.000	0.000	0.000	32,582,666.358	0.000	0.000	0.000
2010	8	0.000	0.000	0.000	0.000	63,621,435.528	0.000	0.000
2010	9	0.000	0.000	0.000	0.000	0.000	43,424,423.870	0.000
2010	10	0.000	0.000	0.000	0.000	0.000	0.000	-24,043,445.590
2010	11	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2010	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2011	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2011	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2011	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2011	4	-51,624,249.613	0.000	0.000	0.000	0.000	0.000	0.000
2011	5	0.000	-55,761,839.844	0.000	0.000	0.000	0.000	0.000
2011	6	0.000	0.000	-39,429,489.925	0.000	0.000	0.000	0.000
2011	7	0.000	0.000	0.000	32,582,666.358	0.000	0.000	0.000
2011	8	0.000	0.000	0.000	0.000	63,621,435.528	0.000	0.000
2011	9	0.000	0.000	0.000	0.000	0.000	43,424,423.870	0.000

Indiana Michigan Power Company-Indiana
Long-Term Residential Energy Model Output

Year	Month	Apr	May	Jun	Jul	Aug	Sep	Oct
2011	10	0.000	0.000	0.000	0.000	0.000	0.000	-24,043,445.590
2011	11	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2011	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2012	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2012	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2012	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2012	4	-51,624,249.613	0.000	0.000	0.000	0.000	0.000	0.000
2012	5	0.000	-55,761,839.844	0.000	0.000	0.000	0.000	0.000
2012	6	0.000	0.000	-39,429,489.925	0.000	0.000	0.000	0.000
2012	7	0.000	0.000	0.000	32,582,666.358	0.000	0.000	0.000
2012	8	0.000	0.000	0.000	0.000	63,621,435.528	0.000	0.000
2012	9	0.000	0.000	0.000	0.000	0.000	43,424,423.870	0.000
2012	10	0.000	0.000	0.000	0.000	0.000	0.000	-24,043,445.590
2012	11	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2012	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2013	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2013	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2013	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2013	4	-51,624,249.613	0.000	0.000	0.000	0.000	0.000	0.000
2013	5	0.000	-55,761,839.844	0.000	0.000	0.000	0.000	0.000
2013	6	0.000	0.000	-39,429,489.925	0.000	0.000	0.000	0.000
2013	7	0.000	0.000	0.000	32,582,666.358	0.000	0.000	0.000
2013	8	0.000	0.000	0.000	0.000	63,621,435.528	0.000	0.000
2013	9	0.000	0.000	0.000	0.000	0.000	43,424,423.870	0.000
2013	10	0.000	0.000	0.000	0.000	0.000	0.000	-24,043,445.590
2013	11	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2013	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2014	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2014	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2014	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2014	4	-51,624,249.613	0.000	0.000	0.000	0.000	0.000	0.000
2014	5	0.000	-55,761,839.844	0.000	0.000	0.000	0.000	0.000
2014	6	0.000	0.000	-39,429,489.925	0.000	0.000	0.000	0.000

Indiana Michigan Power Company-Indiana
Long-Term Residential Energy Model Output

Year	Month	Apr	May	Jun	Jul	Aug	Sep	Oct
2014	7	0.000	0.000	0.000	32,582,666.358	0.000	0.000	0.000
2014	8	0.000	0.000	0.000	0.000	63,621,435.528	0.000	0.000
2014	9	0.000	0.000	0.000	0.000	0.000	43,424,423.870	0.000
2014	10	0.000	0.000	0.000	0.000	0.000	0.000	-24,043,445.590
2014	11	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2014	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2015	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2015	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2015	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2015	4	-51,624,249.613	0.000	0.000	0.000	0.000	0.000	0.000
2015	5	0.000	-55,761,839.844	0.000	0.000	0.000	0.000	0.000
2015	6	0.000	0.000	-39,429,489.925	0.000	0.000	0.000	0.000
2015	7	0.000	0.000	0.000	32,582,666.358	0.000	0.000	0.000
2015	8	0.000	0.000	0.000	0.000	63,621,435.528	0.000	0.000
2015	9	0.000	0.000	0.000	0.000	0.000	43,424,423.870	0.000
2015	10	0.000	0.000	0.000	0.000	0.000	0.000	-24,043,445.590
2015	11	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2015	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2016	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2016	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2016	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2016	4	-51,624,249.613	0.000	0.000	0.000	0.000	0.000	0.000
2016	5	0.000	-55,761,839.844	0.000	0.000	0.000	0.000	0.000
2016	6	0.000	0.000	-39,429,489.925	0.000	0.000	0.000	0.000
2016	7	0.000	0.000	0.000	32,582,666.358	0.000	0.000	0.000
2016	8	0.000	0.000	0.000	0.000	63,621,435.528	0.000	0.000
2016	9	0.000	0.000	0.000	0.000	0.000	43,424,423.870	0.000
2016	10	0.000	0.000	0.000	0.000	0.000	0.000	-24,043,445.590
2016	11	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2016	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2017	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2017	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2017	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Indiana Michigan Power Company-Indiana
Long-Term Residential Energy Model Output

Year	Month	Apr	May	Jun	Jul	Aug	Sep	Oct
2017	4	-51,624,249.613	0.000	0.000	0.000	0.000	0.000	0.000
2017	5	0.000	-55,761,839.844	0.000	0.000	0.000	0.000	0.000
2017	6	0.000	0.000	-39,429,489.925	0.000	0.000	0.000	0.000
2017	7	0.000	0.000	0.000	32,582,666.358	0.000	0.000	0.000
2017	8	0.000	0.000	0.000	0.000	63,621,435.528	0.000	0.000
2017	9	0.000	0.000	0.000	0.000	0.000	43,424,423.870	0.000
2017	10	0.000	0.000	0.000	0.000	0.000	0.000	-24,043,445.590
2017	11	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2017	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2018	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2018	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2018	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2018	4	-51,624,249.613	0.000	0.000	0.000	0.000	0.000	0.000
2018	5	0.000	-55,761,839.844	0.000	0.000	0.000	0.000	0.000
2018	6	0.000	0.000	-39,429,489.925	0.000	0.000	0.000	0.000
2018	7	0.000	0.000	0.000	32,582,666.358	0.000	0.000	0.000
2018	8	0.000	0.000	0.000	0.000	63,621,435.528	0.000	0.000
2018	9	0.000	0.000	0.000	0.000	0.000	43,424,423.870	0.000
2018	10	0.000	0.000	0.000	0.000	0.000	0.000	-24,043,445.590
2018	11	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2018	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2019	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2019	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2019	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2019	4	-51,624,249.613	0.000	0.000	0.000	0.000	0.000	0.000
2019	5	0.000	-55,761,839.844	0.000	0.000	0.000	0.000	0.000
2019	6	0.000	0.000	-39,429,489.925	0.000	0.000	0.000	0.000
2019	7	0.000	0.000	0.000	32,582,666.358	0.000	0.000	0.000
2019	8	0.000	0.000	0.000	0.000	63,621,435.528	0.000	0.000
2019	9	0.000	0.000	0.000	0.000	0.000	43,424,423.870	0.000
2019	10	0.000	0.000	0.000	0.000	0.000	0.000	-24,043,445.590
2019	11	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2019	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Indiana Michigan Power Company-Indiana
Long-Term Residential Energy Model Output

Year	Month	Apr	May	Jun	Jul	Aug	Sep	Oct
2020	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2020	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2020	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2020	4	-51,624,249.613	0.000	0.000	0.000	0.000	0.000	0.000
2020	5	0.000	-55,761,839.844	0.000	0.000	0.000	0.000	0.000
2020	6	0.000	0.000	-39,429,489.925	0.000	0.000	0.000	0.000
2020	7	0.000	0.000	0.000	32,582,666.358	0.000	0.000	0.000
2020	8	0.000	0.000	0.000	0.000	63,621,435.528	0.000	0.000
2020	9	0.000	0.000	0.000	0.000	0.000	43,424,423.870	0.000
2020	10	0.000	0.000	0.000	0.000	0.000	0.000	-24,043,445.590
2020	11	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2020	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2021	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2021	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2021	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2021	4	-51,624,249.613	0.000	0.000	0.000	0.000	0.000	0.000
2021	5	0.000	-55,761,839.844	0.000	0.000	0.000	0.000	0.000
2021	6	0.000	0.000	-39,429,489.925	0.000	0.000	0.000	0.000
2021	7	0.000	0.000	0.000	32,582,666.358	0.000	0.000	0.000
2021	8	0.000	0.000	0.000	0.000	63,621,435.528	0.000	0.000
2021	9	0.000	0.000	0.000	0.000	0.000	43,424,423.870	0.000
2021	10	0.000	0.000	0.000	0.000	0.000	0.000	-24,043,445.590
2021	11	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2021	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2022	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2022	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2022	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2022	4	-51,624,249.613	0.000	0.000	0.000	0.000	0.000	0.000
2022	5	0.000	-55,761,839.844	0.000	0.000	0.000	0.000	0.000
2022	6	0.000	0.000	-39,429,489.925	0.000	0.000	0.000	0.000
2022	7	0.000	0.000	0.000	32,582,666.358	0.000	0.000	0.000
2022	8	0.000	0.000	0.000	0.000	63,621,435.528	0.000	0.000
2022	9	0.000	0.000	0.000	0.000	0.000	43,424,423.870	0.000

Indiana Michigan Power Company-Indiana
Long-Term Residential Energy Model Output

Year	Month	Apr	May	Jun	Jul	Aug	Sep	Oct
2022	10	0.000	0.000	0.000	0.000	0.000	0.000	-24,043,445.590
2022	11	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2022	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2023	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2023	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2023	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2023	4	-51,624,249.613	0.000	0.000	0.000	0.000	0.000	0.000
2023	5	0.000	-55,761,839.844	0.000	0.000	0.000	0.000	0.000
2023	6	0.000	0.000	-39,429,489.925	0.000	0.000	0.000	0.000
2023	7	0.000	0.000	0.000	32,582,666.358	0.000	0.000	0.000
2023	8	0.000	0.000	0.000	0.000	63,621,435.528	0.000	0.000
2023	9	0.000	0.000	0.000	0.000	0.000	43,424,423.870	0.000
2023	10	0.000	0.000	0.000	0.000	0.000	0.000	-24,043,445.590
2023	11	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2023	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2024	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2024	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2024	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2024	4	-51,624,249.613	0.000	0.000	0.000	0.000	0.000	0.000
2024	5	0.000	-55,761,839.844	0.000	0.000	0.000	0.000	0.000
2024	6	0.000	0.000	-39,429,489.925	0.000	0.000	0.000	0.000
2024	7	0.000	0.000	0.000	32,582,666.358	0.000	0.000	0.000
2024	8	0.000	0.000	0.000	0.000	63,621,435.528	0.000	0.000
2024	9	0.000	0.000	0.000	0.000	0.000	43,424,423.870	0.000
2024	10	0.000	0.000	0.000	0.000	0.000	0.000	-24,043,445.590
2024	11	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2024	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2025	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2025	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2025	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2025	4	-51,624,249.613	0.000	0.000	0.000	0.000	0.000	0.000
2025	5	0.000	-55,761,839.844	0.000	0.000	0.000	0.000	0.000
2025	6	0.000	0.000	-39,429,489.925	0.000	0.000	0.000	0.000

Indiana Michigan Power Company-Indiana
Long-Term Residential Energy Model Output

Year	Month	Apr	May	Jun	Jul	Aug	Sep	Oct
2025	7	0.000	0.000	0.000	32,582,666.358	0.000	0.000	0.000
2025	8	0.000	0.000	0.000	0.000	63,621,435.528	0.000	0.000
2025	9	0.000	0.000	0.000	0.000	0.000	43,424,423.870	0.000
2025	10	0.000	0.000	0.000	0.000	0.000	0.000	-24,043,445.590
2025	11	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2025	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2026	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2026	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2026	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2026	4	-51,624,249.613	0.000	0.000	0.000	0.000	0.000	0.000
2026	5	0.000	-55,761,839.844	0.000	0.000	0.000	0.000	0.000
2026	6	0.000	0.000	-39,429,489.925	0.000	0.000	0.000	0.000
2026	7	0.000	0.000	0.000	32,582,666.358	0.000	0.000	0.000
2026	8	0.000	0.000	0.000	0.000	63,621,435.528	0.000	0.000
2026	9	0.000	0.000	0.000	0.000	0.000	43,424,423.870	0.000
2026	10	0.000	0.000	0.000	0.000	0.000	0.000	-24,043,445.590
2026	11	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2026	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2027	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2027	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2027	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2027	4	-51,624,249.613	0.000	0.000	0.000	0.000	0.000	0.000
2027	5	0.000	-55,761,839.844	0.000	0.000	0.000	0.000	0.000
2027	6	0.000	0.000	-39,429,489.925	0.000	0.000	0.000	0.000
2027	7	0.000	0.000	0.000	32,582,666.358	0.000	0.000	0.000
2027	8	0.000	0.000	0.000	0.000	63,621,435.528	0.000	0.000
2027	9	0.000	0.000	0.000	0.000	0.000	43,424,423.870	0.000
2027	10	0.000	0.000	0.000	0.000	0.000	0.000	-24,043,445.590
2027	11	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2027	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2028	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2028	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2028	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Indiana Michigan Power Company-Indiana
Long-Term Residential Energy Model Output

Year	Month	Apr	May	Jun	Jul	Aug	Sep	Oct
2028	4	-51,624,249.613	0.000	0.000	0.000	0.000	0.000	0.000
2028	5	0.000	-55,761,839.844	0.000	0.000	0.000	0.000	0.000
2028	6	0.000	0.000	-39,429,489.925	0.000	0.000	0.000	0.000
2028	7	0.000	0.000	0.000	32,582,666.358	0.000	0.000	0.000
2028	8	0.000	0.000	0.000	0.000	63,621,435.528	0.000	0.000
2028	9	0.000	0.000	0.000	0.000	0.000	43,424,423.870	0.000
2028	10	0.000	0.000	0.000	0.000	0.000	0.000	-24,043,445.590
2028	11	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2028	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2029	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2029	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2029	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2029	4	-51,624,249.613	0.000	0.000	0.000	0.000	0.000	0.000
2029	5	0.000	-55,761,839.844	0.000	0.000	0.000	0.000	0.000
2029	6	0.000	0.000	-39,429,489.925	0.000	0.000	0.000	0.000
2029	7	0.000	0.000	0.000	32,582,666.358	0.000	0.000	0.000
2029	8	0.000	0.000	0.000	0.000	63,621,435.528	0.000	0.000
2029	9	0.000	0.000	0.000	0.000	0.000	43,424,423.870	0.000
2029	10	0.000	0.000	0.000	0.000	0.000	0.000	-24,043,445.590
2029	11	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2029	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2030	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2030	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2030	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2030	4	-51,624,249.613	0.000	0.000	0.000	0.000	0.000	0.000
2030	5	0.000	-55,761,839.844	0.000	0.000	0.000	0.000	0.000
2030	6	0.000	0.000	-39,429,489.925	0.000	0.000	0.000	0.000
2030	7	0.000	0.000	0.000	32,582,666.358	0.000	0.000	0.000
2030	8	0.000	0.000	0.000	0.000	63,621,435.528	0.000	0.000
2030	9	0.000	0.000	0.000	0.000	0.000	43,424,423.870	0.000
2030	10	0.000	0.000	0.000	0.000	0.000	0.000	-24,043,445.590
2030	11	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2030	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Indiana Michigan Power Company-Indiana
Long-Term Residential Energy Model Output

Year	Month	Apr	May	Jun	Jul	Aug	Sep	Oct
2031	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2031	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2031	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2031	4	-51,624,249.613	0.000	0.000	0.000	0.000	0.000	0.000
2031	5	0.000	-55,761,839.844	0.000	0.000	0.000	0.000	0.000
2031	6	0.000	0.000	-39,429,489.925	0.000	0.000	0.000	0.000
2031	7	0.000	0.000	0.000	32,582,666.358	0.000	0.000	0.000
2031	8	0.000	0.000	0.000	0.000	63,621,435.528	0.000	0.000
2031	9	0.000	0.000	0.000	0.000	0.000	43,424,423.870	0.000
2031	10	0.000	0.000	0.000	0.000	0.000	0.000	-24,043,445.590
2031	11	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2031	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2032	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2032	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2032	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2032	4	-51,624,249.613	0.000	0.000	0.000	0.000	0.000	0.000
2032	5	0.000	-55,761,839.844	0.000	0.000	0.000	0.000	0.000
2032	6	0.000	0.000	-39,429,489.925	0.000	0.000	0.000	0.000
2032	7	0.000	0.000	0.000	32,582,666.358	0.000	0.000	0.000
2032	8	0.000	0.000	0.000	0.000	63,621,435.528	0.000	0.000
2032	9	0.000	0.000	0.000	0.000	0.000	43,424,423.870	0.000
2032	10	0.000	0.000	0.000	0.000	0.000	0.000	-24,043,445.590
2032	11	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2032	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2033	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2033	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2033	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2033	4	-51,624,249.613	0.000	0.000	0.000	0.000	0.000	0.000
2033	5	0.000	-55,761,839.844	0.000	0.000	0.000	0.000	0.000
2033	6	0.000	0.000	-39,429,489.925	0.000	0.000	0.000	0.000
2033	7	0.000	0.000	0.000	32,582,666.358	0.000	0.000	0.000
2033	8	0.000	0.000	0.000	0.000	63,621,435.528	0.000	0.000
2033	9	0.000	0.000	0.000	0.000	0.000	43,424,423.870	0.000

Indiana Michigan Power Company-Indiana
Long-Term Residential Energy Model Output

Year	Month	Apr	May	Jun	Jul	Aug	Sep	Oct
2033	10	0.000	0.000	0.000	0.000	0.000	0.000	-24,043,445.590
2033	11	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2033	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2034	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2034	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2034	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2034	4	-51,624,249.613	0.000	0.000	0.000	0.000	0.000	0.000
2034	5	0.000	-55,761,839.844	0.000	0.000	0.000	0.000	0.000
2034	6	0.000	0.000	-39,429,489.925	0.000	0.000	0.000	0.000
2034	7	0.000	0.000	0.000	32,582,666.358	0.000	0.000	0.000
2034	8	0.000	0.000	0.000	0.000	63,621,435.528	0.000	0.000
2034	9	0.000	0.000	0.000	0.000	0.000	43,424,423.870	0.000
2034	10	0.000	0.000	0.000	0.000	0.000	0.000	-24,043,445.590
2034	11	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2034	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2035	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2035	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2035	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2035	4	-51,624,249.613	0.000	0.000	0.000	0.000	0.000	0.000
2035	5	0.000	-55,761,839.844	0.000	0.000	0.000	0.000	0.000
2035	6	0.000	0.000	-39,429,489.925	0.000	0.000	0.000	0.000
2035	7	0.000	0.000	0.000	32,582,666.358	0.000	0.000	0.000
2035	8	0.000	0.000	0.000	0.000	63,621,435.528	0.000	0.000
2035	9	0.000	0.000	0.000	0.000	0.000	43,424,423.870	0.000
2035	10	0.000	0.000	0.000	0.000	0.000	0.000	-24,043,445.590
2035	11	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2035	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2036	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2036	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2036	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2036	4	-51,624,249.613	0.000	0.000	0.000	0.000	0.000	0.000
2036	5	0.000	-55,761,839.844	0.000	0.000	0.000	0.000	0.000
2036	6	0.000	0.000	-39,429,489.925	0.000	0.000	0.000	0.000

Indiana Michigan Power Company-Indiana
Long-Term Residential Energy Model Output

Year	Month	Apr	May	Jun	Jul	Aug	Sep	Oct
2036	7	0.000	0.000	0.000	32,582,666.358	0.000	0.000	0.000
2036	8	0.000	0.000	0.000	0.000	63,621,435.528	0.000	0.000
2036	9	0.000	0.000	0.000	0.000	0.000	43,424,423.870	0.000
2036	10	0.000	0.000	0.000	0.000	0.000	0.000	-24,043,445.590
2036	11	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2036	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2037	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2037	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2037	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2037	4	-51,624,249.613	0.000	0.000	0.000	0.000	0.000	0.000
2037	5	0.000	-55,761,839.844	0.000	0.000	0.000	0.000	0.000
2037	6	0.000	0.000	-39,429,489.925	0.000	0.000	0.000	0.000
2037	7	0.000	0.000	0.000	32,582,666.358	0.000	0.000	0.000
2037	8	0.000	0.000	0.000	0.000	63,621,435.528	0.000	0.000
2037	9	0.000	0.000	0.000	0.000	0.000	43,424,423.870	0.000
2037	10	0.000	0.000	0.000	0.000	0.000	0.000	-24,043,445.590
2037	11	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2037	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2038	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2038	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2038	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2038	4	-51,624,249.613	0.000	0.000	0.000	0.000	0.000	0.000
2038	5	0.000	-55,761,839.844	0.000	0.000	0.000	0.000	0.000
2038	6	0.000	0.000	-39,429,489.925	0.000	0.000	0.000	0.000
2038	7	0.000	0.000	0.000	32,582,666.358	0.000	0.000	0.000
2038	8	0.000	0.000	0.000	0.000	63,621,435.528	0.000	0.000
2038	9	0.000	0.000	0.000	0.000	0.000	43,424,423.870	0.000
2038	10	0.000	0.000	0.000	0.000	0.000	0.000	-24,043,445.590
2038	11	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2038	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2039	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2039	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2039	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Indiana Michigan Power Company-Indiana
Long-Term Residential Energy Model Output

Year	Month	Apr	May	Jun	Jul	Aug	Sep	Oct
2039	4	-51,624,249.613	0.000	0.000	0.000	0.000	0.000	0.000
2039	5	0.000	-55,761,839.844	0.000	0.000	0.000	0.000	0.000
2039	6	0.000	0.000	-39,429,489.925	0.000	0.000	0.000	0.000
2039	7	0.000	0.000	0.000	32,582,666.358	0.000	0.000	0.000
2039	8	0.000	0.000	0.000	0.000	63,621,435.528	0.000	0.000
2039	9	0.000	0.000	0.000	0.000	0.000	43,424,423.870	0.000
2039	10	0.000	0.000	0.000	0.000	0.000	0.000	-24,043,445.590
2039	11	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2039	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2040	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2040	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2040	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2040	4	-51,624,249.613	0.000	0.000	0.000	0.000	0.000	0.000
2040	5	0.000	-55,761,839.844	0.000	0.000	0.000	0.000	0.000
2040	6	0.000	0.000	-39,429,489.925	0.000	0.000	0.000	0.000
2040	7	0.000	0.000	0.000	32,582,666.358	0.000	0.000	0.000
2040	8	0.000	0.000	0.000	0.000	63,621,435.528	0.000	0.000
2040	9	0.000	0.000	0.000	0.000	0.000	43,424,423.870	0.000
2040	10	0.000	0.000	0.000	0.000	0.000	0.000	-24,043,445.590
2040	11	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2040	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2041	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2041	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2041	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2041	4	-51,624,249.613	0.000	0.000	0.000	0.000	0.000	0.000
2041	5	0.000	-55,761,839.844	0.000	0.000	0.000	0.000	0.000
2041	6	0.000	0.000	-39,429,489.925	0.000	0.000	0.000	0.000
2041	7	0.000	0.000	0.000	32,582,666.358	0.000	0.000	0.000
2041	8	0.000	0.000	0.000	0.000	63,621,435.528	0.000	0.000
2041	9	0.000	0.000	0.000	0.000	0.000	43,424,423.870	0.000
2041	10	0.000	0.000	0.000	0.000	0.000	0.000	-24,043,445.590
2041	11	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2041	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Indiana Michigan Power Company-Indiana
Long-Term Residential Energy Model Output

Year	Month	Apr	May	Jun	Jul	Aug	Sep	Oct
2042	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2042	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2042	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2042	4	-51,624,249.613	0.000	0.000	0.000	0.000	0.000	0.000
2042	5	0.000	-55,761,839.844	0.000	0.000	0.000	0.000	0.000
2042	6	0.000	0.000	-39,429,489.925	0.000	0.000	0.000	0.000
2042	7	0.000	0.000	0.000	32,582,666.358	0.000	0.000	0.000
2042	8	0.000	0.000	0.000	0.000	63,621,435.528	0.000	0.000
2042	9	0.000	0.000	0.000	0.000	0.000	43,424,423.870	0.000
2042	10	0.000	0.000	0.000	0.000	0.000	0.000	-24,043,445.590
2042	11	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2042	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2043	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2043	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2043	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2043	4	-51,624,249.613	0.000	0.000	0.000	0.000	0.000	0.000
2043	5	0.000	-55,761,839.844	0.000	0.000	0.000	0.000	0.000
2043	6	0.000	0.000	-39,429,489.925	0.000	0.000	0.000	0.000
2043	7	0.000	0.000	0.000	32,582,666.358	0.000	0.000	0.000
2043	8	0.000	0.000	0.000	0.000	63,621,435.528	0.000	0.000
2043	9	0.000	0.000	0.000	0.000	0.000	43,424,423.870	0.000
2043	10	0.000	0.000	0.000	0.000	0.000	0.000	-24,043,445.590
2043	11	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2043	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2044	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2044	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2044	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2044	4	-51,624,249.613	0.000	0.000	0.000	0.000	0.000	0.000
2044	5	0.000	-55,761,839.844	0.000	0.000	0.000	0.000	0.000
2044	6	0.000	0.000	-39,429,489.925	0.000	0.000	0.000	0.000
2044	7	0.000	0.000	0.000	32,582,666.358	0.000	0.000	0.000
2044	8	0.000	0.000	0.000	0.000	63,621,435.528	0.000	0.000
2044	9	0.000	0.000	0.000	0.000	0.000	43,424,423.870	0.000

Indiana Michigan Power Company-Indiana
Long-Term Residential Energy Model Output

Year	Month	Apr	May	Jun	Jul	Aug	Sep	Oct
2044	10	0.000	0.000	0.000	0.000	0.000	0.000	-24,043,445.590
2044	11	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2044	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2045	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2045	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2045	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2045	4	-51,624,249.613	0.000	0.000	0.000	0.000	0.000	0.000
2045	5	0.000	-55,761,839.844	0.000	0.000	0.000	0.000	0.000
2045	6	0.000	0.000	-39,429,489.925	0.000	0.000	0.000	0.000
2045	7	0.000	0.000	0.000	32,582,666.358	0.000	0.000	0.000
2045	8	0.000	0.000	0.000	0.000	63,621,435.528	0.000	0.000
2045	9	0.000	0.000	0.000	0.000	0.000	43,424,423.870	0.000
2045	10	0.000	0.000	0.000	0.000	0.000	0.000	-24,043,445.590
2045	11	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2045	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2046	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2046	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2046	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2046	4	-51,624,249.613	0.000	0.000	0.000	0.000	0.000	0.000
2046	5	0.000	-55,761,839.844	0.000	0.000	0.000	0.000	0.000
2046	6	0.000	0.000	-39,429,489.925	0.000	0.000	0.000	0.000
2046	7	0.000	0.000	0.000	32,582,666.358	0.000	0.000	0.000
2046	8	0.000	0.000	0.000	0.000	63,621,435.528	0.000	0.000
2046	9	0.000	0.000	0.000	0.000	0.000	43,424,423.870	0.000
2046	10	0.000	0.000	0.000	0.000	0.000	0.000	-24,043,445.590
2046	11	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2046	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2047	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2047	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2047	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2047	4	-51,624,249.613	0.000	0.000	0.000	0.000	0.000	0.000
2047	5	0.000	-55,761,839.844	0.000	0.000	0.000	0.000	0.000
2047	6	0.000	0.000	-39,429,489.925	0.000	0.000	0.000	0.000

Indiana Michigan Power Company-Indiana
Long-Term Residential Energy Model Output

Year	Month	Apr	May	Jun	Jul	Aug	Sep	Oct
2047	7	0.000	0.000	0.000	32,582,666.358	0.000	0.000	0.000
2047	8	0.000	0.000	0.000	0.000	63,621,435.528	0.000	0.000
2047	9	0.000	0.000	0.000	0.000	0.000	43,424,423.870	0.000
2047	10	0.000	0.000	0.000	0.000	0.000	0.000	-24,043,445.590
2047	11	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2047	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2048	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2048	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2048	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2048	4	-51,624,249.613	0.000	0.000	0.000	0.000	0.000	0.000
2048	5	0.000	-55,761,839.844	0.000	0.000	0.000	0.000	0.000
2048	6	0.000	0.000	-39,429,489.925	0.000	0.000	0.000	0.000
2048	7	0.000	0.000	0.000	32,582,666.358	0.000	0.000	0.000
2048	8	0.000	0.000	0.000	0.000	63,621,435.528	0.000	0.000
2048	9	0.000	0.000	0.000	0.000	0.000	43,424,423.870	0.000
2048	10	0.000	0.000	0.000	0.000	0.000	0.000	-24,043,445.590
2048	11	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2048	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2049	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2049	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2049	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2049	4	-51,624,249.613	0.000	0.000	0.000	0.000	0.000	0.000
2049	5	0.000	-55,761,839.844	0.000	0.000	0.000	0.000	0.000
2049	6	0.000	0.000	-39,429,489.925	0.000	0.000	0.000	0.000
2049	7	0.000	0.000	0.000	32,582,666.358	0.000	0.000	0.000
2049	8	0.000	0.000	0.000	0.000	63,621,435.528	0.000	0.000
2049	9	0.000	0.000	0.000	0.000	0.000	43,424,423.870	0.000
2049	10	0.000	0.000	0.000	0.000	0.000	0.000	-24,043,445.590
2049	11	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2049	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2050	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2050	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2050	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Indiana Michigan Power Company-Indiana
Long-Term Residential Energy Model Output

Year	Month	Apr	May	Jun	Jul	Aug	Sep	Oct
2050	4	-51,624,249.613	0.000	0.000	0.000	0.000	0.000	0.000
2050	5	0.000	-55,761,839.844	0.000	0.000	0.000	0.000	0.000
2050	6	0.000	0.000	-39,429,489.925	0.000	0.000	0.000	0.000
2050	7	0.000	0.000	0.000	32,582,666.358	0.000	0.000	0.000
2050	8	0.000	0.000	0.000	0.000	63,621,435.528	0.000	0.000
2050	9	0.000	0.000	0.000	0.000	0.000	43,424,423.870	0.000
2050	10	0.000	0.000	0.000	0.000	0.000	0.000	-24,043,445.590
2050	11	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2050	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2051	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2051	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2051	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2051	4	-51,624,249.613	0.000	0.000	0.000	0.000	0.000	0.000
2051	5	0.000	-55,761,839.844	0.000	0.000	0.000	0.000	0.000
2051	6	0.000	0.000	-39,429,489.925	0.000	0.000	0.000	0.000
2051	7	0.000	0.000	0.000	32,582,666.358	0.000	0.000	0.000
2051	8	0.000	0.000	0.000	0.000	63,621,435.528	0.000	0.000
2051	9	0.000	0.000	0.000	0.000	0.000	43,424,423.870	0.000
2051	10	0.000	0.000	0.000	0.000	0.000	0.000	-24,043,445.590
2051	11	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2051	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2052	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2052	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2052	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2052	4	-51,624,249.613	0.000	0.000	0.000	0.000	0.000	0.000
2052	5	0.000	-55,761,839.844	0.000	0.000	0.000	0.000	0.000
2052	6	0.000	0.000	-39,429,489.925	0.000	0.000	0.000	0.000
2052	7	0.000	0.000	0.000	32,582,666.358	0.000	0.000	0.000
2052	8	0.000	0.000	0.000	0.000	63,621,435.528	0.000	0.000
2052	9	0.000	0.000	0.000	0.000	0.000	43,424,423.870	0.000
2052	10	0.000	0.000	0.000	0.000	0.000	0.000	-24,043,445.590
2052	11	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2052	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Indiana Michigan Power Company-Indiana
Long-Term Residential Energy Model Output

Year	Month	Apr	May	Jun	Jul	Aug	Sep	Oct
2053	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2053	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2053	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2053	4	-51,624,249.613	0.000	0.000	0.000	0.000	0.000	0.000
2053	5	0.000	-55,761,839.844	0.000	0.000	0.000	0.000	0.000
2053	6	0.000	0.000	-39,429,489.925	0.000	0.000	0.000	0.000
2053	7	0.000	0.000	0.000	32,582,666.358	0.000	0.000	0.000
2053	8	0.000	0.000	0.000	0.000	63,621,435.528	0.000	0.000
2053	9	0.000	0.000	0.000	0.000	0.000	43,424,423.870	0.000
2053	10	0.000	0.000	0.000	0.000	0.000	0.000	-24,043,445.590
2053	11	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2053	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2054	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2054	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2054	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2054	4	-51,624,249.613	0.000	0.000	0.000	0.000	0.000	0.000
2054	5	0.000	-55,761,839.844	0.000	0.000	0.000	0.000	0.000
2054	6	0.000	0.000	-39,429,489.925	0.000	0.000	0.000	0.000
2054	7	0.000	0.000	0.000	32,582,666.358	0.000	0.000	0.000
2054	8	0.000	0.000	0.000	0.000	63,621,435.528	0.000	0.000
2054	9	0.000	0.000	0.000	0.000	0.000	43,424,423.870	0.000
2054	10	0.000	0.000	0.000	0.000	0.000	0.000	-24,043,445.590
2054	11	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2054	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2055	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2055	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2055	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2055	4	-51,624,249.613	0.000	0.000	0.000	0.000	0.000	0.000
2055	5	0.000	-55,761,839.844	0.000	0.000	0.000	0.000	0.000
2055	6	0.000	0.000	-39,429,489.925	0.000	0.000	0.000	0.000
2055	7	0.000	0.000	0.000	32,582,666.358	0.000	0.000	0.000
2055	8	0.000	0.000	0.000	0.000	63,621,435.528	0.000	0.000
2055	9	0.000	0.000	0.000	0.000	0.000	43,424,423.870	0.000

Indiana Michigan Power Company-Indiana
Long-Term Residential Energy Model Output

Year	Month	Apr	May	Jun	Jul	Aug	Sep	Oct
2055	10	0.000	0.000	0.000	0.000	0.000	0.000	-24,043,445.590
2055	11	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2055	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2056	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2056	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2056	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2056	4	-51,624,249.613	0.000	0.000	0.000	0.000	0.000	0.000
2056	5	0.000	-55,761,839.844	0.000	0.000	0.000	0.000	0.000
2056	6	0.000	0.000	-39,429,489.925	0.000	0.000	0.000	0.000
2056	7	0.000	0.000	0.000	32,582,666.358	0.000	0.000	0.000
2056	8	0.000	0.000	0.000	0.000	63,621,435.528	0.000	0.000
2056	9	0.000	0.000	0.000	0.000	0.000	43,424,423.870	0.000
2056	10	0.000	0.000	0.000	0.000	0.000	0.000	-24,043,445.590
2056	11	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2056	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2057	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2057	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2057	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2057	4	-51,624,249.613	0.000	0.000	0.000	0.000	0.000	0.000
2057	5	0.000	-55,761,839.844	0.000	0.000	0.000	0.000	0.000
2057	6	0.000	0.000	-39,429,489.925	0.000	0.000	0.000	0.000
2057	7	0.000	0.000	0.000	32,582,666.358	0.000	0.000	0.000
2057	8	0.000	0.000	0.000	0.000	63,621,435.528	0.000	0.000
2057	9	0.000	0.000	0.000	0.000	0.000	43,424,423.870	0.000
2057	10	0.000	0.000	0.000	0.000	0.000	0.000	-24,043,445.590
2057	11	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2057	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Indiana Michigan Power Company-Indiana
Long-Term Residential Energy Model Output

Year	Month	Nov	JanD06on	FebD06on	may13on	11-Sep	d1112	DJuly10on
1998	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1998	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1998	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1998	4	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1998	5	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1998	6	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1998	7	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1998	8	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1998	9	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1998	10	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1998	11	-38,366,247.544	0.000	0.000	0.000	0.000	0.000	0.000
1998	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1999	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1999	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1999	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1999	4	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1999	5	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1999	6	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1999	7	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1999	8	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1999	9	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1999	10	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1999	11	-38,366,247.544	0.000	0.000	0.000	0.000	0.000	0.000
1999	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2000	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2000	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2000	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2000	4	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2000	5	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2000	6	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2000	7	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2000	8	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2000	9	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Indiana Michigan Power Company-Indiana
Long-Term Residential Energy Model Output

Year	Month	Nov	JanD06on	FebD06on	may13on	11-Sep	d1112	DJuly10on
2000	10	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2000	11	-38,366,247.544	0.000	0.000	0.000	0.000	0.000	0.000
2000	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2001	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2001	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2001	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2001	4	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2001	5	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2001	6	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2001	7	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2001	8	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2001	9	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2001	10	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2001	11	-38,366,247.544	0.000	0.000	0.000	0.000	0.000	0.000
2001	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2002	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2002	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2002	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2002	4	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2002	5	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2002	6	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2002	7	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2002	8	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2002	9	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2002	10	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2002	11	-38,366,247.544	0.000	0.000	0.000	0.000	0.000	0.000
2002	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2003	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2003	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2003	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2003	4	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2003	5	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2003	6	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Indiana Michigan Power Company-Indiana
Long-Term Residential Energy Model Output

Year	Month	Nov	JanD06on	FebD06on	may13on	11-Sep	d1112	DJuly10on
2003	7	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2003	8	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2003	9	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2003	10	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2003	11	-38,366,247.544	0.000	0.000	0.000	0.000	0.000	0.000
2003	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2004	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2004	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2004	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2004	4	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2004	5	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2004	6	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2004	7	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2004	8	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2004	9	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2004	10	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2004	11	-38,366,247.544	0.000	0.000	0.000	0.000	0.000	0.000
2004	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2005	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2005	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2005	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2005	4	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2005	5	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2005	6	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2005	7	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2005	8	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2005	9	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2005	10	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2005	11	-38,366,247.544	0.000	0.000	0.000	0.000	0.000	0.000
2005	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2006	1	0.000	68,448,442.345	0.000	0.000	0.000	0.000	0.000
2006	2	0.000	0.000	62,253,427.558	0.000	0.000	0.000	0.000
2006	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Indiana Michigan Power Company-Indiana
Long-Term Residential Energy Model Output

Year	Month	Nov	JanD06on	FebD06on	may13on	11-Sep	d1112	DJuly10on
2006	4	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2006	5	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2006	6	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2006	7	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2006	8	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2006	9	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2006	10	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2006	11	-38,366,247.544	0.000	0.000	0.000	0.000	0.000	0.000
2006	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2007	1	0.000	68,448,442.345	0.000	0.000	0.000	0.000	0.000
2007	2	0.000	0.000	62,253,427.558	0.000	0.000	0.000	0.000
2007	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2007	4	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2007	5	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2007	6	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2007	7	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2007	8	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2007	9	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2007	10	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2007	11	-38,366,247.544	0.000	0.000	0.000	0.000	0.000	0.000
2007	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2008	1	0.000	68,448,442.345	0.000	0.000	0.000	0.000	0.000
2008	2	0.000	0.000	62,253,427.558	0.000	0.000	0.000	0.000
2008	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2008	4	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2008	5	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2008	6	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2008	7	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2008	8	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2008	9	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2008	10	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2008	11	-38,366,247.544	0.000	0.000	0.000	0.000	0.000	0.000
2008	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Indiana Michigan Power Company-Indiana
Long-Term Residential Energy Model Output

Year	Month	Nov	JanD06on	FebD06on	may13on	11-Sep	d1112	DJuly10on
2009	1	0.000	68,448,442.345	0.000	0.000	0.000	0.000	0.000
2009	2	0.000	0.000	62,253,427.558	0.000	0.000	0.000	0.000
2009	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2009	4	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2009	5	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2009	6	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2009	7	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2009	8	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2009	9	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2009	10	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2009	11	-38,366,247.544	0.000	0.000	0.000	0.000	0.000	0.000
2009	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2010	1	0.000	68,448,442.345	0.000	0.000	0.000	0.000	0.000
2010	2	0.000	0.000	62,253,427.558	0.000	0.000	0.000	0.000
2010	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2010	4	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2010	5	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2010	6	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2010	7	0.000	0.000	0.000	0.000	0.000	0.000	-2,445,676.233
2010	8	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2010	9	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2010	10	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2010	11	-38,366,247.544	0.000	0.000	0.000	0.000	0.000	0.000
2010	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2011	1	0.000	68,448,442.345	0.000	0.000	0.000	-30,164,611.906	0.000
2011	2	0.000	0.000	62,253,427.558	0.000	0.000	-30,164,611.906	0.000
2011	3	0.000	0.000	0.000	0.000	0.000	-30,164,611.906	0.000
2011	4	0.000	0.000	0.000	0.000	0.000	-30,164,611.906	0.000
2011	5	0.000	0.000	0.000	0.000	0.000	-30,164,611.906	0.000
2011	6	0.000	0.000	0.000	0.000	0.000	-30,164,611.906	0.000
2011	7	0.000	0.000	0.000	0.000	0.000	-30,164,611.906	-2,445,676.233
2011	8	0.000	0.000	0.000	0.000	0.000	-30,164,611.906	0.000
2011	9	0.000	0.000	0.000	0.000	-21,083,788.942	-30,164,611.906	0.000

Indiana Michigan Power Company-Indiana
Long-Term Residential Energy Model Output

Year	Month	Nov	JanD06on	FebD06on	may13on	11-Sep	d1112	DJuly10on
2011	10	0.000	0.000	0.000	0.000	0.000	-30,164,611.906	0.000
2011	11	-38,366,247.544	0.000	0.000	0.000	0.000	-30,164,611.906	0.000
2011	12	0.000	0.000	0.000	0.000	0.000	-30,164,611.906	0.000
2012	1	0.000	68,448,442.345	0.000	0.000	0.000	-30,164,611.906	0.000
2012	2	0.000	0.000	62,253,427.558	0.000	0.000	-30,164,611.906	0.000
2012	3	0.000	0.000	0.000	0.000	0.000	-30,164,611.906	0.000
2012	4	0.000	0.000	0.000	0.000	0.000	-30,164,611.906	0.000
2012	5	0.000	0.000	0.000	0.000	0.000	-30,164,611.906	0.000
2012	6	0.000	0.000	0.000	0.000	0.000	-30,164,611.906	0.000
2012	7	0.000	0.000	0.000	0.000	0.000	-30,164,611.906	-2,445,676.233
2012	8	0.000	0.000	0.000	0.000	0.000	-30,164,611.906	0.000
2012	9	0.000	0.000	0.000	0.000	0.000	-30,164,611.906	0.000
2012	10	0.000	0.000	0.000	0.000	0.000	-30,164,611.906	0.000
2012	11	-38,366,247.544	0.000	0.000	0.000	0.000	-30,164,611.906	0.000
2012	12	0.000	0.000	0.000	0.000	0.000	-30,164,611.906	0.000
2013	1	0.000	68,448,442.345	0.000	0.000	0.000	0.000	0.000
2013	2	0.000	0.000	62,253,427.558	0.000	0.000	0.000	0.000
2013	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2013	4	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2013	5	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2013	6	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2013	7	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	-2,445,676.233
2013	8	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2013	9	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2013	10	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2013	11	-38,366,247.544	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2013	12	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2014	1	0.000	68,448,442.345	0.000	-64,665,171.704	0.000	0.000	0.000
2014	2	0.000	0.000	62,253,427.558	-64,665,171.704	0.000	0.000	0.000
2014	3	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2014	4	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2014	5	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2014	6	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000

Indiana Michigan Power Company-Indiana
Long-Term Residential Energy Model Output

Year	Month	Nov	JanD06on	FebD06on	may13on	11-Sep	d1112	DJuly10on
2014	7	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	-2,445,676.233
2014	8	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2014	9	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2014	10	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2014	11	-38,366,247.544	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2014	12	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2015	1	0.000	68,448,442.345	0.000	-64,665,171.704	0.000	0.000	0.000
2015	2	0.000	0.000	62,253,427.558	-64,665,171.704	0.000	0.000	0.000
2015	3	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2015	4	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2015	5	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2015	6	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2015	7	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	-2,445,676.233
2015	8	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2015	9	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2015	10	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2015	11	-38,366,247.544	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2015	12	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2016	1	0.000	68,448,442.345	0.000	-64,665,171.704	0.000	0.000	0.000
2016	2	0.000	0.000	62,253,427.558	-64,665,171.704	0.000	0.000	0.000
2016	3	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2016	4	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2016	5	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2016	6	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2016	7	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	-2,445,676.233
2016	8	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2016	9	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2016	10	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2016	11	-38,366,247.544	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2016	12	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2017	1	0.000	68,448,442.345	0.000	-64,665,171.704	0.000	0.000	0.000
2017	2	0.000	0.000	62,253,427.558	-64,665,171.704	0.000	0.000	0.000
2017	3	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000

Indiana Michigan Power Company-Indiana
Long-Term Residential Energy Model Output

Year	Month	Nov	JanD06on	FebD06on	may13on	11-Sep	d1112	DJuly10on
2017	4	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2017	5	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2017	6	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2017	7	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	-2,445,676.233
2017	8	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2017	9	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2017	10	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2017	11	-38,366,247.544	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2017	12	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2018	1	0.000	68,448,442.345	0.000	-64,665,171.704	0.000	0.000	0.000
2018	2	0.000	0.000	62,253,427.558	-64,665,171.704	0.000	0.000	0.000
2018	3	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2018	4	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2018	5	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2018	6	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2018	7	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	-2,445,676.233
2018	8	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2018	9	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2018	10	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2018	11	-38,366,247.544	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2018	12	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2019	1	0.000	68,448,442.345	0.000	-64,665,171.704	0.000	0.000	0.000
2019	2	0.000	0.000	62,253,427.558	-64,665,171.704	0.000	0.000	0.000
2019	3	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2019	4	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2019	5	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2019	6	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2019	7	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	-2,445,676.233
2019	8	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2019	9	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2019	10	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2019	11	-38,366,247.544	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2019	12	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000

Indiana Michigan Power Company-Indiana
Long-Term Residential Energy Model Output

Year	Month	Nov	JanD06on	FebD06on	may13on	11-Sep	d1112	DJuly10on
2020	1	0.000	68,448,442.345	0.000	-64,665,171.704	0.000	0.000	0.000
2020	2	0.000	0.000	62,253,427.558	-64,665,171.704	0.000	0.000	0.000
2020	3	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2020	4	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2020	5	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2020	6	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2020	7	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	-2,445,676.233
2020	8	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2020	9	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2020	10	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2020	11	-38,366,247.544	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2020	12	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2021	1	0.000	68,448,442.345	0.000	-64,665,171.704	0.000	0.000	0.000
2021	2	0.000	0.000	62,253,427.558	-64,665,171.704	0.000	0.000	0.000
2021	3	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2021	4	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2021	5	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2021	6	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2021	7	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	-2,445,676.233
2021	8	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2021	9	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2021	10	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2021	11	-38,366,247.544	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2021	12	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2022	1	0.000	68,448,442.345	0.000	-64,665,171.704	0.000	0.000	0.000
2022	2	0.000	0.000	62,253,427.558	-64,665,171.704	0.000	0.000	0.000
2022	3	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2022	4	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2022	5	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2022	6	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2022	7	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	-2,445,676.233
2022	8	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2022	9	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000

Indiana Michigan Power Company-Indiana
Long-Term Residential Energy Model Output

Year	Month	Nov	JanD06on	FebD06on	may13on	11-Sep	d1112	DJuly10on
2022	10	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2022	11	-38,366,247.544	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2022	12	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2023	1	0.000	68,448,442.345	0.000	-64,665,171.704	0.000	0.000	0.000
2023	2	0.000	0.000	62,253,427.558	-64,665,171.704	0.000	0.000	0.000
2023	3	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2023	4	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2023	5	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2023	6	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2023	7	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	-2,445,676.233
2023	8	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2023	9	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2023	10	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2023	11	-38,366,247.544	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2023	12	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2024	1	0.000	68,448,442.345	0.000	-64,665,171.704	0.000	0.000	0.000
2024	2	0.000	0.000	62,253,427.558	-64,665,171.704	0.000	0.000	0.000
2024	3	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2024	4	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2024	5	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2024	6	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2024	7	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	-2,445,676.233
2024	8	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2024	9	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2024	10	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2024	11	-38,366,247.544	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2024	12	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2025	1	0.000	68,448,442.345	0.000	-64,665,171.704	0.000	0.000	0.000
2025	2	0.000	0.000	62,253,427.558	-64,665,171.704	0.000	0.000	0.000
2025	3	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2025	4	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2025	5	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2025	6	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000

Indiana Michigan Power Company-Indiana
Long-Term Residential Energy Model Output

Year	Month	Nov	JanD06on	FebD06on	may13on	11-Sep	d1112	DJuly10on
2025	7	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	-2,445,676.233
2025	8	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2025	9	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2025	10	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2025	11	-38,366,247.544	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2025	12	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2026	1	0.000	68,448,442.345	0.000	-64,665,171.704	0.000	0.000	0.000
2026	2	0.000	0.000	62,253,427.558	-64,665,171.704	0.000	0.000	0.000
2026	3	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2026	4	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2026	5	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2026	6	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2026	7	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	-2,445,676.233
2026	8	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2026	9	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2026	10	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2026	11	-38,366,247.544	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2026	12	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2027	1	0.000	68,448,442.345	0.000	-64,665,171.704	0.000	0.000	0.000
2027	2	0.000	0.000	62,253,427.558	-64,665,171.704	0.000	0.000	0.000
2027	3	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2027	4	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2027	5	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2027	6	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2027	7	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	-2,445,676.233
2027	8	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2027	9	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2027	10	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2027	11	-38,366,247.544	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2027	12	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2028	1	0.000	68,448,442.345	0.000	-64,665,171.704	0.000	0.000	0.000
2028	2	0.000	0.000	62,253,427.558	-64,665,171.704	0.000	0.000	0.000
2028	3	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000

Indiana Michigan Power Company-Indiana
Long-Term Residential Energy Model Output

Year	Month	Nov	JanD06on	FebD06on	may13on	11-Sep	d1112	DJuly10on
2028	4	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2028	5	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2028	6	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2028	7	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	-2,445,676.233
2028	8	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2028	9	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2028	10	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2028	11	-38,366,247.544	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2028	12	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2029	1	0.000	68,448,442.345	0.000	-64,665,171.704	0.000	0.000	0.000
2029	2	0.000	0.000	62,253,427.558	-64,665,171.704	0.000	0.000	0.000
2029	3	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2029	4	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2029	5	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2029	6	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2029	7	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	-2,445,676.233
2029	8	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2029	9	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2029	10	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2029	11	-38,366,247.544	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2029	12	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2030	1	0.000	68,448,442.345	0.000	-64,665,171.704	0.000	0.000	0.000
2030	2	0.000	0.000	62,253,427.558	-64,665,171.704	0.000	0.000	0.000
2030	3	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2030	4	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2030	5	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2030	6	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2030	7	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	-2,445,676.233
2030	8	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2030	9	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2030	10	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2030	11	-38,366,247.544	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2030	12	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000

Indiana Michigan Power Company-Indiana
Long-Term Residential Energy Model Output

Year	Month	Nov	JanD06on	FebD06on	may13on	11-Sep	d1112	DJuly10on
2031	1	0.000	68,448,442.345	0.000	-64,665,171.704	0.000	0.000	0.000
2031	2	0.000	0.000	62,253,427.558	-64,665,171.704	0.000	0.000	0.000
2031	3	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2031	4	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2031	5	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2031	6	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2031	7	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	-2,445,676.233
2031	8	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2031	9	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2031	10	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2031	11	-38,366,247.544	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2031	12	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2032	1	0.000	68,448,442.345	0.000	-64,665,171.704	0.000	0.000	0.000
2032	2	0.000	0.000	62,253,427.558	-64,665,171.704	0.000	0.000	0.000
2032	3	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2032	4	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2032	5	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2032	6	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2032	7	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	-2,445,676.233
2032	8	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2032	9	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2032	10	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2032	11	-38,366,247.544	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2032	12	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2033	1	0.000	68,448,442.345	0.000	-64,665,171.704	0.000	0.000	0.000
2033	2	0.000	0.000	62,253,427.558	-64,665,171.704	0.000	0.000	0.000
2033	3	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2033	4	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2033	5	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2033	6	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2033	7	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	-2,445,676.233
2033	8	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2033	9	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000

Indiana Michigan Power Company-Indiana
Long-Term Residential Energy Model Output

Year	Month	Nov	JanD06on	FebD06on	may13on	11-Sep	d1112	DJuly10on
2033	10	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2033	11	-38,366,247.544	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2033	12	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2034	1	0.000	68,448,442.345	0.000	-64,665,171.704	0.000	0.000	0.000
2034	2	0.000	0.000	62,253,427.558	-64,665,171.704	0.000	0.000	0.000
2034	3	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2034	4	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2034	5	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2034	6	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2034	7	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	-2,445,676.233
2034	8	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2034	9	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2034	10	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2034	11	-38,366,247.544	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2034	12	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2035	1	0.000	68,448,442.345	0.000	-64,665,171.704	0.000	0.000	0.000
2035	2	0.000	0.000	62,253,427.558	-64,665,171.704	0.000	0.000	0.000
2035	3	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2035	4	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2035	5	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2035	6	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2035	7	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	-2,445,676.233
2035	8	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2035	9	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2035	10	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2035	11	-38,366,247.544	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2035	12	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2036	1	0.000	68,448,442.345	0.000	-64,665,171.704	0.000	0.000	0.000
2036	2	0.000	0.000	62,253,427.558	-64,665,171.704	0.000	0.000	0.000
2036	3	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2036	4	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2036	5	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2036	6	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000

Indiana Michigan Power Company-Indiana
Long-Term Residential Energy Model Output

Year	Month	Nov	JanD06on	FebD06on	may13on	11-Sep	d1112	DJuly10on
2036	7	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	-2,445,676.233
2036	8	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2036	9	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2036	10	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2036	11	-38,366,247.544	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2036	12	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2037	1	0.000	68,448,442.345	0.000	-64,665,171.704	0.000	0.000	0.000
2037	2	0.000	0.000	62,253,427.558	-64,665,171.704	0.000	0.000	0.000
2037	3	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2037	4	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2037	5	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2037	6	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2037	7	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	-2,445,676.233
2037	8	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2037	9	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2037	10	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2037	11	-38,366,247.544	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2037	12	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2038	1	0.000	68,448,442.345	0.000	-64,665,171.704	0.000	0.000	0.000
2038	2	0.000	0.000	62,253,427.558	-64,665,171.704	0.000	0.000	0.000
2038	3	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2038	4	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2038	5	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2038	6	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2038	7	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	-2,445,676.233
2038	8	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2038	9	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2038	10	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2038	11	-38,366,247.544	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2038	12	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2039	1	0.000	68,448,442.345	0.000	-64,665,171.704	0.000	0.000	0.000
2039	2	0.000	0.000	62,253,427.558	-64,665,171.704	0.000	0.000	0.000
2039	3	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000

Indiana Michigan Power Company-Indiana
Long-Term Residential Energy Model Output

Year	Month	Nov	JanD06on	FebD06on	may13on	11-Sep	d1112	DJuly10on
2039	4	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2039	5	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2039	6	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2039	7	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	-2,445,676.233
2039	8	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2039	9	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2039	10	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2039	11	-38,366,247.544	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2039	12	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2040	1	0.000	68,448,442.345	0.000	-64,665,171.704	0.000	0.000	0.000
2040	2	0.000	0.000	62,253,427.558	-64,665,171.704	0.000	0.000	0.000
2040	3	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2040	4	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2040	5	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2040	6	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2040	7	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	-2,445,676.233
2040	8	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2040	9	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2040	10	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2040	11	-38,366,247.544	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2040	12	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2041	1	0.000	68,448,442.345	0.000	-64,665,171.704	0.000	0.000	0.000
2041	2	0.000	0.000	62,253,427.558	-64,665,171.704	0.000	0.000	0.000
2041	3	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2041	4	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2041	5	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2041	6	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2041	7	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	-2,445,676.233
2041	8	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2041	9	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2041	10	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2041	11	-38,366,247.544	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2041	12	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000

Indiana Michigan Power Company-Indiana
Long-Term Residential Energy Model Output

Year	Month	Nov	JanD06on	FebD06on	may13on	11-Sep	d1112	DJuly10on
2042	1	0.000	68,448,442.345	0.000	-64,665,171.704	0.000	0.000	0.000
2042	2	0.000	0.000	62,253,427.558	-64,665,171.704	0.000	0.000	0.000
2042	3	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2042	4	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2042	5	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2042	6	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2042	7	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	-2,445,676.233
2042	8	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2042	9	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2042	10	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2042	11	-38,366,247.544	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2042	12	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2043	1	0.000	68,448,442.345	0.000	-64,665,171.704	0.000	0.000	0.000
2043	2	0.000	0.000	62,253,427.558	-64,665,171.704	0.000	0.000	0.000
2043	3	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2043	4	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2043	5	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2043	6	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2043	7	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	-2,445,676.233
2043	8	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2043	9	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2043	10	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2043	11	-38,366,247.544	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2043	12	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2044	1	0.000	68,448,442.345	0.000	-64,665,171.704	0.000	0.000	0.000
2044	2	0.000	0.000	62,253,427.558	-64,665,171.704	0.000	0.000	0.000
2044	3	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2044	4	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2044	5	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2044	6	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2044	7	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	-2,445,676.233
2044	8	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2044	9	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000

Indiana Michigan Power Company-Indiana
Long-Term Residential Energy Model Output

Year	Month	Nov	JanD06on	FebD06on	may13on	11-Sep	d1112	DJuly10on
2044	10	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2044	11	-38,366,247.544	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2044	12	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2045	1	0.000	68,448,442.345	0.000	-64,665,171.704	0.000	0.000	0.000
2045	2	0.000	0.000	62,253,427.558	-64,665,171.704	0.000	0.000	0.000
2045	3	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2045	4	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2045	5	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2045	6	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2045	7	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	-2,445,676.233
2045	8	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2045	9	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2045	10	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2045	11	-38,366,247.544	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2045	12	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2046	1	0.000	68,448,442.345	0.000	-64,665,171.704	0.000	0.000	0.000
2046	2	0.000	0.000	62,253,427.558	-64,665,171.704	0.000	0.000	0.000
2046	3	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2046	4	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2046	5	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2046	6	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2046	7	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	-2,445,676.233
2046	8	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2046	9	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2046	10	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2046	11	-38,366,247.544	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2046	12	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2047	1	0.000	68,448,442.345	0.000	-64,665,171.704	0.000	0.000	0.000
2047	2	0.000	0.000	62,253,427.558	-64,665,171.704	0.000	0.000	0.000
2047	3	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2047	4	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2047	5	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2047	6	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000

Indiana Michigan Power Company-Indiana
Long-Term Residential Energy Model Output

Year	Month	Nov	JanD06on	FebD06on	may13on	11-Sep	d1112	DJuly10on
2047	7	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	-2,445,676.233
2047	8	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2047	9	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2047	10	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2047	11	-38,366,247.544	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2047	12	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2048	1	0.000	68,448,442.345	0.000	-64,665,171.704	0.000	0.000	0.000
2048	2	0.000	0.000	62,253,427.558	-64,665,171.704	0.000	0.000	0.000
2048	3	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2048	4	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2048	5	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2048	6	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2048	7	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	-2,445,676.233
2048	8	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2048	9	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2048	10	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2048	11	-38,366,247.544	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2048	12	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2049	1	0.000	68,448,442.345	0.000	-64,665,171.704	0.000	0.000	0.000
2049	2	0.000	0.000	62,253,427.558	-64,665,171.704	0.000	0.000	0.000
2049	3	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2049	4	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2049	5	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2049	6	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2049	7	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	-2,445,676.233
2049	8	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2049	9	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2049	10	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2049	11	-38,366,247.544	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2049	12	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2050	1	0.000	68,448,442.345	0.000	-64,665,171.704	0.000	0.000	0.000
2050	2	0.000	0.000	62,253,427.558	-64,665,171.704	0.000	0.000	0.000
2050	3	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000

Indiana Michigan Power Company-Indiana
Long-Term Residential Energy Model Output

Year	Month	Nov	JanD06on	FebD06on	may13on	11-Sep	d1112	DJuly10on
2050	4	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2050	5	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2050	6	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2050	7	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	-2,445,676.233
2050	8	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2050	9	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2050	10	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2050	11	-38,366,247.544	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2050	12	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2051	1	0.000	68,448,442.345	0.000	-64,665,171.704	0.000	0.000	0.000
2051	2	0.000	0.000	62,253,427.558	-64,665,171.704	0.000	0.000	0.000
2051	3	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2051	4	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2051	5	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2051	6	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2051	7	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	-2,445,676.233
2051	8	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2051	9	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2051	10	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2051	11	-38,366,247.544	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2051	12	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2052	1	0.000	68,448,442.345	0.000	-64,665,171.704	0.000	0.000	0.000
2052	2	0.000	0.000	62,253,427.558	-64,665,171.704	0.000	0.000	0.000
2052	3	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2052	4	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2052	5	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2052	6	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2052	7	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	-2,445,676.233
2052	8	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2052	9	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2052	10	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2052	11	-38,366,247.544	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2052	12	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000

Indiana Michigan Power Company-Indiana
Long-Term Residential Energy Model Output

Year	Month	Nov	JanD06on	FebD06on	may13on	11-Sep	d1112	DJuly10on
2053	1	0.000	68,448,442.345	0.000	-64,665,171.704	0.000	0.000	0.000
2053	2	0.000	0.000	62,253,427.558	-64,665,171.704	0.000	0.000	0.000
2053	3	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2053	4	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2053	5	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2053	6	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2053	7	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	-2,445,676.233
2053	8	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2053	9	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2053	10	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2053	11	-38,366,247.544	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2053	12	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2054	1	0.000	68,448,442.345	0.000	-64,665,171.704	0.000	0.000	0.000
2054	2	0.000	0.000	62,253,427.558	-64,665,171.704	0.000	0.000	0.000
2054	3	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2054	4	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2054	5	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2054	6	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2054	7	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	-2,445,676.233
2054	8	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2054	9	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2054	10	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2054	11	-38,366,247.544	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2054	12	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2055	1	0.000	68,448,442.345	0.000	-64,665,171.704	0.000	0.000	0.000
2055	2	0.000	0.000	62,253,427.558	-64,665,171.704	0.000	0.000	0.000
2055	3	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2055	4	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2055	5	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2055	6	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2055	7	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	-2,445,676.233
2055	8	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2055	9	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000

Indiana Michigan Power Company-Indiana
Long-Term Residential Energy Model Output

Year	Month	Nov	JanD06on	FebD06on	may13on	11-Sep	d1112	DJuly10on
2055	10	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2055	11	-38,366,247.544	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2055	12	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2056	1	0.000	68,448,442.345	0.000	-64,665,171.704	0.000	0.000	0.000
2056	2	0.000	0.000	62,253,427.558	-64,665,171.704	0.000	0.000	0.000
2056	3	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2056	4	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2056	5	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2056	6	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2056	7	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	-2,445,676.233
2056	8	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2056	9	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2056	10	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2056	11	-38,366,247.544	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2056	12	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2057	1	0.000	68,448,442.345	0.000	-64,665,171.704	0.000	0.000	0.000
2057	2	0.000	0.000	62,253,427.558	-64,665,171.704	0.000	0.000	0.000
2057	3	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2057	4	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2057	5	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2057	6	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2057	7	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	-2,445,676.233
2057	8	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2057	9	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2057	10	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2057	11	-38,366,247.544	0.000	0.000	-64,665,171.704	0.000	0.000	0.000
2057	12	0.000	0.000	0.000	-64,665,171.704	0.000	0.000	0.000

Indiana Michigan Power Company-Indiana
Long-Term Residential Energy Model Output

Year	Month	D19onjan	nov16on	NovD16on	DecD16on	D16onJan	d15onjan	d2020on
1998	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1998	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1998	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1998	4	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1998	5	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1998	6	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1998	7	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1998	8	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1998	9	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1998	10	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1998	11	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1998	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1999	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1999	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1999	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1999	4	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1999	5	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1999	6	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1999	7	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1999	8	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1999	9	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1999	10	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1999	11	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1999	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2000	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2000	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2000	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2000	4	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2000	5	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2000	6	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2000	7	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2000	8	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2000	9	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Indiana Michigan Power Company-Indiana
Long-Term Residential Energy Model Output

Year	Month	D19onjan	nov16on	NovD16on	DecD16on	D16onJan	d15onjan	d2020on
2000	10	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2000	11	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2000	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2001	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2001	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2001	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2001	4	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2001	5	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2001	6	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2001	7	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2001	8	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2001	9	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2001	10	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2001	11	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2001	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2002	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2002	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2002	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2002	4	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2002	5	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2002	6	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2002	7	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2002	8	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2002	9	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2002	10	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2002	11	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2002	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2003	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2003	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2003	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2003	4	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2003	5	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2003	6	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Indiana Michigan Power Company-Indiana
Long-Term Residential Energy Model Output

Year	Month	D19onjan	nov16on	NovD16on	DecD16on	D16onJan	d15onjan	d2020on
2003	7	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2003	8	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2003	9	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2003	10	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2003	11	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2003	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2004	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2004	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2004	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2004	4	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2004	5	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2004	6	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2004	7	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2004	8	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2004	9	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2004	10	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2004	11	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2004	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2005	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2005	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2005	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2005	4	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2005	5	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2005	6	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2005	7	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2005	8	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2005	9	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2005	10	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2005	11	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2005	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2006	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2006	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2006	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Indiana Michigan Power Company-Indiana
Long-Term Residential Energy Model Output

Year	Month	D19onjan	nov16on	NovD16on	DecD16on	D16onJan	d15onjan	d2020on
2006	4	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2006	5	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2006	6	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2006	7	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2006	8	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2006	9	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2006	10	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2006	11	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2006	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2007	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2007	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2007	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2007	4	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2007	5	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2007	6	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2007	7	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2007	8	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2007	9	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2007	10	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2007	11	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2007	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2008	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2008	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2008	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2008	4	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2008	5	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2008	6	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2008	7	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2008	8	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2008	9	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2008	10	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2008	11	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2008	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Indiana Michigan Power Company-Indiana
Long-Term Residential Energy Model Output

Year	Month	D19onjan	nov16on	NovD16on	DecD16on	D16onJan	d15onjan	d2020on
2009	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2009	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2009	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2009	4	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2009	5	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2009	6	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2009	7	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2009	8	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2009	9	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2009	10	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2009	11	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2009	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2010	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2010	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2010	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2010	4	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2010	5	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2010	6	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2010	7	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2010	8	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2010	9	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2010	10	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2010	11	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2010	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2011	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2011	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2011	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2011	4	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2011	5	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2011	6	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2011	7	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2011	8	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2011	9	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Indiana Michigan Power Company-Indiana
Long-Term Residential Energy Model Output

Year	Month	D19onjan	nov16on	NovD16on	DecD16on	D16onJan	d15onjan	d2020on
2011	10	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2011	11	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2011	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2012	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2012	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2012	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2012	4	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2012	5	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2012	6	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2012	7	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2012	8	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2012	9	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2012	10	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2012	11	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2012	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2013	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2013	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2013	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2013	4	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2013	5	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2013	6	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2013	7	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2013	8	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2013	9	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2013	10	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2013	11	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2013	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2014	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2014	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2014	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2014	4	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2014	5	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2014	6	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Indiana Michigan Power Company-Indiana
Long-Term Residential Energy Model Output

Year	Month	D19onjan	nov16on	NovD16on	DecD16on	D16onJan	d15onjan	d2020on
2014	7	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2014	8	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2014	9	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2014	10	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2014	11	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2014	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2015	1	0.000	0.000	0.000	0.000	0.000	-36,555,156.980	0.000
2015	2	0.000	0.000	0.000	0.000	0.000	-36,555,156.980	0.000
2015	3	0.000	0.000	0.000	0.000	0.000	-36,555,156.980	0.000
2015	4	0.000	0.000	0.000	0.000	0.000	-36,555,156.980	0.000
2015	5	0.000	0.000	0.000	0.000	0.000	-36,555,156.980	0.000
2015	6	0.000	0.000	0.000	0.000	0.000	-36,555,156.980	0.000
2015	7	0.000	0.000	0.000	0.000	0.000	-36,555,156.980	0.000
2015	8	0.000	0.000	0.000	0.000	0.000	-36,555,156.980	0.000
2015	9	0.000	0.000	0.000	0.000	0.000	-36,555,156.980	0.000
2015	10	0.000	0.000	0.000	0.000	0.000	-36,555,156.980	0.000
2015	11	0.000	0.000	0.000	0.000	0.000	-36,555,156.980	0.000
2015	12	0.000	0.000	0.000	0.000	0.000	-36,555,156.980	0.000
2016	1	0.000	0.000	0.000	0.000	-51,085,811.564	-36,555,156.980	0.000
2016	2	0.000	0.000	0.000	0.000	0.000	-36,555,156.980	0.000
2016	3	0.000	0.000	0.000	0.000	0.000	-36,555,156.980	0.000
2016	4	0.000	0.000	0.000	0.000	0.000	-36,555,156.980	0.000
2016	5	0.000	0.000	0.000	0.000	0.000	-36,555,156.980	0.000
2016	6	0.000	0.000	0.000	0.000	0.000	-36,555,156.980	0.000
2016	7	0.000	0.000	0.000	0.000	0.000	-36,555,156.980	0.000
2016	8	0.000	0.000	0.000	0.000	0.000	-36,555,156.980	0.000
2016	9	0.000	0.000	0.000	0.000	0.000	-36,555,156.980	0.000
2016	10	0.000	0.000	0.000	0.000	0.000	-36,555,156.980	0.000
2016	11	0.000	-17,316,023.933	-23,527,117.029	0.000	0.000	-36,555,156.980	0.000
2016	12	0.000	-17,316,023.933	0.000	-27,275,412.793	0.000	-36,555,156.980	0.000
2017	1	0.000	-17,316,023.933	0.000	0.000	-51,085,811.564	-36,555,156.980	0.000
2017	2	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	0.000
2017	3	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	0.000

Indiana Michigan Power Company-Indiana
Long-Term Residential Energy Model Output

Year	Month	D19onjan	nov16on	NovD16on	DecD16on	D16onJan	d15onjan	d2020on
2017	4	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	0.000
2017	5	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	0.000
2017	6	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	0.000
2017	7	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	0.000
2017	8	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	0.000
2017	9	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	0.000
2017	10	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	0.000
2017	11	0.000	-17,316,023.933	-23,527,117.029	0.000	0.000	-36,555,156.980	0.000
2017	12	0.000	-17,316,023.933	0.000	-27,275,412.793	0.000	-36,555,156.980	0.000
2018	1	0.000	-17,316,023.933	0.000	0.000	-51,085,811.564	-36,555,156.980	0.000
2018	2	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	0.000
2018	3	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	0.000
2018	4	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	0.000
2018	5	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	0.000
2018	6	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	0.000
2018	7	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	0.000
2018	8	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	0.000
2018	9	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	0.000
2018	10	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	0.000
2018	11	0.000	-17,316,023.933	-23,527,117.029	0.000	0.000	-36,555,156.980	0.000
2018	12	0.000	-17,316,023.933	0.000	-27,275,412.793	0.000	-36,555,156.980	0.000
2019	1	-25,671,029.702	-17,316,023.933	0.000	0.000	-51,085,811.564	-36,555,156.980	0.000
2019	2	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	0.000
2019	3	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	0.000
2019	4	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	0.000
2019	5	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	0.000
2019	6	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	0.000
2019	7	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	0.000
2019	8	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	0.000
2019	9	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	0.000
2019	10	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	0.000
2019	11	0.000	-17,316,023.933	-23,527,117.029	0.000	0.000	-36,555,156.980	0.000
2019	12	0.000	-17,316,023.933	0.000	-27,275,412.793	0.000	-36,555,156.980	0.000

Indiana Michigan Power Company-Indiana
Long-Term Residential Energy Model Output

Year	Month	D19onjan	nov16on	NovD16on	DecD16on	D16onJan	d15onjan	d2020on
2020	1	-25,671,029.702	-17,316,023.933	0.000	0.000	-51,085,811.564	-36,555,156.980	19,835,337.085
2020	2	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2020	3	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2020	4	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2020	5	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2020	6	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2020	7	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2020	8	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2020	9	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2020	10	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2020	11	0.000	-17,316,023.933	-23,527,117.029	0.000	0.000	-36,555,156.980	19,835,337.085
2020	12	0.000	-17,316,023.933	0.000	-27,275,412.793	0.000	-36,555,156.980	19,835,337.085
2021	1	-25,671,029.702	-17,316,023.933	0.000	0.000	-51,085,811.564	-36,555,156.980	19,835,337.085
2021	2	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2021	3	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2021	4	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2021	5	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2021	6	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2021	7	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2021	8	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2021	9	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2021	10	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2021	11	0.000	-17,316,023.933	-23,527,117.029	0.000	0.000	-36,555,156.980	19,835,337.085
2021	12	0.000	-17,316,023.933	0.000	-27,275,412.793	0.000	-36,555,156.980	19,835,337.085
2022	1	-25,671,029.702	-17,316,023.933	0.000	0.000	-51,085,811.564	-36,555,156.980	19,835,337.085
2022	2	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2022	3	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2022	4	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2022	5	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2022	6	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2022	7	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2022	8	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2022	9	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085

Indiana Michigan Power Company-Indiana
Long-Term Residential Energy Model Output

Year	Month	D19onjan	nov16on	NovD16on	DecD16on	D16onJan	d15onjan	d2020on
2022	10	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2022	11	0.000	-17,316,023.933	-23,527,117.029	0.000	0.000	-36,555,156.980	19,835,337.085
2022	12	0.000	-17,316,023.933	0.000	-27,275,412.793	0.000	-36,555,156.980	19,835,337.085
2023	1	-25,671,029.702	-17,316,023.933	0.000	0.000	-51,085,811.564	-36,555,156.980	19,835,337.085
2023	2	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2023	3	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2023	4	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2023	5	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2023	6	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2023	7	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2023	8	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2023	9	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2023	10	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2023	11	0.000	-17,316,023.933	-23,527,117.029	0.000	0.000	-36,555,156.980	19,835,337.085
2023	12	0.000	-17,316,023.933	0.000	-27,275,412.793	0.000	-36,555,156.980	19,835,337.085
2024	1	-25,671,029.702	-17,316,023.933	0.000	0.000	-51,085,811.564	-36,555,156.980	19,835,337.085
2024	2	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2024	3	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2024	4	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2024	5	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2024	6	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2024	7	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2024	8	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2024	9	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2024	10	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2024	11	0.000	-17,316,023.933	-23,527,117.029	0.000	0.000	-36,555,156.980	19,835,337.085
2024	12	0.000	-17,316,023.933	0.000	-27,275,412.793	0.000	-36,555,156.980	19,835,337.085
2025	1	-25,671,029.702	-17,316,023.933	0.000	0.000	-51,085,811.564	-36,555,156.980	19,835,337.085
2025	2	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2025	3	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2025	4	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2025	5	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2025	6	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085

Indiana Michigan Power Company-Indiana
Long-Term Residential Energy Model Output

Year	Month	D19onjan	nov16on	NovD16on	DecD16on	D16onJan	d15onjan	d2020on
2025	7	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2025	8	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2025	9	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2025	10	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2025	11	0.000	-17,316,023.933	-23,527,117.029	0.000	0.000	-36,555,156.980	19,835,337.085
2025	12	0.000	-17,316,023.933	0.000	-27,275,412.793	0.000	-36,555,156.980	19,835,337.085
2026	1	-25,671,029.702	-17,316,023.933	0.000	0.000	-51,085,811.564	-36,555,156.980	19,835,337.085
2026	2	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2026	3	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2026	4	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2026	5	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2026	6	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2026	7	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2026	8	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2026	9	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2026	10	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2026	11	0.000	-17,316,023.933	-23,527,117.029	0.000	0.000	-36,555,156.980	19,835,337.085
2026	12	0.000	-17,316,023.933	0.000	-27,275,412.793	0.000	-36,555,156.980	19,835,337.085
2027	1	-25,671,029.702	-17,316,023.933	0.000	0.000	-51,085,811.564	-36,555,156.980	19,835,337.085
2027	2	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2027	3	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2027	4	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2027	5	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2027	6	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2027	7	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2027	8	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2027	9	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2027	10	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2027	11	0.000	-17,316,023.933	-23,527,117.029	0.000	0.000	-36,555,156.980	19,835,337.085
2027	12	0.000	-17,316,023.933	0.000	-27,275,412.793	0.000	-36,555,156.980	19,835,337.085
2028	1	-25,671,029.702	-17,316,023.933	0.000	0.000	-51,085,811.564	-36,555,156.980	19,835,337.085
2028	2	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2028	3	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085

Indiana Michigan Power Company-Indiana
Long-Term Residential Energy Model Output

Year	Month	D19onjan	nov16on	NovD16on	DecD16on	D16onJan	d15onjan	d2020on
2028	4	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2028	5	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2028	6	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2028	7	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2028	8	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2028	9	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2028	10	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2028	11	0.000	-17,316,023.933	-23,527,117.029	0.000	0.000	-36,555,156.980	19,835,337.085
2028	12	0.000	-17,316,023.933	0.000	-27,275,412.793	0.000	-36,555,156.980	19,835,337.085
2029	1	-25,671,029.702	-17,316,023.933	0.000	0.000	-51,085,811.564	-36,555,156.980	19,835,337.085
2029	2	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2029	3	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2029	4	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2029	5	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2029	6	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2029	7	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2029	8	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2029	9	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2029	10	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2029	11	0.000	-17,316,023.933	-23,527,117.029	0.000	0.000	-36,555,156.980	19,835,337.085
2029	12	0.000	-17,316,023.933	0.000	-27,275,412.793	0.000	-36,555,156.980	19,835,337.085
2030	1	-25,671,029.702	-17,316,023.933	0.000	0.000	-51,085,811.564	-36,555,156.980	19,835,337.085
2030	2	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2030	3	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2030	4	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2030	5	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2030	6	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2030	7	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2030	8	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2030	9	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2030	10	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2030	11	0.000	-17,316,023.933	-23,527,117.029	0.000	0.000	-36,555,156.980	19,835,337.085
2030	12	0.000	-17,316,023.933	0.000	-27,275,412.793	0.000	-36,555,156.980	19,835,337.085

Indiana Michigan Power Company-Indiana
Long-Term Residential Energy Model Output

Year	Month	D19onjan	nov16on	NovD16on	DecD16on	D16onJan	d15onjan	d2020on
2031	1	-25,671,029.702	-17,316,023.933	0.000	0.000	-51,085,811.564	-36,555,156.980	19,835,337.085
2031	2	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2031	3	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2031	4	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2031	5	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2031	6	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2031	7	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2031	8	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2031	9	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2031	10	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2031	11	0.000	-17,316,023.933	-23,527,117.029	0.000	0.000	-36,555,156.980	19,835,337.085
2031	12	0.000	-17,316,023.933	0.000	-27,275,412.793	0.000	-36,555,156.980	19,835,337.085
2032	1	-25,671,029.702	-17,316,023.933	0.000	0.000	-51,085,811.564	-36,555,156.980	19,835,337.085
2032	2	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2032	3	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2032	4	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2032	5	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2032	6	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2032	7	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2032	8	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2032	9	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2032	10	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2032	11	0.000	-17,316,023.933	-23,527,117.029	0.000	0.000	-36,555,156.980	19,835,337.085
2032	12	0.000	-17,316,023.933	0.000	-27,275,412.793	0.000	-36,555,156.980	19,835,337.085
2033	1	-25,671,029.702	-17,316,023.933	0.000	0.000	-51,085,811.564	-36,555,156.980	19,835,337.085
2033	2	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2033	3	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2033	4	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2033	5	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2033	6	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2033	7	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2033	8	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2033	9	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085

Indiana Michigan Power Company-Indiana
Long-Term Residential Energy Model Output

Year	Month	D19onjan	nov16on	NovD16on	DecD16on	D16onJan	d15onjan	d2020on
2033	10	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2033	11	0.000	-17,316,023.933	-23,527,117.029	0.000	0.000	-36,555,156.980	19,835,337.085
2033	12	0.000	-17,316,023.933	0.000	-27,275,412.793	0.000	-36,555,156.980	19,835,337.085
2034	1	-25,671,029.702	-17,316,023.933	0.000	0.000	-51,085,811.564	-36,555,156.980	19,835,337.085
2034	2	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2034	3	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2034	4	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2034	5	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2034	6	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2034	7	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2034	8	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2034	9	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2034	10	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2034	11	0.000	-17,316,023.933	-23,527,117.029	0.000	0.000	-36,555,156.980	19,835,337.085
2034	12	0.000	-17,316,023.933	0.000	-27,275,412.793	0.000	-36,555,156.980	19,835,337.085
2035	1	-25,671,029.702	-17,316,023.933	0.000	0.000	-51,085,811.564	-36,555,156.980	19,835,337.085
2035	2	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2035	3	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2035	4	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2035	5	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2035	6	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2035	7	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2035	8	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2035	9	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2035	10	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2035	11	0.000	-17,316,023.933	-23,527,117.029	0.000	0.000	-36,555,156.980	19,835,337.085
2035	12	0.000	-17,316,023.933	0.000	-27,275,412.793	0.000	-36,555,156.980	19,835,337.085
2036	1	-25,671,029.702	-17,316,023.933	0.000	0.000	-51,085,811.564	-36,555,156.980	19,835,337.085
2036	2	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2036	3	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2036	4	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2036	5	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2036	6	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085

Indiana Michigan Power Company-Indiana
Long-Term Residential Energy Model Output

Year	Month	D19onjan	nov16on	NovD16on	DecD16on	D16onJan	d15onjan	d2020on
2036	7	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2036	8	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2036	9	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2036	10	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2036	11	0.000	-17,316,023.933	-23,527,117.029	0.000	0.000	-36,555,156.980	19,835,337.085
2036	12	0.000	-17,316,023.933	0.000	-27,275,412.793	0.000	-36,555,156.980	19,835,337.085
2037	1	-25,671,029.702	-17,316,023.933	0.000	0.000	-51,085,811.564	-36,555,156.980	19,835,337.085
2037	2	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2037	3	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2037	4	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2037	5	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2037	6	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2037	7	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2037	8	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2037	9	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2037	10	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2037	11	0.000	-17,316,023.933	-23,527,117.029	0.000	0.000	-36,555,156.980	19,835,337.085
2037	12	0.000	-17,316,023.933	0.000	-27,275,412.793	0.000	-36,555,156.980	19,835,337.085
2038	1	-25,671,029.702	-17,316,023.933	0.000	0.000	-51,085,811.564	-36,555,156.980	19,835,337.085
2038	2	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2038	3	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2038	4	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2038	5	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2038	6	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2038	7	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2038	8	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2038	9	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2038	10	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2038	11	0.000	-17,316,023.933	-23,527,117.029	0.000	0.000	-36,555,156.980	19,835,337.085
2038	12	0.000	-17,316,023.933	0.000	-27,275,412.793	0.000	-36,555,156.980	19,835,337.085
2039	1	-25,671,029.702	-17,316,023.933	0.000	0.000	-51,085,811.564	-36,555,156.980	19,835,337.085
2039	2	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2039	3	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085

Indiana Michigan Power Company-Indiana
Long-Term Residential Energy Model Output

Year	Month	D19onjan	nov16on	NovD16on	DecD16on	D16onJan	d15onjan	d2020on
2039	4	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2039	5	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2039	6	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2039	7	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2039	8	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2039	9	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2039	10	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2039	11	0.000	-17,316,023.933	-23,527,117.029	0.000	0.000	-36,555,156.980	19,835,337.085
2039	12	0.000	-17,316,023.933	0.000	-27,275,412.793	0.000	-36,555,156.980	19,835,337.085
2040	1	-25,671,029.702	-17,316,023.933	0.000	0.000	-51,085,811.564	-36,555,156.980	19,835,337.085
2040	2	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2040	3	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2040	4	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2040	5	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2040	6	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2040	7	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2040	8	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2040	9	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2040	10	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2040	11	0.000	-17,316,023.933	-23,527,117.029	0.000	0.000	-36,555,156.980	19,835,337.085
2040	12	0.000	-17,316,023.933	0.000	-27,275,412.793	0.000	-36,555,156.980	19,835,337.085
2041	1	-25,671,029.702	-17,316,023.933	0.000	0.000	-51,085,811.564	-36,555,156.980	19,835,337.085
2041	2	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2041	3	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2041	4	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2041	5	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2041	6	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2041	7	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2041	8	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2041	9	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2041	10	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2041	11	0.000	-17,316,023.933	-23,527,117.029	0.000	0.000	-36,555,156.980	19,835,337.085
2041	12	0.000	-17,316,023.933	0.000	-27,275,412.793	0.000	-36,555,156.980	19,835,337.085

Indiana Michigan Power Company-Indiana
Long-Term Residential Energy Model Output

Year	Month	D19onjan	nov16on	NovD16on	DecD16on	D16onJan	d15onjan	d2020on
2042	1	-25,671,029.702	-17,316,023.933	0.000	0.000	-51,085,811.564	-36,555,156.980	19,835,337.085
2042	2	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2042	3	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2042	4	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2042	5	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2042	6	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2042	7	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2042	8	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2042	9	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2042	10	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2042	11	0.000	-17,316,023.933	-23,527,117.029	0.000	0.000	-36,555,156.980	19,835,337.085
2042	12	0.000	-17,316,023.933	0.000	-27,275,412.793	0.000	-36,555,156.980	19,835,337.085
2043	1	-25,671,029.702	-17,316,023.933	0.000	0.000	-51,085,811.564	-36,555,156.980	19,835,337.085
2043	2	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2043	3	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2043	4	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2043	5	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2043	6	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2043	7	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2043	8	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2043	9	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2043	10	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2043	11	0.000	-17,316,023.933	-23,527,117.029	0.000	0.000	-36,555,156.980	19,835,337.085
2043	12	0.000	-17,316,023.933	0.000	-27,275,412.793	0.000	-36,555,156.980	19,835,337.085
2044	1	-25,671,029.702	-17,316,023.933	0.000	0.000	-51,085,811.564	-36,555,156.980	19,835,337.085
2044	2	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2044	3	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2044	4	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2044	5	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2044	6	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2044	7	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2044	8	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2044	9	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085

Indiana Michigan Power Company-Indiana
Long-Term Residential Energy Model Output

Year	Month	D19onjan	nov16on	NovD16on	DecD16on	D16onJan	d15onjan	d2020on
2044	10	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2044	11	0.000	-17,316,023.933	-23,527,117.029	0.000	0.000	-36,555,156.980	19,835,337.085
2044	12	0.000	-17,316,023.933	0.000	-27,275,412.793	0.000	-36,555,156.980	19,835,337.085
2045	1	-25,671,029.702	-17,316,023.933	0.000	0.000	-51,085,811.564	-36,555,156.980	19,835,337.085
2045	2	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2045	3	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2045	4	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2045	5	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2045	6	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2045	7	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2045	8	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2045	9	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2045	10	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2045	11	0.000	-17,316,023.933	-23,527,117.029	0.000	0.000	-36,555,156.980	19,835,337.085
2045	12	0.000	-17,316,023.933	0.000	-27,275,412.793	0.000	-36,555,156.980	19,835,337.085
2046	1	-25,671,029.702	-17,316,023.933	0.000	0.000	-51,085,811.564	-36,555,156.980	19,835,337.085
2046	2	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2046	3	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2046	4	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2046	5	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2046	6	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2046	7	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2046	8	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2046	9	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2046	10	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2046	11	0.000	-17,316,023.933	-23,527,117.029	0.000	0.000	-36,555,156.980	19,835,337.085
2046	12	0.000	-17,316,023.933	0.000	-27,275,412.793	0.000	-36,555,156.980	19,835,337.085
2047	1	-25,671,029.702	-17,316,023.933	0.000	0.000	-51,085,811.564	-36,555,156.980	19,835,337.085
2047	2	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2047	3	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2047	4	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2047	5	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2047	6	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085

Indiana Michigan Power Company-Indiana
Long-Term Residential Energy Model Output

Year	Month	D19onjan	nov16on	NovD16on	DecD16on	D16onJan	d15onjan	d2020on
2047	7	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2047	8	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2047	9	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2047	10	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2047	11	0.000	-17,316,023.933	-23,527,117.029	0.000	0.000	-36,555,156.980	19,835,337.085
2047	12	0.000	-17,316,023.933	0.000	-27,275,412.793	0.000	-36,555,156.980	19,835,337.085
2048	1	-25,671,029.702	-17,316,023.933	0.000	0.000	-51,085,811.564	-36,555,156.980	19,835,337.085
2048	2	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2048	3	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2048	4	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2048	5	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2048	6	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2048	7	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2048	8	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2048	9	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2048	10	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2048	11	0.000	-17,316,023.933	-23,527,117.029	0.000	0.000	-36,555,156.980	19,835,337.085
2048	12	0.000	-17,316,023.933	0.000	-27,275,412.793	0.000	-36,555,156.980	19,835,337.085
2049	1	-25,671,029.702	-17,316,023.933	0.000	0.000	-51,085,811.564	-36,555,156.980	19,835,337.085
2049	2	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2049	3	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2049	4	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2049	5	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2049	6	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2049	7	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2049	8	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2049	9	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2049	10	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2049	11	0.000	-17,316,023.933	-23,527,117.029	0.000	0.000	-36,555,156.980	19,835,337.085
2049	12	0.000	-17,316,023.933	0.000	-27,275,412.793	0.000	-36,555,156.980	19,835,337.085
2050	1	-25,671,029.702	-17,316,023.933	0.000	0.000	-51,085,811.564	-36,555,156.980	19,835,337.085
2050	2	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2050	3	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085

Indiana Michigan Power Company-Indiana
Long-Term Residential Energy Model Output

Year	Month	D19onjan	nov16on	NovD16on	DecD16on	D16onJan	d15onjan	d2020on
2050	4	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2050	5	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2050	6	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2050	7	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2050	8	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2050	9	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2050	10	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2050	11	0.000	-17,316,023.933	-23,527,117.029	0.000	0.000	-36,555,156.980	19,835,337.085
2050	12	0.000	-17,316,023.933	0.000	-27,275,412.793	0.000	-36,555,156.980	19,835,337.085
2051	1	-25,671,029.702	-17,316,023.933	0.000	0.000	-51,085,811.564	-36,555,156.980	19,835,337.085
2051	2	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2051	3	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2051	4	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2051	5	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2051	6	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2051	7	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2051	8	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2051	9	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2051	10	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2051	11	0.000	-17,316,023.933	-23,527,117.029	0.000	0.000	-36,555,156.980	19,835,337.085
2051	12	0.000	-17,316,023.933	0.000	-27,275,412.793	0.000	-36,555,156.980	19,835,337.085
2052	1	-25,671,029.702	-17,316,023.933	0.000	0.000	-51,085,811.564	-36,555,156.980	19,835,337.085
2052	2	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2052	3	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2052	4	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2052	5	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2052	6	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2052	7	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2052	8	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2052	9	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2052	10	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2052	11	0.000	-17,316,023.933	-23,527,117.029	0.000	0.000	-36,555,156.980	19,835,337.085
2052	12	0.000	-17,316,023.933	0.000	-27,275,412.793	0.000	-36,555,156.980	19,835,337.085

Indiana Michigan Power Company-Indiana
Long-Term Residential Energy Model Output

Year	Month	D19onjan	nov16on	NovD16on	DecD16on	D16onJan	d15onjan	d2020on
2053	1	-25,671,029.702	-17,316,023.933	0.000	0.000	-51,085,811.564	-36,555,156.980	19,835,337.085
2053	2	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2053	3	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2053	4	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2053	5	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2053	6	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2053	7	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2053	8	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2053	9	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2053	10	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2053	11	0.000	-17,316,023.933	-23,527,117.029	0.000	0.000	-36,555,156.980	19,835,337.085
2053	12	0.000	-17,316,023.933	0.000	-27,275,412.793	0.000	-36,555,156.980	19,835,337.085
2054	1	-25,671,029.702	-17,316,023.933	0.000	0.000	-51,085,811.564	-36,555,156.980	19,835,337.085
2054	2	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2054	3	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2054	4	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2054	5	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2054	6	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2054	7	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2054	8	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2054	9	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2054	10	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2054	11	0.000	-17,316,023.933	-23,527,117.029	0.000	0.000	-36,555,156.980	19,835,337.085
2054	12	0.000	-17,316,023.933	0.000	-27,275,412.793	0.000	-36,555,156.980	19,835,337.085
2055	1	-25,671,029.702	-17,316,023.933	0.000	0.000	-51,085,811.564	-36,555,156.980	19,835,337.085
2055	2	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2055	3	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2055	4	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2055	5	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2055	6	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2055	7	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2055	8	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2055	9	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085

Indiana Michigan Power Company-Indiana
Long-Term Residential Energy Model Output

Year	Month	D19onjan	nov16on	NovD16on	DecD16on	D16onJan	d15onjan	d2020on
2055	10	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2055	11	0.000	-17,316,023.933	-23,527,117.029	0.000	0.000	-36,555,156.980	19,835,337.085
2055	12	0.000	-17,316,023.933	0.000	-27,275,412.793	0.000	-36,555,156.980	19,835,337.085
2056	1	-25,671,029.702	-17,316,023.933	0.000	0.000	-51,085,811.564	-36,555,156.980	19,835,337.085
2056	2	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2056	3	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2056	4	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2056	5	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2056	6	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2056	7	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2056	8	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2056	9	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2056	10	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2056	11	0.000	-17,316,023.933	-23,527,117.029	0.000	0.000	-36,555,156.980	19,835,337.085
2056	12	0.000	-17,316,023.933	0.000	-27,275,412.793	0.000	-36,555,156.980	19,835,337.085
2057	1	-25,671,029.702	-17,316,023.933	0.000	0.000	-51,085,811.564	-36,555,156.980	19,835,337.085
2057	2	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2057	3	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2057	4	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2057	5	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2057	6	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2057	7	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2057	8	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2057	9	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2057	10	0.000	-17,316,023.933	0.000	0.000	0.000	-36,555,156.980	19,835,337.085
2057	11	0.000	-17,316,023.933	-23,527,117.029	0.000	0.000	-36,555,156.980	19,835,337.085
2057	12	0.000	-17,316,023.933	0.000	-27,275,412.793	0.000	-36,555,156.980	19,835,337.085

Indiana Michigan Power Company-Indiana
Long-Term Residential Energy Model Output

Year	Month	X-Missing	Lighting Share	Lighting Usage	Heating Usage	Cooling Usage	Lighting Usage	Other Usage
1998	1	0.000	0.16141966	126,754,131.72	316,288,567.683	0.000	126,754,131.72	658,491,800.989
1998	2	0.000	0.16141966	98,508,623.20	321,593,919.909	0.000	98,508,623.20	511,755,473.578
1998	3	0.000	0.16141966	100,370,732.25	264,553,820.603	0.000	100,370,732.25	521,429,190.133
1998	4	0.000	0.16141966	97,633,302.99	166,415,656.911	6,078,241.123	97,633,302.99	507,208,156.883
1998	5	0.000	0.16141966	95,679,619.86	37,997,919.451	27,221,818.385	95,679,619.86	497,058,709.996
1998	6	0.000	0.16141966	101,724,924.52	2,097,566.854	160,170,338.168	101,724,924.52	528,464,262.629
1998	7	0.000	0.16141966	108,908,549.57	746,626.434	352,610,549.589	108,908,549.57	565,783,426.399
1998	8	0.000	0.16141966	108,882,298.03	0.000	280,517,989.993	108,882,298.03	565,647,048.772
1998	9	0.000	0.16141966	111,886,567.93	0.000	242,166,068.462	111,886,567.93	581,254,327.792
1998	10	0.000	0.16141966	99,598,693.97	10,462,386.135	119,931,558.762	99,598,693.97	517,418,426.378
1998	11	0.000	0.16141966	97,783,069.73	92,932,638.919	7,646,765.737	97,783,069.73	507,986,199.922
1998	12	0.000	0.16141966	120,198,773.14	166,334,828.041	0.000	120,198,773.14	624,436,501.832
1999	1	0.000	0.162671251	129,552,840.39	428,078,256.746	0.000	129,552,840.39	666,856,109.704
1999	2	0.000	0.162671251	100,949,854.34	363,143,529.208	0.000	100,949,854.34	519,626,022.389
1999	3	0.000	0.162671251	103,006,565.26	340,923,367.727	0.000	103,006,565.26	530,212,669.771
1999	4	0.000	0.162671251	100,311,534.78	200,620,437.805	0.000	100,311,534.78	516,340,356.846
1999	5	0.000	0.162671251	97,989,481.81	47,926,501.801	15,744,645.500	97,989,481.81	504,387,896.327
1999	6	0.000	0.162671251	103,986,630.78	2,693,138.875	159,484,071.357	103,986,630.78	535,257,427.431
1999	7	0.000	0.162671251	111,327,504.50	0.000	381,770,422.347	111,327,504.50	573,043,603.923
1999	8	0.000	0.162671251	111,084,792.19	0.000	480,391,826.757	111,084,792.19	571,794,274.396
1999	9	0.000	0.162671251	114,564,745.23	124,346.288	187,364,307.395	114,564,745.23	589,706,872.380
1999	10	0.000	0.162671251	101,944,854.06	22,912,437.047	58,797,789.197	101,944,854.06	524,747,651.845
1999	11	0.000	0.162671251	100,136,466.46	90,093,094.346	1,503,651.586	100,136,466.46	515,439,215.853
1999	12	0.000	0.162671251	123,184,672.66	198,914,026.108	0.000	123,184,672.66	634,076,808.646
2000	1	0.000	0.164109112	132,837,258.08	348,262,855.017	0.000	132,837,258.08	676,607,483.130
2000	2	0.000	0.164109112	103,705,552.79	459,287,640.030	0.000	103,705,552.79	528,224,942.843
2000	3	0.000	0.164109112	105,330,490.41	219,606,725.408	0.000	105,330,490.41	536,501,573.767
2000	4	0.000	0.164109112	102,919,324.49	134,576,554.481	0.000	102,919,324.49	524,220,283.642
2000	5	0.000	0.164109112	100,644,327.01	47,627,438.535	53,792,560.177	100,644,327.01	512,632,568.417
2000	6	0.000	0.164109112	106,568,187.61	3,555,619.047	126,589,596.530	106,568,187.61	542,805,792.888
2000	7	0.000	0.164109112	114,013,637.68	132,236.104	276,417,163.093	114,013,637.68	580,729,243.774
2000	8	0.000	0.164109112	113,743,682.97	0.000	292,270,657.624	113,743,682.97	579,354,227.611
2000	9	0.000	0.164109112	117,297,755.33	396,859.805	251,223,202.412	117,297,755.33	597,456,919.529

Indiana Michigan Power Company-Indiana
Long-Term Residential Energy Model Output

Year	Month	X-Missing	Lighting Share	Lighting Usage	Heating Usage	Cooling Usage	Lighting Usage	Other Usage
2000	10	0.000	0.164109112	104,528,522.88	21,204,817.325	57,855,428.006	104,528,522.88	532,416,746.665
2000	11	0.000	0.164109112	102,679,770.88	73,676,629.619	7,726,306.949	102,679,770.88	523,000,115.687
2000	12	0.000	0.164109112	126,351,107.89	332,955,628.225	0.000	126,351,107.89	643,570,232.719
2001	1	0.000	0.16538881	135,984,232.70	511,199,013.930	0.000	135,984,232.70	686,225,157.953
2001	2	0.000	0.16538881	106,420,533.31	384,020,343.628	0.000	106,420,533.31	537,036,138.890
2001	3	0.000	0.16538881	108,096,408.04	306,655,842.219	0.000	108,096,408.04	545,493,203.167
2001	4	0.000	0.16538881	105,573,550.18	204,406,695.176	10,813,682.881	105,573,550.18	532,761,958.578
2001	5	0.000	0.16538881	103,048,309.47	40,880,092.843	57,856,677.947	103,048,309.47	520,018,689.191
2001	6	0.000	0.16538881	109,122,898.56	4,423,066.771	96,877,641.297	109,122,898.56	550,673,242.146
2001	7	0.000	0.16538881	116,610,668.14	775,431.845	284,810,207.408	116,610,668.14	588,459,210.104
2001	8	0.000	0.16538881	116,302,577.00	0.000	429,539,794.675	116,302,577.00	586,904,471.808
2001	9	0.000	0.16538881	119,854,011.59	193,634.744	238,648,596.005	119,854,011.59	604,826,283.171
2001	10	0.000	0.16538881	107,016,152.46	22,927,097.516	32,403,699.590	107,016,152.46	540,041,846.483
2001	11	0.000	0.16538881	105,320,860.89	80,990,077.964	1,041,157.867	105,320,860.89	531,486,797.851
2001	12	0.000	0.16538881	129,062,363.49	136,254,288.476	0.000	129,062,363.49	651,294,925.955
2002	1	0.000	0.167023095	138,907,813.32	328,778,295.288	0.000	138,907,813.32	692,760,483.377
2002	2	0.000	0.167023095	108,745,032.88	279,598,123.701	0.000	108,745,032.88	542,332,787.038
2002	3	0.000	0.167023095	110,574,220.80	275,625,602.525	0.000	110,574,220.80	551,455,305.653
2002	4	0.000	0.167023095	107,982,570.77	209,276,216.350	19,741,381.729	107,982,570.77	538,530,239.097
2002	5	0.000	0.167023095	105,346,329.62	66,035,434.313	46,268,901.985	105,346,329.62	525,382,787.962
2002	6	0.000	0.167023095	111,481,132.44	24,723,772.470	112,949,141.301	111,481,132.44	555,978,251.689
2002	7	0.000	0.167023095	119,068,752.49	0.000	444,268,557.523	119,068,752.49	593,819,199.617
2002	8	0.000	0.167023095	118,741,788.37	0.000	492,312,948.198	118,741,788.37	592,188,565.489
2002	9	0.000	0.167023095	122,477,639.96	105,835.787	315,721,528.822	122,477,639.96	610,819,989.409
2002	10	0.000	0.167023095	109,516,262.97	22,389,284.521	122,365,462.013	109,516,262.97	546,179,062.634
2002	11	0.000	0.167023095	107,811,486.81	151,517,191.837	7,939,953.428	107,811,486.81	537,677,009.875
2002	12	0.000	0.167023095	132,005,012.41	305,415,715.139	0.000	132,005,012.41	658,334,862.641
2003	1	0.000	0.16580063	139,042,258.62	389,499,643.749	0.000	139,042,258.62	699,568,899.351
2003	2	0.000	0.16580063	109,009,626.52	502,208,477.115	0.000	109,009,626.52	548,464,511.417
2003	3	0.000	0.16580063	111,002,547.20	425,594,320.867	0.000	111,002,547.20	558,491,573.270
2003	4	0.000	0.16580063	108,228,465.74	172,687,303.317	531,916.339	108,228,465.74	544,534,225.855
2003	5	0.000	0.16580063	105,856,462.35	62,360,760.840	5,510,840.968	105,856,462.35	532,599,869.925
2003	6	0.000	0.16580063	111,722,612.40	7,351,635.310	30,683,720.192	111,722,612.40	562,114,466.225

Indiana Michigan Power Company-Indiana
Long-Term Residential Energy Model Output

Year	Month	X-Missing	Lighting Share	Lighting Usage	Heating Usage	Cooling Usage	Lighting Usage	Other Usage
2003	7	0.000	0.16580063	118,803,946.54	76,525.437	251,730,278.031	118,803,946.54	597,743,067.079
2003	8	0.000	0.16580063	119,455,660.21	0.000	291,987,520.845	119,455,660.21	601,022,060.236
2003	9	0.000	0.16580063	124,939,008.12	15,322.277	257,723,973.576	124,939,008.12	628,610,648.747
2003	10	0.000	0.16580063	108,006,351.98	37,595,483.182	27,521,333.566	108,006,351.98	543,416,695.945
2003	11	0.000	0.16580063	106,423,450.62	104,236,630.379	1,256,850.633	106,423,450.62	535,452,580.790
2003	12	0.000	0.16580063	132,495,549.95	239,559,457.237	194,087.804	132,495,549.95	666,630,181.109
2004	1	0.000	0.164529124	139,647,660.01	359,856,963.915	0.000	139,647,660.01	709,124,013.844
2004	2	0.000	0.164529124	109,262,701.27	507,563,486.618	0.000	109,262,701.27	554,830,673.745
2004	3	0.000	0.164529124	111,080,607.78	323,581,993.971	0.000	111,080,607.78	564,061,914.395
2004	4	0.000	0.164529124	109,003,323.74	162,454,105.555	5,150,023.904	109,003,323.74	553,513,567.252
2004	5	0.000	0.164529124	106,010,944.71	48,736,331.914	57,356,963.629	106,010,944.71	538,318,412.346
2004	6	0.000	0.164529124	112,374,530.12	4,269,965.127	141,949,927.678	112,374,530.12	570,632,389.000
2004	7	0.000	0.164529124	119,394,859.37	0.000	222,727,728.004	119,394,859.37	606,281,278.901
2004	8	0.000	0.164529124	118,178,078.61	0.000	200,049,969.740	118,178,078.61	600,102,525.512
2004	9	0.000	0.164529124	122,459,560.51	0.000	178,240,088.787	122,459,560.51	621,843,682.017
2004	10	0.000	0.164529124	110,424,128.59	22,390,807.736	62,103,694.250	110,424,128.59	560,728,345.054
2004	11	0.000	0.164529124	108,170,719.56	76,039,750.016	3,966,345.401	108,170,719.56	549,285,643.828
2004	12	0.000	0.164529124	133,958,825.87	222,695,455.369	284,619.964	133,958,825.87	680,236,391.238
2005	1	0.000	0.163297319	139,057,906.76	394,274,267.685	0.000	139,057,906.76	712,504,797.013
2005	2	0.000	0.163297319	110,084,454.71	446,105,895.383	0.000	110,084,454.71	564,050,645.408
2005	3	0.000	0.163297319	111,403,285.33	354,449,483.906	0.000	111,403,285.33	570,808,068.733
2005	4	0.000	0.163297319	111,601,355.12	189,746,255.841	1,240,073.435	111,601,355.12	571,822,938.575
2005	5	0.000	0.163297319	105,213,845.90	78,338,015.214	14,500,034.856	105,213,845.90	539,094,623.651
2005	6	0.000	0.163297319	112,669,954.33	13,036,835.406	112,702,430.178	112,669,954.33	577,298,226.362
2005	7	0.000	0.163297319	121,690,887.32	0.000	366,024,166.355	121,690,887.32	623,519,676.001
2005	8	0.000	0.163297319	119,044,196.77	0.000	411,831,632.075	119,044,196.77	609,958,564.931
2005	9	0.000	0.163297319	123,230,148.97	0.000	252,151,428.549	123,230,148.97	631,406,543.638
2005	10	0.000	0.163297319	111,798,656.27	10,767,977.827	116,888,766.375	111,798,656.27	572,833,870.065
2005	11	0.000	0.163297319	110,533,674.47	94,776,343.096	9,451,586.963	110,533,674.47	566,352,357.238
2005	12	0.000	0.163297319	131,385,266.20	336,189,895.513	0.000	131,385,266.20	673,191,727.125
2006	1	0.000	0.157604195	145,754,165.71	356,178,620.115	0.000	145,754,165.71	779,057,297.034
2006	2	0.000	0.157604195	116,054,667.68	292,071,342.081	0.000	116,054,667.68	620,313,219.007
2006	3	0.000	0.157604195	107,819,119.69	326,129,569.628	0.000	107,819,119.69	576,294,142.563

Indiana Michigan Power Company-Indiana
Long-Term Residential Energy Model Output

Year	Month	X-Missing	Lighting Share	Lighting Usage	Heating Usage	Cooling Usage	Lighting Usage	Other Usage
2006	4	0.000	0.157604195	102,777,550.88	183,433,881.698	1,277,862.467	102,777,550.88	549,346,912.978
2006	5	0.000	0.157604195	104,693,918.30	39,049,506.782	2,466,251.693	104,693,918.30	559,589,913.692
2006	6	0.000	0.157604195	108,982,926.51	15,121,359.497	111,110,954.832	108,982,926.51	582,514,700.247
2006	7	0.000	0.157604195	115,640,955.27	0.000	257,793,178.845	115,640,955.27	618,101,922.511
2006	8	0.000	0.157604195	116,854,956.44	0.000	386,025,658.267	116,854,956.44	624,590,769.452
2006	9	0.000	0.157604195	118,667,236.61	864,068.325	160,016,704.057	118,667,236.61	634,277,422.854
2006	10	0.000	0.157604195	105,872,803.02	29,690,397.722	14,702,389.220	105,872,803.02	565,891,062.891
2006	11	0.000	0.157604195	108,215,567.42	155,405,924.685	1,346,112.941	108,215,567.42	578,413,159.189
2006	12	0.000	0.157604195	128,149,095.18	228,777,518.945	0.000	128,149,095.18	684,958,040.312
2007	1	0.000	0.152027662	139,946,715.48	261,910,542.636	0.000	139,946,715.48	780,587,831.965
2007	2	0.000	0.152027662	114,457,826.79	475,950,883.185	0.000	114,457,826.79	638,417,175.856
2007	3	0.000	0.152027662	104,544,622.57	436,294,163.357	84,892.634	104,544,622.57	583,123,798.207
2007	4	0.000	0.152027662	103,479,572.84	163,666,027.704	5,338,046.856	103,479,572.84	577,183,216.765
2007	5	0.000	0.152027662	100,149,015.48	62,135,314.973	26,892,568.790	100,149,015.48	558,606,199.508
2007	6	0.000	0.152027662	104,194,304.87	4,278,327.305	190,754,999.175	104,194,304.87	581,169,813.563
2007	7	0.000	0.152027662	112,211,128.74	0.000	279,623,743.914	112,211,128.74	625,885,655.186
2007	8	0.000	0.152027662	113,565,587.33	0.000	330,927,801.839	113,565,587.33	633,440,486.982
2007	9	0.000	0.152027662	115,048,458.27	754,006.608	276,570,238.908	115,048,458.27	641,711,570.745
2007	10	0.000	0.152027662	106,412,509.03	7,669,309.626	137,136,485.161	106,412,509.03	593,542,402.425
2007	11	0.000	0.152027662	105,012,993.24	92,564,214.911	28,839,352.195	105,012,993.24	585,736,252.862
2007	12	0.000	0.152027662	123,202,136.64	294,265,734.276	0.000	123,202,136.64	687,190,752.600
2008	1	0.000	0.146821635	136,304,926.81	366,816,326.300	0.000	136,304,926.81	792,065,925.768
2008	2	0.000	0.146821635	109,378,238.59	437,915,482.241	0.000	109,378,238.59	635,595,336.348
2008	3	0.000	0.146821635	101,793,013.00	415,618,600.092	0.000	101,793,013.00	591,517,701.959
2008	4	0.000	0.146821635	98,878,238.30	218,641,323.736	317,795.929	98,878,238.30	574,579,989.083
2008	5	0.000	0.146821635	95,574,678.78	53,067,499.913	12,510,057.434	95,574,678.78	555,383,053.272
2008	6	0.000	0.146821635	101,636,272.18	12,291,276.409	124,137,744.923	101,636,272.18	590,606,883.411
2008	7	0.000	0.146821635	109,583,063.86	15,870.910	240,955,597.073	109,583,063.86	636,785,572.978
2008	8	0.000	0.146821635	108,580,427.71	0.000	304,192,096.917	108,580,427.71	630,959,269.071
2008	9	0.000	0.146821635	109,860,243.09	0.000	226,233,410.270	109,860,243.09	638,396,257.438
2008	10	0.000	0.146821635	100,730,775.10	14,026,597.826	61,200,328.355	100,730,775.10	585,345,053.193
2008	11	0.000	0.146821635	101,738,445.55	113,011,238.066	3,974,879.498	101,738,445.55	591,200,611.330
2008	12	0.000	0.146821635	120,537,528.02	339,745,614.710	0.000	120,537,528.02	700,441,803.204

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Year	Month	X-Missing	Lighting Share	Lighting Usage	Heating Usage	Cooling Usage	Lighting Usage	Other Usage
2009	1	0.000	0.142534727	132,684,228.61	441,191,969.041	0.000	132,684,228.61	798,206,308.030
2009	2	0.000	0.142534727	106,898,210.99	522,194,352.515	0.000	106,898,210.99	643,081,903.704
2009	3	0.000	0.142534727	97,766,792.65	314,227,482.925	0.000	97,766,792.65	588,148,805.838
2009	4	0.000	0.142534727	96,704,831.48	161,566,551.167	694,190.418	96,704,831.48	581,760,223.574
2009	5	0.000	0.142534727	93,228,931.39	62,351,109.714	34,750,980.952	93,228,931.39	560,849,785.303
2009	6	0.000	0.142534727	96,996,070.64	6,727,635.832	87,599,630.502	96,996,070.64	583,512,270.086
2009	7	0.000	0.142534727	107,807,945.31	0.000	248,161,750.334	107,807,945.31	648,554,714.464
2009	8	0.000	0.142534727	104,773,203.18	0.000	199,528,069.812	104,773,203.18	630,298,209.240
2009	9	0.000	0.142534727	107,139,280.48	0.000	143,097,081.963	107,139,280.48	644,532,137.784
2009	10	0.000	0.142534727	100,686,580.42	36,117,563.790	43,379,536.904	100,686,580.42	605,713,764.686
2009	11	0.000	0.142534727	97,202,923.51	98,080,604.018	0.000	97,202,923.51	584,756,662.606
2009	12	0.000	0.142534727	117,085,713.74	228,444,589.376	0.000	117,085,713.74	704,368,230.227
2010	1	0.000	0.122783751	114,512,983.61	428,610,832.368	0.000	114,512,983.61	818,126,580.181
2010	2	0.000	0.122783751	91,070,249.23	443,401,946.602	0.000	91,070,249.23	650,642,304.566
2010	3	0.000	0.122783751	82,460,664.92	329,810,990.718	0.000	82,460,664.92	589,131,988.906
2010	4	0.000	0.122783751	85,108,821.53	111,745,501.364	10,767,085.061	85,108,821.53	608,051,479.451
2010	5	0.000	0.122783751	80,829,040.50	26,169,591.570	24,912,713.946	80,829,040.50	577,475,011.155
2010	6	0.000	0.122783751	84,993,280.42	5,348,768.995	229,025,994.723	84,993,280.42	607,226,007.516
2010	7	0.000	0.122783751	91,223,230.08	0.000	411,383,854.629	91,223,230.08	651,735,260.974
2010	8	0.000	0.122783751	92,812,492.76	0.000	463,052,760.780	92,812,492.76	663,089,589.579
2010	9	0.000	0.122783751	92,962,292.69	0.000	282,233,877.179	92,962,292.69	664,159,820.221
2010	10	0.000	0.122783751	83,777,415.13	12,243,749.435	82,092,951.535	83,777,415.13	598,539,379.360
2010	11	0.000	0.122783751	83,895,559.44	94,567,890.701	7,345,836.488	83,895,559.44	599,383,449.616
2010	12	0.000	0.122783751	100,813,006.07	308,961,446.344	0.000	100,813,006.07	720,248,458.228
2011	1	0.000	0.115431359	103,782,013.65	455,517,374.240	0.000	103,782,013.65	795,297,874.922
2011	2	0.000	0.115431359	85,071,526.48	497,768,332.920	0.000	85,071,526.48	651,916,472.260
2011	3	0.000	0.115431359	74,947,807.44	332,039,395.268	0.000	74,947,807.44	574,336,822.813
2011	4	0.000	0.115431359	72,033,942.68	194,853,417.318	2,656,162.136	72,033,942.68	552,007,419.352
2011	5	0.000	0.115431359	76,968,242.39	60,029,939.177	21,650,733.542	76,968,242.39	589,819,733.215
2011	6	0.000	0.115431359	79,751,589.99	8,402,668.236	196,193,342.421	79,751,589.99	611,148,963.191
2011	7	0.000	0.115431359	84,260,517.78	0.000	363,453,677.587	84,260,517.78	645,701,585.197
2011	8	0.000	0.115431359	86,424,129.16	0.000	521,974,577.490	86,424,129.16	662,281,679.089
2011	9	0.000	0.115431359	83,685,433.17	1,287,405.313	244,878,141.550	83,685,433.17	641,294,621.499

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Year	Month	X-Missing	Lighting Share	Lighting Usage	Heating Usage	Cooling Usage	Lighting Usage	Other Usage
2011	10	0.000	0.115431359	77,720,948.81	15,370,520.173	32,787,547.012	77,720,948.81	595,587,840.765
2011	11	0.000	0.115431359	75,196,655.92	86,564,711.429	1,012,420.863	75,196,655.92	576,243,787.775
2011	12	0.000	0.115431359	93,014,962.10	205,718,042.167	0.000	93,014,962.10	712,788,267.377
2012	1	0.000	0.111901542	102,909,103.97	309,468,927.300	0.000	102,909,103.97	816,730,628.121
2012	2	0.000	0.111901542	80,980,706.09	353,535,899.010	0.000	80,980,706.09	642,697,491.231
2012	3	0.000	0.111901542	76,717,885.49	248,757,400.142	8,327,910.295	76,717,885.49	608,865,925.199
2012	4	0.000	0.111901542	77,502,862.35	65,655,935.230	26,840,993.774	77,502,862.35	615,095,837.048
2012	5	0.000	0.111901542	74,194,029.65	49,735,099.340	34,396,335.176	74,194,029.65	588,835,526.655
2012	6	0.000	0.111901542	77,720,111.04	1,657,466.188	195,274,962.418	77,720,111.04	616,820,015.530
2012	7	0.000	0.111901542	83,481,295.37	156,169.464	470,577,487.328	83,481,295.37	662,543,236.424
2012	8	0.000	0.111901542	84,820,467.98	0.000	410,623,201.607	84,820,467.98	673,171,482.589
2012	9	0.000	0.111901542	84,573,357.21	1,072,998.511	201,701,461.974	84,573,357.21	671,210,305.864
2012	10	0.000	0.111901542	76,256,695.53	35,576,789.245	29,708,711.436	76,256,695.53	605,205,724.633
2012	11	0.000	0.111901542	77,299,317.88	131,835,583.511	2,907,867.725	77,299,317.88	613,480,421.134
2012	12	0.000	0.111901542	89,219,054.33	223,178,374.970	0.000	89,219,054.33	708,080,543.640
2013	1	0.000	0.10057422	94,869,324.91	350,833,768.423	0.000	94,869,324.91	848,407,436.088
2013	2	0.000	0.10057422	76,552,803.61	404,160,290.157	0.000	76,552,803.61	684,604,511.506
2013	3	0.000	0.10057422	72,349,748.68	361,554,269.428	0.000	72,349,748.68	647,016,987.145
2013	4	0.000	0.10057422	71,143,921.70	245,356,653.623	0.000	71,143,921.70	636,233,390.074
2013	5	0.000	0.10057422	62,074,796.34	62,962,058.372	27,640,851.512	62,074,796.34	555,129,056.252
2013	6	0.000	0.10057422	65,925,924.22	6,478,454.922	147,256,008.297	65,925,924.22	589,569,330.146
2013	7	0.000	0.10057422	70,212,527.81	0.000	298,697,830.890	70,212,527.81	627,904,022.203
2013	8	0.000	0.10057422	72,022,637.81	0.000	236,169,362.267	72,022,637.81	644,091,665.431
2013	9	0.000	0.10057422	72,201,693.86	301,223.888	231,745,144.531	72,201,693.86	645,692,946.873
2013	10	0.000	0.10057422	64,629,229.42	10,101,960.611	84,007,401.030	64,629,229.42	577,973,110.645
2013	11	0.000	0.10057422	65,008,275.67	125,345,853.057	7,519,671.678	65,008,275.67	581,362,885.601
2013	12	0.000	0.10057422	77,135,849.45	313,836,275.817	0.000	77,135,849.45	689,818,635.455
2014	1	0.000	0.096034771	86,957,972.17	471,962,243.395	0.000	86,957,972.17	818,526,273.611
2014	2	0.000	0.096034771	66,476,044.44	578,729,886.339	0.000	66,476,044.44	625,732,035.635
2014	3	0.000	0.096034771	62,607,216.32	502,334,907.356	0.000	62,607,216.32	589,315,162.193
2014	4	0.000	0.096034771	61,034,601.36	258,736,082.573	0.000	61,034,601.36	574,512,302.547
2014	5	0.000	0.096034771	61,489,083.20	63,332,634.500	19,580,903.362	61,489,083.20	578,790,292.454
2014	6	0.000	0.096034771	62,972,303.25	12,856,953.705	150,740,547.197	62,972,303.25	592,751,687.245

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Year	Month	X-Missing	Lighting Share	Lighting Usage	Heating Usage	Cooling Usage	Lighting Usage	Other Usage
2014	7	0.000	0.096034771	68,154,647.97	0.000	282,526,297.205	68,154,647.97	641,532,554.656
2014	8	0.000	0.096034771	68,199,927.99	0.000	180,139,032.771	68,199,927.99	641,958,770.723
2014	9	0.000	0.096034771	69,530,286.64	822,006.423	225,656,238.348	69,530,286.64	654,481,297.164
2014	10	0.000	0.096034771	61,825,149.04	22,803,355.777	23,438,582.920	61,825,149.04	581,953,644.965
2014	11	0.000	0.096034771	61,604,644.90	138,563,867.359	449,559.741	61,604,644.90	579,878,062.573
2014	12	0.000	0.096034771	75,352,632.59	329,099,789.967	0.000	75,352,632.59	709,286,429.107
2015	1	0.000	0.088566174	74,029,898.56	425,389,478.214	0.000	74,029,898.56	761,841,121.752
2015	2	0.000	0.088566174	56,944,788.93	510,944,709.895	0.000	56,944,788.93	586,018,388.744
2015	3	0.000	0.088566174	53,450,371.60	530,246,107.671	0.000	53,450,371.60	550,057,366.650
2015	4	0.000	0.088566174	54,433,642.52	217,468,216.633	0.000	54,433,642.52	560,176,200.194
2015	5	0.000	0.088566174	51,982,575.31	57,779,038.473	38,396,216.854	51,982,575.31	534,952,286.176
2015	6	0.000	0.088566174	53,551,290.11	5,826,613.505	158,414,342.482	53,551,290.11	551,095,918.238
2015	7	0.000	0.088566174	59,639,672.65	41,634.202	207,770,077.366	59,639,672.65	613,751,416.543
2015	8	0.000	0.088566174	58,767,476.20	0.000	292,071,795.950	58,767,476.20	604,775,649.549
2015	9	0.000	0.088566174	60,362,039.60	0.000	228,385,924.534	60,362,039.60	621,185,289.322
2015	10	0.000	0.088566174	53,602,196.78	11,103,001.462	75,296,165.720	53,602,196.78	551,619,798.439
2015	11	0.000	0.088566174	52,921,980.03	71,907,825.755	1,991,724.053	52,921,980.03	544,619,692.993
2015	12	0.000	0.088566174	67,420,500.74	200,828,553.594	0.000	67,420,500.74	693,823,859.113
2016	1	0.000	0.068046164	54,193,340.68	302,793,416.679	0.000	54,193,340.68	742,226,878.302
2016	2	0.000	0.068046164	45,283,429.24	420,438,617.744	0.000	45,283,429.24	620,197,572.266
2016	3	0.000	0.068046164	42,063,964.71	287,531,114.504	0.000	42,063,964.71	576,104,089.993
2016	4	0.000	0.068046164	42,496,358.84	154,065,503.516	0.000	42,496,358.84	582,026,119.078
2016	5	0.000	0.068046164	40,018,065.66	62,319,934.018	2,286,377.595	40,018,065.66	548,083,649.631
2016	6	0.000	0.068046164	43,300,432.41	11,040,274.056	166,006,817.251	43,300,432.41	593,038,634.798
2016	7	0.000	0.068046164	46,521,916.43	0.000	278,465,430.705	46,521,916.43	637,159,775.882
2016	8	0.000	0.068046164	46,832,494.80	0.000	411,942,755.815	46,832,494.80	641,413,427.894
2016	9	0.000	0.068046164	47,529,721.81	0.000	309,666,070.515	47,529,721.81	650,962,583.228
2016	10	0.000	0.068046164	42,609,927.17	3,742,769.500	120,184,894.515	42,609,927.17	583,581,540.307
2016	11	0.000	0.068046164	38,895,360.54	61,211,512.256	20,166,409.240	38,895,360.54	532,707,186.327
2016	12	0.000	0.068046164	48,600,371.07	272,690,548.311	804,864.037	48,600,371.07	665,626,094.458
2017	1	0.000	0.060306326	47,875,086.12	406,900,577.793	0.000	47,875,086.12	745,989,992.931
2017	2	0.000	0.060306326	39,211,026.88	309,055,927.068	0.000	39,211,026.88	610,986,549.334
2017	3	0.000	0.060306326	36,243,650.12	235,930,610.001	0.000	36,243,650.12	564,748,859.717

Indiana Michigan Power Company-Indiana
Long-Term Residential Energy Model Output

Year	Month	X-Missing	Lighting Share	Lighting Usage	Heating Usage	Cooling Usage	Lighting Usage	Other Usage
2017	4	0.000	0.060306326	36,228,655.58	166,345,408.099	5,094,774.928	36,228,655.58	564,515,214.659
2017	5	0.000	0.060306326	34,564,472.72	43,340,309.308	33,643,391.607	34,564,472.72	538,583,903.391
2017	6	0.000	0.060306326	37,396,996.61	8,503,176.236	128,737,504.710	37,396,996.61	582,720,314.401
2017	7	0.000	0.060306326	41,391,228.45	0.000	281,989,324.288	41,391,228.45	644,958,468.393
2017	8	0.000	0.060306326	41,394,429.31	0.000	263,467,792.449	41,394,429.31	645,008,344.257
2017	9	0.000	0.060306326	41,570,615.28	0.000	126,315,925.093	41,570,615.28	647,753,675.508
2017	10	0.000	0.060306326	37,441,067.06	1,986,570.296	132,905,627.120	37,441,067.06	583,407,020.580
2017	11	0.000	0.060306326	34,616,140.21	118,009,593.370	14,280,450.938	34,616,140.21	539,388,986.713
2017	12	0.000	0.060306326	43,536,197.16	252,181,890.099	0.000	43,536,197.16	678,381,388.854
2018	1	0.000	0.052827528	40,937,382.94	502,802,734.983	0.000	40,937,382.94	733,987,821.326
2018	2	0.000	0.052827528	33,606,390.22	419,815,243.871	0.000	33,606,390.22	602,546,605.709
2018	3	0.000	0.052827528	31,227,872.58	288,439,640.626	0.000	31,227,872.58	559,900,914.825
2018	4	0.000	0.052827528	31,762,678.40	254,096,523.664	509,824.335	31,762,678.40	569,489,728.929
2018	5	0.000	0.052827528	30,390,610.29	87,487,009.649	28,356,678.183	30,390,610.29	544,889,199.752
2018	6	0.000	0.052827528	32,783,958.54	927,346.393	225,711,767.277	32,783,958.54	587,800,796.563
2018	7	0.000	0.052827528	35,021,084.79	0.000	360,127,268.304	35,021,084.79	627,911,407.056
2018	8	0.000	0.052827528	35,803,931.28	0.000	301,054,013.129	35,803,931.28	641,947,472.625
2018	9	0.000	0.052827528	35,951,141.85	0.000	310,810,443.026	35,951,141.85	644,586,888.155
2018	10	0.000	0.052827528	31,722,873.24	19,140,031.653	154,707,831.616	31,722,873.24	568,776,041.345
2018	11	0.000	0.052827528	30,426,277.40	148,674,823.175	21,813,035.302	30,426,277.40	545,528,694.129
2018	12	0.000	0.052827528	36,860,603.11	295,820,503.364	0.000	36,860,603.11	660,893,096.254
2019	1	0.000	0.046495133	33,903,653.95	300,199,494.304	0.000	33,903,653.95	695,283,499.899
2019	2	0.000	0.046495133	29,378,312.93	438,363,416.691	0.000	29,378,312.93	602,479,492.761
2019	3	0.000	0.046495133	26,438,584.04	364,162,261.910	0.000	26,438,584.04	542,192,628.361
2019	4	0.000	0.046495133	26,494,874.01	188,739,508.012	0.000	26,494,874.01	543,347,002.163
2019	5	0.000	0.046495133	27,287,067.30	55,514,538.684	7,389,748.555	27,287,067.30	559,593,006.882
2019	6	0.000	0.046495133	28,303,316.00	9,381,891.560	118,440,681.153	28,303,316.00	580,433,856.527
2019	7	0.000	0.046495133	30,355,390.34	0.000	362,573,495.535	30,355,390.34	622,517,032.299
2019	8	0.000	0.046495133	30,958,882.09	0.000	344,684,658.765	30,958,882.09	634,893,216.209
2019	9	0.000	0.046495133	31,070,681.39	0.000	191,013,022.744	31,070,681.39	637,185,954.576
2019	10	0.000	0.046495133	27,395,016.89	10,893,993.970	120,532,450.228	27,395,016.89	561,806,796.753
2019	11	0.000	0.046495133	25,809,717.58	143,943,776.663	7,023,809.260	25,809,717.58	529,296,069.378
2019	12	0.000	0.046495133	31,685,851.03	295,578,418.439	0.000	31,685,851.03	649,801,624.194

Indiana Michigan Power Company-Indiana
Long-Term Residential Energy Model Output

Year	Month	X-Missing	Lighting Share	Lighting Usage	Heating Usage	Cooling Usage	Lighting Usage	Other Usage
2020	1	0.000	0.043328557	32,974,054.69	293,698,053.088	0.000	32,974,054.69	728,049,546.130
2020	2	0.000	0.043328557	27,498,641.99	339,865,423.019	0.000	27,498,641.99	607,155,353.136
2020	3	0.000	0.043328557	25,503,867.37	318,222,850.224	0.000	25,503,867.37	563,111,793.149
2020	4	0.000	0.043328557	26,087,011.18	169,994,217.367	0.000	26,087,011.18	575,987,297.438
2020	5	0.000	0.043328557	25,527,070.71	97,808,019.443	4,491,342.985	25,527,070.71	563,624,110.425
2020	6	0.000	0.043328557	26,456,298.78	16,628,549.986	149,208,673.032	26,456,298.78	584,140,970.881
2020	7	0.000	0.043328557	28,957,492.61	0.000	349,047,910.294	28,957,492.61	639,365,996.898
2020	8	0.000	0.043328557	29,388,466.55	0.000	326,212,741.995	29,388,466.55	648,881,671.734
2020	9	0.000	0.043328557	29,112,286.18	383,498.499	210,169,089.192	29,112,286.18	642,783,756.442
2020	10	0.000	0.043328557	26,458,375.27	22,851,173.237	26,577,734.362	26,458,375.27	584,186,818.599
2020	11	0.000	0.043328557	24,878,765.37	101,403,950.169	2,708,982.605	24,878,765.37	549,309,874.191
2020	12	0.000	0.043328557	30,217,544.89	220,688,731.493	1,071,798.199	30,217,544.89	667,187,279.488
2021	1	0.000	0.041803189	30,858,158.35	328,961,073.711	0.000	30,858,158.35	707,318,979.600
2021	2	0.000	0.041803189	26,613,210.06	421,621,635.985	0.000	26,613,210.06	610,017,888.077
2021	3	0.000	0.041803189	24,623,720.10	335,012,131.215	258,251.770	24,623,720.10	564,415,555.108
2021	4	0.000	0.041803189	24,648,033.43	185,093,818.203	2,968,946.893	24,648,033.43	564,972,856.218
2021	5	0.000	0.041803189	24,128,969.44	59,120,020.831	21,530,047.014	24,128,969.44	553,075,068.573
2021	6	0.000	0.041803189	25,655,571.79	8,435,378.414	124,048,036.383	25,655,571.79	588,067,267.606
2021	7	0.000	0.041803189	27,985,402.33	90,124.405	283,465,136.503	27,985,402.33	641,470,757.909
2021	8	0.000	0.041803189	28,120,502.36	0.000	296,970,235.583	28,120,502.36	644,567,469.352
2021	9	0.000	0.041803189	28,322,389.15	330,200.767	205,809,198.888	28,322,389.15	649,195,041.598
2021	10	0.000	0.041803189	25,033,007.28	19,415,394.905	63,214,604.684	25,033,007.28	573,797,080.373
2021	11	0.000	0.041803189	23,549,918.38	109,846,975.123	5,768,131.651	23,549,918.38	539,802,280.269
2021	12	0.000	0.041803189	28,862,592.43	258,398,866.505	73,533.161	28,862,592.43	661,577,375.925
2022	1	0.000	0.040747028	30,172,484.83	374,487,316.914	0.000	30,172,484.83	710,310,597.014
2022	2	0.000	0.040747028	25,858,885.20	417,950,840.377	0.000	25,858,885.20	608,761,270.047
2022	3	0.000	0.040747028	23,920,247.02	332,052,434.707	256,641.516	23,920,247.02	563,122,495.129
2022	4	0.000	0.040747028	23,901,268.67	183,231,191.010	2,946,694.218	23,901,268.67	562,675,712.974
2022	5	0.000	0.040747028	23,396,735.19	58,519,127.147	21,366,423.784	23,396,735.19	550,798,153.793
2022	6	0.000	0.040747028	24,881,025.17	8,348,884.090	123,093,106.242	24,881,025.17	585,740,814.532
2022	7	0.000	0.040747028	27,156,695.14	89,194.048	281,265,227.866	27,156,695.14	639,313,879.634
2022	8	0.000	0.040747028	27,292,262.22	0.000	294,656,646.963	27,292,262.22	642,505,354.804
2022	9	0.000	0.040747028	27,480,685.56	326,768.438	204,201,505.518	27,480,685.56	646,941,154.302

Indiana Michigan Power Company-Indiana
Long-Term Residential Energy Model Output

Year	Month	X-Missing	Lighting Share	Lighting Usage	Heating Usage	Cooling Usage	Lighting Usage	Other Usage
2022	10	0.000	0.040747028	24,269,915.24	19,213,109.347	62,720,523.373	24,269,915.24	571,354,267.999
2022	11	0.000	0.040747028	22,818,816.14	108,705,106.777	5,723,260.806	22,818,816.14	537,192,975.920
2022	12	0.000	0.040747028	27,974,743.42	255,737,061.580	72,968.398	27,974,743.42	658,572,100.164
2023	1	0.000	0.039922043	29,608,250.59	374,134,602.678	0.000	29,608,250.59	712,043,445.600
2023	2	0.000	0.039922043	25,381,571.16	417,667,212.394	0.000	25,381,571.16	610,396,799.052
2023	3	0.000	0.039922043	23,487,265.26	331,932,347.378	254,697.425	23,487,265.26	564,840,980.239
2023	4	0.000	0.039922043	23,477,189.23	183,234,033.873	2,925,268.327	23,477,189.23	564,598,663.499
2023	5	0.000	0.039922043	22,989,160.34	58,544,971.394	21,218,464.523	22,989,160.34	552,862,145.255
2023	6	0.000	0.039922043	24,450,422.84	8,355,622.010	122,279,106.196	24,450,422.84	588,003,782.103
2023	7	0.000	0.039922043	26,685,791.35	89,296.537	279,481,601.348	26,685,791.35	641,761,753.688
2023	8	0.000	0.039922043	26,820,019.82	0.000	292,857,077.530	26,820,019.82	644,989,789.667
2023	9	0.000	0.039922043	27,012,437.45	327,324.150	202,995,992.280	27,012,437.45	649,617,206.360
2023	10	0.000	0.039922043	23,867,586.07	19,251,626.155	62,364,145.326	23,867,586.07	573,987,246.324
2023	11	0.000	0.039922043	22,448,977.08	108,952,229.923	5,691,826.525	22,448,977.08	539,871,376.080
2023	12	0.000	0.039922043	27,513,421.19	256,374,204.751	72,578.189	27,513,421.19	661,665,273.481
2024	1	0.000	0.039354033	29,178,839.63	372,719,605.156	0.000	29,178,839.63	712,265,865.529
2024	2	0.000	0.039354033	25,016,227.27	416,135,641.890	0.000	25,016,227.27	610,655,015.745
2024	3	0.000	0.039354033	23,150,132.47	330,711,135.015	253,349.689	23,150,132.47	565,102,977.036
2024	4	0.000	0.039354033	23,141,467.01	182,542,742.536	2,909,555.932	23,141,467.01	564,891,450.206
2024	5	0.000	0.039354033	22,659,793.10	58,319,226.960	21,103,099.732	22,659,793.10	553,133,618.386
2024	6	0.000	0.039354033	24,099,210.01	8,322,859.970	121,609,905.248	24,099,210.01	588,270,297.898
2024	7	0.000	0.039354033	26,305,107.88	88,941.619	277,941,130.277	26,305,107.88	642,117,050.234
2024	8	0.000	0.039354033	26,439,164.15	0.000	291,255,280.246	26,439,164.15	645,389,411.610
2024	9	0.000	0.039354033	26,629,044.11	326,064.219	201,891,648.133	26,629,044.11	650,024,449.064
2024	10	0.000	0.039354033	23,526,478.47	19,178,482.363	62,026,734.428	23,526,478.47	574,289,716.956
2024	11	0.000	0.039354033	22,126,505.83	108,544,797.048	5,661,255.781	22,126,505.83	540,115,886.223
2024	12	0.000	0.039354033	27,114,264.02	255,416,573.655	72,188.996	27,114,264.02	661,868,839.860
2025	1	0.000	0.038864773	28,826,686.04	371,494,941.694	0.000	28,826,686.04	712,890,904.963
2025	2	0.000	0.038864773	24,716,906.70	414,802,612.640	0.000	24,716,906.70	611,255,069.597
2025	3	0.000	0.038864773	22,876,940.70	329,688,787.106	252,243.208	22,876,940.70	565,752,266.231
2025	4	0.000	0.038864773	22,874,152.87	182,011,270.219	2,897,220.082	22,874,152.87	565,683,322.668
2025	5	0.000	0.038864773	22,400,428.11	58,156,253.835	21,015,235.670	22,400,428.11	553,967,995.032
2025	6	0.000	0.038864773	23,824,603.20	8,301,010.721	121,116,705.474	23,824,603.20	589,188,188.820

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Year	Month	X-Missing	Lighting Share	Lighting Usage	Heating Usage	Cooling Usage	Lighting Usage	Other Usage
2025	7	0.000	0.038864773	26,007,729.20	88,719.223	276,840,914.537	26,007,729.20	643,177,421.704
2025	8	0.000	0.038864773	26,139,451.19	0.000	290,099,294.608	26,139,451.19	646,434,938.257
2025	9	0.000	0.038864773	26,327,770.16	325,237.278	201,091,902.627	26,327,770.16	651,092,112.046
2025	10	0.000	0.038864773	23,260,125.01	19,129,378.290	61,780,325.452	23,260,125.01	575,228,506.837
2025	11	0.000	0.038864773	21,874,784.39	108,262,039.273	5,638,586.256	21,874,784.39	540,968,698.917
2025	12	0.000	0.038864773	26,800,226.46	254,766,373.437	71,902.426	26,800,226.46	662,776,070.314
2026	1	0.000	0.03838336	28,484,533.82	370,338,038.000	0.000	28,484,533.82	713,621,773.512
2026	2	0.000	0.03838336	24,424,930.91	413,505,836.472	0.000	24,424,930.91	611,916,720.158
2026	3	0.000	0.03838336	22,608,882.12	328,656,806.009	251,253.253	22,608,882.12	566,419,329.664
2026	4	0.000	0.03838336	22,609,023.09	181,441,204.295	2,885,797.934	22,609,023.09	566,422,861.613
2026	5	0.000	0.03838336	22,141,763.82	57,975,097.881	20,932,260.853	22,141,763.82	554,716,635.672
2026	6	0.000	0.03838336	23,547,763.73	8,274,700.769	120,632,882.462	23,547,763.73	589,941,089.395
2026	7	0.000	0.03838336	25,706,504.79	88,435.030	275,729,855.294	25,706,504.79	644,023,934.246
2026	8	0.000	0.03838336	25,837,339.63	0.000	288,943,243.142	25,837,339.63	647,301,733.943
2026	9	0.000	0.03838336	26,023,975.15	324,212.270	200,296,701.862	26,023,975.15	651,977,505.244
2026	10	0.000	0.03838336	22,991,655.41	19,069,742.638	61,538,495.825	22,991,655.41	576,008,932.260
2026	11	0.000	0.03838336	21,623,045.77	107,937,004.409	5,617,031.577	21,623,045.77	541,721,215.088
2026	12	0.000	0.03838336	26,486,918.98	254,022,560.630	71,631.836	26,486,918.98	663,575,616.759
2027	1	0.000	0.038010048	28,227,507.95	368,794,772.819	0.000	28,227,507.95	714,405,287.620
2027	2	0.000	0.038010048	24,206,587.75	411,787,132.061	0.000	24,206,587.75	612,640,489.510
2027	3	0.000	0.038010048	22,409,829.37	327,303,494.216	250,319.795	22,409,829.37	567,166,631.418
2027	4	0.000	0.038010048	22,412,246.14	180,684,090.305	2,875,024.539	22,412,246.14	567,227,797.170
2027	5	0.000	0.038010048	21,949,997.93	57,733,314.288	20,854,396.900	21,949,997.93	555,528,834.263
2027	6	0.000	0.038010048	23,342,968.55	8,240,267.909	120,187,004.413	23,342,968.55	590,783,295.279
2027	7	0.000	0.038010048	25,483,836.10	88,068.111	274,715,693.890	25,483,836.10	644,966,154.862
2027	8	0.000	0.038010048	25,613,864.96	0.000	287,889,126.935	25,613,864.96	648,257,033.564
2027	9	0.000	0.038010048	25,800,942.94	322,910.517	199,583,079.768	25,800,942.94	652,991,758.974
2027	10	0.000	0.038010048	22,795,446.62	18,993,947.534	61,320,742.574	22,795,446.62	576,926,154.158
2027	11	0.000	0.038010048	21,438,768.94	107,512,961.424	5,597,333.634	21,438,768.94	542,590,225.182
2027	12	0.000	0.038010048	26,254,334.95	253,023,783.778	71,380.633	26,254,334.95	664,466,581.523
2028	1	0.000	0.037670146	28,016,504.76	367,562,007.621	0.000	28,016,504.76	715,715,815.065
2028	2	0.000	0.037670146	24,028,727.18	410,429,133.232	0.000	24,028,727.18	613,843,168.756
2028	3	0.000	0.037670146	22,250,028.64	326,249,921.752	249,669.813	22,250,028.64	568,404,143.246

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Year	Month	X-Missing	Lighting Share	Lighting Usage	Heating Usage	Cooling Usage	Lighting Usage	Other Usage
2028	4	0.000	0.037670146	22,256,857.32	180,122,644.144	2,867,740.302	22,256,857.32	568,578,590.164
2028	5	0.000	0.037670146	21,799,164.67	57,555,021.851	20,802,233.785	21,799,164.67	556,886,272.839
2028	6	0.000	0.037670146	23,180,632.09	8,214,908.321	119,887,178.457	23,180,632.09	592,177,544.498
2028	7	0.000	0.037670146	25,305,474.35	87,801.851	274,041,605.432	25,305,474.35	646,459,233.749
2028	8	0.000	0.037670146	25,434,885.70	0.000	287,203,172.836	25,434,885.70	649,765,204.762
2028	9	0.000	0.037670146	25,621,956.27	321,967.261	199,109,806.174	25,621,956.27	654,544,150.814
2028	10	0.000	0.037670146	22,640,500.90	18,939,023.110	61,176,695.849	22,640,500.90	578,379,233.683
2028	11	0.000	0.037670146	21,294,495.00	107,203,961.147	5,584,255.966	21,294,495.00	543,993,869.941
2028	12	0.000	0.037670146	26,070,356.18	252,312,761.982	71,217.806	26,070,356.18	665,999,073.802
2029	1	0.000	0.037386146	27,861,568.11	366,576,993.531	0.000	27,861,568.11	717,376,203.501
2029	2	0.000	0.037386146	23,900,665.67	409,379,389.003	0.000	23,900,665.67	615,391,378.082
2029	3	0.000	0.037386146	22,137,477.94	325,448,262.504	249,214.928	22,137,477.94	569,993,039.051
2029	4	0.000	0.037386146	22,149,017.14	179,700,330.978	2,862,775.046	22,149,017.14	570,290,148.847
2029	5	0.000	0.037386146	21,696,524.15	57,428,437.688	20,768,103.765	21,696,524.15	558,639,415.344
2029	6	0.000	0.037386146	23,070,405.47	8,197,726.016	119,700,154.564	23,070,405.47	594,013,941.296
2029	7	0.000	0.037386146	25,181,724.31	87,622.375	273,624,496.364	25,181,724.31	648,375,917.159
2029	8	0.000	0.037386146	25,308,231.50	0.000	286,764,092.092	25,308,231.50	651,633,208.854
2029	9	0.000	0.037386146	25,496,409.47	321,305.337	198,808,700.472	25,496,409.47	656,478,391.902
2029	10	0.000	0.037386146	22,535,587.33	18,901,927.123	61,088,751.947	22,535,587.33	580,243,510.314
2029	11	0.000	0.037386146	21,199,301.71	107,001,536.476	5,576,510.658	21,199,301.71	545,836,993.584
2029	12	0.000	0.037386146	25,943,681.50	251,836,768.207	71,118.799	25,943,681.50	667,994,696.599
2030	1	0.000	0.035142027	26,195,859.94	365,936,851.632	0.000	26,195,859.94	719,232,389.057
2030	2	0.000	0.035142027	22,473,727.47	408,636,553.103	0.000	22,473,727.47	617,037,682.063
2030	3	0.000	0.035142027	20,817,667.28	324,821,899.291	248,973.967	20,817,667.28	571,568,965.621
2030	4	0.000	0.035142027	20,833,284.28	179,355,184.875	2,859,992.698	20,833,284.28	571,997,745.191
2030	5	0.000	0.035142027	20,412,993.91	57,321,160.031	20,748,567.267	20,412,993.91	560,458,271.226
2030	6	0.000	0.035142027	21,711,278.00	8,183,254.731	119,596,697.690	21,711,278.00	596,103,902.677
2030	7	0.000	0.035142027	23,700,261.94	87,472.805	273,401,064.942	23,700,261.94	650,713,358.954
2030	8	0.000	0.035142027	23,818,204.64	0.000	286,544,395.493	23,818,204.64	653,951,588.732
2030	9	0.000	0.035142027	23,994,281.82	320,812.401	198,670,151.662	23,994,281.82	658,785,955.955
2030	10	0.000	0.035142027	21,205,611.93	18,874,246.876	61,049,474.225	21,205,611.93	582,220,357.122
2030	11	0.000	0.035142027	19,944,849.36	106,851,887.933	5,573,206.653	19,944,849.36	547,604,914.764
2030	12	0.000	0.035142027	24,402,751.87	251,508,426.926	71,081.758	24,402,751.87	670,000,892.028

Indiana Michigan Power Company-Indiana
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Year	Month	X-Missing	Lighting Share	Lighting Usage	Heating Usage	Cooling Usage	Lighting Usage	Other Usage
2031	1	0.000	0.033495691	25,027,215.20	365,810,087.173	0.000	25,027,215.20	722,149,933.043
2031	2	0.000	0.033495691	21,476,797.37	408,539,046.864	0.000	21,476,797.37	619,704,096.306
2031	3	0.000	0.033495691	19,901,562.06	324,782,067.137	249,206.627	19,901,562.06	574,251,333.651
2031	4	0.000	0.033495691	19,920,561.18	179,335,725.829	2,862,705.950	19,920,561.18	574,799,545.533
2031	5	0.000	0.033495691	19,522,675.59	57,316,599.151	20,768,801.540	19,522,675.59	563,318,721.591
2031	6	0.000	0.033495691	20,765,193.18	8,182,791.390	119,716,457.310	20,765,193.18	599,171,052.143
2031	7	0.000	0.033495691	22,663,040.29	87,469.770	273,682,217.171	22,663,040.29	653,932,644.815
2031	8	0.000	0.033495691	22,772,508.70	0.000	286,846,658.085	22,772,508.70	657,091,310.484
2031	9	0.000	0.033495691	22,941,357.03	320,814.900	198,884,800.460	22,941,357.03	661,963,359.039
2031	10	0.000	0.033495691	20,278,095.74	18,874,840.161	61,116,809.311	20,278,095.74	585,116,057.126
2031	11	0.000	0.033495691	19,072,810.55	106,857,490.863	5,579,455.682	19,072,810.55	550,338,051.918
2031	12	0.000	0.033495691	23,325,777.26	251,527,552.021	71,162.879	23,325,777.26	673,055,645.785
2032	1	0.000	0.032469133	24,346,739.20	365,566,402.145	0.000	24,346,739.20	725,495,864.376
2032	2	0.000	0.032469133	20,897,123.24	408,271,192.514	0.000	20,897,123.24	622,702,545.854
2032	3	0.000	0.032469133	19,370,719.28	324,572,784.951	249,484.620	19,370,719.28	577,218,025.443
2032	4	0.000	0.032469133	19,392,142.99	179,221,426.550	2,865,909.472	19,392,142.99	577,856,419.294
2032	5	0.000	0.032469133	19,007,194.01	57,280,519.735	20,792,131.798	19,007,194.01	566,385,524.388
2032	6	0.000	0.032469133	20,215,180.48	8,177,704.866	119,851,420.598	20,215,180.48	602,381,687.155
2032	7	0.000	0.032469133	22,055,662.14	87,416.195	273,992,187.440	22,055,662.14	657,225,246.203
2032	8	0.000	0.032469133	22,158,433.32	0.000	287,173,472.850	22,158,433.32	660,287,671.514
2032	9	0.000	0.032469133	22,324,384.90	320,626.309	199,113,154.187	22,324,384.90	665,232,776.407
2032	10	0.000	0.032469133	19,738,616.06	18,864,075.488	61,187,720.394	19,738,616.06	588,180,790.940
2032	11	0.000	0.032469133	18,568,185.56	106,798,612.236	5,586,005.466	18,568,185.56	553,303,738.841
2032	12	0.000	0.032469133	22,697,975.43	251,393,917.635	71,247.425	22,697,975.43	676,365,207.072
2033	1	0.000	0.032031144	24,138,298.83	365,513,014.386	0.000	24,138,298.83	729,450,113.594
2033	2	0.000	0.032031144	20,721,367.63	408,167,680.392	0.000	20,721,367.63	626,191,766.058
2033	3	0.000	0.032031144	19,213,542.16	324,455,452.852	250,023.984	19,213,542.16	580,625,859.814
2033	4	0.000	0.032031144	19,235,513.78	179,137,124.716	2,871,873.751	19,235,513.78	581,289,833.678
2033	5	0.000	0.032031144	18,853,538.86	57,247,192.797	20,833,683.312	18,853,538.86	569,746,698.448
2033	6	0.000	0.032031144	20,046,390.03	8,172,045.973	120,081,156.251	20,046,390.03	605,794,202.236
2033	7	0.000	0.032031144	21,860,584.96	87,346.346	274,495,575.762	21,860,584.96	660,618,475.816
2033	8	0.000	0.032031144	21,956,994.29	0.000	287,678,424.529	21,956,994.29	663,531,928.641
2033	9	0.000	0.032031144	22,122,637.80	320,300.510	199,446,893.699	22,122,637.80	668,537,612.062

Indiana Michigan Power Company-Indiana
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Year	Month	X-Missing	Lighting Share	Lighting Usage	Heating Usage	Cooling Usage	Lighting Usage	Other Usage
2033	10	0.000	0.032031144	19,566,746.13	18,842,702.737	61,284,982.289	19,566,746.13	591,299,548.054
2033	11	0.000	0.032031144	18,409,296.05	106,665,249.709	5,594,406.031	18,409,296.05	556,321,851.380
2033	12	0.000	0.032031144	22,490,508.55	251,052,335.095	71,348.767	22,490,508.55	679,654,524.630
2034	1	0.000	0.03170732	24,007,720.20	364,981,781.317	0.000	24,007,720.20	733,158,766.300
2034	2	0.000	0.03170732	20,613,391.48	407,567,443.849	0.000	20,613,391.48	629,501,199.613
2034	3	0.000	0.03170732	19,120,048.77	323,973,060.925	250,531.640	19,120,048.77	583,896,815.279
2034	4	0.000	0.03170732	19,143,717.88	178,867,534.611	2,877,664.419	19,143,717.88	584,619,633.285
2034	5	0.000	0.03170732	18,764,514.05	57,160,007.343	20,875,401.215	18,764,514.05	573,039,332.876
2034	6	0.000	0.03170732	19,947,498.13	8,159,451.777	120,319,895.781	19,947,498.13	609,165,843.104
2034	7	0.000	0.03170732	21,742,999.19	87,210.238	275,037,607.608	21,742,999.19	663,997,677.775
2034	8	0.000	0.03170732	21,834,604.11	0.000	288,242,964.398	21,834,604.11	666,795,150.645
2034	9	0.000	0.03170732	22,001,849.98	319,791.068	199,835,689.107	22,001,849.98	671,902,581.895
2034	10	0.000	0.03170732	19,468,295.97	18,812,420.636	61,403,673.237	19,468,295.97	594,531,747.826
2034	11	0.000	0.03170732	18,321,317.18	106,492,087.517	5,605,171.600	18,321,317.18	559,504,783.722
2034	12	0.000	0.03170732	22,370,955.66	250,641,027.445	71,485.267	22,370,955.66	683,174,500.261
2035	1	0.000	0.031525265	23,994,875.57	364,458,620.214	0.000	23,994,875.57	737,136,736.574
2035	2	0.000	0.031525265	20,606,671.24	406,976,119.918	0.000	20,606,671.24	633,049,100.353
2035	3	0.000	0.031525265	19,120,800.46	323,497,536.873	251,181.162	19,120,800.46	587,402,273.203
2035	4	0.000	0.031525265	19,146,096.35	178,601,971.281	2,885,087.656	19,146,096.35	588,179,377.741
2035	5	0.000	0.031525265	18,767,618.30	57,074,152.431	20,928,971.600	18,767,618.30	576,552,308.764
2035	6	0.000	0.031525265	19,945,974.92	8,147,055.278	120,627,022.235	19,945,974.92	612,752,119.406
2035	7	0.000	0.031525265	21,730,503.64	87,076.392	275,736,339.188	21,730,503.64	667,573,894.791
2035	8	0.000	0.031525265	21,817,424.49	0.000	288,971,649.222	21,817,424.49	670,244,154.515
2035	9	0.000	0.031525265	21,987,524.54	319,290.318	200,338,494.012	21,987,524.54	675,469,728.509
2035	10	0.000	0.031525265	19,465,155.79	18,782,637.805	61,557,338.274	19,465,155.79	597,981,071.967
2035	11	0.000	0.031525265	18,323,883.56	106,321,820.951	5,619,131.546	18,323,883.56	562,920,515.536
2035	12	0.000	0.031525265	22,361,428.72	250,236,458.011	71,662.467	22,361,428.72	686,956,285.499
2036	1	0.000	0.031396433	24,030,570.28	363,992,566.884	0.000	24,030,570.28	741,361,157.829
2036	2	0.000	0.031396433	20,642,077.87	406,455,162.429	0.000	20,642,077.87	636,823,619.749
2036	3	0.000	0.031396433	19,161,258.23	323,083,164.075	251,977.969	19,161,258.23	591,139,220.511
2036	4	0.000	0.031396433	19,188,253.51	178,372,202.884	2,894,226.272	19,188,253.51	591,972,045.257
2036	5	0.000	0.031396433	18,809,864.56	57,000,423.323	20,995,171.810	18,809,864.56	580,298,461.794
2036	6	0.000	0.031396433	19,985,966.77	8,136,500.830	121,008,234.536	19,985,966.77	616,582,098.828

Indiana Michigan Power Company-Indiana
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Year	Month	X-Missing	Lighting Share	Lighting Usage	Heating Usage	Cooling Usage	Lighting Usage	Other Usage
2036	7	0.000	0.031396433	21,762,391.34	86,963.247	276,606,882.322	21,762,391.34	671,386,132.313
2036	8	0.000	0.031396433	21,844,689.87	0.000	289,883,513.571	21,844,689.87	673,925,103.879
2036	9	0.000	0.031396433	22,018,525.71	318,873.879	200,970,299.298	22,018,525.71	679,288,070.316
2036	10	0.000	0.031396433	19,503,487.72	18,758,117.836	61,751,439.595	19,503,487.72	601,697,257.646
2036	11	0.000	0.031396433	18,366,445.84	106,182,857.715	5,636,844.423	18,366,445.84	566,618,660.804
2036	12	0.000	0.031396433	22,400,420.16	249,909,192.274	71,888.344	22,400,420.16	691,069,801.112
2037	1	0.000	0.031273565	24,077,771.47	363,500,978.750	0.000	24,077,771.47	745,830,352.012
2037	2	0.000	0.031273565	20,687,708.99	405,908,770.357	0.000	20,687,708.99	640,820,156.300
2037	3	0.000	0.031273565	19,211,607.59	322,650,427.762	252,916.632	19,211,607.59	595,096,604.623
2037	4	0.000	0.031273565	19,240,452.58	178,134,766.841	2,905,025.764	19,240,452.58	595,990,104.003
2037	5	0.000	0.031273565	18,862,241.28	56,925,027.910	21,073,646.624	18,862,241.28	584,274,673.149
2037	6	0.000	0.031273565	20,036,677.64	8,125,802.204	121,461,237.533	20,036,677.64	620,653,882.288
2037	7	0.000	0.031273565	21,805,153.94	86,849.476	277,643,691.769	21,805,153.94	675,434,005.809
2037	8	0.000	0.031273565	21,882,533.98	0.000	290,971,063.192	21,882,533.98	677,830,921.277
2037	9	0.000	0.031273565	22,060,548.13	318,460.336	201,725,151.261	22,060,548.13	683,345,067.633
2037	10	0.000	0.031273565	19,552,425.34	18,733,892.824	61,983,602.219	19,552,425.34	605,653,737.252
2037	11	0.000	0.031273565	18,419,584.11	106,046,262.943	5,658,055.369	18,419,584.11	570,562,974.145
2037	12	0.000	0.031273565	22,451,935.34	249,588,846.042	72,159.066	22,451,935.34	695,468,634.046
2038	1	0.000	0.031143865	24,121,041.68	362,789,563.829	0.000	24,121,041.68	750,382,761.808
2038	2	0.000	0.031143865	20,729,845.12	405,115,059.888	0.000	20,729,845.12	644,885,848.625
2038	3	0.000	0.031143865	19,258,684.04	322,020,515.242	253,682.490	19,258,684.04	599,119,420.704
2038	4	0.000	0.031143865	19,289,142.55	177,787,553.377	2,913,827.769	19,289,142.55	600,066,956.141
2038	5	0.000	0.031143865	18,911,079.51	56,814,242.167	21,137,532.494	18,911,079.51	588,305,773.012
2038	6	0.000	0.031143865	20,083,582.60	8,110,011.139	121,829,642.015	20,083,582.60	624,781,233.630
2038	7	0.000	0.031143865	21,843,500.14	86,680.989	278,486,411.932	21,843,500.14	679,530,601.466
2038	8	0.000	0.031143865	21,915,857.19	0.000	291,854,966.768	21,915,857.19	681,781,560.761
2038	9	0.000	0.031143865	22,097,941.78	317,844.792	202,338,405.537	22,097,941.78	687,446,039.784
2038	10	0.000	0.031143865	19,597,336.73	18,697,750.811	62,172,183.001	19,597,336.73	609,654,585.198
2038	11	0.000	0.031143865	18,469,001.15	105,842,141.827	5,675,287.601	18,469,001.15	574,553,133.778
2038	12	0.000	0.031143865	22,499,108.60	249,109,556.254	72,379.080	22,499,108.60	699,925,959.745
2039	1	0.000	0.03101924	24,169,170.31	362,449,721.447	0.000	24,169,170.31	754,997,885.975
2039	2	0.000	0.03101924	20,776,371.16	404,739,243.847	0.000	20,776,371.16	649,013,437.462
2039	3	0.000	0.03101924	19,310,012.49	321,724,621.231	254,663.913	19,310,012.49	603,207,244.085

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Year	Month	X-Missing	Lighting Share	Lighting Usage	Heating Usage	Cooling Usage	Lighting Usage	Other Usage
2039	4	0.000	0.03101924	19,342,219.87	177,625,780.096	2,925,119.361	19,342,219.87	604,213,339.828
2039	5	0.000	0.03101924	18,964,431.82	56,763,069.992	21,219,585.991	18,964,431.82	592,411,975.621
2039	6	0.000	0.03101924	20,135,508.57	8,102,784.905	122,303,443.159	20,135,508.57	628,994,136.367
2039	7	0.000	0.03101924	21,887,243.77	86,604.480	279,571,132.866	21,887,243.77	683,714,937.949
2039	8	0.000	0.03101924	21,954,566.91	0.000	292,993,502.490	21,954,566.91	685,817,981.997
2039	9	0.000	0.03101924	22,140,756.89	317,569.580	203,128,987.100	22,140,756.89	691,634,194.759
2039	10	0.000	0.03101924	19,647,284.01	18,681,724.617	62,415,500.117	19,647,284.01	613,742,950.452
2039	11	0.000	0.03101924	18,523,259.07	105,752,337.235	5,697,534.361	18,523,259.07	578,630,596.778
2039	12	0.000	0.03101924	22,552,007.98	248,900,193.329	72,663.224	22,552,007.98	704,480,879.335
2040	1	0.000	0.03044939	23,856,064.66	362,293,699.896	0.000	23,856,064.66	759,610,017.716
2040	2	0.000	0.03044939	20,512,337.69	404,568,718.781	0.000	20,512,337.69	653,141,137.015
2040	3	0.000	0.03044939	19,072,442.53	321,592,171.097	255,698.999	19,072,442.53	607,292,888.251
2040	4	0.000	0.03044939	19,106,294.80	177,553,532.380	2,937,018.118	19,106,294.80	608,370,791.194
2040	5	0.000	0.03044939	18,735,252.92	56,740,361.358	21,306,005.058	18,735,252.92	596,556,305.591
2040	6	0.000	0.03044939	19,888,977.35	8,099,598.864	122,802,116.601	19,888,977.35	633,292,483.399
2040	7	0.000	0.03044939	21,607,816.00	86,571.031	280,712,393.901	21,607,816.00	688,022,677.936
2040	8	0.000	0.03044939	21,669,146.82	0.000	294,191,144.992	21,669,146.82	689,975,535.885
2040	9	0.000	0.03044939	21,855,602.12	317,451.106	203,960,082.723	21,855,602.12	695,912,529.966
2040	10	0.000	0.03044939	19,404,337.70	18,674,881.651	62,671,180.453	19,404,337.70	617,860,888.285
2040	11	0.000	0.03044939	18,299,765.77	105,714,294.246	5,720,900.776	18,299,765.77	582,689,793.979
2040	12	0.000	0.03044939	22,267,333.57	248,812,317.799	72,961.573	22,267,333.57	709,022,627.420
2041	1	0.000	0.029965351	23,606,749.71	361,929,053.227	0.000	23,606,749.71	764,194,798.437
2041	2	0.000	0.029965351	20,302,834.10	404,159,477.614	0.000	20,302,834.10	657,240,848.616
2041	3	0.000	0.029965351	18,885,092.85	321,264,962.386	256,543.618	18,885,092.85	611,345,903.294
2041	4	0.000	0.029965351	18,920,536.77	177,372,423.780	2,946,714.330	18,920,536.77	612,493,289.568
2041	5	0.000	0.029965351	18,555,032.37	56,682,271.279	21,376,282.002	18,555,032.37	600,661,226.110
2041	6	0.000	0.029965351	19,694,413.26	8,091,277.986	123,206,841.621	19,694,413.26	637,545,123.992
2041	7	0.000	0.029965351	21,385,186.06	86,481.809	281,636,834.153	21,385,186.06	692,278,613.228
2041	8	0.000	0.029965351	21,440,788.21	0.000	295,159,334.159	21,440,788.21	694,078,559.193
2041	9	0.000	0.029965351	21,627,756.13	317,122.806	204,631,228.561	21,627,756.13	700,131,061.753
2041	10	0.000	0.029965351	19,211,850.74	18,655,544.973	62,877,346.047	19,211,850.74	621,923,669.425
2041	11	0.000	0.029965351	18,123,568.48	105,604,695.377	5,739,715.399	18,123,568.48	586,693,930.241
2041	12	0.000	0.029965351	22,040,487.73	248,553,804.910	73,201.404	22,040,487.73	713,491,958.381

Indiana Michigan Power Company-Indiana
Long-Term Residential Energy Model Output

Year	Month	X-Missing	Lighting Share	Lighting Usage	Heating Usage	Cooling Usage	Lighting Usage	Other Usage
2042	1	0.000	0.029550842	23,407,895.10	361,850,102.792	0.000	23,407,895.10	768,714,891.521
2042	2	0.000	0.029550842	20,136,659.17	404,072,547.338	0.000	20,136,659.17	661,287,557.294
2042	3	0.000	0.029550842	18,737,909.15	321,197,074.785	257,575.622	18,737,909.15	615,352,629.451
2042	4	0.000	0.029550842	18,774,978.04	177,335,657.486	2,958,576.472	18,774,978.04	616,569,971.142
2042	5	0.000	0.029550842	18,414,239.39	56,670,758.514	21,462,394.095	18,414,239.39	604,723,319.793
2042	6	0.000	0.029550842	19,541,885.11	8,089,669.043	123,703,523.496	19,541,885.11	641,755,186.611
2042	7	0.000	0.029550842	21,208,667.88	86,464.974	282,773,007.262	21,208,667.88	696,492,305.512
2042	8	0.000	0.029550842	21,258,884.88	0.000	296,350,549.499	21,258,884.88	698,141,431.214
2042	9	0.000	0.029550842	21,446,559.94	317,062.807	205,457,363.845	21,446,559.94	704,304,677.103
2042	10	0.000	0.029550842	19,060,567.67	18,652,069.119	63,131,298.004	19,060,567.67	625,948,730.040
2042	11	0.000	0.029550842	17,986,127.84	105,585,400.514	5,762,910.927	17,986,127.84	590,664,143.648
2042	12	0.000	0.029550842	21,861,165.83	248,509,238.436	73,497.388	21,861,165.83	717,920,327.652
2043	1	0.000	0.029201708	23,262,083.27	361,946,969.536	0.000	23,262,083.27	773,338,017.680
2043	2	0.000	0.029201708	20,016,038.91	404,181,649.087	0.000	20,016,038.91	665,424,660.082
2043	3	0.000	0.029201708	18,633,081.00	321,284,779.171	258,688.821	18,633,081.00	619,448,815.414
2043	4	0.000	0.029201708	18,671,714.35	177,384,510.511	2,971,367.676	18,671,714.35	620,733,164.650
2043	5	0.000	0.029201708	18,314,808.93	56,686,581.321	21,555,247.232	18,314,808.93	608,867,996.504
2043	6	0.000	0.029201708	19,433,106.02	8,091,961.514	124,239,119.635	19,433,106.02	646,045,305.199
2043	7	0.000	0.029201708	21,079,560.41	86,489.842	283,998,312.292	21,079,560.41	700,780,978.051
2043	8	0.000	0.029201708	21,124,633.27	0.000	297,635,824.923	21,124,633.27	702,279,405.936
2043	9	0.000	0.029201708	21,313,711.48	317,156.991	206,349,337.349	21,313,711.48	708,565,230.245
2043	10	0.000	0.029201708	18,952,659.26	18,657,714.885	63,405,692.777	18,952,659.26	630,073,058.043
2043	11	0.000	0.029201708	17,889,992.04	105,617,991.469	5,787,988.896	17,889,992.04	594,745,140.508
2043	12	0.000	0.029201708	21,732,248.53	248,587,805.001	73,817.699	21,732,248.53	722,479,315.685
2044	1	0.000	0.028859199	23,118,173.53	362,104,245.972	0.000	23,118,173.53	777,949,587.049
2044	2	0.000	0.028859199	19,897,079.96	404,359,511.115	0.000	19,897,079.96	669,556,576.950
2044	3	0.000	0.028859199	18,529,697.05	321,427,101.164	259,813.939	18,529,697.05	623,542,778.997
2044	4	0.000	0.028859199	18,569,940.94	177,462,939.636	2,984,290.871	18,569,940.94	624,897,025.896
2044	5	0.000	0.028859199	18,216,823.31	56,711,613.371	21,648,998.193	18,216,823.31	613,014,265.628
2044	6	0.000	0.028859199	19,325,942.73	8,095,535.899	124,779,524.147	19,325,942.73	650,337,239.932
2044	7	0.000	0.028859199	20,952,472.53	86,528.078	285,233,707.473	20,952,472.53	705,071,589.045
2044	8	0.000	0.028859199	20,992,453.35	0.000	298,930,698.861	20,992,453.35	706,416,983.681
2044	9	0.000	0.028859199	21,182,654.79	317,297.184	207,246,876.263	21,182,654.79	712,817,451.846

Indiana Michigan Power Company-Indiana
Long-Term Residential Energy Model Output

Year	Month	X-Missing	Lighting Share	Lighting Usage	Heating Usage	Cooling Usage	Lighting Usage	Other Usage
2044	10	0.000	0.028859199	18,845,847.96	18,665,933.110	63,681,384.087	18,845,847.96	634,181,572.341
2044	11	0.000	0.028859199	17,794,505.23	105,664,279.962	5,813,143.694	17,794,505.23	598,802,841.352
2044	12	0.000	0.028859199	21,604,111.09	248,695,896.481	74,138.286	21,604,111.09	726,999,876.385
2045	1	0.000	0.028516677	22,967,677.75	362,270,819.642	0.000	22,967,677.75	782,444,465.317
2045	2	0.000	0.028516677	19,771,972.72	404,541,877.658	0.000	19,771,972.72	673,575,743.849
2045	3	0.000	0.028516677	18,420,047.04	321,569,646.734	260,922.436	18,420,047.04	627,519,421.368
2045	4	0.000	0.028516677	18,461,769.63	177,540,983.639	2,997,014.726	18,461,769.63	628,940,793.409
2045	5	0.000	0.028516677	18,112,429.16	56,736,336.700	21,741,237.993	18,112,429.16	617,039,741.611
2045	6	0.000	0.028516677	19,212,163.10	8,099,030.336	125,310,776.358	19,212,163.10	654,504,597.405
2045	7	0.000	0.028516677	20,818,891.18	86,565.038	286,447,177.525	20,818,891.18	709,241,323.998
2045	8	0.000	0.028516677	20,854,037.50	0.000	300,201,776.620	20,854,037.50	710,438,660.740
2045	9	0.000	0.028516677	21,045,115.86	317,430.640	208,127,776.055	21,045,115.86	716,948,165.177
2045	10	0.000	0.028516677	18,732,691.88	18,673,722.177	63,951,942.264	18,732,691.88	638,170,355.657
2045	11	0.000	0.028516677	17,692,704.73	105,708,058.122	5,837,832.594	17,692,704.73	602,740,905.845
2045	12	0.000	0.028516677	21,468,988.45	248,798,473.781	74,453.120	21,468,988.45	731,388,317.677
2046	1	0.000	0.02817892	22,815,648.91	362,444,566.290	0.000	22,815,648.91	786,855,166.238
2046	2	0.000	0.02817892	19,645,457.07	404,732,808.321	0.000	19,645,457.07	677,523,109.306
2046	3	0.000	0.02817892	18,308,884.24	321,718,914.935	262,009.035	18,308,884.24	631,428,025.846
2046	4	0.000	0.02817892	18,352,013.14	177,621,717.566	3,009,475.313	18,352,013.14	632,915,434.679
2046	5	0.000	0.02817892	18,006,349.36	56,761,536.666	21,831,459.205	18,006,349.36	620,994,348.171
2046	6	0.000	0.02817892	19,096,641.66	8,102,538.058	125,829,721.150	19,096,641.66	658,595,826.556
2046	7	0.000	0.02817892	20,683,769.14	86,601.497	287,630,701.041	20,683,769.14	713,331,918.267
2046	8	0.000	0.02817892	20,714,012.26	0.000	301,438,905.140	20,714,012.26	714,374,928.712
2046	9	0.000	0.02817892	20,905,383.20	317,555.512	208,982,954.074	20,905,383.20	720,974,837.842
2046	10	0.000	0.02817892	18,616,666.98	18,680,777.963	64,213,900.154	18,616,666.98	642,042,689.519
2046	11	0.000	0.02817892	17,587,454.65	105,746,360.295	5,861,670.941	17,587,454.65	606,547,708.123
2046	12	0.000	0.02817892	21,329,754.33	248,884,906.660	74,756.222	21,329,754.33	735,610,346.059
2047	1	0.000	0.027843558	22,660,759.49	362,653,245.690	0.000	22,660,759.49	791,199,278.469
2047	2	0.000	0.027843558	19,516,044.96	404,959,882.966	0.000	19,516,044.96	681,401,728.812
2047	3	0.000	0.027843558	18,194,477.07	321,894,523.999	263,075.805	18,194,477.07	635,259,252.211
2047	4	0.000	0.027843558	18,238,759.59	177,715,968.342	3,021,691.676	18,238,759.59	636,805,374.140
2047	5	0.000	0.027843558	17,896,686.85	56,790,864.050	21,919,842.776	17,896,686.85	624,861,921.597
2047	6	0.000	0.027843558	18,977,432.92	8,106,614.126	126,337,800.123	18,977,432.92	662,596,116.381

Indiana Michigan Power Company-Indiana
Long-Term Residential Energy Model Output

Year	Month	X-Missing	Lighting Share	Lighting Usage	Heating Usage	Cooling Usage	Lighting Usage	Other Usage
2047	7	0.000	0.027843558	20,545,306.21	86,644.175	288,789,964.042	20,545,306.21	717,338,333.468
2047	8	0.000	0.027843558	20,571,029.09	0.000	302,651,719.522	20,571,029.09	718,236,446.540
2047	9	0.000	0.027843558	20,762,831.11	317,706.455	209,822,718.192	20,762,831.11	724,933,204.426
2047	10	0.000	0.027843558	18,498,063.40	18,689,512.480	64,471,624.970	18,498,063.40	645,858,953.865
2047	11	0.000	0.027843558	17,479,934.02	105,795,014.505	5,885,171.370	17,479,934.02	610,311,017.767
2047	12	0.000	0.027843558	21,188,547.10	248,997,441.496	75,055.574	21,188,547.10	739,797,057.015
2048	1	0.000	0.027524628	22,514,620.24	362,897,749.932	0.000	22,514,620.24	795,466,280.902
2048	2	0.000	0.027524628	19,394,466.90	405,231,782.199	0.000	19,394,466.90	685,227,833.835
2048	3	0.000	0.027524628	18,087,579.52	322,109,599.145	264,115.378	18,087,579.52	639,054,066.254
2048	4	0.000	0.027524628	18,133,430.24	177,833,937.570	3,033,627.077	18,133,430.24	640,674,022.709
2048	5	0.000	0.027524628	17,795,046.93	56,828,228.168	22,006,350.372	17,795,046.93	628,718,568.204
2048	6	0.000	0.027524628	18,867,131.69	8,111,913.765	126,836,160.152	18,867,131.69	666,596,501.210
2048	7	0.000	0.027524628	20,416,811.72	86,700.304	289,928,035.231	20,416,811.72	721,348,400.152
2048	8	0.000	0.027524628	20,438,265.07	0.000	303,843,537.200	20,438,265.07	722,106,370.365
2048	9	0.000	0.027524628	20,630,593.55	317,908.650	210,648,100.556	20,630,593.55	728,901,547.041
2048	10	0.000	0.027524628	18,388,453.50	18,701,247.561	64,724,845.045	18,388,453.50	649,684,274.757
2048	11	0.000	0.027524628	17,380,766.67	105,860,590.023	5,908,252.900	17,380,766.67	614,081,591.252
2048	12	0.000	0.027524628	21,057,595.61	249,149,876.921	75,349.536	21,057,595.61	743,987,999.327
2049	1	0.000	0.027225621	22,387,459.09	363,322,338.990	0.000	22,387,459.09	799,906,345.356
2049	2	0.000	0.027225621	19,289,036.89	405,702,384.694	0.000	19,289,036.89	689,199,383.617
2049	3	0.000	0.027225621	17,995,657.29	322,481,212.232	265,209.726	17,995,657.29	642,986,790.016
2049	4	0.000	0.027225621	18,042,856.98	178,038,028.848	3,046,183.245	18,042,856.98	644,673,240.187
2049	5	0.000	0.027225621	17,707,725.35	56,893,101.174	22,097,338.260	17,707,725.35	632,698,950.342
2049	6	0.000	0.027225621	18,771,672.06	8,121,113.073	127,359,850.214	18,771,672.06	670,713,881.985
2049	7	0.000	0.027225621	20,304,130.49	86,798.107	291,123,884.137	20,304,130.49	725,468,788.079
2049	8	0.000	0.027225621	20,321,167.61	0.000	305,095,167.840	20,321,167.61	726,077,526.434
2049	9	0.000	0.027225621	20,514,232.36	318,262.931	211,514,820.126	20,514,232.36	732,975,750.790
2049	10	0.000	0.027225621	18,293,214.58	18,721,971.744	64,990,877.980	18,293,214.58	653,618,544.349
2049	11	0.000	0.027225621	17,295,331.70	105,977,149.363	5,932,506.430	17,295,331.70	617,964,080.698
2049	12	0.000	0.027225621	20,943,336.67	249,422,781.556	75,658.556	20,943,336.67	748,307,694.474
2050	1	0.000	0.026947317	22,277,341.45	363,840,073.005	0.000	22,277,341.45	804,422,455.132
2050	2	0.000	0.026947317	19,198,342.35	406,278,248.405	0.000	19,198,342.35	693,241,503.825
2050	3	0.000	0.026947317	17,917,521.91	322,937,373.651	266,303.907	17,917,521.91	646,991,787.474

Indiana Michigan Power Company-Indiana
Long-Term Residential Energy Model Output

Year	Month	X-Missing	Lighting Share	Lighting Usage	Heating Usage	Cooling Usage	Lighting Usage	Other Usage
2050	4	0.000	0.026947317	17,966,088.55	178,288,816.910	3,058,738.449	17,966,088.55	648,745,502.165
2050	5	0.000	0.026947317	17,633,946.98	56,972,940.861	22,188,338.208	17,633,946.98	636,752,053.842
2050	6	0.000	0.026947317	18,690,601.73	8,132,468.319	127,883,906.968	18,690,601.73	674,907,271.413
2050	7	0.000	0.026947317	20,206,981.50	86,919.066	292,320,902.018	20,206,981.50	729,662,904.889
2050	8	0.000	0.026947317	20,219,716.32	0.000	306,348,825.168	20,219,716.32	730,122,751.958
2050	9	0.000	0.026947317	20,413,802.52	318,703.518	212,383,233.076	20,413,802.52	737,131,097.047
2050	10	0.000	0.026947317	18,212,372.23	18,747,810.090	65,257,548.234	18,212,372.23	657,638,669.367
2050	11	0.000	0.026947317	17,223,743.82	106,122,987.799	5,956,835.539	17,223,743.82	621,939,845.099
2050	12	0.000	0.026947317	20,845,939.44	249,764,956.255	75,968.636	20,845,939.44	752,735,321.744
2051	1	0.000	0.026643131	22,140,675.88	364,145,262.831	0.000	22,140,675.88	808,868,111.076
2051	2	0.000	0.026643131	19,084,707.25	406,617,862.462	0.000	19,084,707.25	697,224,022.673
2051	3	0.000	0.026643131	17,817,819.81	323,206,612.239	267,371.075	17,817,819.81	650,940,663.697
2051	4	0.000	0.026643131	17,867,796.52	178,436,884.787	3,070,989.830	17,867,796.52	652,766,469.121
2051	5	0.000	0.026643131	17,539,126.55	57,020,110.131	22,277,181.652	17,539,126.55	640,759,127.607
2051	6	0.000	0.026643131	18,587,495.33	8,139,181.968	128,395,808.299	18,587,495.33	679,059,316.972
2051	7	0.000	0.026643131	20,086,537.87	86,990.641	293,490,739.671	20,086,537.87	733,824,027.529
2051	8	0.000	0.026643131	20,095,159.32	0.000	307,574,622.375	20,095,159.32	734,138,995.989
2051	9	0.000	0.026643131	20,289,893.37	318,964.663	213,232,765.102	20,289,893.37	741,253,239.650
2051	10	0.000	0.026643131	18,110,177.00	18,763,141.918	65,518,551.183	18,110,177.00	661,621,385.826
2051	11	0.000	0.026643131	17,131,683.83	106,209,626.172	5,980,659.281	17,131,683.83	625,873,971.459
2051	12	0.000	0.026643131	20,724,034.30	249,968,411.778	76,272.415	20,724,034.30	757,113,765.210
2052	1	0.000	0.026342107	22,003,960.75	364,448,273.388	0.000	22,003,960.75	813,311,186.875
2052	2	0.000	0.026342107	18,970,970.44	406,955,837.886	0.000	18,970,970.44	701,205,690.060
2052	3	0.000	0.026342107	17,717,913.03	323,475,158.873	268,435.477	17,717,913.03	654,890,137.192
2052	4	0.000	0.026342107	17,769,302.54	178,584,907.193	3,083,213.954	17,769,302.54	656,789,598.099
2052	5	0.000	0.026342107	17,444,104.17	57,067,372.043	22,365,860.054	17,444,104.17	644,769,604.047
2052	6	0.000	0.026342107	18,484,263.39	8,145,923.713	128,906,942.569	18,484,263.39	683,216,006.581
2052	7	0.000	0.026342107	19,966,194.11	87,062.666	294,659,221.587	19,966,194.11	737,991,183.093
2052	8	0.000	0.026342107	19,970,817.46	0.000	308,799,405.507	19,970,817.46	738,162,071.578
2052	9	0.000	0.026342107	20,166,179.45	319,228.543	214,081,880.264	20,166,179.45	745,383,048.551
2052	10	0.000	0.026342107	18,008,000.28	18,778,668.054	65,779,516.588	18,008,000.28	665,612,352.432
2052	11	0.000	0.026342107	17,039,565.14	106,297,552.101	6,004,487.791	17,039,565.14	629,817,018.214
2052	12	0.000	0.026342107	20,602,283.93	250,175,314.461	76,576.354	20,602,283.93	761,502,357.643

Indiana Michigan Power Company-Indiana
Long-Term Residential Energy Model Output

Year	Month	X-Missing	Lighting Share	Lighting Usage	Heating Usage	Cooling Usage	Lighting Usage	Other Usage
2053	1	0.000	0.026044216	21,867,520.43	364,755,550.912	0.000	21,867,520.43	817,763,063.609
2053	2	0.000	0.026044216	18,857,370.88	407,297,860.628	0.000	18,857,370.88	705,194,785.603
2053	3	0.000	0.026044216	17,617,989.42	323,746,343.971	269,499.399	17,617,989.42	658,846,577.760
2053	4	0.000	0.026044216	17,670,745.37	178,734,049.016	3,095,428.425	17,670,745.37	660,819,452.153
2053	5	0.000	0.026044216	17,348,967.83	57,114,880.339	22,454,437.427	17,348,967.83	648,786,181.840
2053	6	0.000	0.026044216	18,380,946.32	8,152,684.670	129,417,315.516	18,380,946.32	687,378,297.809
2053	7	0.000	0.026044216	19,845,943.05	87,134.733	295,825,570.039	19,845,943.05	742,163,668.780
2053	8	0.000	0.026044216	19,846,640.48	0.000	310,021,544.960	19,846,640.48	742,189,750.003
2053	9	0.000	0.026044216	20,042,561.17	319,491.358	214,928,866.851	20,042,561.17	749,516,447.205
2053	10	0.000	0.026044216	17,905,696.26	18,794,093.199	66,039,732.146	17,905,696.26	669,605,732.168
2053	11	0.000	0.026044216	16,947,192.04	106,384,691.875	6,028,239.222	16,947,192.04	633,761,277.453
2053	12	0.000	0.026044216	20,480,409.77	250,379,881.408	76,879.203	20,480,409.77	765,890,339.097
2054	1	0.000	0.025749431	21,731,116.23	365,059,914.699	0.000	21,731,116.23	822,214,370.529
2054	2	0.000	0.025749431	18,743,740.53	407,637,320.060	0.000	18,743,740.53	709,184,593.189
2054	3	0.000	0.025749431	17,517,927.43	324,016,037.868	270,560.471	17,517,927.43	662,804,962.501
2054	4	0.000	0.025749431	17,572,049.17	178,882,687.073	3,107,614.274	17,572,049.17	664,852,702.208
2054	5	0.000	0.025749431	17,253,689.34	57,162,334.780	22,542,838.648	17,253,689.34	652,807,300.507
2054	6	0.000	0.025749431	18,277,562.15	8,159,453.360	129,926,856.977	18,277,562.15	691,546,356.998
2054	7	0.000	0.025749431	19,725,844.33	87,207.039	296,990,421.043	19,725,844.33	746,343,285.450
2054	8	0.000	0.025749431	19,722,725.35	0.000	311,242,528.823	19,722,725.35	746,225,276.242
2054	9	0.000	0.025749431	19,919,184.80	319,756.201	215,775,343.611	19,919,184.80	753,658,478.534
2054	10	0.000	0.025749431	17,803,457.96	18,809,672.798	66,299,883.324	17,803,457.96	673,608,240.973
2054	11	0.000	0.025749431	16,854,807.35	106,472,904.484	6,051,993.192	16,854,807.35	637,715,277.426
2054	12	0.000	0.025749431	20,358,738.61	250,587,426.804	77,182.189	20,358,738.61	770,289,352.772
2055	1	0.000	0.025457724	21,595,100.16	365,369,648.562	0.000	21,595,100.16	826,677,915.443
2055	2	0.000	0.025457724	18,630,410.92	407,984,104.323	0.000	18,630,410.92	713,187,211.254
2055	3	0.000	0.025457724	17,418,072.26	324,292,608.755	271,623.927	17,418,072.26	666,777,905.920
2055	4	0.000	0.025457724	17,473,575.50	179,035,710.714	3,119,835.080	17,473,575.50	668,902,614.949
2055	5	0.000	0.025457724	17,158,640.40	57,211,380.073	22,631,548.843	17,158,640.40	656,846,644.339
2055	6	0.000	0.025457724	18,174,505.17	8,166,476.005	130,438,496.913	18,174,505.17	695,734,770.014
2055	7	0.000	0.025457724	19,606,292.57	87,282.337	298,160,769.324	19,606,292.57	750,544,750.998
2055	8	0.000	0.025457724	19,599,462.59	0.000	312,470,004.887	19,599,462.59	750,283,293.852
2055	9	0.000	0.025457724	19,796,477.54	320,034.067	216,626,846.847	19,796,477.54	757,825,185.527

Indiana Michigan Power Company-Indiana
Long-Term Residential Energy Model Output

Year	Month	X-Missing	Lighting Share	Lighting Usage	Heating Usage	Cooling Usage	Lighting Usage	Other Usage
2055	10	0.000	0.025457724	17,701,729.08	18,826,082.818	66,561,747.329	17,701,729.08	677,636,518.580
2055	11	0.000	0.025457724	16,762,878.91	106,566,177.177	6,075,918.694	16,762,878.91	641,696,574.303
2055	12	0.000	0.025457724	20,237,820.96	250,807,681.590	77,487.546	20,237,820.96	774,720,168.997
2056	1	0.000	0.025169066	21,460,020.24	365,698,632.055	0.000	21,460,020.24	831,174,714.387
2056	2	0.000	0.025169066	18,517,856.00	408,353,329.030	0.000	18,517,856.00	717,220,836.703
2056	3	0.000	0.025169066	17,318,877.91	324,587,762.637	272,697.090	17,318,877.91	670,782,843.471
2056	4	0.000	0.025169066	17,375,765.19	179,199,426.305	3,132,173.000	17,375,765.19	672,986,162.466
2056	5	0.000	0.025169066	17,064,243.68	57,263,985.674	22,721,151.069	17,064,243.68	660,920,526.030
2056	6	0.000	0.025169066	18,072,195.07	8,174,027.452	130,955,524.907	18,072,195.07	699,959,804.500
2056	7	0.000	0.025169066	19,487,682.16	87,363.498	299,343,975.910	19,487,682.16	754,783,474.935
2056	8	0.000	0.025169066	19,477,218.31	0.000	313,711,517.343	19,477,218.31	754,378,196.380
2056	9	0.000	0.025169066	19,674,813.88	320,334.986	217,488,482.645	19,674,813.88	762,031,331.893
2056	10	0.000	0.025169066	17,600,872.60	18,843,897.539	66,826,853.486	17,600,872.60	681,704,867.423
2056	11	0.000	0.025169066	16,671,764.76	106,667,674.633	6,100,151.834	16,671,764.76	645,719,303.063
2056	12	0.000	0.025169066	20,118,052.51	251,047,906.601	77,796.967	20,118,052.51	779,198,545.009
2057	1	0.000	0.024883431	21,326,240.31	366,056,446.196	0.000	21,326,240.31	835,719,560.717
2057	2	0.000	0.024883431	18,406,364.96	408,754,575.415	0.000	18,406,364.96	721,297,285.255
2057	3	0.000	0.024883431	17,220,596.12	324,908,230.975	273,784.289	17,220,596.12	674,830,106.873
2057	4	0.000	0.024883431	17,278,834.29	179,377,038.016	3,144,671.204	17,278,834.29	677,112,308.090
2057	5	0.000	0.024883431	16,970,676.06	57,321,006.021	22,811,909.372	16,970,676.06	665,036,393.409
2057	6	0.000	0.024883431	17,970,775.23	8,182,205.421	131,479,179.227	17,970,775.23	704,227,663.389
2057	7	0.000	0.024883431	19,370,116.44	87,451.318	300,542,250.372	19,370,116.44	759,064,184.102
2057	8	0.000	0.024883431	19,356,058.45	0.000	314,968,739.319	19,356,058.45	758,513,288.350
2057	9	0.000	0.024883431	19,554,228.50	320,660.043	218,360,948.171	19,554,228.50	766,279,054.168
2057	10	0.000	0.024883431	17,500,888.12	18,863,123.236	67,095,266.829	17,500,888.12	685,814,017.053
2057	11	0.000	0.024883431	16,581,428.65	106,777,110.242	6,124,685.086	16,581,428.65	649,782,806.017
2057	12	0.000	0.024883431	19,999,350.37	251,306,709.384	78,110.195	19,999,350.37	783,722,215.402

Indiana Michigan Power Company-Indiana
Long-Term Residential Energy Model Output

Year	Month	Total Usage	Actual	Heating Usage	Cooling Usage	Lighting Usage	Other Usage
1998	1	1,101,534,500.388	1,128,807,578.39	316,288,567.683	0.000	126,754,131.715	685,764,879.00
1998	2	931,858,016.687	924,727,569.72	321,593,919.909	0.000	98,508,623.200	504,625,026.61
1998	3	886,353,742.986	897,003,923.26	264,553,820.603	0.000	100,370,732.251	532,079,370.40
1998	4	777,335,357.910	793,305,322.29	166,415,656.911	6,078,241.123	97,633,302.993	523,178,121.26
1998	5	657,958,067.688	693,987,488.99	37,997,919.451	27,221,818.385	95,679,619.856	533,088,131.30
1998	6	792,457,092.170	785,266,303.20	2,097,566.854	160,170,338.168	101,724,924.519	521,273,473.66
1998	7	1,028,049,151.997	1,035,958,636.33	746,626.434	352,610,549.589	108,908,549.574	573,692,910.73
1998	8	955,047,336.793	995,719,762.15	0.000	280,517,989.993	108,882,298.028	606,319,474.12
1998	9	935,306,964.188	933,979,452.72	0.000	242,166,068.462	111,886,567.934	579,926,816.32
1998	10	747,411,065.246	766,870,207.12	10,462,386.135	119,931,558.762	99,598,693.971	536,877,568.25
1998	11	706,348,674.310	729,664,307.62	92,932,638.919	7,646,765.737	97,783,069.733	531,301,833.23
1998	12	910,970,103.011	917,954,652.24	166,334,828.041	0.000	120,198,773.139	631,421,051.06
1999	1	1,224,487,206.843	1,175,756,719.08	428,078,256.746	0.000	129,552,840.393	618,125,621.94
1999	2	983,719,405.940	1,045,025,543.65	363,143,529.208	0.000	100,949,854.343	580,932,160.10
1999	3	974,142,602.754	943,768,635.62	340,923,367.727	0.000	103,006,565.257	499,838,702.64
1999	4	817,272,329.427	811,991,330.82	200,620,437.805	0.000	100,311,534.775	511,059,358.24
1999	5	666,048,525.433	658,445,490.23	47,926,501.801	15,744,645.500	97,989,481.806	496,784,861.12
1999	6	801,421,268.445	790,698,900.92	2,693,138.875	159,484,071.357	103,986,630.783	524,535,059.90
1999	7	1,066,141,530.775	1,062,558,033.46	0.000	381,770,422.347	111,327,504.505	569,460,106.60
1999	8	1,163,270,893.345	1,127,959,276.73	0.000	480,391,826.757	111,084,792.192	536,482,657.78
1999	9	891,760,271.296	896,307,850.40	124,346.288	187,364,307.395	114,564,745.234	594,254,451.48
1999	10	708,402,732.153	705,118,301.89	22,912,437.047	58,797,789.197	101,944,854.065	521,463,221.58
1999	11	707,172,428.245	702,650,153.76	90,093,094.346	1,503,651.586	100,136,466.461	510,916,941.37
1999	12	956,175,507.416	944,507,931.73	198,914,026.108	0.000	123,184,672.663	622,409,232.96
2000	1	1,157,707,596.230	1,165,999,262.68	348,262,855.017	0.000	132,837,258.083	684,899,149.58
2000	2	1,091,218,135.660	1,037,856,201.38	459,287,640.030	0.000	103,705,552.787	474,863,008.57
2000	3	861,438,789.589	869,176,809.64	219,606,725.408	0.000	105,330,490.415	544,239,593.82
2000	4	761,716,162.616	767,318,560.07	134,576,554.481	0.000	102,919,324.493	529,822,681.10
2000	5	714,696,894.144	717,294,935.56	47,627,438.535	53,792,560.177	100,644,327.014	515,230,609.83
2000	6	779,519,196.072	771,108,002.28	3,555,619.047	126,589,596.530	106,568,187.607	534,394,599.10
2000	7	971,292,280.649	928,795,528.35	132,236.104	276,417,163.093	114,013,637.677	538,232,491.47
2000	8	985,368,568.202	934,010,772.63	0.000	292,270,657.624	113,743,682.967	527,996,432.04
2000	9	966,374,737.079	948,174,702.47	396,859.805	251,223,202.412	117,297,755.333	579,256,884.92

Indiana Michigan Power Company-Indiana
Long-Term Residential Energy Model Output

Year	Month	Total Usage	Actual	Heating Usage	Cooling Usage	Lighting Usage	Other Usage
2000	10	716,005,514.881	744,094,577.73	21,204,817.325	57,855,428.006	104,528,522.885	560,505,809.51
2000	11	707,082,823.137	709,589,282.70	73,676,629.619	7,726,306.949	102,679,770.882	525,506,575.25
2000	12	1,102,876,968.831	1,051,144,998.41	332,955,628.225	0.000	126,351,107.887	591,838,262.30
2001	1	1,333,408,404.587	1,320,784,368.28	511,199,013.930	0.000	135,984,232.704	673,601,121.65
2001	2	1,027,477,015.829	1,057,441,042.46	384,020,343.628	0.000	106,420,533.312	567,000,165.52
2001	3	960,245,453.421	951,330,133.81	306,655,842.219	0.000	108,096,408.035	536,577,883.56
2001	4	853,555,886.820	836,233,902.72	204,406,695.176	10,813,682.881	105,573,550.185	515,439,974.47
2001	5	721,803,769.449	698,801,377.48	40,880,092.843	57,856,677.947	103,048,309.468	497,016,297.22
2001	6	761,096,848.779	753,141,473.46	4,423,066.771	96,877,641.297	109,122,898.565	542,717,866.83
2001	7	990,655,517.497	971,790,816.86	775,431.845	284,810,207.408	116,610,668.140	569,594,509.47
2001	8	1,132,746,843.480	1,100,570,835.54	0.000	429,539,794.675	116,302,576.996	554,728,463.87
2001	9	963,522,525.512	925,794,065.28	193,634.744	238,648,596.005	119,854,011.592	567,097,822.94
2001	10	702,388,796.044	714,363,585.24	22,927,097.516	32,403,699.590	107,016,152.455	552,016,635.68
2001	11	718,838,894.570	734,687,442.18	80,990,077.964	1,041,157.867	105,320,860.887	547,335,345.46
2001	12	916,611,577.919	910,422,653.17	136,254,288.476	0.000	129,062,363.488	645,106,001.21
2002	1	1,160,446,591.987	1,170,728,314.26	328,778,295.288	0.000	138,907,813.322	703,042,205.65
2002	2	930,675,943.616	955,762,741.01	279,598,123.701	0.000	108,745,032.877	567,419,584.43
2002	3	937,655,128.982	944,739,700.17	275,625,602.525	0.000	110,574,220.804	558,539,876.85
2002	4	875,530,407.943	895,370,606.81	209,276,216.350	19,741,381.729	107,982,570.767	558,370,437.96
2002	5	743,033,453.885	733,321,280.58	66,035,434.313	46,268,901.985	105,346,329.625	515,670,614.66
2002	6	805,132,297.901	811,363,558.80	24,723,772.470	112,949,141.301	111,481,132.441	562,209,512.59
2002	7	1,157,156,509.627	1,131,322,462.14	0.000	444,268,557.523	119,068,752.487	567,985,152.13
2002	8	1,203,243,302.054	1,164,616,753.41	0.000	492,312,948.198	118,741,788.368	553,562,016.85
2002	9	1,049,124,993.979	1,037,162,315.42	105,835.787	315,721,528.822	122,477,639.961	598,857,310.85
2002	10	800,450,072.138	780,089,665.62	22,389,284.521	122,365,462.013	109,516,262.970	525,818,656.12
2002	11	804,945,641.949	801,729,870.49	151,517,191.837	7,939,953.428	107,811,486.809	534,461,238.41
2002	12	1,095,755,590.187	1,077,298,616.77	305,415,715.139	0.000	132,005,012.407	639,877,889.23
2003	1	1,228,110,801.719	1,246,048,951.72	389,499,643.749	0.000	139,042,258.619	717,507,049.35
2003	2	1,159,682,615.047	1,137,796,271.91	502,208,477.115	0.000	109,009,626.515	526,578,168.28
2003	3	1,095,088,441.334	1,050,867,408.35	425,594,320.867	0.000	111,002,547.196	514,270,540.28
2003	4	825,981,911.254	812,684,841.75	172,687,303.317	531,916.339	108,228,465.743	531,237,156.35
2003	5	706,327,934.083	723,932,608.60	62,360,760.840	5,510,840.968	105,856,462.349	550,204,544.44
2003	6	711,872,434.122	719,067,313.66	7,351,635.310	30,683,720.192	111,722,612.396	569,309,345.77

Indiana Michigan Power Company-Indiana
Long-Term Residential Energy Model Output

Year	Month	Total Usage	Actual	Heating Usage	Cooling Usage	Lighting Usage	Other Usage
2003	7	968,353,817.089	955,717,350.79	76,525.437	251,730,278.031	118,803,946.541	585,106,600.78
2003	8	1,012,465,241.292	979,389,983.16	0.000	291,987,520.845	119,455,660.211	567,946,802.11
2003	9	1,011,288,952.717	1,001,408,291.79	15,322.277	257,723,973.576	124,939,008.116	618,729,987.82
2003	10	716,539,864.670	730,763,666.78	37,595,483.182	27,521,333.566	108,006,351.977	557,640,498.06
2003	11	747,369,512.424	733,496,861.56	104,236,630.379	1,256,850.633	106,423,450.622	521,579,929.92
2003	12	1,038,879,276.097	1,034,717,393.28	239,559,457.237	194,087.804	132,495,549.947	662,468,298.29
2004	1	1,208,628,637.768	1,229,931,326.87	359,856,963.915	0.000	139,647,660.009	730,426,702.95
2004	2	1,171,656,861.636	1,153,242,163.60	507,563,486.618	0.000	109,262,701.273	536,415,975.71
2004	3	998,724,516.141	989,686,999.47	323,581,993.971	0.000	111,080,607.775	555,024,397.72
2004	4	830,121,020.447	833,878,684.98	162,454,105.555	5,150,023.904	109,003,323.736	557,271,231.78
2004	5	750,422,652.599	731,915,305.67	48,736,331.914	57,356,963.629	106,010,944.710	519,811,065.42
2004	6	829,226,811.920	831,106,406.74	4,269,965.127	141,949,927.678	112,374,530.116	572,511,983.82
2004	7	948,403,866.270	957,123,852.86	0.000	222,727,728.004	119,394,859.366	615,001,265.49
2004	8	918,330,573.863	893,763,723.23	0.000	200,049,969.740	118,178,078.612	575,535,674.88
2004	9	922,543,331.319	901,623,071.74	0.000	178,240,088.787	122,459,560.514	600,923,422.44
2004	10	755,646,975.626	766,876,147.00	22,390,807.736	62,103,694.250	110,424,128.586	571,957,516.42
2004	11	737,462,458.808	735,296,041.17	76,039,750.016	3,966,345.401	108,170,719.564	547,119,226.19
2004	12	1,037,175,292.439	1,027,305,281.53	222,695,455.369	284,619.964	133,958,825.868	670,366,380.33
2005	1	1,245,836,971.462	1,222,104,189.70	394,274,267.685	0.000	139,057,906.764	688,772,015.25
2005	2	1,120,240,995.503	1,104,677,456.17	446,105,895.383	0.000	110,084,454.713	548,487,106.08
2005	3	1,036,660,837.972	1,027,179,471.54	354,449,483.906	0.000	111,403,285.332	561,326,702.30
2005	4	874,410,622.973	864,178,503.18	189,746,255.841	1,240,073.435	111,601,355.122	561,590,818.78
2005	5	737,146,519.616	737,439,247.43	78,338,015.214	14,500,034.856	105,213,845.895	539,387,351.46
2005	6	815,707,446.272	842,535,974.44	13,036,835.406	112,702,430.178	112,669,954.326	604,126,754.53
2005	7	1,111,234,729.679	1,154,990,162.86	0.000	366,024,166.355	121,690,887.324	667,275,109.18
2005	8	1,140,834,393.772	1,166,756,969.35	0.000	411,831,632.075	119,044,196.766	635,881,140.51
2005	9	1,006,788,121.155	1,042,947,645.99	0.000	252,151,428.549	123,230,148.967	667,566,068.48
2005	10	812,289,270.541	808,878,202.76	10,767,977.827	116,888,766.375	111,798,656.274	569,422,802.28
2005	11	781,113,961.763	770,586,960.83	94,776,343.096	9,451,586.963	110,533,674.466	555,825,356.30
2005	12	1,140,766,888.839	1,113,492,084.97	336,189,895.513	0.000	131,385,266.201	645,916,923.26
2006	1	1,280,990,082.858	1,261,765,924.71	356,178,620.115	0.000	145,754,165.709	759,833,138.88
2006	2	1,028,439,228.773	1,029,995,482.57	292,071,342.081	0.000	116,054,667.685	621,869,472.81
2006	3	1,010,242,831.879	1,010,864,730.82	326,129,569.628	0.000	107,819,119.687	576,916,041.50

Indiana Michigan Power Company-Indiana
Long-Term Residential Energy Model Output

Year	Month	Total Usage	Actual	Heating Usage	Cooling Usage	Lighting Usage	Other Usage
2006	4	836,836,208.025	827,744,586.94	183,433,881.698	1,277,862.467	102,777,550.882	540,255,291.89
2006	5	705,799,590.471	708,201,048.18	39,049,506.782	2,466,251.693	104,693,918.303	561,991,371.40
2006	6	817,729,941.084	851,210,986.07	15,121,359.497	111,110,954.832	108,982,926.507	615,995,745.24
2006	7	991,536,056.625	1,020,497,358.73	0.000	257,793,178.845	115,640,955.269	647,063,224.62
2006	8	1,127,471,384.161	1,168,596,592.07	0.000	386,025,658.267	116,854,956.442	665,715,977.36
2006	9	913,825,431.841	940,085,420.20	864,068.325	160,016,704.057	118,667,236.605	660,537,411.21
2006	10	716,156,652.857	715,642,943.38	29,690,397.722	14,702,389.220	105,872,803.025	565,377,353.41
2006	11	843,380,764.237	850,916,498.38	155,405,924.685	1,346,112.941	108,215,567.422	585,948,893.33
2006	12	1,041,884,654.441	1,079,823,341.38	228,777,518.945	0.000	128,149,095.184	722,896,727.25
2007	1	1,182,445,090.078	1,171,404,713.32	261,910,542.636	0.000	139,946,715.477	769,547,455.21
2007	2	1,228,825,885.831	1,256,888,620.08	475,950,883.185	0.000	114,457,826.790	666,479,910.10
2007	3	1,124,047,476.768	1,120,964,281.52	436,294,163.357	84,892.634	104,544,622.570	580,040,602.96
2007	4	849,666,864.164	867,673,200.49	163,666,027.704	5,338,046.856	103,479,572.839	595,189,553.09
2007	5	747,783,098.750	757,499,019.57	62,135,314.973	26,892,568.790	100,149,015.479	568,322,120.32
2007	6	880,397,444.914	893,106,273.56	4,278,327.305	190,754,999.175	104,194,304.871	593,878,642.21
2007	7	1,017,720,527.842	1,050,550,772.61	0.000	279,623,743.914	112,211,128.742	658,715,899.95
2007	8	1,077,933,876.155	1,101,282,504.46	0.000	330,927,801.839	113,565,587.334	656,789,115.29
2007	9	1,034,084,274.527	1,066,945,212.77	754,006.608	276,570,238.908	115,048,458.267	674,572,508.99
2007	10	844,760,706.240	844,860,283.49	7,669,309.626	137,136,485.161	106,412,509.028	593,641,979.68
2007	11	812,152,813.211	811,138,056.16	92,564,214.911	28,839,352.195	105,012,993.243	584,721,495.81
2007	12	1,104,658,623.516	1,116,535,807.00	294,265,734.276	0.000	123,202,136.639	699,067,936.09
2008	1	1,295,187,178.883	1,307,785,885.66	366,816,326.300	0.000	136,304,926.814	804,664,632.54
2008	2	1,182,889,057.175	1,222,297,719.24	437,915,482.241	0.000	109,378,238.586	675,003,998.41
2008	3	1,108,929,315.046	1,135,098,446.67	415,618,600.092	0.000	101,793,012.995	617,686,833.59
2008	4	892,417,347.052	917,562,635.63	218,641,323.736	317,795.929	98,878,238.304	599,725,277.66
2008	5	716,535,289.402	715,066,773.91	53,067,499.913	12,510,057.434	95,574,678.783	553,914,537.78
2008	6	828,672,176.928	813,217,764.20	12,291,276.409	124,137,744.923	101,636,272.184	575,152,470.68
2008	7	987,340,104.817	993,689,713.73	15,870.910	240,955,597.073	109,583,063.855	643,135,181.89
2008	8	1,043,731,793.697	1,048,238,839.09	0.000	304,192,096.917	108,580,427.709	635,466,314.47
2008	9	974,489,910.799	956,267,613.08	0.000	226,233,410.270	109,860,243.091	620,173,959.72
2008	10	761,302,754.480	761,156,739.74	14,026,597.826	61,200,328.355	100,730,775.105	585,199,038.45
2008	11	809,925,174.444	812,214,857.65	113,011,238.066	3,974,879.498	101,738,445.549	593,490,294.54
2008	12	1,160,724,945.937	1,180,788,748.00	339,745,614.710	0.000	120,537,528.023	720,505,605.27

Indiana Michigan Power Company-Indiana
Long-Term Residential Energy Model Output

Year	Month	Total Usage	Actual	Heating Usage	Cooling Usage	Lighting Usage	Other Usage
2009	1	1,372,082,505.680	1,421,423,301.17	441,191,969.041	0.000	132,684,228.610	847,547,103.51
2009	2	1,272,174,467.205	1,290,897,327.19	522,194,352.515	0.000	106,898,210.986	661,804,763.69
2009	3	1,000,143,081.415	1,042,256,079.61	314,227,482.925	0.000	97,766,792.652	630,261,804.03
2009	4	840,725,796.635	869,439,326.63	161,566,551.167	694,190.418	96,704,831.476	610,473,753.57
2009	5	751,180,807.362	736,305,248.00	62,351,109.714	34,750,980.952	93,228,931.393	545,974,225.94
2009	6	774,835,607.062	766,368,128.69	6,727,635.832	87,599,630.502	96,996,070.642	575,044,791.72
2009	7	1,004,524,410.106	979,413,814.25	0.000	248,161,750.334	107,807,945.307	623,444,118.61
2009	8	934,599,482.229	915,594,702.87	0.000	199,528,069.812	104,773,203.176	611,293,429.88
2009	9	894,768,500.226	884,971,974.90	0.000	143,097,081.963	107,139,280.479	634,735,612.46
2009	10	785,897,445.801	782,179,201.11	36,117,563.790	43,379,536.904	100,686,580.421	601,995,519.99
2009	11	780,040,190.132	804,218,572.79	98,080,604.018	0.000	97,202,923.507	608,935,045.26
2009	12	1,049,898,533.340	1,087,856,595.28	228,444,589.376	0.000	117,085,713.737	742,326,292.16
2010	1	1,361,250,396.157	1,403,274,674.46	428,610,832.368	0.000	114,512,983.608	860,150,858.48
2010	2	1,185,114,500.396	1,214,391,091.73	443,401,946.602	0.000	91,070,249.228	679,918,895.90
2010	3	1,001,403,644.541	1,019,431,759.76	329,810,990.718	0.000	82,460,664.918	607,160,104.12
2010	4	815,672,887.402	797,057,545.26	111,745,501.364	10,767,085.061	85,108,821.527	589,436,137.30
2010	5	709,386,357.175	690,513,687.94	26,169,591.570	24,912,713.946	80,829,040.503	558,602,341.92
2010	6	926,594,051.649	911,343,274.18	5,348,768.995	229,025,994.723	84,993,280.416	591,975,230.05
2010	7	1,154,342,345.680	1,151,883,770.02	0.000	411,383,854.629	91,223,230.078	649,276,685.32
2010	8	1,218,954,843.121	1,222,852,139.88	0.000	463,052,760.780	92,812,492.763	666,986,886.34
2010	9	1,039,355,990.092	1,045,503,908.61	0.000	282,233,877.179	92,962,292.692	670,307,738.74
2010	10	776,653,495.460	737,567,231.96	12,243,749.435	82,092,951.535	83,777,415.131	559,453,115.86
2010	11	785,192,736.249	758,500,340.97	94,567,890.701	7,345,836.488	83,895,559.445	572,691,054.34
2010	12	1,130,022,910.639	1,112,507,867.77	308,961,446.344	0.000	100,813,006.066	702,733,415.36
2011	1	1,354,597,262.817	1,373,172,391.46	455,517,374.240	0.000	103,782,013.655	813,873,003.56
2011	2	1,234,756,331.661	1,241,975,465.29	497,768,332.920	0.000	85,071,526.480	659,135,605.89
2011	3	981,324,025.521	997,269,207.56	332,039,395.268	0.000	74,947,807.441	590,282,004.86
2011	4	821,550,941.483	836,996,084.64	194,853,417.318	2,656,162.136	72,033,942.676	567,452,562.51
2011	5	748,468,648.321	778,458,985.35	60,029,939.177	21,650,733.542	76,968,242.387	619,810,070.24
2011	6	895,496,563.841	896,131,113.02	8,402,668.236	196,193,342.421	79,751,589.993	611,783,512.37
2011	7	1,093,415,780.567	1,091,681,552.26	0.000	363,453,677.587	84,260,517.782	643,967,356.89
2011	8	1,270,680,385.738	1,275,079,505.35	0.000	521,974,577.490	86,424,129.160	666,680,798.70
2011	9	971,145,601.536	971,145,601.54	1,287,405.313	244,878,141.550	83,685,433.174	641,294,621.50

Indiana Michigan Power Company-Indiana
Long-Term Residential Energy Model Output

Year	Month	Total Usage	Actual	Heating Usage	Cooling Usage	Lighting Usage	Other Usage
2011	10	721,466,856.756	718,245,424.50	15,370,520.173	32,787,547.012	77,720,948.807	592,366,408.50
2011	11	739,017,575.982	760,696,342.55	86,564,711.429	1,012,420.863	75,196,655.916	597,922,554.35
2011	12	1,011,521,271.649	1,052,862,076.68	205,718,042.167	0.000	93,014,962.105	754,129,072.41
2012	1	1,229,108,659.394	1,214,977,952.49	309,468,927.300	0.000	102,909,103.973	802,599,921.22
2012	2	1,077,214,096.328	1,070,040,784.88	353,535,899.010	0.000	80,980,706.087	635,524,179.79
2012	3	942,669,121.124	945,646,395.63	248,757,400.142	8,327,910.295	76,717,885.487	611,843,199.70
2012	4	785,095,628.401	744,681,042.13	65,655,935.230	26,840,993.774	77,502,862.350	574,681,250.77
2012	5	747,160,990.817	723,657,308.62	49,735,099.340	34,396,335.176	74,194,029.646	565,331,844.46
2012	6	891,472,555.179	893,124,134.36	1,657,466.188	195,274,962.418	77,720,111.044	618,471,594.71
2012	7	1,216,758,188.585	1,215,282,155.58	156,169.464	470,577,487.328	83,481,295.370	661,067,203.42
2012	8	1,168,615,152.178	1,198,260,046.56	0.000	410,623,201.607	84,820,467.983	702,816,376.97
2012	9	958,558,123.557	942,094,552.35	1,072,998.511	201,701,461.974	84,573,357.207	654,746,734.66
2012	10	746,747,920.846	710,696,286.21	35,576,789.245	29,708,711.436	76,256,695.533	569,154,090.00
2012	11	825,523,190.247	799,154,387.77	131,835,583.511	2,907,867.725	77,299,317.878	587,111,618.66
2012	12	1,020,477,972.944	1,001,514,048.70	223,178,374.970	0.000	89,219,054.334	689,116,619.40
2013	1	1,294,110,529.425	1,214,942,085.08	350,833,768.423	0.000	94,869,324.914	769,238,991.74
2013	2	1,165,317,605.277	1,134,587,813.91	404,160,290.157	0.000	76,552,803.614	653,874,720.14
2013	3	1,080,921,005.252	1,091,217,289.65	361,554,269.428	0.000	72,349,748.679	657,313,271.54
2013	4	952,733,965.400	935,730,649.74	245,356,653.623	0.000	71,143,921.702	619,230,074.42
2013	5	707,806,762.475	735,105,296.01	62,962,058.372	27,640,851.512	62,074,796.338	582,427,589.79
2013	6	809,229,717.587	799,977,333.75	6,478,454.922	147,256,008.297	65,925,924.222	580,316,946.31
2013	7	996,814,380.899	997,913,948.06	0.000	298,697,830.890	70,212,527.806	629,003,589.36
2013	8	952,283,665.504	954,792,503.24	0.000	236,169,362.267	72,022,637.807	646,600,503.16
2013	9	949,941,009.155	962,594,429.17	301,223.888	231,745,144.531	72,201,693.863	658,346,366.89
2013	10	736,711,701.702	742,848,782.25	10,101,960.611	84,007,401.030	64,629,229.416	584,110,191.19
2013	11	779,236,686.008	787,187,654.69	125,345,853.057	7,519,671.678	65,008,275.672	589,313,854.28
2013	12	1,080,790,760.718	1,098,703,351.25	313,836,275.817	0.000	77,135,849.446	707,731,225.99
2014	1	1,377,446,489.173	1,397,111,585.66	471,962,243.395	0.000	86,957,972.167	838,191,370.10
2014	2	1,270,937,966.412	1,292,194,502.82	578,729,886.339	0.000	66,476,044.439	646,988,572.04
2014	3	1,154,257,285.865	1,153,516,893.19	502,334,907.356	0.000	62,607,216.315	588,574,769.52
2014	4	894,282,986.482	898,404,068.91	258,736,082.573	0.000	61,034,601.362	578,633,384.98
2014	5	723,192,913.519	720,151,202.22	63,332,634.500	19,580,903.362	61,489,083.203	575,748,581.15
2014	6	819,321,491.399	817,030,693.29	12,856,953.705	150,740,547.197	62,972,303.252	590,460,889.13

Indiana Michigan Power Company-Indiana
Long-Term Residential Energy Model Output

Year	Month	Total Usage	Actual	Heating Usage	Cooling Usage	Lighting Usage	Other Usage
2014	7	992,213,499.831	955,052,765.46	0.000	282,526,297.205	68,154,647.970	604,371,820.28
2014	8	890,297,731.483	860,465,247.71	0.000	180,139,032.771	68,199,927.988	612,126,286.95
2014	9	950,489,828.570	930,511,419.36	822,006.423	225,656,238.348	69,530,286.635	634,502,887.95
2014	10	690,020,732.706	684,307,912.46	22,803,355.777	23,438,582.920	61,825,149.043	576,240,824.72
2014	11	780,496,134.570	764,853,592.81	138,563,867.359	449,559.741	61,604,644.898	564,235,520.81
2014	12	1,113,738,851.664	1,116,787,413.42	329,099,789.967	0.000	75,352,632.590	712,334,990.87
2015	1	1,261,260,498.530	1,242,620,178.99	425,389,478.214	0.000	74,029,898.565	743,200,802.22
2015	2	1,153,907,887.568	1,143,773,825.06	510,944,709.895	0.000	56,944,788.929	575,884,326.24
2015	3	1,133,753,845.920	1,118,221,165.59	530,246,107.671	0.000	53,450,371.600	534,524,686.32
2015	4	832,078,059.347	832,491,138.85	217,468,216.633	0.000	54,433,642.520	560,589,279.70
2015	5	683,110,116.809	685,196,349.92	57,779,038.473	38,396,216.854	51,982,575.306	537,038,519.29
2015	6	768,888,164.333	778,631,130.65	5,826,613.505	158,414,342.482	53,551,290.107	560,838,884.56
2015	7	881,202,800.758	895,000,775.90	41,634.202	207,770,077.366	59,639,672.647	627,549,391.68
2015	8	955,614,921.698	971,906,079.07	0.000	292,071,795.950	58,767,476.200	621,066,806.92
2015	9	909,933,253.453	910,855,832.00	0.000	228,385,924.534	60,362,039.598	622,107,867.87
2015	10	691,621,162.403	710,581,491.69	11,103,001.462	75,296,165.720	53,602,196.782	570,580,127.73
2015	11	671,441,222.828	670,159,659.03	71,907,825.755	1,991,724.053	52,921,980.026	543,338,129.20
2015	12	962,072,913.445	941,868,865.62	200,828,553.594	0.000	67,420,500.739	673,619,811.29
2016	1	1,099,213,635.664	1,104,782,673.75	302,793,416.679	0.000	54,193,340.683	747,795,916.38
2016	2	1,085,919,619.251	1,053,799,146.75	420,438,617.744	0.000	45,283,429.241	588,077,099.76
2016	3	905,699,169.210	890,847,862.62	287,531,114.504	0.000	42,063,964.713	561,252,783.41
2016	4	778,587,981.430	769,544,117.50	154,065,503.516	0.000	42,496,358.835	572,982,255.15
2016	5	652,708,026.900	653,378,542.33	62,319,934.018	2,286,377.595	40,018,065.656	548,754,165.07
2016	6	813,386,158.511	814,516,167.53	11,040,274.056	166,006,817.251	43,300,432.406	594,168,643.82
2016	7	962,147,123.015	983,451,672.82	0.000	278,465,430.705	46,521,916.429	658,464,325.69
2016	8	1,100,188,678.507	1,112,863,207.36	0.000	411,942,755.815	46,832,494.797	654,087,956.75
2016	9	1,008,158,375.552	1,019,460,491.29	0.000	309,666,070.515	47,529,721.809	662,264,698.97
2016	10	750,119,131.495	757,062,372.30	3,742,769.500	120,184,894.515	42,609,927.173	590,524,781.11
2016	11	652,980,468.361	658,408,576.19	61,211,512.256	20,166,409.240	38,895,360.539	538,135,294.15
2016	12	987,721,877.878	994,599,588.76	272,690,548.311	804,864.037	48,600,371.071	672,503,805.35
2017	1	1,200,765,656.843	1,192,319,124.85	406,900,577.793	0.000	47,875,086.119	737,543,460.94
2017	2	959,253,503.285	943,620,575.59	309,055,927.068	0.000	39,211,026.882	595,353,621.64
2017	3	836,923,119.835	831,175,342.11	235,930,610.001	0.000	36,243,650.117	559,001,082.00

Indiana Michigan Power Company-Indiana
Long-Term Residential Energy Model Output

Year	Month	Total Usage	Actual	Heating Usage	Cooling Usage	Lighting Usage	Other Usage
2017	4	772,184,053.262	751,248,739.52	166,345,408.099	5,094,774.928	36,228,655.576	543,579,900.92
2017	5	650,132,077.022	634,787,439.46	43,340,309.308	33,643,391.607	34,564,472.716	523,239,265.83
2017	6	757,357,991.955	751,366,703.39	8,503,176.236	128,737,504.710	37,396,996.608	576,729,025.84
2017	7	968,339,021.129	945,004,114.97	0.000	281,989,324.288	41,391,228.448	621,623,562.24
2017	8	949,870,566.016	959,412,522.00	0.000	263,467,792.449	41,394,429.310	654,550,300.24
2017	9	815,640,215.880	810,174,366.19	0.000	126,315,925.093	41,570,615.280	642,287,825.81
2017	10	755,740,285.057	754,236,976.77	1,986,570.296	132,905,627.120	37,441,067.061	581,903,712.29
2017	11	706,295,171.230	705,242,951.47	118,009,593.370	14,280,450.938	34,616,140.210	538,336,766.95
2017	12	974,099,476.115	981,869,135.95	252,181,890.099	0.000	43,536,197.161	686,151,048.69
2018	1	1,277,727,939.253	1,280,605,433.17	502,802,734.983	0.000	40,937,382.944	736,865,315.24
2018	2	1,055,968,239.799	1,029,735,502.58	419,815,243.871	0.000	33,606,390.219	576,313,868.49
2018	3	879,568,428.033	894,658,259.26	288,439,640.626	0.000	31,227,872.582	574,990,746.06
2018	4	855,858,755.325	866,915,658.86	254,096,523.664	509,824.335	31,762,678.397	580,546,632.46
2018	5	691,123,497.871	687,171,742.59	87,487,009.649	28,356,678.183	30,390,610.286	540,937,444.47
2018	6	847,223,868.773	855,053,624.72	927,346.393	225,711,767.277	32,783,958.541	595,630,552.51
2018	7	1,023,059,760.151	1,040,114,324.19	0.000	360,127,268.304	35,021,084.790	644,965,971.10
2018	8	978,805,417.036	982,331,840.75	0.000	301,054,013.129	35,803,931.282	645,473,896.34
2018	9	991,348,473.032	984,968,430.53	0.000	310,810,443.026	35,951,141.851	638,206,845.65
2018	10	774,346,777.852	755,741,075.53	19,140,031.653	154,707,831.616	31,722,873.238	550,170,339.02
2018	11	746,442,830.005	752,128,106.30	148,674,823.175	21,813,035.302	30,426,277.398	551,213,970.42
2018	12	993,574,202.724	1,017,147,120.23	295,820,503.364	0.000	36,860,603.106	684,466,013.76
2019	1	1,029,386,648.148	1,058,983,087.13	300,199,494.304	0.000	33,903,653.945	724,879,938.88
2019	2	1,070,221,222.377	1,105,190,996.13	438,363,416.691	0.000	29,378,312.925	637,449,266.51
2019	3	932,793,474.311	965,314,899.74	364,162,261.910	0.000	26,438,584.040	574,714,053.79
2019	4	758,581,384.188	768,319,115.62	188,739,508.012	0.000	26,494,874.014	553,084,733.59
2019	5	649,784,361.423	655,405,844.44	55,514,538.684	7,389,748.555	27,287,067.302	565,214,489.90
2019	6	736,559,745.244	701,017,875.00	9,381,891.560	118,440,681.153	28,303,316.004	544,891,986.28
2019	7	1,015,445,918.176	985,375,726.02	0.000	362,573,495.535	30,355,390.343	592,446,840.14
2019	8	1,010,536,757.067	1,021,296,292.21	0.000	344,684,658.765	30,958,882.093	645,652,751.35
2019	9	859,269,658.713	855,475,204.30	0.000	191,013,022.744	31,070,681.393	633,391,500.17
2019	10	720,628,257.838	733,845,220.81	10,893,993.970	120,532,450.228	27,395,016.887	575,023,759.73
2019	11	706,073,372.882	702,312,098.72	143,943,776.663	7,023,809.260	25,809,717.581	525,534,795.22
2019	12	977,065,893.661	956,124,731.71	295,578,418.439	0.000	31,685,851.028	628,860,462.25

Indiana Michigan Power Company-Indiana
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Year	Month	Total Usage	Actual	Heating Usage	Cooling Usage	Lighting Usage	Other Usage
2020	1	1,054,721,653.911	1,020,977,690.89	293,698,053.088	0.000	32,974,054.693	694,305,583.11
2020	2	974,519,418.147	916,070,175.65	339,865,423.019	0.000	27,498,641.992	548,706,110.64
2020	3	906,838,510.746	859,588,153.06	318,222,850.224	0.000	25,503,867.373	515,861,435.46
2020	4	772,068,525.984	775,495,420.65	169,994,217.367	0.000	26,087,011.178	579,414,192.11
2020	5	691,450,543.562	697,024,675.71	97,808,019.443	4,491,342.985	25,527,070.709	569,198,242.57
2020	6	776,434,492.684	793,650,230.90	16,628,549.986	149,208,673.032	26,456,298.785	601,356,709.10
2020	7	1,017,371,399.800	1,060,349,413.31	0.000	349,047,910.294	28,957,492.609	682,344,010.41
2020	8	1,004,482,880.279	1,039,614,588.84	0.000	326,212,741.995	29,388,466.550	684,013,380.30
2020	9	882,448,630.313	931,715,322.39	383,498.499	210,169,089.192	29,112,286.181	692,050,448.52
2020	10	660,074,101.469	665,355,977.92	22,851,173.237	26,577,734.362	26,458,375.271	589,468,695.05
2020	11	678,301,572.334	672,001,682.14	101,403,950.169	2,708,982.605	24,878,765.369	543,009,983.99
2020	12	919,165,354.073	901,886,227.79	220,688,731.493	1,071,798.199	30,217,544.893	649,908,153.21
2021	1	1,067,138,211.656	1,071,285,735.70	328,961,073.711	0.000	30,858,158.345	711,466,503.65
2021	2	1,058,252,734.122	0.00	421,621,635.985	0.000	26,613,210.060	610,017,888.08
2021	3	924,309,658.189		335,012,131.215	258,251.770	24,623,720.096	564,415,555.11
2021	4	777,683,654.747		185,093,818.203	2,968,946.893	24,648,033.434	564,972,856.22
2021	5	657,854,105.858		59,120,020.831	21,530,047.014	24,128,969.440	553,075,068.57
2021	6	746,206,254.197		8,435,378.414	124,048,036.383	25,655,571.793	588,067,267.61
2021	7	953,011,421.149		90,124.405	283,465,136.503	27,985,402.332	641,470,757.91
2021	8	969,658,207.292		0.000	296,970,235.583	28,120,502.358	644,567,469.35
2021	9	883,656,830.399		330,200.767	205,809,198.888	28,322,389.146	649,195,041.60
2021	10	681,460,087.239		19,415,394.905	63,214,604.684	25,033,007.278	573,797,080.37
2021	11	678,967,305.426		109,846,975.123	5,768,131.651	23,549,918.382	539,802,280.27
2021	12	948,912,368.018		258,398,866.505	73,533.161	28,862,592.427	661,577,375.93
2022	1	1,114,970,398.759		374,487,316.914	0.000	30,172,484.832	710,310,597.01
2022	2	1,052,570,995.627		417,950,840.377	0.000	25,858,885.203	608,761,270.05
2022	3	919,351,818.373		332,052,434.707	256,641.516	23,920,247.022	563,122,495.13
2022	4	772,754,866.867		183,231,191.010	2,946,694.218	23,901,268.665	562,675,712.97
2022	5	654,080,439.914		58,519,127.147	21,366,423.784	23,396,735.190	550,798,153.79
2022	6	742,063,830.032		8,348,884.090	123,093,106.242	24,881,025.169	585,740,814.53
2022	7	947,824,996.687		89,194.048	281,265,227.866	27,156,695.138	639,313,879.63
2022	8	964,454,263.989		0.000	294,656,646.963	27,292,262.222	642,505,354.80
2022	9	878,950,113.818		326,768.438	204,201,505.518	27,480,685.559	646,941,154.30

Indiana Michigan Power Company-Indiana
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Year	Month	Total Usage	Actual	Heating Usage	Cooling Usage	Lighting Usage	Other Usage
2022	10	677,557,815.960		19,213,109.347	62,720,523.373	24,269,915.242	571,354,268.00
2022	11	674,440,159.646		108,705,106.777	5,723,260.806	22,818,816.143	537,192,975.92
2022	12	942,356,873.565		255,737,061.580	72,968.398	27,974,743.424	658,572,100.16
2023	1	1,115,786,298.868		374,134,602.678	0.000	29,608,250.590	712,043,445.60
2023	2	1,053,445,582.609		417,667,212.394	0.000	25,381,571.163	610,396,799.05
2023	3	920,515,290.307		331,932,347.378	254,697.425	23,487,265.264	564,840,980.24
2023	4	774,235,154.928		183,234,033.873	2,925,268.327	23,477,189.229	564,598,663.50
2023	5	655,614,741.511		58,544,971.394	21,218,464.523	22,989,160.338	552,862,145.26
2023	6	743,088,933.154		8,355,622.010	122,279,106.196	24,450,422.844	588,003,782.10
2023	7	948,018,442.925		89,296.537	279,481,601.348	26,685,791.351	641,761,753.69
2023	8	964,666,887.013		0.000	292,857,077.530	26,820,019.816	644,989,789.67
2023	9	879,952,960.236		327,324.150	202,995,992.280	27,012,437.447	649,617,206.36
2023	10	679,470,603.877		19,251,626.155	62,364,145.326	23,867,586.072	573,987,246.32
2023	11	676,964,409.607		108,952,229.923	5,691,826.525	22,448,977.079	539,871,376.08
2023	12	945,625,477.611		256,374,204.751	72,578.189	27,513,421.190	661,665,273.48
2024	1	1,114,164,310.312		372,719,605.156	0.000	29,178,839.626	712,265,865.53
2024	2	1,051,806,884.909		416,135,641.890	0.000	25,016,227.274	610,655,015.75
2024	3	919,217,594.208		330,711,135.015	253,349.689	23,150,132.468	565,102,977.04
2024	4	773,485,215.687		182,542,742.536	2,909,555.932	23,141,467.013	564,891,450.21
2024	5	655,215,738.175		58,319,226.960	21,103,099.732	22,659,793.097	553,133,618.39
2024	6	742,302,273.130		8,322,859.970	121,609,905.248	24,099,210.014	588,270,297.90
2024	7	946,452,230.008		88,941.619	277,941,130.277	26,305,107.877	642,117,050.23
2024	8	963,083,856.006		0.000	291,255,280.246	26,439,164.151	645,389,411.61
2024	9	878,871,205.527		326,064.219	201,891,648.133	26,629,044.112	650,024,449.06
2024	10	679,021,412.217		19,178,482.363	62,026,734.428	23,526,478.470	574,289,716.96
2024	11	676,448,444.879		108,544,797.048	5,661,255.781	22,126,505.826	540,115,886.22
2024	12	944,471,866.533		255,416,573.655	72,188.996	27,114,264.022	661,868,839.86
2025	1	1,113,212,532.698		371,494,941.694	0.000	28,826,686.042	712,890,904.96
2025	2	1,050,774,588.933		414,802,612.640	0.000	24,716,906.696	611,255,069.60
2025	3	918,570,237.241		329,688,787.106	252,243.208	22,876,940.697	565,752,266.23
2025	4	773,465,965.842		182,011,270.219	2,897,220.082	22,874,152.873	565,683,322.67
2025	5	655,539,912.651		58,156,253.835	21,015,235.670	22,400,428.114	553,967,995.03
2025	6	742,430,508.218		8,301,010.721	121,116,705.474	23,824,603.204	589,188,188.82

Indiana Michigan Power Company-Indiana
Long-Term Residential Energy Model Output

Year	Month	Total Usage	Actual	Heating Usage	Cooling Usage	Lighting Usage	Other Usage
2025	7	946,114,784.663		88,719.223	276,840,914.537	26,007,729.199	643,177,421.70
2025	8	962,673,684.051		0.000	290,099,294.608	26,139,451.186	646,434,938.26
2025	9	878,837,022.116		325,237.278	201,091,902.627	26,327,770.164	651,092,112.05
2025	10	679,398,335.591		19,129,378.290	61,780,325.452	23,260,125.011	575,228,506.84
2025	11	676,744,108.840		108,262,039.273	5,638,586.256	21,874,784.393	540,968,698.92
2025	12	944,414,572.638		254,766,373.437	71,902.426	26,800,226.461	662,776,070.31
2026	1	1,112,444,345.332		370,338,038.000	0.000	28,484,533.820	713,621,773.51
2026	2	1,049,847,487.535		413,505,836.472	0.000	24,424,930.905	611,916,720.16
2026	3	917,936,271.041		328,656,806.009	251,253.253	22,608,882.115	566,419,329.66
2026	4	773,358,886.936		181,441,204.295	2,885,797.934	22,609,023.094	566,422,861.61
2026	5	655,765,758.231		57,975,097.881	20,932,260.853	22,141,763.825	554,716,635.67
2026	6	742,396,436.352		8,274,700.769	120,632,882.462	23,547,763.726	589,941,089.40
2026	7	945,548,729.355		88,435.030	275,729,855.294	25,706,504.786	644,023,934.25
2026	8	962,082,316.718		0.000	288,943,243.142	25,837,339.634	647,301,733.94
2026	9	878,622,394.522		324,212.270	200,296,701.862	26,023,975.147	651,977,505.24
2026	10	679,608,826.136		19,069,742.638	61,538,495.825	22,991,655.413	576,008,932.26
2026	11	676,898,296.845		107,937,004.409	5,617,031.577	21,623,045.771	541,721,215.09
2026	12	944,156,728.206		254,022,560.630	71,631.836	26,486,918.980	663,575,616.76
2027	1	1,111,427,568.385		368,794,772.819	0.000	28,227,507.945	714,405,287.62
2027	2	1,048,634,209.323		411,787,132.061	0.000	24,206,587.752	612,640,489.51
2027	3	917,130,274.795		327,303,494.216	250,319.795	22,409,829.367	567,166,631.42
2027	4	773,199,158.156		180,684,090.305	2,875,024.539	22,412,246.142	567,227,797.17
2027	5	656,066,543.379		57,733,314.288	20,854,396.900	21,949,997.928	555,528,834.26
2027	6	742,553,536.151		8,240,267.909	120,187,004.413	23,342,968.551	590,783,295.28
2027	7	945,253,752.967		88,068.111	274,715,693.890	25,483,836.103	644,966,154.86
2027	8	961,760,025.462		0.000	287,889,126.935	25,613,864.963	648,257,033.56
2027	9	878,698,692.203		322,910.517	199,583,079.768	25,800,942.944	652,991,758.97
2027	10	680,036,290.888		18,993,947.534	61,320,742.574	22,795,446.622	576,926,154.16
2027	11	677,139,289.183		107,512,961.424	5,597,333.634	21,438,768.942	542,590,225.18
2027	12	943,816,080.881		253,023,783.778	71,380.633	26,254,334.948	664,466,581.52
2028	1	1,111,294,327.444		367,562,007.621	0.000	28,016,504.758	715,715,815.07
2028	2	1,048,301,029.167		410,429,133.232	0.000	24,028,727.179	613,843,168.76
2028	3	917,153,763.452		326,249,921.752	249,669.813	22,250,028.640	568,404,143.25

Indiana Michigan Power Company-Indiana
Long-Term Residential Energy Model Output

Year	Month	Total Usage	Actual	Heating Usage	Cooling Usage	Lighting Usage	Other Usage
2028	4	773,825,831.928		180,122,644.144	2,867,740.302	22,256,857.319	568,578,590.16
2028	5	657,042,693.150		57,555,021.851	20,802,233.785	21,799,164.674	556,886,272.84
2028	6	743,460,263.369		8,214,908.321	119,887,178.457	23,180,632.094	592,177,544.50
2028	7	945,894,115.379		87,801.851	274,041,605.432	25,305,474.347	646,459,233.75
2028	8	962,403,263.299		0.000	287,203,172.836	25,434,885.701	649,765,204.76
2028	9	879,597,880.520		321,967.261	199,109,806.174	25,621,956.270	654,544,150.81
2028	10	681,135,453.538		18,939,023.110	61,176,695.849	22,640,500.896	578,379,233.68
2028	11	678,076,582.055		107,203,961.147	5,584,255.966	21,294,495.000	543,993,869.94
2028	12	944,453,409.767		252,312,761.982	71,217.806	26,070,356.176	665,999,073.80
2029	1	1,111,814,765.147		366,576,993.531	0.000	27,861,568.115	717,376,203.50
2029	2	1,048,671,432.753		409,379,389.003	0.000	23,900,665.667	615,391,378.08
2029	3	917,827,994.427		325,448,262.504	249,214.928	22,137,477.944	569,993,039.05
2029	4	775,002,272.011		179,700,330.978	2,862,775.046	22,149,017.140	570,290,148.85
2029	5	658,532,480.945		57,428,437.688	20,768,103.765	21,696,524.148	558,639,415.34
2029	6	744,982,227.342		8,197,726.016	119,700,154.564	23,070,405.466	594,013,941.30
2029	7	947,269,760.204		87,622.375	273,624,496.364	25,181,724.305	648,375,917.16
2029	8	963,705,532.451		0.000	286,764,092.092	25,308,231.505	651,633,208.85
2029	9	881,104,807.185		321,305.337	198,808,700.472	25,496,409.475	656,478,391.90
2029	10	682,769,776.719		18,901,927.123	61,088,751.947	22,535,587.335	580,243,510.31
2029	11	679,614,342.426		107,001,536.476	5,576,510.658	21,199,301.708	545,836,993.58
2029	12	945,846,265.106		251,836,768.207	71,118.799	25,943,681.500	667,994,696.60
2030	1	1,111,365,100.634		365,936,851.632	0.000	26,195,859.944	719,232,389.06
2030	2	1,048,147,962.637		408,636,553.103	0.000	22,473,727.471	617,037,682.06
2030	3	917,457,506.158		324,821,899.291	248,973.967	20,817,667.279	571,568,965.62
2030	4	775,046,207.040		179,355,184.875	2,859,992.698	20,833,284.276	571,997,745.19
2030	5	658,940,992.435		57,321,160.031	20,748,567.267	20,412,993.910	560,458,271.23
2030	6	745,595,133.100		8,183,254.731	119,596,697.690	21,711,278.002	596,103,902.68
2030	7	947,902,158.639		87,472.805	273,401,064.942	23,700,261.938	650,713,358.95
2030	8	964,314,188.869		0.000	286,544,395.493	23,818,204.644	653,951,588.73
2030	9	881,771,201.835		320,812.401	198,670,151.662	23,994,281.818	658,785,955.95
2030	10	683,349,690.156		18,874,246.876	61,049,474.225	21,205,611.933	582,220,357.12
2030	11	679,974,858.706		106,851,887.933	5,573,206.653	19,944,849.356	547,604,914.76
2030	12	945,983,152.585		251,508,426.926	71,081.758	24,402,751.874	670,000,892.03

Indiana Michigan Power Company-Indiana
Long-Term Residential Energy Model Output

Year	Month	Total Usage	Actual	Heating Usage	Cooling Usage	Lighting Usage	Other Usage
2031	1	1,112,987,235.418		365,810,087.173	0.000	25,027,215.202	722,149,933.04
2031	2	1,049,719,940.535		408,539,046.864	0.000	21,476,797.366	619,704,096.31
2031	3	919,184,169.473		324,782,067.137	249,206.627	19,901,562.057	574,251,333.65
2031	4	776,918,538.494		179,335,725.829	2,862,705.950	19,920,561.182	574,799,545.53
2031	5	660,926,797.875		57,316,599.151	20,768,801.540	19,522,675.593	563,318,721.59
2031	6	747,835,494.023		8,182,791.390	119,716,457.310	20,765,193.180	599,171,052.14
2031	7	950,365,372.048		87,469.770	273,682,217.171	22,663,040.292	653,932,644.81
2031	8	966,710,477.271		0.000	286,846,658.085	22,772,508.702	657,091,310.48
2031	9	884,110,331.428		320,814.900	198,884,800.460	22,941,357.029	661,963,359.04
2031	10	685,385,802.337		18,874,840.161	61,116,809.311	20,278,095.738	585,116,057.13
2031	11	681,847,809.009		106,857,490.863	5,579,455.682	19,072,810.546	550,338,051.92
2031	12	947,980,137.949		251,527,552.021	71,162.879	23,325,777.264	673,055,645.78
2032	1	1,115,409,005.724		365,566,402.145	0.000	24,346,739.203	725,495,864.38
2032	2	1,051,870,861.603		408,271,192.514	0.000	20,897,123.236	622,702,545.85
2032	3	921,411,014.295		324,572,784.951	249,484.620	19,370,719.281	577,218,025.44
2032	4	779,335,898.302		179,221,426.550	2,865,909.472	19,392,142.985	577,856,419.29
2032	5	663,465,369.936		57,280,519.735	20,792,131.798	19,007,194.014	566,385,524.39
2032	6	750,625,993.102		8,177,704.866	119,851,420.598	20,215,180.482	602,381,687.16
2032	7	953,360,511.975		87,416.195	273,992,187.440	22,055,662.137	657,225,246.20
2032	8	969,619,577.688		0.000	287,173,472.850	22,158,433.323	660,287,671.51
2032	9	886,990,941.799		320,626.309	199,113,154.187	22,324,384.895	665,232,776.41
2032	10	687,971,202.884		18,864,075.488	61,187,720.394	19,738,616.061	588,180,790.94
2032	11	684,256,542.099		106,798,612.236	5,586,005.466	18,568,185.555	553,303,738.84
2032	12	950,528,347.559		251,393,917.635	71,247.425	22,697,975.428	676,365,207.07
2033	1	1,119,101,426.810		365,513,014.386	0.000	24,138,298.829	729,450,113.59
2033	2	1,055,080,814.082		408,167,680.392	0.000	20,721,367.633	626,191,766.06
2033	3	924,544,878.812		324,455,452.852	250,023.984	19,213,542.162	580,625,859.81
2033	4	782,534,345.925		179,137,124.716	2,871,873.751	19,235,513.780	581,289,833.68
2033	5	666,681,113.418		57,247,192.797	20,833,683.312	18,853,538.862	569,746,698.45
2033	6	754,093,794.488		8,172,045.973	120,081,156.251	20,046,390.027	605,794,202.24
2033	7	957,061,982.882		87,346.346	274,495,575.762	21,860,584.959	660,618,475.82
2033	8	973,167,347.457		0.000	287,678,424.529	21,956,994.286	663,531,928.64
2033	9	890,427,444.074		320,300.510	199,446,893.699	22,122,637.803	668,537,612.06

Indiana Michigan Power Company-Indiana
Long-Term Residential Energy Model Output

Year	Month	Total Usage	Actual	Heating Usage	Cooling Usage	Lighting Usage	Other Usage
2033	10	690,993,979.212		18,842,702.737	61,284,982.289	19,566,746.132	591,299,548.05
2033	11	686,990,803.168		106,665,249.709	5,594,406.031	18,409,296.049	556,321,851.38
2033	12	953,268,717.041		251,052,335.095	71,348.767	22,490,508.550	679,654,524.63
2034	1	1,122,148,267.820		364,981,781.317	0.000	24,007,720.203	733,158,766.30
2034	2	1,057,682,034.943		407,567,443.849	0.000	20,613,391.482	629,501,199.61
2034	3	927,240,456.616		323,973,060.925	250,531.640	19,120,048.771	583,896,815.28
2034	4	785,508,550.193		178,867,534.611	2,877,664.419	19,143,717.877	584,619,633.29
2034	5	669,839,255.481		57,160,007.343	20,875,401.215	18,764,514.047	573,039,332.88
2034	6	757,592,688.790		8,159,451.777	120,319,895.781	19,947,498.128	609,165,843.10
2034	7	960,865,494.814		87,210.238	275,037,607.608	21,742,999.192	663,997,677.78
2034	8	976,872,719.150		0.000	288,242,964.398	21,834,604.107	666,795,150.65
2034	9	894,059,912.052		319,791.068	199,835,689.107	22,001,849.983	671,902,581.89
2034	10	694,216,137.668		18,812,420.636	61,403,673.237	19,468,295.968	594,531,747.83
2034	11	689,923,360.018		106,492,087.517	5,605,171.600	18,321,317.179	559,504,783.72
2034	12	956,257,968.632		250,641,027.445	71,485.267	22,370,955.659	683,174,500.26
2035	1	1,125,590,232.356		364,458,620.214	0.000	23,994,875.569	737,136,736.57
2035	2	1,060,631,891.514		406,976,119.918	0.000	20,606,671.243	633,049,100.35
2035	3	930,271,791.701		323,497,536.873	251,181.162	19,120,800.464	587,402,273.20
2035	4	788,812,533.028		178,601,971.281	2,885,087.656	19,146,096.349	588,179,377.74
2035	5	673,323,051.096		57,074,152.431	20,928,971.600	18,767,618.301	576,552,308.76
2035	6	761,472,171.837		8,147,055.278	120,627,022.235	19,945,974.919	612,752,119.41
2035	7	965,127,814.012		87,076.392	275,736,339.188	21,730,503.642	667,573,894.79
2035	8	981,033,228.226		0.000	288,971,649.222	21,817,424.489	670,244,154.51
2035	9	898,115,037.381		319,290.318	200,338,494.012	21,987,524.542	675,469,728.51
2035	10	697,786,203.834		18,782,637.805	61,557,338.274	19,465,155.788	597,981,071.97
2035	11	693,185,351.589		106,321,820.951	5,619,131.546	18,323,883.555	562,920,515.54
2035	12	959,625,834.697		250,236,458.011	71,662.467	22,361,428.720	686,956,285.50
2036	1	1,129,384,294.998		363,992,566.884	0.000	24,030,570.285	741,361,157.83
2036	2	1,063,920,860.053		406,455,162.429	0.000	20,642,077.875	636,823,619.75
2036	3	933,635,620.785		323,083,164.075	251,977.969	19,161,258.230	591,139,220.51
2036	4	792,426,727.925		178,372,202.884	2,894,226.272	19,188,253.512	591,972,045.26
2036	5	677,103,921.492		57,000,423.323	20,995,171.810	18,809,864.565	580,298,461.79
2036	6	765,712,800.959		8,136,500.830	121,008,234.536	19,985,966.766	616,582,098.83

Indiana Michigan Power Company-Indiana
Long-Term Residential Energy Model Output

Year	Month	Total Usage	Actual	Heating Usage	Cooling Usage	Lighting Usage	Other Usage
2036	7	969,842,369.223		86,963.247	276,606,882.322	21,762,391.340	671,386,132.31
2036	8	985,653,307.321		0.000	289,883,513.571	21,844,689.871	673,925,103.88
2036	9	902,595,769.208		318,873.879	200,970,299.298	22,018,525.714	679,288,070.32
2036	10	701,710,302.799		18,758,117.836	61,751,439.595	19,503,487.723	601,697,257.65
2036	11	696,804,808.782		106,182,857.715	5,636,844.423	18,366,445.840	566,618,660.80
2036	12	963,451,301.892		249,909,192.274	71,888.344	22,400,420.162	691,069,801.11
2037	1	1,133,409,102.232		363,500,978.750	0.000	24,077,771.470	745,830,352.01
2037	2	1,067,416,635.646		405,908,770.357	0.000	20,687,708.988	640,820,156.30
2037	3	937,211,556.604		322,650,427.762	252,916.632	19,211,607.586	595,096,604.62
2037	4	796,270,349.190		178,134,766.841	2,905,025.764	19,240,452.583	595,990,104.00
2037	5	681,135,588.966		56,925,027.910	21,073,646.624	18,862,241.283	584,274,673.15
2037	6	770,277,599.668		8,125,802.204	121,461,237.533	20,036,677.643	620,653,882.29
2037	7	974,969,700.989		86,849.476	277,643,691.769	21,805,153.935	675,434,005.81
2037	8	990,684,518.444		0.000	290,971,063.192	21,882,533.976	677,830,921.28
2037	9	907,449,227.356		318,460.336	201,725,151.261	22,060,548.125	683,345,067.63
2037	10	705,923,657.637		18,733,892.824	61,983,602.219	19,552,425.342	605,653,737.25
2037	11	700,686,876.568		106,046,262.943	5,658,055.369	18,419,584.110	570,562,974.15
2037	12	967,581,574.490		249,588,846.042	72,159.066	22,451,935.336	695,468,634.05
2038	1	1,137,293,367.319		362,789,563.829	0.000	24,121,041.682	750,382,761.81
2038	2	1,070,730,753.635		405,115,059.888	0.000	20,729,845.122	644,885,848.62
2038	3	940,652,302.477		322,020,515.242	253,682.490	19,258,684.041	599,119,420.70
2038	4	800,057,479.838		177,787,553.377	2,913,827.769	19,289,142.552	600,066,956.14
2038	5	685,168,627.184		56,814,242.167	21,137,532.494	18,911,079.511	588,305,773.01
2038	6	774,804,469.384		8,110,011.139	121,829,642.015	20,083,582.600	624,781,233.63
2038	7	979,947,194.526		86,680.989	278,486,411.932	21,843,500.139	679,530,601.47
2038	8	995,552,384.718		0.000	291,854,966.768	21,915,857.189	681,781,560.76
2038	9	912,200,231.888		317,844.792	202,338,405.537	22,097,941.775	687,446,039.78
2038	10	710,121,855.743		18,697,750.811	62,172,183.001	19,597,336.732	609,654,585.20
2038	11	704,539,564.353		105,842,141.827	5,675,287.601	18,469,001.147	574,553,133.78
2038	12	971,607,003.679		249,109,556.254	72,379.080	22,499,108.600	699,925,959.75
2039	1	1,141,616,777.727		362,449,721.447	0.000	24,169,170.305	754,997,885.97
2039	2	1,074,529,052.464		404,739,243.847	0.000	20,776,371.155	649,013,437.46
2039	3	944,496,541.723		321,724,621.231	254,663.913	19,310,012.495	603,207,244.08

Indiana Michigan Power Company-Indiana
Long-Term Residential Energy Model Output

Year	Month	Total Usage	Actual	Heating Usage	Cooling Usage	Lighting Usage	Other Usage
2039	4	804,106,459.154		177,625,780.096	2,925,119.361	19,342,219.869	604,213,339.83
2039	5	689,359,063.420		56,763,069.992	21,219,585.991	18,964,431.816	592,411,975.62
2039	6	779,535,873.001		8,102,784.905	122,303,443.159	20,135,508.569	628,994,136.37
2039	7	985,259,919.064		86,604.480	279,571,132.866	21,887,243.769	683,714,937.95
2039	8	1,000,766,051.398		0.000	292,993,502.490	21,954,566.911	685,817,982.00
2039	9	917,221,508.324		317,569.580	203,128,987.100	22,140,756.885	691,634,194.76
2039	10	714,487,459.197		18,681,724.617	62,415,500.117	19,647,284.011	613,742,950.45
2039	11	708,603,727.442		105,752,337.235	5,697,534.361	18,523,259.068	578,630,596.78
2039	12	976,005,743.868		248,900,193.329	72,663.224	22,552,007.980	704,480,879.34
2040	1	1,145,759,782.274		362,293,699.896	0.000	23,856,064.663	759,610,017.72
2040	2	1,078,222,193.489		404,568,718.781	0.000	20,512,337.693	653,141,137.02
2040	3	948,213,200.881		321,592,171.097	255,698.999	19,072,442.534	607,292,888.25
2040	4	807,967,636.494		177,553,532.380	2,937,018.118	19,106,294.803	608,370,791.19
2040	5	693,337,924.925		56,740,361.358	21,306,005.058	18,735,252.918	596,556,305.59
2040	6	784,083,176.211		8,099,598.864	122,802,116.601	19,888,977.346	633,292,483.40
2040	7	990,429,458.867		86,571.031	280,712,393.901	21,607,815.999	688,022,677.94
2040	8	1,005,835,827.697		0.000	294,191,144.992	21,669,146.820	689,975,535.89
2040	9	922,045,665.916		317,451.106	203,960,082.723	21,855,602.121	695,912,529.97
2040	10	718,611,288.087		18,674,881.651	62,671,180.453	19,404,337.699	617,860,888.28
2040	11	712,424,754.775		105,714,294.246	5,720,900.776	18,299,765.773	582,689,793.98
2040	12	980,175,240.362		248,812,317.799	72,961.573	22,267,333.569	709,022,627.42
2041	1	1,149,730,601.370		361,929,053.227	0.000	23,606,749.706	764,194,798.44
2041	2	1,081,703,160.326		404,159,477.614	0.000	20,302,834.096	657,240,848.62
2041	3	951,752,502.147		321,264,962.386	256,543.618	18,885,092.849	611,345,903.29
2041	4	811,732,964.448		177,372,423.780	2,946,714.330	18,920,536.770	612,493,289.57
2041	5	697,274,811.762		56,682,271.279	21,376,282.002	18,555,032.371	600,661,226.11
2041	6	788,537,656.855		8,091,277.986	123,206,841.621	19,694,413.256	637,545,123.99
2041	7	995,387,115.248		86,481.809	281,636,834.153	21,385,186.058	692,278,613.23
2041	8	1,010,678,681.560		0.000	295,159,334.159	21,440,788.208	694,078,559.19
2041	9	926,707,169.250		317,122.806	204,631,228.561	21,627,756.130	700,131,061.75
2041	10	722,668,411.181		18,655,544.973	62,877,346.047	19,211,850.735	621,923,669.43
2041	11	716,161,909.501		105,604,695.377	5,739,715.399	18,123,568.485	586,693,930.24
2041	12	984,159,452.426		248,553,804.910	73,201.404	22,040,487.731	713,491,958.38

Indiana Michigan Power Company-Indiana
Long-Term Residential Energy Model Output

Year	Month	Total Usage	Actual	Heating Usage	Cooling Usage	Lighting Usage	Other Usage
2042	1	1,153,972,889.414		361,850,102.792	0.000	23,407,895.101	768,714,891.52
2042	2	1,085,496,763.806		404,072,547.338	0.000	20,136,659.174	661,287,557.29
2042	3	955,545,189.009		321,197,074.785	257,575.622	18,737,909.151	615,352,629.45
2042	4	815,639,183.139		177,335,657.486	2,958,576.472	18,774,978.039	616,569,971.14
2042	5	701,270,711.791		56,670,758.514	21,462,394.095	18,414,239.390	604,723,319.79
2042	6	793,090,264.255		8,089,669.043	123,703,523.496	19,541,885.105	641,755,186.61
2042	7	1,000,560,445.624		86,464.974	282,773,007.262	21,208,667.877	696,492,305.51
2042	8	1,015,750,865.597		0.000	296,350,549.499	21,258,884.884	698,141,431.21
2042	9	931,525,663.698		317,062.807	205,457,363.845	21,446,559.944	704,304,677.10
2042	10	726,792,664.835		18,652,069.119	63,131,298.004	19,060,567.673	625,948,730.04
2042	11	719,998,582.933		105,585,400.514	5,762,910.927	17,986,127.844	590,664,143.65
2042	12	988,364,229.306		248,509,238.436	73,497.388	21,861,165.831	717,920,327.65
2043	1	1,158,547,070.482		361,946,969.536	0.000	23,262,083.266	773,338,017.68
2043	2	1,089,622,348.077		404,181,649.087	0.000	20,016,038.907	665,424,660.08
2043	3	959,625,364.405		321,284,779.171	258,688.821	18,633,080.999	619,448,815.41
2043	4	819,760,757.187		177,384,510.511	2,971,367.676	18,671,714.350	620,733,164.65
2043	5	705,424,633.988		56,686,581.321	21,555,247.232	18,314,808.931	608,867,996.50
2043	6	797,809,492.363		8,091,961.514	124,239,119.635	19,433,106.015	646,045,305.20
2043	7	1,005,945,340.598		86,489.842	283,998,312.292	21,079,560.412	700,780,978.05
2043	8	1,021,039,864.129		0.000	297,635,824.923	21,124,633.270	702,279,405.94
2043	9	936,545,436.066		317,156.991	206,349,337.349	21,313,711.480	708,565,230.24
2043	10	731,089,124.962		18,657,714.885	63,405,692.777	18,952,659.258	630,073,058.04
2043	11	724,041,112.914		105,617,991.469	5,787,988.896	17,889,992.040	594,745,140.51
2043	12	992,873,186.917		248,587,805.001	73,817.699	21,732,248.532	722,479,315.68
2044	1	1,163,172,006.556		362,104,245.972	0.000	23,118,173.534	777,949,587.05
2044	2	1,093,813,168.023		404,359,511.115	0.000	19,897,079.958	669,556,576.95
2044	3	963,759,391.154		321,427,101.164	259,813.939	18,529,697.054	623,542,779.00
2044	4	823,914,197.343		177,462,939.636	2,984,290.871	18,569,940.940	624,897,025.90
2044	5	709,591,700.503		56,711,613.371	21,648,998.193	18,216,823.311	613,014,265.63
2044	6	802,538,242.711		8,095,535.899	124,779,524.147	19,325,942.733	650,337,239.93
2044	7	1,011,344,297.122		86,528.078	285,233,707.473	20,952,472.527	705,071,589.04
2044	8	1,026,340,135.894		0.000	298,930,698.861	20,992,453.352	706,416,983.68
2044	9	941,564,280.087		317,297.184	207,246,876.263	21,182,654.795	712,817,451.85

Indiana Michigan Power Company-Indiana
Long-Term Residential Energy Model Output

Year	Month	Total Usage	Actual	Heating Usage	Cooling Usage	Lighting Usage	Other Usage
2044	10	735,374,737.503		18,665,933.110	63,681,384.087	18,845,847.965	634,181,572.34
2044	11	728,074,770.242		105,664,279.962	5,813,143.694	17,794,505.235	598,802,841.35
2044	12	997,374,022.243		248,695,896.481	74,138.286	21,604,111.091	726,999,876.39
2045	1	1,167,682,962.712		362,270,819.642	0.000	22,967,677.753	782,444,465.32
2045	2	1,097,889,594.231		404,541,877.658	0.000	19,771,972.725	673,575,743.85
2045	3	967,770,037.573		321,569,646.734	260,922.436	18,420,047.035	627,519,421.37
2045	4	827,940,561.407		177,540,983.639	2,997,014.726	18,461,769.632	628,940,793.41
2045	5	713,629,745.460		56,736,336.700	21,741,237.993	18,112,429.155	617,039,741.61
2045	6	807,126,567.195		8,099,030.336	125,310,776.358	19,212,163.096	654,504,597.40
2045	7	1,016,593,957.742		86,565.038	286,447,177.525	20,818,891.181	709,241,324.00
2045	8	1,031,494,474.862		0.000	300,201,776.620	20,854,037.502	710,438,660.74
2045	9	946,438,487.727		317,430.640	208,127,776.055	21,045,115.856	716,948,165.18
2045	10	739,528,711.977		18,673,722.177	63,951,942.264	18,732,691.878	638,170,355.66
2045	11	731,979,501.293		105,708,058.122	5,837,832.594	17,692,704.732	602,740,905.85
2045	12	1,001,730,233.033		248,798,473.781	74,453.120	21,468,988.455	731,388,317.68
2046	1	1,172,115,381.437		362,444,566.290	0.000	22,815,648.909	786,855,166.24
2046	2	1,101,901,374.698		404,732,808.321	0.000	19,645,457.071	677,523,109.31
2046	3	971,717,834.052		321,718,914.935	262,009.035	18,308,884.235	631,428,025.85
2046	4	831,898,640.693		177,621,717.566	3,009,475.313	18,352,013.135	632,915,434.68
2046	5	717,593,693.406		56,761,536.666	21,831,459.205	18,006,349.364	620,994,348.17
2046	6	811,624,727.429		8,102,538.058	125,829,721.150	19,096,641.664	658,595,826.56
2046	7	1,021,732,989.943		86,601.497	287,630,701.041	20,683,769.137	713,331,918.27
2046	8	1,036,527,846.114		0.000	301,438,905.140	20,714,012.263	714,374,928.71
2046	9	951,180,730.627		317,555.512	208,982,954.074	20,905,383.199	720,974,837.84
2046	10	743,554,034.612		18,680,777.963	64,213,900.154	18,616,666.976	642,042,689.52
2046	11	735,743,194.013		105,746,360.295	5,861,670.941	17,587,454.653	606,547,708.12
2046	12	1,005,899,763.270		248,884,906.660	74,756.222	21,329,754.330	735,610,346.06
2047	1	1,176,513,283.649		362,653,245.690	0.000	22,660,759.491	791,199,278.47
2047	2	1,105,877,656.740		404,959,882.966	0.000	19,516,044.963	681,401,728.81
2047	3	975,611,329.083		321,894,523.999	263,075.805	18,194,477.068	635,259,252.21
2047	4	835,781,793.745		177,715,968.342	3,021,691.676	18,238,759.587	636,805,374.14
2047	5	721,469,315.270		56,790,864.050	21,919,842.776	17,896,686.847	624,861,921.60
2047	6	816,017,963.549		8,106,614.126	126,337,800.123	18,977,432.919	662,596,116.38

Indiana Michigan Power Company-Indiana
Long-Term Residential Energy Model Output

Year	Month	Total Usage	Actual	Heating Usage	Cooling Usage	Lighting Usage	Other Usage
2047	7	1,026,760,247.894		86,644.175	288,789,964.042	20,545,306.208	717,338,333.47
2047	8	1,041,459,195.151		0.000	302,651,719.522	20,571,029.089	718,236,446.54
2047	9	955,836,460.182		317,706.455	209,822,718.192	20,762,831.109	724,933,204.43
2047	10	747,518,154.719		18,689,512.480	64,471,624.970	18,498,063.404	645,858,953.87
2047	11	739,471,137.667		105,795,014.505	5,885,171.370	17,479,934.025	610,311,017.77
2047	12	1,010,058,101.189		248,997,441.496	75,055.574	21,188,547.104	739,797,057.01
2048	1	1,180,878,651.071		362,897,749.932	0.000	22,514,620.237	795,466,280.90
2048	2	1,109,854,082.933		405,231,782.199	0.000	19,394,466.899	685,227,833.84
2048	3	979,515,360.299		322,109,599.145	264,115.378	18,087,579.522	639,054,066.25
2048	4	839,675,017.601		177,833,937.570	3,033,627.077	18,133,430.245	640,674,022.71
2048	5	725,348,193.672		56,828,228.168	22,006,350.372	17,795,046.929	628,718,568.20
2048	6	820,411,706.816		8,111,913.765	126,836,160.152	18,867,131.689	666,596,501.21
2048	7	1,031,779,947.408		86,700.304	289,928,035.231	20,416,811.721	721,348,400.15
2048	8	1,046,388,172.630		0.000	303,843,537.200	20,438,265.065	722,106,370.37
2048	9	960,498,149.794		317,908.650	210,648,100.556	20,630,593.547	728,901,547.04
2048	10	751,498,820.867		18,701,247.561	64,724,845.045	18,388,453.504	649,684,274.76
2048	11	743,231,200.844		105,860,590.023	5,908,252.900	17,380,766.669	614,081,591.25
2048	12	1,014,270,821.395		249,149,876.921	75,349.536	21,057,595.611	743,987,999.33
2049	1	1,185,616,143.434		363,322,338.990	0.000	22,387,459.088	799,906,345.36
2049	2	1,114,190,805.201		405,702,384.694	0.000	19,289,036.890	689,199,383.62
2049	3	983,728,869.264		322,481,212.232	265,209.726	17,995,657.290	642,986,790.02
2049	4	843,800,309.264		178,038,028.848	3,046,183.245	18,042,856.984	644,673,240.19
2049	5	729,397,115.122		56,893,101.174	22,097,338.260	17,707,725.345	632,698,950.34
2049	6	824,966,517.330		8,121,113.073	127,359,850.214	18,771,672.058	670,713,881.99
2049	7	1,036,983,600.808		86,798.107	291,123,884.137	20,304,130.486	725,468,788.08
2049	8	1,051,493,861.885		0.000	305,095,167.840	20,321,167.611	726,077,526.43
2049	9	965,323,066.205		318,262.931	211,514,820.126	20,514,232.358	732,975,750.79
2049	10	755,624,608.654		18,721,971.744	64,990,877.980	18,293,214.581	653,618,544.35
2049	11	747,169,068.195		105,977,149.363	5,932,506.430	17,295,331.703	617,964,080.70
2049	12	1,018,749,471.256		249,422,781.556	75,658.556	20,943,336.670	748,307,694.47
2050	1	1,190,539,869.583		363,840,073.005	0.000	22,277,341.445	804,422,455.13
2050	2	1,118,718,094.576		406,278,248.405	0.000	19,198,342.347	693,241,503.82
2050	3	988,112,986.939		322,937,373.651	266,303.907	17,917,521.907	646,991,787.47

Indiana Michigan Power Company-Indiana
Long-Term Residential Energy Model Output

Year	Month	Total Usage	Actual	Heating Usage	Cooling Usage	Lighting Usage	Other Usage
2050	4	848,059,146.078		178,288,816.910	3,058,738.449	17,966,088.553	648,745,502.17
2050	5	733,547,279.887		56,972,940.861	22,188,338.208	17,633,946.975	636,752,053.84
2050	6	829,614,248.427		8,132,468.319	127,883,906.968	18,690,601.727	674,907,271.41
2050	7	1,042,277,707.477		86,919.066	292,320,902.018	20,206,981.504	729,662,904.89
2050	8	1,056,691,293.444		0.000	306,348,825.168	20,219,716.318	730,122,751.96
2050	9	970,246,836.157		318,703.518	212,383,233.076	20,413,802.517	737,131,097.05
2050	10	759,856,399.923		18,747,810.090	65,257,548.234	18,212,372.233	657,638,669.37
2050	11	751,243,412.254		106,122,987.799	5,956,835.539	17,223,743.817	621,939,845.10
2050	12	1,023,422,186.070		249,764,956.255	75,968.636	20,845,939.436	752,735,321.74
2051	1	1,195,154,049.785		364,145,262.831	0.000	22,140,675.878	808,868,111.08
2051	2	1,122,926,592.381		406,617,862.462	0.000	19,084,707.246	697,224,022.67
2051	3	992,232,466.818		323,206,612.239	267,371.075	17,817,819.807	650,940,663.70
2051	4	852,142,140.255		178,436,884.787	3,070,989.830	17,867,796.516	652,766,469.12
2051	5	737,595,545.937		57,020,110.131	22,277,181.652	17,539,126.547	640,759,127.61
2051	6	834,181,802.571		8,139,181.968	128,395,808.299	18,587,495.332	679,059,316.97
2051	7	1,047,488,295.711		86,990.641	293,490,739.671	20,086,537.870	733,824,027.53
2051	8	1,061,808,777.682		0.000	307,574,622.375	20,095,159.318	734,138,995.99
2051	9	975,094,862.783		318,964.663	213,232,765.102	20,289,893.368	741,253,239.65
2051	10	764,013,255.922		18,763,141.918	65,518,551.183	18,110,176.995	661,621,385.83
2051	11	755,195,940.747		106,209,626.172	5,980,659.281	17,131,683.834	625,873,971.46
2051	12	1,027,882,483.703		249,968,411.778	76,272.415	20,724,034.300	757,113,765.21
2052	1	1,199,763,421.017		364,448,273.388	0.000	22,003,960.754	813,311,186.88
2052	2	1,127,132,498.386		406,955,837.886	0.000	18,970,970.440	701,205,690.06
2052	3	996,351,644.573		323,475,158.873	268,435.477	17,717,913.032	654,890,137.19
2052	4	856,227,021.788		178,584,907.193	3,083,213.954	17,769,302.542	656,789,598.10
2052	5	741,646,940.310		57,067,372.043	22,365,860.054	17,444,104.165	644,769,604.05
2052	6	838,753,136.251		8,145,923.713	128,906,942.569	18,484,263.389	683,216,006.58
2052	7	1,052,703,661.456		87,062.666	294,659,221.587	19,966,194.110	737,991,183.09
2052	8	1,066,932,294.548		0.000	308,799,405.507	19,970,817.462	738,162,071.58
2052	9	979,950,336.812		319,228.543	214,081,880.264	20,166,179.454	745,383,048.55
2052	10	768,178,537.354		18,778,668.054	65,779,516.588	18,008,000.279	665,612,352.43
2052	11	759,158,623.251		106,297,552.101	6,004,487.791	17,039,565.144	629,817,018.21
2052	12	1,032,356,532.383		250,175,314.461	76,576.354	20,602,283.925	761,502,357.64

Indiana Michigan Power Company-Indiana
Long-Term Residential Energy Model Output

Year	Month	Total Usage	Actual	Heating Usage	Cooling Usage	Lighting Usage	Other Usage
2053	1	1,204,386,134.951		364,755,550.912	0.000	21,867,520.430	817,763,063.61
2053	2	1,131,350,017.110		407,297,860.628	0.000	18,857,370.879	705,194,785.60
2053	3	1,000,480,410.546		323,746,343.971	269,499.399	17,617,989.416	658,846,577.76
2053	4	860,319,674.965		178,734,049.016	3,095,428.425	17,670,745.371	660,819,452.15
2053	5	745,704,467.440		57,114,880.339	22,454,437.427	17,348,967.834	648,786,181.84
2053	6	843,329,244.310		8,152,684.670	129,417,315.516	18,380,946.315	687,378,297.81
2053	7	1,057,922,316.603		87,134.733	295,825,570.039	19,845,943.051	742,163,668.78
2053	8	1,072,057,935.443		0.000	310,021,544.960	19,846,640.480	742,189,750.00
2053	9	984,807,366.580		319,491.358	214,928,866.851	20,042,561.167	749,516,447.20
2053	10	772,345,253.771		18,794,093.199	66,039,732.146	17,905,696.259	669,605,732.17
2053	11	763,121,400.591		106,384,691.875	6,028,239.222	16,947,192.041	633,761,277.45
2053	12	1,036,827,509.478		250,379,881.408	76,879.203	20,480,409.770	765,890,339.10
2054	1	1,209,005,401.456		365,059,914.699	0.000	21,731,116.228	822,214,370.53
2054	2	1,135,565,653.779		407,637,320.060	0.000	18,743,740.530	709,184,593.19
2054	3	1,004,609,488.272		324,016,037.868	270,560.471	17,517,927.432	662,804,962.50
2054	4	864,415,052.724		178,882,687.073	3,107,614.274	17,572,049.169	664,852,702.21
2054	5	749,766,163.276		57,162,334.780	22,542,838.648	17,253,689.342	652,807,300.51
2054	6	847,910,229.488		8,159,453.360	129,926,856.977	18,277,562.153	691,546,357.00
2054	7	1,063,146,757.867		87,207.039	296,990,421.043	19,725,844.334	746,343,285.45
2054	8	1,077,190,530.417		0.000	311,242,528.823	19,722,725.352	746,225,276.24
2054	9	989,672,763.148		319,756.201	215,775,343.611	19,919,184.802	753,658,478.53
2054	10	776,521,255.050		18,809,672.798	66,299,883.324	17,803,457.956	673,608,240.97
2054	11	767,094,982.450		106,472,904.484	6,051,993.192	16,854,807.348	637,715,277.43
2054	12	1,041,312,700.379		250,587,426.804	77,182.189	20,358,738.614	770,289,352.77
2055	1	1,213,642,664.168		365,369,648.562	0.000	21,595,100.163	826,677,915.44
2055	2	1,139,801,726.496		407,984,104.323	0.000	18,630,410.919	713,187,211.25
2055	3	1,008,760,210.859		324,292,608.755	271,623.927	17,418,072.258	666,777,905.92
2055	4	868,531,736.243		179,035,710.714	3,119,835.080	17,473,575.500	668,902,614.95
2055	5	753,848,213.653		57,211,380.073	22,631,548.843	17,158,640.398	656,846,644.34
2055	6	852,514,248.099		8,166,476.005	130,438,496.913	18,174,505.167	695,734,770.01
2055	7	1,068,399,095.234		87,282.337	298,160,769.324	19,606,292.574	750,544,751.00
2055	8	1,082,352,761.334		0.000	312,470,004.887	19,599,462.595	750,283,293.85
2055	9	994,568,543.983		320,034.067	216,626,846.847	19,796,477.542	757,825,185.53

Indiana Michigan Power Company-Indiana
Long-Term Residential Energy Model Output

Year	Month	Total Usage	Actual	Heating Usage	Cooling Usage	Lighting Usage	Other Usage
2055	10	780,726,077.804		18,826,082.818	66,561,747.329	17,701,729.077	677,636,518.58
2055	11	771,101,549.088		106,566,177.177	6,075,918.694	16,762,878.913	641,696,574.30
2055	12	1,045,843,159.097		250,807,681.590	77,487.546	20,237,820.964	774,720,169.00
2056	1	1,218,333,366.685		365,698,632.055	0.000	21,460,020.243	831,174,714.39
2056	2	1,144,092,021.735		408,353,329.030	0.000	18,517,856.003	717,220,836.70
2056	3	1,012,962,181.106		324,587,762.637	272,697.090	17,318,877.909	670,782,843.47
2056	4	872,693,526.962		179,199,426.305	3,132,173.000	17,375,765.191	672,986,162.47
2056	5	757,969,906.454		57,263,985.674	22,721,151.069	17,064,243.681	660,920,526.03
2056	6	857,161,551.928		8,174,027.452	130,955,524.907	18,072,195.068	699,959,804.50
2056	7	1,073,702,496.500		87,363.498	299,343,975.910	19,487,682.157	754,783,474.93
2056	8	1,087,566,932.032		0.000	313,711,517.343	19,477,218.309	754,378,196.38
2056	9	999,514,963.405		320,334.986	217,488,482.645	19,674,813.881	762,031,331.89
2056	10	784,976,491.046		18,843,897.539	66,826,853.486	17,600,872.598	681,704,867.42
2056	11	775,158,894.293		106,667,674.633	6,100,151.834	16,671,764.763	645,719,303.06
2056	12	1,050,442,301.088		251,047,906.601	77,796.967	20,118,052.510	779,198,545.01
2057	1	1,223,102,247.222		366,056,446.196	0.000	21,326,240.310	835,719,560.72
2057	2	1,148,458,225.632		408,754,575.415	0.000	18,406,364.962	721,297,285.26
2057	3	1,017,232,718.260		324,908,230.975	273,784.289	17,220,596.124	674,830,106.87
2057	4	876,912,851.596		179,377,038.016	3,144,671.204	17,278,834.286	677,112,308.09
2057	5	762,139,984.861		57,321,006.021	22,811,909.372	16,970,676.059	665,036,393.41
2057	6	861,859,823.269		8,182,205.421	131,479,179.227	17,970,775.232	704,227,663.39
2057	7	1,079,064,002.231		87,451.318	300,542,250.372	19,370,116.439	759,064,184.10
2057	8	1,092,838,086.120		0.000	314,968,739.319	19,356,058.451	758,513,288.35
2057	9	1,004,514,890.884		320,660.043	218,360,948.171	19,554,228.502	766,279,054.17
2057	10	789,273,295.243		18,863,123.236	67,095,266.829	17,500,888.125	685,814,017.05
2057	11	779,266,029.999		106,777,110.242	6,124,685.086	16,581,428.654	649,782,806.02
2057	12	1,055,106,385.346		251,306,709.384	78,110.195	19,999,350.366	783,722,215.40

Indiana Michigan Power Company-Indiana
Long-Term Residential Energy Model Output

Year	Month	Total Usage	Customers	Heating Energy	CoolingEnergy	Lighting Energy	Other Energy	Total Energy
1998	1	1,128,807,578.395	383.221	121,208.421	0.000	48,574.845	262,799.503	432,582.769
1998	2	924,727,569.723	382.619	123,047.944	0.000	37,691.271	193,079.123	353,818.338
1998	3	897,003,923.258	383.100	101,350.569	0.000	38,452.028	203,839.607	343,642.203
1998	4	793,305,322.290	382.373	63,632.854	2,324.155	37,332.339	200,049.188	303,338.536
1998	5	693,987,488.993	381.584	14,499.398	10,387.410	36,509.812	203,417.901	264,814.522
1998	6	785,266,303.196	382.241	801.776	61,223.670	38,883.437	199,252.094	300,160.977
1998	7	1,035,958,636.330	382.292	285.429	134,800.192	41,634.867	219,318.210	396,038.699
1998	8	995,719,762.145	382.418	0.000	107,275.129	41,638.551	231,867.481	380,781.160
1998	9	933,979,452.716	383.019	0.000	92,754.205	42,854.681	222,122.989	357,731.876
1998	10	766,870,207.121	382.964	4,006.717	45,929.469	38,142.714	205,604.781	293,683.682
1998	11	729,664,307.621	383.771	35,664.852	2,934.607	37,526.306	203,898.236	280,024.001
1998	12	917,954,652.239	384.804	64,006.307	0.000	46,252.969	242,973.346	353,232.622
1999	1	1,175,756,719.082	385.953	165,218.087	0.000	50,001.307	238,567.438	453,786.833
1999	2	1,045,025,543.653	384.988	139,805.901	0.000	38,864.483	223,651.910	402,322.294
1999	3	943,768,635.624	386.719	131,841.544	0.000	39,834.596	193,297.123	364,973.263
1999	4	811,991,330.819	386.311	77,501.882	0.000	38,751.449	197,427.852	313,681.183
1999	5	658,445,490.227	385.995	18,499.390	6,077.354	37,823.450	191,756.472	254,156.667
1999	6	790,698,900.917	385.594	1,038.458	61,496.101	40,096.621	202,257.572	304,888.752
1999	7	1,062,558,033.457	385.631	0.000	147,222.510	42,931.337	219,601.470	409,755.317
1999	8	1,127,959,276.733	386.192	0.000	185,523.480	42,900.058	207,185.311	435,608.849
1999	9	896,307,850.400	386.337	48.040	72,385.764	44,260.600	229,582.482	346,276.886
1999	10	705,118,301.892	386.807	8,862.691	22,743.396	39,432.983	201,705.624	272,744.695
1999	11	702,650,153.760	387.616	34,921.525	582.839	38,814.497	198,039.581	272,358.442
1999	12	944,507,931.726	388.377	77,253.633	0.000	47,842.094	241,729.431	366,825.157
2000	1	1,165,999,262.677	389.246	135,559.923	0.000	51,706.371	266,594.254	453,860.549
2000	2	1,037,856,201.384	389.663	178,967.400	0.000	40,410.217	185,036.545	404,414.161
2000	3	869,176,809.640	390.188	85,687.909	0.000	41,098.693	212,355.759	339,142.361
2000	4	767,318,560.070	388.991	52,349.069	0.000	40,034.691	206,096.255	298,480.014
2000	5	717,294,935.559	388.651	18,510.452	20,906.532	39,115.518	200,244.892	278,777.394
2000	6	771,108,002.283	388.964	1,383.008	49,238.796	41,451.189	207,860.261	299,933.253
2000	7	928,795,528.349	388.626	51.390	107,422.896	44,308.664	209,171.140	360,954.091
2000	8	934,010,772.634	389.227	0.000	113,759.631	44,272.112	205,510.467	363,542.211
2000	9	948,174,702.474	389.714	154.662	97,905.199	45,712.577	225,744.518	369,516.956

Indiana Michigan Power Company-Indiana
Long-Term Residential Energy Model Output

Year	Month	Total Usage	Customers	Heating Energy	CoolingEnergy	Lighting Energy	Other Energy	Total Energy
2000	10	744,094,577.731	390.261	8,275.413	22,578.717	40,793.406	218,743.558	290,391.094
2000	11	709,589,282.699	390.882	28,798.868	3,020.074	40,135.674	205,411.061	277,365.678
2000	12	1,051,144,998.414	390.956	130,171.001	0.000	49,397.724	231,382.720	410,951.444
2001	1	1,320,784,368.282	392.113	200,447.779	0.000	53,321.185	264,127.757	517,896.721
2001	2	1,057,441,042.458	391.536	150,357.789	0.000	41,667.470	222,000.977	414,026.236
2001	3	951,330,133.814	392.038	120,220.743	0.000	42,377.900	210,358.920	372,957.563
2001	4	836,233,902.716	391.184	79,960.629	4,230.140	41,298.684	201,631.871	327,121.323
2001	5	698,801,377.483	391.003	15,984.239	22,622.135	40,292.198	194,334.863	273,233.435
2001	6	753,141,473.459	390.469	1,727.070	37,827.716	42,609.109	211,914.503	294,078.398
2001	7	971,790,816.863	390.237	302.602	111,143.481	45,505.797	222,276.853	379,228.733
2001	8	1,100,570,835.538	391.209	0.000	168,039.834	45,498.615	217,014.768	430,553.216
2001	9	925,794,065.279	391.459	75.800	93,421.141	46,917.932	221,995.547	362,410.419
2001	10	714,363,585.239	391.204	8,969.172	12,676.457	41,865.147	215,951.116	279,461.892
2001	11	734,687,442.177	391.278	31,689.636	407.382	41,209.736	214,160.279	287,467.033
2001	12	910,422,653.174	392.104	53,425.852	0.000	50,605.869	252,948.643	356,980.364
2002	1	1,170,728,314.260	393.127	129,251.625	0.000	54,608.412	276,384.873	460,244.910
2002	2	955,762,741.013	393.081	109,904.710	0.000	42,745.606	223,041.858	375,692.174
2002	3	944,739,700.174	393.162	108,365.513	0.000	43,473.582	219,596.655	371,435.750
2002	4	895,370,606.809	393.023	82,250.366	7,758.817	42,439.634	219,452.425	351,901.242
2002	5	733,321,280.582	392.884	25,944.266	18,178.311	41,388.887	202,598.734	288,110.198
2002	6	811,363,558.800	392.638	9,707.493	44,348.125	43,771.729	220,744.819	318,572.165
2002	7	1,131,322,462.145	392.812	0.000	174,514.021	46,771.635	223,111.384	444,397.039
2002	8	1,164,616,753.413	393.102	0.000	193,529.205	46,677.634	217,606.336	457,813.175
2002	9	1,037,162,315.424	393.604	41.657	124,269.257	48,207.689	235,712.633	408,231.236
2002	10	780,089,665.623	393.328	8,806.333	48,129.762	43,075.813	206,819.200	306,831.108
2002	11	801,729,870.486	393.626	59,641.106	3,125.372	42,437.404	210,377.839	315,581.722
2002	12	1,077,298,616.774	394.874	120,600.725	0.000	52,125.347	252,671.142	425,397.214
2003	1	1,246,048,951.720	395.839	154,179.149	0.000	55,038.349	284,017.273	493,234.771
2003	2	1,137,796,271.913	396.450	199,100.551	0.000	43,216.866	208,761.915	451,079.332
2003	3	1,050,867,408.348	395.138	168,168.489	0.000	43,861.324	203,207.833	415,237.646
2003	4	812,684,841.749	394.973	68,206.822	210.093	42,747.322	209,824.333	320,988.570
2003	5	723,932,608.596	393.982	24,569.017	2,171.172	41,705.541	216,770.687	285,216.417
2003	6	719,067,313.665	394.437	2,899.757	12,102.795	44,067.532	224,556.670	283,626.754

Indiana Michigan Power Company-Indiana
Long-Term Residential Energy Model Output

Year	Month	Total Usage	Customers	Heating Energy	CoolingEnergy	Lighting Energy	Other Energy	Total Energy
2003	7	955,717,350.786	394.351	30.178	99,270.087	46,850.455	230,737.373	376,888.093
2003	8	979,389,983.163	394.376	0.000	115,152.871	47,110.445	223,984.588	386,247.904
2003	9	1,001,408,291.792	394.583	6.046	101,693.499	49,298.809	244,140.335	395,138.688
2003	10	730,763,666.783	395.082	14,853.299	10,873.184	42,671.366	220,313.723	288,711.571
2003	11	733,496,861.557	395.897	41,266.969	497.583	42,132.725	206,491.930	290,389.207
2003	12	1,034,717,393.275	397.050	95,117.082	77.063	52,607.358	263,033.038	410,834.541
2004	1	1,229,931,326.872	398.147	143,275.971	0.000	55,600.297	290,817.200	489,693.468
2004	2	1,153,242,163.598	398.429	202,228.012	0.000	43,533.429	213,723.681	459,485.122
2004	3	989,686,999.467	398.076	128,810.226	0.000	44,218.524	220,941.892	393,970.642
2004	4	833,878,684.976	397.255	64,535.706	2,045.873	43,302.115	221,378.783	331,262.477
2004	5	731,915,305.670	396.768	19,337.017	22,757.408	42,061.751	206,244.397	290,400.572
2004	6	831,106,406.743	396.629	1,693.592	56,301.458	44,570.998	227,074.856	329,640.903
2004	7	957,123,852.864	397.076	0.000	88,439.835	47,408.833	244,202.242	380,050.911
2004	8	893,763,723.228	397.483	0.000	79,516.462	46,973.777	228,765.647	355,255.886
2004	9	901,623,071.742	397.898	0.000	70,921.375	48,726.414	239,106.228	358,754.017
2004	10	766,876,146.996	398.214	8,916.333	24,730.561	43,972.434	227,761.490	305,380.818
2004	11	735,296,041.174	398.502	30,301.992	1,580.597	43,106.248	218,028.106	293,016.943
2004	12	1,027,305,281.532	399.297	88,921.627	113.648	53,489.357	267,675.285	410,199.917
2005	1	1,222,104,189.697	399.838	157,645.835	0.000	55,600.635	275,397.225	488,643.695
2005	2	1,104,677,456.175	398.628	177,830.301	0.000	43,882.746	218,642.318	440,355.365
2005	3	1,027,179,471.536	401.579	142,339.469	0.000	44,737.220	225,417.016	412,493.705
2005	4	864,178,503.178	398.738	75,659.043	494.464	44,499.701	223,927.600	344,580.808
2005	5	737,439,247.429	398.049	31,182.369	5,771.724	41,880.266	214,702.596	293,536.955
2005	6	842,535,974.442	397.838	5,186.549	44,837.309	44,824.389	240,344.580	335,192.827
2005	7	1,154,990,162.861	396.965	0.000	145,298.783	48,307.023	264,884.864	458,490.670
2005	8	1,166,756,969.353	398.674	0.000	164,186.564	47,459.826	253,509.278	465,155.668
2005	9	1,042,947,645.993	397.811	0.000	100,308.612	49,022.309	265,565.125	414,896.046
2005	10	808,878,202.759	397.743	4,282.888	46,491.689	44,467.133	226,483.934	321,725.643
2005	11	770,586,960.830	398.645	37,782.115	3,767.828	44,063.697	221,576.999	307,190.639
2005	12	1,113,492,084.972	399.051	134,156.914	0.000	52,429.422	257,753.794	444,340.130
2006	1	1,261,765,924.706	399.662	142,351.060	0.000	58,252.401	303,676.432	504,279.893
2006	2	1,029,995,482.573	399.121	116,571.806	0.000	46,319.855	248,201.166	411,092.827
2006	3	1,010,864,730.818	399.618	130,327.246	0.000	43,086.461	230,546.035	403,959.742

Indiana Michigan Power Company-Indiana
Long-Term Residential Energy Model Output

Year	Month	Total Usage	Customers	Heating Energy	CoolingEnergy	Lighting Energy	Other Energy	Total Energy
2006	4	827,744,586.940	398.296	73,060.981	508.968	40,935.887	215,181.522	329,687.358
2006	5	708,201,048.183	398.213	15,550.021	982.093	41,690.479	223,792.270	282,014.864
2006	6	851,210,986.073	397.922	6,017.122	44,213.493	43,366.704	245,118.259	338,715.578
2006	7	1,020,497,358.730	397.536	0.000	102,482.069	45,971.443	257,230.926	405,684.438
2006	8	1,168,596,592.065	398.071	0.000	153,665.620	46,516.569	265,002.225	465,184.414
2006	9	940,085,420.198	397.646	343.593	63,630.002	47,187.552	262,660.059	373,821.207
2006	10	715,642,943.381	398.399	11,828.625	5,857.417	42,179.619	225,245.772	285,111.433
2006	11	850,916,498.381	398.627	61,948.998	536.597	43,137.647	233,575.050	339,198.291
2006	12	1,079,823,341.383	399.188	91,325.240	0.000	51,155.581	288,571.699	431,052.520
2007	1	1,171,404,713.323	399.421	104,612.571	0.000	55,897.657	307,373.414	467,883.642
2007	2	1,256,888,620.079	399.291	190,042.904	0.000	45,701.980	266,119.430	501,864.314
2007	3	1,120,964,281.518	400.017	174,525.082	33.958	41,819.626	232,026.102	448,404.769
2007	4	867,673,200.486	399.205	65,336.297	2,130.975	41,309.563	237,602.646	346,379.480
2007	5	757,499,019.566	398.293	24,748.061	10,711.122	39,888.652	226,358.722	301,706.557
2007	6	893,106,273.564	398.641	1,705.517	76,042.764	41,536.122	236,744.376	356,028.778
2007	7	1,050,550,772.610	397.872	0.000	111,254.458	44,645.666	262,084.613	417,984.737
2007	8	1,101,282,504.460	398.553	0.000	131,892.268	45,261.906	261,765.272	438,919.446
2007	9	1,066,945,212.774	398.122	300.187	110,108.697	45,803.322	268,562.156	424,774.362
2007	10	844,860,283.491	392.323	3,008.847	53,801.797	41,748.075	232,899.402	331,458.121
2007	11	811,138,056.162	398.490	36,885.914	11,492.193	41,846.628	233,005.669	323,230.404
2007	12	1,116,535,807.005	399.056	117,428.507	0.000	49,164.552	278,967.254	445,560.313
2008	1	1,307,785,885.655	399.721	146,624.189	0.000	54,483.942	321,641.352	522,749.482
2008	2	1,222,297,719.241	399.823	175,088.682	0.000	43,731.935	269,882.124	488,702.741
2008	3	1,135,098,446.672	399.658	166,105.298	0.000	40,682.392	246,863.485	453,651.175
2008	4	917,562,635.631	398.599	87,150.213	126.673	39,412.767	239,049.896	365,739.549
2008	5	715,066,773.906	397.865	21,113.701	4,977.314	38,025.820	220,383.208	284,500.042
2008	6	813,217,764.199	397.361	4,884.074	49,327.498	40,386.291	228,543.161	323,141.024
2008	7	993,689,713.725	397.520	6.309	95,784.669	43,561.460	255,659.098	395,011.535
2008	8	1,048,238,839.095	397.862	0.000	121,026.476	43,200.026	252,827.899	417,054.401
2008	9	956,267,613.077	397.361	0.000	89,896.334	43,654.176	246,432.945	379,983.455
2008	10	761,156,739.741	397.404	5,574.226	24,321.255	40,030.813	232,560.439	302,486.733
2008	11	812,214,857.655	397.519	44,924.114	1,580.090	40,442.965	235,923.668	322,870.838
2008	12	1,180,788,748.000	398.027	135,227.928	0.000	47,977.191	286,780.685	469,985.803

Indiana Michigan Power Company-Indiana
Long-Term Residential Energy Model Output

Year	Month	Total Usage	Customers	Heating Energy	CoolingEnergy	Lighting Energy	Other Energy	Total Energy
2009	1	1,421,423,301.166	398.950	176,013.536	0.000	52,934.373	338,128.917	567,076.826
2009	2	1,290,897,327.192	398.158	207,915.859	0.000	42,562.378	263,502.861	513,981.098
2009	3	1,042,256,079.606	399.368	125,492.401	0.000	39,044.928	251,706.396	416,243.726
2009	4	869,439,326.630	396.632	64,082.464	275.338	38,356.231	242,133.426	344,847.459
2009	5	736,305,247.995	396.399	24,715.918	13,775.254	36,955.855	216,423.637	291,870.664
2009	6	766,368,128.693	396.231	2,665.698	34,709.689	38,432.850	227,850.573	303,658.810
2009	7	979,413,814.253	396.185	0.000	98,317.963	42,711.891	246,999.208	388,029.062
2009	8	915,594,702.866	396.403	0.000	79,093.525	41,532.412	242,318.549	362,944.487
2009	9	884,971,974.898	396.466	0.000	56,733.128	42,477.082	251,651.089	350,861.299
2009	10	782,179,201.108	395.723	14,292.551	17,166.280	39,843.996	238,223.473	309,526.300
2009	11	804,218,572.790	396.774	38,915.834	0.000	38,567.593	241,609.594	319,093.020
2009	12	1,087,856,595.275	397.853	90,887.365	0.000	46,582.902	295,336.742	432,807.010
2010	1	1,403,274,674.459	398.337	170,731.553	0.000	45,614.758	342,629.913	558,976.224
2010	2	1,214,391,091.733	390.581	173,184.376	0.000	35,570.309	265,563.402	474,318.087
2010	3	1,019,431,759.758	407.289	134,328.389	0.000	33,585.322	247,289.632	415,203.342
2010	4	797,057,545.255	397.687	44,439.733	4,281.930	33,846.672	234,411.089	316,979.424
2010	5	690,513,687.942	396.663	10,380.509	9,881.952	32,061.890	221,576.881	273,901.231
2010	6	911,343,274.182	396.948	2,123.183	90,911.411	33,737.913	234,983.384	361,755.890
2010	7	1,151,883,770.024	396.963	0.000	163,304.169	36,212.247	257,738.821	457,255.237
2010	8	1,222,852,139.882	396.564	0.000	183,630.055	36,806.093	264,502.988	484,939.136
2010	9	1,045,503,908.614	396.560	0.000	111,922.666	36,865.127	265,817.237	414,605.030
2010	10	737,567,231.963	396.783	4,858.112	32,573.088	33,241.454	221,981.486	292,654.139
2010	11	758,500,340.972	397.393	37,580.618	2,919.184	33,339.508	227,583.416	301,422.726
2010	12	1,112,507,867.768	397.635	122,853.885	0.000	40,086.780	279,431.402	442,372.066
2011	1	1,373,172,391.460	399.898	182,160.487	0.000	41,502.220	325,466.186	549,128.893
2011	2	1,241,975,465.287	389.652	193,956.426	0.000	33,148.290	256,833.507	483,938.224
2011	3	997,269,207.564	407.730	135,382.423	0.000	30,558.470	240,675.682	406,616.574
2011	4	836,996,084.638	397.409	77,436.502	1,055.583	28,626.937	225,510.755	332,629.777
2011	5	778,458,985.349	397.102	23,838.009	8,597.550	30,564.243	246,127.819	309,127.620
2011	6	896,131,113.017	396.490	3,331.574	77,788.698	31,620.708	242,566.045	355,307.025
2011	7	1,091,681,552.261	396.222	0.000	144,008.343	33,385.871	255,154.034	432,548.248
2011	8	1,275,079,505.349	396.967	0.000	207,206.682	34,307.527	264,650.277	506,164.486
2011	9	971,145,601.536	396.809	510.854	97,169.850	33,207.133	254,471.477	385,359.315

Indiana Michigan Power Company-Indiana
Long-Term Residential Energy Model Output

Year	Month	Total Usage	Customers	Heating Energy	CoolingEnergy	Lighting Energy	Other Energy	Total Energy
2011	10	718,245,424.496	396.623	6,096.302	13,004.295	30,825.916	234,946.142	284,872.655
2011	11	760,696,342.554	397.135	34,377.877	402.068	29,863.224	237,455.974	302,099.142
2011	12	1,052,862,076.681	397.750	81,824.351	0.000	36,996.701	299,954.839	418,775.891
2012	1	1,214,977,952.491	398.367	123,282.208	0.000	40,995.591	319,729.323	484,007.122
2012	2	1,070,040,784.884	398.530	140,894.662	0.000	32,273.241	253,275.451	426,443.354
2012	3	945,646,395.628	398.516	99,133.804	3,318.805	30,573.305	243,829.305	376,855.219
2012	4	744,681,042.127	398.109	26,138.219	10,685.641	30,854.587	228,785.778	296,464.225
2012	5	723,657,308.622	397.982	19,793.674	13,689.122	29,527.888	224,991.898	288,002.583
2012	6	893,124,134.356	397.392	658.664	77,600.708	30,885.350	245,775.664	354,920.386
2012	7	1,215,282,155.578	397.536	62.083	187,071.492	33,186.820	262,798.012	483,118.407
2012	8	1,198,260,046.561	397.325	0.000	163,150.864	33,701.292	279,246.517	476,098.673
2012	9	942,094,552.350	397.621	426.647	80,200.737	33,628.143	260,341.051	374,596.578
2012	10	710,696,286.209	398.003	14,159.669	11,824.156	30,350.394	226,525.035	282,859.254
2012	11	799,154,387.770	398.380	52,520.660	1,158.436	30,794.502	233,893.527	318,367.125
2012	12	1,001,514,048.704	398.898	89,025.407	0.000	35,589.302	274,887.241	399,501.951
2013	1	1,214,942,085.077	400.484	140,503.311	0.000	37,993.647	308,067.908	486,564.866
2013	2	1,134,587,813.907	399.800	161,583.284	0.000	30,605.811	261,419.113	453,608.208
2013	3	1,091,217,289.650	400.332	144,741.744	0.000	28,963.920	263,143.537	436,849.200
2013	4	935,730,649.743	398.819	97,852.895	0.000	28,373.548	246,960.719	373,187.162
2013	5	735,105,296.011	398.904	25,115.817	11,026.046	24,761.885	232,332.695	293,236.443
2013	6	799,977,333.755	398.478	2,581.522	58,678.280	26,270.030	231,243.536	318,773.368
2013	7	997,913,948.060	398.887	0.000	119,146.682	28,006.865	250,901.355	398,054.901
2013	8	954,792,503.236	398.652	0.000	94,149.389	28,711.969	257,768.584	380,629.941
2013	9	962,594,429.167	399.294	120.277	92,534.446	28,829.703	262,873.754	384,358.180
2013	10	742,848,782.247	401.970	4,060.685	33,768.455	25,979.011	234,794.774	298,602.925
2013	11	787,187,654.691	399.990	50,137.088	3,007.793	26,002.660	235,719.649	314,867.190
2013	12	1,098,703,351.250	401.313	125,946.577	0.000	30,955.619	284,021.741	440,923.938
2014	1	1,397,111,585.663	401.548	189,515.495	0.000	34,917.800	336,574.068	561,007.363
2014	2	1,292,194,502.823	400.169	231,589.760	0.000	26,601.652	258,904.770	517,096.182
2014	3	1,153,516,893.187	401.582	201,728.657	0.000	25,141.931	236,361.033	463,231.621
2014	4	898,404,068.912	401.090	103,776.455	0.000	24,480.368	232,084.064	360,340.888
2014	5	720,151,202.216	399.637	25,310.064	7,825.253	24,573.313	230,090.436	287,799.066
2014	6	817,030,693.285	399.273	5,133.434	60,186.631	25,143.140	235,755.091	326,218.296

Indiana Michigan Power Company-Indiana
Long-Term Residential Energy Model Output

Year	Month	Total Usage	Customers	Heating Energy	CoolingEnergy	Lighting Energy	Other Energy	Total Energy
2014	7	955,052,765.456	399.030	0.000	112,736.468	27,195.749	241,162.487	381,094.705
2014	8	860,465,247.713	400.060	0.000	72,066.421	27,284.063	244,887.242	344,237.727
2014	9	930,511,419.360	400.110	328.893	90,287.318	27,819.763	253,870.950	372,306.924
2014	10	684,307,912.460	399.724	9,115.049	9,368.964	24,712.996	230,337.287	273,534.296
2014	11	764,853,592.806	401.121	55,580.877	180.328	24,710.917	226,326.716	306,798.838
2014	12	1,116,787,413.422	402.095	132,329.380	0.000	30,298.917	286,426.338	449,054.635
2015	1	1,242,620,178.994	401.913	170,969.561	0.000	29,753.579	298,702.064	499,425.204
2015	2	1,143,773,825.064	402.958	205,889.258	0.000	22,946.358	232,057.196	460,892.813
2015	3	1,118,221,165.586	402.956	213,665.851	0.000	21,538.148	215,389.929	450,593.928
2015	4	832,491,138.850	401.923	87,405.478	0.000	21,878.133	225,313.725	334,597.336
2015	5	685,196,349.918	400.265	23,126.927	15,368.662	20,806.806	214,957.723	274,260.117
2015	6	778,631,130.654	401.405	2,338.832	63,588.309	21,495.756	225,123.532	312,546.429
2015	7	895,000,775.896	400.827	16.688	83,279.857	23,905.191	251,538.740	358,740.476
2015	8	971,906,079.074	400.209	0.000	116,889.761	23,519.273	248,556.526	388,965.560
2015	9	910,855,831.999	401.046	0.000	91,593.261	24,207.955	249,493.872	365,295.088
2015	10	710,581,491.692	401.182	4,454.324	30,207.466	21,504.237	228,906.477	285,072.504
2015	11	670,159,659.030	401.443	28,866.893	799.564	21,245.158	218,119.289	269,030.904
2015	12	941,868,865.618	402.404	80,814.213	0.000	27,130.279	271,067.307	379,011.799
2016	1	1,104,782,673.746	403.030	122,034.831	0.000	21,841.542	301,384.188	445,260.561
2016	2	1,053,799,146.750	403.633	169,702.901	0.000	18,277.886	237,367.324	425,348.111
2016	3	890,847,862.625	403.392	115,987.751	0.000	16,968.267	226,404.883	359,360.901
2016	4	769,544,117.501	403.060	62,097.642	0.000	17,128.582	230,946.228	310,172.452
2016	5	653,378,542.334	402.383	25,076.482	919.999	16,102.589	220,809.347	262,908.418
2016	6	814,516,167.531	402.195	4,440.343	66,767.112	17,415.217	238,971.658	327,594.330
2016	7	983,451,672.821	402.165	0.000	111,989.050	18,709.487	264,811.306	395,509.842
2016	8	1,112,863,207.359	401.988	0.000	165,596.045	18,826.101	262,935.510	447,357.655
2016	9	1,019,460,491.289	402.696	0.000	124,701.288	19,140.029	266,691.345	410,532.662
2016	10	757,062,372.297	402.791	1,507.554	48,409.394	17,162.895	237,858.067	304,937.910
2016	11	658,408,576.188	403.396	24,692.479	8,135.049	15,690.233	217,081.625	265,599.386
2016	12	994,599,588.765	405.121	110,472.668	326.067	19,689.031	272,445.414	402,933.180
2017	1	1,192,319,124.847	405.415	164,963.598	0.000	19,409.278	299,011.182	483,384.058
2017	2	943,620,575.587	405.082	125,192.993	0.000	15,883.681	241,167.036	382,243.710
2017	3	831,175,342.114	405.128	95,582.096	0.000	14,683.317	226,466.990	336,732.404

Indiana Michigan Power Company-Indiana
Long-Term Residential Energy Model Output

Year	Month	Total Usage	Customers	Heating Energy	CoolingEnergy	Lighting Energy	Other Energy	Total Energy
2017	4	751,248,739.521	404.608	67,304.683	2,061.387	14,658.404	219,936.777	303,961.250
2017	5	634,787,439.458	404.266	17,521.013	13,600.879	13,973.241	211,527.845	256,622.979
2017	6	751,366,703.391	403.915	3,434.560	51,999.009	15,105.208	232,949.504	303,488.282
2017	7	945,004,114.972	404.134	0.000	113,961.474	16,727.603	251,219.217	381,908.293
2017	8	959,412,522.004	403.913	0.000	106,418.066	16,719.748	264,381.375	387,519.190
2017	9	810,174,366.186	404.614	0.000	51,109.192	16,820.053	259,878.646	327,807.891
2017	10	754,236,976.767	404.719	804.003	53,789.433	15,153.111	235,507.489	305,254.035
2017	11	705,242,951.467	405.439	47,845.692	5,789.852	14,034.733	218,262.720	285,932.997
2017	12	981,869,135.948	406.353	102,474.868	0.000	17,691.064	278,819.537	398,985.469
2018	1	1,280,605,433.167	406.945	204,613.059	0.000	16,659.263	299,863.656	521,135.978
2018	2	1,029,735,502.584	407.176	170,938.692	0.000	13,683.716	234,661.176	419,283.583
2018	3	894,658,259.265	406.943	117,378.493	0.000	12,707.964	233,988.459	364,074.916
2018	4	866,915,658.857	406.492	103,288.204	207.240	12,911.275	235,987.562	352,394.280
2018	5	687,171,742.588	406.166	35,534.249	11,517.519	12,343.633	219,710.398	279,105.798
2018	6	855,053,624.723	406.100	376.595	91,661.549	13,313.566	241,885.567	347,237.277
2018	7	1,040,114,324.191	406.187	0.000	146,279.015	14,225.109	261,976.793	422,480.917
2018	8	982,331,840.750	406.454	0.000	122,364.608	14,552.651	262,355.447	399,272.706
2018	9	984,968,430.525	406.722	0.000	126,413.445	14,622.120	259,572.765	400,608.330
2018	10	755,741,075.525	407.559	7,800.692	63,052.569	12,928.942	224,226.873	308,009.077
2018	11	752,128,106.301	407.599	60,599.709	8,890.971	12,401.720	224,674.263	306,566.664
2018	12	1,017,147,120.234	408.054	120,710.740	0.000	15,041.117	279,299.095	415,050.951
2019	1	1,058,983,087.126	408.801	122,721.853	0.000	13,859.848	296,331.644	432,913.345
2019	2	1,105,190,996.131	409.113	179,340.172	0.000	12,019.050	260,788.782	452,148.004
2019	3	965,314,899.737	408.873	148,896.117	0.000	10,810.023	234,985.059	394,691.199
2019	4	768,319,115.618	408.059	77,016.855	0.000	10,811.472	225,691.203	313,519.530
2019	5	655,405,844.442	407.772	22,637.274	3,013.333	11,126.902	230,478.643	267,256.152
2019	6	701,017,874.998	407.049	3,818.890	48,211.161	11,520.836	221,797.738	285,348.625
2019	7	985,375,726.018	407.531	0.000	147,759.939	12,370.763	241,440.453	401,571.155
2019	8	1,021,296,292.207	407.601	0.000	140,493.812	12,618.871	263,168.707	416,281.390
2019	9	855,475,204.302	407.974	0.000	77,928.347	12,676.030	258,407.264	349,011.641
2019	10	733,845,220.814	408.511	4,450.316	49,238.832	11,191.166	234,903.531	299,783.845
2019	11	702,312,098.720	409.159	58,895.892	2,873.855	10,560.278	215,027.291	287,357.316
2019	12	956,124,731.713	410.008	121,189.516	0.000	12,991.452	257,837.820	392,018.789

Indiana Michigan Power Company-Indiana
Long-Term Residential Energy Model Output

Year	Month	Total Usage	Customers	Heating Energy	CoolingEnergy	Lighting Energy	Other Energy	Total Energy
2020	1	1,020,977,690.886	410.729	120,630.308	0.000	13,543.401	285,171.438	419,345.146
2020	2	916,070,175.652	410.869	139,640.166	0.000	11,298.340	225,446.331	376,384.837
2020	3	859,588,153.056	410.570	130,652.756	0.000	10,471.123	211,797.230	352,921.108
2020	4	775,495,420.653	411.194	69,900.602	0.000	10,726.822	238,251.639	318,879.064
2020	5	697,024,675.706	412.511	40,346.884	1,852.728	10,530.197	234,800.536	287,530.346
2020	6	793,650,230.900	411.866	6,848.734	61,453.979	10,896.450	247,678.382	326,877.546
2020	7	1,060,349,413.314	412.231	0.000	143,888.369	11,937.176	281,283.354	437,108.899
2020	8	1,039,614,588.841	412.274	0.000	134,489.032	12,116.101	282,000.932	428,606.065
2020	9	931,715,322.393	412.168	158.066	86,624.973	11,999.153	285,241.049	384,023.241
2020	10	665,355,977.924	411.857	9,411.416	10,946.226	10,897.067	242,776.808	274,031.517
2020	11	672,001,682.137	411.976	41,775.994	1,116.036	10,249.454	223,707.081	276,848.565
2020	12	901,886,227.792	412.737	91,086.405	442.371	12,471.899	268,241.141	372,241.816
2021	1	1,071,285,735.704	413.536	136,037.247	0.000	12,760.959	294,217.012	443,015.218
2021	2	1,058,252,734.122	412.621	173,969.819	0.000	10,981.162	251,706.014	436,656.994
2021	3	924,309,658.189	412.636	138,238.012	106.564	10,160.629	232,898.086	381,403.292
2021	4	777,683,654.747	410.531	75,986.710	1,218.844	10,118.777	231,938.750	319,263.081
2021	5	657,854,105.858	409.876	24,231.891	8,824.654	9,889.891	226,692.322	269,638.759
2021	6	746,206,254.197	409.605	3,455.170	50,810.652	10,508.641	240,875.087	305,649.551
2021	7	953,011,421.149	409.428	36.899	116,058.491	11,458.000	262,635.924	390,189.314
2021	8	969,658,207.292	409.610	0.000	121,642.010	11,518.442	264,021.350	397,181.802
2021	9	883,656,830.399	409.667	135.272	84,313.138	11,602.735	265,953.472	362,004.617
2021	10	681,460,087.239	409.685	7,954.197	25,898.077	10,255.648	235,076.074	279,183.996
2021	11	678,967,305.426	410.100	45,048.271	2,365.512	9,657.827	221,373.045	278,444.656
2021	12	948,912,368.018	410.763	106,140.766	30.205	11,855.693	271,751.693	389,778.356
2022	1	1,114,970,398.759	411.431	154,075.747	0.000	12,413.900	292,243.905	458,733.553
2022	2	1,052,570,995.627	411.247	171,881.084	0.000	10,634.392	250,351.326	432,866.803
2022	3	919,351,818.373	411.304	136,574.628	105.558	9,838.503	231,614.761	378,133.449
2022	4	772,754,866.867	410.340	75,187.069	1,209.146	9,807.644	230,888.296	317,092.155
2022	5	654,080,439.914	409.724	23,976.709	8,754.343	9,586.211	225,675.393	267,992.657
2022	6	742,063,830.032	409.490	3,418.786	50,405.413	10,188.534	239,855.087	303,867.820
2022	7	947,824,996.687	409.349	36.511	115,135.641	11,116.566	261,702.500	387,991.218
2022	8	964,454,263.989	409.565	0.000	120,681.193	11,177.969	263,148.017	395,007.179
2022	9	878,950,113.818	409.654	133.862	83,652.029	11,257.582	265,022.238	360,065.710

Indiana Michigan Power Company-Indiana
Long-Term Residential Energy Model Output

Year	Month	Total Usage	Customers	Heating Energy	CoolingEnergy	Lighting Energy	Other Energy	Total Energy
2022	10	677,557,815.960	409.704	7,871.679	25,696.821	9,943.471	234,085.875	277,597.847
2022	11	674,440,159.646	410.148	44,585.162	2,347.383	9,359.088	220,328.525	276,620.157
2022	12	942,356,873.565	410.838	105,066.556	29.978	11,493.093	270,566.581	387,156.208
2023	1	1,115,786,298.868	411.532	153,968.319	0.000	12,184.739	293,028.582	459,181.640
2023	2	1,053,445,582.609	411.372	171,816.626	0.000	10,441.270	251,100.196	433,358.092
2023	3	920,515,290.307	411.452	136,574.226	104.796	9,663.882	232,404.947	378,747.850
2023	4	774,235,154.928	410.509	75,219.157	1,200.848	9,637.589	231,772.638	317,830.232
2023	5	655,614,741.511	409.913	23,998.336	8,697.721	9,423.552	226,625.297	268,744.907
2023	6	743,088,933.154	409.697	3,423.274	50,097.397	10,017.268	240,903.453	304,441.392
2023	7	948,018,442.925	409.573	36.573	114,468.175	10,929.785	262,848.417	388,282.950
2023	8	964,666,887.013	409.806	0.000	120,014.519	10,990.999	264,320.534	395,326.052
2023	9	879,952,960.236	409.910	134.173	83,210.015	11,072.659	266,284.359	360,701.206
2023	10	679,470,603.877	409.973	7,892.646	25,567.614	9,785.065	235,319.259	278,564.585
2023	11	676,964,409.607	410.430	44,717.310	2,336.099	9,213.743	221,579.640	277,846.793
2023	12	945,625,477.611	411.133	105,403.948	29.839	11,311.681	272,032.563	388,778.031
2024	1	1,114,164,310.312	411.839	153,500.320	0.000	12,016.972	293,338.576	458,855.869
2024	2	1,051,806,884.909	411.690	171,318.796	0.000	10,298.925	251,400.437	433,018.159
2024	3	919,217,594.208	411.780	136,180.250	104.324	9,532.763	232,698.136	378,515.473
2024	4	773,485,215.687	410.846	74,997.026	1,195.381	9,507.588	232,083.610	317,783.604
2024	5	655,215,738.175	410.260	23,926.021	8,657.749	9,296.397	226,928.365	268,808.532
2024	6	742,302,273.130	410.052	3,412.807	49,866.409	9,881.934	241,221.531	304,382.681
2024	7	946,452,230.008	409.936	36.460	113,938.083	10,783.411	263,226.912	387,984.867
2024	8	963,083,856.006	410.176	0.000	119,465.840	10,844.703	264,723.057	395,033.600
2024	9	878,871,205.527	410.286	133.780	82,833.339	10,925.527	266,696.003	360,588.649
2024	10	679,021,412.217	410.355	7,869.993	25,453.003	9,654.217	235,662.866	278,640.079
2024	11	676,448,444.879	410.818	44,592.174	2,325.747	9,089.970	221,889.415	277,897.306
2024	12	944,471,866.533	411.526	105,110.493	29.708	11,158.217	272,376.060	388,674.478
2025	1	1,113,212,532.698	412.235	153,143.398	0.000	11,883.383	293,878.928	458,905.709
2025	2	1,050,774,588.933	412.091	170,936.219	0.000	10,185.603	251,892.411	433,014.232
2025	3	918,570,237.241	412.184	135,892.480	103.971	9,429.512	233,194.096	378,620.058
2025	4	773,465,965.842	411.253	74,852.744	1,191.491	9,407.072	232,639.160	318,090.468
2025	5	655,539,912.651	410.669	23,882.973	8,630.307	9,199.162	227,497.507	269,209.949
2025	6	742,430,508.218	410.464	3,407.265	49,714.025	9,779.137	241,840.431	304,740.858

Indiana Michigan Power Company-Indiana
Long-Term Residential Energy Model Output

Year	Month	Total Usage	Customers	Heating Energy	CoolingEnergy	Lighting Energy	Other Energy	Total Energy
2025	7	946,114,784.663	410.349	36.406	113,601.528	10,672.258	263,927.526	388,237.718
2025	8	962,673,684.051	410.591	0.000	119,112.076	10,732.616	265,420.183	395,264.875
2025	9	878,837,022.116	410.702	133.576	82,588.933	10,812.879	267,405.112	360,940.500
2025	10	679,398,335.591	410.773	7,857.828	25,377.676	9,554.626	236,288.211	279,078.341
2025	11	676,744,108.840	411.237	44,521.303	2,318.793	8,995.710	222,466.079	278,301.884
2025	12	944,414,572.638	411.945	104,949.699	29.620	11,040.216	273,027.197	389,046.731
2026	1	1,112,444,345.332	412.655	152,821.962	0.000	11,754.294	294,479.823	459,056.079
2026	2	1,049,847,487.535	412.511	170,575.675	0.000	10,075.551	252,422.333	433,073.559
2026	3	917,936,271.041	412.605	135,605.436	103.668	9,328.537	233,707.438	378,745.079
2026	4	773,358,886.936	411.675	74,694.724	1,188.010	9,307.559	233,181.869	318,372.161
2026	5	655,765,758.231	411.090	23,833.009	8,605.052	9,102.268	228,038.709	269,579.038
2026	6	742,396,436.352	410.885	3,399.953	49,566.281	9,675.430	242,398.133	305,039.797
2026	7	945,548,729.355	410.771	36.327	113,261.821	10,559.486	264,546.339	388,403.972
2026	8	962,082,316.718	411.012	0.000	118,759.157	10,619.458	266,048.819	395,427.435
2026	9	878,622,394.522	411.124	133.291	82,346.685	10,699.068	268,043.287	361,222.331
2026	10	679,608,826.136	411.193	7,841.354	25,304.229	9,454.019	236,851.126	279,450.729
2026	11	676,898,296.845	411.657	44,432.992	2,312.289	8,901.272	223,003.173	278,649.726
2026	12	944,156,728.206	412.364	104,749.870	29.538	10,922.263	273,634.984	389,336.655
2027	1	1,111,427,568.385	413.074	152,339.616	0.000	11,660.056	295,102.412	459,102.084
2027	2	1,048,634,209.323	412.929	170,038.860	0.000	9,995.603	252,977.041	433,011.504
2027	3	917,130,274.795	413.022	135,183.601	103.388	9,255.756	234,252.396	378,795.141
2027	4	773,199,158.156	412.091	74,458.235	1,184.771	9,235.878	233,749.306	318,628.190
2027	5	656,066,543.379	411.505	23,757.576	8,581.699	9,032.545	228,603.166	269,974.985
2027	6	742,553,536.151	411.299	3,389.215	49,432.810	9,600.943	242,988.653	305,411.620
2027	7	945,253,752.967	411.183	36.212	112,958.551	10,478.532	265,199.419	388,672.714
2027	8	961,760,025.462	411.423	0.000	118,444.253	10,538.137	266,707.955	395,690.345
2027	9	878,698,692.203	411.533	132.888	82,135.052	10,617.943	268,727.751	361,613.634
2027	10	680,036,290.888	411.602	7,817.939	25,239.716	9,382.642	237,463.732	279,904.030
2027	11	677,139,289.183	412.063	44,302.140	2,306.455	8,834.129	223,581.490	279,024.214
2027	12	943,816,080.881	412.769	104,440.458	29.464	10,836.984	274,271.426	389,578.332
2028	1	1,111,294,327.444	413.478	151,978.626	0.000	11,584.195	295,932.398	459,495.219
2028	2	1,048,301,029.167	413.331	169,642.969	0.000	9,931.811	253,720.238	433,295.018
2028	3	917,153,763.452	413.422	134,878.979	103.219	9,198.657	234,990.924	379,171.780

Indiana Michigan Power Company-Indiana
Long-Term Residential Energy Model Output

Year	Month	Total Usage	Customers	Heating Energy	CoolingEnergy	Lighting Energy	Other Energy	Total Energy
2028	4	773,825,831.928	412.489	74,298.640	1,182.912	9,180.713	234,532.510	319,194.774
2028	5	657,042,693.150	411.902	23,707.046	8,568.488	8,979.126	229,382.737	270,637.397
2028	6	743,460,263.369	411.694	3,382.031	49,356.867	9,543.334	243,796.113	306,078.344
2028	7	945,894,115.379	411.577	36.137	112,789.202	10,415.149	266,067.706	389,308.195
2028	8	962,403,263.299	411.815	0.000	118,274.559	10,474.466	267,583.022	396,332.046
2028	9	879,597,880.520	411.923	132.626	82,017.958	10,554.279	269,621.953	362,326.817
2028	10	681,135,453.538	411.990	7,802.689	25,204.189	9,327.661	238,286.479	280,621.017
2028	11	678,076,582.055	412.450	44,216.274	2,303.226	8,782.915	224,370.275	279,672.690
2028	12	944,453,409.767	413.154	104,244.140	29.424	10,771.084	275,160.480	390,205.127
2029	1	1,111,814,765.147	413.861	151,711.942	0.000	11,530.818	296,894.074	460,136.834
2029	2	1,048,671,432.753	413.713	169,365.439	0.000	9,888.008	254,595.208	433,848.655
2029	3	917,827,994.427	413.803	134,671.334	103.126	9,160.546	235,864.596	379,799.601
2029	4	775,002,272.011	412.868	74,192.494	1,181.948	9,144.618	235,454.482	319,973.541
2029	5	658,532,480.945	412.279	23,676.559	8,562.260	8,945.029	230,315.495	271,499.343
2029	6	744,982,227.342	412.070	3,378.034	49,324.803	9,506.614	244,775.127	306,984.579
2029	7	947,269,760.204	411.951	36.096	112,719.780	10,373.627	267,098.858	390,228.360
2029	8	963,705,532.451	412.187	0.000	118,200.399	10,431.721	268,594.665	397,226.786
2029	9	881,104,807.185	412.293	132.472	81,967.519	10,512.002	270,661.720	363,273.712
2029	10	682,769,776.719	412.358	7,794.368	25,190.458	9,292.738	239,268.265	281,545.828
2029	11	679,614,342.426	412.816	44,171.998	2,302.076	8,751.421	225,330.507	280,556.002
2029	12	945,846,265.106	413.519	104,139.292	29.409	10,728.206	276,228.509	391,125.416
2030	1	1,111,365,100.634	414.224	151,579.736	0.000	10,850.947	297,923.140	460,353.823
2030	2	1,048,147,962.637	414.073	169,205.549	0.000	9,305.774	255,498.925	434,010.248
2030	3	917,457,506.158	414.161	134,528.708	103.115	8,621.875	236,721.830	379,975.529
2030	4	775,046,207.040	413.225	74,114.010	1,181.820	8,608.830	236,363.653	320,268.313
2030	5	658,940,992.435	412.634	23,652.680	8,561.572	8,423.103	231,264.338	271,901.693
2030	6	745,595,133.100	412.423	3,374.960	49,324.400	8,954.225	245,846.815	307,500.400
2030	7	947,902,158.639	412.302	36.065	112,723.762	9,771.662	268,290.316	390,821.805
2030	8	964,314,188.869	412.536	0.000	118,209.961	9,825.874	269,778.761	397,814.596
2030	9	881,771,201.835	412.641	132.380	81,979.463	9,901.026	271,842.139	363,855.008
2030	10	683,349,690.156	412.704	7,789.484	25,195.383	8,751.648	240,284.867	282,021.382
2030	11	679,974,858.706	413.161	44,147.017	2,302.631	8,240.431	226,248.912	280,938.990
2030	12	945,983,152.585	413.862	104,089.743	29.418	10,099.368	277,287.808	391,506.337

Indiana Michigan Power Company-Indiana
Long-Term Residential Energy Model Output

Year	Month	Total Usage	Customers	Heating Energy	CoolingEnergy	Lighting Energy	Other Energy	Total Energy
2031	1	1,112,987,235.418	414.565	151,652.119	0.000	10,375.412	299,378.206	461,405.737
2031	2	1,049,719,940.535	414.413	169,304.094	0.000	8,900.275	256,813.740	435,018.109
2031	3	919,184,169.473	414.500	134,622.217	103.296	8,249.201	238,027.266	381,001.980
2031	4	776,918,538.494	413.562	74,166.473	1,183.907	8,238.391	237,715.351	321,304.121
2031	5	660,926,797.875	412.970	23,670.059	8,576.900	8,062.287	232,633.958	272,943.204
2031	6	747,835,494.023	412.757	3,377.508	49,413.861	8,570.988	247,312.324	308,674.682
2031	7	950,365,372.048	412.635	36.093	112,930.904	9,351.567	269,835.598	392,154.162
2031	8	966,710,477.271	412.868	0.000	118,429.844	9,402.043	271,292.062	399,123.949
2031	9	884,110,331.428	412.971	132.487	82,133.721	9,474.123	273,371.890	365,112.220
2031	10	685,385,802.337	413.033	7,795.931	25,243.255	8,375.521	241,672.200	283,086.906
2031	11	681,847,809.009	413.488	44,184.250	2,307.036	7,886.371	227,557.973	281,935.629
2031	12	947,980,137.949	414.187	104,179.366	29.475	9,661.227	278,770.696	392,640.763
2032	1	1,115,409,005.724	414.888	151,669.122	0.000	10,101.171	300,999.546	462,769.838
2032	2	1,051,870,861.603	414.734	169,324.058	0.000	8,666.753	258,256.090	436,246.901
2032	3	921,411,014.295	414.819	134,638.878	103.491	8,035.338	239,440.862	382,218.569
2032	4	779,335,898.302	413.878	74,175.893	1,186.138	8,025.991	239,162.342	322,550.364
2032	5	663,465,369.936	413.284	23,673.143	8,593.063	7,855.376	234,078.279	274,199.861
2032	6	750,625,993.102	413.069	3,377.956	49,506.904	8,350.264	248,825.190	310,060.314
2032	7	953,360,511.975	412.944	36.098	113,143.486	9,107.758	271,397.357	393,684.699
2032	8	969,619,577.688	413.175	0.000	118,652.812	9,155.304	272,814.157	400,622.273
2032	9	886,990,941.799	413.275	132.507	82,288.577	9,226.120	274,924.371	366,571.575
2032	10	687,971,202.884	413.335	7,797.175	25,291.002	8,158.653	243,115.474	284,362.304
2032	11	684,256,542.099	413.787	44,191.867	2,311.416	7,683.272	228,949.841	283,136.396
2032	12	950,528,347.559	414.484	104,198.661	29.531	9,407.939	280,342.300	393,978.431
2033	1	1,119,101,426.810	415.183	151,754.682	0.000	10,021.804	302,855.071	464,631.556
2033	2	1,055,080,814.082	415.027	169,400.498	0.000	8,599.921	259,886.321	437,886.741
2033	3	924,544,878.812	415.109	134,684.387	103.787	7,975.715	241,023.035	383,786.925
2033	4	782,534,345.925	414.167	74,192.616	1,189.434	7,966.708	240,750.842	324,099.600
2033	5	666,681,113.418	413.570	23,675.741	8,616.194	7,797.265	235,630.340	275,719.539
2033	6	754,093,794.488	413.353	3,377.939	49,635.888	8,286.232	250,406.761	311,706.821
2033	7	957,061,982.882	413.226	36.094	113,428.689	9,033.360	272,984.682	395,482.825
2033	8	973,167,347.457	413.454	0.000	118,941.868	9,078.213	274,340.097	402,360.178
2033	9	890,427,444.074	413.553	132.461	82,481.815	9,148.878	276,475.581	368,238.736

Indiana Michigan Power Company-Indiana
Long-Term Residential Energy Model Output

Year	Month	Total Usage	Customers	Heating Energy	CoolingEnergy	Lighting Energy	Other Energy	Total Energy
2033	10	690,993,979.212	413.610	7,793.523	25,348.059	8,092.995	244,567.192	285,801.769
2033	11	686,990,803.168	414.060	44,165.771	2,316.418	7,622.546	230,350.404	284,455.138
2033	12	953,268,717.041	414.754	104,124.938	29.592	9,328.026	281,889.372	395,371.928
2034	1	1,122,148,267.820	415.451	151,631.879	0.000	9,974.020	304,591.206	466,197.105
2034	2	1,057,682,034.943	415.292	169,259.511	0.000	8,560.577	261,426.831	439,246.919
2034	3	927,240,456.616	415.372	134,569.247	104.064	7,941.927	242,534.223	385,149.461
2034	4	785,508,550.193	414.427	74,127.471	1,192.581	7,933.667	242,281.949	325,535.667
2034	5	669,839,255.481	413.828	23,654.391	8,638.818	7,765.275	237,139.518	277,198.002
2034	6	757,592,688.790	413.607	3,374.809	49,765.197	8,250.432	251,955.488	313,345.926
2034	7	960,865,494.814	413.478	36.059	113,721.906	8,990.244	274,548.204	397,296.413
2034	8	976,872,719.150	413.703	0.000	119,247.029	9,033.045	275,855.270	404,135.344
2034	9	894,059,912.052	413.799	132.329	82,691.780	9,104.340	278,032.521	369,960.971
2034	10	694,216,137.668	413.853	7,785.575	25,412.088	8,057.011	246,048.684	287,303.357
2034	11	689,923,360.018	414.300	44,119.675	2,322.223	7,590.522	231,802.846	285,835.266
2034	12	956,257,968.632	414.992	104,013.898	29.666	9,283.757	283,511.616	396,838.936
2035	1	1,125,590,232.356	415.685	151,500.115	0.000	9,974.319	306,416.954	467,891.387
2035	2	1,060,631,891.514	415.524	169,108.392	0.000	8,562.569	263,047.167	440,718.128
2035	3	930,271,791.701	415.601	134,445.932	104.391	7,946.626	244,125.030	386,621.979
2035	4	788,812,533.028	414.653	74,057.901	1,196.311	7,938.993	243,890.535	327,083.741
2035	5	673,323,051.096	414.052	23,631.647	8,665.675	7,770.763	238,722.435	278,790.520
2035	6	761,472,171.837	413.829	3,371.485	49,918.926	8,254.217	253,574.422	315,119.050
2035	7	965,127,814.012	413.696	36.023	114,071.115	8,989.830	276,172.879	399,269.847
2035	8	981,033,228.226	413.919	0.000	119,610.917	9,030.651	277,426.931	406,068.500
2035	9	898,115,037.381	414.012	132.190	82,942.595	9,103.105	279,652.756	371,830.646
2035	10	697,786,203.834	414.064	7,777.208	25,488.658	8,059.814	247,602.242	288,927.922
2035	11	693,185,351.589	414.508	44,071.266	2,329.176	7,595.400	233,335.166	287,331.008
2035	12	959,625,834.697	415.197	103,897.443	29.754	9,284.400	285,222.233	398,433.830
2036	1	1,129,384,294.998	415.888	151,380.268	0.000	9,994.034	308,323.469	469,697.771
2036	2	1,063,920,860.053	415.725	168,973.386	0.000	8,581.418	264,743.208	442,298.013
2036	3	933,635,620.785	415.799	134,337.653	104.772	7,967.232	245,795.091	388,204.748
2036	4	792,426,727.925	414.849	73,997.471	1,200.666	7,960.221	245,578.816	328,737.174
2036	5	677,103,921.492	414.244	23,612.110	8,697.134	7,791.882	240,385.428	280,486.555
2036	6	765,712,800.959	414.019	3,368.666	50,099.712	8,274.571	255,276.724	317,019.674

Indiana Michigan Power Company-Indiana
Long-Term Residential Energy Model Output

Year	Month	Total Usage	Customers	Heating Energy	CoolingEnergy	Lighting Energy	Other Energy	Total Energy
2036	7	969,842,369.223	413.884	35.993	114,483.207	9,007.109	277,876.086	401,402.396
2036	8	985,653,307.321	414.105	0.000	120,042.084	9,045.986	279,075.457	408,163.527
2036	9	902,595,769.208	414.195	132.076	83,240.926	9,119.967	281,357.832	373,850.801
2036	10	701,710,302.799	414.244	7,770.441	25,580.174	8,079.206	249,249.578	290,679.398
2036	11	696,804,808.782	414.686	44,032.575	2,337.522	7,616.313	234,968.991	288,955.402
2036	12	963,451,301.892	415.373	103,805.486	29.860	9,304.526	287,051.613	400,191.485
2037	1	1,133,409,102.232	416.062	151,238.868	0.000	10,017.841	310,311.511	471,568.219
2037	2	1,067,416,635.646	415.896	168,815.703	0.000	8,603.929	266,514.333	443,933.964
2037	3	937,211,556.604	415.968	134,212.193	105.205	7,991.410	247,541.034	389,849.843
2037	4	796,270,349.190	415.015	73,928.639	1,205.630	7,985.081	247,344.963	330,464.313
2037	5	681,135,588.966	414.409	23,590.229	8,733.103	7,816.678	242,128.532	282,268.543
2037	6	770,277,599.668	414.181	3,365.553	50,306.938	8,298.811	257,063.053	319,034.355
2037	7	974,969,700.989	414.044	35.959	114,956.662	9,028.290	279,659.294	403,680.205
2037	8	990,684,518.444	414.262	0.000	120,538.231	9,065.101	280,799.538	410,402.870
2037	9	907,449,227.356	414.350	131.954	83,584.850	9,140.792	283,144.143	376,001.739
2037	10	705,923,657.637	414.397	7,763.265	25,685.806	8,102.462	250,980.967	292,532.501
2037	11	700,686,876.568	414.837	43,991.862	2,347.168	7,641.116	236,690.358	290,670.504
2037	12	967,581,574.490	415.521	103,709.304	29.984	9,329.241	288,981.536	402,050.065
2038	1	1,137,293,367.319	416.207	150,995.591	0.000	10,039.349	312,314.631	473,349.570
2038	2	1,070,730,753.635	416.038	168,543.457	0.000	8,624.413	268,297.333	445,465.203
2038	3	940,652,302.477	416.108	133,995.345	105.559	8,013.694	249,298.444	391,413.042
2038	4	800,057,479.838	415.153	73,809.028	1,209.684	8,007.944	249,119.568	332,146.224
2038	5	685,168,627.184	414.544	23,551.998	8,762.435	7,839.473	243,878.574	284,032.481
2038	6	774,804,469.384	414.314	3,360.088	50,475.677	8,320.901	258,855.362	321,012.029
2038	7	979,947,194.526	414.174	35.901	115,341.792	9,047.007	281,443.812	405,868.511
2038	8	995,552,384.718	414.389	0.000	120,941.589	9,081.698	282,523.016	412,546.303
2038	9	912,200,231.888	414.475	131.739	83,864.220	9,159.045	284,929.227	378,084.231
2038	10	710,121,855.743	414.519	7,750.575	25,771.559	8,123.471	252,713.485	294,359.090
2038	11	704,539,564.353	414.956	43,919.867	2,354.997	7,663.829	238,414.460	292,353.153
2038	12	971,607,003.679	415.638	103,539.377	30.083	9,351.483	290,915.769	403,836.712
2039	1	1,141,616,777.727	416.322	150,895.786	0.000	10,062.157	314,322.215	475,280.158
2039	2	1,074,529,052.464	416.151	168,432.625	0.000	8,646.107	270,087.566	447,166.298
2039	3	944,496,541.723	416.218	133,907.651	105.996	8,037.179	251,065.848	393,116.673

Indiana Michigan Power Company-Indiana
Long-Term Residential Energy Model Output

Year	Month	Total Usage	Customers	Heating Energy	CoolingEnergy	Lighting Energy	Other Energy	Total Energy
2039	4	804,106,459.154	415.261	73,761.014	1,214.687	8,032.065	250,906.084	333,913.851
2039	5	689,359,063.420	414.649	23,536.774	8,798.689	7,863.591	245,643.277	285,842.330
2039	6	779,535,873.001	414.417	3,357.931	50,684.608	8,344.494	260,665.773	323,052.806
2039	7	985,259,919.064	414.275	35.878	115,819.306	9,067.336	283,245.944	408,168.463
2039	8	1,000,766,051.398	414.488	0.000	121,442.363	9,099.910	284,263.493	414,805.766
2039	9	917,221,508.324	414.572	131.655	84,211.557	9,178.934	286,732.059	380,254.206
2039	10	714,487,459.197	414.614	7,745.702	25,878.331	8,146.036	254,466.327	296,236.396
2039	11	708,603,727.442	415.049	43,892.404	2,364.756	7,688.060	240,160.060	294,105.281
2039	12	976,005,743.868	415.729	103,474.932	30.208	9,375.515	292,872.858	405,753.513
2040	1	1,145,759,782.274	416.411	150,862.980	0.000	9,933.921	316,309.754	477,106.655
2040	2	1,078,222,193.489	416.238	168,396.794	0.000	8,538.010	271,862.031	448,796.836
2040	3	948,213,200.881	416.303	133,879.842	106.448	7,939.918	252,817.957	394,744.166
2040	4	807,967,636.494	415.344	73,745.766	1,219.872	7,935.682	252,683.060	335,584.379
2040	5	693,337,924.925	414.731	23,531.968	8,836.254	7,770.084	247,410.191	287,548.496
2040	6	784,083,176.211	414.496	3,357.254	50,901.021	8,243.907	262,497.383	324,999.565
2040	7	990,429,458.867	414.353	35.871	116,313.891	8,953.253	285,083.939	410,386.955
2040	8	1,005,835,827.697	414.564	0.000	121,961.081	8,983.250	286,039.073	416,983.404
2040	9	922,045,665.916	414.646	131.630	84,571.206	9,062.335	288,557.257	382,322.428
2040	10	718,611,288.087	414.686	7,744.214	25,988.866	8,046.709	256,218.311	297,998.100
2040	11	712,424,754.775	415.119	43,884.060	2,374.857	7,596.589	241,885.868	295,741.374
2040	12	980,175,240.362	415.797	103,455.482	30.337	9,258.696	294,809.671	407,554.187
2041	1	1,149,730,601.370	416.478	150,735.344	0.000	9,831.683	318,270.017	478,837.044
2041	2	1,081,703,160.326	416.303	168,252.775	0.000	8,452.129	273,611.291	450,316.196
2041	3	951,752,502.147	416.367	133,763.979	106.816	7,863.121	254,543.974	396,277.890
2041	4	811,732,964.448	415.405	73,681.475	1,224.081	7,859.694	254,433.063	337,198.314
2041	5	697,274,811.762	414.791	23,511.271	8,866.680	7,696.452	249,148.611	289,223.015
2041	6	788,537,656.855	414.554	3,354.276	51,075.950	8,164.408	264,297.199	326,891.832
2041	7	995,387,115.248	414.409	35.839	116,712.853	8,862.215	286,886.523	412,497.430
2041	8	1,010,678,681.560	414.619	0.000	122,378.650	8,889.757	287,778.117	419,046.524
2041	9	926,707,169.250	414.699	131.511	84,860.392	8,969.012	290,343.740	384,304.654
2041	10	722,668,411.181	414.738	7,737.159	26,077.610	7,967.880	257,935.237	299,717.887
2041	11	716,161,909.501	415.170	43,843.861	2,382.955	7,524.355	243,577.492	297,328.663
2041	12	984,159,452.426	415.846	103,360.084	30.441	9,165.447	296,702.714	409,258.685

Indiana Michigan Power Company-Indiana
Long-Term Residential Energy Model Output

Year	Month	Total Usage	Customers	Heating Energy	CoolingEnergy	Lighting Energy	Other Energy	Total Energy
2042	1	1,153,972,889.414	416.525	150,719.531	0.000	9,749.968	320,188.794	480,658.293
2042	2	1,085,496,763.806	416.349	168,235.041	0.000	8,383.870	275,326.152	451,945.064
2042	3	955,545,189.009	416.411	133,749.927	107.257	7,802.668	256,239.474	397,899.325
2042	4	815,639,183.139	415.448	73,673.793	1,229.135	7,800.032	256,152.932	338,855.893
2042	5	701,270,711.791	414.832	23,508.841	8,903.287	7,638.815	250,858.551	290,909.493
2042	6	793,090,264.255	414.594	3,353.931	51,286.788	8,101.956	266,068.105	328,810.781
2042	7	1,000,560,445.624	414.447	35.835	117,194.558	8,789.879	288,659.476	414,679.748
2042	8	1,015,750,865.597	414.656	0.000	122,883.487	8,815.121	289,488.425	421,187.033
2042	9	931,525,663.698	414.734	131.497	85,210.247	8,894.627	292,099.415	386,335.787
2042	10	726,792,664.835	414.771	7,736.346	26,185.061	7,905.780	259,625.672	301,452.858
2042	11	719,998,582.933	415.202	43,839.231	2,392.770	7,467.870	245,244.716	298,944.586
2042	12	988,364,229.306	415.876	103,349.088	30.566	9,091.539	298,566.008	411,037.201
2043	1	1,158,547,070.482	416.553	150,770.217	0.000	9,689.898	322,136.529	482,596.645
2043	2	1,089,622,348.077	416.375	168,291.290	0.000	8,334.186	277,066.450	453,691.925
2043	3	959,625,364.405	416.436	133,794.470	107.727	7,759.481	257,960.635	399,622.314
2043	4	819,760,757.187	415.471	73,698.200	1,234.518	7,757.564	257,896.909	340,587.192
2043	5	705,424,633.988	414.853	23,516.617	8,942.266	7,597.959	252,590.913	292,647.755
2043	6	797,809,492.363	414.614	3,355.041	51,511.283	8,057.239	267,859.453	330,783.015
2043	7	1,005,945,340.598	414.465	35.847	117,707.487	8,736.749	290,449.500	416,929.583
2043	8	1,021,039,864.129	414.672	0.000	123,421.302	8,759.798	291,215.747	423,396.847
2043	9	936,545,436.066	414.749	131.541	85,583.244	8,839.847	293,876.936	388,431.568
2043	10	731,089,124.962	414.785	7,738.939	26,299.726	7,861.277	261,344.810	303,244.752
2043	11	724,041,112.914	415.214	43,854.051	2,403.253	7,428.172	246,946.411	300,631.887
2043	12	992,873,186.917	415.887	103,384.510	30.700	9,038.166	300,469.968	412,923.344
2044	1	1,163,172,006.556	416.563	150,839.364	0.000	9,630.184	324,065.298	484,534.846
2044	2	1,093,813,168.023	416.385	168,369.048	0.000	8,284.836	278,793.005	455,446.890
2044	3	963,759,391.154	416.444	133,856.436	108.198	7,716.584	259,670.743	401,351.962
2044	4	823,914,197.343	415.479	73,732.157	1,239.911	7,715.424	259,631.705	342,319.197
2044	5	709,591,700.503	414.860	23,527.408	8,981.314	7,557.440	254,315.402	294,381.564
2044	6	802,538,242.711	414.621	3,356.577	51,736.176	8,012.936	269,643.296	332,748.986
2044	7	1,011,344,297.122	414.472	35.863	118,221.300	8,684.207	292,232.222	419,173.593
2044	8	1,026,340,135.894	414.678	0.000	123,960.012	8,705.111	292,935.647	425,600.769
2044	9	941,564,280.087	414.755	131.601	85,956.650	8,785.609	295,644.504	390,518.363

Indiana Michigan Power Company-Indiana
Long-Term Residential Energy Model Output

Year	Month	Total Usage	Customers	Heating Energy	CoolingEnergy	Lighting Energy	Other Energy	Total Energy
2044	10	735,374,737.503	414.790	7,742.446	26,414.413	7,817.073	263,052.289	305,026.220
2044	11	728,074,770.242	415.219	43,873.793	2,413.726	7,388.613	248,634.183	302,310.316
2044	12	997,374,022.243	415.892	103,430.620	30.834	8,984.976	302,353.392	414,799.821
2045	1	1,167,682,962.712	416.568	150,910.332	0.000	9,567.593	325,941.112	486,419.037
2045	2	1,097,889,594.231	416.389	168,446.638	0.000	8,232.825	280,469.281	457,148.744
2045	3	967,770,037.573	416.448	133,917.026	108.661	7,670.991	261,329.188	403,025.865
2045	4	827,940,561.407	415.483	73,765.214	1,245.208	7,670.547	261,314.043	343,995.011
2045	5	713,629,745.460	414.864	23,537.854	9,019.653	7,514.192	255,987.472	296,059.171
2045	6	807,126,567.195	414.624	3,358.052	51,956.843	7,965.822	271,373.248	334,653.964
2045	7	1,016,593,957.742	414.475	35.879	118,725.129	8,628.905	293,962.638	421,352.551
2045	8	1,031,494,474.862	414.681	0.000	124,488.020	8,647.776	294,605.525	427,741.321
2045	9	946,438,487.727	414.758	131.657	86,322.660	8,728.630	297,359.987	392,542.934
2045	10	739,528,711.977	414.793	7,745.738	26,526.848	7,770.198	264,708.897	306,751.681
2045	11	731,979,501.293	415.222	43,892.345	2,423.998	7,346.406	250,271.479	303,934.229
2045	12	1,001,730,233.033	415.896	103,474.241	30.965	8,928.862	304,181.332	416,615.399
2046	1	1,172,115,381.437	416.572	150,984.247	0.000	9,504.360	327,781.807	488,270.414
2046	2	1,101,901,374.698	416.393	168,528.016	0.000	8,180.236	282,116.061	458,824.313
2046	3	971,717,834.052	416.453	133,980.810	109.114	7,624.790	262,960.102	404,674.816
2046	4	831,898,640.693	415.488	73,799.723	1,250.401	7,625.044	262,968.876	345,644.045
2046	5	717,593,693.406	414.870	23,548.636	9,057.209	7,470.287	257,631.675	297,707.806
2046	6	811,624,727.429	414.630	3,359.554	52,172.762	7,918.038	273,073.508	336,523.862
2046	7	1,021,732,989.943	414.481	35.895	119,217.407	8,573.025	295,662.393	423,488.720
2046	8	1,036,527,846.114	414.687	0.000	125,002.811	8,589.833	296,242.033	429,834.676
2046	9	951,180,730.627	414.764	131.710	86,678.507	8,670.790	299,034.065	394,515.073
2046	10	743,554,034.612	414.798	7,748.757	26,635.823	7,722.164	266,318.281	308,425.024
2046	11	735,743,194.013	415.226	43,908.682	2,433.921	7,302.776	251,854.627	305,500.005
2046	12	1,005,899,763.270	415.899	103,510.938	31.091	8,871.020	305,939.473	418,352.522
2047	1	1,176,513,283.649	416.574	151,071.794	0.000	9,439.876	329,592.788	490,104.457
2047	2	1,105,877,656.740	416.393	168,622.644	0.000	8,126.353	283,731.219	460,480.217
2047	3	975,611,329.083	416.452	134,053.458	109.558	7,577.117	264,554.669	406,294.802
2047	4	835,781,793.745	415.485	73,838.286	1,255.467	7,577.928	264,582.963	347,254.644
2047	5	721,469,315.270	414.864	23,560.502	9,093.760	7,424.696	259,232.898	299,311.855
2047	6	816,017,963.549	414.623	3,361.186	52,382.509	7,868.473	274,727.334	338,339.501

Indiana Michigan Power Company-Indiana
Long-Term Residential Energy Model Output

Year	Month	Total Usage	Customers	Heating Energy	CoolingEnergy	Lighting Energy	Other Energy	Total Energy
2047	7	1,026,760,247.894	414.472	35.912	119,695.245	8,515.446	297,316.382	425,562.985
2047	8	1,041,459,195.151	414.676	0.000	125,502.404	8,530.312	297,835.416	431,868.133
2047	9	955,836,460.182	414.751	131.769	87,024.130	8,611.400	300,666.593	396,433.892
2047	10	747,518,154.719	414.784	7,752.112	26,741.804	7,672.702	267,892.011	310,058.628
2047	11	739,471,137.667	415.211	43,927.226	2,443.586	7,257.856	253,407.690	307,036.359
2047	12	1,010,058,101.189	415.882	103,553.557	31.214	8,811.936	307,668.290	420,064.997
2048	1	1,180,878,651.071	416.556	151,167.217	0.000	9,378.599	331,356.213	491,902.029
2048	2	1,109,854,082.933	416.375	168,728.404	0.000	8,075.372	285,311.774	462,115.549
2048	3	979,515,360.299	416.433	134,136.955	109.986	7,532.259	266,122.981	407,902.181
2048	4	839,675,017.601	415.466	73,883.913	1,260.368	7,533.819	266,178.122	348,856.222
2048	5	725,348,193.672	414.845	23,574.920	9,129.230	7,382.190	260,820.905	300,907.245
2048	6	820,411,706.816	414.604	3,363.230	52,586.746	7,822.383	276,373.400	340,145.759
2048	7	1,031,779,947.408	414.453	35.933	120,161.564	8,461.810	298,965.058	427,624.366
2048	8	1,046,388,172.630	414.658	0.000	125,991.122	8,474.888	299,427.107	433,893.117
2048	9	960,498,149.794	414.733	131.847	87,362.756	8,556.192	302,299.653	398,350.447
2048	10	751,498,820.867	414.767	7,756.662	26,845.736	7,626.925	269,467.659	311,696.982
2048	11	743,231,200.844	415.194	43,952.725	2,453.074	7,216.397	254,963.241	308,585.436
2048	12	1,014,270,821.395	415.866	103,613.048	31.335	8,757.145	309,399.568	421,801.097
2049	1	1,185,616,143.434	416.541	151,338.633	0.000	9,325.294	333,193.752	493,857.679
2049	2	1,114,190,805.201	416.361	168,918.538	0.000	8,031.197	286,955.554	463,905.290
2049	3	983,728,869.264	416.419	134,287.303	110.438	7,493.734	267,751.914	409,643.389
2049	4	843,800,309.264	415.453	73,966.392	1,265.545	7,495.955	267,831.282	350,559.174
2049	5	729,397,115.122	414.833	23,601.131	9,166.703	7,345.747	262,464.355	302,577.937
2049	6	824,966,517.330	414.592	3,366.949	52,802.386	7,782.587	278,072.669	342,024.591
2049	7	1,036,983,600.808	414.442	35.973	120,653.993	8,414.886	300,664.805	429,769.656
2049	8	1,051,493,861.885	414.648	0.000	126,506.980	8,426.123	301,066.307	435,999.410
2049	9	965,323,066.205	414.724	131.991	87,720.188	8,507.736	303,982.344	400,342.259
2049	10	755,624,608.654	414.758	7,765.092	26,955.503	7,587.262	271,093.688	313,401.546
2049	11	747,169,068.195	415.186	44,000.264	2,463.096	7,180.785	256,570.238	310,214.383
2049	12	1,018,749,471.256	415.859	103,724.729	31.463	8,709.477	311,190.550	423,656.218
2050	1	1,190,539,869.583	416.535	151,551.968	0.000	9,279.283	335,069.761	495,901.012
2050	2	1,118,718,094.576	416.355	169,156.092	0.000	7,993.331	288,634.757	465,784.180
2050	3	988,112,986.939	416.415	134,475.815	110.893	7,461.116	269,416.781	411,464.605

Indiana Michigan Power Company-Indiana
Long-Term Residential Energy Model Output

Year	Month	Total Usage	Customers	Heating Energy	CoolingEnergy	Lighting Energy	Other Energy	Total Energy
2050	4	848,059,146.078	415.449	74,069.974	1,270.751	7,464.000	269,520.900	352,325.624
2050	5	733,547,279.887	414.831	23,634.119	9,204.402	7,315.101	264,144.234	304,297.855
2050	6	829,614,248.427	414.591	3,371.648	53,019.507	7,748.954	279,810.430	343,950.538
2050	7	1,042,277,707.477	414.442	36.023	121,150.108	8,374.625	302,403.076	431,963.833
2050	8	1,056,691,293.444	414.649	0.000	127,027.247	8,384.086	302,744.700	438,156.033
2050	9	970,246,836.157	414.726	132.175	88,080.945	8,466.144	305,707.766	402,387.030
2050	10	759,856,399.923	414.763	7,775.891	27,066.393	7,553.812	272,763.951	315,160.047
2050	11	751,243,412.254	415.192	44,061.447	2,473.232	7,151.166	258,224.635	311,910.481
2050	12	1,023,422,186.070	415.867	103,868.940	31.593	8,669.133	313,037.591	425,607.257
2051	1	1,195,154,049.785	416.542	151,681.974	0.000	9,222.532	336,927.937	497,832.443
2051	2	1,122,926,592.381	416.364	169,300.850	0.000	7,946.176	290,298.658	467,545.684
2051	3	992,232,466.818	416.423	134,590.732	111.340	7,419.754	271,066.795	413,188.621
2051	4	852,142,140.255	415.459	74,133.128	1,275.869	7,423.329	271,197.404	354,029.730
2051	5	737,595,545.937	414.840	23,654.243	9,241.474	7,275.937	265,812.744	305,984.398
2051	6	834,181,802.571	414.601	3,374.516	53,233.077	7,706.401	281,538.916	345,852.910
2051	7	1,047,488,295.711	414.453	36.054	121,638.228	8,324.933	304,135.846	434,135.061
2051	8	1,061,808,777.682	414.661	0.000	127,539.254	8,332.682	304,418.939	440,290.876
2051	9	975,094,862.783	414.740	132.287	88,436.068	8,415.022	307,427.059	404,410.436
2051	10	764,013,255.922	414.777	7,782.518	27,175.582	7,511.683	274,425.268	316,895.051
2051	11	755,195,940.747	415.208	44,099.062	2,483.216	7,113.208	259,867.736	313,563.222
2051	12	1,027,882,483.703	415.884	103,957.752	31.720	8,618.785	314,871.164	427,479.422
2052	1	1,199,763,421.017	416.559	151,814.283	0.000	9,165.952	338,792.261	499,772.496
2052	2	1,127,132,498.386	416.380	169,448.378	0.000	7,899.138	291,968.208	469,315.724
2052	3	996,351,644.573	416.440	134,708.006	111.787	7,378.448	272,722.471	414,920.712
2052	4	856,227,021.788	415.476	74,197.670	1,281.000	7,382.711	272,880.047	355,741.429
2052	5	741,646,940.310	414.858	23,674.839	9,278.649	7,236.821	267,487.636	307,677.945
2052	6	838,753,136.251	414.619	3,377.456	53,447.283	7,663.929	283,274.416	347,763.083
2052	7	1,052,703,661.456	414.472	36.085	122,127.894	8,275.421	305,876.425	436,315.825
2052	8	1,066,932,294.548	414.680	0.000	128,052.979	8,281.501	306,101.147	442,435.627
2052	9	979,950,336.812	414.759	132.403	88,792.452	8,364.111	309,154.557	406,443.523
2052	10	768,178,537.354	414.798	7,789.345	27,285.182	7,469.674	276,094.367	318,638.568
2052	11	759,158,623.251	415.229	44,137.870	2,493.240	7,075.329	261,518.550	315,224.988
2052	12	1,032,356,532.383	415.906	104,049.499	31.849	8,568.620	316,713.656	429,363.624

Indiana Michigan Power Company-Indiana
Long-Term Residential Energy Model Output

Year	Month	Total Usage	Customers	Heating Energy	CoolingEnergy	Lighting Energy	Other Energy	Total Energy
2053	1	1,204,386,134.951	416.582	151,950.490	0.000	9,109.609	340,665.133	501,725.233
2053	2	1,131,350,017.110	416.403	169,599.888	0.000	7,852.258	293,644.942	471,097.089
2053	3	1,000,480,410.546	416.462	134,828.150	112.236	7,337.229	274,384.766	416,662.381
2053	4	860,319,674.965	415.498	74,263.627	1,286.144	7,342.158	274,569.111	357,461.040
2053	5	745,704,467.440	414.880	23,695.832	9,315.901	7,197.743	269,168.525	309,378.001
2053	6	843,329,244.310	414.642	3,380.444	53,661.836	7,621.510	285,015.812	349,679.602
2053	7	1,057,922,316.603	414.495	36.117	122,618.152	8,226.040	307,622.961	438,503.270
2053	8	1,072,057,935.443	414.704	0.000	128,567.115	8,230.477	307,788.915	444,586.508
2053	9	984,807,366.580	414.784	132.520	89,148.974	8,313.326	310,887.146	408,481.966
2053	10	772,345,253.771	414.823	7,796.216	27,394.777	7,427.688	277,767.625	320,386.306
2053	11	763,121,400.591	415.255	44,176.819	2,503.259	7,037.413	263,172.799	316,890.290
2053	12	1,036,827,509.478	415.933	104,141.347	31.977	8,518.486	318,559.349	431,251.158
2054	1	1,209,005,401.456	416.608	152,087.012	0.000	9,053.365	342,541.380	503,681.757
2054	2	1,135,565,653.779	416.429	169,751.998	0.000	7,805.437	295,325.024	472,882.459
2054	3	1,004,609,488.272	416.489	134,948.967	112.685	7,296.016	276,050.672	418,408.341
2054	4	864,415,052.724	415.524	74,330.073	1,291.289	7,301.610	276,262.341	359,185.313
2054	5	749,766,163.276	414.906	23,717.021	9,353.169	7,158.667	270,853.952	311,082.809
2054	6	847,910,229.488	414.668	3,383.467	53,876.549	7,579.126	286,762.354	351,601.496
2054	7	1,063,146,757.867	414.522	36.149	123,108.923	8,176.787	309,375.359	440,697.218
2054	8	1,077,190,530.417	414.731	0.000	129,081.938	8,179.626	309,482.787	446,744.351
2054	9	989,672,763.148	414.811	132.639	89,506.079	8,262.706	312,626.151	410,527.573
2054	10	776,521,255.050	414.851	7,803.215	27,504.585	7,385.786	279,447.180	322,140.766
2054	11	767,094,982.450	415.285	44,216.576	2,513.301	6,999.545	264,833.446	318,562.868
2054	12	1,041,312,700.379	415.964	104,235.275	32.105	8,468.496	320,412.415	433,148.292
2055	1	1,213,642,664.168	416.638	152,226.976	0.000	8,997.345	344,425.651	505,649.972
2055	2	1,139,801,726.496	416.459	169,908.481	0.000	7,758.794	297,012.934	474,680.209
2055	3	1,008,760,210.859	416.518	135,073.684	113.136	7,254.939	277,724.949	420,166.709
2055	4	868,531,736.243	415.553	74,398.905	1,296.458	7,261.204	277,964.780	360,921.348
2055	5	753,848,213.653	414.936	23,739.047	9,390.639	7,119.733	272,549.160	312,798.580
2055	6	852,514,248.099	414.698	3,386.619	54,092.553	7,536.927	288,519.653	353,535.752
2055	7	1,068,399,095.234	414.551	36.183	123,602.921	8,127.813	311,139.267	442,906.184
2055	8	1,082,352,761.334	414.761	0.000	129,600.437	8,129.097	311,188.406	448,917.940
2055	9	994,568,543.983	414.842	132.764	89,865.943	8,212.413	314,377.815	412,588.935

Indiana Michigan Power Company-Indiana
Long-Term Residential Energy Model Output

Year	Month	Total Usage	Customers	Heating Energy	CoolingEnergy	Lighting Energy	Other Energy	Total Energy
2055	10	780,726,077.804	414.883	7,810.614	27,615.310	7,344.139	281,139.592	323,909.655
2055	11	771,101,549.088	415.317	44,258.741	2,523.432	6,961.908	266,507.475	320,251.556
2055	12	1,045,843,159.097	415.997	104,335.203	32.235	8,418.870	322,281.143	435,067.450
2056	1	1,218,333,366.685	416.671	152,375.989	0.000	8,941.767	346,326.342	507,644.098
2056	2	1,144,092,021.735	416.491	170,075.447	0.000	7,712.519	298,715.955	476,503.921
2056	3	1,012,962,181.106	416.550	135,207.037	113.592	7,214.179	279,414.603	421,949.411
2056	4	872,693,526.962	415.585	74,472.669	1,301.685	7,221.115	279,683.239	362,678.709
2056	5	757,969,906.454	414.968	23,762.706	9,428.545	7,081.111	274,260.692	314,533.054
2056	6	857,161,551.928	414.730	3,390.013	54,311.166	7,495.079	290,294.229	355,490.487
2056	7	1,073,702,496.500	414.584	36.219	124,103.100	8,079.273	312,920.842	445,139.435
2056	8	1,087,566,932.032	414.794	0.000	130,125.644	8,079.033	312,911.522	451,116.199
2056	9	999,514,963.405	414.875	132.899	90,230.622	8,162.596	316,148.055	414,674.172
2056	10	784,976,491.046	414.917	7,818.645	27,727.566	7,302.893	282,850.620	325,699.724
2056	11	775,158,894.293	415.352	44,304.599	2,533.708	6,924.646	268,200.602	321,963.554
2056	12	1,050,442,301.088	416.032	104,444.085	32.366	8,369.763	324,171.908	437,018.122
2057	1	1,223,102,247.222	416.706	152,537.952	0.000	8,886.774	348,249.433	509,674.159
2057	2	1,148,458,225.632	416.526	170,256.789	0.000	7,666.724	300,438.863	478,362.376
2057	3	1,017,232,718.260	416.585	135,351.755	114.054	7,173.835	281,123.809	423,763.453
2057	4	876,912,851.596	415.620	74,552.660	1,306.988	7,181.427	281,421.323	364,462.397
2057	5	762,139,984.861	415.002	23,788.340	9,466.991	7,042.867	275,991.529	316,289.728
2057	6	861,859,823.269	414.764	3,393.687	54,532.879	7,453.637	292,088.545	357,468.749
2057	7	1,079,064,002.231	414.618	36.259	124,610.328	8,031.205	314,721.929	447,399.721
2057	8	1,092,838,086.120	414.829	0.000	130,658.204	8,029.457	314,653.399	453,341.060
2057	9	1,004,514,890.884	414.911	133.045	90,600.372	8,113.266	317,937.655	416,784.338
2057	10	789,273,295.243	414.953	7,827.307	27,841.373	7,262.044	284,580.486	327,511.209
2057	11	779,266,029.999	415.389	44,354.013	2,544.125	6,887.739	269,912.483	323,698.361
2057	12	1,055,106,385.346	416.070	104,561.305	32.499	8,321.139	326,083.685	438,998.629

Indiana Michigan Power Company-Michigan
Long-Term Residential Energy Model Inputs

Year	Month	SalesPerHH	XHeat	XCool	XOther	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	d0610	Febd03on
2000	1	1,126,734,758.72	543.70	0.00	537.17	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2000	2	964,954,727.23	668.46	0.00	482.31	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2000	3	871,380,711.49	333.45	8.53	472.56	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2000	4	772,643,673.75	239.25	5.21	458.46	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2000	5	725,376,208.59	109.97	116.78	452.48	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2000	6	773,909,192.64	13.42	262.84	465.94	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2000	7	883,862,133.20	1.31	535.80	443.08	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
2000	8	874,349,559.80	0.00	549.86	428.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
2000	9	901,455,208.05	2.04	645.64	451.66	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00
2000	10	748,924,075.17	47.35	161.12	445.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00
2000	11	716,449,212.00	127.86	10.96	440.84	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
2000	12	1,015,709,984.83	556.04	0.00	517.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2001	1	1,221,091,798.57	810.63	0.00	544.66	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2001	2	1,059,764,367.00	648.79	0.00	489.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2001	3	936,781,624.61	535.37	0.00	478.87	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2001	4	816,854,862.70	340.30	10.96	464.57	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2001	5	723,295,919.36	61.57	133.28	463.29	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2001	6	833,445,931.28	20.73	222.37	471.61	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2001	7	908,946,040.63	2.35	621.87	448.86	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
2001	8	1,039,984,747.55	0.00	1,034.22	433.66	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
2001	9	905,255,319.76	0.71	585.93	457.58	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00
2001	10	713,824,934.60	39.50	85.74	450.84	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00
2001	11	724,584,451.88	126.42	4.54	446.76	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
2001	12	911,744,702.69	209.27	0.00	523.35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2002	1	1,108,909,913.58	555.69	0.00	549.81	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2002	2	940,755,221.05	477.30	0.00	493.44	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2002	3	944,386,353.72	480.87	0.00	484.26	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2002	4	881,179,152.37	377.00	41.89	473.14	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2002	5	759,958,630.22	137.86	89.30	462.56	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2002	6	800,552,041.81	52.41	220.37	476.58	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2002	7	1,059,920,197.31	0.00	1,023.89	454.11	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
2002	8	1,104,253,201.77	0.00	1,105.61	438.80	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
2002	9	968,766,191.47	0.00	730.89	462.63	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00
2002	10	760,458,812.64	34.29	310.82	455.87	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00

2002	11	801,944,236.62	249.71	19.34	452.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
2002	12	1,043,881,978.56	495.68	0.00	529.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2003	1	1,186,250,594.82	614.71	0.00	554.12	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2003	2	1,068,111,870.70	764.32	0.00	490.10	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00
2003	3	986,307,683.63	657.14	0.00	487.78	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2003	4	827,112,182.26	273.91	13.27	473.24	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2003	5	722,545,004.00	108.10	32.09	466.44	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2003	6	764,532,039.88	28.38	59.93	480.86	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2003	7	937,577,302.32	1.49	582.05	461.72	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
2003	8	962,816,384.10	0.00	626.64	447.65	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
2003	9	945,599,179.39	0.10	663.96	462.94	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00
2003	10	742,915,779.98	64.98	109.17	459.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00
2003	11	740,980,400.08	164.70	3.24	448.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
2003	12	1,014,554,340.89	375.83	0.00	538.49	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2004	1	1,174,563,971.19	566.82	0.00	563.53	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2004	2	1,098,678,660.08	805.34	0.00	504.73	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00
2004	3	936,696,806.27	514.50	0.00	480.12	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2004	4	820,473,937.77	276.11	19.36	482.66	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2004	5	751,130,986.38	97.57	177.63	486.35	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2004	6	794,835,791.19	10.96	331.91	489.62	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2004	7	889,785,125.98	0.10	496.95	457.05	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
2004	8	889,347,654.97	0.00	498.04	449.89	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
2004	9	883,562,008.85	0.00	416.90	473.67	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00
2004	10	756,265,281.42	39.00	147.78	462.65	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00
2004	11	739,342,350.89	136.83	8.82	456.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
2004	12	1,012,149,854.94	376.35	0.64	548.16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2005	1	1,205,164,592.52	637.47	0.00	563.17	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2005	2	1,059,188,243.80	697.67	0.00	504.77	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00
2005	3	1,063,236,724.42	580.36	0.00	521.40	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2005	4	833,305,825.69	333.74	6.16	485.32	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2005	5	708,643,783.41	119.57	38.31	462.30	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2005	6	836,340,538.93	17.50	264.66	487.45	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2005	7	1,089,766,745.37	0.00	844.96	457.82	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
2005	8	1,136,481,652.78	0.00	897.95	447.35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
2005	9	1,025,977,317.25	0.00	592.76	485.82	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00

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2005	10	775,294,503.54	23.72	284.29	472.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00
2005	11	760,631,932.71	156.73	23.75	473.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
2005	12	1,054,317,442.26	534.55	0.00	528.49	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2006	1	1,196,487,149.17	580.25	0.00	561.39	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2006	2	1,003,937,408.89	488.74	0.00	511.65	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00
2006	3	959,229,583.01	546.16	0.00	480.31	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2006	4	810,137,860.90	315.86	3.40	470.60	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2006	5	707,508,596.65	75.03	6.12	473.59	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2006	6	831,644,879.07	38.85	238.50	487.79	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2006	7	994,762,697.14	0.00	508.36	476.59	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	0.00
2006	8	1,116,796,352.92	0.00	832.54	445.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0.00
2006	9	904,939,991.14	1.57	355.00	466.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00
2006	10	749,352,735.91	55.08	40.33	472.79	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	0.00
2006	11	814,506,559.24	251.44	1.55	471.80	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2006	12	1,017,636,584.69	367.10	0.00	525.72	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2007	1	1,139,730,073.76	429.59	0.00	566.08	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2007	2	1,138,443,929.66	753.69	0.00	501.52	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00
2007	3	1,026,768,486.09	678.06	0.94	481.94	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2007	4	866,172,436.27	271.88	24.72	494.87	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2007	5	724,550,568.51	105.28	60.42	467.43	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2007	6	859,662,901.14	6.50	385.31	482.51	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2007	7	1,004,454,660.64	0.00	653.62	465.55	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	0.00
2007	8	1,014,547,769.47	0.00	693.29	438.34	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0.00
2007	9	1,024,137,204.84	1.36	595.82	484.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00
2007	10	766,541,329.52	13.91	316.61	450.72	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	0.00
2007	11	789,927,004.62	150.50	64.38	477.73	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2007	12	1,079,815,227.76	474.84	0.00	543.79	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2008	1	1,236,344,007.39	596.19	0.00	568.26	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2008	2	1,159,432,869.23	733.16	0.00	504.05	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00
2008	3	1,052,860,215.74	670.44	0.00	482.56	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2008	4	898,644,054.13	373.66	0.61	482.09	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2008	5	718,605,891.19	112.44	15.55	471.72	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2008	6	798,943,040.99	32.88	250.39	479.94	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2008	7	935,203,630.10	0.01	518.35	470.48	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	0.00
2008	8	1,038,440,376.13	0.00	649.74	459.87	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0.00

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2008	9	907,739,835.76	0.00	414.77	463.36	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00
2008	10	746,127,998.39	25.06	127.24	464.49	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	0.00
2008	11	804,556,451.54	192.02	13.89	477.65	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2008	12	1,103,181,096.31	559.55	0.00	525.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2009	1	1,345,799,588.63	736.86	0.00	560.65	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2009	2	1,225,423,049.75	842.23	0.00	508.01	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00
2009	3	1,013,213,707.23	540.43	0.00	479.98	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2009	4	879,818,293.17	295.62	1.20	485.91	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2009	5	745,954,507.60	114.41	37.55	477.66	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2009	6	749,217,553.76	17.35	154.95	477.32	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2009	7	893,196,804.32	0.01	459.41	458.71	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	0.00
2009	8	901,807,986.08	0.00	448.55	439.37	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0.00
2009	9	877,253,929.00	0.00	311.46	472.14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00
2009	10	769,451,286.42	72.00	70.46	466.51	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	0.00
2009	11	811,343,351.69	170.17	0.00	475.37	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2009	12	1,048,682,883.56	395.25	0.00	535.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2010	1	1,286,371,326.55	700.12	0.00	554.98	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2010	2	1,165,645,621.96	711.82	0.00	513.69	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00
2010	3	987,035,416.48	540.51	0.00	477.89	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2010	4	805,988,821.19	203.53	33.29	487.17	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2010	5	710,018,857.90	75.61	35.14	469.68	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2010	6	845,593,019.96	16.20	349.55	482.63	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2010	7	1,086,446,676.91	0.00	702.76	467.46	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	0.00
2010	8	1,195,390,336.34	0.00	916.25	452.54	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0.00
2010	9	1,001,892,176.43	0.00	610.01	465.64	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00
2010	10	728,331,287.00	29.12	141.94	461.83	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	0.00
2010	11	750,701,170.86	154.34	13.77	464.14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2010	12	1,083,550,540.94	470.31	0.00	534.59	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2011	1	1,296,404,037.91	693.65	0.00	559.08	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2011	2	1,140,422,579.29	767.28	0.00	494.44	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00
2011	3	966,631,797.60	534.35	0.00	469.07	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2011	4	862,388,665.49	338.06	9.34	470.14	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2011	5	777,410,500.27	120.64	46.90	484.22	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2011	6	845,086,938.59	15.92	347.64	488.57	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2011	7	1,035,939,351.39	0.00	659.03	489.48	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00

2011	8	1,148,836,785.38	0.00	972.11	453.86	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
2011	9	929,914,042.85	2.76	496.04	471.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00
2011	10	713,684,429.99	32.02	79.97	471.46	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00
2011	11	787,386,590.23	142.74	13.25	478.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
2011	12	991,700,074.34	329.99	0.00	525.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2012	1	1,120,010,835.98	491.33	0.00	550.78	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2012	2	1,024,449,415.04	553.98	0.00	498.60	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00
2012	3	920,339,902.25	392.07	29.93	492.23	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2012	4	735,384,751.63	113.82	89.70	488.02	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2012	5	728,447,599.92	94.90	61.53	482.62	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2012	6	854,064,781.83	6.30	391.03	492.21	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2012	7	1,230,752,857.01	0.56	991.20	488.24	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
2012	8	1,111,558,927.03	0.00	873.77	454.56	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
2012	9	923,843,757.46	1.09	450.60	479.42	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00
2012	10	725,989,890.09	52.87	74.68	473.76	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00
2012	11	805,774,715.09	210.31	17.40	489.83	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
2012	12	977,235,566.16	325.81	0.00	533.59	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2013	1	1,154,307,824.62	528.31	0.00	558.68	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2013	2	1,073,768,616.39	623.87	0.00	493.86	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00
2013	3	1,019,829,304.26	563.40	0.00	488.87	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2013	4	943,236,792.45	404.60	0.00	499.80	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2013	5	732,370,481.79	116.35	64.79	471.71	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2013	6	787,846,809.60	22.29	268.46	494.20	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2013	7	986,982,148.75	0.32	592.80	481.62	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
2013	8	928,774,694.64	0.00	484.05	457.98	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
2013	9	949,369,786.22	0.04	546.06	478.23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00
2013	10	722,671,698.36	15.57	202.97	471.16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00
2013	11	803,457,209.40	188.93	18.33	490.91	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
2013	12	1,053,087,980.59	487.43	0.00	530.86	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2014	1	1,326,618,927.77	759.66	0.00	574.45	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2014	2	1,200,185,981.56	890.74	0.00	495.21	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00
2014	3	1,118,070,611.70	768.17	0.00	494.32	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2014	4	900,334,873.15	413.81	1.73	482.37	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2014	5	756,265,244.85	112.16	50.42	496.30	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2014	6	784,428,629.19	25.61	325.12	484.62	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Indiana Michigan Power Company-Michigan
Long-Term Residential Energy Model Inputs

2014	7	931,250,029.89	0.00	557.14	486.78	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
2014	8	856,671,459.19	0.00	417.33	455.26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
2014	9	929,276,351.13	2.45	570.14	480.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00
2014	10	705,678,457.42	35.21	85.67	475.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00
2014	11	771,788,322.71	207.76	2.25	479.89	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
2014	12	1,085,922,255.58	513.29	0.00	542.26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2015	1	1,215,289,689.63	648.92	0.00	564.63	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2015	2	1,116,428,804.46	779.41	0.00	498.99	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00
2015	3	1,070,580,325.26	812.94	0.00	484.45	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2015	4	842,916,017.92	333.05	0.71	495.50	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2015	5	699,854,790.69	101.87	66.05	479.06	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2015	6	772,375,651.50	16.79	293.70	487.75	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2015	7	868,795,651.22	0.15	408.58	477.54	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
2015	8	1,003,984,951.91	0.00	659.00	463.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
2015	9	919,801,987.11	0.17	498.33	478.49	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00
2015	10	721,888,861.33	25.64	146.33	470.97	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00
2015	11	695,534,513.14	127.47	3.45	472.73	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
2015	12	935,311,398.40	331.62	0.00	548.16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2016	1	1,105,285,507.35	519.95	0.00	573.39	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2016	2	1,031,741,823.84	702.11	0.00	506.57	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00
2016	3	885,542,114.85	506.37	0.00	491.70	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2016	4	804,870,566.23	285.15	0.31	510.97	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2016	5	694,115,156.13	126.27	12.40	491.27	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2016	6	810,850,967.31	25.19	298.71	502.90	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2016	7	972,112,558.16	0.00	528.55	487.31	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
2016	8	1,099,025,995.79	0.00	780.52	468.69	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
2016	9	1,006,612,655.75	0.00	600.38	482.23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00
2016	10	749,414,308.23	10.53	209.11	484.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00
2016	11	688,102,367.54	115.69	20.06	487.55	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
2016	12	959,770,482.07	435.19	0.26	543.36	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2017	1	1,178,359,341.92	688.27	0.00	573.56	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2017	2	961,460,022.98	548.77	0.00	512.48	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00
2017	3	842,700,424.44	412.24	0.00	493.60	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2017	4	795,036,683.10	315.06	5.39	497.40	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2017	5	665,377,731.95	100.22	46.04	481.47	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

2017	6	775,474,321.67	22.47	217.05	511.34	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2017	7	942,366,205.27	0.00	489.00	491.54	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
2017	8	960,965,493.03	0.00	481.48	479.37	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
2017	9	826,244,101.95	0.00	243.00	495.82	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00
2017	10	759,173,225.98	4.93	278.65	484.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00
2017	11	741,102,683.37	210.12	15.91	491.81	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
2017	12	964,202,330.63	440.91	0.00	548.33	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2018	1	1,232,758,612.55	808.51	0.00	565.52	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2018	2	1,015,538,870.69	708.81	0.00	498.78	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00
2018	3	904,833,967.33	528.99	0.00	486.39	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2018	4	898,627,076.79	453.08	0.00	507.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2018	5	730,015,478.53	186.82	44.95	495.47	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2018	6	836,922,250.18	3.88	321.43	492.94	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2018	7	1,051,929,323.43	0.00	594.67	485.88	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
2018	8	990,513,336.48	0.00	585.32	465.51	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
2018	9	975,688,018.59	0.00	559.92	483.45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00
2018	10	729,846,590.50	39.36	223.38	472.87	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00
2018	11	755,318,089.39	277.90	24.10	481.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
2018	12	1,012,052,419.54	520.58	0.00	542.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2019	1	1,070,183,718.21	529.31	0.00	553.03	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2019	2	1,059,465,555.66	768.55	0.00	484.03	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00
2019	3	958,342,113.60	634.38	0.00	469.87	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2019	4	796,587,683.49	354.37	0.00	477.31	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2019	5	713,797,929.01	128.90	4.54	492.38	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2019	6	702,669,321.08	26.54	101.40	489.40	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2019	7	1,013,854,535.07	0.00	572.38	488.37	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
2019	8	999,858,163.49	0.00	629.95	452.64	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
2019	9	876,642,423.75	0.00	366.17	487.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00
2019	10	721,425,533.65	17.71	265.15	462.76	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00
2019	11	733,244,126.47	232.73	12.54	463.53	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
2019	12	974,810,544.61	455.18	0.00	530.43	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2020	1	1,039,029,278.57	444.02	0.00	550.15	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2020	2	923,161,306.36	539.69	0.00	479.41	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00
2020	3	883,241,137.12	489.83	0.00	474.09	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2020	4	833,589,281.19	269.70	1.56	483.95	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Indiana Michigan Power Company-Michigan
Long-Term Residential Energy Model Inputs

2020	5	758,198,478.09	176.80	11.12	475.25	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2020	6	848,047,500.11	28.97	314.18	481.44	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2020	7	1,102,021,842.95	0.00	726.42	470.78	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
2020	8	1,100,998,315.19	0.00	705.68	464.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
2020	9	947,636,387.39	0.77	523.97	460.66	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00
2020	10	699,346,217.37	31.63	69.63	466.16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00
2020	11	724,756,686.59	161.85	5.08	467.55	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
2020	12	917,938,869.43	342.54	2.70	518.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2021	1	1,084,106,654.67	528.53	0.00	534.39	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2021	2		665.97	0.00	483.87	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00
2021	3		532.67	1.16	470.58	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2021	4		308.30	8.96	476.17	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2021	5		111.04	44.51	470.57	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2021	6		20.31	233.22	482.97	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2021	7		0.54	556.88	472.77	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
2021	8		0.00	612.68	452.26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
2021	9		0.70	441.48	469.49	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00
2021	10		34.00	135.03	458.97	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00
2021	11		177.53	11.66	461.94	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
2021	12		405.29	0.13	515.59	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2022	1		584.58	0.00	535.92	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2022	2		660.34	0.00	482.40	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00
2022	3		528.00	1.15	469.06	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2022	4		304.80	8.88	473.16	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2022	5		109.76	44.09	467.53	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2022	6		20.07	231.02	479.81	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2022	7		0.53	551.66	469.72	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
2022	8		0.00	606.96	449.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
2022	9		0.69	437.45	466.43	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00
2022	10		33.63	133.85	455.98	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00
2022	11		175.68	11.56	458.96	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
2022	12		401.27	0.13	512.32	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2023	1		583.19	0.00	535.29	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2023	2		659.17	0.00	482.01	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00
2023	3		527.38	1.14	468.85	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Indiana Michigan Power Company-Michigan
Long-Term Residential Energy Model Inputs

2023	4	304.62	8.81	473.14	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2023	5	109.76	43.76	467.67	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2023	6	20.08	229.40	480.08	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2023	7	0.53	548.02	470.13	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
2023	8	0.00	603.11	449.78	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
2023	9	0.69	434.76	467.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00
2023	10	33.69	133.05	456.55	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00
2023	11	176.01	11.50	459.55	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
2023	12	402.04	0.13	512.95	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2024	1	580.38	0.00	533.94	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2024	2	655.86	0.00	480.76	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00
2024	3	524.63	1.13	467.60	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2024	4	302.96	8.75	471.86	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2024	5	109.14	43.45	466.37	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2024	6	19.96	227.74	478.70	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2024	7	0.53	544.01	468.80	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
2024	8	0.00	598.68	448.52	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
2024	9	0.69	431.56	465.68	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00
2024	10	33.49	132.06	455.21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00
2024	11	174.97	11.41	458.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
2024	12	399.68	0.13	511.34	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2025	1	577.21	0.00	532.56	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2025	2	652.36	0.00	479.57	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00
2025	3	521.88	1.12	466.49	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2025	4	301.42	8.69	470.83	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2025	5	108.59	43.18	465.38	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2025	6	19.87	226.36	477.72	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2025	7	0.53	540.76	467.93	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
2025	8	0.00	595.13	447.71	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
2025	9	0.68	429.01	464.84	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00
2025	10	33.34	131.28	454.35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00
2025	11	174.16	11.34	457.27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
2025	12	397.87	0.13	510.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2026	1	574.31	0.00	531.37	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2026	2	649.10	0.00	478.53	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00

2026	3	519.29	1.12	465.52	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2026	4	299.93	8.65	469.91	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2026	5	108.06	42.94	464.50	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2026	6	19.77	225.10	476.80	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2026	7	0.53	537.74	467.09	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
2026	8	0.00	591.83	446.94	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
2026	9	0.68	426.66	464.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00
2026	10	33.18	130.58	453.56	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00
2026	11	173.35	11.28	456.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
2026	12	396.07	0.13	509.38	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2027	1	570.99	0.00	530.43	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2027	2	645.37	0.00	477.72	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00
2027	3	516.35	1.11	464.78	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2027	4	298.23	8.60	469.22	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2027	5	107.46	42.73	463.86	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2027	6	19.66	223.98	476.17	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2027	7	0.52	535.09	466.53	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
2027	8	0.00	588.94	446.44	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
2027	9	0.68	424.62	463.57	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00
2027	10	33.00	129.95	453.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00
2027	11	172.44	11.23	455.93	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
2027	12	393.96	0.13	508.68	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2028	1	568.26	0.00	529.97	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2028	2	642.29	0.00	477.33	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00
2028	3	513.91	1.11	464.43	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2028	4	296.82	8.57	468.91	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2028	5	106.94	42.55	463.54	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2028	6	19.57	223.12	475.91	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2028	7	0.52	533.09	466.38	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
2028	8	0.00	586.80	446.36	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
2028	9	0.67	423.09	463.49	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00
2028	10	32.87	129.49	452.95	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00
2028	11	171.74	11.19	455.82	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
2028	12	392.41	0.13	508.52	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2029	1	566.12	0.00	529.89	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

2029	2	639.96	0.00	477.32	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00
2029	3	512.12	1.10	464.47	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2029	4	295.85	8.54	469.06	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2029	5	106.61	42.44	463.74	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2029	6	19.51	222.51	476.07	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2029	7	0.52	531.62	466.57	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
2029	8	0.00	585.16	446.54	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
2029	9	0.67	421.91	463.67	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00
2029	10	32.76	129.14	453.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00
2029	11	171.20	11.16	455.97	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
2029	12	391.16	0.12	508.62	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2030	1	564.38	0.00	528.90	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2030	2	638.00	0.00	476.48	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00
2030	3	510.58	1.10	463.73	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2030	4	294.98	8.53	468.41	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2030	5	106.31	42.36	463.23	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2030	6	19.46	222.10	475.66	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2030	7	0.52	530.70	466.29	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
2030	8	0.00	584.24	446.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
2030	9	0.67	421.31	463.43	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00
2030	10	32.70	128.97	452.82	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00
2030	11	170.90	11.15	455.61	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
2030	12	390.56	0.12	508.19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2031	1	564.23	0.00	529.31	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2031	2	637.82	0.00	476.89	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00
2031	3	510.43	1.10	464.17	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2031	4	294.89	8.53	468.91	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2031	5	106.28	42.38	463.77	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2031	6	19.45	222.20	476.27	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2031	7	0.52	530.95	466.93	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
2031	8	0.00	584.50	446.91	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
2031	9	0.67	421.49	464.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00
2031	10	32.68	129.02	453.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00
2031	11	170.80	11.15	456.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
2031	12	390.34	0.12	508.57	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

2032	1	563.59	0.00	530.09	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2032	2	637.09	0.00	477.62	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00
2032	3	509.84	1.10	464.90	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2032	4	294.54	8.53	469.70	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2032	5	106.15	42.40	464.57	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2032	6	19.43	222.30	477.11	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2032	7	0.52	531.19	467.78	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
2032	8	0.00	584.75	447.72	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
2032	9	0.67	421.66	464.85	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00
2032	10	32.64	129.07	454.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00
2032	11	170.58	11.16	456.71	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
2032	12	389.82	0.12	509.27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2033	1	562.78	0.00	531.45	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2033	2	636.11	0.00	478.83	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00
2033	3	508.99	1.10	466.06	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2033	4	294.02	8.54	470.87	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2033	5	105.95	42.43	465.71	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2033	6	19.39	222.44	478.25	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2033	7	0.52	531.47	468.91	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
2033	8	0.00	585.03	448.79	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
2033	9	0.67	421.83	465.93	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00
2033	10	32.56	129.11	455.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00
2033	11	170.15	11.16	457.66	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
2033	12	388.80	0.12	510.26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2034	1	561.27	0.00	532.75	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2034	2	634.40	0.00	480.02	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00
2034	3	507.63	1.11	467.24	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2034	4	293.23	8.55	472.10	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2034	5	105.67	42.47	466.94	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2034	6	19.34	222.63	479.50	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2034	7	0.51	531.92	470.17	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
2034	8	0.00	585.51	450.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
2034	9	0.66	422.17	467.19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00
2034	10	32.47	129.22	456.24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00
2034	11	169.68	11.17	458.84	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00

2034	12	387.72	0.12	511.51	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2035	1	559.82	0.00	534.34	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2035	2	632.75	0.00	481.46	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00
2035	3	506.30	1.11	468.64	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2035	4	292.46	8.56	473.53	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2035	5	105.38	42.53	468.34	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2035	6	19.28	222.93	480.92	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2035	7	0.51	532.64	471.58	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
2035	8	0.00	586.29	451.36	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
2035	9	0.66	422.73	468.59	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00
2035	10	32.38	129.39	457.58	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00
2035	11	169.20	11.18	460.16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
2035	12	386.63	0.12	512.94	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2036	1	558.48	0.00	536.08	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2036	2	631.24	0.00	483.03	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00
2036	3	505.08	1.11	470.17	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2036	4	291.76	8.58	475.11	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2036	5	105.13	42.61	469.90	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2036	6	19.24	223.39	482.51	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2036	7	0.51	533.72	473.16	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
2036	8	0.00	587.48	452.88	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
2036	9	0.66	423.59	470.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00
2036	10	32.31	129.65	459.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00
2036	11	168.80	11.20	461.70	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
2036	12	385.69	0.13	514.61	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2037	1	557.25	0.00	537.97	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2037	2	629.85	0.00	484.75	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00
2037	3	503.97	1.11	471.86	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2037	4	291.12	8.60	476.84	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2037	5	104.90	42.74	471.61	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2037	6	19.20	224.03	484.26	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2037	7	0.51	535.27	474.90	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
2037	8	0.00	589.20	454.57	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
2037	9	0.66	424.83	471.95	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00
2037	10	32.24	130.03	460.84	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00

2037	11	168.44	11.24	463.42	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
2037	12	384.90	0.13	516.51	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2038	1	556.03	0.00	539.98	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2038	2	628.48	0.00	486.57	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00
2038	3	502.89	1.12	473.64	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2038	4	290.50	8.63	478.67	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2038	5	104.68	42.86	473.43	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2038	6	19.16	224.68	486.12	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2038	7	0.51	536.82	476.75	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
2038	8	0.00	590.91	456.35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
2038	9	0.66	426.07	473.82	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00
2038	10	32.17	130.41	462.65	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00
2038	11	168.10	11.27	465.24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
2038	12	384.11	0.13	518.51	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2039	1	554.91	0.00	542.08	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2039	2	627.22	0.00	488.48	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00
2039	3	501.88	1.12	475.51	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2039	4	289.92	8.65	480.58	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2039	5	104.47	42.98	475.32	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2039	6	19.12	225.30	488.05	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2039	7	0.51	538.32	478.66	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
2039	8	0.00	592.56	458.19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
2039	9	0.66	427.26	475.73	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00
2039	10	32.11	130.78	464.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00
2039	11	167.77	11.30	467.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
2039	12	383.36	0.13	520.54	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2040	1	554.06	0.00	543.93	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2040	2	626.26	0.00	490.16	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00
2040	3	501.12	1.12	477.16	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2040	4	289.48	8.68	482.27	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2040	5	104.31	43.10	477.02	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2040	6	19.09	225.97	489.81	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2040	7	0.51	539.91	480.42	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
2040	8	0.00	594.31	459.87	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
2040	9	0.66	428.53	477.46	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00

2040	10	32.06	131.16	466.16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00
2040	11	167.52	11.34	468.73	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
2040	12	382.80	0.13	522.34	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2041	1	553.34	0.00	545.78	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2041	2	625.44	0.00	491.85	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00
2041	3	500.46	1.13	478.82	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2041	4	289.10	8.70	483.98	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2041	5	104.18	43.23	478.72	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2041	6	19.06	226.65	491.57	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2041	7	0.51	541.54	482.18	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
2041	8	0.00	596.10	461.56	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
2041	9	0.65	429.82	479.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00
2041	10	32.02	131.56	467.83	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00
2041	11	167.30	11.37	470.38	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
2041	12	382.30	0.13	524.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2042	1	552.60	0.00	547.63	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2042	2	624.61	0.00	493.53	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00
2042	3	499.80	1.13	480.47	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2042	4	288.72	8.73	485.68	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2042	5	104.04	43.36	480.43	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2042	6	19.04	227.31	493.35	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2042	7	0.51	543.13	483.94	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
2042	8	0.00	597.86	463.26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
2042	9	0.65	431.09	480.95	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00
2042	10	31.98	131.95	469.51	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00
2042	11	167.09	11.40	472.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
2042	12	381.83	0.13	525.95	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2043	1	552.18	0.00	549.60	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2043	2	624.15	0.00	495.32	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00
2043	3	499.43	1.13	482.23	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2043	4	288.51	8.76	487.49	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2043	5	103.97	43.50	482.24	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2043	6	19.02	228.07	495.22	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2043	7	0.51	544.94	485.81	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
2043	8	0.00	599.86	465.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00

2043	9	0.65	432.53	482.81	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00
2043	10	31.96	132.39	471.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00
2043	11	166.98	11.44	473.82	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
2043	12	381.57	0.13	527.89	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2044	1	551.89	0.00	551.58	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2044	2	623.81	0.00	497.12	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00
2044	3	499.17	1.14	484.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2044	4	288.35	8.79	489.30	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2044	5	103.91	43.65	484.04	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2044	6	19.01	228.84	497.08	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2044	7	0.51	546.77	487.66	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
2044	8	0.00	601.86	466.82	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
2044	9	0.65	433.97	484.63	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00
2044	10	31.94	132.83	473.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00
2044	11	166.88	11.48	475.52	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
2044	12	381.33	0.13	529.75	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2045	1	551.56	0.00	553.39	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2045	2	623.43	0.00	498.76	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00
2045	3	498.85	1.14	485.60	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2045	4	288.16	8.81	490.93	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2045	5	103.84	43.79	485.66	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2045	6	19.00	229.55	498.75	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2045	7	0.51	548.47	489.32	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
2045	8	0.00	603.73	468.42	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
2045	9	0.65	435.31	486.26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00
2045	10	31.91	133.24	474.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00
2045	11	166.76	11.52	477.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
2045	12	381.05	0.13	531.42	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2046	1	551.20	0.00	555.07	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2046	2	623.02	0.00	500.29	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00
2046	3	498.52	1.14	487.10	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2046	4	287.97	8.84	492.48	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2046	5	103.77	43.92	487.21	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2046	6	18.99	230.25	500.36	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2046	7	0.50	550.13	490.93	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00

2046	8	0.00	605.56	469.96	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
2046	9	0.65	436.64	487.84	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00
2046	10	31.89	133.65	476.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00
2046	11	166.64	11.55	478.55	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
2046	12	380.79	0.13	533.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2047	1	550.97	0.00	556.75	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2047	2	622.76	0.00	501.81	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00
2047	3	498.30	1.15	488.59	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2047	4	287.85	8.87	494.02	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2047	5	103.72	44.06	488.75	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2047	6	18.98	230.96	501.94	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2047	7	0.50	551.82	492.52	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
2047	8	0.00	607.42	471.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
2047	9	0.65	437.97	489.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00
2047	10	31.88	134.05	477.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00
2047	11	166.56	11.59	480.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
2047	12	380.59	0.13	534.62	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2048	1	550.82	0.00	558.39	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2048	2	622.58	0.00	503.30	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00
2048	3	498.16	1.15	490.05	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2048	4	287.76	8.89	495.52	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2048	5	103.69	44.19	490.25	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2048	6	18.97	231.64	503.51	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2048	7	0.50	553.46	494.08	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
2048	8	0.00	609.22	472.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
2048	9	0.65	439.27	490.94	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00
2048	10	31.87	134.45	479.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00
2048	11	166.50	11.62	481.46	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
2048	12	380.46	0.13	536.19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2049	1	550.93	0.00	560.11	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2049	2	622.70	0.00	504.86	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00
2049	3	498.25	1.15	491.59	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2049	4	287.81	8.92	497.10	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2049	5	103.71	44.33	491.83	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2049	6	18.98	232.38	505.13	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

2049	7	0.50	555.20	495.71	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
2049	8	0.00	611.14	474.55	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
2049	9	0.65	440.65	492.54	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00
2049	10	31.87	134.87	480.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00
2049	11	166.52	11.66	482.97	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
2049	12	380.50	0.13	537.83	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2050	1	551.17	0.00	561.87	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2050	2	622.96	0.00	506.46	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00
2050	3	498.46	1.16	493.16	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2050	4	287.93	8.95	498.71	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2050	5	103.75	44.46	493.43	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2050	6	18.98	233.10	506.79	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2050	7	0.50	556.92	497.37	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
2050	8	0.00	613.02	476.14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
2050	9	0.65	442.00	494.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00
2050	10	31.88	135.29	482.16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00
2050	11	166.58	11.69	484.52	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
2050	12	380.63	0.13	539.51	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2051	1	551.08	0.00	563.56	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2051	2	622.86	0.00	508.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00
2051	3	498.37	1.16	494.67	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2051	4	287.88	8.98	500.27	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2051	5	103.73	44.60	494.99	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2051	6	18.98	233.79	508.41	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2051	7	0.50	558.59	498.99	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
2051	8	0.00	614.85	477.70	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
2051	9	0.65	443.32	495.77	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00
2051	10	31.88	135.69	483.69	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00
2051	11	166.55	11.73	486.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
2051	12	380.55	0.13	541.14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2052	1	550.99	0.00	565.25	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2052	2	622.76	0.00	509.54	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00
2052	3	498.29	1.16	496.18	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2052	4	287.83	9.00	501.83	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2052	5	103.72	44.73	496.55	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

2052	6	18.98	234.49	510.03	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2052	7	0.50	560.25	500.61	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
2052	8	0.00	616.68	479.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
2052	9	0.65	444.64	497.37	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00
2052	10	31.87	136.09	485.22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00
2052	11	166.51	11.76	487.53	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
2052	12	380.47	0.13	542.77	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2053	1	550.90	0.00	566.93	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2053	2	622.67	0.00	511.08	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00
2053	3	498.21	1.17	497.70	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2053	4	287.79	9.03	503.39	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2053	5	103.70	44.86	498.11	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2053	6	18.97	235.18	511.64	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2053	7	0.50	561.91	502.23	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
2053	8	0.00	618.50	480.81	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
2053	9	0.65	445.95	498.96	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00
2053	10	31.86	136.49	486.74	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00
2053	11	166.48	11.80	489.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
2053	12	380.39	0.13	544.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2054	1	550.82	0.00	568.61	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2054	2	622.57	0.00	512.61	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00
2054	3	498.13	1.17	499.20	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2054	4	287.74	9.06	504.94	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2054	5	103.68	44.99	499.66	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2054	6	18.97	235.87	513.25	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2054	7	0.50	563.56	503.84	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
2054	8	0.00	620.31	482.36	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
2054	9	0.65	447.25	500.55	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00
2054	10	31.86	136.89	488.26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00
2054	11	166.45	11.83	490.52	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
2054	12	380.32	0.13	546.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2055	1	550.73	0.00	570.29	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2055	2	622.48	0.00	514.14	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00
2055	3	498.06	1.17	500.71	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2055	4	287.70	9.08	506.49	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

2055	5	103.67	45.13	501.21	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2055	6	18.97	236.57	514.87	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2055	7	0.50	565.21	505.46	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
2055	8	0.00	622.12	483.91	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
2055	9	0.65	448.56	502.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00
2055	10	31.85	137.29	489.79	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00
2055	11	166.42	11.86	492.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
2055	12	380.26	0.13	547.65	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2056	1	550.68	0.00	571.98	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2056	2	622.43	0.00	515.68	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00
2056	3	498.02	1.18	502.23	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2056	4	287.67	9.11	508.06	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2056	5	103.66	45.26	502.78	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2056	6	18.97	237.27	516.50	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2056	7	0.50	566.88	507.09	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
2056	8	0.00	623.97	485.49	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
2056	9	0.65	449.89	503.76	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00
2056	10	31.85	137.70	491.33	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00
2056	11	166.41	11.90	493.55	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
2056	12	380.23	0.13	549.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2057	1	550.67	0.00	573.69	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2057	2	622.42	0.00	517.24	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00
2057	3	498.02	1.18	503.76	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2057	4	287.67	9.14	509.64	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2057	5	103.66	45.40	504.37	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2057	6	18.97	237.98	518.14	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2057	7	0.50	568.58	508.75	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
2057	8	0.00	625.83	487.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
2057	9	0.65	451.23	505.39	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00
2057	10	31.85	138.11	492.89	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00
2057	11	166.41	11.94	495.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
2057	12	380.23	0.13	550.98	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Indiana Michigan Power Company-Michigan
Long-Term Residential Energy Model Inputs

Jand03on	d16onjan	d9801	d16onjul	d15onmay	jan20on	d15onnov	d16onaug	d18onoct	d17on	XMissing	YMissing
0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0

0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0

0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0

0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0

0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0

0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0	0
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0	0
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0	0
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0	0
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0	0
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0	0
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0	0
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0	0
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0	0
0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	0	0

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0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00	0	0
0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	0	0
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0	0
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0	0
0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	1.00	0	0
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0	0
1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0	0
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0	0
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0	0
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0	0
0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	0	0
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0	0
0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00	0	0
0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	0	0
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0	0
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0	0
0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	1.00	0	0
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0	0
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0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0	0
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0	0
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0	0
0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	0	0
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0	0
0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00	0	0
0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	0	0
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0	0
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0	0
0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	1.00	0	0
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0	0
1.00	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	0
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	0
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0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	0

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0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	0	0
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	0
1.00	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	0
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
1.00	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
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0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
1.00	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
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0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1

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0.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
1.00	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
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0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
1.00	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
1.00	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1

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0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
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0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
1.00	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
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0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
1.00	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
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0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
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0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
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0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
1.00	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
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0.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
1.00	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1

1.00	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
1.00	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
1.00	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	0	1

0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
1.00	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
1.00	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
1.00	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
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0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	0	1

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0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
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0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
1.00	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
1.00	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1

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0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
1.00	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
1.00	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
1.00	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
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0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
1.00	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
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0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
1.00	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
1.00	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
1.00	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1

0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
1.00	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
1.00	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
1.00	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1

0.00	0.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
1.00	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
1.00	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
1.00	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
1.00	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	0	1

0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
1.00	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
1.00	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
1.00	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1

0.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
1.00	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
1.00	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	0	1
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0	1

Indiana Michigan Power Company-Michigan
Long-Term Residential Energy Model Coefficients

Variable	Coefficient	StdErr	T-Stat	P-Value	Definition
CONST	35300594.782	109541268.780	0.322	74.76%	Constant term
ResidentialVars.XHeat	543847.151	27658.861	19.663	0.00%	Residential Heating Component
ResidentialVars.XCool	416009.881	20659.159	20.137	0.00%	Residential Cooling Component
ResidentialVars.XOther	1386933.165	202296.232	6.856	0.00%	Residential Other Component
BinaryVars.Jan	16854729.149	19448806.323	0.867	38.71%	January
BinaryVars.Feb	-48812553.995	19956562.892	-2.446	1.52%	February
BinaryVars.Mar	-45860469.243	13773488.081	-3.330	0.10%	March
BinaryVars.Apr	-46867954.071	13729806.093	-3.414	0.08%	April
BinaryVars.May	-52145362.851	18024863.295	-2.893	0.42%	May
BinaryVars.Jun	-30735304.510	17864876.026	-1.720	8.67%	June
BinaryVars.Jul	25000628.500	23341379.663	1.071	28.53%	July
BinaryVars.Aug	50473554.526	26635244.418	1.895	5.94%	August
BinaryVars.Sep	25574310.262	21348387.800	1.198	23.22%	September
BinaryVars.Oct	-32281144.451	19882897.441	-1.624	10.59%	October
BinaryVars.Nov	-22058577.731	17770653.238	-1.241	21.58%	November
BinaryVars.d0610	32838003.772	4611484.613	7.121	0.00%	Binary Variable-2006 Through 2010
BinaryVars.Febd03on	14237420.329	18525475.531	0.769	44.30%	Binary Variable-2003 On Januarys
BinaryVars.Jand03on	44214776.735	18847949.927	2.346	1.98%	Binary Variable-2003 On Februarys
BinaryVars.d16onjan	-57741670.665	14928525.376	-3.868	0.02%	Binary Variable-2016 On Januarys
BinaryVars.d9801	-730307.270	7846709.077	-0.093	92.59%	Binary Variable-2000 and 2001
BinaryVars.d16onjul	59901878.190	15576116.804	3.846	0.02%	Binary Variable-2016 On Julys
BinaryVars.d15onmay	-18712688.921	14488418.224	-1.292	19.78%	Binary Variable-2015 On Mays
BinaryVars.jan20on	43300613.688	9916075.537	4.367	0.00%	Binary Variable-January 2020 On
BinaryVars.d15onnov	-44730926.403	14370351.564	-3.113	0.21%	Binary Variable-2015 On Novembers
BinaryVars.d16onaug	51577168.438	15674053.675	3.291	0.12%	Binary Variable-2016 On Augusts
BinaryVars.d18onoct	-8421883.658	18613310.516	-0.452	65.14%	Binary Variable-2018 On Octobers
BinaryVars.d17on	-33700591.388	6325089.859	-5.328	0.00%	Binary Variable-2017 On

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Statistics

Model Statistics	
Iterations	1
Adjusted Observations	253
Deg. of Freedom for Error	226
R-Squared	0.969
Adjusted R-Squared	0.966
AIC	34.432
BIC	34.809
F-Statistic	274.904
Prob (F-Statistic)	0.0000
Log-Likelihood	-4,687.65
Model Sum of Squares	5,809,586,626,604,920,000.00
Sum of Squared Errors	183,696,073,575,009,000.00
Mean Squared Error	812,814,484,845,170.00
Std. Error of Regression	28,509,901.52
Mean Abs. Dev. (MAD)	21,634,145.13
Mean Abs. % Err. (MAPE)	2.35%
Durbin-Watson Statistic	1.249
Durbin-H Statistic	#NA
Ljung-Box Statistic	117.65
Prob (Ljung-Box)	0.0000
Skewness	0.061
Kurtosis	2.848
Jarque-Bera	0.401
Prob (Jarque-Bera)	0.8183

Forecast Statistics	
Forecast Observations	0
Mean Abs. Dev. (MAD)	0.00
Mean Abs. % Err. (MAPE)	0.00%
Avg. Forecast Error	0.00
Mean % Error	0.00%
Root Mean-Square Error	0.00
Theil's Inequality Coefficient	0.0000
-- Bias Proportion	0.00%
-- Variance Proportion	0.00%
-- Covariance Proportion	0.00%

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	Pred	CONST	XHeat	XCool	XOther	Jan	Feb
2000	1	1,092,130,898.837	35,300,594.782	295,687,489.661	0.000	745,018,392.515	16,854,729.149	0.000
2000	2	1,018,223,418.189	35,300,594.782	363,537,521.693	0.000	668,928,162.979	0.000	-48,812,553.995
2000	3	829,009,347.396	35,300,594.782	181,345,305.207	3,548,661.885	655,405,562.036	0.000	0.000
2000	4	755,841,393.760	35,300,594.782	130,116,279.521	2,165,927.863	635,856,852.935	0.000	0.000
2000	5	718,371,085.064	35,300,594.782	59,807,087.619	48,581,180.656	627,557,892.128	0.000	0.000
2000	6	766,700,597.781	35,300,594.782	7,297,245.328	109,345,487.708	646,222,881.743	0.000	0.000
2000	7	897,704,913.251	35,300,594.782	713,613.498	222,899,724.079	614,520,659.662	0.000	0.000
2000	8	907,450,740.632	35,300,594.782	0.000	228,749,251.945	593,657,646.649	0.000	0.000
2000	9	956,265,949.241	35,300,594.782	1,109,526.815	268,591,890.670	626,419,933.982	0.000	0.000
2000	10	712,258,357.202	35,300,594.782	25,752,927.556	67,026,208.202	617,190,078.383	0.000	0.000
2000	11	698,016,911.307	35,300,594.782	69,536,706.009	4,557,578.433	611,410,917.085	0.000	0.000
2000	12	1,054,041,061.238	35,300,594.782	302,402,633.730	0.000	717,068,139.997	0.000	0.000
2001	1	1,247,689,478.059	35,300,594.782	440,861,476.478	0.000	755,402,984.920	16,854,729.149	0.000
2001	2	1,016,819,830.461	35,300,594.782	352,845,230.023	0.000	678,216,866.921	0.000	-48,812,553.995
2001	3	944,027,454.601	35,300,594.782	291,158,212.753	0.000	664,159,423.580	0.000	0.000
2001	4	821,665,328.607	35,300,594.782	185,072,310.368	4,559,062.802	644,331,621.996	0.000	0.000
2001	5	713,909,068.964	35,300,594.782	33,484,058.031	55,447,626.432	642,552,459.840	0.000	0.000
2001	6	761,715,365.345	35,300,594.782	11,276,095.237	92,510,006.892	654,094,280.214	0.000	0.000
2001	7	942,090,765.687	35,300,594.782	1,278,363.288	258,704,406.905	622,537,079.482	0.000	0.000
2001	8	1,116,739,760.559	35,300,594.782	0.000	430,244,833.227	601,451,085.294	0.000	0.000
2001	9	938,911,753.748	35,300,594.782	387,636.056	243,751,660.487	634,627,859.431	0.000	0.000
2001	10	684,728,251.493	35,300,594.782	21,482,873.441	35,668,094.592	625,288,140.399	0.000	0.000
2001	11	702,778,700.123	35,300,594.782	68,755,303.397	1,886,706.747	619,624,980.199	0.000	0.000
2001	12	874,233,714.545	35,300,594.782	113,812,058.044	0.000	725,851,368.989	0.000	0.000
2002	1	1,116,916,093.973	35,300,594.782	302,211,164.461	0.000	762,549,605.580	16,854,729.149	0.000
2002	2	930,431,066.632	35,300,594.782	259,578,142.632	0.000	684,364,883.213	0.000	-48,812,553.995
2002	3	922,595,880.416	35,300,594.782	261,518,414.462	0.000	671,637,340.416	0.000	0.000
2002	4	867,108,805.242	35,300,594.782	205,032,918.485	17,425,552.744	656,217,693.302	0.000	0.000
2002	5	736,815,362.688	35,300,594.782	74,975,054.591	37,148,772.767	641,536,303.399	0.000	0.000
2002	6	785,731,204.645	35,300,594.782	28,501,753.661	91,675,623.189	660,988,537.523	0.000	0.000
2002	7	1,116,077,188.274	35,300,594.782	0.000	425,949,250.181	629,826,714.811	0.000	0.000
2002	8	1,154,301,747.614	35,300,594.782	0.000	459,942,726.085	608,584,872.221	0.000	0.000
2002	9	1,006,566,057.784	35,300,594.782	0.000	304,058,815.600	641,632,337.139	0.000	0.000
2002	10	783,227,615.937	35,300,594.782	18,646,775.271	129,303,086.982	632,258,303.353	0.000	0.000

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	Pred	CONST	XHeat	XCool	XOther	Jan	Feb
2002	11	784,197,956.445	35,300,594.782	135,805,375.930	8,045,765.518	627,104,797.946	0.000	0.000
2002	12	1,038,963,185.527	35,300,594.782	269,571,965.551	0.000	734,090,625.195	0.000	0.000
2003	1	1,199,205,001.517	35,300,594.782	334,307,984.235	0.000	768,526,916.616	16,854,729.149	0.000
2003	2	1,096,141,487.187	35,300,594.782	415,675,135.448	0.000	679,740,890.622	0.000	-48,812,553.995
2003	3	1,023,347,515.786	35,300,594.782	357,384,367.204	0.000	676,523,023.043	0.000	0.000
2003	4	799,273,045.959	35,300,594.782	148,964,759.569	5,519,677.173	656,355,968.506	0.000	0.000
2003	5	702,213,418.343	35,300,594.782	58,790,889.619	13,351,292.787	646,916,004.006	0.000	0.000
2003	6	711,852,329.005	35,300,594.782	15,432,710.393	24,931,435.151	666,922,893.189	0.000	0.000
2003	7	943,622,194.685	35,300,594.782	809,149.609	242,137,812.510	640,374,009.284	0.000	0.000
2003	8	967,327,298.729	35,300,594.782	0.000	260,688,744.928	620,864,404.494	0.000	0.000
2003	9	979,206,837.271	35,300,594.782	53,136.695	276,213,995.516	642,064,800.017	0.000	0.000
2003	10	720,448,053.108	35,300,594.782	35,336,792.697	45,417,434.491	636,674,375.589	0.000	0.000
2003	11	726,889,237.328	35,300,594.782	89,573,053.153	1,348,421.735	622,725,745.389	0.000	0.000
2003	12	986,541,767.914	35,300,594.782	204,394,467.690	0.000	746,846,705.442	0.000	0.000
2004	1	1,186,218,324.690	35,300,594.782	308,264,608.246	0.000	781,583,615.778	16,854,729.149	0.000
2004	2	1,138,735,804.728	35,300,594.782	437,980,461.203	0.000	700,029,882.409	0.000	-48,812,553.995
2004	3	935,151,458.999	35,300,594.782	279,810,205.413	0.000	665,901,128.048	0.000	0.000
2004	4	816,074,437.531	35,300,594.782	150,163,443.281	8,055,248.090	669,423,105.449	0.000	0.000
2004	5	784,647,756.021	35,300,594.782	53,062,748.512	73,896,623.871	674,533,151.707	0.000	0.000
2004	6	827,675,854.574	35,300,594.782	5,959,927.844	138,077,300.122	679,073,336.336	0.000	0.000
2004	7	900,982,742.847	35,300,594.782	54,010.389	206,734,755.926	633,892,753.250	0.000	0.000
2004	8	916,934,880.254	35,300,594.782	0.000	207,190,115.567	623,970,615.379	0.000	0.000
2004	9	891,262,680.348	35,300,594.782	0.000	173,435,041.359	656,952,733.945	0.000	0.000
2004	10	727,368,715.829	35,300,594.782	21,210,650.544	61,479,112.361	641,659,502.593	0.000	0.000
2004	11	724,196,666.217	35,300,594.782	74,416,671.421	3,667,219.759	632,870,757.986	0.000	0.000
2004	12	1,000,501,879.946	35,300,594.782	204,675,951.023	264,607.360	760,260,726.781	0.000	0.000
2005	1	1,224,128,960.944	35,300,594.782	346,684,474.232	0.000	781,074,386.046	16,854,729.149	0.000
2005	2	1,080,238,585.147	35,300,594.782	379,427,988.676	0.000	700,085,135.355	0.000	-48,812,553.995
2005	3	1,028,209,116.378	35,300,594.782	315,626,623.069	0.000	723,142,367.771	0.000	0.000
2005	4	845,605,071.478	35,300,594.782	181,506,037.462	2,563,443.919	673,102,949.386	0.000	0.000
2005	5	705,303,289.929	35,300,594.782	65,027,956.214	15,937,719.075	641,182,382.709	0.000	0.000
2005	6	800,241,599.937	35,300,594.782	9,515,566.201	110,100,977.597	676,059,765.867	0.000	0.000
2005	7	1,046,785,280.370	35,300,594.782	0.000	351,513,627.907	634,970,429.181	0.000	0.000
2005	8	1,079,770,053.196	35,300,594.782	0.000	373,554,075.421	620,441,828.467	0.000	0.000

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	Pred	CONST	XHeat	XCool	XOther	Jan	Feb
2005	9	981,267,353.011	35,300,594.782	0.000	246,593,410.358	673,799,037.608	0.000	0.000
2005	10	788,971,405.917	35,300,594.782	12,899,044.240	118,267,764.600	654,785,146.745	0.000	0.000
2005	11	764,585,783.006	35,300,594.782	85,234,773.006	9,880,268.132	656,228,724.818	0.000	0.000
2005	12	1,058,995,110.999	35,300,594.782	290,713,810.316	0.000	732,980,705.901	0.000	0.000
2006	1	1,223,393,697.642	35,300,594.782	315,569,872.564	0.000	778,615,720.641	16,854,729.149	0.000
2006	2	1,008,986,844.221	35,300,594.782	265,799,194.762	0.000	709,624,184.570	0.000	-48,812,553.995
2006	3	985,459,669.025	35,300,594.782	297,027,112.007	0.000	666,154,427.709	0.000	0.000
2006	4	847,155,192.707	35,300,594.782	171,777,768.617	1,414,927.470	652,691,852.137	0.000	0.000
2006	5	716,174,799.045	35,300,594.782	40,803,141.795	2,545,324.658	656,833,096.889	0.000	0.000
2006	6	834,282,501.957	35,300,594.782	21,126,456.566	99,219,057.073	676,533,694.274	0.000	0.000
2006	7	965,623,593.667	35,300,594.782	0.000	211,482,020.645	661,002,345.968	0.000	0.000
2006	8	1,082,810,468.326	35,300,594.782	0.000	346,345,691.047	617,852,624.199	0.000	0.000
2006	9	888,831,872.562	35,300,594.782	853,484.119	147,682,901.915	646,582,577.712	0.000	0.000
2006	10	738,317,121.977	35,300,594.782	29,953,860.612	16,777,689.093	655,728,118.169	0.000	0.000
2006	11	837,822,696.324	35,300,594.782	136,746,094.885	646,235.614	654,350,345.002	0.000	0.000
2006	12	996,932,023.160	35,300,594.782	199,648,321.269	0.000	729,145,103.337	0.000	0.000
2007	1	1,147,952,838.266	35,300,594.782	233,631,771.004	0.000	785,112,962.825	16,854,729.149	0.000
2007	2	1,139,034,975.885	35,300,594.782	409,891,500.482	0.000	695,580,010.515	0.000	-48,812,553.995
2007	3	1,059,843,630.355	35,300,594.782	368,760,286.084	389,109.822	668,416,105.138	0.000	0.000
2007	4	865,761,984.344	35,300,594.782	147,861,192.016	10,285,027.993	686,345,119.851	0.000	0.000
2007	5	746,682,928.215	35,300,594.782	57,256,021.455	25,133,367.733	648,300,303.325	0.000	0.000
2007	6	870,441,226.970	35,300,594.782	3,537,190.228	160,292,472.800	669,208,269.897	0.000	0.000
2007	7	1,010,735,677.006	35,300,594.782	0.000	271,910,720.457	645,685,729.495	0.000	0.000
2007	8	1,014,969,222.624	35,300,594.782	0.000	288,413,594.462	607,943,475.081	0.000	0.000
2007	9	1,014,418,219.621	35,300,594.782	737,195.721	247,864,963.014	672,103,152.071	0.000	0.000
2007	10	800,252,755.799	35,300,594.782	7,566,224.446	131,711,709.335	625,117,367.915	0.000	0.000
2007	11	817,287,811.445	35,300,594.782	81,847,675.928	26,782,528.581	662,577,586.113	0.000	0.000
2007	12	1,080,581,468.969	35,300,594.782	258,242,411.557	0.000	754,200,458.858	0.000	0.000
2008	1	1,241,576,573.205	35,300,594.782	324,236,083.637	0.000	788,132,385.130	16,854,729.149	0.000
2008	2	1,131,372,709.743	35,300,594.782	398,726,505.279	0.000	699,082,739.576	0.000	-48,812,553.995
2008	3	1,056,175,163.393	35,300,594.782	364,616,455.452	0.000	669,280,578.630	0.000	0.000
2008	4	893,367,732.739	35,300,594.782	203,211,791.735	252,897.734	668,632,398.787	0.000	0.000
2008	5	737,851,482.847	35,300,594.782	61,150,053.756	6,468,595.836	654,239,597.551	0.000	0.000
2008	6	825,098,400.527	35,300,594.782	17,881,899.020	104,166,388.690	665,646,818.773	0.000	0.000

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	Pred	CONST	XHeat	XCool	XOther	Jan	Feb
2008	7	961,315,054.178	35,300,594.782	6,849.900	215,639,320.719	652,529,656.505	0.000	0.000
2008	8	1,026,720,949.061	35,300,594.782	0.000	270,298,167.655	637,810,628.326	0.000	0.000
2008	9	908,910,378.455	35,300,594.782	0.000	172,548,858.730	642,648,610.908	0.000	0.000
2008	10	746,637,225.952	35,300,594.782	13,626,946.958	52,932,293.183	644,220,531.708	0.000	0.000
2008	11	818,763,233.548	35,300,594.782	104,431,432.029	5,777,081.389	662,474,699.308	0.000	0.000
2008	12	1,100,731,644.943	35,300,594.782	304,310,988.673	0.000	728,282,057.716	0.000	0.000
2009	1	1,307,532,995.693	35,300,594.782	400,739,094.487	0.000	777,585,796.768	16,854,729.149	0.000
2009	2	1,196,183,036.028	35,300,594.782	458,046,832.881	0.000	704,572,738.259	0.000	-48,812,553.995
2009	3	981,894,049.170	35,300,594.782	293,909,299.391	0.000	665,706,620.469	0.000	0.000
2009	4	856,463,636.386	35,300,594.782	160,771,710.285	498,277.597	673,923,004.020	0.000	0.000
2009	5	756,315,279.273	35,300,594.782	62,218,888.281	15,621,350.101	662,481,805.188	0.000	0.000
2009	6	773,304,338.715	35,300,594.782	9,435,807.230	64,459,559.512	662,005,677.929	0.000	0.000
2009	7	920,463,841.647	35,300,594.782	6,756.759	191,118,224.029	636,199,633.805	0.000	0.000
2009	8	914,590,229.305	35,300,594.782	0.000	186,602,425.743	609,375,650.482	0.000	0.000
2009	9	878,110,835.410	35,300,594.782	0.000	129,572,034.470	654,825,892.124	0.000	0.000
2009	10	751,342,405.635	35,300,594.782	39,156,723.656	29,313,417.597	647,014,810.279	0.000	0.000
2009	11	797,937,427.151	35,300,594.782	92,546,696.626	0.000	659,310,709.703	0.000	0.000
2009	12	1,025,351,902.743	35,300,594.782	214,956,912.881	0.000	742,256,391.309	0.000	0.000
2010	1	1,279,680,975.064	35,300,594.782	380,756,869.184	0.000	769,716,001.442	16,854,729.149	0.000
2010	2	1,133,137,580.338	35,300,594.782	387,120,115.687	0.000	712,453,999.763	0.000	-48,812,553.995
2010	3	979,039,228.757	35,300,594.782	293,953,204.615	0.000	662,807,894.832	0.000	0.000
2010	4	821,473,492.689	35,300,594.782	110,687,931.372	13,848,880.076	675,666,036.758	0.000	0.000
2010	5	723,141,456.915	35,300,594.782	41,119,312.240	14,619,577.883	651,409,331.089	0.000	0.000
2010	6	861,006,376.195	35,300,594.782	8,808,427.162	145,415,702.602	669,378,952.387	0.000	0.000
2010	7	1,033,834,064.224	35,300,594.782	0.000	292,354,517.009	648,340,320.161	0.000	0.000
2010	8	1,127,417,850.271	35,300,594.782	0.000	381,168,824.810	627,636,872.381	0.000	0.000
2010	9	993,299,081.243	35,300,594.782	0.000	253,768,852.150	645,817,320.277	0.000	0.000
2010	10	751,278,298.403	35,300,594.782	15,838,140.062	59,048,721.262	640,533,982.976	0.000	0.000
2010	11	779,479,371.177	35,300,594.782	83,939,031.734	5,729,247.471	643,731,071.150	0.000	0.000
2010	12	1,065,348,130.465	35,300,594.782	255,774,371.416	0.000	741,435,160.495	0.000	0.000
2011	1	1,249,014,987.204	35,300,594.782	377,239,798.015	0.000	775,405,088.523	16,854,729.149	0.000
2011	2	1,103,770,242.709	35,300,594.782	417,283,995.760	0.000	685,760,785.832	0.000	-48,812,553.995
2011	3	930,610,086.272	35,300,594.782	290,602,099.155	0.000	650,567,861.579	0.000	0.000
2011	4	828,220,809.159	35,300,594.782	183,852,869.859	3,886,136.371	652,049,162.217	0.000	0.000

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	Pred	CONST	XHeat	XCool	XOther	Jan	Feb
2011	5	739,847,867.267	35,300,594.782	65,607,232.366	19,511,280.341	671,574,122.629	0.000	0.000
2011	6	835,461,086.725	35,300,594.782	8,658,796.537	144,623,392.006	677,613,607.910	0.000	0.000
2011	7	1,013,344,932.486	35,300,594.782	0.000	274,162,388.430	678,881,320.774	0.000	0.000
2011	8	1,119,662,164.500	35,300,594.782	0.000	404,408,965.429	629,479,049.763	0.000	0.000
2011	9	923,226,222.913	35,300,594.782	1,499,803.687	206,356,029.012	654,495,485.170	0.000	0.000
2011	10	707,592,048.615	35,300,594.782	17,416,326.748	33,269,846.188	653,886,425.348	0.000	0.000
2011	11	759,983,444.378	35,300,594.782	77,626,450.770	5,511,922.622	663,603,053.935	0.000	0.000
2011	12	943,002,645.486	35,300,594.782	179,465,275.969	0.000	728,236,774.735	0.000	0.000
2012	1	1,127,476,079.241	35,300,594.782	267,208,547.005	0.000	763,897,431.570	16,854,729.149	0.000
2012	2	993,528,573.777	35,300,594.782	301,283,139.423	0.000	691,519,973.238	0.000	-48,812,553.995
2012	3	897,810,116.718	35,300,594.782	213,226,727.301	12,449,967.463	682,693,296.416	0.000	0.000
2012	4	764,508,563.025	35,300,594.782	61,901,758.215	37,317,574.833	676,856,589.265	0.000	0.000
2012	5	729,725,742.838	35,300,594.782	51,612,197.293	25,596,432.999	669,361,880.614	0.000	0.000
2012	6	853,323,783.668	35,300,594.782	3,425,508.657	162,670,806.012	682,662,178.726	0.000	0.000
2012	7	1,150,117,478.970	35,300,594.782	306,200.156	412,350,747.688	677,159,307.844	0.000	0.000
2012	8	1,079,715,012.545	35,300,594.782	0.000	363,498,169.536	630,442,693.701	0.000	0.000
2012	9	913,846,152.827	35,300,594.782	591,420.157	187,453,358.887	664,926,468.739	0.000	0.000
2012	10	719,918,775.166	35,300,594.782	28,754,412.054	31,065,791.179	657,079,121.602	0.000	0.000
2012	11	814,216,715.751	35,300,594.782	114,374,422.267	7,238,737.575	679,361,538.858	0.000	0.000
2012	12	952,546,479.233	35,300,594.782	177,189,874.735	0.000	740,056,009.716	0.000	0.000
2013	1	1,158,544,363.077	35,300,594.782	287,318,824.486	0.000	774,855,437.926	16,854,729.149	0.000
2013	2	1,024,970,504.355	35,300,594.782	339,288,797.948	0.000	684,956,245.290	0.000	-48,812,553.995
2013	3	973,876,370.403	35,300,594.782	306,400,893.175	0.000	678,035,351.690	0.000	0.000
2013	4	901,655,031.832	35,300,594.782	220,039,784.874	0.000	693,182,606.247	0.000	0.000
2013	5	727,614,537.477	35,300,594.782	63,277,966.123	26,952,156.904	654,229,182.519	0.000	0.000
2013	6	813,789,532.416	35,300,594.782	12,124,525.963	111,680,272.034	685,419,444.148	0.000	0.000
2013	7	975,061,860.889	35,300,594.782	174,536.726	246,609,889.365	667,976,211.516	0.000	0.000
2013	8	922,335,022.549	35,300,594.782	0.000	201,371,525.942	635,189,347.300	0.000	0.000
2013	9	951,336,185.754	35,300,594.782	19,459.103	227,167,144.251	663,274,677.355	0.000	0.000
2013	10	749,391,923.535	35,300,594.782	8,465,908.020	84,439,277.814	653,467,287.371	0.000	0.000
2013	11	804,475,432.897	35,300,594.782	102,746,781.463	7,625,559.487	680,861,074.896	0.000	0.000
2013	12	1,036,650,740.623	35,300,594.782	265,088,693.385	0.000	736,261,452.456	0.000	0.000
2014	1	1,306,226,296.015	35,300,594.782	413,137,600.761	0.000	796,718,594.588	16,854,729.149	0.000
2014	2	1,171,975,626.065	35,300,594.782	484,423,868.853	0.000	686,826,296.096	0.000	-48,812,553.995

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	Pred	CONST	XHeat	XCool	XOther	Jan	Feb
2014	3	1,092,796,921.692	35,300,594.782	417,764,446.722	0.000	685,592,349.431	0.000	0.000
2014	4	883,222,882.983	35,300,594.782	225,051,337.657	721,622.963	669,017,281.652	0.000	0.000
2014	5	753,468,705.741	35,300,594.782	61,000,151.371	20,974,262.164	688,339,060.274	0.000	0.000
2014	6	825,890,619.099	35,300,594.782	13,928,201.874	135,254,895.060	672,142,231.893	0.000	0.000
2014	7	967,204,508.027	35,300,594.782	0.000	231,774,120.423	675,129,164.322	0.000	0.000
2014	8	890,809,300.188	35,300,594.782	0.000	173,613,784.453	631,421,366.427	0.000	0.000
2014	9	965,258,787.796	35,300,594.782	1,332,852.392	237,184,194.719	665,866,835.641	0.000	0.000
2014	10	716,879,647.364	35,300,594.782	19,147,288.962	35,638,708.936	659,074,199.136	0.000	0.000
2014	11	792,742,572.448	35,300,594.782	112,989,053.559	936,590.581	665,574,911.257	0.000	0.000
2014	12	1,066,529,054.232	35,300,594.782	279,150,912.906	0.000	752,077,546.544	0.000	0.000
2015	1	1,232,391,527.386	35,300,594.782	352,914,375.055	0.000	783,107,051.666	16,854,729.149	0.000
2015	2	1,116,672,532.708	35,300,594.782	423,880,965.262	0.000	692,066,106.330	0.000	-48,812,553.995
2015	3	1,103,453,144.152	35,300,594.782	442,115,040.780	0.000	671,897,977.833	0.000	0.000
2015	4	857,082,891.464	35,300,594.782	181,126,533.861	294,543.806	687,229,173.086	0.000	0.000
2015	5	711,740,611.698	35,300,594.782	55,404,414.899	27,475,512.692	664,418,141.097	0.000	0.000
2015	6	812,353,053.375	35,300,594.782	9,133,175.745	122,182,591.131	676,471,996.226	0.000	0.000
2015	7	892,677,955.958	35,300,594.782	83,968.891	169,972,081.163	662,320,682.622	0.000	0.000
2015	8	1,002,488,139.705	35,300,594.782	0.000	274,149,192.538	642,564,797.858	0.000	0.000
2015	9	931,908,920.056	35,300,594.782	91,522.857	207,312,189.332	663,630,302.824	0.000	0.000
2015	10	731,041,655.325	35,300,594.782	13,942,826.112	60,874,617.607	653,204,761.275	0.000	0.000
2015	11	694,917,315.850	35,300,594.782	69,324,383.932	1,434,621.609	655,647,219.662	0.000	0.000
2015	12	975,910,508.512	35,300,594.782	180,351,865.189	0.000	760,258,048.541	0.000	0.000
2016	1	1,116,661,082.617	35,300,594.782	282,774,616.402	0.000	795,258,036.214	16,854,729.149	0.000
2016	2	1,085,145,656.365	35,300,594.782	381,840,512.282	0.000	702,579,682.966	0.000	-48,812,553.995
2016	3	946,776,520.956	35,300,594.782	275,385,663.029	0.000	681,950,732.388	0.000	0.000
2016	4	852,327,241.022	35,300,594.782	155,080,059.476	128,251.304	708,686,289.531	0.000	0.000
2016	5	719,631,115.866	35,300,594.782	68,669,412.894	5,159,202.801	681,359,957.161	0.000	0.000
2016	6	840,022,234.837	35,300,594.782	13,699,630.723	124,265,492.951	697,491,820.891	0.000	0.000
2016	7	1,015,946,464.120	35,300,594.782	0.000	219,881,034.278	675,862,328.370	0.000	0.000
2016	8	1,112,100,673.797	35,300,594.782	0.000	324,705,229.186	650,044,126.865	0.000	0.000
2016	9	979,462,116.362	35,300,594.782	0.000	249,765,271.654	668,821,939.664	0.000	0.000
2016	10	767,108,113.655	35,300,594.782	5,725,245.421	86,989,958.986	671,373,458.917	0.000	0.000
2016	11	715,977,308.197	35,300,594.782	62,915,756.757	8,345,080.809	676,205,379.984	0.000	0.000
2016	12	1,025,684,468.309	35,300,594.782	236,677,172.787	108,278.077	753,598,422.663	0.000	0.000

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	Pred	CONST	XHeat	XCool	XOther	Jan	Feb
2017	1	1,174,728,206.517	35,300,594.782	374,312,624.401	0.000	795,487,743.503	16,854,729.149	0.000
2017	2	976,251,251.957	35,300,594.782	298,449,482.564	0.000	710,776,899.665	0.000	-48,812,553.995
2017	3	864,530,441.927	35,300,594.782	224,195,140.536	0.000	684,595,767.240	0.000	0.000
2017	4	818,175,149.036	35,300,594.782	171,344,187.225	2,240,771.406	689,858,141.082	0.000	0.000
2017	5	672,171,850.143	35,300,594.782	54,506,318.125	19,153,754.908	667,769,825.489	0.000	0.000
2017	6	782,580,681.525	35,300,594.782	12,222,749.073	90,294,958.000	709,198,275.569	0.000	0.000
2017	7	971,658,686.816	35,300,594.782	0.000	203,429,662.804	681,726,513.929	0.000	0.000
2017	8	968,812,514.581	35,300,594.782	0.000	200,302,126.704	664,859,661.519	0.000	0.000
2017	9	815,939,310.967	35,300,594.782	0.000	101,090,649.283	687,674,348.028	0.000	0.000
2017	10	759,226,525.060	35,300,594.782	2,680,671.135	115,922,174.537	671,304,820.445	0.000	0.000
2017	11	737,814,884.503	35,300,594.782	114,274,675.546	6,620,429.767	682,109,279.931	0.000	0.000
2017	12	1,001,879,576.532	35,300,594.782	239,785,872.863	0.000	760,493,700.276	0.000	0.000
2018	1	1,228,974,740.931	35,300,594.782	439,705,983.302	0.000	784,340,919.017	16,854,729.149	0.000
2018	2	1,044,280,411.938	35,300,594.782	385,486,985.284	0.000	691,768,556.926	0.000	-48,812,553.995
2018	3	918,021,740.337	35,300,594.782	287,688,985.938	0.000	674,593,220.249	0.000	0.000
2018	4	904,309,990.089	35,300,594.782	246,404,396.374	0.000	703,173,544.391	0.000	0.000
2018	5	738,226,489.332	35,300,594.782	101,603,922.486	18,699,217.771	687,181,397.453	0.000	0.000
2018	6	790,372,287.737	35,300,594.782	2,109,282.545	133,718,326.015	683,679,980.293	0.000	0.000
2018	7	1,007,777,684.768	35,300,594.782	0.000	247,388,404.528	673,886,770.156	0.000	0.000
2018	8	992,776,607.072	35,300,594.782	0.000	243,497,142.821	645,628,737.893	0.000	0.000
2018	9	930,614,270.290	35,300,594.782	0.000	232,930,297.727	670,509,658.908	0.000	0.000
2018	10	731,072,275.500	35,300,594.782	21,407,211.426	92,930,026.422	655,838,062.368	0.000	0.000
2018	11	763,157,995.272	35,300,594.782	151,133,007.053	10,027,690.765	667,186,798.195	0.000	0.000
2018	12	1,036,567,316.319	35,300,594.782	283,114,472.951	0.000	751,852,839.974	0.000	0.000
2019	1	1,059,798,910.698	35,300,594.782	287,861,883.171	0.000	767,009,188.914	16,854,729.149	0.000
2019	2	1,056,319,955.200	35,300,594.782	417,972,150.788	0.000	671,322,934.683	0.000	-48,812,553.995
2019	3	952,414,574.231	35,300,594.782	345,003,368.787	0.000	651,671,671.293	0.000	0.000
2019	4	809,445,425.387	35,300,594.782	192,720,749.200	0.000	661,992,626.864	0.000	0.000
2019	5	685,636,445.174	35,300,594.782	70,103,412.728	1,889,925.114	682,901,155.711	0.000	0.000
2019	6	706,247,038.065	35,300,594.782	14,433,770.997	42,183,114.950	678,765,453.234	0.000	0.000
2019	7	1,001,953,536.938	35,300,594.782	0.000	238,114,731.945	677,336,294.909	0.000	0.000
2019	8	993,499,889.089	35,300,594.782	0.000	262,064,634.306	627,784,528.424	0.000	0.000
2019	9	855,191,001.092	35,300,594.782	0.000	152,328,626.293	675,688,061.143	0.000	0.000
2019	10	722,651,542.625	35,300,594.782	9,630,900.643	110,305,234.256	641,818,432.442	0.000	0.000

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	Pred	CONST	XHeat	XCool	XOther	Jan	Feb
2019	11	709,484,736.350	35,300,594.782	126,568,893.505	5,217,231.091	642,888,112.494	0.000	0.000
2019	12	984,824,304.359	35,300,594.782	247,547,724.848	0.000	735,676,576.117	0.000	0.000
2020	1	1,052,729,815.513	35,300,594.782	241,478,313.357	0.000	763,023,049.855	16,854,729.149	0.000
2020	2	968,738,851.959	35,300,594.782	293,510,618.141	0.000	664,902,750.401	0.000	-48,812,553.995
2020	3	922,966,580.120	35,300,594.782	266,395,055.781	0.000	657,531,376.500	0.000	0.000
2020	4	816,565,386.201	35,300,594.782	146,677,195.099	649,615.961	671,205,912.129	0.000	0.000
2020	5	733,953,052.180	35,300,594.782	96,152,485.258	4,624,700.603	659,133,301.009	0.000	0.000
2020	6	828,353,988.614	35,300,594.782	15,757,326.821	130,703,577.491	667,727,771.729	0.000	0.000
2020	7	1,084,948,092.237	35,300,594.782	0.000	302,197,694.422	652,947,274.043	0.000	0.000
2020	8	1,084,171,619.440	35,300,594.782	0.000	293,570,821.571	643,649,457.822	0.000	0.000
2020	9	927,773,887.349	35,300,594.782	419,478.981	217,975,351.111	638,904,129.914	0.000	0.000
2020	10	696,894,523.386	35,300,594.782	17,200,888.515	28,967,242.376	646,528,803.522	0.000	0.000
2020	11	716,706,226.326	35,300,594.782	88,020,071.801	2,113,258.136	648,461,783.441	0.000	0.000
2020	12	951,439,574.704	35,300,594.782	186,289,518.212	1,125,189.811	719,124,249.599	0.000	0.000
2021	1	1,076,830,356.992	35,300,594.782	287,439,632.485	0.000	741,162,272.206	16,854,729.149	0.000
2021	2	1,043,605,522.580	35,300,594.782	362,186,890.097	0.000	671,093,149.066	0.000	-48,812,553.995
2021	3	941,874,645.792	35,300,594.782	289,691,001.633	481,041.376	652,662,454.944	0.000	0.000
2021	4	829,842,832.607	35,300,594.782	167,667,769.214	3,728,648.492	660,413,751.889	0.000	0.000
2021	5	705,587,571.143	35,300,594.782	60,386,279.816	18,515,435.531	652,643,290.486	0.000	0.000
2021	6	792,078,977.260	35,300,594.782	11,043,448.849	97,021,840.819	669,848,375.020	0.000	0.000
2021	7	1,017,470,279.818	35,300,594.782	293,309.427	231,669,266.285	655,704,580.335	0.000	0.000
2021	8	1,029,082,785.618	35,300,594.782	0.000	254,881,577.673	627,249,867.898	0.000	0.000
2021	9	905,659,937.466	35,300,594.782	378,605.990	183,658,343.075	651,148,061.057	0.000	0.000
2021	10	715,430,474.109	35,300,594.782	18,493,274.260	56,175,776.128	636,563,834.749	0.000	0.000
2021	11	720,192,241.901	35,300,594.782	96,549,520.256	4,851,693.179	640,679,915.518	0.000	0.000
2021	12	980,466,645.649	35,300,594.782	220,417,425.239	54,152.022	715,094,451.306	0.000	0.000
2022	1	1,109,435,822.534	35,300,594.782	317,924,695.426	0.000	743,282,674.807	16,854,729.149	0.000
2022	2	1,038,508,424.302	35,300,594.782	359,123,442.178	0.000	669,059,498.707	0.000	-48,812,553.995
2022	3	937,227,092.491	35,300,594.782	287,151,711.179	477,936.554	650,557,296.919	0.000	0.000
2022	4	823,736,436.067	35,300,594.782	165,764,478.332	3,694,661.689	656,244,633.034	0.000	0.000
2022	5	700,514,690.150	35,300,594.782	59,690,015.856	18,342,806.132	648,439,302.852	0.000	0.000
2022	6	786,650,273.967	35,300,594.782	10,915,041.780	96,105,028.315	665,464,891.300	0.000	0.000
2022	7	1,011,063,460.632	35,300,594.782	289,934.454	229,496,520.154	651,473,882.252	0.000	0.000
2022	8	1,022,621,639.945	35,300,594.782	0.000	252,502,356.812	623,167,943.087	0.000	0.000

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	Pred	CONST	XHeat	XCool	XOther	Jan	Feb
2022	9	899,747,930.103	35,300,594.782	374,358.390	181,984,673.500	646,913,970.869	0.000	0.000
2022	10	710,585,046.893	35,300,594.782	18,292,100.337	55,681,572.730	632,413,784.854	0.000	0.000
2022	11	715,011,212.904	35,300,594.782	95,540,978.005	4,810,979.378	636,548,142.573	0.000	0.000
2022	12	973,740,830.962	35,300,594.782	218,228,262.159	53,723.808	710,558,227.913	0.000	0.000
2023	1	1,107,803,648.954	35,300,594.782	317,166,273.995	0.000	742,408,922.657	16,854,729.149	0.000
2023	2	1,037,329,677.098	35,300,594.782	358,487,313.562	0.000	668,516,880.120	0.000	-48,812,553.995
2023	3	936,592,950.114	35,300,594.782	286,815,682.920	473,844.461	650,263,274.894	0.000	0.000
2023	4	823,570,123.327	35,300,594.782	165,665,338.825	3,665,006.967	656,207,114.524	0.000	0.000
2023	5	700,566,910.066	35,300,594.782	59,690,691.655	18,205,627.885	648,628,025.217	0.000	0.000
2023	6	786,350,796.638	35,300,594.782	10,920,900.733	95,431,840.424	665,832,742.908	0.000	0.000
2023	7	1,010,108,643.576	35,300,594.782	290,224.240	227,981,288.496	652,034,007.069	0.000	0.000
2023	8	1,021,664,882.992	35,300,594.782	0.000	250,901,717.233	623,811,825.712	0.000	0.000
2023	9	899,405,896.697	35,300,594.782	374,928.926	180,864,574.603	647,691,465.824	0.000	0.000
2023	10	711,074,811.130	35,300,594.782	18,324,121.654	55,348,200.606	633,204,899.897	0.000	0.000
2023	11	715,980,186.988	35,300,594.782	95,721,142.645	4,782,565.243	637,365,366.152	0.000	0.000
2023	12	975,031,226.812	35,300,594.782	218,649,776.818	53,406.697	711,427,426.215	0.000	0.000
2024	1	1,104,411,484.869	35,300,594.782	315,640,066.513	0.000	740,542,966.055	16,854,729.149	0.000
2024	2	1,033,789,842.465	35,300,594.782	356,685,198.741	0.000	666,779,160.308	0.000	-48,812,553.995
2024	3	933,360,556.007	35,300,594.782	285,319,483.523	470,678.785	648,530,245.860	0.000	0.000
2024	4	820,866,765.899	35,300,594.782	164,761,235.159	3,639,715.003	654,433,152.725	0.000	0.000
2024	5	698,290,774.746	35,300,594.782	59,353,652.775	18,076,583.253	646,817,973.408	0.000	0.000
2024	6	783,688,823.041	35,300,594.782	10,857,855.900	94,742,995.902	663,922,658.667	0.000	0.000
2024	7	1,006,599,902.980	35,300,594.782	288,520.896	226,312,945.415	650,195,312.897	0.000	0.000
2024	8	1,018,068,292.973	35,300,594.782	0.000	249,056,265.085	622,060,687.842	0.000	0.000
2024	9	896,241,276.291	35,300,594.782	372,721.220	179,532,533.840	645,861,093.887	0.000	0.000
2024	10	708,694,086.642	35,300,594.782	18,215,941.255	54,939,567.573	631,340,988.842	0.000	0.000
2024	11	713,468,928.656	35,300,594.782	95,159,412.614	4,747,380.731	635,451,022.363	0.000	0.000
2024	12	971,513,103.967	35,300,594.782	217,366,527.147	53,014.117	709,192,945.621	0.000	0.000
2025	1	1,100,770,691.717	35,300,594.782	313,915,233.179	0.000	738,627,006.236	16,854,729.149	0.000
2025	2	1,030,249,138.623	35,300,594.782	354,786,679.059	0.000	665,136,976.147	0.000	-48,812,553.995
2025	3	930,326,057.181	35,300,594.782	283,824,358.418	467,690.049	646,993,860.875	0.000	0.000
2025	4	818,585,006.426	35,300,594.782	163,924,968.414	3,617,059.356	653,010,315.645	0.000	0.000
2025	5	696,520,890.083	35,300,594.782	59,056,938.674	17,965,235.698	645,456,150.402	0.000	0.000
2025	6	781,697,059.854	35,300,594.782	10,804,749.840	94,167,745.460	662,559,251.982	0.000	0.000

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	Pred	CONST	XHeat	XCool	XOther	Jan	Feb
2025	7	1,004,034,929.045	35,300,594.782	287,146.989	224,962,261.134	648,982,397.150	0.000	0.000
2025	8	1,015,466,507.910	35,300,594.782	0.000	247,578,137.848	620,937,030.016	0.000	0.000
2025	9	894,016,571.017	35,300,594.782	370,970.283	178,472,324.578	644,698,348.811	0.000	0.000
2025	10	707,090,866.674	35,300,594.782	18,130,700.802	54,615,810.106	630,146,766.794	0.000	0.000
2025	11	711,748,339.447	35,300,594.782	94,715,040.087	4,719,430.019	634,202,756.393	0.000	0.000
2025	12	969,099,199.411	35,300,594.782	216,383,124.277	52,707.396	707,762,750.657	0.000	0.000
2026	1	1,097,541,629.564	35,300,594.782	312,338,072.738	0.000	736,975,104.524	16,854,729.149	0.000
2026	2	1,027,026,960.115	35,300,594.782	353,009,734.177	0.000	663,691,742.522	0.000	-48,812,553.995
2026	3	927,558,176.324	35,300,594.782	282,413,920.840	465,062.877	645,639,044.768	0.000	0.000
2026	4	816,478,918.975	35,300,594.782	163,116,501.954	3,596,830.295	651,732,923.715	0.000	0.000
2026	5	694,901,433.246	35,300,594.782	58,767,402.960	17,865,121.070	644,226,343.905	0.000	0.000
2026	6	779,851,700.082	35,300,594.782	10,751,440.067	93,641,795.592	661,293,151.850	0.000	0.000
2026	7	1,001,620,973.597	35,300,594.782	285,728.498	223,706,231.171	647,825,890.156	0.000	0.000
2026	8	1,013,036,090.480	35,300,594.782	0.000	246,207,018.256	619,877,732.177	0.000	0.000
2026	9	891,949,846.086	35,300,594.782	369,176.066	177,493,583.968	643,612,158.708	0.000	0.000
2026	10	705,622,103.819	35,300,594.782	18,044,725.699	54,320,818.314	629,058,970.833	0.000	0.000
2026	11	710,180,523.359	35,300,594.782	94,275,869.583	4,694,355.922	633,099,184.906	0.000	0.000
2026	12	966,822,326.003	35,300,594.782	215,399,678.076	52,431.368	706,469,599.477	0.000	0.000
2027	1	1,094,431,946.683	35,300,594.782	310,532,382.014	0.000	735,671,112.368	16,854,729.149	0.000
2027	2	1,023,879,478.268	35,300,594.782	350,982,752.782	0.000	662,571,242.070	0.000	-48,812,553.995
2027	3	924,931,526.051	35,300,594.782	280,814,935.927	462,680.472	644,613,761.813	0.000	0.000
2027	4	814,582,928.919	35,300,594.782	162,194,187.296	3,578,493.959	650,777,584.652	0.000	0.000
2027	5	693,597,469.525	35,300,594.782	58,440,461.073	17,775,449.332	643,338,993.811	0.000	0.000
2027	6	778,451,030.213	35,300,594.782	10,692,529.245	93,178,539.938	660,414,648.459	0.000	0.000
2027	7	999,743,633.966	35,300,594.782	284,164.157	222,603,660.204	647,052,685.834	0.000	0.000
2027	8	1,011,139,908.757	35,300,594.782	0.000	245,002,987.029	619,185,581.681	0.000	0.000
2027	9	890,425,819.354	35,300,594.782	367,226.733	176,644,696.254	642,938,969.022	0.000	0.000
2027	10	704,558,305.345	35,300,594.782	17,949,671.222	54,061,814.013	628,349,231.137	0.000	0.000
2027	11	708,916,697.886	35,300,594.782	93,782,177.240	4,672,085.663	632,351,322.035	0.000	0.000
2027	12	964,707,775.237	35,300,594.782	214,251,702.815	52,179.231	705,503,276.109	0.000	0.000
2028	1	1,092,304,822.530	35,300,594.782	309,045,524.155	0.000	735,030,846.073	16,854,729.149	0.000
2028	2	1,021,664,700.036	35,300,594.782	349,308,034.399	0.000	662,031,182.221	0.000	-48,812,553.995
2028	3	923,130,615.140	35,300,594.782	279,490,641.154	460,841.606	644,138,984.541	0.000	0.000
2028	4	813,374,998.376	35,300,594.782	161,425,204.842	3,564,172.977	650,352,957.546	0.000	0.000

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	Pred	CONST	XHeat	XCool	XOther	Jan	Feb
2028	5	692,800,537.554	35,300,594.782	58,157,001.016	17,703,116.912	642,897,854.317	0.000	0.000
2028	6	777,688,828.143	35,300,594.782	10,643,622.609	92,818,415.344	660,061,477.616	0.000	0.000
2028	7	998,702,644.841	35,300,594.782	282,916.973	221,771,831.307	646,844,772.789	0.000	0.000
2028	8	1,010,131,082.852	35,300,594.782	0.000	244,114,261.340	619,065,481.466	0.000	0.000
2028	9	889,674,448.450	35,300,594.782	365,687.525	176,009,534.793	642,824,298.787	0.000	0.000
2028	10	704,147,862.663	35,300,594.782	17,875,806.079	53,869,894.421	628,204,573.191	0.000	0.000
2028	11	708,354,204.892	35,300,594.782	93,401,898.035	4,655,692.388	632,185,501.522	0.000	0.000
2028	12	963,649,561.092	35,300,594.782	213,413,140.471	52,001.609	705,283,801.930	0.000	0.000
2029	1	1,091,037,583.710	35,300,594.782	307,884,066.530	0.000	734,925,064.879	16,854,729.149	0.000
2029	2	1,020,380,627.120	35,300,594.782	348,041,579.393	0.000	662,013,564.310	0.000	-48,812,553.995
2029	3	922,207,481.261	35,300,594.782	278,512,816.448	459,501.907	644,195,015.067	0.000	0.000
2029	4	813,034,796.811	35,300,594.782	160,895,807.778	3,554,391.812	650,551,934.210	0.000	0.000
2029	5	692,855,467.019	35,300,594.782	57,978,925.961	17,657,060.596	643,176,915.152	0.000	0.000
2029	6	777,613,315.600	35,300,594.782	10,609,500.340	92,565,714.909	660,272,787.777	0.000	0.000
2029	7	998,342,680.252	35,300,594.782	281,996.296	221,159,463.438	647,098,096.746	0.000	0.000
2029	8	1,009,704,927.387	35,300,594.782	0.000	243,434,066.243	619,319,521.097	0.000	0.000
2029	9	889,439,331.272	35,300,594.782	364,479.230	175,518,014.288	643,081,910.409	0.000	0.000
2029	10	704,185,934.825	35,300,594.782	17,818,763.442	53,723,909.553	628,445,672.858	0.000	0.000
2029	11	708,263,997.617	35,300,594.782	93,107,358.363	4,643,193.682	632,402,332.625	0.000	0.000
2029	12	963,100,656.990	35,300,594.782	212,730,638.080	51,860.077	705,417,541.751	0.000	0.000
2030	1	1,088,720,473.440	35,300,594.782	306,938,829.980	0.000	733,553,191.158	16,854,729.149	0.000
2030	2	1,018,152,153.036	35,300,594.782	346,975,061.757	0.000	660,851,607.863	0.000	-48,812,553.995
2030	3	920,339,739.176	35,300,594.782	277,676,895.907	458,523.053	643,164,172.378	0.000	0.000
2030	4	811,664,744.922	35,300,594.782	160,426,093.078	3,547,023.975	649,658,964.857	0.000	0.000
2030	5	691,947,821.082	35,300,594.782	57,818,576.408	17,622,411.441	642,464,267.924	0.000	0.000
2030	6	776,855,422.885	35,300,594.782	10,581,654.519	92,394,272.938	659,714,182.856	0.000	0.000
2030	7	997,568,543.578	35,300,594.782	281,302.766	220,777,975.108	646,706,141.932	0.000	0.000
2030	8	1,008,990,484.185	35,300,594.782	0.000	243,047,594.690	618,991,549.448	0.000	0.000
2030	9	888,861,202.399	35,300,594.782	363,739.879	175,269,401.395	642,753,133.780	0.000	0.000
2030	10	703,671,497.194	35,300,594.782	17,785,291.683	53,653,883.713	628,034,732.826	0.000	0.000
2030	11	707,589,636.620	35,300,594.782	92,943,495.724	4,637,558.485	631,897,469.464	0.000	0.000
2030	12	962,178,405.908	35,300,594.782	212,404,029.435	51,805.884	704,821,953.506	0.000	0.000
2031	1	1,089,202,094.092	35,300,594.782	306,854,334.315	0.000	734,119,307.476	16,854,729.149	0.000
2031	2	1,018,616,174.163	35,300,594.782	346,876,455.244	0.000	661,414,235.502	0.000	-48,812,553.995

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	Pred	CONST	XHeat	XCool	XOther	Jan	Feb
2031	3	920,860,624.994	35,300,594.782	277,594,950.025	458,752.190	643,766,774.940	0.000	0.000
2031	4	812,310,438.625	35,300,594.782	160,375,520.893	3,548,770.160	650,353,484.560	0.000	0.000
2031	5	692,692,740.512	35,300,594.782	57,798,896.661	17,630,899.763	643,220,378.777	0.000	0.000
2031	6	777,738,627.139	35,300,594.782	10,577,788.787	92,438,070.633	660,557,455.147	0.000	0.000
2031	7	998,563,044.885	35,300,594.782	281,192.917	220,881,116.594	647,597,611.602	0.000	0.000
2031	8	1,009,942,578.294	35,300,594.782	0.000	243,159,569.798	619,831,668.449	0.000	0.000
2031	9	889,748,829.898	35,300,594.782	363,566.277	175,343,925.162	643,566,411.115	0.000	0.000
2031	10	704,346,710.988	35,300,594.782	17,775,612.408	53,674,456.513	628,699,053.095	0.000	0.000
2031	11	708,096,517.759	35,300,594.782	92,889,757.221	4,639,249.782	632,456,397.809	0.000	0.000
2031	12	962,586,702.229	35,300,594.782	212,285,132.625	51,825.812	705,349,126.709	0.000	0.000
2032	1	1,089,937,733.111	35,300,594.782	306,504,876.935	0.000	735,204,403.875	16,854,729.149	0.000
2032	2	1,019,229,731.575	35,300,594.782	346,478,033.374	0.000	662,426,214.784	0.000	-48,812,553.995
2032	3	921,556,822.232	35,300,594.782	277,272,941.488	458,986.331	644,784,746.574	0.000	0.000
2032	4	813,211,074.367	35,300,594.782	160,186,429.045	3,550,530.993	651,441,451.317	0.000	0.000
2032	5	693,740,957.870	35,300,594.782	57,729,514.646	17,639,358.209	644,329,519.705	0.000	0.000
2032	6	778,931,015.335	35,300,594.782	10,564,860.912	92,480,852.156	661,719,989.695	0.000	0.000
2032	7	999,847,881.584	35,300,594.782	280,842.873	220,979,348.360	648,784,566.579	0.000	0.000
2032	8	1,011,174,216.912	35,300,594.782	0.000	243,263,016.859	620,959,860.006	0.000	0.000
2032	9	890,963,825.367	35,300,594.782	363,098.179	175,415,839.233	644,709,960.610	0.000	0.000
2032	10	705,375,141.783	35,300,594.782	17,752,336.922	53,695,481.021	629,729,734.868	0.000	0.000
2032	11	708,940,958.820	35,300,594.782	92,766,784.694	4,641,013.934	633,422,047.244	0.000	0.000
2032	12	963,279,489.936	35,300,594.782	211,999,807.202	51,844.623	706,327,221.030	0.000	0.000
2033	1	1,091,374,940.683	35,300,594.782	306,064,337.409	0.000	737,082,150.973	16,854,729.149	0.000
2033	2	1,020,369,512.137	35,300,594.782	345,944,121.778	0.000	664,099,906.943	0.000	-48,812,553.995
2033	3	922,702,531.318	35,300,594.782	276,813,870.785	459,378.759	646,389,133.935	0.000	0.000
2033	4	814,556,254.484	35,300,594.782	159,903,167.292	3,553,270.294	653,067,153.886	0.000	0.000
2033	5	695,226,134.689	35,300,594.782	57,621,135.028	17,651,556.506	645,910,877.845	0.000	0.000
2033	6	780,547,004.304	35,300,594.782	10,543,907.563	92,537,677.401	663,300,106.769	0.000	0.000
2033	7	1,001,526,332.497	35,300,594.782	280,256.618	221,098,455.761	650,344,496.346	0.000	0.000
2033	8	1,012,764,281.436	35,300,594.782	0.000	243,376,604.414	622,436,336.976	0.000	0.000
2033	9	892,529,678.007	35,300,594.782	362,264.793	175,484,376.454	646,208,109.416	0.000	0.000
2033	10	706,736,647.756	35,300,594.782	17,709,772.235	53,712,635.739	631,116,650.809	0.000	0.000
2033	11	710,037,002.275	35,300,594.782	92,535,142.559	4,642,174.610	634,748,572.158	0.000	0.000
2033	12	964,101,821.941	35,300,594.782	211,449,492.677	51,854.058	707,699,858.124	0.000	0.000

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	Pred	CONST	XHeat	XCool	XOther	Jan	Feb
2034	1	1,092,359,144.955	35,300,594.782	305,242,723.313	0.000	738,887,969.341	16,854,729.149	0.000
2034	2	1,021,095,834.156	35,300,594.782	345,015,956.030	0.000	665,754,394.710	0.000	-48,812,553.995
2034	3	923,595,412.729	35,300,594.782	276,071,347.753	459,760.201	648,024,156.936	0.000	0.000
2034	4	815,834,132.012	35,300,594.782	159,474,382.202	3,556,238.359	654,770,848.439	0.000	0.000
2034	5	696,785,979.390	35,300,594.782	57,466,590.172	17,666,362.688	647,610,461.220	0.000	0.000
2034	6	782,333,545.959	35,300,594.782	10,515,564.658	92,615,106.239	665,037,562.490	0.000	0.000
2034	7	1,003,458,824.171	35,300,594.782	279,501.329	221,282,769.784	652,093,429.285	0.000	0.000
2034	8	1,014,653,482.245	35,300,594.782	0.000	243,577,962.502	624,124,179.696	0.000	0.000
2034	9	894,421,794.895	35,300,594.782	361,280.300	175,628,021.352	647,957,565.898	0.000	0.000
2034	10	708,390,923.895	35,300,594.782	17,661,342.656	53,755,900.268	632,776,091.999	0.000	0.000
2034	11	711,414,355.222	35,300,594.782	92,280,419.816	4,645,847.057	636,376,975.401	0.000	0.000
2034	12	965,247,768.699	35,300,594.782	210,862,636.083	51,894.099	709,432,621.435	0.000	0.000
2035	1	1,093,784,686.960	35,300,594.782	304,457,243.393	0.000	741,098,991.266	16,854,729.149	0.000
2035	2	1,022,197,328.794	35,300,594.782	344,120,716.505	0.000	667,751,128.873	0.000	-48,812,553.995
2035	3	924,815,747.441	35,300,594.782	275,348,509.576	460,420.934	649,966,669.092	0.000	0.000
2035	4	817,402,321.773	35,300,594.782	159,052,620.980	3,561,268.995	656,755,768.786	0.000	0.000
2035	5	698,603,303.972	35,300,594.782	57,312,969.781	17,690,915.555	649,556,853.326	0.000	0.000
2035	6	784,400,954.198	35,300,594.782	10,487,211.373	92,742,016.668	667,006,413.584	0.000	0.000
2035	7	1,005,715,864.708	35,300,594.782	278,741.575	221,581,912.569	654,052,086.792	0.000	0.000
2035	8	1,016,857,026.575	35,300,594.782	0.000	243,902,099.857	626,003,586.671	0.000	0.000
2035	9	896,597,926.055	35,300,594.782	360,281.227	175,858,405.326	649,904,312.158	0.000	0.000
2035	10	710,271,822.572	35,300,594.782	17,612,139.474	53,825,510.517	634,636,583.609	0.000	0.000
2035	11	713,000,455.488	35,300,594.782	92,021,503.274	4,651,787.387	638,216,051.879	0.000	0.000
2035	12	966,639,256.889	35,300,594.782	210,268,040.062	51,959.915	711,418,639.830	0.000	0.000
2036	1	1,095,459,487.080	35,300,594.782	303,727,601.675	0.000	743,503,433.104	16,854,729.149	0.000
2036	2	1,023,553,056.620	35,300,594.782	343,295,559.838	0.000	669,932,013.365	0.000	-48,812,553.995
2036	3	926,287,564.124	35,300,594.782	274,687,596.119	461,363.801	652,098,456.366	0.000	0.000
2036	4	819,215,174.121	35,300,594.782	158,670,384.395	3,568,554.534	658,943,572.181	0.000	0.000
2036	5	700,664,301.068	35,300,594.782	57,175,047.514	17,727,064.629	651,719,623.615	0.000	0.000
2036	6	786,764,385.885	35,300,594.782	10,461,926.178	92,931,176.130	669,205,971.005	0.000	0.000
2036	7	1,008,356,323.593	35,300,594.782	278,068.234	222,033,017.364	656,242,114.223	0.000	0.000
2036	8	1,019,469,915.383	35,300,594.782	0.000	244,398,984.761	628,119,590.575	0.000	0.000
2036	9	899,162,169.395	35,300,594.782	359,410.309	176,216,394.331	652,111,437.410	0.000	0.000
2036	10	712,467,866.549	35,300,594.782	17,569,523.885	53,934,991.783	636,765,761.908	0.000	0.000

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	Pred	CONST	XHeat	XCool	XOther	Jan	Feb
2036	11	714,913,437.999	35,300,594.782	91,798,960.919	4,661,257.936	640,342,106.197	0.000	0.000
2036	12	968,445,246.659	35,300,594.782	209,758,902.484	52,065.572	713,733,661.520	0.000	0.000
2037	1	1,097,420,062.847	35,300,594.782	303,057,602.029	0.000	746,134,008.517	16,854,729.149	0.000
2037	2	1,025,183,677.775	35,300,594.782	342,540,037.922	0.000	672,318,156.437	0.000	-48,812,553.995
2037	3	928,023,918.740	35,300,594.782	274,085,350.821	462,686.923	654,435,733.157	0.000	0.000
2037	4	821,275,375.806	35,300,594.782	158,324,136.587	3,578,817.941	661,339,758.266	0.000	0.000
2037	5	702,967,328.183	35,300,594.782	57,051,060.247	17,778,255.361	654,095,447.265	0.000	0.000
2037	6	789,437,660.359	35,300,594.782	10,439,361.951	93,200,448.526	671,632,537.309	0.000	0.000
2037	7	1,011,417,734.859	35,300,594.782	277,472.456	222,679,116.416	658,658,022.214	0.000	0.000
2037	8	1,022,519,376.811	35,300,594.782	0.000	245,113,203.471	630,454,833.294	0.000	0.000
2037	9	902,128,349.738	35,300,594.782	358,652.034	176,734,308.764	654,560,461.595	0.000	0.000
2037	10	714,972,142.733	35,300,594.782	17,532,780.408	54,094,410.486	639,147,362.866	0.000	0.000
2037	11	717,125,166.761	35,300,594.782	91,608,301.825	4,675,094.943	642,730,657.045	0.000	0.000
2037	12	970,644,783.599	35,300,594.782	209,327,322.030	52,221.056	716,364,623.432	0.000	0.000
2038	1	1,099,533,624.023	35,300,594.782	302,395,845.244	0.000	748,909,326.477	16,854,729.149	0.000
2038	2	1,026,966,295.754	35,300,594.782	341,797,805.768	0.000	674,843,006.569	0.000	-48,812,553.995
2038	3	929,913,190.289	35,300,594.782	273,495,903.938	463,995.804	656,913,142.708	0.000	0.000
2038	4	823,490,737.663	35,300,594.782	157,986,618.891	3,589,004.630	663,882,451.131	0.000	0.000
2038	5	705,419,651.145	35,300,594.782	56,930,223.364	17,829,081.016	656,617,781.454	0.000	0.000
2038	6	792,268,597.734	35,300,594.782	10,417,422.857	93,468,320.684	674,217,541.621	0.000	0.000
2038	7	1,014,627,107.566	35,300,594.782	276,892.765	223,321,635.165	661,225,455.865	0.000	0.000
2038	8	1,025,708,157.146	35,300,594.782	0.000	245,823,289.429	632,933,527.670	0.000	0.000
2038	9	905,230,597.119	35,300,594.782	357,910.550	177,247,695.867	657,150,063.357	0.000	0.000
2038	10	717,608,336.471	35,300,594.782	17,496,700.994	54,251,999.029	641,662,047.475	0.000	0.000
2038	11	719,472,140.125	35,300,594.782	91,420,552.179	4,688,748.096	645,251,726.903	0.000	0.000
2038	12	972,987,896.963	35,300,594.782	208,899,430.484	52,373.781	719,135,475.616	0.000	0.000
2039	1	1,101,844,878.776	35,300,594.782	301,784,152.049	0.000	751,832,274.426	16,854,729.149	0.000
2039	2	1,028,929,138.386	35,300,594.782	341,109,387.359	0.000	677,494,267.610	0.000	-48,812,553.995
2039	3	931,955,173.177	35,300,594.782	272,946,641.239	465,282.993	659,503,101.106	0.000	0.000
2039	4	825,831,156.325	35,300,594.782	157,670,534.817	3,598,979.305	666,528,979.191	0.000	0.000
2039	5	707,975,409.886	35,300,594.782	56,816,728.590	17,878,715.029	659,237,400.957	0.000	0.000
2039	6	795,184,946.920	35,300,594.782	10,396,710.700	93,728,796.681	676,894,126.967	0.000	0.000
2039	7	1,017,900,128.111	35,300,594.782	276,343.701	223,944,626.869	663,876,033.769	0.000	0.000
2039	8	1,028,942,935.030	35,300,594.782	0.000	246,509,666.504	635,481,928.479	0.000	0.000

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	Pred	CONST	XHeat	XCool	XOther	Jan	Feb
2039	9	908,380,829.805	35,300,594.782	357,205.069	177,743,416.313	659,805,281.078	0.000	0.000
2039	10	720,295,200.580	35,300,594.782	17,462,275.586	54,403,793.382	644,231,542.639	0.000	0.000
2039	11	721,874,845.612	35,300,594.782	91,241,283.018	4,701,887.465	647,820,562.181	0.000	0.000
2039	12	975,398,732.533	35,300,594.782	208,490,621.441	52,520.635	721,954,973.375	0.000	0.000
2040	1	1,103,944,569.198	35,300,594.782	301,322,206.546	0.000	754,393,910.351	16,854,729.149	0.000
2040	2	1,030,734,708.298	35,300,594.782	340,587,857.834	0.000	679,821,367.047	0.000	-48,812,553.995
2040	3	933,828,269.133	35,300,594.782	272,530,995.279	466,654.877	661,790,471.139	0.000	0.000
2040	4	827,952,219.057	35,300,594.782	157,430,679.869	3,609,590.279	668,879,285.897	0.000	0.000
2040	5	710,293,935.567	35,300,594.782	56,730,578.380	17,931,483.442	661,589,308.434	0.000	0.000
2040	6	797,881,867.778	35,300,594.782	10,380,991.198	94,005,646.160	679,329,917.847	0.000	0.000
2040	7	1,020,990,152.822	35,300,594.782	275,928.260	224,607,552.716	666,303,548.074	0.000	0.000
2040	8	1,031,998,640.182	35,300,594.782	0.000	247,239,812.337	637,807,487.798	0.000	0.000
2040	9	911,310,440.594	35,300,594.782	356,671.949	178,270,807.638	662,208,033.661	0.000	0.000
2040	10	722,735,590.070	35,300,594.782	17,436,356.997	54,565,566.264	646,536,077.836	0.000	0.000
2040	11	724,031,876.488	35,300,594.782	91,106,477.842	4,715,892.474	650,098,393.224	0.000	0.000
2040	12	977,582,000.359	35,300,594.782	208,184,548.923	52,677.461	724,444,156.893	0.000	0.000
2041	1	1,106,119,044.911	35,300,594.782	300,930,543.057	0.000	756,960,049.553	16,854,729.149	0.000
2041	2	1,032,627,566.434	35,300,594.782	340,144,032.059	0.000	682,158,050.958	0.000	-48,812,553.995
2041	3	935,769,501.810	35,300,594.782	272,174,638.069	468,060.330	664,086,655.572	0.000	0.000
2041	4	830,122,105.957	35,300,594.782	157,225,035.385	3,620,469.031	671,243,938.529	0.000	0.000
2041	5	712,637,361.656	35,300,594.782	56,656,232.793	17,985,464.769	663,953,098.784	0.000	0.000
2041	6	800,602,446.633	35,300,594.782	10,367,395.163	94,288,799.192	681,780,939.706	0.000	0.000
2041	7	1,024,107,880.531	35,300,594.782	275,566.655	225,284,088.690	668,745,101.414	0.000	0.000
2041	8	1,035,086,644.804	35,300,594.782	0.000	247,984,790.925	640,150,513.832	0.000	0.000
2041	9	914,262,677.936	35,300,594.782	356,205.011	178,808,202.092	664,623,343.488	0.000	0.000
2041	10	725,191,140.401	35,300,594.782	17,413,542.048	54,730,109.259	648,849,900.121	0.000	0.000
2041	11	726,213,255.798	35,300,594.782	90,987,542.403	4,730,129.452	652,384,470.995	0.000	0.000
2041	12	979,804,112.392	35,300,594.782	207,913,208.448	52,836.632	726,937,450.230	0.000	0.000
2042	1	1,108,286,184.333	35,300,594.782	300,529,940.882	0.000	759,527,791.150	16,854,729.149	0.000
2042	2	1,034,517,336.144	35,300,594.782	339,693,811.489	0.000	684,498,041.239	0.000	-48,812,553.995
2042	3	937,711,893.886	35,300,594.782	271,815,888.883	469,422.996	666,386,434.167	0.000	0.000
2042	4	832,291,341.933	35,300,594.782	157,018,879.224	3,631,029.756	673,608,769.942	0.000	0.000
2042	5	714,987,853.185	35,300,594.782	56,582,635.211	18,038,123.937	666,324,528.727	0.000	0.000
2042	6	803,321,047.048	35,300,594.782	10,353,971.849	94,565,141.871	684,236,620.755	0.000	0.000

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	Pred	CONST	XHeat	XCool	XOther	Jan	Feb
2042	7	1,027,221,578.269	35,300,594.782	275,212.556	225,946,271.733	671,196,970.208	0.000	0.000
2042	8	1,038,171,728.404	35,300,594.782	0.000	248,715,036.141	642,505,352.216	0.000	0.000
2042	9	917,217,199.486	35,300,594.782	355,752.530	179,335,970.821	667,050,548.791	0.000	0.000
2042	10	727,661,800.098	35,300,594.782	17,391,568.082	54,892,043.888	651,180,599.155	0.000	0.000
2042	11	728,418,990.339	35,300,594.782	90,873,541.732	4,744,161.786	654,690,173.873	0.000	0.000
2042	12	982,063,849.276	35,300,594.782	207,654,562.018	52,993.780	729,455,676.395	0.000	0.000
2043	1	1,110,787,618.354	35,300,594.782	300,303,622.203	0.000	762,255,543.850	16,854,729.149	0.000
2043	2	1,036,742,989.490	35,300,594.782	339,439,619.714	0.000	686,977,886.359	0.000	-48,812,553.995
2043	3	939,951,045.635	35,300,594.782	271,614,904.393	470,974.572	668,825,018.831	0.000	0.000
2043	4	834,694,120.141	35,300,594.782	156,903,917.072	3,643,054.685	676,114,485.373	0.000	0.000
2043	5	717,513,229.714	35,300,594.782	56,541,721.658	18,098,010.310	668,830,932.435	0.000	0.000
2043	6	806,226,766.881	35,300,594.782	10,346,594.398	94,880,023.068	686,834,836.843	0.000	0.000
2043	7	1,030,565,358.006	35,300,594.782	275,018.505	226,700,141.936	673,787,073.793	0.000	0.000
2043	8	1,041,495,606.271	35,300,594.782	0.000	249,546,794.111	644,997,472.114	0.000	0.000
2043	9	920,395,974.273	35,300,594.782	355,508.607	179,937,601.988	669,627,936.333	0.000	0.000
2043	10	730,317,963.582	35,300,594.782	17,379,806.271	55,076,674.606	653,663,893.733	0.000	0.000
2043	11	730,837,084.171	35,300,594.782	90,812,676.712	4,760,146.198	657,153,148.314	0.000	0.000
2043	12	984,625,354.068	35,300,594.782	207,517,540.768	53,172.804	732,154,023.414	0.000	0.000
2044	1	1,113,372,241.428	35,300,594.782	300,142,901.084	0.000	765,000,888.043	16,854,729.149	0.000
2044	2	1,039,058,406.513	35,300,594.782	339,259,423.343	0.000	689,473,499.753	0.000	-48,812,553.995
2044	3	942,253,345.557	35,300,594.782	271,470,080.086	472,561.437	671,270,556.196	0.000	0.000
2044	4	837,132,385.587	35,300,594.782	156,820,026.907	3,655,326.716	678,624,368.953	0.000	0.000
2044	5	720,043,438.498	35,300,594.782	56,511,115.929	18,158,866.567	671,330,890.692	0.000	0.000
2044	6	809,120,370.539	35,300,594.782	10,340,932.225	95,198,523.355	689,415,602.386	0.000	0.000
2044	7	1,033,892,722.402	35,300,594.782	274,866.882	227,460,207.828	676,354,523.920	0.000	0.000
2044	8	1,044,786,998.447	35,300,594.782	0.000	250,381,073.840	647,454,584.560	0.000	0.000
2044	9	923,514,196.032	35,300,594.782	355,304.716	180,536,819.919	672,147,144.052	0.000	0.000
2044	10	732,895,913.296	35,300,594.782	17,369,563.432	55,259,212.731	656,069,548.160	0.000	0.000
2044	11	733,165,934.466	35,300,594.782	90,757,754.478	4,775,849.681	659,521,217.359	0.000	0.000
2044	12	987,063,083.360	35,300,594.782	207,387,932.007	53,347.181	734,721,187.089	0.000	0.000
2045	1	1,115,707,264.267	35,300,594.782	299,963,435.810	0.000	767,515,376.155	16,854,729.149	0.000
2045	2	1,041,120,326.240	35,300,594.782	339,049,196.945	0.000	691,745,645.878	0.000	-48,812,553.995
2045	3	944,297,933.237	35,300,594.782	271,295,750.142	474,062.595	673,487,972.661	0.000	0.000
2045	4	839,304,355.762	35,300,594.782	156,716,174.365	3,666,867.727	680,888,650.659	0.000	0.000

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	Pred	CONST	XHeat	XCool	XOther	Jan	Feb
2045	5	722,312,292.571	35,300,594.782	56,472,681.487	18,215,890.086	673,581,155.689	0.000	0.000
2045	6	811,730,272.752	35,300,594.782	10,333,734.873	95,496,061.517	691,735,163.789	0.000	0.000
2045	7	1,036,904,143.446	35,300,594.782	274,670.633	228,167,322.782	678,659,026.259	0.000	0.000
2045	8	1,047,768,917.882	35,300,594.782	0.000	251,156,643.457	649,660,934.379	0.000	0.000
2045	9	926,334,665.838	35,300,594.782	355,043.795	181,094,889.152	674,409,805.547	0.000	0.000
2045	10	735,218,871.668	35,300,594.782	17,356,723.085	55,429,838.410	658,234,721.200	0.000	0.000
2045	11	735,248,582.240	35,300,594.782	90,690,312.867	4,790,584.356	661,656,572.070	0.000	0.000
2045	12	989,231,862.255	35,300,594.782	207,233,403.112	53,511.736	737,044,330.325	0.000	0.000
2046	1	1,117,842,205.509	35,300,594.782	299,767,653.989	0.000	769,846,099.218	16,854,729.149	0.000
2046	2	1,043,017,708.258	35,300,594.782	338,826,476.805	0.000	693,865,748.036	0.000	-48,812,553.995
2046	3	946,204,388.062	35,300,594.782	271,116,269.458	475,501.097	675,572,469.667	0.000	0.000
2046	4	841,362,582.787	35,300,594.782	156,612,567.174	3,678,006.076	683,039,346.525	0.000	0.000
2046	5	724,481,834.899	35,300,594.782	56,435,206.947	18,271,225.214	675,732,837.428	0.000	0.000
2046	6	814,243,997.541	35,300,594.782	10,326,846.161	95,786,106.458	693,965,732.350	0.000	0.000
2046	7	1,039,830,495.380	35,300,594.782	274,487.160	228,860,583.899	680,892,300.549	0.000	0.000
2046	8	1,050,675,833.078	35,300,594.782	0.000	251,919,429.948	651,805,063.083	0.000	0.000
2046	9	929,082,096.525	35,300,594.782	354,804.083	181,644,777.750	676,607,587.348	0.000	0.000
2046	10	737,472,457.770	35,300,594.782	17,344,896.454	55,597,961.197	660,332,011.146	0.000	0.000
2046	11	737,261,239.438	35,300,594.782	90,627,840.045	4,805,091.594	663,717,194.851	0.000	0.000
2046	12	991,319,946.056	35,300,594.782	207,089,205.389	53,673.555	739,276,450.030	0.000	0.000
2047	1	1,120,050,820.024	35,300,594.782	299,645,451.491	0.000	772,176,916.232	16,854,729.149	0.000
2047	2	1,044,990,901.580	35,300,594.782	338,685,512.989	0.000	695,979,905.174	0.000	-48,812,553.995
2047	3	948,162,062.562	35,300,594.782	271,000,544.220	476,972.887	677,644,397.616	0.000	0.000
2047	4	843,434,033.807	35,300,594.782	156,544,192.765	3,689,365.741	685,167,812.289	0.000	0.000
2047	5	726,638,161.423	35,300,594.782	56,410,040.326	18,327,541.280	677,858,014.507	0.000	0.000
2047	6	816,729,814.053	35,300,594.782	10,322,106.829	96,080,379.946	696,162,014.705	0.000	0.000
2047	7	1,042,731,740.099	35,300,594.782	274,359.410	229,562,867.799	683,091,389.118	0.000	0.000
2047	8	1,053,558,203.824	35,300,594.782	0.000	252,690,904.956	653,915,958.821	0.000	0.000
2047	9	931,799,501.363	35,300,594.782	354,632.791	182,200,049.355	678,769,891.872	0.000	0.000
2047	10	739,697,024.010	35,300,594.782	17,336,350.427	55,767,531.077	662,395,553.533	0.000	0.000
2047	11	739,264,072.948	35,300,594.782	90,582,576.108	4,819,728.716	665,750,655.177	0.000	0.000
2047	12	993,420,357.402	35,300,594.782	206,983,581.850	53,836.659	741,482,321.811	0.000	0.000
2048	1	1,122,235,238.825	35,300,594.782	299,562,866.252	0.000	774,443,920.271	16,854,729.149	0.000
2048	2	1,046,956,966.744	35,300,594.782	338,589,901.506	0.000	698,041,581.821	0.000	-48,812,553.995

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	Pred	CONST	XHeat	XCool	XOther	Jan	Feb
2048	3	950,112,014.151	35,300,594.782	270,922,165.368	478,399.498	679,671,301.446	0.000	0.000
2048	4	845,487,535.808	35,300,594.782	156,497,793.476	3,700,383.735	687,256,695.585	0.000	0.000
2048	5	728,765,316.851	35,300,594.782	56,392,877.510	18,382,175.918	679,947,698.113	0.000	0.000
2048	6	819,180,647.752	35,300,594.782	10,318,900.697	96,366,403.740	698,330,030.743	0.000	0.000
2048	7	1,045,584,557.507	35,300,594.782	274,271.909	230,244,842.184	685,262,319.643	0.000	0.000
2048	8	1,056,391,547.181	35,300,594.782	0.000	253,439,926.961	656,000,280.173	0.000	0.000
2048	9	934,473,564.214	35,300,594.782	354,513.990	182,739,208.328	680,904,914.552	0.000	0.000
2048	10	741,895,304.921	35,300,594.782	17,330,433.277	55,932,340.127	664,434,942.544	0.000	0.000
2048	11	741,253,186.817	35,300,594.782	90,550,981.367	4,833,947.495	667,757,145.007	0.000	0.000
2048	12	995,522,117.131	35,300,594.782	206,909,792.956	53,995.194	743,657,711.899	0.000	0.000
2049	1	1,124,683,185.095	35,300,594.782	299,623,787.322	0.000	776,830,945.472	16,854,729.149	0.000
2049	2	1,049,191,855.299	35,300,594.782	338,656,193.260	0.000	700,210,178.622	0.000	-48,812,553.995
2049	3	952,293,379.403	35,300,594.782	270,973,046.642	479,918.220	681,800,266.702	0.000	0.000
2049	4	847,714,969.226	35,300,594.782	156,526,196.740	3,712,113.385	689,443,996.089	0.000	0.000
2049	5	731,015,167.146	35,300,594.782	56,402,663.720	18,440,328.815	682,129,609.301	0.000	0.000
2049	6	821,744,089.968	35,300,594.782	10,320,627.791	96,670,838.523	700,587,311.081	0.000	0.000
2049	7	1,048,564,855.099	35,300,594.782	274,315.523	230,970,710.429	687,516,705.374	0.000	0.000
2049	8	1,059,356,977.455	35,300,594.782	0.000	254,238,265.132	658,167,372.276	0.000	0.000
2049	9	937,269,116.321	35,300,594.782	354,565.832	183,313,654.323	683,125,968.821	0.000	0.000
2049	10	744,195,658.682	35,300,594.782	17,332,811.117	56,107,766.799	666,557,491.793	0.000	0.000
2049	11	743,373,185.677	35,300,594.782	90,562,791.339	4,849,084.824	669,850,196.566	0.000	0.000
2049	12	997,824,244.266	35,300,594.782	206,935,779.083	54,164.120	745,933,683.981	0.000	0.000
2050	1	1,127,253,083.904	35,300,594.782	299,751,236.814	0.000	779,273,394.788	16,854,729.149	0.000
2050	2	1,051,549,988.515	35,300,594.782	338,797,622.303	0.000	702,426,882.795	0.000	-48,812,553.995
2050	3	954,578,543.549	35,300,594.782	271,083,716.792	481,414.024	683,973,264.894	0.000	0.000
2050	4	850,020,354.002	35,300,594.782	156,588,868.349	3,723,660.144	691,675,162.497	0.000	0.000
2050	5	733,319,638.592	35,300,594.782	56,424,801.178	18,497,575.415	684,354,696.689	0.000	0.000
2050	6	824,350,218.682	35,300,594.782	10,324,614.435	96,970,510.124	702,889,781.551	0.000	0.000
2050	7	1,051,579,971.811	35,300,594.782	274,419.788	231,685,652.820	689,816,775.431	0.000	0.000
2050	8	1,062,349,333.780	35,300,594.782	0.000	255,023,169.222	660,374,824.511	0.000	0.000
2050	9	940,099,856.145	35,300,594.782	354,694.169	183,878,364.354	685,391,870.277	0.000	0.000
2050	10	746,545,709.562	35,300,594.782	17,338,958.512	56,280,299.550	668,728,862.527	0.000	0.000
2050	11	745,562,901.061	35,300,594.782	90,594,152.236	4,863,963.392	671,993,672.486	0.000	0.000
2050	12	1,000,223,713.998	35,300,594.782	207,005,235.521	54,329.830	748,263,531.565	0.000	0.000

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	Pred	CONST	XHeat	XCool	XOther	Jan	Feb
2051	1	1,129,550,944.536	35,300,594.782	299,702,301.540	0.000	781,620,190.694	16,854,729.149	0.000
2051	2	1,053,634,303.390	35,300,594.782	338,742,713.693	0.000	704,566,106.281	0.000	-48,812,553.995
2051	3	956,638,426.087	35,300,594.782	271,038,813.754	482,860.551	686,076,603.943	0.000	0.000
2051	4	852,171,163.603	35,300,594.782	156,562,286.641	3,734,838.155	693,841,375.796	0.000	0.000
2051	5	735,530,466.277	35,300,594.782	56,414,947.254	18,553,035.348	686,519,918.365	0.000	0.000
2051	6	826,884,426.836	35,300,594.782	10,322,773.855	97,261,011.263	705,135,329.146	0.000	0.000
2051	7	1,054,522,348.998	35,300,594.782	274,369.815	232,379,103.690	692,065,751.720	0.000	0.000
2051	8	1,065,270,823.077	35,300,594.782	0.000	255,784,842.733	662,534,640.297	0.000	0.000
2051	9	942,861,935.829	35,300,594.782	354,624.752	184,426,634.235	687,605,749.498	0.000	0.000
2051	10	748,827,633.506	35,300,594.782	17,335,477.584	56,447,892.950	670,846,674.000	0.000	0.000
2051	11	747,645,223.089	35,300,594.782	90,575,397.131	4,878,422.563	674,080,290.448	0.000	0.000
2051	12	1,002,442,530.052	35,300,594.782	206,960,624.212	54,490.940	750,526,797.818	0.000	0.000
2052	1	1,131,840,672.859	35,300,594.782	299,652,928.123	0.000	783,959,292.435	16,854,729.149	0.000
2052	2	1,055,712,413.541	35,300,594.782	338,687,796.085	0.000	706,699,134.040	0.000	-48,812,553.995
2052	3	958,693,451.178	35,300,594.782	270,994,327.609	484,300.833	688,174,674.897	0.000	0.000
2052	4	854,318,022.611	35,300,594.782	156,536,196.765	3,745,972.259	696,003,190.575	0.000	0.000
2052	5	737,737,714.381	35,300,594.782	56,405,358.482	18,608,298.290	688,681,492.299	0.000	0.000
2052	6	829,414,727.158	35,300,594.782	10,320,997.456	97,550,588.564	707,377,828.565	0.000	0.000
2052	7	1,057,460,810.509	35,300,594.782	274,321.955	233,070,600.926	694,312,763.856	0.000	0.000
2052	8	1,068,189,243.557	35,300,594.782	0.000	256,544,633.654	664,693,269.856	0.000	0.000
2052	9	945,621,999.488	35,300,594.782	354,559.126	184,973,753.212	689,818,759.805	0.000	0.000
2052	10	751,109,023.040	35,300,594.782	17,332,209.091	56,615,198.216	672,964,026.760	0.000	0.000
2052	11	749,728,691.507	35,300,594.782	90,557,888.097	4,892,862.138	676,166,828.324	0.000	0.000
2052	12	1,004,664,685.404	35,300,594.782	206,919,176.645	54,651.890	752,790,239.787	0.000	0.000
2053	1	1,134,133,223.647	35,300,594.782	299,607,390.119	0.000	786,297,381.228	16,854,729.149	0.000
2053	2	1,057,792,708.730	35,300,594.782	338,636,605.509	0.000	708,830,619.804	0.000	-48,812,553.995
2053	3	960,748,738.628	35,300,594.782	270,952,288.790	485,737.653	690,270,564.347	0.000	0.000
2053	4	856,463,157.565	35,300,594.782	156,511,197.070	3,757,073.868	698,162,223.616	0.000	0.000
2053	5	739,941,563.394	35,300,594.782	56,396,045.989	18,663,371.315	690,839,580.780	0.000	0.000
2053	6	831,939,601.292	35,300,594.782	10,319,250.378	97,839,022.590	709,616,015.752	0.000	0.000
2053	7	1,060,391,648.514	35,300,594.782	274,274.314	233,759,016.145	696,555,234.283	0.000	0.000
2053	8	1,071,098,947.614	35,300,594.782	0.000	257,300,637.209	666,846,970.358	0.000	0.000
2053	9	948,372,823.117	35,300,594.782	354,492.309	185,517,853.155	692,025,550.310	0.000	0.000
2053	10	753,382,142.681	35,300,594.782	17,328,844.955	56,781,489.146	675,074,219.606	0.000	0.000

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	Pred	CONST	XHeat	XCool	XOther	Jan	Feb
2053	11	751,803,093.936	35,300,594.782	90,539,692.898	4,907,206.562	678,245,081.529	0.000	0.000
2053	12	1,006,874,122.709	35,300,594.782	206,875,720.793	54,811.690	755,042,973.144	0.000	0.000
2054	1	1,136,412,485.399	35,300,594.782	299,559,307.792	0.000	788,624,725.306	16,854,729.149	0.000
2054	2	1,059,861,669.942	35,300,594.782	338,583,022.662	0.000	710,953,163.863	0.000	-48,812,553.995
2054	3	962,794,621.679	35,300,594.782	270,908,770.061	487,165.930	692,358,537.850	0.000	0.000
2054	4	858,600,639.081	35,300,594.782	156,485,612.149	3,768,114.100	700,314,249.821	0.000	0.000
2054	5	742,138,886.593	35,300,594.782	56,386,621.812	18,718,163.243	692,991,536.228	0.000	0.000
2054	6	834,457,650.670	35,300,594.782	10,317,501.178	98,126,110.126	711,848,726.793	0.000	0.000
2054	7	1,063,315,369.535	35,300,594.782	274,227.100	234,444,516.178	698,793,502.485	0.000	0.000
2054	8	1,074,002,548.707	35,300,594.782	0.000	258,053,753.035	668,997,455.625	0.000	0.000
2054	9	951,118,912.600	35,300,594.782	354,427.302	186,060,114.303	694,229,443.650	0.000	0.000
2054	10	755,652,535.846	35,300,594.782	17,325,600.840	56,947,292.001	677,182,054.032	0.000	0.000
2054	11	753,876,337.510	35,300,594.782	90,522,283.826	4,921,515.025	680,321,425.710	0.000	0.000
2054	12	1,009,083,991.415	35,300,594.782	206,834,442.079	54,971.161	757,293,961.092	0.000	0.000
2055	1	1,138,695,154.718	35,300,594.782	299,515,216.742	0.000	790,951,485.674	16,854,729.149	0.000
2055	2	1,061,936,901.402	35,300,594.782	338,534,927.173	0.000	713,076,490.812	0.000	-48,812,553.995
2055	3	964,847,917.907	35,300,594.782	270,870,512.768	488,594.654	694,448,662.647	0.000	0.000
2055	4	860,745,380.965	35,300,594.782	156,463,579.242	3,779,166.860	702,469,971.851	0.000	0.000
2055	5	744,342,725.916	35,300,594.782	56,378,658.187	18,773,061.297	695,148,441.123	0.000	0.000
2055	6	836,983,149.195	35,300,594.782	10,316,052.002	98,413,983.074	714,087,801.547	0.000	0.000
2055	7	1,066,249,279.467	35,300,594.782	274,188.730	235,132,439.341	701,039,527.625	0.000	0.000
2055	8	1,076,918,128.217	35,300,594.782	0.000	258,810,134.648	671,156,653.522	0.000	0.000
2055	9	953,878,112.405	35,300,594.782	354,376.041	186,605,185.998	696,443,623.022	0.000	0.000
2055	10	757,935,940.154	35,300,594.782	17,323,087.364	57,114,096.628	679,301,167.190	0.000	0.000
2055	11	755,966,354.231	35,300,594.782	90,508,985.678	4,935,921.730	682,410,333.875	0.000	0.000
2055	12	1,011,319,218.337	35,300,594.782	206,803,240.808	55,131.862	759,560,228.585	0.000	0.000
2056	1	1,141,009,905.510	35,300,594.782	299,486,299.310	0.000	793,295,153.899	16,854,729.149	0.000
2056	2	1,064,046,107.814	35,300,594.782	338,504,676.066	0.000	715,215,948.332	0.000	-48,812,553.995
2056	3	966,932,756.091	35,300,594.782	270,847,150.014	490,036.755	696,555,421.483	0.000	0.000
2056	4	862,917,060.433	35,300,594.782	156,450,527.076	3,790,329.816	704,643,540.530	0.000	0.000
2056	5	746,569,067.305	35,300,594.782	56,374,067.686	18,828,540.409	697,323,893.901	0.000	0.000
2056	6	839,532,426.727	35,300,594.782	10,315,245.188	98,705,080.244	716,346,788.723	0.000	0.000
2056	7	1,069,211,875.282	35,300,594.782	274,168.098	235,828,489.310	703,306,094.103	0.000	0.000
2056	8	1,079,863,723.895	35,300,594.782	0.000	259,575,918.959	673,336,464.889	0.000	0.000

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	Pred	CONST	XHeat	XCool	XOther	Jan	Feb
2056	9	956,666,990.815	35,300,594.782	354,349.458	187,157,385.549	698,680,328.463	0.000	0.000
2056	10	760,245,944.278	35,300,594.782	17,321,824.667	57,283,191.025	681,443,339.614	0.000	0.000
2056	11	758,087,596.177	35,300,594.782	90,502,445.834	4,950,535.284	684,523,502.112	0.000	0.000
2056	12	1,013,598,584.432	35,300,594.782	206,788,005.987	55,294.975	761,854,666.387	0.000	0.000
2057	1	1,143,376,613.319	35,300,594.782	299,480,224.918	0.000	795,667,936.099	16,854,729.149	0.000
2057	2	1,066,207,040.825	35,300,594.782	338,500,098.917	0.000	717,381,458.491	0.000	-48,812,553.995
2057	3	969,063,179.754	35,300,594.782	270,844,207.436	491,499.862	698,687,324.617	0.000	0.000
2057	4	865,125,832.612	35,300,594.782	156,449,196.883	3,801,654.023	706,842,318.694	0.000	0.000
2057	5	748,825,038.273	35,300,594.782	56,373,674.763	18,884,814.416	699,523,983.785	0.000	0.000
2057	6	842,111,555.269	35,300,594.782	10,315,201.770	99,000,314.540	718,630,726.386	0.000	0.000
2057	7	1,072,208,602.319	35,300,594.782	274,167.635	236,534,354.332	705,596,956.581	0.000	0.000
2057	8	1,082,843,171.384	35,300,594.782	0.000	260,352,421.182	675,539,410.155	0.000	0.000
2057	9	959,487,583.684	35,300,594.782	354,348.619	187,717,254.020	700,941,053.700	0.000	0.000
2057	10	762,582,884.759	35,300,594.782	17,321,812.063	57,454,613.275	683,608,870.449	0.000	0.000
2057	11	760,238,945.771	35,300,594.782	90,502,396.372	4,965,348.423	686,660,088.028	0.000	0.000
2057	12	1,015,918,584.320	35,300,594.782	206,787,509.114	55,460.300	764,174,997.823	0.000	0.000

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	Mar	Apr	May	Jun	Jul	Aug	Sep
2000	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2000	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2000	3	-45,860,469.243	0.000	0.000	0.000	0.000	0.000	0.000
2000	4	0.000	-46,867,954.071	0.000	0.000	0.000	0.000	0.000
2000	5	0.000	0.000	-52,145,362.851	0.000	0.000	0.000	0.000
2000	6	0.000	0.000	0.000	-30,735,304.510	0.000	0.000	0.000
2000	7	0.000	0.000	0.000	0.000	25,000,628.500	0.000	0.000
2000	8	0.000	0.000	0.000	0.000	0.000	50,473,554.526	0.000
2000	9	0.000	0.000	0.000	0.000	0.000	0.000	25,574,310.262
2000	10	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2000	11	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2000	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2001	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2001	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2001	3	-45,860,469.243	0.000	0.000	0.000	0.000	0.000	0.000
2001	4	0.000	-46,867,954.071	0.000	0.000	0.000	0.000	0.000
2001	5	0.000	0.000	-52,145,362.851	0.000	0.000	0.000	0.000
2001	6	0.000	0.000	0.000	-30,735,304.510	0.000	0.000	0.000
2001	7	0.000	0.000	0.000	0.000	25,000,628.500	0.000	0.000
2001	8	0.000	0.000	0.000	0.000	0.000	50,473,554.526	0.000
2001	9	0.000	0.000	0.000	0.000	0.000	0.000	25,574,310.262
2001	10	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2001	11	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2001	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2002	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2002	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2002	3	-45,860,469.243	0.000	0.000	0.000	0.000	0.000	0.000
2002	4	0.000	-46,867,954.071	0.000	0.000	0.000	0.000	0.000
2002	5	0.000	0.000	-52,145,362.851	0.000	0.000	0.000	0.000
2002	6	0.000	0.000	0.000	-30,735,304.510	0.000	0.000	0.000
2002	7	0.000	0.000	0.000	0.000	25,000,628.500	0.000	0.000
2002	8	0.000	0.000	0.000	0.000	0.000	50,473,554.526	0.000
2002	9	0.000	0.000	0.000	0.000	0.000	0.000	25,574,310.262
2002	10	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	Mar	Apr	May	Jun	Jul	Aug	Sep
2002	11	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2002	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2003	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2003	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2003	3	-45,860,469.243	0.000	0.000	0.000	0.000	0.000	0.000
2003	4	0.000	-46,867,954.071	0.000	0.000	0.000	0.000	0.000
2003	5	0.000	0.000	-52,145,362.851	0.000	0.000	0.000	0.000
2003	6	0.000	0.000	0.000	-30,735,304.510	0.000	0.000	0.000
2003	7	0.000	0.000	0.000	0.000	25,000,628.500	0.000	0.000
2003	8	0.000	0.000	0.000	0.000	0.000	50,473,554.526	0.000
2003	9	0.000	0.000	0.000	0.000	0.000	0.000	25,574,310.262
2003	10	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2003	11	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2003	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2004	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2004	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2004	3	-45,860,469.243	0.000	0.000	0.000	0.000	0.000	0.000
2004	4	0.000	-46,867,954.071	0.000	0.000	0.000	0.000	0.000
2004	5	0.000	0.000	-52,145,362.851	0.000	0.000	0.000	0.000
2004	6	0.000	0.000	0.000	-30,735,304.510	0.000	0.000	0.000
2004	7	0.000	0.000	0.000	0.000	25,000,628.500	0.000	0.000
2004	8	0.000	0.000	0.000	0.000	0.000	50,473,554.526	0.000
2004	9	0.000	0.000	0.000	0.000	0.000	0.000	25,574,310.262
2004	10	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2004	11	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2004	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2005	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2005	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2005	3	-45,860,469.243	0.000	0.000	0.000	0.000	0.000	0.000
2005	4	0.000	-46,867,954.071	0.000	0.000	0.000	0.000	0.000
2005	5	0.000	0.000	-52,145,362.851	0.000	0.000	0.000	0.000
2005	6	0.000	0.000	0.000	-30,735,304.510	0.000	0.000	0.000
2005	7	0.000	0.000	0.000	0.000	25,000,628.500	0.000	0.000
2005	8	0.000	0.000	0.000	0.000	0.000	50,473,554.526	0.000

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	Mar	Apr	May	Jun	Jul	Aug	Sep
2005	9	0.000	0.000	0.000	0.000	0.000	0.000	25,574,310.262
2005	10	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2005	11	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2005	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2006	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2006	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2006	3	-45,860,469.243	0.000	0.000	0.000	0.000	0.000	0.000
2006	4	0.000	-46,867,954.071	0.000	0.000	0.000	0.000	0.000
2006	5	0.000	0.000	-52,145,362.851	0.000	0.000	0.000	0.000
2006	6	0.000	0.000	0.000	-30,735,304.510	0.000	0.000	0.000
2006	7	0.000	0.000	0.000	0.000	25,000,628.500	0.000	0.000
2006	8	0.000	0.000	0.000	0.000	0.000	50,473,554.526	0.000
2006	9	0.000	0.000	0.000	0.000	0.000	0.000	25,574,310.262
2006	10	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2006	11	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2006	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2007	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2007	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2007	3	-45,860,469.243	0.000	0.000	0.000	0.000	0.000	0.000
2007	4	0.000	-46,867,954.071	0.000	0.000	0.000	0.000	0.000
2007	5	0.000	0.000	-52,145,362.851	0.000	0.000	0.000	0.000
2007	6	0.000	0.000	0.000	-30,735,304.510	0.000	0.000	0.000
2007	7	0.000	0.000	0.000	0.000	25,000,628.500	0.000	0.000
2007	8	0.000	0.000	0.000	0.000	0.000	50,473,554.526	0.000
2007	9	0.000	0.000	0.000	0.000	0.000	0.000	25,574,310.262
2007	10	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2007	11	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2007	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2008	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2008	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2008	3	-45,860,469.243	0.000	0.000	0.000	0.000	0.000	0.000
2008	4	0.000	-46,867,954.071	0.000	0.000	0.000	0.000	0.000
2008	5	0.000	0.000	-52,145,362.851	0.000	0.000	0.000	0.000
2008	6	0.000	0.000	0.000	-30,735,304.510	0.000	0.000	0.000

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	Mar	Apr	May	Jun	Jul	Aug	Sep
2008	7	0.000	0.000	0.000	0.000	25,000,628.500	0.000	0.000
2008	8	0.000	0.000	0.000	0.000	0.000	50,473,554.526	0.000
2008	9	0.000	0.000	0.000	0.000	0.000	0.000	25,574,310.262
2008	10	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2008	11	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2008	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2009	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2009	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2009	3	-45,860,469.243	0.000	0.000	0.000	0.000	0.000	0.000
2009	4	0.000	-46,867,954.071	0.000	0.000	0.000	0.000	0.000
2009	5	0.000	0.000	-52,145,362.851	0.000	0.000	0.000	0.000
2009	6	0.000	0.000	0.000	-30,735,304.510	0.000	0.000	0.000
2009	7	0.000	0.000	0.000	0.000	25,000,628.500	0.000	0.000
2009	8	0.000	0.000	0.000	0.000	0.000	50,473,554.526	0.000
2009	9	0.000	0.000	0.000	0.000	0.000	0.000	25,574,310.262
2009	10	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2009	11	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2009	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2010	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2010	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2010	3	-45,860,469.243	0.000	0.000	0.000	0.000	0.000	0.000
2010	4	0.000	-46,867,954.071	0.000	0.000	0.000	0.000	0.000
2010	5	0.000	0.000	-52,145,362.851	0.000	0.000	0.000	0.000
2010	6	0.000	0.000	0.000	-30,735,304.510	0.000	0.000	0.000
2010	7	0.000	0.000	0.000	0.000	25,000,628.500	0.000	0.000
2010	8	0.000	0.000	0.000	0.000	0.000	50,473,554.526	0.000
2010	9	0.000	0.000	0.000	0.000	0.000	0.000	25,574,310.262
2010	10	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2010	11	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2010	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2011	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2011	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2011	3	-45,860,469.243	0.000	0.000	0.000	0.000	0.000	0.000
2011	4	0.000	-46,867,954.071	0.000	0.000	0.000	0.000	0.000

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	Mar	Apr	May	Jun	Jul	Aug	Sep
2011	5	0.000	0.000	-52,145,362.851	0.000	0.000	0.000	0.000
2011	6	0.000	0.000	0.000	-30,735,304.510	0.000	0.000	0.000
2011	7	0.000	0.000	0.000	0.000	25,000,628.500	0.000	0.000
2011	8	0.000	0.000	0.000	0.000	0.000	50,473,554.526	0.000
2011	9	0.000	0.000	0.000	0.000	0.000	0.000	25,574,310.262
2011	10	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2011	11	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2011	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2012	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2012	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2012	3	-45,860,469.243	0.000	0.000	0.000	0.000	0.000	0.000
2012	4	0.000	-46,867,954.071	0.000	0.000	0.000	0.000	0.000
2012	5	0.000	0.000	-52,145,362.851	0.000	0.000	0.000	0.000
2012	6	0.000	0.000	0.000	-30,735,304.510	0.000	0.000	0.000
2012	7	0.000	0.000	0.000	0.000	25,000,628.500	0.000	0.000
2012	8	0.000	0.000	0.000	0.000	0.000	50,473,554.526	0.000
2012	9	0.000	0.000	0.000	0.000	0.000	0.000	25,574,310.262
2012	10	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2012	11	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2012	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2013	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2013	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2013	3	-45,860,469.243	0.000	0.000	0.000	0.000	0.000	0.000
2013	4	0.000	-46,867,954.071	0.000	0.000	0.000	0.000	0.000
2013	5	0.000	0.000	-52,145,362.851	0.000	0.000	0.000	0.000
2013	6	0.000	0.000	0.000	-30,735,304.510	0.000	0.000	0.000
2013	7	0.000	0.000	0.000	0.000	25,000,628.500	0.000	0.000
2013	8	0.000	0.000	0.000	0.000	0.000	50,473,554.526	0.000
2013	9	0.000	0.000	0.000	0.000	0.000	0.000	25,574,310.262
2013	10	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2013	11	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2013	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2014	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2014	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	Mar	Apr	May	Jun	Jul	Aug	Sep
2014	3	-45,860,469.243	0.000	0.000	0.000	0.000	0.000	0.000
2014	4	0.000	-46,867,954.071	0.000	0.000	0.000	0.000	0.000
2014	5	0.000	0.000	-52,145,362.851	0.000	0.000	0.000	0.000
2014	6	0.000	0.000	0.000	-30,735,304.510	0.000	0.000	0.000
2014	7	0.000	0.000	0.000	0.000	25,000,628.500	0.000	0.000
2014	8	0.000	0.000	0.000	0.000	0.000	50,473,554.526	0.000
2014	9	0.000	0.000	0.000	0.000	0.000	0.000	25,574,310.262
2014	10	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2014	11	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2014	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2015	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2015	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2015	3	-45,860,469.243	0.000	0.000	0.000	0.000	0.000	0.000
2015	4	0.000	-46,867,954.071	0.000	0.000	0.000	0.000	0.000
2015	5	0.000	0.000	-52,145,362.851	0.000	0.000	0.000	0.000
2015	6	0.000	0.000	0.000	-30,735,304.510	0.000	0.000	0.000
2015	7	0.000	0.000	0.000	0.000	25,000,628.500	0.000	0.000
2015	8	0.000	0.000	0.000	0.000	0.000	50,473,554.526	0.000
2015	9	0.000	0.000	0.000	0.000	0.000	0.000	25,574,310.262
2015	10	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2015	11	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2015	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2016	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2016	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2016	3	-45,860,469.243	0.000	0.000	0.000	0.000	0.000	0.000
2016	4	0.000	-46,867,954.071	0.000	0.000	0.000	0.000	0.000
2016	5	0.000	0.000	-52,145,362.851	0.000	0.000	0.000	0.000
2016	6	0.000	0.000	0.000	-30,735,304.510	0.000	0.000	0.000
2016	7	0.000	0.000	0.000	0.000	25,000,628.500	0.000	0.000
2016	8	0.000	0.000	0.000	0.000	0.000	50,473,554.526	0.000
2016	9	0.000	0.000	0.000	0.000	0.000	0.000	25,574,310.262
2016	10	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2016	11	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2016	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	Mar	Apr	May	Jun	Jul	Aug	Sep
2017	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2017	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2017	3	-45,860,469.243	0.000	0.000	0.000	0.000	0.000	0.000
2017	4	0.000	-46,867,954.071	0.000	0.000	0.000	0.000	0.000
2017	5	0.000	0.000	-52,145,362.851	0.000	0.000	0.000	0.000
2017	6	0.000	0.000	0.000	-30,735,304.510	0.000	0.000	0.000
2017	7	0.000	0.000	0.000	0.000	25,000,628.500	0.000	0.000
2017	8	0.000	0.000	0.000	0.000	0.000	50,473,554.526	0.000
2017	9	0.000	0.000	0.000	0.000	0.000	0.000	25,574,310.262
2017	10	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2017	11	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2017	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2018	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2018	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2018	3	-45,860,469.243	0.000	0.000	0.000	0.000	0.000	0.000
2018	4	0.000	-46,867,954.071	0.000	0.000	0.000	0.000	0.000
2018	5	0.000	0.000	-52,145,362.851	0.000	0.000	0.000	0.000
2018	6	0.000	0.000	0.000	-30,735,304.510	0.000	0.000	0.000
2018	7	0.000	0.000	0.000	0.000	25,000,628.500	0.000	0.000
2018	8	0.000	0.000	0.000	0.000	0.000	50,473,554.526	0.000
2018	9	0.000	0.000	0.000	0.000	0.000	0.000	25,574,310.262
2018	10	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2018	11	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2018	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2019	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2019	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2019	3	-45,860,469.243	0.000	0.000	0.000	0.000	0.000	0.000
2019	4	0.000	-46,867,954.071	0.000	0.000	0.000	0.000	0.000
2019	5	0.000	0.000	-52,145,362.851	0.000	0.000	0.000	0.000
2019	6	0.000	0.000	0.000	-30,735,304.510	0.000	0.000	0.000
2019	7	0.000	0.000	0.000	0.000	25,000,628.500	0.000	0.000
2019	8	0.000	0.000	0.000	0.000	0.000	50,473,554.526	0.000
2019	9	0.000	0.000	0.000	0.000	0.000	0.000	25,574,310.262
2019	10	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	Mar	Apr	May	Jun	Jul	Aug	Sep
2019	11	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2019	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2020	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2020	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2020	3	-45,860,469.243	0.000	0.000	0.000	0.000	0.000	0.000
2020	4	0.000	-46,867,954.071	0.000	0.000	0.000	0.000	0.000
2020	5	0.000	0.000	-52,145,362.851	0.000	0.000	0.000	0.000
2020	6	0.000	0.000	0.000	-30,735,304.510	0.000	0.000	0.000
2020	7	0.000	0.000	0.000	0.000	25,000,628.500	0.000	0.000
2020	8	0.000	0.000	0.000	0.000	0.000	50,473,554.526	0.000
2020	9	0.000	0.000	0.000	0.000	0.000	0.000	25,574,310.262
2020	10	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2020	11	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2020	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2021	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2021	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2021	3	-45,860,469.243	0.000	0.000	0.000	0.000	0.000	0.000
2021	4	0.000	-46,867,954.071	0.000	0.000	0.000	0.000	0.000
2021	5	0.000	0.000	-52,145,362.851	0.000	0.000	0.000	0.000
2021	6	0.000	0.000	0.000	-30,735,304.510	0.000	0.000	0.000
2021	7	0.000	0.000	0.000	0.000	25,000,628.500	0.000	0.000
2021	8	0.000	0.000	0.000	0.000	0.000	50,473,554.526	0.000
2021	9	0.000	0.000	0.000	0.000	0.000	0.000	25,574,310.262
2021	10	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2021	11	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2021	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2022	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2022	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2022	3	-45,860,469.243	0.000	0.000	0.000	0.000	0.000	0.000
2022	4	0.000	-46,867,954.071	0.000	0.000	0.000	0.000	0.000
2022	5	0.000	0.000	-52,145,362.851	0.000	0.000	0.000	0.000
2022	6	0.000	0.000	0.000	-30,735,304.510	0.000	0.000	0.000
2022	7	0.000	0.000	0.000	0.000	25,000,628.500	0.000	0.000
2022	8	0.000	0.000	0.000	0.000	0.000	50,473,554.526	0.000

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	Mar	Apr	May	Jun	Jul	Aug	Sep
2022	9	0.000	0.000	0.000	0.000	0.000	0.000	25,574,310.262
2022	10	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2022	11	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2022	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2023	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2023	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2023	3	-45,860,469.243	0.000	0.000	0.000	0.000	0.000	0.000
2023	4	0.000	-46,867,954.071	0.000	0.000	0.000	0.000	0.000
2023	5	0.000	0.000	-52,145,362.851	0.000	0.000	0.000	0.000
2023	6	0.000	0.000	0.000	-30,735,304.510	0.000	0.000	0.000
2023	7	0.000	0.000	0.000	0.000	25,000,628.500	0.000	0.000
2023	8	0.000	0.000	0.000	0.000	0.000	50,473,554.526	0.000
2023	9	0.000	0.000	0.000	0.000	0.000	0.000	25,574,310.262
2023	10	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2023	11	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2023	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2024	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2024	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2024	3	-45,860,469.243	0.000	0.000	0.000	0.000	0.000	0.000
2024	4	0.000	-46,867,954.071	0.000	0.000	0.000	0.000	0.000
2024	5	0.000	0.000	-52,145,362.851	0.000	0.000	0.000	0.000
2024	6	0.000	0.000	0.000	-30,735,304.510	0.000	0.000	0.000
2024	7	0.000	0.000	0.000	0.000	25,000,628.500	0.000	0.000
2024	8	0.000	0.000	0.000	0.000	0.000	50,473,554.526	0.000
2024	9	0.000	0.000	0.000	0.000	0.000	0.000	25,574,310.262
2024	10	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2024	11	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2024	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2025	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2025	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2025	3	-45,860,469.243	0.000	0.000	0.000	0.000	0.000	0.000
2025	4	0.000	-46,867,954.071	0.000	0.000	0.000	0.000	0.000
2025	5	0.000	0.000	-52,145,362.851	0.000	0.000	0.000	0.000
2025	6	0.000	0.000	0.000	-30,735,304.510	0.000	0.000	0.000

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	Mar	Apr	May	Jun	Jul	Aug	Sep
2025	7	0.000	0.000	0.000	0.000	25,000,628.500	0.000	0.000
2025	8	0.000	0.000	0.000	0.000	0.000	50,473,554.526	0.000
2025	9	0.000	0.000	0.000	0.000	0.000	0.000	25,574,310.262
2025	10	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2025	11	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2025	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2026	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2026	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2026	3	-45,860,469.243	0.000	0.000	0.000	0.000	0.000	0.000
2026	4	0.000	-46,867,954.071	0.000	0.000	0.000	0.000	0.000
2026	5	0.000	0.000	-52,145,362.851	0.000	0.000	0.000	0.000
2026	6	0.000	0.000	0.000	-30,735,304.510	0.000	0.000	0.000
2026	7	0.000	0.000	0.000	0.000	25,000,628.500	0.000	0.000
2026	8	0.000	0.000	0.000	0.000	0.000	50,473,554.526	0.000
2026	9	0.000	0.000	0.000	0.000	0.000	0.000	25,574,310.262
2026	10	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2026	11	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2026	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2027	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2027	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2027	3	-45,860,469.243	0.000	0.000	0.000	0.000	0.000	0.000
2027	4	0.000	-46,867,954.071	0.000	0.000	0.000	0.000	0.000
2027	5	0.000	0.000	-52,145,362.851	0.000	0.000	0.000	0.000
2027	6	0.000	0.000	0.000	-30,735,304.510	0.000	0.000	0.000
2027	7	0.000	0.000	0.000	0.000	25,000,628.500	0.000	0.000
2027	8	0.000	0.000	0.000	0.000	0.000	50,473,554.526	0.000
2027	9	0.000	0.000	0.000	0.000	0.000	0.000	25,574,310.262
2027	10	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2027	11	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2027	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2028	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2028	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2028	3	-45,860,469.243	0.000	0.000	0.000	0.000	0.000	0.000
2028	4	0.000	-46,867,954.071	0.000	0.000	0.000	0.000	0.000

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	Mar	Apr	May	Jun	Jul	Aug	Sep
2028	5	0.000	0.000	-52,145,362.851	0.000	0.000	0.000	0.000
2028	6	0.000	0.000	0.000	-30,735,304.510	0.000	0.000	0.000
2028	7	0.000	0.000	0.000	0.000	25,000,628.500	0.000	0.000
2028	8	0.000	0.000	0.000	0.000	0.000	50,473,554.526	0.000
2028	9	0.000	0.000	0.000	0.000	0.000	0.000	25,574,310.262
2028	10	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2028	11	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2028	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2029	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2029	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2029	3	-45,860,469.243	0.000	0.000	0.000	0.000	0.000	0.000
2029	4	0.000	-46,867,954.071	0.000	0.000	0.000	0.000	0.000
2029	5	0.000	0.000	-52,145,362.851	0.000	0.000	0.000	0.000
2029	6	0.000	0.000	0.000	-30,735,304.510	0.000	0.000	0.000
2029	7	0.000	0.000	0.000	0.000	25,000,628.500	0.000	0.000
2029	8	0.000	0.000	0.000	0.000	0.000	50,473,554.526	0.000
2029	9	0.000	0.000	0.000	0.000	0.000	0.000	25,574,310.262
2029	10	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2029	11	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2029	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2030	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2030	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2030	3	-45,860,469.243	0.000	0.000	0.000	0.000	0.000	0.000
2030	4	0.000	-46,867,954.071	0.000	0.000	0.000	0.000	0.000
2030	5	0.000	0.000	-52,145,362.851	0.000	0.000	0.000	0.000
2030	6	0.000	0.000	0.000	-30,735,304.510	0.000	0.000	0.000
2030	7	0.000	0.000	0.000	0.000	25,000,628.500	0.000	0.000
2030	8	0.000	0.000	0.000	0.000	0.000	50,473,554.526	0.000
2030	9	0.000	0.000	0.000	0.000	0.000	0.000	25,574,310.262
2030	10	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2030	11	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2030	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2031	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2031	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	Mar	Apr	May	Jun	Jul	Aug	Sep
2031	3	-45,860,469.243	0.000	0.000	0.000	0.000	0.000	0.000
2031	4	0.000	-46,867,954.071	0.000	0.000	0.000	0.000	0.000
2031	5	0.000	0.000	-52,145,362.851	0.000	0.000	0.000	0.000
2031	6	0.000	0.000	0.000	-30,735,304.510	0.000	0.000	0.000
2031	7	0.000	0.000	0.000	0.000	25,000,628.500	0.000	0.000
2031	8	0.000	0.000	0.000	0.000	0.000	50,473,554.526	0.000
2031	9	0.000	0.000	0.000	0.000	0.000	0.000	25,574,310.262
2031	10	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2031	11	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2031	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2032	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2032	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2032	3	-45,860,469.243	0.000	0.000	0.000	0.000	0.000	0.000
2032	4	0.000	-46,867,954.071	0.000	0.000	0.000	0.000	0.000
2032	5	0.000	0.000	-52,145,362.851	0.000	0.000	0.000	0.000
2032	6	0.000	0.000	0.000	-30,735,304.510	0.000	0.000	0.000
2032	7	0.000	0.000	0.000	0.000	25,000,628.500	0.000	0.000
2032	8	0.000	0.000	0.000	0.000	0.000	50,473,554.526	0.000
2032	9	0.000	0.000	0.000	0.000	0.000	0.000	25,574,310.262
2032	10	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2032	11	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2032	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2033	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2033	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2033	3	-45,860,469.243	0.000	0.000	0.000	0.000	0.000	0.000
2033	4	0.000	-46,867,954.071	0.000	0.000	0.000	0.000	0.000
2033	5	0.000	0.000	-52,145,362.851	0.000	0.000	0.000	0.000
2033	6	0.000	0.000	0.000	-30,735,304.510	0.000	0.000	0.000
2033	7	0.000	0.000	0.000	0.000	25,000,628.500	0.000	0.000
2033	8	0.000	0.000	0.000	0.000	0.000	50,473,554.526	0.000
2033	9	0.000	0.000	0.000	0.000	0.000	0.000	25,574,310.262
2033	10	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2033	11	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2033	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	Mar	Apr	May	Jun	Jul	Aug	Sep
2034	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2034	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2034	3	-45,860,469.243	0.000	0.000	0.000	0.000	0.000	0.000
2034	4	0.000	-46,867,954.071	0.000	0.000	0.000	0.000	0.000
2034	5	0.000	0.000	-52,145,362.851	0.000	0.000	0.000	0.000
2034	6	0.000	0.000	0.000	-30,735,304.510	0.000	0.000	0.000
2034	7	0.000	0.000	0.000	0.000	25,000,628.500	0.000	0.000
2034	8	0.000	0.000	0.000	0.000	0.000	50,473,554.526	0.000
2034	9	0.000	0.000	0.000	0.000	0.000	0.000	25,574,310.262
2034	10	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2034	11	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2034	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2035	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2035	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2035	3	-45,860,469.243	0.000	0.000	0.000	0.000	0.000	0.000
2035	4	0.000	-46,867,954.071	0.000	0.000	0.000	0.000	0.000
2035	5	0.000	0.000	-52,145,362.851	0.000	0.000	0.000	0.000
2035	6	0.000	0.000	0.000	-30,735,304.510	0.000	0.000	0.000
2035	7	0.000	0.000	0.000	0.000	25,000,628.500	0.000	0.000
2035	8	0.000	0.000	0.000	0.000	0.000	50,473,554.526	0.000
2035	9	0.000	0.000	0.000	0.000	0.000	0.000	25,574,310.262
2035	10	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2035	11	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2035	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2036	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2036	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2036	3	-45,860,469.243	0.000	0.000	0.000	0.000	0.000	0.000
2036	4	0.000	-46,867,954.071	0.000	0.000	0.000	0.000	0.000
2036	5	0.000	0.000	-52,145,362.851	0.000	0.000	0.000	0.000
2036	6	0.000	0.000	0.000	-30,735,304.510	0.000	0.000	0.000
2036	7	0.000	0.000	0.000	0.000	25,000,628.500	0.000	0.000
2036	8	0.000	0.000	0.000	0.000	0.000	50,473,554.526	0.000
2036	9	0.000	0.000	0.000	0.000	0.000	0.000	25,574,310.262
2036	10	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	Mar	Apr	May	Jun	Jul	Aug	Sep
2036	11	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2036	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2037	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2037	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2037	3	-45,860,469.243	0.000	0.000	0.000	0.000	0.000	0.000
2037	4	0.000	-46,867,954.071	0.000	0.000	0.000	0.000	0.000
2037	5	0.000	0.000	-52,145,362.851	0.000	0.000	0.000	0.000
2037	6	0.000	0.000	0.000	-30,735,304.510	0.000	0.000	0.000
2037	7	0.000	0.000	0.000	0.000	25,000,628.500	0.000	0.000
2037	8	0.000	0.000	0.000	0.000	0.000	50,473,554.526	0.000
2037	9	0.000	0.000	0.000	0.000	0.000	0.000	25,574,310.262
2037	10	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2037	11	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2037	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2038	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2038	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2038	3	-45,860,469.243	0.000	0.000	0.000	0.000	0.000	0.000
2038	4	0.000	-46,867,954.071	0.000	0.000	0.000	0.000	0.000
2038	5	0.000	0.000	-52,145,362.851	0.000	0.000	0.000	0.000
2038	6	0.000	0.000	0.000	-30,735,304.510	0.000	0.000	0.000
2038	7	0.000	0.000	0.000	0.000	25,000,628.500	0.000	0.000
2038	8	0.000	0.000	0.000	0.000	0.000	50,473,554.526	0.000
2038	9	0.000	0.000	0.000	0.000	0.000	0.000	25,574,310.262
2038	10	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2038	11	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2038	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2039	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2039	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2039	3	-45,860,469.243	0.000	0.000	0.000	0.000	0.000	0.000
2039	4	0.000	-46,867,954.071	0.000	0.000	0.000	0.000	0.000
2039	5	0.000	0.000	-52,145,362.851	0.000	0.000	0.000	0.000
2039	6	0.000	0.000	0.000	-30,735,304.510	0.000	0.000	0.000
2039	7	0.000	0.000	0.000	0.000	25,000,628.500	0.000	0.000
2039	8	0.000	0.000	0.000	0.000	0.000	50,473,554.526	0.000

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	Mar	Apr	May	Jun	Jul	Aug	Sep
2039	9	0.000	0.000	0.000	0.000	0.000	0.000	25,574,310.262
2039	10	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2039	11	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2039	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2040	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2040	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2040	3	-45,860,469.243	0.000	0.000	0.000	0.000	0.000	0.000
2040	4	0.000	-46,867,954.071	0.000	0.000	0.000	0.000	0.000
2040	5	0.000	0.000	-52,145,362.851	0.000	0.000	0.000	0.000
2040	6	0.000	0.000	0.000	-30,735,304.510	0.000	0.000	0.000
2040	7	0.000	0.000	0.000	0.000	25,000,628.500	0.000	0.000
2040	8	0.000	0.000	0.000	0.000	0.000	50,473,554.526	0.000
2040	9	0.000	0.000	0.000	0.000	0.000	0.000	25,574,310.262
2040	10	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2040	11	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2040	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2041	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2041	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2041	3	-45,860,469.243	0.000	0.000	0.000	0.000	0.000	0.000
2041	4	0.000	-46,867,954.071	0.000	0.000	0.000	0.000	0.000
2041	5	0.000	0.000	-52,145,362.851	0.000	0.000	0.000	0.000
2041	6	0.000	0.000	0.000	-30,735,304.510	0.000	0.000	0.000
2041	7	0.000	0.000	0.000	0.000	25,000,628.500	0.000	0.000
2041	8	0.000	0.000	0.000	0.000	0.000	50,473,554.526	0.000
2041	9	0.000	0.000	0.000	0.000	0.000	0.000	25,574,310.262
2041	10	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2041	11	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2041	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2042	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2042	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2042	3	-45,860,469.243	0.000	0.000	0.000	0.000	0.000	0.000
2042	4	0.000	-46,867,954.071	0.000	0.000	0.000	0.000	0.000
2042	5	0.000	0.000	-52,145,362.851	0.000	0.000	0.000	0.000
2042	6	0.000	0.000	0.000	-30,735,304.510	0.000	0.000	0.000

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	Mar	Apr	May	Jun	Jul	Aug	Sep
2042	7	0.000	0.000	0.000	0.000	25,000,628.500	0.000	0.000
2042	8	0.000	0.000	0.000	0.000	0.000	50,473,554.526	0.000
2042	9	0.000	0.000	0.000	0.000	0.000	0.000	25,574,310.262
2042	10	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2042	11	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2042	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2043	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2043	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2043	3	-45,860,469.243	0.000	0.000	0.000	0.000	0.000	0.000
2043	4	0.000	-46,867,954.071	0.000	0.000	0.000	0.000	0.000
2043	5	0.000	0.000	-52,145,362.851	0.000	0.000	0.000	0.000
2043	6	0.000	0.000	0.000	-30,735,304.510	0.000	0.000	0.000
2043	7	0.000	0.000	0.000	0.000	25,000,628.500	0.000	0.000
2043	8	0.000	0.000	0.000	0.000	0.000	50,473,554.526	0.000
2043	9	0.000	0.000	0.000	0.000	0.000	0.000	25,574,310.262
2043	10	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2043	11	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2043	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2044	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2044	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2044	3	-45,860,469.243	0.000	0.000	0.000	0.000	0.000	0.000
2044	4	0.000	-46,867,954.071	0.000	0.000	0.000	0.000	0.000
2044	5	0.000	0.000	-52,145,362.851	0.000	0.000	0.000	0.000
2044	6	0.000	0.000	0.000	-30,735,304.510	0.000	0.000	0.000
2044	7	0.000	0.000	0.000	0.000	25,000,628.500	0.000	0.000
2044	8	0.000	0.000	0.000	0.000	0.000	50,473,554.526	0.000
2044	9	0.000	0.000	0.000	0.000	0.000	0.000	25,574,310.262
2044	10	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2044	11	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2044	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2045	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2045	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2045	3	-45,860,469.243	0.000	0.000	0.000	0.000	0.000	0.000
2045	4	0.000	-46,867,954.071	0.000	0.000	0.000	0.000	0.000

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	Mar	Apr	May	Jun	Jul	Aug	Sep
2045	5	0.000	0.000	-52,145,362.851	0.000	0.000	0.000	0.000
2045	6	0.000	0.000	0.000	-30,735,304.510	0.000	0.000	0.000
2045	7	0.000	0.000	0.000	0.000	25,000,628.500	0.000	0.000
2045	8	0.000	0.000	0.000	0.000	0.000	50,473,554.526	0.000
2045	9	0.000	0.000	0.000	0.000	0.000	0.000	25,574,310.262
2045	10	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2045	11	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2045	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2046	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2046	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2046	3	-45,860,469.243	0.000	0.000	0.000	0.000	0.000	0.000
2046	4	0.000	-46,867,954.071	0.000	0.000	0.000	0.000	0.000
2046	5	0.000	0.000	-52,145,362.851	0.000	0.000	0.000	0.000
2046	6	0.000	0.000	0.000	-30,735,304.510	0.000	0.000	0.000
2046	7	0.000	0.000	0.000	0.000	25,000,628.500	0.000	0.000
2046	8	0.000	0.000	0.000	0.000	0.000	50,473,554.526	0.000
2046	9	0.000	0.000	0.000	0.000	0.000	0.000	25,574,310.262
2046	10	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2046	11	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2046	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2047	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2047	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2047	3	-45,860,469.243	0.000	0.000	0.000	0.000	0.000	0.000
2047	4	0.000	-46,867,954.071	0.000	0.000	0.000	0.000	0.000
2047	5	0.000	0.000	-52,145,362.851	0.000	0.000	0.000	0.000
2047	6	0.000	0.000	0.000	-30,735,304.510	0.000	0.000	0.000
2047	7	0.000	0.000	0.000	0.000	25,000,628.500	0.000	0.000
2047	8	0.000	0.000	0.000	0.000	0.000	50,473,554.526	0.000
2047	9	0.000	0.000	0.000	0.000	0.000	0.000	25,574,310.262
2047	10	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2047	11	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2047	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2048	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2048	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	Mar	Apr	May	Jun	Jul	Aug	Sep
2048	3	-45,860,469.243	0.000	0.000	0.000	0.000	0.000	0.000
2048	4	0.000	-46,867,954.071	0.000	0.000	0.000	0.000	0.000
2048	5	0.000	0.000	-52,145,362.851	0.000	0.000	0.000	0.000
2048	6	0.000	0.000	0.000	-30,735,304.510	0.000	0.000	0.000
2048	7	0.000	0.000	0.000	0.000	25,000,628.500	0.000	0.000
2048	8	0.000	0.000	0.000	0.000	0.000	50,473,554.526	0.000
2048	9	0.000	0.000	0.000	0.000	0.000	0.000	25,574,310.262
2048	10	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2048	11	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2048	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2049	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2049	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2049	3	-45,860,469.243	0.000	0.000	0.000	0.000	0.000	0.000
2049	4	0.000	-46,867,954.071	0.000	0.000	0.000	0.000	0.000
2049	5	0.000	0.000	-52,145,362.851	0.000	0.000	0.000	0.000
2049	6	0.000	0.000	0.000	-30,735,304.510	0.000	0.000	0.000
2049	7	0.000	0.000	0.000	0.000	25,000,628.500	0.000	0.000
2049	8	0.000	0.000	0.000	0.000	0.000	50,473,554.526	0.000
2049	9	0.000	0.000	0.000	0.000	0.000	0.000	25,574,310.262
2049	10	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2049	11	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2049	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2050	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2050	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2050	3	-45,860,469.243	0.000	0.000	0.000	0.000	0.000	0.000
2050	4	0.000	-46,867,954.071	0.000	0.000	0.000	0.000	0.000
2050	5	0.000	0.000	-52,145,362.851	0.000	0.000	0.000	0.000
2050	6	0.000	0.000	0.000	-30,735,304.510	0.000	0.000	0.000
2050	7	0.000	0.000	0.000	0.000	25,000,628.500	0.000	0.000
2050	8	0.000	0.000	0.000	0.000	0.000	50,473,554.526	0.000
2050	9	0.000	0.000	0.000	0.000	0.000	0.000	25,574,310.262
2050	10	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2050	11	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2050	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	Mar	Apr	May	Jun	Jul	Aug	Sep
2051	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2051	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2051	3	-45,860,469.243	0.000	0.000	0.000	0.000	0.000	0.000
2051	4	0.000	-46,867,954.071	0.000	0.000	0.000	0.000	0.000
2051	5	0.000	0.000	-52,145,362.851	0.000	0.000	0.000	0.000
2051	6	0.000	0.000	0.000	-30,735,304.510	0.000	0.000	0.000
2051	7	0.000	0.000	0.000	0.000	25,000,628.500	0.000	0.000
2051	8	0.000	0.000	0.000	0.000	0.000	50,473,554.526	0.000
2051	9	0.000	0.000	0.000	0.000	0.000	0.000	25,574,310.262
2051	10	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2051	11	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2051	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2052	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2052	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2052	3	-45,860,469.243	0.000	0.000	0.000	0.000	0.000	0.000
2052	4	0.000	-46,867,954.071	0.000	0.000	0.000	0.000	0.000
2052	5	0.000	0.000	-52,145,362.851	0.000	0.000	0.000	0.000
2052	6	0.000	0.000	0.000	-30,735,304.510	0.000	0.000	0.000
2052	7	0.000	0.000	0.000	0.000	25,000,628.500	0.000	0.000
2052	8	0.000	0.000	0.000	0.000	0.000	50,473,554.526	0.000
2052	9	0.000	0.000	0.000	0.000	0.000	0.000	25,574,310.262
2052	10	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2052	11	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2052	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2053	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2053	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2053	3	-45,860,469.243	0.000	0.000	0.000	0.000	0.000	0.000
2053	4	0.000	-46,867,954.071	0.000	0.000	0.000	0.000	0.000
2053	5	0.000	0.000	-52,145,362.851	0.000	0.000	0.000	0.000
2053	6	0.000	0.000	0.000	-30,735,304.510	0.000	0.000	0.000
2053	7	0.000	0.000	0.000	0.000	25,000,628.500	0.000	0.000
2053	8	0.000	0.000	0.000	0.000	0.000	50,473,554.526	0.000
2053	9	0.000	0.000	0.000	0.000	0.000	0.000	25,574,310.262
2053	10	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	Mar	Apr	May	Jun	Jul	Aug	Sep
2053	11	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2053	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2054	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2054	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2054	3	-45,860,469.243	0.000	0.000	0.000	0.000	0.000	0.000
2054	4	0.000	-46,867,954.071	0.000	0.000	0.000	0.000	0.000
2054	5	0.000	0.000	-52,145,362.851	0.000	0.000	0.000	0.000
2054	6	0.000	0.000	0.000	-30,735,304.510	0.000	0.000	0.000
2054	7	0.000	0.000	0.000	0.000	25,000,628.500	0.000	0.000
2054	8	0.000	0.000	0.000	0.000	0.000	50,473,554.526	0.000
2054	9	0.000	0.000	0.000	0.000	0.000	0.000	25,574,310.262
2054	10	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2054	11	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2054	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2055	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2055	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2055	3	-45,860,469.243	0.000	0.000	0.000	0.000	0.000	0.000
2055	4	0.000	-46,867,954.071	0.000	0.000	0.000	0.000	0.000
2055	5	0.000	0.000	-52,145,362.851	0.000	0.000	0.000	0.000
2055	6	0.000	0.000	0.000	-30,735,304.510	0.000	0.000	0.000
2055	7	0.000	0.000	0.000	0.000	25,000,628.500	0.000	0.000
2055	8	0.000	0.000	0.000	0.000	0.000	50,473,554.526	0.000
2055	9	0.000	0.000	0.000	0.000	0.000	0.000	25,574,310.262
2055	10	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2055	11	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2055	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2056	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2056	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2056	3	-45,860,469.243	0.000	0.000	0.000	0.000	0.000	0.000
2056	4	0.000	-46,867,954.071	0.000	0.000	0.000	0.000	0.000
2056	5	0.000	0.000	-52,145,362.851	0.000	0.000	0.000	0.000
2056	6	0.000	0.000	0.000	-30,735,304.510	0.000	0.000	0.000
2056	7	0.000	0.000	0.000	0.000	25,000,628.500	0.000	0.000
2056	8	0.000	0.000	0.000	0.000	0.000	50,473,554.526	0.000

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	Mar	Apr	May	Jun	Jul	Aug	Sep
2056	9	0.000	0.000	0.000	0.000	0.000	0.000	25,574,310.262
2056	10	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2056	11	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2056	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2057	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2057	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2057	3	-45,860,469.243	0.000	0.000	0.000	0.000	0.000	0.000
2057	4	0.000	-46,867,954.071	0.000	0.000	0.000	0.000	0.000
2057	5	0.000	0.000	-52,145,362.851	0.000	0.000	0.000	0.000
2057	6	0.000	0.000	0.000	-30,735,304.510	0.000	0.000	0.000
2057	7	0.000	0.000	0.000	0.000	25,000,628.500	0.000	0.000
2057	8	0.000	0.000	0.000	0.000	0.000	50,473,554.526	0.000
2057	9	0.000	0.000	0.000	0.000	0.000	0.000	25,574,310.262
2057	10	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2057	11	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2057	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	Oct	Nov	d0610	Febd03on	Jand03on	d16onjan	d9801	d16onjul
2000	1	0.000	0.000	0.000	0.000	0.000	0.000	-730,307.270	0.000
2000	2	0.000	0.000	0.000	0.000	0.000	0.000	-730,307.270	0.000
2000	3	0.000	0.000	0.000	0.000	0.000	0.000	-730,307.270	0.000
2000	4	0.000	0.000	0.000	0.000	0.000	0.000	-730,307.270	0.000
2000	5	0.000	0.000	0.000	0.000	0.000	0.000	-730,307.270	0.000
2000	6	0.000	0.000	0.000	0.000	0.000	0.000	-730,307.270	0.000
2000	7	0.000	0.000	0.000	0.000	0.000	0.000	-730,307.270	0.000
2000	8	0.000	0.000	0.000	0.000	0.000	0.000	-730,307.270	0.000
2000	9	0.000	0.000	0.000	0.000	0.000	0.000	-730,307.270	0.000
2000	10	-32,281,144.451	0.000	0.000	0.000	0.000	0.000	-730,307.270	0.000
2000	11	0.000	-22,058,577.731	0.000	0.000	0.000	0.000	-730,307.270	0.000
2000	12	0.000	0.000	0.000	0.000	0.000	0.000	-730,307.270	0.000
2001	1	0.000	0.000	0.000	0.000	0.000	0.000	-730,307.270	0.000
2001	2	0.000	0.000	0.000	0.000	0.000	0.000	-730,307.270	0.000
2001	3	0.000	0.000	0.000	0.000	0.000	0.000	-730,307.270	0.000
2001	4	0.000	0.000	0.000	0.000	0.000	0.000	-730,307.270	0.000
2001	5	0.000	0.000	0.000	0.000	0.000	0.000	-730,307.270	0.000
2001	6	0.000	0.000	0.000	0.000	0.000	0.000	-730,307.270	0.000
2001	7	0.000	0.000	0.000	0.000	0.000	0.000	-730,307.270	0.000
2001	8	0.000	0.000	0.000	0.000	0.000	0.000	-730,307.270	0.000
2001	9	0.000	0.000	0.000	0.000	0.000	0.000	-730,307.270	0.000
2001	10	-32,281,144.451	0.000	0.000	0.000	0.000	0.000	-730,307.270	0.000
2001	11	0.000	-22,058,577.731	0.000	0.000	0.000	0.000	-730,307.270	0.000
2001	12	0.000	0.000	0.000	0.000	0.000	0.000	-730,307.270	0.000
2002	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2002	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2002	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2002	4	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2002	5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2002	6	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2002	7	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2002	8	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2002	9	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2002	10	-32,281,144.451	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	Oct	Nov	d0610	Febd03on	Jand03on	d16onjan	d9801	d16onjul
2002	11	0.000	-22,058,577.731	0.000	0.000	0.000	0.000	0.000	0.000
2002	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2003	1	0.000	0.000	0.000	0.000	44,214,776.735	0.000	0.000	0.000
2003	2	0.000	0.000	0.000	14,237,420.329	0.000	0.000	0.000	0.000
2003	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2003	4	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2003	5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2003	6	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2003	7	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2003	8	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2003	9	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2003	10	-32,281,144.451	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2003	11	0.000	-22,058,577.731	0.000	0.000	0.000	0.000	0.000	0.000
2003	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2004	1	0.000	0.000	0.000	0.000	44,214,776.735	0.000	0.000	0.000
2004	2	0.000	0.000	0.000	14,237,420.329	0.000	0.000	0.000	0.000
2004	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2004	4	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2004	5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2004	6	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2004	7	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2004	8	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2004	9	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2004	10	-32,281,144.451	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2004	11	0.000	-22,058,577.731	0.000	0.000	0.000	0.000	0.000	0.000
2004	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2005	1	0.000	0.000	0.000	0.000	44,214,776.735	0.000	0.000	0.000
2005	2	0.000	0.000	0.000	14,237,420.329	0.000	0.000	0.000	0.000
2005	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2005	4	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2005	5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2005	6	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2005	7	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2005	8	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	Oct	Nov	d0610	Febd03on	Jand03on	d16onjan	d9801	d16onjul
2005	9	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2005	10	-32,281,144.451	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2005	11	0.000	-22,058,577.731	0.000	0.000	0.000	0.000	0.000	0.000
2005	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2006	1	0.000	0.000	32,838,003.772	0.000	44,214,776.735	0.000	0.000	0.000
2006	2	0.000	0.000	32,838,003.772	14,237,420.329	0.000	0.000	0.000	0.000
2006	3	0.000	0.000	32,838,003.772	0.000	0.000	0.000	0.000	0.000
2006	4	0.000	0.000	32,838,003.772	0.000	0.000	0.000	0.000	0.000
2006	5	0.000	0.000	32,838,003.772	0.000	0.000	0.000	0.000	0.000
2006	6	0.000	0.000	32,838,003.772	0.000	0.000	0.000	0.000	0.000
2006	7	0.000	0.000	32,838,003.772	0.000	0.000	0.000	0.000	0.000
2006	8	0.000	0.000	32,838,003.772	0.000	0.000	0.000	0.000	0.000
2006	9	0.000	0.000	32,838,003.772	0.000	0.000	0.000	0.000	0.000
2006	10	-32,281,144.451	0.000	32,838,003.772	0.000	0.000	0.000	0.000	0.000
2006	11	0.000	-22,058,577.731	32,838,003.772	0.000	0.000	0.000	0.000	0.000
2006	12	0.000	0.000	32,838,003.772	0.000	0.000	0.000	0.000	0.000
2007	1	0.000	0.000	32,838,003.772	0.000	44,214,776.735	0.000	0.000	0.000
2007	2	0.000	0.000	32,838,003.772	14,237,420.329	0.000	0.000	0.000	0.000
2007	3	0.000	0.000	32,838,003.772	0.000	0.000	0.000	0.000	0.000
2007	4	0.000	0.000	32,838,003.772	0.000	0.000	0.000	0.000	0.000
2007	5	0.000	0.000	32,838,003.772	0.000	0.000	0.000	0.000	0.000
2007	6	0.000	0.000	32,838,003.772	0.000	0.000	0.000	0.000	0.000
2007	7	0.000	0.000	32,838,003.772	0.000	0.000	0.000	0.000	0.000
2007	8	0.000	0.000	32,838,003.772	0.000	0.000	0.000	0.000	0.000
2007	9	0.000	0.000	32,838,003.772	0.000	0.000	0.000	0.000	0.000
2007	10	-32,281,144.451	0.000	32,838,003.772	0.000	0.000	0.000	0.000	0.000
2007	11	0.000	-22,058,577.731	32,838,003.772	0.000	0.000	0.000	0.000	0.000
2007	12	0.000	0.000	32,838,003.772	0.000	0.000	0.000	0.000	0.000
2008	1	0.000	0.000	32,838,003.772	0.000	44,214,776.735	0.000	0.000	0.000
2008	2	0.000	0.000	32,838,003.772	14,237,420.329	0.000	0.000	0.000	0.000
2008	3	0.000	0.000	32,838,003.772	0.000	0.000	0.000	0.000	0.000
2008	4	0.000	0.000	32,838,003.772	0.000	0.000	0.000	0.000	0.000
2008	5	0.000	0.000	32,838,003.772	0.000	0.000	0.000	0.000	0.000
2008	6	0.000	0.000	32,838,003.772	0.000	0.000	0.000	0.000	0.000

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	Oct	Nov	d0610	Febd03on	Jand03on	d16onjan	d9801	d16onjul
2008	7	0.000	0.000	32,838,003.772	0.000	0.000	0.000	0.000	0.000
2008	8	0.000	0.000	32,838,003.772	0.000	0.000	0.000	0.000	0.000
2008	9	0.000	0.000	32,838,003.772	0.000	0.000	0.000	0.000	0.000
2008	10	-32,281,144.451	0.000	32,838,003.772	0.000	0.000	0.000	0.000	0.000
2008	11	0.000	-22,058,577.731	32,838,003.772	0.000	0.000	0.000	0.000	0.000
2008	12	0.000	0.000	32,838,003.772	0.000	0.000	0.000	0.000	0.000
2009	1	0.000	0.000	32,838,003.772	0.000	44,214,776.735	0.000	0.000	0.000
2009	2	0.000	0.000	32,838,003.772	14,237,420.329	0.000	0.000	0.000	0.000
2009	3	0.000	0.000	32,838,003.772	0.000	0.000	0.000	0.000	0.000
2009	4	0.000	0.000	32,838,003.772	0.000	0.000	0.000	0.000	0.000
2009	5	0.000	0.000	32,838,003.772	0.000	0.000	0.000	0.000	0.000
2009	6	0.000	0.000	32,838,003.772	0.000	0.000	0.000	0.000	0.000
2009	7	0.000	0.000	32,838,003.772	0.000	0.000	0.000	0.000	0.000
2009	8	0.000	0.000	32,838,003.772	0.000	0.000	0.000	0.000	0.000
2009	9	0.000	0.000	32,838,003.772	0.000	0.000	0.000	0.000	0.000
2009	10	-32,281,144.451	0.000	32,838,003.772	0.000	0.000	0.000	0.000	0.000
2009	11	0.000	-22,058,577.731	32,838,003.772	0.000	0.000	0.000	0.000	0.000
2009	12	0.000	0.000	32,838,003.772	0.000	0.000	0.000	0.000	0.000
2010	1	0.000	0.000	32,838,003.772	0.000	44,214,776.735	0.000	0.000	0.000
2010	2	0.000	0.000	32,838,003.772	14,237,420.329	0.000	0.000	0.000	0.000
2010	3	0.000	0.000	32,838,003.772	0.000	0.000	0.000	0.000	0.000
2010	4	0.000	0.000	32,838,003.772	0.000	0.000	0.000	0.000	0.000
2010	5	0.000	0.000	32,838,003.772	0.000	0.000	0.000	0.000	0.000
2010	6	0.000	0.000	32,838,003.772	0.000	0.000	0.000	0.000	0.000
2010	7	0.000	0.000	32,838,003.772	0.000	0.000	0.000	0.000	0.000
2010	8	0.000	0.000	32,838,003.772	0.000	0.000	0.000	0.000	0.000
2010	9	0.000	0.000	32,838,003.772	0.000	0.000	0.000	0.000	0.000
2010	10	-32,281,144.451	0.000	32,838,003.772	0.000	0.000	0.000	0.000	0.000
2010	11	0.000	-22,058,577.731	32,838,003.772	0.000	0.000	0.000	0.000	0.000
2010	12	0.000	0.000	32,838,003.772	0.000	0.000	0.000	0.000	0.000
2011	1	0.000	0.000	0.000	0.000	44,214,776.735	0.000	0.000	0.000
2011	2	0.000	0.000	0.000	14,237,420.329	0.000	0.000	0.000	0.000
2011	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2011	4	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	Oct	Nov	d0610	Febd03on	Jand03on	d16onjan	d9801	d16onjul
2011	5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2011	6	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2011	7	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2011	8	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2011	9	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2011	10	-32,281,144.451	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2011	11	0.000	-22,058,577.731	0.000	0.000	0.000	0.000	0.000	0.000
2011	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2012	1	0.000	0.000	0.000	0.000	44,214,776.735	0.000	0.000	0.000
2012	2	0.000	0.000	0.000	14,237,420.329	0.000	0.000	0.000	0.000
2012	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2012	4	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2012	5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2012	6	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2012	7	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2012	8	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2012	9	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2012	10	-32,281,144.451	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2012	11	0.000	-22,058,577.731	0.000	0.000	0.000	0.000	0.000	0.000
2012	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2013	1	0.000	0.000	0.000	0.000	44,214,776.735	0.000	0.000	0.000
2013	2	0.000	0.000	0.000	14,237,420.329	0.000	0.000	0.000	0.000
2013	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2013	4	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2013	5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2013	6	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2013	7	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2013	8	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2013	9	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2013	10	-32,281,144.451	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2013	11	0.000	-22,058,577.731	0.000	0.000	0.000	0.000	0.000	0.000
2013	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2014	1	0.000	0.000	0.000	0.000	44,214,776.735	0.000	0.000	0.000
2014	2	0.000	0.000	0.000	14,237,420.329	0.000	0.000	0.000	0.000

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	Oct	Nov	d0610	Febd03on	Jand03on	d16onjan	d9801	d16onjul
2014	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2014	4	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2014	5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2014	6	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2014	7	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2014	8	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2014	9	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2014	10	-32,281,144.451	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2014	11	0.000	-22,058,577.731	0.000	0.000	0.000	0.000	0.000	0.000
2014	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2015	1	0.000	0.000	0.000	0.000	44,214,776.735	0.000	0.000	0.000
2015	2	0.000	0.000	0.000	14,237,420.329	0.000	0.000	0.000	0.000
2015	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2015	4	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2015	5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2015	6	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2015	7	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2015	8	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2015	9	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2015	10	-32,281,144.451	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2015	11	0.000	-22,058,577.731	0.000	0.000	0.000	0.000	0.000	0.000
2015	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2016	1	0.000	0.000	0.000	0.000	44,214,776.735	-57,741,670.665	0.000	0.000
2016	2	0.000	0.000	0.000	14,237,420.329	0.000	0.000	0.000	0.000
2016	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2016	4	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2016	5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2016	6	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2016	7	0.000	0.000	0.000	0.000	0.000	0.000	0.000	59,901,878.190
2016	8	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2016	9	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2016	10	-32,281,144.451	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2016	11	0.000	-22,058,577.731	0.000	0.000	0.000	0.000	0.000	0.000
2016	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	Oct	Nov	d0610	Febd03on	Jand03on	d16onjan	d9801	d16onjul
2017	1	0.000	0.000	0.000	0.000	44,214,776.735	-57,741,670.665	0.000	0.000
2017	2	0.000	0.000	0.000	14,237,420.329	0.000	0.000	0.000	0.000
2017	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2017	4	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2017	5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2017	6	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2017	7	0.000	0.000	0.000	0.000	0.000	0.000	0.000	59,901,878.190
2017	8	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2017	9	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2017	10	-32,281,144.451	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2017	11	0.000	-22,058,577.731	0.000	0.000	0.000	0.000	0.000	0.000
2017	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2018	1	0.000	0.000	0.000	0.000	44,214,776.735	-57,741,670.665	0.000	0.000
2018	2	0.000	0.000	0.000	14,237,420.329	0.000	0.000	0.000	0.000
2018	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2018	4	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2018	5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2018	6	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2018	7	0.000	0.000	0.000	0.000	0.000	0.000	0.000	59,901,878.190
2018	8	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2018	9	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2018	10	-32,281,144.451	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2018	11	0.000	-22,058,577.731	0.000	0.000	0.000	0.000	0.000	0.000
2018	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2019	1	0.000	0.000	0.000	0.000	44,214,776.735	-57,741,670.665	0.000	0.000
2019	2	0.000	0.000	0.000	14,237,420.329	0.000	0.000	0.000	0.000
2019	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2019	4	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2019	5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2019	6	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2019	7	0.000	0.000	0.000	0.000	0.000	0.000	0.000	59,901,878.190
2019	8	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2019	9	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2019	10	-32,281,144.451	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	Oct	Nov	d0610	Febd03on	Jand03on	d16onjan	d9801	d16onjul
2019	11	0.000	-22,058,577.731	0.000	0.000	0.000	0.000	0.000	0.000
2019	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2020	1	0.000	0.000	0.000	0.000	44,214,776.735	-57,741,670.665	0.000	0.000
2020	2	0.000	0.000	0.000	14,237,420.329	0.000	0.000	0.000	0.000
2020	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2020	4	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2020	5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2020	6	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2020	7	0.000	0.000	0.000	0.000	0.000	0.000	0.000	59,901,878.190
2020	8	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2020	9	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2020	10	-32,281,144.451	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2020	11	0.000	-22,058,577.731	0.000	0.000	0.000	0.000	0.000	0.000
2020	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2021	1	0.000	0.000	0.000	0.000	44,214,776.735	-57,741,670.665	0.000	0.000
2021	2	0.000	0.000	0.000	14,237,420.329	0.000	0.000	0.000	0.000
2021	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2021	4	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2021	5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2021	6	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2021	7	0.000	0.000	0.000	0.000	0.000	0.000	0.000	59,901,878.190
2021	8	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2021	9	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2021	10	-32,281,144.451	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2021	11	0.000	-22,058,577.731	0.000	0.000	0.000	0.000	0.000	0.000
2021	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2022	1	0.000	0.000	0.000	0.000	44,214,776.735	-57,741,670.665	0.000	0.000
2022	2	0.000	0.000	0.000	14,237,420.329	0.000	0.000	0.000	0.000
2022	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2022	4	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2022	5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2022	6	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2022	7	0.000	0.000	0.000	0.000	0.000	0.000	0.000	59,901,878.190
2022	8	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	Oct	Nov	d0610	Febd03on	Jand03on	d16onjan	d9801	d16onjul
2022	9	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2022	10	-32,281,144.451	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2022	11	0.000	-22,058,577.731	0.000	0.000	0.000	0.000	0.000	0.000
2022	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2023	1	0.000	0.000	0.000	0.000	44,214,776.735	-57,741,670.665	0.000	0.000
2023	2	0.000	0.000	0.000	14,237,420.329	0.000	0.000	0.000	0.000
2023	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2023	4	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2023	5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2023	6	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2023	7	0.000	0.000	0.000	0.000	0.000	0.000	0.000	59,901,878.190
2023	8	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2023	9	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2023	10	-32,281,144.451	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2023	11	0.000	-22,058,577.731	0.000	0.000	0.000	0.000	0.000	0.000
2023	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2024	1	0.000	0.000	0.000	0.000	44,214,776.735	-57,741,670.665	0.000	0.000
2024	2	0.000	0.000	0.000	14,237,420.329	0.000	0.000	0.000	0.000
2024	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2024	4	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2024	5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2024	6	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2024	7	0.000	0.000	0.000	0.000	0.000	0.000	0.000	59,901,878.190
2024	8	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2024	9	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2024	10	-32,281,144.451	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2024	11	0.000	-22,058,577.731	0.000	0.000	0.000	0.000	0.000	0.000
2024	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2025	1	0.000	0.000	0.000	0.000	44,214,776.735	-57,741,670.665	0.000	0.000
2025	2	0.000	0.000	0.000	14,237,420.329	0.000	0.000	0.000	0.000
2025	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2025	4	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2025	5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2025	6	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	Oct	Nov	d0610	Febd03on	Jand03on	d16onjan	d9801	d16onjul
2025	7	0.000	0.000	0.000	0.000	0.000	0.000	0.000	59,901,878.190
2025	8	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2025	9	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2025	10	-32,281,144.451	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2025	11	0.000	-22,058,577.731	0.000	0.000	0.000	0.000	0.000	0.000
2025	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2026	1	0.000	0.000	0.000	0.000	44,214,776.735	-57,741,670.665	0.000	0.000
2026	2	0.000	0.000	0.000	14,237,420.329	0.000	0.000	0.000	0.000
2026	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2026	4	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2026	5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2026	6	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2026	7	0.000	0.000	0.000	0.000	0.000	0.000	0.000	59,901,878.190
2026	8	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2026	9	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2026	10	-32,281,144.451	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2026	11	0.000	-22,058,577.731	0.000	0.000	0.000	0.000	0.000	0.000
2026	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2027	1	0.000	0.000	0.000	0.000	44,214,776.735	-57,741,670.665	0.000	0.000
2027	2	0.000	0.000	0.000	14,237,420.329	0.000	0.000	0.000	0.000
2027	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2027	4	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2027	5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2027	6	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2027	7	0.000	0.000	0.000	0.000	0.000	0.000	0.000	59,901,878.190
2027	8	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2027	9	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2027	10	-32,281,144.451	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2027	11	0.000	-22,058,577.731	0.000	0.000	0.000	0.000	0.000	0.000
2027	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2028	1	0.000	0.000	0.000	0.000	44,214,776.735	-57,741,670.665	0.000	0.000
2028	2	0.000	0.000	0.000	14,237,420.329	0.000	0.000	0.000	0.000
2028	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2028	4	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	Oct	Nov	d0610	Febd03on	Jand03on	d16onjan	d9801	d16onjul
2028	5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2028	6	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2028	7	0.000	0.000	0.000	0.000	0.000	0.000	0.000	59,901,878.190
2028	8	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2028	9	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2028	10	-32,281,144.451	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2028	11	0.000	-22,058,577.731	0.000	0.000	0.000	0.000	0.000	0.000
2028	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2029	1	0.000	0.000	0.000	0.000	44,214,776.735	-57,741,670.665	0.000	0.000
2029	2	0.000	0.000	0.000	14,237,420.329	0.000	0.000	0.000	0.000
2029	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2029	4	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2029	5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2029	6	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2029	7	0.000	0.000	0.000	0.000	0.000	0.000	0.000	59,901,878.190
2029	8	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2029	9	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2029	10	-32,281,144.451	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2029	11	0.000	-22,058,577.731	0.000	0.000	0.000	0.000	0.000	0.000
2029	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2030	1	0.000	0.000	0.000	0.000	44,214,776.735	-57,741,670.665	0.000	0.000
2030	2	0.000	0.000	0.000	14,237,420.329	0.000	0.000	0.000	0.000
2030	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2030	4	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2030	5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2030	6	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2030	7	0.000	0.000	0.000	0.000	0.000	0.000	0.000	59,901,878.190
2030	8	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2030	9	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2030	10	-32,281,144.451	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2030	11	0.000	-22,058,577.731	0.000	0.000	0.000	0.000	0.000	0.000
2030	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2031	1	0.000	0.000	0.000	0.000	44,214,776.735	-57,741,670.665	0.000	0.000
2031	2	0.000	0.000	0.000	14,237,420.329	0.000	0.000	0.000	0.000

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	Oct	Nov	d0610	Febd03on	Jand03on	d16onjan	d9801	d16onjul
2031	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2031	4	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2031	5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2031	6	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2031	7	0.000	0.000	0.000	0.000	0.000	0.000	0.000	59,901,878.190
2031	8	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2031	9	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2031	10	-32,281,144.451	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2031	11	0.000	-22,058,577.731	0.000	0.000	0.000	0.000	0.000	0.000
2031	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2032	1	0.000	0.000	0.000	0.000	44,214,776.735	-57,741,670.665	0.000	0.000
2032	2	0.000	0.000	0.000	14,237,420.329	0.000	0.000	0.000	0.000
2032	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2032	4	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2032	5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2032	6	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2032	7	0.000	0.000	0.000	0.000	0.000	0.000	0.000	59,901,878.190
2032	8	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2032	9	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2032	10	-32,281,144.451	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2032	11	0.000	-22,058,577.731	0.000	0.000	0.000	0.000	0.000	0.000
2032	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2033	1	0.000	0.000	0.000	0.000	44,214,776.735	-57,741,670.665	0.000	0.000
2033	2	0.000	0.000	0.000	14,237,420.329	0.000	0.000	0.000	0.000
2033	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2033	4	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2033	5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2033	6	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2033	7	0.000	0.000	0.000	0.000	0.000	0.000	0.000	59,901,878.190
2033	8	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2033	9	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2033	10	-32,281,144.451	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2033	11	0.000	-22,058,577.731	0.000	0.000	0.000	0.000	0.000	0.000
2033	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	Oct	Nov	d0610	Febd03on	Jand03on	d16onjan	d9801	d16onjul
2034	1	0.000	0.000	0.000	0.000	44,214,776.735	-57,741,670.665	0.000	0.000
2034	2	0.000	0.000	0.000	14,237,420.329	0.000	0.000	0.000	0.000
2034	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2034	4	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2034	5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2034	6	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2034	7	0.000	0.000	0.000	0.000	0.000	0.000	0.000	59,901,878.190
2034	8	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2034	9	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2034	10	-32,281,144.451	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2034	11	0.000	-22,058,577.731	0.000	0.000	0.000	0.000	0.000	0.000
2034	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2035	1	0.000	0.000	0.000	0.000	44,214,776.735	-57,741,670.665	0.000	0.000
2035	2	0.000	0.000	0.000	14,237,420.329	0.000	0.000	0.000	0.000
2035	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2035	4	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2035	5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2035	6	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2035	7	0.000	0.000	0.000	0.000	0.000	0.000	0.000	59,901,878.190
2035	8	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2035	9	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2035	10	-32,281,144.451	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2035	11	0.000	-22,058,577.731	0.000	0.000	0.000	0.000	0.000	0.000
2035	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2036	1	0.000	0.000	0.000	0.000	44,214,776.735	-57,741,670.665	0.000	0.000
2036	2	0.000	0.000	0.000	14,237,420.329	0.000	0.000	0.000	0.000
2036	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2036	4	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2036	5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2036	6	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2036	7	0.000	0.000	0.000	0.000	0.000	0.000	0.000	59,901,878.190
2036	8	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2036	9	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2036	10	-32,281,144.451	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	Oct	Nov	d0610	Febd03on	Jand03on	d16onjan	d9801	d16onjul
2036	11	0.000	-22,058,577.731	0.000	0.000	0.000	0.000	0.000	0.000
2036	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2037	1	0.000	0.000	0.000	0.000	44,214,776.735	-57,741,670.665	0.000	0.000
2037	2	0.000	0.000	0.000	14,237,420.329	0.000	0.000	0.000	0.000
2037	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2037	4	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2037	5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2037	6	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2037	7	0.000	0.000	0.000	0.000	0.000	0.000	0.000	59,901,878.190
2037	8	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2037	9	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2037	10	-32,281,144.451	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2037	11	0.000	-22,058,577.731	0.000	0.000	0.000	0.000	0.000	0.000
2037	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2038	1	0.000	0.000	0.000	0.000	44,214,776.735	-57,741,670.665	0.000	0.000
2038	2	0.000	0.000	0.000	14,237,420.329	0.000	0.000	0.000	0.000
2038	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2038	4	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2038	5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2038	6	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2038	7	0.000	0.000	0.000	0.000	0.000	0.000	0.000	59,901,878.190
2038	8	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2038	9	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2038	10	-32,281,144.451	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2038	11	0.000	-22,058,577.731	0.000	0.000	0.000	0.000	0.000	0.000
2038	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2039	1	0.000	0.000	0.000	0.000	44,214,776.735	-57,741,670.665	0.000	0.000
2039	2	0.000	0.000	0.000	14,237,420.329	0.000	0.000	0.000	0.000
2039	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2039	4	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2039	5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2039	6	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2039	7	0.000	0.000	0.000	0.000	0.000	0.000	0.000	59,901,878.190
2039	8	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	Oct	Nov	d0610	Febd03on	Jand03on	d16onjan	d9801	d16onjul
2039	9	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2039	10	-32,281,144.451	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2039	11	0.000	-22,058,577.731	0.000	0.000	0.000	0.000	0.000	0.000
2039	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2040	1	0.000	0.000	0.000	0.000	44,214,776.735	-57,741,670.665	0.000	0.000
2040	2	0.000	0.000	0.000	14,237,420.329	0.000	0.000	0.000	0.000
2040	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2040	4	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2040	5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2040	6	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2040	7	0.000	0.000	0.000	0.000	0.000	0.000	0.000	59,901,878.190
2040	8	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2040	9	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2040	10	-32,281,144.451	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2040	11	0.000	-22,058,577.731	0.000	0.000	0.000	0.000	0.000	0.000
2040	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2041	1	0.000	0.000	0.000	0.000	44,214,776.735	-57,741,670.665	0.000	0.000
2041	2	0.000	0.000	0.000	14,237,420.329	0.000	0.000	0.000	0.000
2041	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2041	4	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2041	5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2041	6	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2041	7	0.000	0.000	0.000	0.000	0.000	0.000	0.000	59,901,878.190
2041	8	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2041	9	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2041	10	-32,281,144.451	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2041	11	0.000	-22,058,577.731	0.000	0.000	0.000	0.000	0.000	0.000
2041	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2042	1	0.000	0.000	0.000	0.000	44,214,776.735	-57,741,670.665	0.000	0.000
2042	2	0.000	0.000	0.000	14,237,420.329	0.000	0.000	0.000	0.000
2042	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2042	4	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2042	5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2042	6	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	Oct	Nov	d0610	Febd03on	Jand03on	d16onjan	d9801	d16onjul
2042	7	0.000	0.000	0.000	0.000	0.000	0.000	0.000	59,901,878.190
2042	8	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2042	9	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2042	10	-32,281,144.451	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2042	11	0.000	-22,058,577.731	0.000	0.000	0.000	0.000	0.000	0.000
2042	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2043	1	0.000	0.000	0.000	0.000	44,214,776.735	-57,741,670.665	0.000	0.000
2043	2	0.000	0.000	0.000	14,237,420.329	0.000	0.000	0.000	0.000
2043	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2043	4	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2043	5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2043	6	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2043	7	0.000	0.000	0.000	0.000	0.000	0.000	0.000	59,901,878.190
2043	8	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2043	9	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2043	10	-32,281,144.451	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2043	11	0.000	-22,058,577.731	0.000	0.000	0.000	0.000	0.000	0.000
2043	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2044	1	0.000	0.000	0.000	0.000	44,214,776.735	-57,741,670.665	0.000	0.000
2044	2	0.000	0.000	0.000	14,237,420.329	0.000	0.000	0.000	0.000
2044	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2044	4	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2044	5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2044	6	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2044	7	0.000	0.000	0.000	0.000	0.000	0.000	0.000	59,901,878.190
2044	8	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2044	9	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2044	10	-32,281,144.451	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2044	11	0.000	-22,058,577.731	0.000	0.000	0.000	0.000	0.000	0.000
2044	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2045	1	0.000	0.000	0.000	0.000	44,214,776.735	-57,741,670.665	0.000	0.000
2045	2	0.000	0.000	0.000	14,237,420.329	0.000	0.000	0.000	0.000
2045	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2045	4	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	Oct	Nov	d0610	Febd03on	Jand03on	d16onjan	d9801	d16onjul
2045	5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2045	6	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2045	7	0.000	0.000	0.000	0.000	0.000	0.000	0.000	59,901,878.190
2045	8	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2045	9	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2045	10	-32,281,144.451	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2045	11	0.000	-22,058,577.731	0.000	0.000	0.000	0.000	0.000	0.000
2045	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2046	1	0.000	0.000	0.000	0.000	44,214,776.735	-57,741,670.665	0.000	0.000
2046	2	0.000	0.000	0.000	14,237,420.329	0.000	0.000	0.000	0.000
2046	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2046	4	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2046	5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2046	6	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2046	7	0.000	0.000	0.000	0.000	0.000	0.000	0.000	59,901,878.190
2046	8	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2046	9	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2046	10	-32,281,144.451	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2046	11	0.000	-22,058,577.731	0.000	0.000	0.000	0.000	0.000	0.000
2046	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2047	1	0.000	0.000	0.000	0.000	44,214,776.735	-57,741,670.665	0.000	0.000
2047	2	0.000	0.000	0.000	14,237,420.329	0.000	0.000	0.000	0.000
2047	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2047	4	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2047	5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2047	6	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2047	7	0.000	0.000	0.000	0.000	0.000	0.000	0.000	59,901,878.190
2047	8	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2047	9	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2047	10	-32,281,144.451	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2047	11	0.000	-22,058,577.731	0.000	0.000	0.000	0.000	0.000	0.000
2047	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2048	1	0.000	0.000	0.000	0.000	44,214,776.735	-57,741,670.665	0.000	0.000
2048	2	0.000	0.000	0.000	14,237,420.329	0.000	0.000	0.000	0.000

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	Oct	Nov	d0610	Febd03on	Jand03on	d16onjan	d9801	d16onjul
2048	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2048	4	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2048	5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2048	6	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2048	7	0.000	0.000	0.000	0.000	0.000	0.000	0.000	59,901,878.190
2048	8	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2048	9	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2048	10	-32,281,144.451	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2048	11	0.000	-22,058,577.731	0.000	0.000	0.000	0.000	0.000	0.000
2048	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2049	1	0.000	0.000	0.000	0.000	44,214,776.735	-57,741,670.665	0.000	0.000
2049	2	0.000	0.000	0.000	14,237,420.329	0.000	0.000	0.000	0.000
2049	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2049	4	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2049	5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2049	6	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2049	7	0.000	0.000	0.000	0.000	0.000	0.000	0.000	59,901,878.190
2049	8	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2049	9	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2049	10	-32,281,144.451	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2049	11	0.000	-22,058,577.731	0.000	0.000	0.000	0.000	0.000	0.000
2049	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2050	1	0.000	0.000	0.000	0.000	44,214,776.735	-57,741,670.665	0.000	0.000
2050	2	0.000	0.000	0.000	14,237,420.329	0.000	0.000	0.000	0.000
2050	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2050	4	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2050	5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2050	6	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2050	7	0.000	0.000	0.000	0.000	0.000	0.000	0.000	59,901,878.190
2050	8	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2050	9	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2050	10	-32,281,144.451	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2050	11	0.000	-22,058,577.731	0.000	0.000	0.000	0.000	0.000	0.000
2050	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	Oct	Nov	d0610	Febd03on	Jand03on	d16onjan	d9801	d16onjul
2051	1	0.000	0.000	0.000	0.000	44,214,776.735	-57,741,670.665	0.000	0.000
2051	2	0.000	0.000	0.000	14,237,420.329	0.000	0.000	0.000	0.000
2051	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2051	4	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2051	5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2051	6	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2051	7	0.000	0.000	0.000	0.000	0.000	0.000	0.000	59,901,878.190
2051	8	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2051	9	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2051	10	-32,281,144.451	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2051	11	0.000	-22,058,577.731	0.000	0.000	0.000	0.000	0.000	0.000
2051	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2052	1	0.000	0.000	0.000	0.000	44,214,776.735	-57,741,670.665	0.000	0.000
2052	2	0.000	0.000	0.000	14,237,420.329	0.000	0.000	0.000	0.000
2052	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2052	4	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2052	5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2052	6	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2052	7	0.000	0.000	0.000	0.000	0.000	0.000	0.000	59,901,878.190
2052	8	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2052	9	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2052	10	-32,281,144.451	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2052	11	0.000	-22,058,577.731	0.000	0.000	0.000	0.000	0.000	0.000
2052	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2053	1	0.000	0.000	0.000	0.000	44,214,776.735	-57,741,670.665	0.000	0.000
2053	2	0.000	0.000	0.000	14,237,420.329	0.000	0.000	0.000	0.000
2053	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2053	4	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2053	5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2053	6	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2053	7	0.000	0.000	0.000	0.000	0.000	0.000	0.000	59,901,878.190
2053	8	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2053	9	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2053	10	-32,281,144.451	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	Oct	Nov	d0610	Febd03on	Jand03on	d16onjan	d9801	d16onjul
2053	11	0.000	-22,058,577.731	0.000	0.000	0.000	0.000	0.000	0.000
2053	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2054	1	0.000	0.000	0.000	0.000	44,214,776.735	-57,741,670.665	0.000	0.000
2054	2	0.000	0.000	0.000	14,237,420.329	0.000	0.000	0.000	0.000
2054	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2054	4	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2054	5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2054	6	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2054	7	0.000	0.000	0.000	0.000	0.000	0.000	0.000	59,901,878.190
2054	8	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2054	9	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2054	10	-32,281,144.451	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2054	11	0.000	-22,058,577.731	0.000	0.000	0.000	0.000	0.000	0.000
2054	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2055	1	0.000	0.000	0.000	0.000	44,214,776.735	-57,741,670.665	0.000	0.000
2055	2	0.000	0.000	0.000	14,237,420.329	0.000	0.000	0.000	0.000
2055	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2055	4	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2055	5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2055	6	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2055	7	0.000	0.000	0.000	0.000	0.000	0.000	0.000	59,901,878.190
2055	8	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2055	9	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2055	10	-32,281,144.451	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2055	11	0.000	-22,058,577.731	0.000	0.000	0.000	0.000	0.000	0.000
2055	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2056	1	0.000	0.000	0.000	0.000	44,214,776.735	-57,741,670.665	0.000	0.000
2056	2	0.000	0.000	0.000	14,237,420.329	0.000	0.000	0.000	0.000
2056	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2056	4	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2056	5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2056	6	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2056	7	0.000	0.000	0.000	0.000	0.000	0.000	0.000	59,901,878.190
2056	8	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	Oct	Nov	d0610	Febd03on	Jand03on	d16onjan	d9801	d16onjul
2056	9	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2056	10	-32,281,144.451	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2056	11	0.000	-22,058,577.731	0.000	0.000	0.000	0.000	0.000	0.000
2056	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2057	1	0.000	0.000	0.000	0.000	44,214,776.735	-57,741,670.665	0.000	0.000
2057	2	0.000	0.000	0.000	14,237,420.329	0.000	0.000	0.000	0.000
2057	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2057	4	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2057	5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2057	6	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2057	7	0.000	0.000	0.000	0.000	0.000	0.000	0.000	59,901,878.190
2057	8	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2057	9	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2057	10	-32,281,144.451	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2057	11	0.000	-22,058,577.731	0.000	0.000	0.000	0.000	0.000	0.000
2057	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	d15onmay	jan20on	d15onnov	d16onaug	d18onoct	d17on	X-Missing
2000	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2000	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2000	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2000	4	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2000	5	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2000	6	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2000	7	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2000	8	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2000	9	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2000	10	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2000	11	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2000	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2001	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2001	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2001	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2001	4	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2001	5	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2001	6	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2001	7	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2001	8	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2001	9	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2001	10	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2001	11	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2001	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2002	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2002	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2002	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2002	4	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2002	5	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2002	6	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2002	7	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2002	8	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2002	9	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2002	10	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	d15onmay	jan20on	d15onnov	d16onaug	d18onoct	d17on	X-Missing
2002	11	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2002	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2003	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2003	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2003	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2003	4	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2003	5	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2003	6	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2003	7	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2003	8	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2003	9	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2003	10	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2003	11	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2003	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2004	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2004	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2004	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2004	4	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2004	5	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2004	6	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2004	7	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2004	8	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2004	9	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2004	10	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2004	11	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2004	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2005	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2005	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2005	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2005	4	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2005	5	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2005	6	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2005	7	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2005	8	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	d15onmay	jan20on	d15onnov	d16onaug	d18onoct	d17on	X-Missing
2005	9	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2005	10	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2005	11	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2005	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2006	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2006	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2006	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2006	4	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2006	5	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2006	6	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2006	7	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2006	8	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2006	9	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2006	10	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2006	11	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2006	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2007	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2007	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2007	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2007	4	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2007	5	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2007	6	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2007	7	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2007	8	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2007	9	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2007	10	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2007	11	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2007	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2008	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2008	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2008	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2008	4	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2008	5	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2008	6	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	d15onmay	jan20on	d15onnov	d16onaug	d18onoct	d17on	X-Missing
2008	7	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2008	8	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2008	9	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2008	10	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2008	11	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2008	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2009	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2009	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2009	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2009	4	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2009	5	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2009	6	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2009	7	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2009	8	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2009	9	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2009	10	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2009	11	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2009	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2010	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2010	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2010	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2010	4	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2010	5	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2010	6	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2010	7	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2010	8	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2010	9	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2010	10	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2010	11	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2010	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2011	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2011	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2011	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2011	4	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	d15onmay	jan20on	d15onnov	d16onaug	d18onoct	d17on	X-Missing
2011	5	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2011	6	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2011	7	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2011	8	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2011	9	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2011	10	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2011	11	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2011	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2012	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2012	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2012	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2012	4	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2012	5	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2012	6	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2012	7	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2012	8	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2012	9	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2012	10	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2012	11	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2012	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2013	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2013	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2013	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2013	4	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2013	5	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2013	6	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2013	7	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2013	8	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2013	9	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2013	10	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2013	11	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2013	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2014	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2014	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	d15onmay	jan20on	d15onnov	d16onaug	d18onoct	d17on	X-Missing
2014	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2014	4	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2014	5	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2014	6	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2014	7	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2014	8	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2014	9	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2014	10	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2014	11	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2014	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2015	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2015	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2015	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2015	4	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2015	5	-18,712,688.921	0.000	0.000	0.000	0.000	0.000	0.000
2015	6	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2015	7	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2015	8	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2015	9	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2015	10	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2015	11	0.000	0.000	-44,730,926.403	0.000	0.000	0.000	0.000
2015	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2016	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2016	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2016	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2016	4	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2016	5	-18,712,688.921	0.000	0.000	0.000	0.000	0.000	0.000
2016	6	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2016	7	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2016	8	0.000	0.000	0.000	51,577,168.438	0.000	0.000	0.000
2016	9	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2016	10	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2016	11	0.000	0.000	-44,730,926.403	0.000	0.000	0.000	0.000
2016	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	d15onmay	jan20on	d15onnov	d16onaug	d18onoct	d17on	X-Missing
2017	1	0.000	0.000	0.000	0.000	0.000	-33,700,591.388	0.000
2017	2	0.000	0.000	0.000	0.000	0.000	-33,700,591.388	0.000
2017	3	0.000	0.000	0.000	0.000	0.000	-33,700,591.388	0.000
2017	4	0.000	0.000	0.000	0.000	0.000	-33,700,591.388	0.000
2017	5	-18,712,688.921	0.000	0.000	0.000	0.000	-33,700,591.388	0.000
2017	6	0.000	0.000	0.000	0.000	0.000	-33,700,591.388	0.000
2017	7	0.000	0.000	0.000	0.000	0.000	-33,700,591.388	0.000
2017	8	0.000	0.000	0.000	51,577,168.438	0.000	-33,700,591.388	0.000
2017	9	0.000	0.000	0.000	0.000	0.000	-33,700,591.388	0.000
2017	10	0.000	0.000	0.000	0.000	0.000	-33,700,591.388	0.000
2017	11	0.000	0.000	-44,730,926.403	0.000	0.000	-33,700,591.388	0.000
2017	12	0.000	0.000	0.000	0.000	0.000	-33,700,591.388	0.000
2018	1	0.000	0.000	0.000	0.000	0.000	-33,700,591.388	0.000
2018	2	0.000	0.000	0.000	0.000	0.000	-33,700,591.388	0.000
2018	3	0.000	0.000	0.000	0.000	0.000	-33,700,591.388	0.000
2018	4	0.000	0.000	0.000	0.000	0.000	-33,700,591.388	0.000
2018	5	-18,712,688.921	0.000	0.000	0.000	0.000	-33,700,591.388	0.000
2018	6	0.000	0.000	0.000	0.000	0.000	-33,700,591.388	0.000
2018	7	0.000	0.000	0.000	0.000	0.000	-33,700,591.388	0.000
2018	8	0.000	0.000	0.000	51,577,168.438	0.000	-33,700,591.388	0.000
2018	9	0.000	0.000	0.000	0.000	0.000	-33,700,591.388	0.000
2018	10	0.000	0.000	0.000	0.000	-8,421,883.658	-33,700,591.388	0.000
2018	11	0.000	0.000	-44,730,926.403	0.000	0.000	-33,700,591.388	0.000
2018	12	0.000	0.000	0.000	0.000	0.000	-33,700,591.388	0.000
2019	1	0.000	0.000	0.000	0.000	0.000	-33,700,591.388	0.000
2019	2	0.000	0.000	0.000	0.000	0.000	-33,700,591.388	0.000
2019	3	0.000	0.000	0.000	0.000	0.000	-33,700,591.388	0.000
2019	4	0.000	0.000	0.000	0.000	0.000	-33,700,591.388	0.000
2019	5	-18,712,688.921	0.000	0.000	0.000	0.000	-33,700,591.388	0.000
2019	6	0.000	0.000	0.000	0.000	0.000	-33,700,591.388	0.000
2019	7	0.000	0.000	0.000	0.000	0.000	-33,700,591.388	0.000
2019	8	0.000	0.000	0.000	51,577,168.438	0.000	-33,700,591.388	0.000
2019	9	0.000	0.000	0.000	0.000	0.000	-33,700,591.388	0.000
2019	10	0.000	0.000	0.000	0.000	-8,421,883.658	-33,700,591.388	0.000

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	d15onmay	jan20on	d15onnov	d16onaug	d18onoct	d17on	X-Missing
2019	11	0.000	0.000	-44,730,926.403	0.000	0.000	-33,700,591.388	0.000
2019	12	0.000	0.000	0.000	0.000	0.000	-33,700,591.388	0.000
2020	1	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2020	2	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2020	3	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2020	4	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2020	5	-18,712,688.921	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2020	6	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2020	7	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2020	8	0.000	43,300,613.688	0.000	51,577,168.438	0.000	-33,700,591.388	0.000
2020	9	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2020	10	0.000	43,300,613.688	0.000	0.000	-8,421,883.658	-33,700,591.388	0.000
2020	11	0.000	43,300,613.688	-44,730,926.403	0.000	0.000	-33,700,591.388	0.000
2020	12	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2021	1	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2021	2	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2021	3	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2021	4	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2021	5	-18,712,688.921	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2021	6	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2021	7	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2021	8	0.000	43,300,613.688	0.000	51,577,168.438	0.000	-33,700,591.388	0.000
2021	9	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2021	10	0.000	43,300,613.688	0.000	0.000	-8,421,883.658	-33,700,591.388	0.000
2021	11	0.000	43,300,613.688	-44,730,926.403	0.000	0.000	-33,700,591.388	0.000
2021	12	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2022	1	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2022	2	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2022	3	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2022	4	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2022	5	-18,712,688.921	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2022	6	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2022	7	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2022	8	0.000	43,300,613.688	0.000	51,577,168.438	0.000	-33,700,591.388	0.000

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	d15onmay	jan20on	d15onnov	d16onaug	d18onoct	d17on	X-Missing
2022	9	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2022	10	0.000	43,300,613.688	0.000	0.000	-8,421,883.658	-33,700,591.388	0.000
2022	11	0.000	43,300,613.688	-44,730,926.403	0.000	0.000	-33,700,591.388	0.000
2022	12	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2023	1	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2023	2	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2023	3	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2023	4	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2023	5	-18,712,688.921	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2023	6	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2023	7	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2023	8	0.000	43,300,613.688	0.000	51,577,168.438	0.000	-33,700,591.388	0.000
2023	9	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2023	10	0.000	43,300,613.688	0.000	0.000	-8,421,883.658	-33,700,591.388	0.000
2023	11	0.000	43,300,613.688	-44,730,926.403	0.000	0.000	-33,700,591.388	0.000
2023	12	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2024	1	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2024	2	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2024	3	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2024	4	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2024	5	-18,712,688.921	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2024	6	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2024	7	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2024	8	0.000	43,300,613.688	0.000	51,577,168.438	0.000	-33,700,591.388	0.000
2024	9	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2024	10	0.000	43,300,613.688	0.000	0.000	-8,421,883.658	-33,700,591.388	0.000
2024	11	0.000	43,300,613.688	-44,730,926.403	0.000	0.000	-33,700,591.388	0.000
2024	12	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2025	1	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2025	2	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2025	3	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2025	4	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2025	5	-18,712,688.921	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2025	6	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	d15onmay	jan20on	d15onnov	d16onaug	d18onoct	d17on	X-Missing
2025	7	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2025	8	0.000	43,300,613.688	0.000	51,577,168.438	0.000	-33,700,591.388	0.000
2025	9	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2025	10	0.000	43,300,613.688	0.000	0.000	-8,421,883.658	-33,700,591.388	0.000
2025	11	0.000	43,300,613.688	-44,730,926.403	0.000	0.000	-33,700,591.388	0.000
2025	12	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2026	1	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2026	2	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2026	3	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2026	4	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2026	5	-18,712,688.921	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2026	6	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2026	7	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2026	8	0.000	43,300,613.688	0.000	51,577,168.438	0.000	-33,700,591.388	0.000
2026	9	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2026	10	0.000	43,300,613.688	0.000	0.000	-8,421,883.658	-33,700,591.388	0.000
2026	11	0.000	43,300,613.688	-44,730,926.403	0.000	0.000	-33,700,591.388	0.000
2026	12	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2027	1	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2027	2	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2027	3	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2027	4	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2027	5	-18,712,688.921	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2027	6	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2027	7	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2027	8	0.000	43,300,613.688	0.000	51,577,168.438	0.000	-33,700,591.388	0.000
2027	9	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2027	10	0.000	43,300,613.688	0.000	0.000	-8,421,883.658	-33,700,591.388	0.000
2027	11	0.000	43,300,613.688	-44,730,926.403	0.000	0.000	-33,700,591.388	0.000
2027	12	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2028	1	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2028	2	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2028	3	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2028	4	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	d15onmay	jan20on	d15onnov	d16onaug	d18onoct	d17on	X-Missing
2028	5	-18,712,688.921	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2028	6	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2028	7	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2028	8	0.000	43,300,613.688	0.000	51,577,168.438	0.000	-33,700,591.388	0.000
2028	9	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2028	10	0.000	43,300,613.688	0.000	0.000	-8,421,883.658	-33,700,591.388	0.000
2028	11	0.000	43,300,613.688	-44,730,926.403	0.000	0.000	-33,700,591.388	0.000
2028	12	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2029	1	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2029	2	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2029	3	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2029	4	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2029	5	-18,712,688.921	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2029	6	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2029	7	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2029	8	0.000	43,300,613.688	0.000	51,577,168.438	0.000	-33,700,591.388	0.000
2029	9	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2029	10	0.000	43,300,613.688	0.000	0.000	-8,421,883.658	-33,700,591.388	0.000
2029	11	0.000	43,300,613.688	-44,730,926.403	0.000	0.000	-33,700,591.388	0.000
2029	12	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2030	1	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2030	2	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2030	3	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2030	4	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2030	5	-18,712,688.921	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2030	6	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2030	7	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2030	8	0.000	43,300,613.688	0.000	51,577,168.438	0.000	-33,700,591.388	0.000
2030	9	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2030	10	0.000	43,300,613.688	0.000	0.000	-8,421,883.658	-33,700,591.388	0.000
2030	11	0.000	43,300,613.688	-44,730,926.403	0.000	0.000	-33,700,591.388	0.000
2030	12	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2031	1	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2031	2	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	d15onmay	jan20on	d15onnov	d16onaug	d18onoct	d17on	X-Missing
2031	3	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2031	4	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2031	5	-18,712,688.921	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2031	6	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2031	7	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2031	8	0.000	43,300,613.688	0.000	51,577,168.438	0.000	-33,700,591.388	0.000
2031	9	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2031	10	0.000	43,300,613.688	0.000	0.000	-8,421,883.658	-33,700,591.388	0.000
2031	11	0.000	43,300,613.688	-44,730,926.403	0.000	0.000	-33,700,591.388	0.000
2031	12	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2032	1	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2032	2	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2032	3	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2032	4	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2032	5	-18,712,688.921	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2032	6	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2032	7	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2032	8	0.000	43,300,613.688	0.000	51,577,168.438	0.000	-33,700,591.388	0.000
2032	9	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2032	10	0.000	43,300,613.688	0.000	0.000	-8,421,883.658	-33,700,591.388	0.000
2032	11	0.000	43,300,613.688	-44,730,926.403	0.000	0.000	-33,700,591.388	0.000
2032	12	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2033	1	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2033	2	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2033	3	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2033	4	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2033	5	-18,712,688.921	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2033	6	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2033	7	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2033	8	0.000	43,300,613.688	0.000	51,577,168.438	0.000	-33,700,591.388	0.000
2033	9	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2033	10	0.000	43,300,613.688	0.000	0.000	-8,421,883.658	-33,700,591.388	0.000
2033	11	0.000	43,300,613.688	-44,730,926.403	0.000	0.000	-33,700,591.388	0.000
2033	12	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	d15onmay	jan20on	d15onnov	d16onaug	d18onoct	d17on	X-Missing
2034	1	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2034	2	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2034	3	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2034	4	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2034	5	-18,712,688.921	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2034	6	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2034	7	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2034	8	0.000	43,300,613.688	0.000	51,577,168.438	0.000	-33,700,591.388	0.000
2034	9	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2034	10	0.000	43,300,613.688	0.000	0.000	-8,421,883.658	-33,700,591.388	0.000
2034	11	0.000	43,300,613.688	-44,730,926.403	0.000	0.000	-33,700,591.388	0.000
2034	12	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2035	1	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2035	2	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2035	3	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2035	4	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2035	5	-18,712,688.921	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2035	6	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2035	7	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2035	8	0.000	43,300,613.688	0.000	51,577,168.438	0.000	-33,700,591.388	0.000
2035	9	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2035	10	0.000	43,300,613.688	0.000	0.000	-8,421,883.658	-33,700,591.388	0.000
2035	11	0.000	43,300,613.688	-44,730,926.403	0.000	0.000	-33,700,591.388	0.000
2035	12	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2036	1	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2036	2	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2036	3	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2036	4	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2036	5	-18,712,688.921	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2036	6	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2036	7	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2036	8	0.000	43,300,613.688	0.000	51,577,168.438	0.000	-33,700,591.388	0.000
2036	9	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2036	10	0.000	43,300,613.688	0.000	0.000	-8,421,883.658	-33,700,591.388	0.000

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	d15onmay	jan20on	d15onnov	d16onaug	d18onoct	d17on	X-Missing
2036	11	0.000	43,300,613.688	-44,730,926.403	0.000	0.000	-33,700,591.388	0.000
2036	12	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2037	1	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2037	2	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2037	3	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2037	4	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2037	5	-18,712,688.921	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2037	6	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2037	7	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2037	8	0.000	43,300,613.688	0.000	51,577,168.438	0.000	-33,700,591.388	0.000
2037	9	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2037	10	0.000	43,300,613.688	0.000	0.000	-8,421,883.658	-33,700,591.388	0.000
2037	11	0.000	43,300,613.688	-44,730,926.403	0.000	0.000	-33,700,591.388	0.000
2037	12	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2038	1	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2038	2	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2038	3	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2038	4	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2038	5	-18,712,688.921	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2038	6	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2038	7	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2038	8	0.000	43,300,613.688	0.000	51,577,168.438	0.000	-33,700,591.388	0.000
2038	9	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2038	10	0.000	43,300,613.688	0.000	0.000	-8,421,883.658	-33,700,591.388	0.000
2038	11	0.000	43,300,613.688	-44,730,926.403	0.000	0.000	-33,700,591.388	0.000
2038	12	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2039	1	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2039	2	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2039	3	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2039	4	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2039	5	-18,712,688.921	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2039	6	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2039	7	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2039	8	0.000	43,300,613.688	0.000	51,577,168.438	0.000	-33,700,591.388	0.000

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	d15onmay	jan20on	d15onnov	d16onaug	d18onoct	d17on	X-Missing
2039	9	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2039	10	0.000	43,300,613.688	0.000	0.000	-8,421,883.658	-33,700,591.388	0.000
2039	11	0.000	43,300,613.688	-44,730,926.403	0.000	0.000	-33,700,591.388	0.000
2039	12	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2040	1	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2040	2	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2040	3	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2040	4	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2040	5	-18,712,688.921	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2040	6	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2040	7	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2040	8	0.000	43,300,613.688	0.000	51,577,168.438	0.000	-33,700,591.388	0.000
2040	9	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2040	10	0.000	43,300,613.688	0.000	0.000	-8,421,883.658	-33,700,591.388	0.000
2040	11	0.000	43,300,613.688	-44,730,926.403	0.000	0.000	-33,700,591.388	0.000
2040	12	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2041	1	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2041	2	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2041	3	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2041	4	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2041	5	-18,712,688.921	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2041	6	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2041	7	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2041	8	0.000	43,300,613.688	0.000	51,577,168.438	0.000	-33,700,591.388	0.000
2041	9	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2041	10	0.000	43,300,613.688	0.000	0.000	-8,421,883.658	-33,700,591.388	0.000
2041	11	0.000	43,300,613.688	-44,730,926.403	0.000	0.000	-33,700,591.388	0.000
2041	12	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2042	1	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2042	2	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2042	3	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2042	4	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2042	5	-18,712,688.921	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2042	6	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	d15onmay	jan20on	d15onnov	d16onaug	d18onoct	d17on	X-Missing
2042	7	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2042	8	0.000	43,300,613.688	0.000	51,577,168.438	0.000	-33,700,591.388	0.000
2042	9	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2042	10	0.000	43,300,613.688	0.000	0.000	-8,421,883.658	-33,700,591.388	0.000
2042	11	0.000	43,300,613.688	-44,730,926.403	0.000	0.000	-33,700,591.388	0.000
2042	12	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2043	1	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2043	2	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2043	3	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2043	4	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2043	5	-18,712,688.921	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2043	6	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2043	7	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2043	8	0.000	43,300,613.688	0.000	51,577,168.438	0.000	-33,700,591.388	0.000
2043	9	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2043	10	0.000	43,300,613.688	0.000	0.000	-8,421,883.658	-33,700,591.388	0.000
2043	11	0.000	43,300,613.688	-44,730,926.403	0.000	0.000	-33,700,591.388	0.000
2043	12	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2044	1	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2044	2	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2044	3	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2044	4	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2044	5	-18,712,688.921	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2044	6	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2044	7	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2044	8	0.000	43,300,613.688	0.000	51,577,168.438	0.000	-33,700,591.388	0.000
2044	9	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2044	10	0.000	43,300,613.688	0.000	0.000	-8,421,883.658	-33,700,591.388	0.000
2044	11	0.000	43,300,613.688	-44,730,926.403	0.000	0.000	-33,700,591.388	0.000
2044	12	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2045	1	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2045	2	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2045	3	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2045	4	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	d15onmay	jan20on	d15onnov	d16onaug	d18onoct	d17on	X-Missing
2045	5	-18,712,688.921	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2045	6	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2045	7	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2045	8	0.000	43,300,613.688	0.000	51,577,168.438	0.000	-33,700,591.388	0.000
2045	9	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2045	10	0.000	43,300,613.688	0.000	0.000	-8,421,883.658	-33,700,591.388	0.000
2045	11	0.000	43,300,613.688	-44,730,926.403	0.000	0.000	-33,700,591.388	0.000
2045	12	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2046	1	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2046	2	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2046	3	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2046	4	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2046	5	-18,712,688.921	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2046	6	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2046	7	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2046	8	0.000	43,300,613.688	0.000	51,577,168.438	0.000	-33,700,591.388	0.000
2046	9	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2046	10	0.000	43,300,613.688	0.000	0.000	-8,421,883.658	-33,700,591.388	0.000
2046	11	0.000	43,300,613.688	-44,730,926.403	0.000	0.000	-33,700,591.388	0.000
2046	12	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2047	1	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2047	2	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2047	3	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2047	4	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2047	5	-18,712,688.921	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2047	6	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2047	7	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2047	8	0.000	43,300,613.688	0.000	51,577,168.438	0.000	-33,700,591.388	0.000
2047	9	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2047	10	0.000	43,300,613.688	0.000	0.000	-8,421,883.658	-33,700,591.388	0.000
2047	11	0.000	43,300,613.688	-44,730,926.403	0.000	0.000	-33,700,591.388	0.000
2047	12	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2048	1	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2048	2	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	d15onmay	jan20on	d15onnov	d16onaug	d18onoct	d17on	X-Missing
2048	3	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2048	4	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2048	5	-18,712,688.921	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2048	6	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2048	7	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2048	8	0.000	43,300,613.688	0.000	51,577,168.438	0.000	-33,700,591.388	0.000
2048	9	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2048	10	0.000	43,300,613.688	0.000	0.000	-8,421,883.658	-33,700,591.388	0.000
2048	11	0.000	43,300,613.688	-44,730,926.403	0.000	0.000	-33,700,591.388	0.000
2048	12	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2049	1	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2049	2	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2049	3	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2049	4	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2049	5	-18,712,688.921	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2049	6	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2049	7	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2049	8	0.000	43,300,613.688	0.000	51,577,168.438	0.000	-33,700,591.388	0.000
2049	9	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2049	10	0.000	43,300,613.688	0.000	0.000	-8,421,883.658	-33,700,591.388	0.000
2049	11	0.000	43,300,613.688	-44,730,926.403	0.000	0.000	-33,700,591.388	0.000
2049	12	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2050	1	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2050	2	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2050	3	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2050	4	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2050	5	-18,712,688.921	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2050	6	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2050	7	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2050	8	0.000	43,300,613.688	0.000	51,577,168.438	0.000	-33,700,591.388	0.000
2050	9	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2050	10	0.000	43,300,613.688	0.000	0.000	-8,421,883.658	-33,700,591.388	0.000
2050	11	0.000	43,300,613.688	-44,730,926.403	0.000	0.000	-33,700,591.388	0.000
2050	12	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	d15onmay	jan20on	d15onnov	d16onaug	d18onoct	d17on	X-Missing
2051	1	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2051	2	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2051	3	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2051	4	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2051	5	-18,712,688.921	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2051	6	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2051	7	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2051	8	0.000	43,300,613.688	0.000	51,577,168.438	0.000	-33,700,591.388	0.000
2051	9	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2051	10	0.000	43,300,613.688	0.000	0.000	-8,421,883.658	-33,700,591.388	0.000
2051	11	0.000	43,300,613.688	-44,730,926.403	0.000	0.000	-33,700,591.388	0.000
2051	12	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2052	1	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2052	2	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2052	3	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2052	4	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2052	5	-18,712,688.921	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2052	6	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2052	7	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2052	8	0.000	43,300,613.688	0.000	51,577,168.438	0.000	-33,700,591.388	0.000
2052	9	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2052	10	0.000	43,300,613.688	0.000	0.000	-8,421,883.658	-33,700,591.388	0.000
2052	11	0.000	43,300,613.688	-44,730,926.403	0.000	0.000	-33,700,591.388	0.000
2052	12	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2053	1	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2053	2	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2053	3	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2053	4	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2053	5	-18,712,688.921	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2053	6	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2053	7	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2053	8	0.000	43,300,613.688	0.000	51,577,168.438	0.000	-33,700,591.388	0.000
2053	9	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2053	10	0.000	43,300,613.688	0.000	0.000	-8,421,883.658	-33,700,591.388	0.000

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	d15onmay	jan20on	d15onnov	d16onaug	d18onoct	d17on	X-Missing
2053	11	0.000	43,300,613.688	-44,730,926.403	0.000	0.000	-33,700,591.388	0.000
2053	12	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2054	1	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2054	2	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2054	3	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2054	4	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2054	5	-18,712,688.921	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2054	6	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2054	7	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2054	8	0.000	43,300,613.688	0.000	51,577,168.438	0.000	-33,700,591.388	0.000
2054	9	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2054	10	0.000	43,300,613.688	0.000	0.000	-8,421,883.658	-33,700,591.388	0.000
2054	11	0.000	43,300,613.688	-44,730,926.403	0.000	0.000	-33,700,591.388	0.000
2054	12	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2055	1	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2055	2	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2055	3	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2055	4	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2055	5	-18,712,688.921	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2055	6	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2055	7	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2055	8	0.000	43,300,613.688	0.000	51,577,168.438	0.000	-33,700,591.388	0.000
2055	9	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2055	10	0.000	43,300,613.688	0.000	0.000	-8,421,883.658	-33,700,591.388	0.000
2055	11	0.000	43,300,613.688	-44,730,926.403	0.000	0.000	-33,700,591.388	0.000
2055	12	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2056	1	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2056	2	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2056	3	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2056	4	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2056	5	-18,712,688.921	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2056	6	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2056	7	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2056	8	0.000	43,300,613.688	0.000	51,577,168.438	0.000	-33,700,591.388	0.000

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	d15onmay	jan20on	d15onnov	d16onaug	d18onoct	d17on	X-Missing
2056	9	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2056	10	0.000	43,300,613.688	0.000	0.000	-8,421,883.658	-33,700,591.388	0.000
2056	11	0.000	43,300,613.688	-44,730,926.403	0.000	0.000	-33,700,591.388	0.000
2056	12	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2057	1	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2057	2	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2057	3	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2057	4	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2057	5	-18,712,688.921	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2057	6	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2057	7	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2057	8	0.000	43,300,613.688	0.000	51,577,168.438	0.000	-33,700,591.388	0.000
2057	9	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000
2057	10	0.000	43,300,613.688	0.000	0.000	-8,421,883.658	-33,700,591.388	0.000
2057	11	0.000	43,300,613.688	-44,730,926.403	0.000	0.000	-33,700,591.388	0.000
2057	12	0.000	43,300,613.688	0.000	0.000	0.000	-33,700,591.388	0.000

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	Lighting Share	Lighting Usage	Heating Usage	Cooling Usage	Lighting Usage	Other Usage	Total Usage
2000	1	0.164109	130,703,621.02	295,687,489.661	0.000	130,703,621.02	665,739,788.155	1,092,130,898.837
2000	2	0.164109	107,439,921.43	363,537,521.693	0.000	107,439,921.43	547,245,975.068	1,018,223,418.189
2000	3	0.164109	105,705,203.40	181,345,305.207	3,548,661.885	105,705,203.40	538,410,176.907	829,009,347.396
2000	4	0.164109	102,331,744.66	130,116,279.521	2,165,927.863	102,331,744.66	521,227,441.720	755,841,393.760
2000	5	0.164109	100,103,738.69	59,807,087.619	48,581,180.656	100,103,738.69	509,879,078.097	718,371,085.064
2000	6	0.164109	106,680,419.24	7,297,245.328	109,345,487.708	106,680,419.24	543,377,445.500	766,700,597.781
2000	7	0.164109	110,624,570.21	713,613.498	222,899,724.079	110,624,570.21	563,467,005.459	897,704,913.251
2000	8	0.164109	111,381,098.95	0.000	228,749,251.945	111,381,098.95	567,320,389.739	907,450,740.632
2000	9	0.164109	112,671,495.97	1,109,526.815	268,591,890.670	112,671,495.97	573,893,035.789	956,265,949.241
2000	10	0.164109	101,662,185.23	25,752,927.556	67,026,208.202	101,662,185.23	517,817,036.212	712,258,357.202
2000	11	0.164109	102,391,388.55	69,536,706.009	4,557,578.433	102,391,388.55	521,531,238.314	698,016,911.307
2000	12	0.164109	123,350,715.24	302,402,633.730	0.000	123,350,715.24	628,287,712.264	1,054,041,061.238
2001	1	0.165389	133,440,323.07	440,861,476.478	0.000	133,440,323.07	673,387,678.512	1,247,689,478.059
2001	2	0.165389	109,813,969.05	352,845,230.023	0.000	109,813,969.05	554,160,631.391	1,016,819,830.461
2001	3	0.165389	107,977,267.00	291,158,212.753	0.000	107,977,267.00	544,891,974.843	944,027,454.601
2001	4	0.165389	104,531,343.78	185,072,310.368	4,559,062.802	104,531,343.78	527,502,611.658	821,665,328.607
2001	5	0.165389	103,364,265.91	33,484,058.031	55,447,626.432	103,364,265.91	521,613,118.592	713,909,068.964
2001	6	0.165389	108,814,137.92	11,276,095.237	92,510,006.892	108,814,137.92	549,115,125.298	761,715,365.345
2001	7	0.165389	112,813,029.68	1,278,363.288	258,704,406.905	112,813,029.68	569,294,965.817	942,090,765.687
2001	8	0.165389	113,538,579.11	0.000	430,244,833.227	113,538,579.11	572,956,348.219	1,116,739,760.559
2001	9	0.165389	114,907,589.93	387,636.056	243,751,660.487	114,907,589.93	579,864,867.276	938,911,753.748
2001	10	0.165389	103,794,260.10	21,482,873.441	35,668,094.592	103,794,260.10	523,783,023.356	684,728,251.493
2001	11	0.165389	104,548,334.92	68,755,303.397	1,886,706.747	104,548,334.92	527,588,355.057	702,778,700.123
2001	12	0.165389	125,765,232.88	113,812,058.044	0.000	125,765,232.88	634,656,423.622	874,233,714.545
2002	1	0.167023	136,074,539.22	302,211,164.461	0.000	136,074,539.22	678,630,390.286	1,116,916,093.973
2002	2	0.167023	112,047,931.97	259,578,142.632	0.000	112,047,931.97	558,804,992.026	930,431,066.632
2002	3	0.167023	110,415,204.71	261,518,414.462	0.000	110,415,204.71	550,662,261.243	922,595,880.416
2002	4	0.167023	107,671,494.29	205,032,918.485	17,425,552.744	107,671,494.29	536,978,839.728	867,108,805.242
2002	5	0.167023	104,337,913.95	74,975,054.591	37,148,772.767	104,337,913.95	520,353,621.383	736,815,362.688
2002	6	0.167023	111,162,860.52	28,501,753.661	91,675,623.189	111,162,860.52	554,390,967.272	785,731,204.645
2002	7	0.167023	115,267,304.49	0.000	425,949,250.181	115,267,304.49	574,860,633.600	1,116,077,188.274
2002	8	0.167023	115,973,993.15	0.000	459,942,726.085	115,973,993.15	578,385,028.383	1,154,301,747.614
2002	9	0.167023	117,334,934.18	0.000	304,058,815.600	117,334,934.18	585,172,308.001	1,006,566,057.784
2002	10	0.167023	106,106,056.91	18,646,775.271	129,303,086.982	106,106,056.91	529,171,696.778	783,227,615.937

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	Lighting Share	Lighting Usage	Heating Usage	Cooling Usage	Lighting Usage	Other Usage	Total Usage
2002	11	0.167023	106,952,707.22	135,805,375.930	8,045,765.518	106,952,707.22	533,394,107.780	784,197,956.445
2002	12	0.167023	128,506,103.19	269,571,965.551	0.000	128,506,103.19	640,885,116.785	1,038,963,185.527
2003	1	0.165801	143,400,470.66	334,307,984.235	0.000	143,400,470.66	721,496,546.619	1,199,205,001.517
2003	2	0.165801	112,821,750.06	415,675,135.448	0.000	112,821,750.06	567,644,601.681	1,096,141,487.187
2003	3	0.165801	110,417,109.83	357,384,367.204	0.000	110,417,109.83	555,546,038.749	1,023,347,515.786
2003	4	0.165801	106,906,357.86	148,964,759.569	5,519,677.173	106,906,357.86	537,882,251.360	799,273,045.959
2003	5	0.165801	104,466,208.09	58,790,889.619	13,351,292.787	104,466,208.09	525,605,027.846	702,213,418.343
2003	6	0.165801	111,333,164.10	15,432,710.393	24,931,435.151	111,333,164.10	560,155,019.363	711,852,329.005
2003	7	0.165801	116,172,395.24	809,149.609	242,137,812.510	116,172,395.24	584,502,837.328	943,622,194.685
2003	8	0.165801	117,161,117.66	0.000	260,688,744.928	117,161,117.66	589,477,436.144	967,327,298.729
2003	9	0.165801	116,547,846.20	53,136.695	276,213,995.516	116,547,846.20	586,391,858.856	979,206,837.271
2003	10	0.165801	106,061,639.58	35,336,792.697	45,417,434.491	106,061,639.58	533,632,186.344	720,448,053.108
2003	11	0.165801	105,443,855.90	89,573,053.153	1,348,421.735	105,443,855.90	530,523,906.538	726,889,237.328
2003	12	0.165801	129,680,515.41	204,394,467.690	0.000	129,680,515.41	652,466,784.812	986,541,767.914
2004	1	0.164529	144,448,955.91	308,264,608.246	0.000	144,448,955.91	733,504,760.530	1,186,218,324.690
2004	2	0.164529	115,294,662.84	437,980,461.203	0.000	115,294,662.84	585,460,680.689	1,138,735,804.728
2004	3	0.164529	107,822,722.40	279,810,205.413	0.000	107,822,722.40	547,518,531.187	935,151,458.999
2004	4	0.164529	108,236,429.66	150,163,443.281	8,055,248.090	108,236,429.66	549,619,316.500	816,074,437.531
2004	5	0.164529	108,208,893.65	53,062,748.512	73,896,623.871	108,208,893.65	549,479,489.987	784,647,756.021
2004	6	0.164529	112,478,464.40	5,959,927.844	138,077,300.122	112,478,464.40	571,160,162.212	827,675,854.574
2004	7	0.164529	114,215,126.87	54,010.389	206,734,755.926	114,215,126.87	579,978,849.659	900,982,742.847
2004	8	0.164529	116,773,684.43	0.000	207,190,115.567	116,773,684.43	592,971,080.261	916,934,880.254
2004	9	0.164529	118,103,552.65	0.000	173,435,041.359	118,103,552.65	599,724,086.334	891,262,680.348
2004	10	0.164529	106,068,463.41	21,210,650.544	61,479,112.361	106,068,463.41	538,610,489.512	727,368,715.829
2004	11	0.164529	106,304,368.91	74,416,671.421	3,667,219.759	106,304,368.91	539,808,406.129	724,196,666.217
2004	12	0.164529	130,893,007.36	204,675,951.023	264,607.360	130,893,007.36	664,668,314.205	1,000,501,879.946
2005	1	0.163297	143,284,332.54	346,684,474.232	0.000	143,284,332.54	734,160,154.175	1,224,128,960.944
2005	2	0.163297	114,440,491.76	379,427,988.676	0.000	114,440,491.76	586,370,104.713	1,080,238,585.147
2005	3	0.163297	116,362,810.96	315,626,623.069	0.000	116,362,810.96	596,219,682.354	1,028,209,116.378
2005	4	0.163297	108,026,988.50	181,506,037.462	2,563,443.919	108,026,988.50	553,508,601.596	845,605,071.478
2005	5	0.163297	101,952,658.82	65,027,956.214	15,937,719.075	101,952,658.82	522,384,955.816	705,303,289.929
2005	6	0.163297	111,144,247.13	9,515,566.201	110,100,977.597	111,144,247.13	569,480,809.006	800,241,599.937
2005	7	0.163297	113,535,997.05	0.000	351,513,627.907	113,535,997.05	581,735,655.413	1,046,785,280.370
2005	8	0.163297	115,323,176.04	0.000	373,554,075.421	115,323,176.04	590,892,801.740	1,079,770,053.196

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	Lighting Share	Lighting Usage	Heating Usage	Cooling Usage	Lighting Usage	Other Usage	Total Usage
2005	9	0.163297	119,970,285.41	0.000	246,593,410.358	119,970,285.41	614,703,657.239	981,267,353.011
2005	10	0.163297	107,417,727.34	12,899,044.240	118,267,764.600	107,417,727.34	550,386,869.734	788,971,405.917
2005	11	0.163297	109,322,777.51	85,234,773.006	9,880,268.132	109,322,777.51	560,147,964.355	764,585,783.006
2005	12	0.163297	125,458,276.89	290,713,810.316	0.000	125,458,276.89	642,823,023.794	1,058,995,110.999
2006	1	0.157604	143,076,842.76	315,569,872.564	0.000	143,076,842.76	764,746,982.321	1,223,393,697.642
2006	2	0.157604	117,129,490.90	265,799,194.762	0.000	117,129,490.90	626,058,158.556	1,008,986,844.221
2006	3	0.157604	108,499,858.66	297,027,112.007	0.000	108,499,858.66	579,932,698.358	985,459,669.025
2006	4	0.157604	106,219,316.45	171,777,768.617	1,414,927.470	106,219,316.45	567,743,180.174	847,155,192.707
2006	5	0.157604	106,040,252.23	40,803,141.795	2,545,324.658	106,040,252.23	566,786,080.362	716,174,799.045
2006	6	0.157604	112,519,464.01	21,126,456.566	99,219,057.073	112,519,464.01	601,417,524.305	834,282,501.957
2006	7	0.157604	118,855,875.20	0.000	211,482,020.645	118,855,875.20	635,285,697.818	965,623,593.667
2006	8	0.157604	116,069,938.05	0.000	346,345,691.047	116,069,938.05	620,394,839.232	1,082,810,468.326
2006	9	0.157604	116,673,673.89	853,484.119	147,682,901.915	116,673,673.89	623,621,812.635	888,831,872.562
2006	10	0.157604	108,996,787.09	29,953,860.612	16,777,689.093	108,996,787.09	582,588,785.182	738,317,121.977
2006	11	0.157604	110,390,763.65	136,746,094.885	646,235.614	110,390,763.65	590,039,602.171	837,822,696.324
2006	12	0.157604	125,655,255.68	199,648,321.269	0.000	125,655,255.68	671,628,446.215	996,932,023.160
2007	1	0.152028	139,002,094.61	233,631,771.004	0.000	139,002,094.61	775,318,972.653	1,147,952,838.266
2007	2	0.152028	110,849,978.18	409,891,500.482	0.000	110,849,978.18	618,293,497.227	1,139,034,975.885
2007	3	0.152028	105,004,629.95	368,760,286.084	389,109.822	105,004,629.95	585,689,604.499	1,059,843,630.355
2007	4	0.152028	107,577,170.58	147,861,192.016	10,285,027.993	107,577,170.58	600,038,593.750	865,761,984.344
2007	5	0.152028	100,990,993.94	57,256,021.455	25,133,367.733	100,990,993.94	563,302,545.091	746,682,928.215
2007	6	0.152028	107,424,504.35	3,537,190.228	160,292,472.800	107,424,504.35	599,187,059.596	870,441,226.970
2007	7	0.152028	112,321,831.12	0.000	271,910,720.457	112,321,831.12	626,503,125.425	1,010,735,677.006
2007	8	0.152028	110,456,553.81	0.000	288,413,594.462	110,456,553.81	616,099,074.352	1,014,969,222.624
2007	9	0.152028	116,425,225.62	737,195.721	247,864,963.014	116,425,225.62	649,390,835.263	1,014,418,219.621
2007	10	0.152028	100,486,457.15	7,566,224.446	131,711,709.335	100,486,457.15	560,488,364.870	800,252,755.799
2007	11	0.152028	107,735,559.48	81,847,675.928	26,782,528.581	107,735,559.48	600,922,047.457	817,287,811.445
2007	12	0.152028	125,018,284.66	258,242,411.557	0.000	125,018,284.66	697,320,772.750	1,080,581,468.969
2008	1	0.146822	134,685,430.88	324,236,083.637	0.000	134,685,430.88	782,655,058.690	1,241,576,573.205
2008	2	0.146822	107,568,313.89	398,726,505.279	0.000	107,568,313.89	625,077,890.571	1,131,372,709.743
2008	3	0.146822	101,535,780.46	364,616,455.452	0.000	101,535,780.46	590,022,927.480	1,056,175,163.393
2008	4	0.146822	101,292,693.07	203,211,791.735	252,897.734	101,292,693.07	588,610,350.205	893,367,732.739
2008	5	0.146822	98,404,680.66	61,150,053.756	6,468,595.836	98,404,680.66	571,828,152.591	737,851,482.847
2008	6	0.146822	103,222,967.32	17,881,899.020	104,166,388.690	103,222,967.32	599,827,145.500	825,098,400.527

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	Lighting Share	Lighting Usage	Heating Usage	Cooling Usage	Lighting Usage	Other Usage	Total Usage
2008	7	0.146822	109,480,324.94	6,849.900	215,639,320.719	109,480,324.94	636,188,558.623	961,315,054.178
2008	8	0.146822	111,059,229.80	0.000	270,298,167.655	111,059,229.80	645,363,551.602	1,026,720,949.061
2008	9	0.146822	108,113,802.56	0.000	172,548,858.730	108,113,802.56	628,247,717.168	908,910,378.455
2008	10	0.146822	99,850,162.06	13,626,946.958	52,932,293.183	99,850,162.06	580,227,823.749	746,637,225.952
2008	11	0.146822	104,031,162.76	104,431,432.029	5,777,081.389	104,031,162.76	604,523,557.365	818,763,233.548
2008	12	0.146822	116,931,783.20	304,310,988.673	0.000	116,931,783.20	679,488,873.067	1,100,731,644.943
2009	1	0.142535	129,249,621.25	400,739,094.487	0.000	129,249,621.25	777,544,279.951	1,307,532,995.693
2009	2	0.142535	105,210,042.29	458,046,832.881	0.000	105,210,042.29	632,926,160.861	1,196,183,036.028
2009	3	0.142535	98,061,718.57	293,909,299.391	0.000	98,061,718.57	589,923,031.213	981,894,049.170
2009	4	0.142535	99,089,236.98	160,771,710.285	498,277.597	99,089,236.98	596,104,411.524	856,463,636.386
2009	5	0.142535	96,706,254.81	62,218,888.281	15,621,350.101	96,706,254.81	581,768,786.086	756,315,279.273
2009	6	0.142535	99,690,066.96	9,435,807.230	64,459,559.512	99,690,066.96	599,718,905.014	773,304,338.715
2009	7	0.142535	103,956,115.50	6,756.759	191,118,224.029	103,956,115.50	625,382,745.355	920,463,841.647
2009	8	0.142535	103,763,542.92	0.000	186,602,425.743	103,763,542.92	624,224,260.641	914,590,229.305
2009	9	0.142535	106,692,773.72	0.000	129,572,034.470	106,692,773.72	641,846,027.216	878,110,835.410
2009	10	0.142535	97,333,011.86	39,156,723.656	29,313,417.597	97,333,011.86	585,539,252.526	751,342,405.635
2009	11	0.142535	100,542,675.28	92,546,696.626	0.000	100,542,675.28	604,848,055.244	797,937,427.151
2009	12	0.142535	115,509,428.73	214,956,912.881	0.000	115,509,428.73	694,885,561.130	1,025,351,902.743
2010	1	0.122784	110,373,273.23	380,756,869.184	0.000	110,373,273.23	788,550,832.648	1,279,680,975.064
2010	2	0.122784	91,598,822.33	387,120,115.687	0.000	91,598,822.33	654,418,642.322	1,133,137,580.338
2010	3	0.122784	84,117,431.53	293,953,204.615	0.000	84,117,431.53	600,968,592.608	979,039,228.757
2010	4	0.122784	85,572,499.66	110,687,931.372	13,848,880.076	85,572,499.66	611,364,181.581	821,473,492.689
2010	5	0.122784	81,946,190.32	41,119,312.240	14,619,577.883	81,946,190.32	585,456,376.475	723,141,456.915
2010	6	0.122784	86,781,375.08	8,808,427.162	145,415,702.602	86,781,375.08	620,000,871.351	861,006,376.195
2010	7	0.122784	91,041,639.81	0.000	292,354,517.009	91,041,639.81	650,437,907.408	1,033,834,064.224
2010	8	0.122784	91,627,254.23	0.000	381,168,824.810	91,627,254.23	654,621,771.227	1,127,417,850.271
2010	9	0.122784	90,802,295.22	0.000	253,768,852.150	90,802,295.22	648,727,933.876	993,299,081.243
2010	10	0.122784	83,049,877.52	15,838,140.062	59,048,721.262	83,049,877.52	593,341,559.554	751,278,298.403
2010	11	0.122784	84,697,593.08	83,939,031.734	5,729,247.471	84,697,593.08	605,113,498.889	779,479,371.177
2010	12	0.122784	99,402,502.53	255,774,371.416	0.000	99,402,502.53	710,171,256.518	1,065,348,130.465
2011	1	0.115431	100,630,195.09	377,239,798.015	0.000	100,630,195.09	771,144,994.099	1,249,014,987.204
2011	2	0.115431	79,242,040.62	417,283,995.760	0.000	79,242,040.62	607,244,206.325	1,103,770,242.709
2011	3	0.115431	73,876,991.91	290,602,099.155	0.000	73,876,991.91	566,130,995.203	930,610,086.272
2011	4	0.115431	73,931,685.12	183,852,869.859	3,886,136.371	73,931,685.12	566,550,117.811	828,220,809.159

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	Lighting Share	Lighting Usage	Heating Usage	Cooling Usage	Lighting Usage	Other Usage	Total Usage
2011	5	0.115431	75,576,299.37	65,607,232.366	19,511,280.341	75,576,299.37	579,153,055.192	739,847,867.267
2011	6	0.115431	78,744,837.50	8,658,796.537	144,623,392.006	78,744,837.50	603,434,060.682	835,461,086.725
2011	7	0.115431	85,324,845.83	0.000	274,162,388.430	85,324,845.83	653,857,698.227	1,013,344,932.486
2011	8	0.115431	82,562,649.01	0.000	404,408,965.429	82,562,649.01	632,690,550.061	1,119,662,164.500
2011	9	0.115431	82,576,176.54	1,499,803.687	206,356,029.012	82,576,176.54	632,794,213.671	923,226,222.913
2011	10	0.115431	75,827,538.16	17,416,326.748	33,269,846.188	75,827,538.16	581,078,337.519	707,592,048.615
2011	11	0.115431	78,129,146.58	77,626,450.770	5,511,922.622	78,129,146.58	598,715,924.409	759,983,444.378
2011	12	0.115431	88,136,156.44	179,465,275.969	0.000	88,136,156.44	675,401,213.080	943,002,645.486
2012	1	0.111902	96,265,263.27	267,208,547.005	0.000	96,265,263.27	764,002,268.971	1,127,476,079.241
2012	2	0.111902	77,463,331.45	301,283,139.423	0.000	77,463,331.45	614,782,102.908	993,528,573.777
2012	3	0.111902	75,212,766.25	213,226,727.301	12,449,967.463	75,212,766.25	596,920,655.705	897,810,116.718
2012	4	0.111902	74,446,890.61	61,901,758.215	37,317,574.833	74,446,890.61	590,842,339.362	764,508,563.025
2012	5	0.111902	73,017,670.98	51,612,197.293	25,596,432.999	73,017,670.98	579,499,441.565	729,725,742.838
2012	6	0.111902	76,901,813.39	3,425,508.657	162,670,806.012	76,901,813.39	610,325,655.612	853,323,783.668
2012	7	0.111902	82,522,970.49	306,200.156	412,350,747.688	82,522,970.49	654,937,560.635	1,150,117,478.970
2012	8	0.111902	80,145,769.04	0.000	363,498,169.536	80,145,769.04	636,071,073.974	1,079,715,012.545
2012	9	0.111902	81,218,292.81	591,420.157	187,453,358.887	81,218,292.81	644,583,080.976	913,846,152.827
2012	10	0.111902	73,866,047.98	28,754,412.054	31,065,791.179	73,866,047.98	586,232,523.957	719,918,775.166
2012	11	0.111902	77,503,405.80	114,374,422.267	7,238,737.575	77,503,405.80	615,100,150.108	814,216,715.751
2012	12	0.111902	86,763,599.53	177,189,874.735	0.000	86,763,599.53	688,593,004.967	952,546,479.233
2013	1	0.100574	87,622,829.39	287,318,824.486	0.000	87,622,829.39	783,602,709.204	1,158,544,363.077
2013	2	0.100574	68,961,903.10	339,288,797.948	0.000	68,961,903.10	616,719,803.302	1,024,970,504.355
2013	3	0.100574	67,130,825.80	306,400,893.175	0.000	67,130,825.80	600,344,651.431	973,876,370.403
2013	4	0.100574	68,552,922.12	220,039,784.874	0.000	68,552,922.12	613,062,324.843	901,655,031.832
2013	5	0.100574	64,104,440.62	63,277,966.123	26,952,156.904	64,104,440.62	573,279,973.835	727,614,537.477
2013	6	0.100574	69,394,676.79	12,124,525.963	111,680,272.034	69,394,676.79	620,590,057.628	813,789,532.416
2013	7	0.100574	73,245,935.28	174,536.726	246,609,889.365	73,245,935.28	655,031,499.515	975,061,860.889
2013	8	0.100574	72,510,341.65	0.000	201,371,525.942	72,510,341.65	648,453,154.957	922,335,022.549
2013	9	0.100574	72,830,779.75	19,459.103	227,167,144.251	72,830,779.75	651,318,802.654	951,336,185.754
2013	10	0.100574	66,025,641.89	8,465,908.020	84,439,277.814	66,025,641.89	590,461,095.816	749,391,923.535
2013	11	0.100574	69,808,877.39	102,746,781.463	7,625,559.487	69,808,877.39	624,294,214.556	804,475,432.897
2013	12	0.100574	77,599,251.44	265,088,693.385	0.000	77,599,251.44	693,962,795.802	1,036,650,740.623
2014	1	0.096035	85,767,568.31	413,137,600.761	0.000	85,767,568.31	807,321,126.942	1,306,226,296.015
2014	2	0.096035	66,028,875.54	484,423,868.853	0.000	66,028,875.54	621,522,881.674	1,171,975,626.065

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	Lighting Share	Lighting Usage	Heating Usage	Cooling Usage	Lighting Usage	Other Usage	Total Usage
2014	3	0.096035	64,826,589.14	417,764,446.722	0.000	64,826,589.14	610,205,885.834	1,092,796,921.692
2014	4	0.096035	63,138,052.72	225,051,337.657	721,622.963	63,138,052.72	594,311,869.640	883,222,882.983
2014	5	0.096035	64,486,800.56	61,000,151.371	20,974,262.164	64,486,800.56	607,007,491.640	753,468,705.741
2014	6	0.096035	64,987,451.91	13,928,201.874	135,254,895.060	64,987,451.91	611,720,070.255	825,890,619.099
2014	7	0.096035	70,626,888.84	0.000	231,774,120.423	70,626,888.84	664,803,498.760	967,204,508.027
2014	8	0.096035	68,875,707.10	0.000	173,613,784.453	68,875,707.10	648,319,808.635	890,809,300.188
2014	9	0.096035	69,792,476.63	1,332,852.392	237,184,194.719	69,792,476.63	656,949,264.058	965,258,787.796
2014	10	0.096035	63,584,011.99	19,147,288.962	35,638,708.936	63,584,011.99	598,509,637.475	716,879,647.364
2014	11	0.096035	65,190,028.25	112,989,053.559	936,590.581	65,190,028.25	613,626,900.062	792,742,572.448
2014	12	0.096035	75,615,679.47	279,150,912.906	0.000	75,615,679.47	711,762,461.851	1,066,529,054.232
2015	1	0.088566	77,891,926.86	352,914,375.055	0.000	77,891,926.86	801,585,225.474	1,232,391,527.386
2015	2	0.088566	61,357,898.79	423,880,965.262	0.000	61,357,898.79	631,433,668.658	1,116,672,532.708
2015	3	0.088566	58,572,185.80	442,115,040.780	0.000	58,572,185.80	602,765,917.569	1,103,453,144.152
2015	4	0.088566	59,840,782.04	181,126,533.861	294,543.806	59,840,782.04	615,821,031.758	857,082,891.464
2015	5	0.088566	55,695,785.02	55,404,414.899	27,475,512.692	55,695,785.02	573,164,899.082	711,740,611.698
2015	6	0.088566	60,316,867.09	9,133,175.745	122,182,591.131	60,316,867.09	620,720,419.407	812,353,053.375
2015	7	0.088566	63,999,857.75	83,968.891	169,972,081.163	63,999,857.75	658,622,048.157	892,677,955.958
2015	8	0.088566	64,506,194.22	0.000	274,149,192.538	64,506,194.22	663,832,752.946	1,002,488,139.705
2015	9	0.088566	64,166,654.60	91,522.857	207,312,189.332	64,166,654.60	660,338,553.272	931,908,920.056
2015	10	0.088566	58,119,267.97	13,942,826.112	60,874,617.607	58,119,267.97	598,104,943.633	731,041,655.325
2015	11	0.088566	55,279,313.77	69,324,383.932	1,434,621.609	55,279,313.77	568,878,996.543	694,917,315.850
2015	12	0.088566	70,459,585.55	180,351,865.189	0.000	70,459,585.55	725,099,057.770	975,910,508.512
2016	1	0.068046	56,742,775.08	282,774,616.402	0.000	56,742,775.08	777,143,691.136	1,116,661,082.617
2016	2	0.068046	47,857,217.04	381,840,512.282	0.000	47,857,217.04	655,447,927.039	1,085,145,656.365
2016	3	0.068046	45,685,572.30	275,385,663.029	0.000	45,685,572.30	625,705,285.628	946,776,520.956
2016	4	0.068046	47,436,268.92	155,080,059.476	128,251.304	47,436,268.92	649,682,661.320	852,327,241.022
2016	5	0.068046	43,944,382.72	68,669,412.894	5,159,202.801	43,944,382.72	601,858,117.455	719,631,115.866
2016	6	0.068046	47,772,293.19	13,699,630.723	124,265,492.951	47,772,293.19	654,284,817.972	840,022,234.837
2016	7	0.068046	54,169,198.64	0.000	219,881,034.278	54,169,198.64	741,896,231.198	1,015,946,464.120
2016	8	0.068046	53,579,239.41	0.000	324,705,229.186	53,579,239.41	733,816,205.203	1,112,100,673.797
2016	9	0.068046	49,653,071.03	0.000	249,765,271.654	49,653,071.03	680,043,773.681	979,462,116.362
2016	10	0.068046	45,889,850.38	5,725,245.421	86,989,958.986	45,889,850.38	628,503,058.873	767,108,113.655
2016	11	0.068046	43,870,482.57	62,915,756.757	8,345,080.809	43,870,482.57	600,845,988.059	715,977,308.197
2016	12	0.068046	53,681,551.77	236,677,172.787	108,278.077	53,681,551.77	735,217,465.674	1,025,684,468.309

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	Lighting Share	Lighting Usage	Heating Usage	Cooling Usage	Lighting Usage	Other Usage	Total Usage
2017	1	0.060306	48,270,122.89	374,312,624.401	0.000	48,270,122.89	752,145,459.225	1,174,728,206.517
2017	2	0.060306	40,875,734.35	298,449,482.564	0.000	40,875,734.35	636,926,035.043	976,251,251.957
2017	3	0.060306	38,616,269.32	224,195,140.536	0.000	38,616,269.32	601,719,032.068	864,530,441.927
2017	4	0.060306	38,872,866.05	171,344,187.225	2,240,771.406	38,872,866.05	605,717,324.359	818,175,149.036
2017	5	0.060306	36,094,046.24	54,506,318.125	19,153,754.908	36,094,046.24	562,417,730.870	672,171,850.143
2017	6	0.060306	41,012,099.32	12,222,749.073	90,294,958.000	41,012,099.32	639,050,875.134	782,580,681.525
2017	7	0.060306	46,329,069.83	0.000	203,429,662.804	46,329,069.83	721,899,954.182	971,658,686.816
2017	8	0.060306	46,346,037.85	0.000	200,302,126.704	46,346,037.85	722,164,350.025	968,812,514.581
2017	9	0.060306	43,109,896.31	0.000	101,090,649.283	43,109,896.31	671,738,765.377	815,939,310.967
2017	10	0.060306	38,633,660.34	2,680,671.135	115,922,174.537	38,633,660.34	601,990,019.047	759,226,525.060
2017	11	0.060306	37,204,165.21	114,274,675.546	6,620,429.767	37,204,165.21	579,715,613.978	737,814,884.503
2017	12	0.060306	45,959,071.20	239,785,872.863	0.000	45,959,071.20	716,134,632.467	1,001,879,576.532
2018	1	0.052828	41,695,117.41	439,705,983.302	0.000	41,695,117.41	747,573,640.218	1,228,974,740.931
2018	2	0.052828	34,802,428.21	385,486,985.284	0.000	34,802,428.21	623,990,998.447	1,044,280,411.938
2018	3	0.052828	33,298,921.25	287,688,985.938	0.000	33,298,921.25	597,033,833.152	918,021,740.337
2018	4	0.052828	34,755,526.19	246,404,396.374	0.000	34,755,526.19	623,150,067.526	904,309,990.089
2018	5	0.052828	32,643,363.04	101,603,922.486	18,699,217.771	32,643,363.04	585,279,986.036	738,226,489.332
2018	6	0.052828	34,577,977.38	2,109,282.545	133,718,326.015	34,577,977.38	619,966,701.795	790,372,287.737
2018	7	0.052828	40,169,486.01	0.000	247,388,404.528	40,169,486.01	720,219,794.230	1,007,777,684.768
2018	8	0.052828	39,582,581.89	0.000	243,497,142.821	39,582,581.89	709,696,882.356	992,776,607.072
2018	9	0.052828	36,856,919.61	0.000	232,930,297.727	36,856,919.61	660,827,052.952	930,614,270.290
2018	10	0.052828	32,580,587.48	21,407,211.426	92,930,026.422	32,580,587.48	584,154,450.168	731,072,275.500
2018	11	0.052828	31,802,029.10	151,133,007.053	10,027,690.765	31,802,029.10	570,195,268.354	763,157,995.272
2018	12	0.052828	39,803,051.20	283,114,472.951	0.000	39,803,051.20	713,649,792.171	1,036,567,316.319
2019	1	0.046495	35,891,315.02	287,861,883.171	0.000	35,891,315.02	736,045,712.504	1,059,798,910.698
2019	2	0.046495	29,680,066.28	417,972,150.788	0.000	29,680,066.28	608,667,738.130	1,056,319,955.200
2019	3	0.046495	28,241,664.99	345,003,368.787	0.000	28,241,664.99	579,169,540.456	952,414,574.231
2019	4	0.046495	28,674,696.05	192,720,749.200	0.000	28,674,696.05	588,049,980.135	809,445,425.387
2019	5	0.046495	28,531,418.10	70,103,412.728	1,889,925.114	28,531,418.10	585,111,689.236	685,636,445.174
2019	6	0.046495	30,204,640.54	14,433,770.997	42,183,114.950	30,204,640.54	619,425,511.576	706,247,038.065
2019	7	0.046495	35,514,787.09	0.000	238,114,731.945	35,514,787.09	728,324,017.906	1,001,953,536.938
2019	8	0.046495	34,008,179.70	0.000	262,064,634.306	34,008,179.70	697,427,075.084	993,499,889.089
2019	9	0.046495	32,679,679.83	0.000	152,328,626.293	32,679,679.83	670,182,694.965	855,191,001.092
2019	10	0.046495	28,023,333.25	9,630,900.643	110,305,234.256	28,023,333.25	574,692,074.480	722,651,542.625

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	Lighting Share	Lighting Usage	Heating Usage	Cooling Usage	Lighting Usage	Other Usage	Total Usage
2019	11	0.046495	26,860,173.98	126,568,893.505	5,217,231.091	26,860,173.98	550,838,437.771	709,484,736.350
2019	12	0.046495	34,279,772.87	247,547,724.848	0.000	34,279,772.87	702,996,806.640	984,824,304.359
2020	1	0.043329	35,150,357.19	241,478,313.357	0.000	35,150,357.19	776,101,144.962	1,052,729,815.513
2020	2	0.043329	29,256,665.22	293,510,618.141	0.000	29,256,665.22	645,971,568.599	968,738,851.959
2020	3	0.043329	28,448,296.91	266,395,055.781	0.000	28,448,296.91	628,123,227.426	922,966,580.120
2020	4	0.043329	28,997,141.95	146,677,195.099	649,615.961	28,997,141.95	640,241,433.191	816,565,386.201
2020	5	0.043329	27,434,596.80	96,152,485.258	4,624,700.603	27,434,596.80	605,741,269.516	733,953,052.180
2020	6	0.043329	29,545,443.57	15,757,326.821	130,703,577.491	29,545,443.57	652,347,640.727	828,353,988.614
2020	7	0.043329	33,915,445.46	0.000	302,197,694.422	33,915,445.46	748,834,952.353	1,084,948,092.237
2020	8	0.043329	34,255,591.97	0.000	293,570,821.571	34,255,591.97	756,345,205.899	1,084,171,619.440
2020	9	0.043329	30,736,371.13	419,478.981	217,975,351.111	30,736,371.13	678,642,686.130	927,773,887.349
2020	10	0.043329	28,195,035.78	17,200,888.515	28,967,242.376	28,195,035.78	622,531,356.712	696,894,523.386
2020	11	0.043329	27,148,499.64	88,020,071.801	2,113,258.136	27,148,499.64	599,424,396.746	716,706,226.326
2020	12	0.043329	33,104,095.21	186,289,518.212	1,125,189.811	33,104,095.21	730,920,771.469	951,439,574.704
2021	1	0.041803	32,999,049.58	287,439,632.485	0.000	32,999,049.58	756,391,674.928	1,076,830,356.992
2021	2	0.041803	28,485,471.82	362,186,890.097	0.000	28,485,471.82	652,933,160.663	1,043,605,522.580
2021	3	0.041803	27,243,247.02	289,691,001.633	481,041.376	27,243,247.02	624,459,355.767	941,874,645.792
2021	4	0.041803	27,525,159.87	167,667,769.214	3,728,648.492	27,525,159.87	630,921,255.033	829,842,832.607
2021	5	0.041803	26,197,467.22	60,386,279.816	18,515,435.531	26,197,467.22	600,488,388.580	705,587,571.143
2021	6	0.041803	28,593,953.40	11,043,448.849	97,021,840.819	28,593,953.40	655,419,734.194	792,078,977.260
2021	7	0.041803	32,836,726.94	293,309.427	231,669,266.285	32,836,726.94	752,670,977.163	1,017,470,279.818
2021	8	0.041803	32,364,079.35	0.000	254,881,577.673	32,364,079.35	741,837,128.596	1,029,082,785.618
2021	9	0.041803	30,166,142.10	378,605.990	183,658,343.075	30,166,142.10	691,456,846.296	905,659,937.466
2021	10	0.041803	26,785,870.84	18,493,274.260	56,175,776.128	26,785,870.84	613,975,552.881	715,430,474.109
2021	11	0.041803	25,867,438.26	96,549,520.256	4,851,693.179	25,867,438.26	592,923,590.208	720,192,241.901
2021	12	0.041803	31,770,217.41	220,417,425.239	54,152.022	31,770,217.41	728,224,850.975	980,466,645.649
2022	1	0.040747	32,251,726.02	317,924,695.426	0.000	32,251,726.02	759,259,401.090	1,109,435,822.534
2022	2	0.040747	27,682,918.86	359,123,442.178	0.000	27,682,918.86	651,702,063.269	1,038,508,424.302
2022	3	0.040747	26,469,165.24	287,151,711.179	477,936.554	26,469,165.24	623,128,279.520	937,227,092.491
2022	4	0.040747	26,659,855.27	165,764,478.332	3,694,661.689	26,659,855.27	627,617,440.777	823,736,436.067
2022	5	0.040747	25,364,286.08	59,690,015.856	18,342,806.132	25,364,286.08	597,117,582.081	700,514,690.150
2022	6	0.040747	27,692,910.91	10,915,041.780	96,105,028.315	27,692,910.91	651,937,292.959	786,650,273.967
2022	7	0.040747	31,834,716.00	289,934.454	229,496,520.154	31,834,716.00	749,442,290.023	1,011,063,460.632
2022	8	0.040747	31,380,071.95	0.000	252,502,356.812	31,380,071.95	738,739,211.179	1,022,621,639.945

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	Lighting Share	Lighting Usage	Heating Usage	Cooling Usage	Lighting Usage	Other Usage	Total Usage
2022	9	0.040747	29,231,465.49	374,358.390	181,984,673.500	29,231,465.49	688,157,432.727	899,747,930.103
2022	10	0.040747	25,940,021.44	18,292,100.337	55,681,572.730	25,940,021.44	610,671,352.384	710,585,046.893
2022	11	0.040747	25,045,537.86	95,540,978.005	4,810,979.378	25,045,537.86	589,613,717.657	715,011,212.904
2022	12	0.040747	30,782,702.67	218,228,262.159	53,723.808	30,782,702.67	724,676,142.323	973,740,830.962
2023	1	0.039922	31,563,858.94	317,166,273.995	0.000	31,563,858.94	759,073,516.015	1,107,803,648.954
2023	2	0.039922	27,100,773.74	358,487,313.562	0.000	27,100,773.74	651,741,589.799	1,037,329,677.098
2023	3	0.039922	25,921,518.89	286,815,682.920	473,844.461	25,921,518.89	623,381,903.847	936,592,950.114
2023	4	0.039922	26,118,588.25	165,665,338.825	3,665,006.967	26,118,588.25	628,121,189.284	823,570,123.327
2023	5	0.039922	24,858,281.82	59,690,691.655	18,205,627.885	24,858,281.82	597,812,308.702	700,566,910.066
2023	6	0.039922	27,146,911.32	10,920,900.733	95,431,840.424	27,146,911.32	652,851,144.160	786,350,796.638
2023	7	0.039922	31,212,535.22	290,224.240	227,981,288.496	31,212,535.22	750,624,595.618	1,010,108,643.576
2023	8	0.039922	30,770,439.92	0.000	250,901,717.233	30,770,439.92	739,992,725.841	1,021,664,882.992
2023	9	0.039922	28,670,669.32	374,928.926	180,864,574.603	28,670,669.32	689,495,723.845	899,405,896.697
2023	10	0.039922	25,446,409.30	18,324,121.654	55,348,200.606	25,446,409.30	611,956,079.573	711,074,811.130
2023	11	0.039922	24,571,078.20	95,721,142.645	4,782,565.243	24,571,078.20	590,905,400.898	715,980,186.988
2023	12	0.039922	30,194,160.34	218,649,776.818	53,406.697	30,194,160.34	726,133,882.953	975,031,226.812
2024	1	0.039354	31,041,336.67	315,640,066.513	0.000	31,041,336.67	757,730,081.682	1,104,411,484.869
2024	2	0.039354	26,646,798.71	356,685,198.741	0.000	26,646,798.71	650,457,845.019	1,033,789,842.465
2024	3	0.039354	25,484,506.85	285,319,483.523	470,678.785	25,484,506.85	622,085,886.853	933,360,556.007
2024	4	0.039354	25,677,161.45	164,761,235.159	3,639,715.003	25,677,161.45	626,788,654.288	820,866,765.899
2024	5	0.039354	24,433,366.32	59,353,652.775	18,076,583.253	24,433,366.32	596,427,172.395	698,290,774.746
2024	6	0.039354	26,685,496.61	10,857,855.900	94,742,995.902	26,685,496.61	651,402,474.631	783,688,823.041
2024	7	0.039354	30,696,084.46	288,520.896	226,312,945.415	30,696,084.46	749,302,352.208	1,006,599,902.980
2024	8	0.039354	30,263,724.96	0.000	249,056,265.085	30,263,724.96	738,748,302.925	1,018,068,292.973
2024	9	0.039354	28,190,711.64	372,721.220	179,532,533.840	28,190,711.64	688,145,309.589	896,241,276.291
2024	10	0.039354	25,011,006.36	18,215,941.255	54,939,567.573	25,011,006.36	610,527,571.452	708,694,086.642
2024	11	0.039354	24,146,144.71	95,159,412.614	4,747,380.731	24,146,144.71	589,415,990.599	713,468,928.656
2024	12	0.039354	29,676,623.19	217,366,527.147	53,014.117	29,676,623.19	724,416,939.516	971,513,103.967
2025	1	0.038865	30,580,959.03	313,915,233.179	0.000	30,580,959.03	756,274,499.506	1,100,770,691.717
2025	2	0.038865	26,251,695.38	354,786,679.059	0.000	26,251,695.38	649,210,764.187	1,030,249,138.623
2025	3	0.038865	25,107,965.31	283,824,358.418	467,690.049	25,107,965.31	620,926,043.408	930,326,057.181
2025	4	0.038865	25,302,637.79	163,924,968.414	3,617,059.356	25,302,637.79	625,740,340.870	818,585,006.426
2025	5	0.038865	24,076,677.16	59,056,938.674	17,965,235.698	24,076,677.16	595,422,038.553	696,520,890.083
2025	6	0.038865	26,300,746.80	10,804,749.840	94,167,745.460	26,300,746.80	650,423,817.753	781,697,059.854

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	Lighting Share	Lighting Usage	Heating Usage	Cooling Usage	Lighting Usage	Other Usage	Total Usage
2025	7	0.038865	30,267,322.74	287,146.989	224,962,261.134	30,267,322.74	748,518,198.187	1,004,034,929.045
2025	8	0.038865	29,843,807.44	0.000	247,578,137.848	29,843,807.44	738,044,562.625	1,015,466,507.910
2025	9	0.038865	27,795,047.26	370,970.283	178,472,324.578	27,795,047.26	687,378,228.894	894,016,571.017
2025	10	0.038865	24,653,649.59	18,130,700.802	54,615,810.106	24,653,649.59	609,690,706.173	707,090,866.674
2025	11	0.038865	23,797,439.73	94,715,040.087	4,719,430.019	23,797,439.73	588,516,429.608	711,748,339.447
2025	12	0.038865	29,252,091.17	216,383,124.277	52,707.396	29,252,091.17	723,411,276.566	969,099,199.411
2026	1	0.038383	30,138,751.08	312,338,072.738	0.000	30,138,751.08	755,064,805.748	1,097,541,629.564
2026	2	0.038383	25,871,046.07	353,009,734.177	0.000	25,871,046.07	648,146,179.867	1,027,026,960.115
2026	3	0.038383	24,744,953.77	282,413,920.840	465,062.877	24,744,953.77	619,934,238.840	927,558,176.324
2026	4	0.038383	24,940,186.67	163,116,501.954	3,596,830.295	24,940,186.67	624,825,400.062	816,478,918.975
2026	5	0.038383	23,731,238.34	58,767,402.960	17,865,121.070	23,731,238.34	594,537,670.873	694,901,433.246
2026	6	0.038383	25,926,365.65	10,751,440.067	93,641,795.592	25,926,365.65	649,532,098.774	779,851,700.082
2026	7	0.038383	29,848,014.67	285,728.498	223,706,231.171	29,848,014.67	747,780,999.260	1,001,620,973.597
2026	8	0.038383	29,433,476.61	0.000	246,207,018.256	29,433,476.61	737,395,595.610	1,013,036,090.480
2026	9	0.038383	27,409,061.95	369,176.066	177,493,583.968	27,409,061.95	686,678,024.100	891,949,846.086
2026	10	0.038383	24,306,514.74	18,044,725.699	54,320,818.314	24,306,514.74	608,950,045.070	705,622,103.819
2026	11	0.038383	23,460,305.12	94,275,869.583	4,694,355.922	23,460,305.12	587,749,992.735	710,180,523.359
2026	12	0.038383	28,840,113.79	215,399,678.076	52,431.368	28,840,113.79	722,530,102.773	966,822,326.003
2027	1	0.038010	29,796,059.81	310,532,382.014	0.000	29,796,059.81	754,103,504.864	1,094,431,946.683
2027	2	0.038010	25,576,836.60	350,982,752.782	0.000	25,576,836.60	647,319,888.887	1,023,879,478.268
2027	3	0.038010	24,465,315.78	280,814,935.927	462,680.472	24,465,315.78	619,188,593.876	924,931,526.051
2027	4	0.038010	24,661,308.43	162,194,187.296	3,578,493.959	24,661,308.43	624,148,939.235	814,582,928.919
2027	5	0.038010	23,466,702.48	58,440,461.073	17,775,449.332	23,466,702.48	593,914,856.641	693,597,469.525
2027	6	0.038010	25,640,816.46	10,692,529.245	93,178,539.938	25,640,816.46	648,939,144.569	778,451,030.213
2027	7	0.038010	29,528,326.34	284,164.157	222,603,660.204	29,528,326.34	747,327,483.266	999,743,633.966
2027	8	0.038010	29,120,900.90	0.000	245,002,987.029	29,120,900.90	737,016,020.827	1,011,139,908.757
2027	9	0.038010	27,116,896.19	367,226.733	176,644,696.254	27,116,896.19	686,297,000.172	890,425,819.354
2027	10	0.038010	24,043,134.77	17,949,671.222	54,061,814.013	24,043,134.77	608,503,685.337	704,558,305.345
2027	11	0.038010	23,203,706.24	93,782,177.240	4,672,085.663	23,203,706.24	587,258,728.741	708,916,697.886
2027	12	0.038010	28,522,887.74	214,251,702.815	52,179.231	28,522,887.74	721,881,005.455	964,707,775.237
2028	1	0.037670	29,505,491.79	309,045,524.155	0.000	29,505,491.79	753,753,806.580	1,092,304,822.530
2028	2	0.037670	25,327,773.47	349,308,034.399	0.000	25,327,773.47	647,028,892.163	1,021,664,700.036
2028	3	0.037670	24,228,651.55	279,490,641.154	460,841.606	24,228,651.55	618,950,480.831	923,130,615.140
2028	4	0.037670	24,424,780.72	161,425,204.842	3,564,172.977	24,424,780.72	623,960,839.841	813,374,998.376

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	Lighting Share	Lighting Usage	Heating Usage	Cooling Usage	Lighting Usage	Other Usage	Total Usage
2028	5	0.037670	23,240,235.42	58,157,001.016	17,703,116.912	23,240,235.42	593,700,184.207	692,800,537.554
2028	6	0.037670	25,398,221.34	10,643,622.609	92,818,415.344	25,398,221.34	648,828,568.851	777,688,828.143
2028	7	0.037670	29,256,439.33	282,916.973	221,771,831.307	29,256,439.33	747,391,457.236	998,702,644.841
2028	8	0.037670	28,855,965.18	0.000	244,114,261.340	28,855,965.18	737,160,856.332	1,010,131,082.852
2028	9	0.037670	26,870,085.69	365,687.525	176,009,534.793	26,870,085.69	686,429,140.443	889,674,448.450
2028	10	0.037670	23,822,681.51	17,875,806.079	53,869,894.421	23,822,681.51	608,579,480.652	704,147,862.663
2028	11	0.037670	22,989,962.31	93,401,898.035	4,655,692.388	22,989,962.31	587,306,652.158	708,354,204.892
2028	12	0.037670	28,259,556.27	213,413,140.471	52,001.609	28,259,556.27	721,924,862.738	963,649,561.092
2029	1	0.037386	29,279,091.71	307,884,066.530	0.000	29,279,091.71	753,874,425.468	1,091,037,583.710
2029	2	0.037386	25,136,165.78	348,041,579.393	0.000	25,136,165.78	647,202,881.944	1,020,380,627.120
2029	3	0.037386	24,048,083.70	278,512,816.448	459,501.907	24,048,083.70	619,187,079.210	922,207,481.261
2029	4	0.037386	24,248,078.43	160,895,807.778	3,554,391.812	24,248,078.43	624,336,518.794	813,034,796.811
2029	5	0.037386	23,075,457.59	57,978,925.961	17,657,060.596	23,075,457.59	594,144,022.868	692,855,467.019
2029	6	0.037386	25,214,641.27	10,609,500.340	92,565,714.909	25,214,641.27	649,223,459.080	777,613,315.600
2029	7	0.037386	29,045,342.44	281,996.296	221,159,463.438	29,045,342.44	747,855,878.080	998,342,680.252
2029	8	0.037386	28,647,914.27	0.000	243,434,066.243	28,647,914.27	737,622,946.873	1,009,704,927.387
2029	9	0.037386	26,677,140.10	364,479.230	175,518,014.288	26,677,140.10	686,879,697.657	889,439,331.272
2029	10	0.037386	23,652,093.34	17,818,763.442	53,723,909.553	23,652,093.34	608,991,168.495	704,185,934.825
2029	11	0.037386	22,824,744.80	93,107,358.363	4,643,193.682	22,824,744.80	587,688,700.777	708,263,997.617
2029	12	0.037386	28,051,504.21	212,730,638.080	51,860.077	28,051,504.21	722,266,654.620	963,100,656.990
2030	1	0.035142	27,473,391.93	306,938,829.980	0.000	27,473,391.93	754,308,251.531	1,088,720,473.440
2030	2	0.035142	23,586,523.73	346,975,061.757	0.000	23,586,523.73	647,590,567.554	1,018,152,153.036
2030	3	0.035142	22,568,361.81	277,676,895.907	458,523.053	22,568,361.81	619,635,958.405	920,339,739.176
2030	4	0.035142	22,761,196.93	160,426,093.078	3,547,023.975	22,761,196.93	624,930,430.941	811,664,744.922
2030	5	0.035142	21,665,300.02	57,818,576.408	17,622,411.441	21,665,300.02	594,841,533.213	691,947,821.082
2030	6	0.035142	23,681,491.69	10,581,654.519	92,394,272.938	23,681,491.69	650,198,003.741	776,855,422.885
2030	7	0.035142	27,288,109.88	281,302.766	220,777,975.108	27,288,109.88	749,221,155.819	997,568,543.578
2030	8	0.035142	26,916,786.00	0.000	243,047,594.690	26,916,786.00	739,026,103.493	1,008,990,484.185
2030	9	0.035142	25,064,280.06	363,739.879	175,269,401.395	25,064,280.06	688,163,781.064	888,861,202.399
2030	10	0.035142	22,217,925.57	17,785,291.683	53,653,883.713	22,217,925.57	610,014,396.229	703,671,497.194
2030	11	0.035142	21,436,938.31	92,943,495.724	4,637,558.485	21,436,938.31	588,571,644.100	707,589,636.620
2030	12	0.035142	26,346,771.11	212,404,029.435	51,805.884	26,346,771.11	723,375,799.477	962,178,405.908
2031	1	0.033496	26,205,279.15	306,854,334.315	0.000	26,205,279.15	756,142,480.625	1,089,202,094.092
2031	2	0.033496	22,500,386.35	346,876,455.244	0.000	22,500,386.35	649,239,332.572	1,018,616,174.163

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	Lighting Share	Lighting Usage	Heating Usage	Cooling Usage	Lighting Usage	Other Usage	Total Usage
2031	3	0.033496	21,531,262.33	277,594,950.025	458,752.190	21,531,262.33	621,275,660.444	920,860,624.994
2031	4	0.033496	21,718,142.33	160,375,520.893	3,548,770.160	21,718,142.33	626,668,005.245	812,310,438.625
2031	5	0.033496	20,675,649.11	57,798,896.661	17,630,899.763	20,675,649.11	596,587,294.981	692,692,740.512
2031	6	0.033496	22,600,305.63	10,577,788.787	92,438,070.633	22,600,305.63	652,122,462.090	777,738,627.139
2031	7	0.033496	26,039,575.15	281,192.917	220,881,116.594	26,039,575.15	751,361,160.224	998,563,044.885
2031	8	0.033496	25,683,927.05	0.000	243,159,569.798	25,683,927.05	741,099,081.449	1,009,942,578.294
2031	9	0.033496	23,917,308.34	363,566.277	175,343,925.162	23,917,308.34	690,124,030.118	889,748,829.898
2031	10	0.033496	21,199,310.63	17,775,612.408	53,674,456.513	21,199,310.63	611,697,331.437	704,346,710.988
2031	11	0.033496	20,451,380.94	92,889,757.221	4,639,249.782	20,451,380.94	590,116,129.819	708,096,517.759
2031	12	0.033496	25,130,133.91	212,285,132.625	51,825.812	25,130,133.91	725,119,609.878	962,586,702.229
2032	1	0.032469	25,437,385.58	306,504,876.935	0.000	25,437,385.58	757,995,470.595	1,089,937,733.111
2032	2	0.032469	21,843,664.35	346,478,033.374	0.000	21,843,664.35	650,908,033.856	1,019,229,731.575
2032	3	0.032469	20,904,436.11	277,272,941.488	458,986.331	20,904,436.11	622,920,458.306	921,556,822.232
2032	4	0.032469	21,087,861.38	160,186,429.045	3,550,530.993	21,087,861.38	628,386,252.949	813,211,074.367
2032	5	0.032469	20,078,005.45	57,729,514.646	17,639,358.209	20,078,005.45	598,294,079.561	693,740,957.870
2032	6	0.032469	21,945,409.75	10,564,860.912	92,480,852.156	21,945,409.75	653,939,892.515	778,931,015.335
2032	7	0.032469	25,280,067.25	280,842.873	220,979,348.360	25,280,067.25	753,307,623.103	999,847,881.584
2032	8	0.032469	24,933,410.86	0.000	243,263,016.859	24,933,410.86	742,977,789.189	1,011,174,216.912
2032	9	0.032469	23,221,433.23	363,098.179	175,415,839.233	23,221,433.23	691,963,454.729	890,963,825.367
2032	10	0.032469	20,583,070.57	17,752,336.922	53,695,481.021	20,583,070.57	613,344,253.269	705,375,141.783
2032	11	0.032469	19,855,951.49	92,766,784.694	4,641,013.934	19,855,951.49	591,677,208.697	708,940,958.820
2032	12	0.032469	24,391,716.57	211,999,807.202	51,844.623	24,391,716.57	726,836,121.545	963,279,489.936
2033	1	0.032031	25,154,396.89	306,064,337.409	0.000	25,154,396.89	760,156,206.387	1,091,374,940.683
2033	2	0.032031	21,602,616.68	345,944,121.778	0.000	21,602,616.68	652,822,773.676	1,020,369,512.137
2033	3	0.032031	20,673,838.16	276,813,870.785	459,378.759	20,673,838.16	624,755,443.615	922,702,531.318
2033	4	0.032031	20,855,471.88	159,903,167.292	3,553,270.294	20,855,471.88	630,244,345.012	814,556,254.484
2033	5	0.032031	19,857,817.91	57,621,135.028	17,651,556.506	19,857,817.91	600,095,625.248	695,226,134.689
2033	6	0.032031	21,699,992.29	10,543,907.563	92,537,677.401	21,699,992.29	655,765,427.052	780,547,004.304
2033	7	0.032031	24,989,020.63	280,256.618	221,098,455.761	24,989,020.63	755,158,599.487	1,001,526,332.497
2033	8	0.032031	24,644,367.35	0.000	243,376,604.414	24,644,367.35	744,743,309.677	1,012,764,281.436
2033	9	0.032031	22,956,177.43	362,264.793	175,484,376.454	22,956,177.43	693,726,859.327	892,529,678.007
2033	10	0.032031	20,349,841.79	17,709,772.235	53,712,635.739	20,349,841.79	614,964,397.988	706,736,647.756
2033	11	0.032031	19,630,596.72	92,535,142.559	4,642,174.610	19,630,596.72	593,229,088.383	710,037,002.275
2033	12	0.032031	24,106,654.07	211,449,492.677	51,854.058	24,106,654.07	728,493,821.136	964,101,821.941

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	Lighting Share	Lighting Usage	Heating Usage	Cooling Usage	Lighting Usage	Other Usage	Total Usage
2034	1	0.031707	24,957,352.39	305,242,723.313	0.000	24,957,352.39	762,159,069.257	1,092,359,144.955
2034	2	0.031707	21,436,681.15	345,015,956.030	0.000	21,436,681.15	654,643,196.976	1,021,095,834.156
2034	3	0.031707	20,516,675.08	276,071,347.753	459,760.201	20,516,675.08	626,547,629.698	923,595,412.729
2034	4	0.031707	20,698,649.94	159,474,382.202	3,556,238.359	20,698,649.94	632,104,861.510	815,834,132.012
2034	5	0.031707	19,710,951.54	57,466,590.172	17,666,362.688	19,710,951.54	601,942,074.988	696,785,979.390
2034	6	0.031707	21,535,703.01	10,515,564.658	92,615,106.239	21,535,703.01	657,667,172.048	782,333,545.959
2034	7	0.031707	24,791,844.34	279,501.329	221,282,769.784	24,791,844.34	757,104,708.716	1,003,458,824.171
2034	8	0.031707	24,448,738.37	0.000	243,577,962.502	24,448,738.37	746,626,781.369	1,014,653,482.245
2034	9	0.031707	22,779,569.08	361,280.300	175,628,021.352	22,779,569.08	695,652,924.165	894,421,794.895
2034	10	0.031707	20,196,728.44	17,661,342.656	53,755,900.268	20,196,728.44	616,776,952.535	708,390,923.895
2034	11	0.031707	19,483,770.55	92,280,419.816	4,645,847.057	19,483,770.55	595,004,317.796	711,414,355.222
2034	12	0.031707	23,917,885.50	210,862,636.083	51,894.099	23,917,885.50	730,415,353.015	965,247,768.699
2035	1	0.031525	24,883,756.62	304,457,243.393	0.000	24,883,756.62	764,443,686.949	1,093,784,686.960
2035	2	0.031525	21,376,544.71	344,120,716.505	0.000	21,376,544.71	656,700,067.579	1,022,197,328.794
2035	3	0.031525	20,460,111.72	275,348,509.576	460,420.934	20,460,111.72	628,546,705.214	924,815,747.441
2035	4	0.031525	20,642,378.66	159,052,620.980	3,561,268.995	20,642,378.66	634,146,053.142	817,402,321.773
2035	5	0.031525	19,659,136.76	57,312,969.781	17,690,915.555	19,659,136.76	603,940,281.877	698,603,303.972
2035	6	0.031525	21,474,119.00	10,487,211.373	92,742,016.668	21,474,119.00	659,697,607.161	784,400,954.198
2035	7	0.031525	24,711,243.02	278,741.575	221,581,912.569	24,711,243.02	759,143,967.539	1,005,715,864.708
2035	8	0.031525	24,367,608.69	0.000	243,902,099.857	24,367,608.69	748,587,318.027	1,016,857,026.575
2035	9	0.031525	22,710,146.23	360,281.227	175,858,405.326	22,710,146.23	697,669,093.269	896,597,926.055
2035	10	0.031525	20,139,416.41	17,612,139.474	53,825,510.517	20,139,416.41	618,694,756.171	710,271,822.572
2035	11	0.031525	19,429,877.03	92,021,503.274	4,651,787.387	19,429,877.03	596,897,287.794	713,000,455.488
2035	12	0.031525	23,843,164.80	210,268,040.062	51,959.915	23,843,164.80	732,476,092.116	966,639,256.889
2036	1	0.031396	24,857,557.27	303,727,601.675	0.000	24,857,557.27	766,874,328.130	1,095,459,487.080
2036	2	0.031396	21,357,659.08	343,295,559.838	0.000	21,357,659.08	658,899,837.707	1,023,553,056.620
2036	3	0.031396	20,443,429.71	274,687,596.119	461,363.801	20,443,429.71	630,695,174.495	926,287,564.124
2036	4	0.031396	20,626,710.50	158,670,384.395	3,568,554.534	20,626,710.50	636,349,524.693	819,215,174.121
2036	5	0.031396	19,646,700.78	57,175,047.514	17,727,064.629	19,646,700.78	606,115,488.144	700,664,301.068
2036	6	0.031396	21,455,420.87	10,461,926.178	92,931,176.130	21,455,420.87	661,915,862.702	786,764,385.885
2036	7	0.031396	24,679,016.83	278,068.234	222,033,017.364	24,679,016.83	761,366,221.166	1,008,356,323.593
2036	8	0.031396	24,334,462.72	0.000	244,398,984.761	24,334,462.72	750,736,467.902	1,019,469,915.383
2036	9	0.031396	22,686,634.55	359,410.309	176,216,394.331	22,686,634.55	699,899,730.203	899,162,169.395
2036	10	0.031396	20,123,963.05	17,569,523.885	53,934,991.783	20,123,963.05	620,839,387.834	712,467,866.549

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	Lighting Share	Lighting Usage	Heating Usage	Cooling Usage	Lighting Usage	Other Usage	Total Usage
2036	11	0.031396	19,417,225.20	91,798,960.919	4,661,257.936	19,417,225.20	599,035,993.945	714,913,437.999
2036	12	0.031396	23,818,410.47	209,758,902.484	52,065.572	23,818,410.47	734,815,868.130	968,445,246.659
2037	1	0.031274	24,842,545.77	303,057,602.029	0.000	24,842,545.77	769,519,915.049	1,097,420,062.847
2037	2	0.031274	21,348,700.00	342,540,037.922	0.000	21,348,700.00	661,294,939.853	1,025,183,677.775
2037	3	0.031274	20,436,520.21	274,085,350.821	462,686.923	20,436,520.21	633,039,360.788	928,023,918.740
2037	4	0.031274	20,620,926.04	158,324,136.587	3,578,817.941	20,620,926.04	638,751,495.236	821,275,375.806
2037	5	0.031274	19,644,114.74	57,051,060.247	17,778,255.361	19,644,114.74	608,493,897.833	702,967,328.183
2037	6	0.031274	21,447,343.39	10,439,361.951	93,200,448.526	21,447,343.39	664,350,506.490	789,437,660.359
2037	7	0.031274	24,657,990.62	277,472.456	222,679,116.416	24,657,990.62	763,803,155.367	1,011,417,734.859
2037	8	0.031274	24,312,262.22	0.000	245,113,203.471	24,312,262.22	753,093,911.123	1,022,519,376.811
2037	9	0.031274	22,674,441.11	358,652.034	176,734,308.764	22,674,441.11	702,360,947.834	902,128,349.738
2037	10	0.031274	20,119,689.94	17,532,780.408	54,094,410.486	20,119,689.94	623,225,261.898	714,972,142.733
2037	11	0.031274	19,415,935.23	91,608,301.825	4,675,094.943	19,415,935.23	601,425,834.764	717,125,166.761
2037	12	0.031274	23,807,477.71	209,327,322.030	52,221.056	23,807,477.71	737,457,762.803	970,644,783.599
2038	1	0.031144	24,825,951.15	302,395,845.244	0.000	24,825,951.15	772,311,827.632	1,099,533,624.023
2038	2	0.031144	21,338,794.76	341,797,805.768	0.000	21,338,794.76	663,829,695.223	1,026,966,295.754
2038	3	0.031144	20,428,920.54	273,495,903.938	463,995.804	20,428,920.54	635,524,370.002	929,913,190.289
2038	4	0.031144	20,614,594.77	157,986,618.891	3,589,004.630	20,614,594.77	641,300,519.370	823,490,737.663
2038	5	0.031144	19,641,200.52	56,930,223.364	17,829,081.016	19,641,200.52	611,019,146.240	705,419,651.145
2038	6	0.031144	21,438,902.49	10,417,422.857	93,468,320.684	21,438,902.49	666,943,951.706	792,268,597.734
2038	7	0.031144	24,635,687.07	276,892.765	223,321,635.165	24,635,687.07	766,392,892.562	1,014,627,107.566
2038	8	0.031144	24,288,628.82	0.000	245,823,289.429	24,288,628.82	755,596,238.898	1,025,708,157.146
2038	9	0.031144	22,661,054.28	357,910.550	177,247,695.867	22,661,054.28	704,963,936.423	905,230,597.119
2038	10	0.031144	20,114,565.15	17,496,700.994	54,251,999.029	20,114,565.15	625,745,071.301	717,608,336.471
2038	11	0.031144	19,413,927.96	91,420,552.179	4,688,748.096	19,413,927.96	603,948,911.894	719,472,140.125
2038	12	0.031144	23,795,036.71	208,899,430.484	52,373.781	23,795,036.71	740,241,055.985	972,987,896.963
2039	1	0.031019	24,817,276.09	301,784,152.049	0.000	24,817,276.09	775,243,450.634	1,101,844,878.776
2039	2	0.031019	21,335,646.28	341,109,387.359	0.000	21,335,646.28	666,484,104.752	1,028,929,138.386
2039	3	0.031019	20,427,511.42	272,946,641.239	465,282.993	20,427,511.42	638,115,737.529	931,955,173.177
2039	4	0.031019	20,614,197.40	157,670,534.817	3,598,979.305	20,614,197.40	643,947,444.799	825,831,156.325
2039	5	0.031019	19,643,863.58	56,816,728.590	17,878,715.029	19,643,863.58	613,636,102.692	707,975,409.886
2039	6	0.031019	21,436,138.95	10,396,710.700	93,728,796.681	21,436,138.95	669,623,300.587	795,184,946.920
2039	7	0.031019	24,619,324.66	276,343.701	223,944,626.869	24,619,324.66	769,059,832.877	1,017,900,128.111
2039	8	0.031019	24,270,485.73	0.000	246,509,666.504	24,270,485.73	758,162,782.797	1,028,942,935.030

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	Lighting Share	Lighting Usage	Heating Usage	Cooling Usage	Lighting Usage	Other Usage	Total Usage
2039	9	0.031019	22,652,737.41	357,205.069	177,743,416.313	22,652,737.41	707,627,471.008	908,380,829.805
2039	10	0.031019	20,113,779.18	17,462,275.586	54,403,793.382	20,113,779.18	628,315,352.433	720,295,200.580
2039	11	0.031019	19,415,925.16	91,241,283.018	4,701,887.465	19,415,925.16	606,515,749.964	721,874,845.612
2039	12	0.031019	23,787,277.99	208,490,621.441	52,520.635	23,787,277.99	743,068,312.471	975,398,732.533
2040	1	0.030449	24,439,361.72	301,322,206.546	0.000	24,439,361.72	778,183,000.932	1,103,944,569.198
2040	2	0.030449	21,014,550.93	340,587,857.834	0.000	21,014,550.93	669,132,299.533	1,030,734,708.298
2040	3	0.030449	20,121,889.55	272,530,995.279	466,654.877	20,121,889.55	640,708,729.425	933,828,269.133
2040	4	0.030449	20,307,062.34	157,430,679.869	3,609,590.279	20,307,062.34	646,604,886.567	827,952,219.057
2040	5	0.030449	19,354,603.12	56,730,578.380	17,931,483.442	19,354,603.12	616,277,270.625	710,293,935.567
2040	6	0.030449	21,116,507.06	10,380,991.198	94,005,646.160	21,116,507.06	672,378,723.359	797,881,867.778
2040	7	0.030449	24,240,962.91	275,928.260	224,607,552.716	24,240,962.91	771,865,708.939	1,020,990,152.822
2040	8	0.030449	23,895,427.97	0.000	247,239,812.337	23,895,427.97	760,863,399.870	1,031,998,640.182
2040	9	0.030449	22,309,749.57	356,671.949	178,270,807.638	22,309,749.57	710,373,211.435	911,310,440.594
2040	10	0.030449	19,814,443.51	17,436,356.997	54,565,566.264	19,814,443.51	630,919,223.296	722,735,590.070
2040	11	0.030449	19,128,596.55	91,106,477.842	4,715,892.474	19,128,596.55	609,080,909.621	724,031,876.488
2040	12	0.030449	23,426,079.43	208,184,548.923	52,677.461	23,426,079.43	745,918,694.546	977,582,000.359
2041	1	0.029965	24,127,755.87	300,930,543.057	0.000	24,127,755.87	781,060,745.982	1,106,119,044.911
2041	2	0.029965	20,750,511.99	340,144,032.059	0.000	20,750,511.99	671,733,022.383	1,032,627,566.434
2041	3	0.029965	19,870,827.25	272,174,638.069	468,060.330	19,870,827.25	643,255,976.159	935,769,501.810
2041	4	0.029965	20,055,108.11	157,225,035.385	3,620,469.031	20,055,108.11	649,221,493.432	830,122,105.957
2041	5	0.029965	19,117,763.85	56,656,232.793	17,985,464.769	19,117,763.85	618,877,900.247	712,637,361.656
2041	6	0.029965	20,854,273.55	10,367,395.163	94,288,799.192	20,854,273.55	675,091,978.731	800,602,446.633
2041	7	0.029965	23,928,777.65	275,566.655	225,284,088.690	23,928,777.65	774,619,447.533	1,024,107,880.531
2041	8	0.029965	23,585,783.12	0.000	247,984,790.925	23,585,783.12	763,516,070.756	1,035,086,644.804
2041	9	0.029965	22,027,477.52	356,205.011	178,808,202.092	22,027,477.52	713,070,793.317	914,262,677.936
2041	10	0.029965	19,568,797.06	17,413,542.048	54,730,109.259	19,568,797.06	633,478,692.032	725,191,140.401
2041	11	0.029965	18,893,021.31	90,987,542.403	4,730,129.452	18,893,021.31	611,602,562.628	726,213,255.798
2041	12	0.029965	23,128,398.40	207,913,208.448	52,836.632	23,128,398.40	748,709,668.908	979,804,112.392
2042	1	0.029551	23,869,876.91	300,529,940.882	0.000	23,869,876.91	783,886,366.541	1,108,286,184.333
2042	2	0.029551	20,532,620.01	339,693,811.489	0.000	20,532,620.01	674,290,904.646	1,034,517,336.144
2042	3	0.029551	19,663,915.61	271,815,888.883	469,422.996	19,663,915.61	645,762,666.396	937,711,893.886
2042	4	0.029551	19,847,569.69	157,018,879.224	3,631,029.756	19,847,569.69	651,793,863.267	832,291,341.933
2042	5	0.029551	18,923,386.65	56,582,635.211	18,038,123.937	18,923,386.65	621,443,707.390	714,987,853.185
2042	6	0.029551	20,638,365.00	10,353,971.849	94,565,141.871	20,638,365.00	677,763,568.330	803,321,047.048

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	Lighting Share	Lighting Usage	Heating Usage	Cooling Usage	Lighting Usage	Other Usage	Total Usage
2042	7	0.029551	23,670,227.01	275,212.556	225,946,271.733	23,670,227.01	777,329,866.974	1,027,221,578.269
2042	8	0.029551	23,329,109.77	0.000	248,715,036.141	23,329,109.77	766,127,582.494	1,038,171,728.404
2042	9	0.029551	21,794,498.62	355,752.530	179,335,970.821	21,794,498.62	715,730,977.516	917,217,199.486
2042	10	0.029551	19,366,977.11	17,391,568.082	54,892,043.888	19,366,977.11	636,011,211.015	727,661,800.098
2042	11	0.029551	18,699,810.68	90,873,541.732	4,744,161.786	18,699,810.68	614,101,476.146	728,418,990.339
2042	12	0.029551	22,882,880.27	207,654,562.018	52,993.780	22,882,880.27	751,473,413.204	982,063,849.276
2043	1	0.029202	23,667,516.72	300,303,622.203	0.000	23,667,516.72	786,816,479.436	1,110,787,618.354
2043	2	0.029202	20,362,449.15	339,439,619.714	0.000	20,362,449.15	676,940,920.625	1,036,742,989.490
2043	3	0.029202	19,502,803.35	271,614,904.393	470,974.572	19,502,803.35	648,362,363.319	939,951,045.635
2043	4	0.029202	19,686,247.94	156,903,917.072	3,643,054.685	19,686,247.94	654,460,900.440	834,694,120.141
2043	5	0.029202	18,773,003.94	56,541,721.658	18,098,010.310	18,773,003.94	624,100,493.805	717,513,229.714
2043	6	0.029202	20,470,401.43	10,346,594.398	94,880,023.068	20,470,401.43	680,529,747.986	806,226,766.881
2043	7	0.029202	23,466,206.02	275,018.505	226,700,141.936	23,466,206.02	780,123,991.541	1,030,565,358.006
2043	8	0.029202	23,126,257.69	0.000	249,546,794.111	23,126,257.69	768,822,554.469	1,041,495,606.271
2043	9	0.029202	21,612,267.46	355,508.607	179,937,601.988	21,612,267.46	718,490,596.217	920,395,974.273
2043	10	0.029202	19,210,678.70	17,379,806.271	55,076,674.606	19,210,678.70	638,650,804.010	730,317,963.582
2043	11	0.029202	18,550,801.24	90,812,676.712	4,760,146.198	18,550,801.24	616,713,460.020	730,837,084.171
2043	12	0.029202	22,691,322.44	207,517,540.768	53,172.804	22,691,322.44	754,363,318.052	984,625,354.068
2044	1	0.028859	23,469,146.98	300,142,901.084	0.000	23,469,146.98	789,760,193.365	1,113,372,241.428
2044	2	0.028859	20,195,637.78	339,259,423.343	0.000	20,195,637.78	679,603,345.387	1,039,058,406.513
2044	3	0.028859	19,344,629.68	271,470,080.086	472,561.437	19,344,629.68	650,966,074.354	942,253,345.557
2044	4	0.028859	19,527,779.62	156,820,026.907	3,655,326.716	19,527,779.62	657,129,252.346	837,132,385.587
2044	5	0.028859	18,624,960.69	56,511,115.929	18,158,866.567	18,624,960.69	626,748,495.313	720,043,438.498
2044	6	0.028859	20,304,781.30	10,340,932.225	95,198,523.355	20,304,781.30	683,276,133.656	809,120,370.539
2044	7	0.028859	23,265,063.60	274,866.882	227,460,207.828	23,265,063.60	782,892,584.095	1,033,892,722.402
2044	8	0.028859	22,925,918.29	0.000	250,381,073.840	22,925,918.29	771,480,006.319	1,044,786,998.447
2044	9	0.028859	21,431,477.79	355,304.716	180,536,819.919	21,431,477.79	721,190,593.609	923,514,196.032
2044	10	0.028859	19,054,780.39	17,369,563.432	55,259,212.731	19,054,780.39	641,212,356.743	732,895,913.296
2044	11	0.028859	18,401,558.01	90,757,754.478	4,775,849.681	18,401,558.01	619,230,772.301	733,165,934.466
2044	12	0.028859	22,499,260.42	207,387,932.007	53,347.181	22,499,260.42	757,122,543.751	987,063,083.360
2045	1	0.028517	23,262,303.09	299,963,435.810	0.000	23,262,303.09	792,481,525.371	1,115,707,264.267
2045	2	0.028517	20,020,735.47	339,049,196.945	0.000	20,020,735.47	682,050,393.829	1,041,120,326.240
2045	3	0.028517	19,178,267.03	271,295,750.142	474,062.595	19,178,267.03	653,349,853.467	944,297,933.237
2045	4	0.028517	19,360,579.66	156,716,174.365	3,666,867.727	19,360,579.66	659,560,734.015	839,304,355.762

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	Lighting Share	Lighting Usage	Heating Usage	Cooling Usage	Lighting Usage	Other Usage	Total Usage
2045	5	0.028517	18,468,076.32	56,472,681.487	18,215,890.086	18,468,076.32	629,155,644.677	722,312,292.571
2045	6	0.028517	20,129,935.72	10,333,734.873	95,496,061.517	20,129,935.72	685,770,540.644	811,730,272.752
2045	7	0.028517	23,054,653.82	274,670.633	228,167,322.782	23,054,653.82	785,407,496.215	1,036,904,143.446
2045	8	0.028517	22,716,734.74	0.000	251,156,643.457	22,716,734.74	773,895,539.682	1,047,768,917.882
2045	9	0.028517	21,241,637.16	355,043.795	181,094,889.152	21,241,637.16	723,643,095.731	926,334,665.838
2045	10	0.028517	18,890,368.07	17,356,723.085	55,429,838.410	18,890,368.07	643,541,942.099	735,218,871.668
2045	11	0.028517	18,244,048.28	90,690,312.867	4,790,584.356	18,244,048.28	621,523,636.734	735,248,582.240
2045	12	0.028517	22,298,471.32	207,233,403.112	53,511.736	22,298,471.32	759,646,476.088	989,231,862.255
2046	1	0.028179	23,052,457.12	299,767,653.989	0.000	23,052,457.12	795,022,094.398	1,117,842,205.509
2046	2	0.028179	19,843,348.19	338,826,476.805	0.000	19,843,348.19	684,347,883.267	1,043,017,708.258
2046	3	0.028179	19,009,854.80	271,116,269.458	475,501.097	19,009,854.80	655,602,762.708	946,204,388.062
2046	4	0.028179	19,191,873.49	156,612,567.174	3,678,006.076	19,191,873.49	661,880,136.049	841,362,582.787
2046	5	0.028179	18,309,968.92	56,435,206.947	18,271,225.214	18,309,968.92	631,465,433.821	724,481,834.899
2046	6	0.028179	19,954,367.87	10,326,846.161	95,786,106.458	19,954,367.87	688,176,677.048	814,243,997.541
2046	7	0.028179	22,844,521.29	274,487.160	228,860,583.899	22,844,521.29	787,850,903.033	1,039,830,495.380
2046	8	0.028179	22,508,092.57	0.000	251,919,429.948	22,508,092.57	776,248,310.562	1,050,675,833.078
2046	9	0.028179	21,051,978.21	354,804.083	181,644,777.750	21,051,978.21	726,030,536.478	929,082,096.525
2046	10	0.028179	18,725,726.26	17,344,896.454	55,597,961.197	18,725,726.26	645,803,873.858	737,472,457.770
2046	11	0.028179	18,086,028.37	90,627,840.045	4,805,091.594	18,086,028.37	623,742,279.433	737,261,239.438
2046	12	0.028179	22,097,262.63	207,089,205.389	53,673.555	22,097,262.63	762,079,804.483	991,319,946.056
2047	1	0.027844	22,843,004.78	299,645,451.491	0.000	22,843,004.78	797,562,363.749	1,120,050,820.024
2047	2	0.027844	19,666,055.33	338,685,512.989	0.000	19,666,055.33	686,639,333.261	1,044,990,901.580
2047	3	0.027844	18,841,305.65	271,000,544.220	476,972.887	18,841,305.65	657,843,239.800	948,162,062.562
2047	4	0.027844	19,022,732.33	156,544,192.765	3,689,365.741	19,022,732.33	664,177,742.972	843,434,033.807
2047	5	0.027844	18,151,231.86	56,410,040.326	18,327,541.280	18,151,231.86	633,749,347.956	726,638,161.423
2047	6	0.027844	19,778,040.42	10,322,106.829	96,080,379.946	19,778,040.42	690,549,286.863	816,729,814.053
2047	7	0.027844	22,633,875.84	274,359.410	229,562,867.799	22,633,875.84	790,260,637.053	1,042,731,740.099
2047	8	0.027844	22,298,995.40	0.000	252,690,904.956	22,298,995.40	778,568,303.467	1,053,558,203.824
2047	9	0.027844	20,861,641.87	354,632.791	182,200,049.355	20,861,641.87	728,383,177.342	931,799,501.363
2047	10	0.027844	18,560,325.09	17,336,350.427	55,767,531.077	18,560,325.09	648,032,817.418	739,697,024.010
2047	11	0.027844	17,927,402.74	90,582,576.108	4,819,728.716	17,927,402.74	625,934,365.387	739,264,072.948
2047	12	0.027844	21,895,699.28	206,983,581.850	53,836.659	21,895,699.28	764,487,239.615	993,420,357.402
2048	1	0.027525	22,643,751.24	299,562,866.252	0.000	22,643,751.24	800,028,621.329	1,122,235,238.825
2048	2	0.027525	19,497,540.15	338,589,901.506	0.000	19,497,540.15	688,869,525.088	1,046,956,966.744

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	Lighting Share	Lighting Usage	Heating Usage	Cooling Usage	Lighting Usage	Other Usage	Total Usage
2048	3	0.027525	18,681,280.34	270,922,165.368	478,399.498	18,681,280.34	660,030,168.940	950,112,014.151
2048	4	0.027525	18,862,334.85	156,497,793.476	3,700,383.735	18,862,334.85	666,427,023.743	845,487,535.808
2048	5	0.027525	18,000,838.89	56,392,877.510	18,382,175.918	18,000,838.89	635,989,424.529	728,765,316.851
2048	6	0.027525	19,611,169.47	10,318,900.697	96,366,403.740	19,611,169.47	692,884,173.845	819,180,647.752
2048	7	0.027525	22,434,373.35	274,271.909	230,244,842.184	22,434,373.35	792,631,070.068	1,045,584,557.507
2048	8	0.027525	22,100,944.87	0.000	253,439,926.961	22,100,944.87	780,850,675.353	1,056,391,547.181
2048	9	0.027525	20,681,450.84	354,513.990	182,739,208.328	20,681,450.84	730,698,391.058	934,473,564.214
2048	10	0.027525	18,403,861.88	17,330,433.277	55,932,340.127	18,403,861.88	650,228,669.637	741,895,304.921
2048	11	0.027525	17,777,283.71	90,550,981.367	4,833,947.495	17,777,283.71	628,090,974.242	741,253,186.817
2048	12	0.027525	21,704,774.88	206,909,792.956	53,995.194	21,704,774.88	766,853,554.105	995,522,117.131
2049	1	0.027226	22,462,754.08	299,623,787.322	0.000	22,462,754.08	802,596,643.691	1,124,683,185.095
2049	2	0.027226	19,344,774.31	338,656,193.260	0.000	19,344,774.31	691,190,887.728	1,049,191,855.299
2049	3	0.027226	18,536,302.77	270,973,046.642	479,918.220	18,536,302.77	662,304,111.770	952,293,379.403
2049	4	0.027226	18,716,978.65	156,526,196.740	3,712,113.385	18,716,978.65	668,759,680.454	847,714,969.226
2049	5	0.027226	17,864,694.63	56,402,663.720	18,440,328.815	17,864,694.63	638,307,479.980	731,015,167.146
2049	6	0.027226	19,459,583.71	10,320,627.791	96,670,838.523	19,459,583.71	695,293,039.946	821,744,089.968
2049	7	0.027226	22,252,039.52	274,315.523	230,970,710.429	22,252,039.52	795,067,789.623	1,048,564,855.099
2049	8	0.027226	21,919,856.55	0.000	254,238,265.132	21,919,856.55	783,198,855.776	1,059,356,977.455
2049	9	0.027226	20,517,252.03	354,565.832	183,313,654.323	20,517,252.03	733,083,644.132	937,269,116.321
2049	10	0.027226	18,261,723.30	17,332,811.117	56,107,766.799	18,261,723.30	652,493,357.465	744,195,658.682
2049	11	0.027226	17,641,148.73	90,562,791.339	4,849,084.824	17,641,148.73	630,320,160.780	743,373,185.677
2049	12	0.027226	21,530,954.59	206,935,779.083	54,164.120	21,530,954.59	769,303,346.477	997,824,244.266
2050	1	0.026947	22,298,954.55	299,751,236.814	0.000	22,298,954.55	805,202,892.535	1,127,253,083.904
2050	2	0.026947	19,206,763.92	338,797,622.303	0.000	19,206,763.92	693,545,602.289	1,051,549,988.515
2050	3	0.026947	18,405,378.92	271,083,716.792	481,414.024	18,405,378.92	664,608,033.815	954,578,543.549
2050	4	0.026947	18,585,775.38	156,588,868.349	3,723,660.144	18,585,775.38	671,122,050.128	850,020,354.002
2050	5	0.026947	17,742,039.70	56,424,801.178	18,497,575.415	17,742,039.70	640,655,222.297	733,319,638.592
2050	6	0.026947	19,322,710.90	10,324,614.435	96,970,510.124	19,322,710.90	697,732,383.227	824,350,218.682
2050	7	0.026947	22,086,557.21	274,419.788	231,685,652.820	22,086,557.21	797,533,341.996	1,051,579,971.811
2050	8	0.026947	21,755,274.04	0.000	255,023,169.222	21,755,274.04	785,570,890.515	1,062,349,333.780
2050	9	0.026947	20,368,582.17	354,694.169	183,878,364.354	20,368,582.17	735,498,215.450	940,099,856.145
2050	10	0.026947	18,133,562.38	17,338,958.512	56,280,299.550	18,133,562.38	654,792,889.124	746,545,709.562
2050	11	0.026947	17,518,579.71	90,594,152.236	4,863,963.392	17,518,579.71	632,586,205.726	745,562,901.061
2050	12	0.026947	21,373,645.71	207,005,235.521	54,329.830	21,373,645.71	771,790,502.936	1,000,223,713.998

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	Lighting Share	Lighting Usage	Heating Usage	Cooling Usage	Lighting Usage	Other Usage	Total Usage
2051	1	0.026643	22,109,766.01	299,702,301.540	0.000	22,109,766.01	807,738,876.985	1,129,550,944.536
2051	2	0.026643	19,046,950.19	338,742,713.693	0.000	19,046,950.19	695,844,639.504	1,053,634,303.390
2051	3	0.026643	18,253,655.29	271,038,813.754	482,860.551	18,253,655.29	666,863,096.492	956,638,426.087
2051	4	0.026643	18,433,690.57	156,562,286.641	3,734,838.155	18,433,690.57	673,440,348.235	852,171,163.603
2051	5	0.026643	17,599,452.71	56,414,947.254	18,553,035.348	17,599,452.71	642,963,030.964	735,530,466.277
2051	6	0.026643	19,164,421.14	10,322,773.855	97,261,011.263	19,164,421.14	700,136,220.574	826,884,426.836
2051	7	0.026643	21,897,160.02	274,369.815	232,379,103.690	21,897,160.02	799,971,715.472	1,054,522,348.998
2051	8	0.026643	21,567,240.92	0.000	255,784,842.733	21,567,240.92	787,918,739.420	1,065,270,823.077
2051	9	0.026643	20,197,642.70	354,624.752	184,426,634.235	20,197,642.70	737,883,034.147	942,861,935.829
2051	10	0.026643	17,985,292.65	17,335,477.584	56,447,892.950	17,985,292.65	657,058,970.321	748,827,633.506
2051	11	0.026643	17,376,420.92	90,575,397.131	4,878,422.563	17,376,420.92	634,814,982.472	747,645,223.089
2051	12	0.026643	21,192,676.73	206,960,624.212	54,490.940	21,192,676.73	774,234,738.175	1,002,442,530.052
2052	1	0.026342	21,921,578.37	299,652,928.123	0.000	21,921,578.37	810,266,166.364	1,131,840,672.859
2052	2	0.026342	18,887,938.99	338,687,796.085	0.000	18,887,938.99	698,136,678.471	1,055,712,413.541
2052	3	0.026342	18,102,686.19	270,994,327.609	484,300.833	18,102,686.19	669,112,136.544	958,693,451.178
2052	4	0.026342	18,282,366.51	156,536,196.765	3,745,972.259	18,282,366.51	675,753,487.072	854,318,022.611
2052	5	0.026342	17,457,547.84	56,405,358.482	18,608,298.290	17,457,547.84	645,266,509.765	737,737,714.381
2052	6	0.026342	19,006,966.42	10,320,997.456	97,550,588.564	19,006,966.42	702,536,174.719	829,414,727.158
2052	7	0.026342	21,708,948.65	274,321.955	233,070,600.926	21,708,948.65	802,406,938.976	1,057,460,810.509
2052	8	0.026342	21,380,428.92	0.000	256,544,633.654	21,380,428.92	790,264,180.980	1,068,189,243.557
2052	9	0.026342	20,027,737.44	354,559.126	184,973,753.212	20,027,737.44	740,265,949.713	945,621,999.488
2052	10	0.026342	17,837,863.54	17,332,209.091	56,615,198.216	17,837,863.54	659,323,752.192	751,109,023.040
2052	11	0.026342	17,235,059.35	90,557,888.097	4,892,862.138	17,235,059.35	637,042,881.926	749,728,691.507
2052	12	0.026342	21,012,857.67	206,919,176.645	54,651.890	21,012,857.67	776,677,999.197	1,004,664,685.404
2053	1	0.026044	21,734,571.20	299,607,390.119	0.000	21,734,571.20	812,791,262.324	1,134,133,223.647
2053	2	0.026044	18,729,857.01	338,636,605.509	0.000	18,729,857.01	700,426,246.211	1,057,792,708.730
2053	3	0.026044	17,952,557.19	270,952,288.790	485,737.653	17,952,557.19	671,358,154.992	960,748,738.628
2053	4	0.026044	18,131,850.12	156,511,197.070	3,757,073.868	18,131,850.12	678,063,036.506	856,463,157.565
2053	5	0.026044	17,316,334.34	56,396,045.989	18,663,371.315	17,316,334.34	647,565,811.752	739,941,563.394
2053	6	0.026044	18,850,317.37	10,319,250.378	97,839,022.590	18,850,317.37	704,931,010.952	831,939,601.292
2053	7	0.026044	21,521,855.71	274,274.314	233,759,016.145	21,521,855.71	804,836,502.347	1,060,391,648.514
2053	8	0.026044	21,194,739.11	0.000	257,300,637.209	21,194,739.11	792,603,571.293	1,071,098,947.614
2053	9	0.026044	19,858,727.27	354,492.309	185,517,853.155	19,858,727.27	742,641,750.388	948,372,823.117
2053	10	0.026044	17,691,101.82	17,328,844.955	56,781,489.146	17,691,101.82	661,580,706.761	753,382,142.681

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	Lighting Share	Lighting Usage	Heating Usage	Cooling Usage	Lighting Usage	Other Usage	Total Usage
2053	11	0.026044	17,094,282.61	90,539,692.898	4,907,206.562	17,094,282.61	639,261,911.866	751,803,093.936
2053	12	0.026044	20,833,903.78	206,875,720.793	54,811.690	20,833,903.78	779,109,686.442	1,006,874,122.709
2054	1	0.025749	21,548,493.30	299,559,307.792	0.000	21,548,493.30	815,304,684.305	1,136,412,485.399
2054	2	0.025749	18,572,514.89	338,583,022.662	0.000	18,572,514.89	702,706,132.393	1,059,861,669.942
2054	3	0.025749	17,803,122.87	270,908,770.061	487,165.930	17,803,122.87	673,595,562.816	962,794,621.679
2054	4	0.025749	17,982,035.77	156,485,612.149	3,768,114.100	17,982,035.77	680,364,877.063	858,600,639.081
2054	5	0.025749	17,175,748.69	56,386,621.812	18,718,163.243	17,175,748.69	649,858,352.848	742,138,886.593
2054	6	0.025749	18,694,448.54	10,317,501.178	98,126,110.126	18,694,448.54	707,319,590.826	834,457,650.670
2054	7	0.025749	21,335,891.80	274,227.100	234,444,516.178	21,335,891.80	807,260,734.457	1,063,315,369.535
2054	8	0.025749	21,010,217.36	0.000	258,053,753.035	21,010,217.36	794,938,578.315	1,074,002,548.707
2054	9	0.025749	19,690,702.57	354,427.302	186,060,114.303	19,690,702.57	745,013,668.423	951,118,912.600
2054	10	0.025749	17,545,138.22	17,325,600.840	56,947,292.001	17,545,138.22	663,834,504.782	755,652,535.846
2054	11	0.025749	16,954,263.34	90,522,283.826	4,921,515.025	16,954,263.34	641,478,275.320	753,876,337.510
2054	12	0.025749	20,656,054.08	206,834,442.079	54,971.161	20,656,054.08	781,538,524.094	1,009,083,991.415
2055	1	0.025458	21,363,611.10	299,515,216.742	0.000	21,363,611.10	817,816,326.871	1,138,695,154.718
2055	2	0.025458	18,416,167.68	338,534,927.173	0.000	18,416,167.68	704,985,806.551	1,061,936,901.402
2055	3	0.025458	17,654,646.62	270,870,512.768	488,594.654	17,654,646.62	675,834,163.869	964,847,917.907
2055	4	0.025458	17,833,202.62	156,463,579.242	3,779,166.860	17,833,202.62	682,669,432.243	860,745,380.965
2055	5	0.025458	17,036,079.83	56,378,658.187	18,773,061.297	17,036,079.83	652,154,926.602	744,342,725.916
2055	6	0.025458	18,539,666.66	10,316,052.002	98,413,983.074	18,539,666.66	709,713,447.462	836,983,149.195
2055	7	0.025458	21,151,362.76	274,188.730	235,132,439.341	21,151,362.76	809,691,288.632	1,066,249,279.467
2055	8	0.025458	20,827,167.36	0.000	258,810,134.648	20,827,167.36	797,280,826.206	1,076,918,128.217
2055	9	0.025458	19,524,000.65	354,376.041	186,605,185.998	19,524,000.65	747,394,549.711	953,878,112.405
2055	10	0.025458	17,400,322.57	17,323,087.364	57,114,096.628	17,400,322.57	666,098,433.590	757,935,940.154
2055	11	0.025458	16,815,372.58	90,508,985.678	4,935,921.730	16,815,372.58	643,706,074.246	755,966,354.231
2055	12	0.025458	20,479,742.04	206,803,240.808	55,131.862	20,479,742.04	783,981,103.626	1,011,319,218.337
2056	1	0.025169	21,180,363.51	299,486,299.310	0.000	21,180,363.51	820,343,242.687	1,141,009,905.510
2056	2	0.025169	18,261,200.46	338,504,676.066	0.000	18,261,200.46	707,280,231.284	1,064,046,107.814
2056	3	0.025169	17,507,491.07	270,847,150.014	490,036.755	17,507,491.07	678,088,078.257	966,932,756.091
2056	4	0.025169	17,685,704.02	156,450,527.076	3,790,329.816	17,685,704.02	684,990,499.523	862,917,060.433
2056	5	0.025169	16,897,666.98	56,374,067.686	18,828,540.409	16,897,666.98	654,468,792.226	746,569,067.305
2056	6	0.025169	18,386,307.58	10,315,245.188	98,705,080.244	18,386,307.58	712,125,793.719	839,532,426.727
2056	7	0.025169	20,968,581.22	274,168.098	235,828,489.310	20,968,581.22	812,140,636.659	1,069,211,875.282
2056	8	0.025169	20,645,878.22	0.000	259,575,918.959	20,645,878.22	799,641,926.713	1,079,863,723.895

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	Lighting Share	Lighting Usage	Heating Usage	Cooling Usage	Lighting Usage	Other Usage	Total Usage
2056	9	0.025169	19,358,919.70	354,349.458	187,157,385.549	19,358,919.70	749,796,336.110	956,666,990.815
2056	10	0.025169	17,256,942.05	17,321,824.667	57,283,191.025	17,256,942.05	668,383,986.535	760,245,944.278
2056	11	0.025169	16,677,894.62	90,502,445.834	4,950,535.284	16,677,894.62	645,956,720.441	758,087,596.177
2056	12	0.025169	20,305,277.29	206,788,005.987	55,294.975	20,305,277.29	786,450,006.179	1,013,598,584.432
2057	1	0.024883	20,999,037.80	299,480,224.918	0.000	20,999,037.80	822,897,350.596	1,143,376,613.319
2057	2	0.024883	18,107,845.70	338,500,098.917	0.000	18,107,845.70	709,599,096.213	1,066,207,040.825
2057	3	0.024883	17,361,853.63	270,844,207.436	491,499.862	17,361,853.63	680,365,618.829	969,063,179.754
2057	4	0.024883	17,539,708.18	156,449,196.883	3,801,654.023	17,539,708.18	687,335,273.524	865,125,832.612
2057	5	0.024883	16,760,646.95	56,373,674.763	18,884,814.416	16,760,646.95	656,805,902.145	748,825,038.273
2057	6	0.024883	18,234,479.89	10,315,201.770	99,000,314.540	18,234,479.89	714,561,559.067	842,111,555.269
2057	7	0.024883	20,787,620.51	274,167.635	236,534,354.332	20,787,620.51	814,612,459.846	1,072,208,602.319
2057	8	0.024883	20,466,392.08	0.000	260,352,421.182	20,466,392.08	802,024,358.124	1,082,843,171.384
2057	9	0.024883	19,195,476.57	354,348.619	187,717,254.020	19,195,476.57	752,220,504.477	959,487,583.684
2057	10	0.024883	17,114,984.78	17,321,812.063	57,454,613.275	17,114,984.78	670,691,474.641	762,582,884.759
2057	11	0.024883	16,541,788.51	90,502,396.372	4,965,348.423	16,541,788.51	648,229,412.467	760,238,945.771
2057	12	0.024883	20,132,577.48	206,787,509.114	55,460.300	20,132,577.48	788,943,037.426	1,015,918,584.320

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	Actual	Heating Usage	Cooling Usage	Lighting Usage	Other Usage	Total Usage
2000	1	1,126,734,758.724	295,687,489.661	0.000	130,703,621.021	700,343,648.042	1,126,734,758.724
2000	2	964,954,727.234	363,537,521.693	0.000	107,439,921.428	493,977,284.114	964,954,727.234
2000	3	871,380,711.485	181,345,305.207	3,548,661.885	105,705,203.397	580,781,540.996	871,380,711.485
2000	4	772,643,673.755	130,116,279.521	2,165,927.863	102,331,744.655	538,029,721.715	772,643,673.755
2000	5	725,376,208.592	59,807,087.619	48,581,180.656	100,103,738.692	516,884,201.625	725,376,208.592
2000	6	773,909,192.643	7,297,245.328	109,345,487.708	106,680,419.244	550,586,040.362	773,909,192.643
2000	7	883,862,133.196	713,613.498	222,899,724.079	110,624,570.215	549,624,225.404	883,862,133.196
2000	8	874,349,559.804	0.000	228,749,251.945	111,381,098.948	534,219,208.910	874,349,559.804
2000	9	901,455,208.055	1,109,526.815	268,591,890.670	112,671,495.967	519,082,294.602	901,455,208.055
2000	10	748,924,075.170	25,752,927.556	67,026,208.202	101,662,185.231	554,482,754.181	748,924,075.170
2000	11	716,449,212.001	69,536,706.009	4,557,578.433	102,391,388.552	539,963,539.008	716,449,212.001
2000	12	1,015,709,984.832	302,402,633.730	0.000	123,350,715.245	589,956,635.858	1,015,709,984.832
2001	1	1,221,091,798.567	440,861,476.478	0.000	133,440,323.068	646,789,999.020	1,221,091,798.567
2001	2	1,059,764,366.995	352,845,230.023	0.000	109,813,969.047	597,105,167.925	1,059,764,366.995
2001	3	936,781,624.615	291,158,212.753	0.000	107,977,267.005	537,646,144.857	936,781,624.615
2001	4	816,854,862.700	185,072,310.368	4,559,062.802	104,531,343.779	522,692,145.752	816,854,862.700
2001	5	723,295,919.360	33,484,058.031	55,447,626.432	103,364,265.909	530,999,968.988	723,295,919.360
2001	6	833,445,931.284	11,276,095.237	92,510,006.892	108,814,137.917	620,845,691.237	833,445,931.284
2001	7	908,946,040.631	1,278,363.288	258,704,406.905	112,813,029.677	536,150,240.762	908,946,040.631
2001	8	1,039,984,747.551	0.000	430,244,833.227	113,538,579.113	496,201,335.211	1,039,984,747.551
2001	9	905,255,319.756	387,636.056	243,751,660.487	114,907,589.929	546,208,433.285	905,255,319.756
2001	10	713,824,934.595	21,482,873.441	35,668,094.592	103,794,260.104	552,879,706.458	713,824,934.595
2001	11	724,584,451.880	68,755,303.397	1,886,706.747	104,548,334.923	549,394,106.814	724,584,451.880
2001	12	911,744,702.685	113,812,058.044	0.000	125,765,232.878	672,167,411.763	911,744,702.685
2002	1	1,108,909,913.581	302,211,164.461	0.000	136,074,539.225	670,624,209.894	1,108,909,913.581
2002	2	940,755,221.055	259,578,142.632	0.000	112,047,931.974	569,129,146.448	940,755,221.055
2002	3	944,386,353.722	261,518,414.462	0.000	110,415,204.712	572,452,734.548	944,386,353.722
2002	4	881,179,152.375	205,032,918.485	17,425,552.744	107,671,494.285	551,049,186.860	881,179,152.375
2002	5	759,958,630.217	74,975,054.591	37,148,772.767	104,337,913.947	543,496,888.912	759,958,630.217
2002	6	800,552,041.811	28,501,753.661	91,675,623.189	111,162,860.523	569,211,804.439	800,552,041.811
2002	7	1,059,920,197.306	0.000	425,949,250.181	115,267,304.493	518,703,642.631	1,059,920,197.306
2002	8	1,104,253,201.766	0.000	459,942,726.085	115,973,993.146	528,336,482.534	1,104,253,201.766
2002	9	968,766,191.465	0.000	304,058,815.600	117,334,934.182	547,372,441.682	968,766,191.465
2002	10	760,458,812.640	18,646,775.271	129,303,086.982	106,106,056.906	506,402,893.481	760,458,812.640

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	Actual	Heating Usage	Cooling Usage	Lighting Usage	Other Usage	Total Usage
2002	11	801,944,236.619	135,805,375.930	8,045,765.518	106,952,707.218	551,140,387.953	801,944,236.619
2002	12	1,043,881,978.559	269,571,965.551	0.000	128,506,103.191	645,803,909.817	1,043,881,978.559
2003	1	1,186,250,594.818	334,307,984.235	0.000	143,400,470.663	708,542,139.921	1,186,250,594.818
2003	2	1,068,111,870.704	415,675,135.448	0.000	112,821,750.058	539,614,985.198	1,068,111,870.704
2003	3	986,307,683.629	357,384,367.204	0.000	110,417,109.832	518,506,206.592	986,307,683.629
2003	4	827,112,182.263	148,964,759.569	5,519,677.173	106,906,357.858	565,721,387.664	827,112,182.263
2003	5	722,545,003.997	58,790,889.619	13,351,292.787	104,466,208.091	545,936,613.500	722,545,003.997
2003	6	764,532,039.877	15,432,710.393	24,931,435.151	111,333,164.098	612,834,730.235	764,532,039.877
2003	7	937,577,302.322	809,149.609	242,137,812.510	116,172,395.238	578,457,944.965	937,577,302.322
2003	8	962,816,384.101	0.000	260,688,744.928	117,161,117.658	584,966,521.516	962,816,384.101
2003	9	945,599,179.387	53,136.695	276,213,995.516	116,547,846.205	552,784,200.972	945,599,179.387
2003	10	742,915,779.975	35,336,792.697	45,417,434.491	106,061,639.576	556,099,913.212	742,915,779.975
2003	11	740,980,400.083	89,573,053.153	1,348,421.735	105,443,855.902	544,615,069.293	740,980,400.083
2003	12	1,014,554,340.890	204,394,467.690	0.000	129,680,515.412	680,479,357.788	1,014,554,340.890
2004	1	1,174,563,971.187	308,264,608.246	0.000	144,448,955.915	721,850,407.027	1,174,563,971.187
2004	2	1,098,678,660.084	437,980,461.203	0.000	115,294,662.837	545,403,536.045	1,098,678,660.084
2004	3	936,696,806.273	279,810,205.413	0.000	107,822,722.400	549,063,878.461	936,696,806.273
2004	4	820,473,937.772	150,163,443.281	8,055,248.090	108,236,429.661	554,018,816.741	820,473,937.772
2004	5	751,130,986.377	53,062,748.512	73,896,623.871	108,208,893.652	515,962,720.343	751,130,986.377
2004	6	794,835,791.185	5,959,927.844	138,077,300.122	112,478,464.396	538,320,098.823	794,835,791.185
2004	7	889,785,125.976	54,010.389	206,734,755.926	114,215,126.873	568,781,232.787	889,785,125.976
2004	8	889,347,654.975	0.000	207,190,115.567	116,773,684.426	565,383,854.982	889,347,654.975
2004	9	883,562,008.848	0.000	173,435,041.359	118,103,552.655	592,023,414.834	883,562,008.848
2004	10	756,265,281.424	21,210,650.544	61,479,112.361	106,068,463.412	567,507,055.107	756,265,281.424
2004	11	739,342,350.894	74,416,671.421	3,667,219.759	106,304,368.908	554,954,090.806	739,342,350.894
2004	12	1,012,149,854.943	204,675,951.023	264,607.360	130,893,007.357	676,316,289.203	1,012,149,854.943
2005	1	1,205,164,592.518	346,684,474.232	0.000	143,284,332.537	715,195,785.749	1,205,164,592.518
2005	2	1,059,188,243.796	379,427,988.676	0.000	114,440,491.758	565,319,763.362	1,059,188,243.796
2005	3	1,063,236,724.419	315,626,623.069	0.000	116,362,810.955	631,247,290.395	1,063,236,724.419
2005	4	833,305,825.692	181,506,037.462	2,563,443.919	108,026,988.501	541,209,355.810	833,305,825.692
2005	5	708,643,783.407	65,027,956.214	15,937,719.075	101,952,658.825	525,725,449.293	708,643,783.407
2005	6	836,340,538.934	9,515,566.201	110,100,977.597	111,144,247.133	605,579,748.004	836,340,538.934
2005	7	1,089,766,745.366	0.000	351,513,627.907	113,535,997.050	624,717,120.410	1,089,766,745.366
2005	8	1,136,481,652.779	0.000	373,554,075.421	115,323,176.035	647,604,401.323	1,136,481,652.779

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	Actual	Heating Usage	Cooling Usage	Lighting Usage	Other Usage	Total Usage
2005	9	1,025,977,317.252	0.000	246,593,410.358	119,970,285.413	659,413,621.481	1,025,977,317.252
2005	10	775,294,503.540	12,899,044.240	118,267,764.600	107,417,727.342	536,709,967.356	775,294,503.540
2005	11	760,631,932.711	85,234,773.006	9,880,268.132	109,322,777.514	556,194,114.059	760,631,932.711
2005	12	1,054,317,442.258	290,713,810.316	0.000	125,458,276.889	638,145,355.053	1,054,317,442.258
2006	1	1,196,487,149.166	315,569,872.564	0.000	143,076,842.757	737,840,433.845	1,196,487,149.166
2006	2	1,003,937,408.889	265,799,194.762	0.000	117,129,490.903	621,008,723.224	1,003,937,408.889
2006	3	959,229,583.007	297,027,112.007	0.000	108,499,858.660	553,702,612.340	959,229,583.007
2006	4	810,137,860.900	171,777,768.617	1,414,927.470	106,219,316.446	530,725,848.367	810,137,860.900
2006	5	707,508,596.650	40,803,141.795	2,545,324.658	106,040,252.229	558,119,877.968	707,508,596.650
2006	6	831,644,879.067	21,126,456.566	99,219,057.073	112,519,464.013	598,779,901.415	831,644,879.067
2006	7	994,762,697.144	0.000	211,482,020.645	118,855,875.203	664,424,801.296	994,762,697.144
2006	8	1,116,796,352.920	0.000	346,345,691.047	116,069,938.048	654,380,723.825	1,116,796,352.920
2006	9	904,939,991.143	853,484.119	147,682,901.915	116,673,673.893	639,729,931.215	904,939,991.143
2006	10	749,352,735.911	29,953,860.612	16,777,689.093	108,996,787.090	593,624,399.116	749,352,735.911
2006	11	814,506,559.236	136,746,094.885	646,235.614	110,390,763.654	566,723,465.083	814,506,559.236
2006	12	1,017,636,584.692	199,648,321.269	0.000	125,655,255.675	692,333,007.747	1,017,636,584.692
2007	1	1,139,730,073.763	233,631,771.004	0.000	139,002,094.609	767,096,208.150	1,139,730,073.763
2007	2	1,138,443,929.658	409,891,500.482	0.000	110,849,978.176	617,702,451.000	1,138,443,929.658
2007	3	1,026,768,486.093	368,760,286.084	389,109.822	105,004,629.950	552,614,460.237	1,026,768,486.093
2007	4	866,172,436.268	147,861,192.016	10,285,027.993	107,577,170.584	600,449,045.675	866,172,436.268
2007	5	724,550,568.511	57,256,021.455	25,133,367.733	100,990,993.937	541,170,185.386	724,550,568.511
2007	6	859,662,901.139	3,537,190.228	160,292,472.800	107,424,504.345	588,408,733.765	859,662,901.139
2007	7	1,004,454,660.643	0.000	271,910,720.457	112,321,831.124	620,222,109.062	1,004,454,660.643
2007	8	1,014,547,769.474	0.000	288,413,594.462	110,456,553.809	615,677,621.203	1,014,547,769.474
2007	9	1,024,137,204.838	737,195.721	247,864,963.014	116,425,225.624	659,109,820.480	1,024,137,204.838
2007	10	766,541,329.517	7,566,224.446	131,711,709.335	100,486,457.148	526,776,938.588	766,541,329.517
2007	11	789,927,004.618	81,847,675.928	26,782,528.581	107,735,559.479	573,561,240.630	789,927,004.618
2007	12	1,079,815,227.756	258,242,411.557	0.000	125,018,284.662	696,554,531.537	1,079,815,227.756
2008	1	1,236,344,007.395	324,236,083.637	0.000	134,685,430.878	777,422,492.880	1,236,344,007.395
2008	2	1,159,432,869.228	398,726,505.279	0.000	107,568,313.894	653,138,050.056	1,159,432,869.228
2008	3	1,052,860,215.742	364,616,455.452	0.000	101,535,780.460	586,707,979.829	1,052,860,215.742
2008	4	898,644,054.131	203,211,791.735	252,897.734	101,292,693.066	593,886,671.597	898,644,054.131
2008	5	718,605,891.194	61,150,053.756	6,468,595.836	98,404,680.663	552,582,560.939	718,605,891.194
2008	6	798,943,040.991	17,881,899.020	104,166,388.690	103,222,967.317	573,671,785.964	798,943,040.991

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	Actual	Heating Usage	Cooling Usage	Lighting Usage	Other Usage	Total Usage
2008	7	935,203,630.103	6,849.900	215,639,320.719	109,480,324.935	610,077,134.549	935,203,630.103
2008	8	1,038,440,376.128	0.000	270,298,167.655	111,059,229.804	657,082,978.670	1,038,440,376.128
2008	9	907,739,835.761	0.000	172,548,858.730	108,113,802.556	627,077,174.475	907,739,835.761
2008	10	746,127,998.389	13,626,946.958	52,932,293.183	99,850,162.062	579,718,596.186	746,127,998.389
2008	11	804,556,451.539	104,431,432.029	5,777,081.389	104,031,162.765	590,316,775.356	804,556,451.539
2008	12	1,103,181,096.311	304,310,988.673	0.000	116,931,783.203	681,938,324.435	1,103,181,096.311
2009	1	1,345,799,588.628	400,739,094.487	0.000	129,249,621.254	815,810,872.887	1,345,799,588.628
2009	2	1,225,423,049.753	458,046,832.881	0.000	105,210,042.286	662,166,174.585	1,225,423,049.753
2009	3	1,013,213,707.227	293,909,299.391	0.000	98,061,718.566	621,242,689.270	1,013,213,707.227
2009	4	879,818,293.173	160,771,710.285	498,277.597	99,089,236.979	619,459,068.312	879,818,293.173
2009	5	745,954,507.600	62,218,888.281	15,621,350.101	96,706,254.805	571,408,014.413	745,954,507.600
2009	6	749,217,553.757	9,435,807.230	64,459,559.512	99,690,066.959	575,632,120.055	749,217,553.757
2009	7	893,196,804.322	6,756.759	191,118,224.029	103,956,115.504	598,115,708.030	893,196,804.322
2009	8	901,807,986.079	0.000	186,602,425.743	103,763,542.921	611,442,017.415	901,807,986.079
2009	9	877,253,929.003	0.000	129,572,034.470	106,692,773.724	640,989,120.809	877,253,929.003
2009	10	769,451,286.420	39,156,723.656	29,313,417.597	97,333,011.855	603,648,133.311	769,451,286.420
2009	11	811,343,351.690	92,546,696.626	0.000	100,542,675.282	618,253,979.782	811,343,351.690
2009	12	1,048,682,883.558	214,956,912.881	0.000	115,509,428.732	718,216,541.945	1,048,682,883.558
2010	1	1,286,371,326.551	380,756,869.184	0.000	110,373,273.232	795,241,184.135	1,286,371,326.551
2010	2	1,165,645,621.957	387,120,115.687	0.000	91,598,822.329	686,926,683.941	1,165,645,621.957
2010	3	987,035,416.480	293,953,204.615	0.000	84,117,431.534	608,964,780.331	987,035,416.480
2010	4	805,988,821.194	110,687,931.372	13,848,880.076	85,572,499.659	595,879,510.086	805,988,821.194
2010	5	710,018,857.902	41,119,312.240	14,619,577.883	81,946,190.316	572,333,777.462	710,018,857.902
2010	6	845,593,019.960	8,808,427.162	145,415,702.602	86,781,375.080	604,587,515.116	845,593,019.960
2010	7	1,086,446,676.914	0.000	292,354,517.009	91,041,639.806	703,050,520.098	1,086,446,676.914
2010	8	1,195,390,336.342	0.000	381,168,824.810	91,627,254.234	722,594,257.298	1,195,390,336.342
2010	9	1,001,892,176.429	0.000	253,768,852.150	90,802,295.216	657,321,029.062	1,001,892,176.429
2010	10	728,331,286.996	15,838,140.062	59,048,721.262	83,049,877.524	570,394,548.148	728,331,286.996
2010	11	750,701,170.857	83,939,031.734	5,729,247.471	84,697,593.084	576,335,298.569	750,701,170.857
2010	12	1,083,550,540.938	255,774,371.416	0.000	99,402,502.530	728,373,666.992	1,083,550,540.938
2011	1	1,296,404,037.911	377,239,798.015	0.000	100,630,195.089	818,534,044.807	1,296,404,037.911
2011	2	1,140,422,579.289	417,283,995.760	0.000	79,242,040.624	643,896,542.905	1,140,422,579.289
2011	3	966,631,797.597	290,602,099.155	0.000	73,876,991.914	602,152,706.528	966,631,797.597
2011	4	862,388,665.488	183,852,869.859	3,886,136.371	73,931,685.117	600,717,974.141	862,388,665.488

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	Actual	Heating Usage	Cooling Usage	Lighting Usage	Other Usage	Total Usage
2011	5	777,410,500.275	65,607,232.366	19,511,280.341	75,576,299.369	616,715,688.200	777,410,500.275
2011	6	845,086,938.592	8,658,796.537	144,623,392.006	78,744,837.501	613,059,912.549	845,086,938.592
2011	7	1,035,939,351.393	0.000	274,162,388.430	85,324,845.829	676,452,117.134	1,035,939,351.393
2011	8	1,148,836,785.380	0.000	404,408,965.429	82,562,649.010	661,865,170.941	1,148,836,785.380
2011	9	929,914,042.850	1,499,803.687	206,356,029.012	82,576,176.543	639,482,033.608	929,914,042.850
2011	10	713,684,429.994	17,416,326.748	33,269,846.188	75,827,538.160	587,170,718.898	713,684,429.994
2011	11	787,386,590.232	77,626,450.770	5,511,922.622	78,129,146.577	626,119,070.262	787,386,590.232
2011	12	991,700,074.341	179,465,275.969	0.000	88,136,156.437	724,098,641.935	991,700,074.341
2012	1	1,120,010,835.984	267,208,547.005	0.000	96,265,263.265	756,537,025.714	1,120,010,835.984
2012	2	1,024,449,415.041	301,283,139.423	0.000	77,463,331.447	645,702,944.172	1,024,449,415.041
2012	3	920,339,902.246	213,226,727.301	12,449,967.463	75,212,766.249	619,450,441.233	920,339,902.246
2012	4	735,384,751.627	61,901,758.215	37,317,574.833	74,446,890.614	561,718,527.964	735,384,751.627
2012	5	728,447,599.916	51,612,197.293	25,596,432.999	73,017,670.981	578,221,298.643	728,447,599.916
2012	6	854,064,781.826	3,425,508.657	162,670,806.012	76,901,813.386	611,066,653.770	854,064,781.826
2012	7	1,230,752,857.012	306,200.156	412,350,747.688	82,522,970.491	735,572,938.677	1,230,752,857.012
2012	8	1,111,558,927.033	0.000	363,498,169.536	80,145,769.036	667,914,988.462	1,111,558,927.033
2012	9	923,843,757.458	591,420.157	187,453,358.887	81,218,292.807	654,580,685.607	923,843,757.458
2012	10	725,989,890.094	28,754,412.054	31,065,791.179	73,866,047.976	592,303,638.885	725,989,890.094
2012	11	805,774,715.091	114,374,422.267	7,238,737.575	77,503,405.801	606,658,149.448	805,774,715.091
2012	12	977,235,566.159	177,189,874.735	0.000	86,763,599.531	713,282,091.892	977,235,566.159
2013	1	1,154,307,824.623	287,318,824.486	0.000	87,622,829.387	779,366,170.750	1,154,307,824.623
2013	2	1,073,768,616.388	339,288,797.948	0.000	68,961,903.104	665,517,915.335	1,073,768,616.388
2013	3	1,019,829,304.264	306,400,893.175	0.000	67,130,825.797	646,297,585.292	1,019,829,304.264
2013	4	943,236,792.453	220,039,784.874	0.000	68,552,922.115	654,644,085.463	943,236,792.453
2013	5	732,370,481.790	63,277,966.123	26,952,156.904	64,104,440.616	578,035,918.147	732,370,481.790
2013	6	787,846,809.603	12,124,525.963	111,680,272.034	69,394,676.793	594,647,334.814	787,846,809.603
2013	7	986,982,148.751	174,536.726	246,609,889.365	73,245,935.282	666,951,787.378	986,982,148.751
2013	8	928,774,694.641	0.000	201,371,525.942	72,510,341.650	654,892,827.049	928,774,694.641
2013	9	949,369,786.219	19,459.103	227,167,144.251	72,830,779.745	649,352,403.119	949,369,786.219
2013	10	722,671,698.356	8,465,908.020	84,439,277.814	66,025,641.886	563,740,870.636	722,671,698.356
2013	11	803,457,209.396	102,746,781.463	7,625,559.487	69,808,877.390	623,275,991.056	803,457,209.396
2013	12	1,053,087,980.593	265,088,693.385	0.000	77,599,251.436	710,400,035.772	1,053,087,980.593
2014	1	1,326,618,927.774	413,137,600.761	0.000	85,767,568.311	827,713,758.701	1,326,618,927.774
2014	2	1,200,185,981.557	484,423,868.853	0.000	66,028,875.539	649,733,237.165	1,200,185,981.557

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	Actual	Heating Usage	Cooling Usage	Lighting Usage	Other Usage	Total Usage
2014	3	1,118,070,611.700	417,764,446.722	0.000	64,826,589.136	635,479,575.841	1,118,070,611.700
2014	4	900,334,873.149	225,051,337.657	721,622.963	63,138,052.723	611,423,859.806	900,334,873.149
2014	5	756,265,244.854	61,000,151.371	20,974,262.164	64,486,800.565	609,804,030.754	756,265,244.854
2014	6	784,428,629.192	13,928,201.874	135,254,895.060	64,987,451.910	570,258,080.348	784,428,629.192
2014	7	931,250,029.886	0.000	231,774,120.423	70,626,888.843	628,849,020.619	931,250,029.886
2014	8	856,671,459.190	0.000	173,613,784.453	68,875,707.100	614,181,967.637	856,671,459.190
2014	9	929,276,351.128	1,332,852.392	237,184,194.719	69,792,476.626	620,966,827.390	929,276,351.128
2014	10	705,678,457.420	19,147,288.962	35,638,708.936	63,584,011.992	587,308,447.530	705,678,457.420
2014	11	771,788,322.712	112,989,053.559	936,590.581	65,190,028.246	592,672,650.326	771,788,322.712
2014	12	1,085,922,255.580	279,150,912.906	0.000	75,615,679.475	731,155,663.199	1,085,922,255.580
2015	1	1,215,289,689.635	352,914,375.055	0.000	77,891,926.858	784,483,387.722	1,215,289,689.635
2015	2	1,116,428,804.457	423,880,965.262	0.000	61,357,898.788	631,189,940.407	1,116,428,804.457
2015	3	1,070,580,325.257	442,115,040.780	0.000	58,572,185.803	569,893,098.673	1,070,580,325.257
2015	4	842,916,017.920	181,126,533.861	294,543.806	59,840,782.039	601,654,158.214	842,916,017.920
2015	5	699,854,790.694	55,404,414.899	27,475,512.692	55,695,785.024	561,279,078.079	699,854,790.694
2015	6	772,375,651.502	9,133,175.745	122,182,591.131	60,316,867.092	580,743,017.535	772,375,651.502
2015	7	868,795,651.215	83,968.891	169,972,081.163	63,999,857.746	634,739,743.415	868,795,651.215
2015	8	1,003,984,951.907	0.000	274,149,192.538	64,506,194.220	665,329,565.149	1,003,984,951.907
2015	9	919,801,987.108	91,522.857	207,312,189.332	64,166,654.597	648,231,620.323	919,801,987.108
2015	10	721,888,861.334	13,942,826.112	60,874,617.607	58,119,267.973	588,952,149.642	721,888,861.334
2015	11	695,534,513.144	69,324,383.932	1,434,621.609	55,279,313.767	569,496,193.837	695,534,513.144
2015	12	935,311,398.398	180,351,865.189	0.000	70,459,585.553	684,499,947.656	935,311,398.398
2016	1	1,105,285,507.353	282,774,616.402	0.000	56,742,775.079	765,768,115.871	1,105,285,507.353
2016	2	1,031,741,823.842	381,840,512.282	0.000	47,857,217.043	602,044,094.516	1,031,741,823.842
2016	3	885,542,114.851	275,385,663.029	0.000	45,685,572.299	564,470,879.523	885,542,114.851
2016	4	804,870,566.232	155,080,059.476	128,251.304	47,436,268.923	602,225,986.529	804,870,566.232
2016	5	694,115,156.127	68,669,412.894	5,159,202.801	43,944,382.716	576,342,157.716	694,115,156.127
2016	6	810,850,967.310	13,699,630.723	124,265,492.951	47,772,293.191	625,113,550.446	810,850,967.310
2016	7	972,112,558.157	0.000	219,881,034.278	54,169,198.643	698,062,325.235	972,112,558.157
2016	8	1,099,025,995.788	0.000	324,705,229.186	53,579,239.408	720,741,527.194	1,099,025,995.788
2016	9	1,006,612,655.748	0.000	249,765,271.654	49,653,071.027	707,194,313.067	1,006,612,655.748
2016	10	749,414,308.234	5,725,245.421	86,989,958.986	45,889,850.375	610,809,253.451	749,414,308.234
2016	11	688,102,367.535	62,915,756.757	8,345,080.809	43,870,482.572	572,971,047.397	688,102,367.535
2016	12	959,770,482.071	236,677,172.787	108,278.077	53,681,551.771	669,303,479.436	959,770,482.071

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	Actual	Heating Usage	Cooling Usage	Lighting Usage	Other Usage	Total Usage
2017	1	1,178,359,341.923	374,312,624.401	0.000	48,270,122.891	755,776,594.631	1,178,359,341.923
2017	2	961,460,022.985	298,449,482.564	0.000	40,875,734.350	622,134,806.071	961,460,022.985
2017	3	842,700,424.439	224,195,140.536	0.000	38,616,269.323	579,889,014.580	842,700,424.439
2017	4	795,036,683.096	171,344,187.225	2,240,771.406	38,872,866.046	582,578,858.419	795,036,683.096
2017	5	665,377,731.947	54,506,318.125	19,153,754.908	36,094,046.241	555,623,612.674	665,377,731.947
2017	6	775,474,321.674	12,222,749.073	90,294,958.000	41,012,099.319	631,944,515.283	775,474,321.674
2017	7	942,366,205.274	0.000	203,429,662.804	46,329,069.831	692,607,472.640	942,366,205.274
2017	8	960,965,493.035	0.000	200,302,126.704	46,346,037.851	714,317,328.480	960,965,493.035
2017	9	826,244,101.947	0.000	101,090,649.283	43,109,896.307	682,043,556.357	826,244,101.947
2017	10	759,173,225.980	2,680,671.135	115,922,174.537	38,633,660.341	601,936,719.968	759,173,225.980
2017	11	741,102,683.366	114,274,675.546	6,620,429.767	37,204,165.212	583,003,412.842	741,102,683.366
2017	12	964,202,330.634	239,785,872.863	0.000	45,959,071.203	678,457,386.568	964,202,330.634
2018	1	1,232,758,612.551	439,705,983.302	0.000	41,695,117.411	751,357,511.838	1,232,758,612.551
2018	2	1,015,538,870.685	385,486,985.284	0.000	34,802,428.208	595,249,457.194	1,015,538,870.685
2018	3	904,833,967.335	287,688,985.938	0.000	33,298,921.247	583,846,060.150	904,833,967.335
2018	4	898,627,076.789	246,404,396.374	0.000	34,755,526.188	617,467,154.227	898,627,076.789
2018	5	730,015,478.526	101,603,922.486	18,699,217.771	32,643,363.039	577,068,975.230	730,015,478.526
2018	6	836,922,250.184	2,109,282.545	133,718,326.015	34,577,977.381	666,516,664.242	836,922,250.184
2018	7	1,051,929,323.431	0.000	247,388,404.528	40,169,486.010	764,371,432.893	1,051,929,323.431
2018	8	990,513,336.478	0.000	243,497,142.821	39,582,581.895	707,433,611.763	990,513,336.478
2018	9	975,688,018.592	0.000	232,930,297.727	36,856,919.612	705,900,801.254	975,688,018.592
2018	10	729,846,590.497	21,407,211.426	92,930,026.422	32,580,587.484	582,928,765.165	729,846,590.497
2018	11	755,318,089.394	151,133,007.053	10,027,690.765	31,802,029.101	562,355,362.476	755,318,089.394
2018	12	1,012,052,419.538	283,114,472.951	0.000	39,803,051.197	689,134,895.390	1,012,052,419.538
2019	1	1,070,183,718.212	287,861,883.171	0.000	35,891,315.022	746,430,520.019	1,070,183,718.212
2019	2	1,059,465,555.656	417,972,150.788	0.000	29,680,066.281	611,813,338.586	1,059,465,555.656
2019	3	958,342,113.600	345,003,368.787	0.000	28,241,664.987	585,097,079.826	958,342,113.600
2019	4	796,587,683.487	192,720,749.200	0.000	28,674,696.051	575,192,238.236	796,587,683.487
2019	5	713,797,929.010	70,103,412.728	1,889,925.114	28,531,418.097	613,273,173.072	713,797,929.010
2019	6	702,669,321.081	14,433,770.997	42,183,114.950	30,204,640.542	615,847,794.593	702,669,321.081
2019	7	1,013,854,535.067	0.000	238,114,731.945	35,514,787.086	740,225,016.036	1,013,854,535.067
2019	8	999,858,163.487	0.000	262,064,634.306	34,008,179.698	703,785,349.483	999,858,163.487
2019	9	876,642,423.748	0.000	152,328,626.293	32,679,679.834	691,634,117.621	876,642,423.748
2019	10	721,425,533.652	9,630,900.643	110,305,234.256	28,023,333.246	573,466,065.507	721,425,533.652

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	Actual	Heating Usage	Cooling Usage	Lighting Usage	Other Usage	Total Usage
2019	11	733,244,126.475	126,568,893.505	5,217,231.091	26,860,173.982	574,597,827.896	733,244,126.475
2019	12	974,810,544.612	247,547,724.848	0.000	34,279,772.870	692,983,046.893	974,810,544.612
2020	1	1,039,029,278.567	241,478,313.357	0.000	35,150,357.194	762,400,608.015	1,039,029,278.567
2020	2	923,161,306.356	293,510,618.141	0.000	29,256,665.218	600,394,022.996	923,161,306.356
2020	3	883,241,137.124	266,395,055.781	0.000	28,448,296.912	588,397,784.430	883,241,137.124
2020	4	833,589,281.195	146,677,195.099	649,615.961	28,997,141.949	657,265,328.185	833,589,281.195
2020	5	758,198,478.094	96,152,485.258	4,624,700.603	27,434,596.803	629,986,695.430	758,198,478.094
2020	6	848,047,500.113	15,757,326.821	130,703,577.491	29,545,443.574	672,041,152.226	848,047,500.113
2020	7	1,102,021,842.954	0.000	302,197,694.422	33,915,445.462	765,908,703.070	1,102,021,842.954
2020	8	1,100,998,315.194	0.000	293,570,821.571	34,255,591.970	773,171,901.653	1,100,998,315.194
2020	9	947,636,387.387	419,478.981	217,975,351.111	30,736,371.128	698,505,186.168	947,636,387.387
2020	10	699,346,217.365	17,200,888.515	28,967,242.376	28,195,035.782	624,983,050.692	699,346,217.365
2020	11	724,756,686.589	88,020,071.801	2,113,258.136	27,148,499.642	607,474,857.009	724,756,686.589
2020	12	917,938,869.427	186,289,518.212	1,125,189.811	33,104,095.213	697,420,066.192	917,938,869.427
2021	1	1,084,106,654.668	287,439,632.485	0.000	32,999,049.579	763,667,972.605	1,084,106,654.668
2021	2	0.000	362,186,890.097	0.000	28,485,471.819	652,933,160.663	1,043,605,522.580
2021	3		289,691,001.633	481,041.376	27,243,247.016	624,459,355.767	941,874,645.792
2021	4		167,667,769.214	3,728,648.492	27,525,159.868	630,921,255.033	829,842,832.607
2021	5		60,386,279.816	18,515,435.531	26,197,467.216	600,488,388.580	705,587,571.143
2021	6		11,043,448.849	97,021,840.819	28,593,953.398	655,419,734.194	792,078,977.260
2021	7		293,309.427	231,669,266.285	32,836,726.944	752,670,977.163	1,017,470,279.818
2021	8		0.000	254,881,577.673	32,364,079.349	741,837,128.596	1,029,082,785.618
2021	9		378,605.990	183,658,343.075	30,166,142.105	691,456,846.296	905,659,937.466
2021	10		18,493,274.260	56,175,776.128	26,785,870.841	613,975,552.881	715,430,474.109
2021	11		96,549,520.256	4,851,693.179	25,867,438.258	592,923,590.208	720,192,241.901
2021	12		220,417,425.239	54,152.022	31,770,217.413	728,224,850.975	980,466,645.649
2022	1		317,924,695.426	0.000	32,251,726.019	759,259,401.090	1,109,435,822.534
2022	2		359,123,442.178	0.000	27,682,918.855	651,702,063.269	1,038,508,424.302
2022	3		287,151,711.179	477,936.554	26,469,165.238	623,128,279.520	937,227,092.491
2022	4		165,764,478.332	3,694,661.689	26,659,855.269	627,617,440.777	823,736,436.067
2022	5		59,690,015.856	18,342,806.132	25,364,286.080	597,117,582.081	700,514,690.150
2022	6		10,915,041.780	96,105,028.315	27,692,910.913	651,937,292.959	786,650,273.967
2022	7		289,934.454	229,496,520.154	31,834,716.001	749,442,290.023	1,011,063,460.632
2022	8		0.000	252,502,356.812	31,380,071.954	738,739,211.179	1,022,621,639.945

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	Actual	Heating Usage	Cooling Usage	Lighting Usage	Other Usage	Total Usage
2022	9		374,358.390	181,984,673.500	29,231,465.486	688,157,432.727	899,747,930.103
2022	10		18,292,100.337	55,681,572.730	25,940,021.442	610,671,352.384	710,585,046.893
2022	11		95,540,978.005	4,810,979.378	25,045,537.864	589,613,717.657	715,011,212.904
2022	12		218,228,262.159	53,723.808	30,782,702.672	724,676,142.323	973,740,830.962
2023	1		317,166,273.995	0.000	31,563,858.944	759,073,516.015	1,107,803,648.954
2023	2		358,487,313.562	0.000	27,100,773.738	651,741,589.799	1,037,329,677.098
2023	3		286,815,682.920	473,844.461	25,921,518.886	623,381,903.847	936,592,950.114
2023	4		165,665,338.825	3,665,006.967	26,118,588.252	628,121,189.284	823,570,123.327
2023	5		59,690,691.655	18,205,627.885	24,858,281.824	597,812,308.702	700,566,910.066
2023	6		10,920,900.733	95,431,840.424	27,146,911.321	652,851,144.160	786,350,796.638
2023	7		290,224.240	227,981,288.496	31,212,535.223	750,624,595.618	1,010,108,643.576
2023	8		0.000	250,901,717.233	30,770,439.918	739,992,725.841	1,021,664,882.992
2023	9		374,928.926	180,864,574.603	28,670,669.323	689,495,723.845	899,405,896.697
2023	10		18,324,121.654	55,348,200.606	25,446,409.297	611,956,079.573	711,074,811.130
2023	11		95,721,142.645	4,782,565.243	24,571,078.202	590,905,400.898	715,980,186.988
2023	12		218,649,776.818	53,406.697	30,194,160.344	726,133,882.953	975,031,226.812
2024	1		315,640,066.513	0.000	31,041,336.674	757,730,081.682	1,104,411,484.869
2024	2		356,685,198.741	0.000	26,646,798.705	650,457,845.019	1,033,789,842.465
2024	3		285,319,483.523	470,678.785	25,484,506.846	622,085,886.853	933,360,556.007
2024	4		164,761,235.159	3,639,715.003	25,677,161.448	626,788,654.288	820,866,765.899
2024	5		59,353,652.775	18,076,583.253	24,433,366.323	596,427,172.395	698,290,774.746
2024	6		10,857,855.900	94,742,995.902	26,685,496.609	651,402,474.631	783,688,823.041
2024	7		288,520.896	226,312,945.415	30,696,084.460	749,302,352.208	1,006,599,902.980
2024	8		0.000	249,056,265.085	30,263,724.963	738,748,302.925	1,018,068,292.973
2024	9		372,721.220	179,532,533.840	28,190,711.643	688,145,309.589	896,241,276.291
2024	10		18,215,941.255	54,939,567.573	25,011,006.363	610,527,571.452	708,694,086.642
2024	11		95,159,412.614	4,747,380.731	24,146,144.712	589,415,990.599	713,468,928.656
2024	12		217,366,527.147	53,014.117	29,676,623.187	724,416,939.516	971,513,103.967
2025	1		313,915,233.179	0.000	30,580,959.031	756,274,499.506	1,100,770,691.717
2025	2		354,786,679.059	0.000	26,251,695.377	649,210,764.187	1,030,249,138.623
2025	3		283,824,358.418	467,690.049	25,107,965.306	620,926,043.408	930,326,057.181
2025	4		163,924,968.414	3,617,059.356	25,302,637.787	625,740,340.870	818,585,006.426
2025	5		59,056,938.674	17,965,235.698	24,076,677.158	595,422,038.553	696,520,890.083
2025	6		10,804,749.840	94,167,745.460	26,300,746.801	650,423,817.753	781,697,059.854

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	Actual	Heating Usage	Cooling Usage	Lighting Usage	Other Usage	Total Usage
2025	7		287,146.989	224,962,261.134	30,267,322.735	748,518,198.187	1,004,034,929.045
2025	8		0.000	247,578,137.848	29,843,807.437	738,044,562.625	1,015,466,507.910
2025	9		370,970.283	178,472,324.578	27,795,047.262	687,378,228.894	894,016,571.017
2025	10		18,130,700.802	54,615,810.106	24,653,649.594	609,690,706.173	707,090,866.674
2025	11		94,715,040.087	4,719,430.019	23,797,439.732	588,516,429.608	711,748,339.447
2025	12		216,383,124.277	52,707.396	29,252,091.173	723,411,276.566	969,099,199.411
2026	1		312,338,072.738	0.000	30,138,751.078	755,064,805.748	1,097,541,629.564
2026	2		353,009,734.177	0.000	25,871,046.072	648,146,179.867	1,027,026,960.115
2026	3		282,413,920.840	465,062.877	24,744,953.767	619,934,238.840	927,558,176.324
2026	4		163,116,501.954	3,596,830.295	24,940,186.665	624,825,400.062	816,478,918.975
2026	5		58,767,402.960	17,865,121.070	23,731,238.342	594,537,670.873	694,901,433.246
2026	6		10,751,440.067	93,641,795.592	25,926,365.648	649,532,098.774	779,851,700.082
2026	7		285,728.498	223,706,231.171	29,848,014.668	747,780,999.260	1,001,620,973.597
2026	8		0.000	246,207,018.256	29,433,476.614	737,395,595.610	1,013,036,090.480
2026	9		369,176.066	177,493,583.968	27,409,061.953	686,678,024.100	891,949,846.086
2026	10		18,044,725.699	54,320,818.314	24,306,514.736	608,950,045.070	705,622,103.819
2026	11		94,275,869.583	4,694,355.922	23,460,305.118	587,749,992.735	710,180,523.359
2026	12		215,399,678.076	52,431.368	28,840,113.786	722,530,102.773	966,822,326.003
2027	1		310,532,382.014	0.000	29,796,059.805	754,103,504.864	1,094,431,946.683
2027	2		350,982,752.782	0.000	25,576,836.599	647,319,888.887	1,023,879,478.268
2027	3		280,814,935.927	462,680.472	24,465,315.776	619,188,593.876	924,931,526.051
2027	4		162,194,187.296	3,578,493.959	24,661,308.429	624,148,939.235	814,582,928.919
2027	5		58,440,461.073	17,775,449.332	23,466,702.480	593,914,856.641	693,597,469.525
2027	6		10,692,529.245	93,178,539.938	25,640,816.462	648,939,144.569	778,451,030.213
2027	7		284,164.157	222,603,660.204	29,528,326.340	747,327,483.266	999,743,633.966
2027	8		0.000	245,002,987.029	29,120,900.901	737,016,020.827	1,011,139,908.757
2027	9		367,226.733	176,644,696.254	27,116,896.195	686,297,000.172	890,425,819.354
2027	10		17,949,671.222	54,061,814.013	24,043,134.773	608,503,685.337	704,558,305.345
2027	11		93,782,177.240	4,672,085.663	23,203,706.242	587,258,728.741	708,916,697.886
2027	12		214,251,702.815	52,179.231	28,522,887.737	721,881,005.455	964,707,775.237
2028	1		309,045,524.155	0.000	29,505,491.794	753,753,806.580	1,092,304,822.530
2028	2		349,308,034.399	0.000	25,327,773.474	647,028,892.163	1,021,664,700.036
2028	3		279,490,641.154	460,841.606	24,228,651.549	618,950,480.831	923,130,615.140
2028	4		161,425,204.842	3,564,172.977	24,424,780.716	623,960,839.841	813,374,998.376

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	Actual	Heating Usage	Cooling Usage	Lighting Usage	Other Usage	Total Usage
2028	5		58,157,001.016	17,703,116.912	23,240,235.419	593,700,184.207	692,800,537.554
2028	6		10,643,622.609	92,818,415.344	25,398,221.338	648,828,568.851	777,688,828.143
2028	7		282,916.973	221,771,831.307	29,256,439.325	747,391,457.236	998,702,644.841
2028	8		0.000	244,114,261.340	28,855,965.181	737,160,856.332	1,010,131,082.852
2028	9		365,687.525	176,009,534.793	26,870,085.688	686,429,140.443	889,674,448.450
2028	10		17,875,806.079	53,869,894.421	23,822,681.512	608,579,480.652	704,147,862.663
2028	11		93,401,898.035	4,655,692.388	22,989,962.312	587,306,652.158	708,354,204.892
2028	12		213,413,140.471	52,001.609	28,259,556.274	721,924,862.738	963,649,561.092
2029	1		307,884,066.530	0.000	29,279,091.713	753,874,425.468	1,091,037,583.710
2029	2		348,041,579.393	0.000	25,136,165.782	647,202,881.944	1,020,380,627.120
2029	3		278,512,816.448	459,501.907	24,048,083.696	619,187,079.210	922,207,481.261
2029	4		160,895,807.778	3,554,391.812	24,248,078.428	624,336,518.794	813,034,796.811
2029	5		57,978,925.961	17,657,060.596	23,075,457.594	594,144,022.868	692,855,467.019
2029	6		10,609,500.340	92,565,714.909	25,214,641.270	649,223,459.080	777,613,315.600
2029	7		281,996.296	221,159,463.438	29,045,342.437	747,855,878.080	998,342,680.252
2029	8		0.000	243,434,066.243	28,647,914.270	737,622,946.873	1,009,704,927.387
2029	9		364,479.230	175,518,014.288	26,677,140.097	686,879,697.657	889,439,331.272
2029	10		17,818,763.442	53,723,909.553	23,652,093.336	608,991,168.495	704,185,934.825
2029	11		93,107,358.363	4,643,193.682	22,824,744.795	587,688,700.777	708,263,997.617
2029	12		212,730,638.080	51,860.077	28,051,504.213	722,266,654.620	963,100,656.990
2030	1		306,938,829.980	0.000	27,473,391.928	754,308,251.531	1,088,720,473.440
2030	2		346,975,061.757	0.000	23,586,523.726	647,590,567.554	1,018,152,153.036
2030	3		277,676,895.907	458,523.053	22,568,361.812	619,635,958.405	920,339,739.176
2030	4		160,426,093.078	3,547,023.975	22,761,196.927	624,930,430.941	811,664,744.922
2030	5		57,818,576.408	17,622,411.441	21,665,300.020	594,841,533.213	691,947,821.082
2030	6		10,581,654.519	92,394,272.938	23,681,491.686	650,198,003.741	776,855,422.885
2030	7		281,302.766	220,777,975.108	27,288,109.885	749,221,155.819	997,568,543.578
2030	8		0.000	243,047,594.690	26,916,786.002	739,026,103.493	1,008,990,484.185
2030	9		363,739.879	175,269,401.395	25,064,280.060	688,163,781.064	888,861,202.399
2030	10		17,785,291.683	53,653,883.713	22,217,925.570	610,014,396.229	703,671,497.194
2030	11		92,943,495.724	4,637,558.485	21,436,938.312	588,571,644.100	707,589,636.620
2030	12		212,404,029.435	51,805.884	26,346,771.111	723,375,799.477	962,178,405.908
2031	1		306,854,334.315	0.000	26,205,279.153	756,142,480.625	1,089,202,094.092
2031	2		346,876,455.244	0.000	22,500,386.347	649,239,332.572	1,018,616,174.163

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	Actual	Heating Usage	Cooling Usage	Lighting Usage	Other Usage	Total Usage
2031	3		277,594,950.025	458,752.190	21,531,262.335	621,275,660.444	920,860,624.994
2031	4		160,375,520.893	3,548,770.160	21,718,142.327	626,668,005.245	812,310,438.625
2031	5		57,798,896.661	17,630,899.763	20,675,649.107	596,587,294.981	692,692,740.512
2031	6		10,577,788.787	92,438,070.633	22,600,305.629	652,122,462.090	777,738,627.139
2031	7		281,192.917	220,881,116.594	26,039,575.150	751,361,160.224	998,563,044.885
2031	8		0.000	243,159,569.798	25,683,927.047	741,099,081.449	1,009,942,578.294
2031	9		363,566.277	175,343,925.162	23,917,308.342	690,124,030.118	889,748,829.898
2031	10		17,775,612.408	53,674,456.513	21,199,310.630	611,697,331.437	704,346,710.988
2031	11		92,889,757.221	4,639,249.782	20,451,380.938	590,116,129.819	708,096,517.759
2031	12		212,285,132.625	51,825.812	25,130,133.914	725,119,609.878	962,586,702.229
2032	1		306,504,876.935	0.000	25,437,385.581	757,995,470.595	1,089,937,733.111
2032	2		346,478,033.374	0.000	21,843,664.345	650,908,033.856	1,019,229,731.575
2032	3		277,272,941.488	458,986.331	20,904,436.107	622,920,458.306	921,556,822.232
2032	4		160,186,429.045	3,550,530.993	21,087,861.379	628,386,252.949	813,211,074.367
2032	5		57,729,514.646	17,639,358.209	20,078,005.454	598,294,079.561	693,740,957.870
2032	6		10,564,860.912	92,480,852.156	21,945,409.752	653,939,892.515	778,931,015.335
2032	7		280,842.873	220,979,348.360	25,280,067.247	753,307,623.103	999,847,881.584
2032	8		0.000	243,263,016.859	24,933,410.864	742,977,789.189	1,011,174,216.912
2032	9		363,098.179	175,415,839.233	23,221,433.226	691,963,454.729	890,963,825.367
2032	10		17,752,336.922	53,695,481.021	20,583,070.572	613,344,253.269	705,375,141.783
2032	11		92,766,784.694	4,641,013.934	19,855,951.494	591,677,208.697	708,940,958.820
2032	12		211,999,807.202	51,844.623	24,391,716.567	726,836,121.545	963,279,489.936
2033	1		306,064,337.409	0.000	25,154,396.887	760,156,206.387	1,091,374,940.683
2033	2		345,944,121.778	0.000	21,602,616.683	652,822,773.676	1,020,369,512.137
2033	3		276,813,870.785	459,378.759	20,673,838.159	624,755,443.615	922,702,531.318
2033	4		159,903,167.292	3,553,270.294	20,855,471.885	630,244,345.012	814,556,254.484
2033	5		57,621,135.028	17,651,556.506	19,857,817.908	600,095,625.248	695,226,134.689
2033	6		10,543,907.563	92,537,677.401	21,699,992.289	655,765,427.052	780,547,004.304
2033	7		280,256.618	221,098,455.761	24,989,020.631	755,158,599.487	1,001,526,332.497
2033	8		0.000	243,376,604.414	24,644,367.346	744,743,309.677	1,012,764,281.436
2033	9		362,264.793	175,484,376.454	22,956,177.433	693,726,859.327	892,529,678.007
2033	10		17,709,772.235	53,712,635.739	20,349,841.794	614,964,397.988	706,736,647.756
2033	11		92,535,142.559	4,642,174.610	19,630,596.723	593,229,088.383	710,037,002.275
2033	12		211,449,492.677	51,854.058	24,106,654.070	728,493,821.136	964,101,821.941

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	Actual	Heating Usage	Cooling Usage	Lighting Usage	Other Usage	Total Usage
2034	1		305,242,723.313	0.000	24,957,352.386	762,159,069.257	1,092,359,144.955
2034	2		345,015,956.030	0.000	21,436,681.151	654,643,196.976	1,021,095,834.156
2034	3		276,071,347.753	459,760.201	20,516,675.077	626,547,629.698	923,595,412.729
2034	4		159,474,382.202	3,556,238.359	20,698,649.940	632,104,861.510	815,834,132.012
2034	5		57,466,590.172	17,666,362.688	19,710,951.542	601,942,074.988	696,785,979.390
2034	6		10,515,564.658	92,615,106.239	21,535,703.014	657,667,172.048	782,333,545.959
2034	7		279,501.329	221,282,769.784	24,791,844.341	757,104,708.716	1,003,458,824.171
2034	8		0.000	243,577,962.502	24,448,738.373	746,626,781.369	1,014,653,482.245
2034	9		361,280.300	175,628,021.352	22,779,569.078	695,652,924.165	894,421,794.895
2034	10		17,661,342.656	53,755,900.268	20,196,728.437	616,776,952.535	708,390,923.895
2034	11		92,280,419.816	4,645,847.057	19,483,770.553	595,004,317.796	711,414,355.222
2034	12		210,862,636.083	51,894.099	23,917,885.502	730,415,353.015	965,247,768.699
2035	1		304,457,243.393	0.000	24,883,756.619	764,443,686.949	1,093,784,686.960
2035	2		344,120,716.505	0.000	21,376,544.711	656,700,067.579	1,022,197,328.794
2035	3		275,348,509.576	460,420.934	20,460,111.717	628,546,705.214	924,815,747.441
2035	4		159,052,620.980	3,561,268.995	20,642,378.656	634,146,053.142	817,402,321.773
2035	5		57,312,969.781	17,690,915.555	19,659,136.759	603,940,281.877	698,603,303.972
2035	6		10,487,211.373	92,742,016.668	21,474,118.995	659,697,607.161	784,400,954.198
2035	7		278,741.575	221,581,912.569	24,711,243.025	759,143,967.539	1,005,715,864.708
2035	8		0.000	243,902,099.857	24,367,608.691	748,587,318.027	1,016,857,026.575
2035	9		360,281.227	175,858,405.326	22,710,146.233	697,669,093.269	896,597,926.055
2035	10		17,612,139.474	53,825,510.517	20,139,416.411	618,694,756.171	710,271,822.572
2035	11		92,021,503.274	4,651,787.387	19,429,877.033	596,897,287.794	713,000,455.488
2035	12		210,268,040.062	51,959.915	23,843,164.796	732,476,092.116	966,639,256.889
2036	1		303,727,601.675	0.000	24,857,557.274	766,874,328.130	1,095,459,487.080
2036	2		343,295,559.838	0.000	21,357,659.075	658,899,837.707	1,023,553,056.620
2036	3		274,687,596.119	461,363.801	20,443,429.709	630,695,174.495	926,287,564.124
2036	4		158,670,384.395	3,568,554.534	20,626,710.500	636,349,524.693	819,215,174.121
2036	5		57,175,047.514	17,727,064.629	19,646,700.781	606,115,488.144	700,664,301.068
2036	6		10,461,926.178	92,931,176.130	21,455,420.875	661,915,862.702	786,764,385.885
2036	7		278,068.234	222,033,017.364	24,679,016.829	761,366,221.166	1,008,356,323.593
2036	8		0.000	244,398,984.761	24,334,462.720	750,736,467.902	1,019,469,915.383
2036	9		359,410.309	176,216,394.331	22,686,634.552	699,899,730.203	899,162,169.395
2036	10		17,569,523.885	53,934,991.783	20,123,963.047	620,839,387.834	712,467,866.549

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	Actual	Heating Usage	Cooling Usage	Lighting Usage	Other Usage	Total Usage
2036	11		91,798,960.919	4,661,257.936	19,417,225.199	599,035,993.945	714,913,437.999
2036	12		209,758,902.484	52,065.572	23,818,410.472	734,815,868.130	968,445,246.659
2037	1		303,057,602.029	0.000	24,842,545.770	769,519,915.049	1,097,420,062.847
2037	2		342,540,037.922	0.000	21,348,700.000	661,294,939.853	1,025,183,677.775
2037	3		274,085,350.821	462,686.923	20,436,520.208	633,039,360.788	928,023,918.740
2037	4		158,324,136.587	3,578,817.941	20,620,926.042	638,751,495.236	821,275,375.806
2037	5		57,051,060.247	17,778,255.361	19,644,114.742	608,493,897.833	702,967,328.183
2037	6		10,439,361.951	93,200,448.526	21,447,343.392	664,350,506.490	789,437,660.359
2037	7		277,472.456	222,679,116.416	24,657,990.619	763,803,155.367	1,011,417,734.859
2037	8		0.000	245,113,203.471	24,312,262.217	753,093,911.123	1,022,519,376.811
2037	9		358,652.034	176,734,308.764	22,674,441.106	702,360,947.834	902,128,349.738
2037	10		17,532,780.408	54,094,410.486	20,119,689.940	623,225,261.898	714,972,142.733
2037	11		91,608,301.825	4,675,094.943	19,415,935.228	601,425,834.764	717,125,166.761
2037	12		209,327,322.030	52,221.056	23,807,477.711	737,457,762.803	970,644,783.599
2038	1		302,395,845.244	0.000	24,825,951.146	772,311,827.632	1,099,533,624.023
2038	2		341,797,805.768	0.000	21,338,794.763	663,829,695.223	1,026,966,295.754
2038	3		273,495,903.938	463,995.804	20,428,920.544	635,524,370.002	929,913,190.289
2038	4		157,986,618.891	3,589,004.630	20,614,594.772	641,300,519.370	823,490,737.663
2038	5		56,930,223.364	17,829,081.016	19,641,200.525	611,019,146.240	705,419,651.145
2038	6		10,417,422.857	93,468,320.684	21,438,902.487	666,943,951.706	792,268,597.734
2038	7		276,892.765	223,321,635.165	24,635,687.075	766,392,892.562	1,014,627,107.566
2038	8		0.000	245,823,289.429	24,288,628.818	755,596,238.898	1,025,708,157.146
2038	9		357,910.550	177,247,695.867	22,661,054.278	704,963,936.423	905,230,597.119
2038	10		17,496,700.994	54,251,999.029	20,114,565.146	625,745,071.301	717,608,336.471
2038	11		91,420,552.179	4,688,748.096	19,413,927.956	603,948,911.894	719,472,140.125
2038	12		208,899,430.484	52,373.781	23,795,036.713	740,241,055.985	972,987,896.963
2039	1		301,784,152.049	0.000	24,817,276.094	775,243,450.634	1,101,844,878.776
2039	2		341,109,387.359	0.000	21,335,646.275	666,484,104.752	1,028,929,138.386
2039	3		272,946,641.239	465,282.993	20,427,511.416	638,115,737.529	931,955,173.177
2039	4		157,670,534.817	3,598,979.305	20,614,197.404	643,947,444.799	825,831,156.325
2039	5		56,816,728.590	17,878,715.029	19,643,863.575	613,636,102.692	707,975,409.886
2039	6		10,396,710.700	93,728,796.681	21,436,138.952	669,623,300.587	795,184,946.920
2039	7		276,343.701	223,944,626.869	24,619,324.665	769,059,832.877	1,017,900,128.111
2039	8		0.000	246,509,666.504	24,270,485.729	758,162,782.797	1,028,942,935.030

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	Actual	Heating Usage	Cooling Usage	Lighting Usage	Other Usage	Total Usage
2039	9		357,205.069	177,743,416.313	22,652,737.415	707,627,471.008	908,380,829.805
2039	10		17,462,275.586	54,403,793.382	20,113,779.178	628,315,352.433	720,295,200.580
2039	11		91,241,283.018	4,701,887.465	19,415,925.165	606,515,749.964	721,874,845.612
2039	12		208,490,621.441	52,520.635	23,787,277.986	743,068,312.471	975,398,732.533
2040	1		301,322,206.546	0.000	24,439,361.721	778,183,000.932	1,103,944,569.198
2040	2		340,587,857.834	0.000	21,014,550.932	669,132,299.533	1,030,734,708.298
2040	3		272,530,995.279	466,654.877	20,121,889.552	640,708,729.425	933,828,269.133
2040	4		157,430,679.869	3,609,590.279	20,307,062.342	646,604,886.567	827,952,219.057
2040	5		56,730,578.380	17,931,483.442	19,354,603.119	616,277,270.625	710,293,935.567
2040	6		10,380,991.198	94,005,646.160	21,116,507.060	672,378,723.359	797,881,867.778
2040	7		275,928.260	224,607,552.716	24,240,962.907	771,865,708.939	1,020,990,152.822
2040	8		0.000	247,239,812.337	23,895,427.974	760,863,399.870	1,031,998,640.182
2040	9		356,671.949	178,270,807.638	22,309,749.571	710,373,211.435	911,310,440.594
2040	10		17,436,356.997	54,565,566.264	19,814,443.513	630,919,223.296	722,735,590.070
2040	11		91,106,477.842	4,715,892.474	19,128,596.551	609,080,909.621	724,031,876.488
2040	12		208,184,548.923	52,677.461	23,426,079.429	745,918,694.546	977,582,000.359
2041	1		300,930,543.057	0.000	24,127,755.872	781,060,745.982	1,106,119,044.911
2041	2		340,144,032.059	0.000	20,750,511.991	671,733,022.383	1,032,627,566.434
2041	3		272,174,638.069	468,060.330	19,870,827.251	643,255,976.159	935,769,501.810
2041	4		157,225,035.385	3,620,469.031	20,055,108.109	649,221,493.432	830,122,105.957
2041	5		56,656,232.793	17,985,464.769	19,117,763.847	618,877,900.247	712,637,361.656
2041	6		10,367,395.163	94,288,799.192	20,854,273.548	675,091,978.731	800,602,446.633
2041	7		275,566.655	225,284,088.690	23,928,777.653	774,619,447.533	1,024,107,880.531
2041	8		0.000	247,984,790.925	23,585,783.122	763,516,070.756	1,035,086,644.804
2041	9		356,205.011	178,808,202.092	22,027,477.516	713,070,793.317	914,262,677.936
2041	10		17,413,542.048	54,730,109.259	19,568,797.063	633,478,692.032	725,191,140.401
2041	11		90,987,542.403	4,730,129.452	18,893,021.315	611,602,562.628	726,213,255.798
2041	12		207,913,208.448	52,836.632	23,128,398.404	748,709,668.908	979,804,112.392
2042	1		300,529,940.882	0.000	23,869,876.909	783,886,366.541	1,108,286,184.333
2042	2		339,693,811.489	0.000	20,532,620.010	674,290,904.646	1,034,517,336.144
2042	3		271,815,888.883	469,422.996	19,663,915.610	645,762,666.396	937,711,893.886
2042	4		157,018,879.224	3,631,029.756	19,847,569.687	651,793,863.267	832,291,341.933
2042	5		56,582,635.211	18,038,123.937	18,923,386.647	621,443,707.390	714,987,853.185
2042	6		10,353,971.849	94,565,141.871	20,638,364.998	677,763,568.330	803,321,047.048

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	Actual	Heating Usage	Cooling Usage	Lighting Usage	Other Usage	Total Usage
2042	7		275,212.556	225,946,271.733	23,670,227.006	777,329,866.974	1,027,221,578.269
2042	8		0.000	248,715,036.141	23,329,109.768	766,127,582.494	1,038,171,728.404
2042	9		355,752.530	179,335,970.821	21,794,498.620	715,730,977.516	917,217,199.486
2042	10		17,391,568.082	54,892,043.888	19,366,977.113	636,011,211.015	727,661,800.098
2042	11		90,873,541.732	4,744,161.786	18,699,810.676	614,101,476.146	728,418,990.339
2042	12		207,654,562.018	52,993.780	22,882,880.274	751,473,413.204	982,063,849.276
2043	1		300,303,622.203	0.000	23,667,516.715	786,816,479.436	1,110,787,618.354
2043	2		339,439,619.714	0.000	20,362,449.152	676,940,920.625	1,036,742,989.490
2043	3		271,614,904.393	470,974.572	19,502,803.351	648,362,363.319	939,951,045.635
2043	4		156,903,917.072	3,643,054.685	19,686,247.944	654,460,900.440	834,694,120.141
2043	5		56,541,721.658	18,098,010.310	18,773,003.941	624,100,493.805	717,513,229.714
2043	6		10,346,594.398	94,880,023.068	20,470,401.430	680,529,747.986	806,226,766.881
2043	7		275,018.505	226,700,141.936	23,466,206.024	780,123,991.541	1,030,565,358.006
2043	8		0.000	249,546,794.111	23,126,257.691	768,822,554.469	1,041,495,606.271
2043	9		355,508.607	179,937,601.988	21,612,267.460	718,490,596.217	920,395,974.273
2043	10		17,379,806.271	55,076,674.606	19,210,678.696	638,650,804.010	730,317,963.582
2043	11		90,812,676.712	4,760,146.198	18,550,801.241	616,713,460.020	730,837,084.171
2043	12		207,517,540.768	53,172.804	22,691,322.444	754,363,318.052	984,625,354.068
2044	1		300,142,901.084	0.000	23,469,146.979	789,760,193.365	1,113,372,241.428
2044	2		339,259,423.343	0.000	20,195,637.783	679,603,345.387	1,039,058,406.513
2044	3		271,470,080.086	472,561.437	19,344,629.681	650,966,074.354	942,253,345.557
2044	4		156,820,026.907	3,655,326.716	19,527,779.619	657,129,252.346	837,132,385.587
2044	5		56,511,115.929	18,158,866.567	18,624,960.689	626,748,495.313	720,043,438.498
2044	6		10,340,932.225	95,198,523.355	20,304,781.303	683,276,133.656	809,120,370.539
2044	7		274,866.882	227,460,207.828	23,265,063.597	782,892,584.095	1,033,892,722.402
2044	8		0.000	250,381,073.840	22,925,918.287	771,480,006.319	1,044,786,998.447
2044	9		355,304.716	180,536,819.919	21,431,477.787	721,190,593.609	923,514,196.032
2044	10		17,369,563.432	55,259,212.731	19,054,780.390	641,212,356.743	732,895,913.296
2044	11		90,757,754.478	4,775,849.681	18,401,558.006	619,230,772.301	733,165,934.466
2044	12		207,387,932.007	53,347.181	22,499,260.421	757,122,543.751	987,063,083.360
2045	1		299,963,435.810	0.000	23,262,303.085	792,481,525.371	1,115,707,264.267
2045	2		339,049,196.945	0.000	20,020,735.466	682,050,393.829	1,041,120,326.240
2045	3		271,295,750.142	474,062.595	19,178,267.033	653,349,853.467	944,297,933.237
2045	4		156,716,174.365	3,666,867.727	19,360,579.656	659,560,734.015	839,304,355.762

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	Actual	Heating Usage	Cooling Usage	Lighting Usage	Other Usage	Total Usage
2045	5		56,472,681.487	18,215,890.086	18,468,076.322	629,155,644.677	722,312,292.571
2045	6		10,333,734.873	95,496,061.517	20,129,935.718	685,770,540.644	811,730,272.752
2045	7		274,670.633	228,167,322.782	23,054,653.815	785,407,496.215	1,036,904,143.446
2045	8		0.000	251,156,643.457	22,716,734.743	773,895,539.682	1,047,768,917.882
2045	9		355,043.795	181,094,889.152	21,241,637.161	723,643,095.731	926,334,665.838
2045	10		17,356,723.085	55,429,838.410	18,890,368.073	643,541,942.099	735,218,871.668
2045	11		90,690,312.867	4,790,584.356	18,244,048.283	621,523,636.734	735,248,582.240
2045	12		207,233,403.112	53,511.736	22,298,471.319	759,646,476.088	989,231,862.255
2046	1		299,767,653.989	0.000	23,052,457.121	795,022,094.398	1,117,842,205.509
2046	2		338,826,476.805	0.000	19,843,348.186	684,347,883.267	1,043,017,708.258
2046	3		271,116,269.458	475,501.097	19,009,854.798	655,602,762.708	946,204,388.062
2046	4		156,612,567.174	3,678,006.076	19,191,873.488	661,880,136.049	841,362,582.787
2046	5		56,435,206.947	18,271,225.214	18,309,968.917	631,465,433.821	724,481,834.899
2046	6		10,326,846.161	95,786,106.458	19,954,367.874	688,176,677.048	814,243,997.541
2046	7		274,487.160	228,860,583.899	22,844,521.288	787,850,903.033	1,039,830,495.380
2046	8		0.000	251,919,429.948	22,508,092.568	776,248,310.562	1,050,675,833.078
2046	9		354,804.083	181,644,777.750	21,051,978.214	726,030,536.478	929,082,096.525
2046	10		17,344,896.454	55,597,961.197	18,725,726.261	645,803,873.858	737,472,457.770
2046	11		90,627,840.045	4,805,091.594	18,086,028.367	623,742,279.433	737,261,239.438
2046	12		207,089,205.389	53,673.555	22,097,262.629	762,079,804.483	991,319,946.056
2047	1		299,645,451.491	0.000	22,843,004.785	797,562,363.749	1,120,050,820.024
2047	2		338,685,512.989	0.000	19,666,055.330	686,639,333.261	1,044,990,901.580
2047	3		271,000,544.220	476,972.887	18,841,305.655	657,843,239.800	948,162,062.562
2047	4		156,544,192.765	3,689,365.741	19,022,732.328	664,177,742.972	843,434,033.807
2047	5		56,410,040.326	18,327,541.280	18,151,231.860	633,749,347.956	726,638,161.423
2047	6		10,322,106.829	96,080,379.946	19,778,040.415	690,549,286.863	816,729,814.053
2047	7		274,359.410	229,562,867.799	22,633,875.837	790,260,637.053	1,042,731,740.099
2047	8		0.000	252,690,904.956	22,298,995.401	778,568,303.467	1,053,558,203.824
2047	9		354,632.791	182,200,049.355	20,861,641.874	728,383,177.342	931,799,501.363
2047	10		17,336,350.427	55,767,531.077	18,560,325.088	648,032,817.418	739,697,024.010
2047	11		90,582,576.108	4,819,728.716	17,927,402.738	625,934,365.387	739,264,072.948
2047	12		206,983,581.850	53,836.659	21,895,699.278	764,487,239.615	993,420,357.402
2048	1		299,562,866.252	0.000	22,643,751.244	800,028,621.329	1,122,235,238.825
2048	2		338,589,901.506	0.000	19,497,540.150	688,869,525.088	1,046,956,966.744

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	Actual	Heating Usage	Cooling Usage	Lighting Usage	Other Usage	Total Usage
2048	3		270,922,165.368	478,399.498	18,681,280.345	660,030,168.940	950,112,014.151
2048	4		156,497,793.476	3,700,383.735	18,862,334.854	666,427,023.743	845,487,535.808
2048	5		56,392,877.510	18,382,175.918	18,000,838.894	635,989,424.529	728,765,316.851
2048	6		10,318,900.697	96,366,403.740	19,611,169.470	692,884,173.845	819,180,647.752
2048	7		274,271.909	230,244,842.184	22,434,373.347	792,631,070.068	1,045,584,557.507
2048	8		0.000	253,439,926.961	22,100,944.866	780,850,675.353	1,056,391,547.181
2048	9		354,513.990	182,739,208.328	20,681,450.839	730,698,391.058	934,473,564.214
2048	10		17,330,433.277	55,932,340.127	18,403,861.880	650,228,669.637	741,895,304.921
2048	11		90,550,981.367	4,833,947.495	17,777,283.712	628,090,974.242	741,253,186.817
2048	12		206,909,792.956	53,995.194	21,704,774.875	766,853,554.105	995,522,117.131
2049	1		299,623,787.322	0.000	22,462,754.082	802,596,643.691	1,124,683,185.095
2049	2		338,656,193.260	0.000	19,344,774.311	691,190,887.728	1,049,191,855.299
2049	3		270,973,046.642	479,918.220	18,536,302.771	662,304,111.770	952,293,379.403
2049	4		156,526,196.740	3,712,113.385	18,716,978.647	668,759,680.454	847,714,969.226
2049	5		56,402,663.720	18,440,328.815	17,864,694.631	638,307,479.980	731,015,167.146
2049	6		10,320,627.791	96,670,838.523	19,459,583.708	695,293,039.946	821,744,089.968
2049	7		274,315.523	230,970,710.429	22,252,039.524	795,067,789.623	1,048,564,855.099
2049	8		0.000	254,238,265.132	21,919,856.547	783,198,855.776	1,059,356,977.455
2049	9		354,565.832	183,313,654.323	20,517,252.033	733,083,644.132	937,269,116.321
2049	10		17,332,811.117	56,107,766.799	18,261,723.300	652,493,357.465	744,195,658.682
2049	11		90,562,791.339	4,849,084.824	17,641,148.734	630,320,160.780	743,373,185.677
2049	12		206,935,779.083	54,164.120	21,530,954.586	769,303,346.477	997,824,244.266
2050	1		299,751,236.814	0.000	22,298,954.555	805,202,892.535	1,127,253,083.904
2050	2		338,797,622.303	0.000	19,206,763.923	693,545,602.289	1,051,549,988.515
2050	3		271,083,716.792	481,414.024	18,405,378.918	664,608,033.815	954,578,543.549
2050	4		156,588,868.349	3,723,660.144	18,585,775.381	671,122,050.128	850,020,354.002
2050	5		56,424,801.178	18,497,575.415	17,742,039.702	640,655,222.297	733,319,638.592
2050	6		10,324,614.435	96,970,510.124	19,322,710.896	697,732,383.227	824,350,218.682
2050	7		274,419.788	231,685,652.820	22,086,557.207	797,533,341.996	1,051,579,971.811
2050	8		0.000	255,023,169.222	21,755,274.043	785,570,890.515	1,062,349,333.780
2050	9		354,694.169	183,878,364.354	20,368,582.172	735,498,215.450	940,099,856.145
2050	10		17,338,958.512	56,280,299.550	18,133,562.376	654,792,889.124	746,545,709.562
2050	11		90,594,152.236	4,863,963.392	17,518,579.707	632,586,205.726	745,562,901.061
2050	12		207,005,235.521	54,329.830	21,373,645.711	771,790,502.936	1,000,223,713.998

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	Actual	Heating Usage	Cooling Usage	Lighting Usage	Other Usage	Total Usage
2051	1		299,702,301.540	0.000	22,109,766.011	807,738,876.985	1,129,550,944.536
2051	2		338,742,713.693	0.000	19,046,950.193	695,844,639.504	1,053,634,303.390
2051	3		271,038,813.754	482,860.551	18,253,655.290	666,863,096.492	956,638,426.087
2051	4		156,562,286.641	3,734,838.155	18,433,690.572	673,440,348.235	852,171,163.603
2051	5		56,414,947.254	18,553,035.348	17,599,452.711	642,963,030.964	735,530,466.277
2051	6		10,322,773.855	97,261,011.263	19,164,421.143	700,136,220.574	826,884,426.836
2051	7		274,369.815	232,379,103.690	21,897,160.021	799,971,715.472	1,054,522,348.998
2051	8		0.000	255,784,842.733	21,567,240.924	787,918,739.420	1,065,270,823.077
2051	9		354,624.752	184,426,634.235	20,197,642.695	737,883,034.147	942,861,935.829
2051	10		17,335,477.584	56,447,892.950	17,985,292.652	657,058,970.321	748,827,633.506
2051	11		90,575,397.131	4,878,422.563	17,376,420.923	634,814,982.472	747,645,223.089
2051	12		206,960,624.212	54,490.940	21,192,676.725	774,234,738.175	1,002,442,530.052
2052	1		299,652,928.123	0.000	21,921,578.373	810,266,166.364	1,131,840,672.859
2052	2		338,687,796.085	0.000	18,887,938.985	698,136,678.471	1,055,712,413.541
2052	3		270,994,327.609	484,300.833	18,102,686.192	669,112,136.544	958,693,451.178
2052	4		156,536,196.765	3,745,972.259	18,282,366.514	675,753,487.072	854,318,022.611
2052	5		56,405,358.482	18,608,298.290	17,457,547.844	645,266,509.765	737,737,714.381
2052	6		10,320,997.456	97,550,588.564	19,006,966.418	702,536,174.719	829,414,727.158
2052	7		274,321.955	233,070,600.926	21,708,948.652	802,406,938.976	1,057,460,810.509
2052	8		0.000	256,544,633.654	21,380,428.923	790,264,180.980	1,068,189,243.557
2052	9		354,559.126	184,973,753.212	20,027,737.436	740,265,949.713	945,621,999.488
2052	10		17,332,209.091	56,615,198.216	17,837,863.540	659,323,752.192	751,109,023.040
2052	11		90,557,888.097	4,892,862.138	17,235,059.346	637,042,881.926	749,728,691.507
2052	12		206,919,176.645	54,651.890	21,012,857.672	776,677,999.197	1,004,664,685.404
2053	1		299,607,390.119	0.000	21,734,571.205	812,791,262.324	1,134,133,223.647
2053	2		338,636,605.509	0.000	18,729,857.009	700,426,246.211	1,057,792,708.730
2053	3		270,952,288.790	485,737.653	17,952,557.194	671,358,154.992	960,748,738.628
2053	4		156,511,197.070	3,757,073.868	18,131,850.121	678,063,036.506	856,463,157.565
2053	5		56,396,045.989	18,663,371.315	17,316,334.338	647,565,811.752	739,941,563.394
2053	6		10,319,250.378	97,839,022.590	18,850,317.372	704,931,010.952	831,939,601.292
2053	7		274,274.314	233,759,016.145	21,521,855.708	804,836,502.347	1,060,391,648.514
2053	8		0.000	257,300,637.209	21,194,739.112	792,603,571.293	1,071,098,947.614
2053	9		354,492.309	185,517,853.155	19,858,727.267	742,641,750.388	948,372,823.117
2053	10		17,328,844.955	56,781,489.146	17,691,101.818	661,580,706.761	753,382,142.681

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	Actual	Heating Usage	Cooling Usage	Lighting Usage	Other Usage	Total Usage
2053	11		90,539,692.898	4,907,206.562	17,094,282.611	639,261,911.866	751,803,093.936
2053	12		206,875,720.793	54,811.690	20,833,903.784	779,109,686.442	1,006,874,122.709
2054	1		299,559,307.792	0.000	21,548,493.301	815,304,684.305	1,136,412,485.399
2054	2		338,583,022.662	0.000	18,572,514.887	702,706,132.393	1,059,861,669.942
2054	3		270,908,770.061	487,165.930	17,803,122.872	673,595,562.816	962,794,621.679
2054	4		156,485,612.149	3,768,114.100	17,982,035.769	680,364,877.063	858,600,639.081
2054	5		56,386,621.812	18,718,163.243	17,175,748.690	649,858,352.848	742,138,886.593
2054	6		10,317,501.178	98,126,110.126	18,694,448.540	707,319,590.826	834,457,650.670
2054	7		274,227.100	234,444,516.178	21,335,891.801	807,260,734.457	1,063,315,369.535
2054	8		0.000	258,053,753.035	21,010,217.357	794,938,578.315	1,074,002,548.707
2054	9		354,427.302	186,060,114.303	19,690,702.571	745,013,668.423	951,118,912.600
2054	10		17,325,600.840	56,947,292.001	17,545,138.222	663,834,504.782	755,652,535.846
2054	11		90,522,283.826	4,921,515.025	16,954,263.338	641,478,275.320	753,876,337.510
2054	12		206,834,442.079	54,971.161	20,656,054.081	781,538,524.094	1,009,083,991.415
2055	1		299,515,216.742	0.000	21,363,611.104	817,816,326.871	1,138,695,154.718
2055	2		338,534,927.173	0.000	18,416,167.678	704,985,806.551	1,061,936,901.402
2055	3		270,870,512.768	488,594.654	17,654,646.616	675,834,163.869	964,847,917.907
2055	4		156,463,579.242	3,779,166.860	17,833,202.620	682,669,432.243	860,745,380.965
2055	5		56,378,658.187	18,773,061.297	17,036,079.831	652,154,926.602	744,342,725.916
2055	6		10,316,052.002	98,413,983.074	18,539,666.657	709,713,447.462	836,983,149.195
2055	7		274,188.730	235,132,439.341	21,151,362.765	809,691,288.632	1,066,249,279.467
2055	8		0.000	258,810,134.648	20,827,167.363	797,280,826.206	1,076,918,128.217
2055	9		354,376.041	186,605,185.998	19,524,000.655	747,394,549.711	953,878,112.405
2055	10		17,323,087.364	57,114,096.628	17,400,322.572	666,098,433.590	757,935,940.154
2055	11		90,508,985.678	4,935,921.730	16,815,372.577	643,706,074.246	755,966,354.231
2055	12		206,803,240.808	55,131.862	20,479,742.041	783,981,103.626	1,011,319,218.337
2056	1		299,486,299.310	0.000	21,180,363.514	820,343,242.687	1,141,009,905.510
2056	2		338,504,676.066	0.000	18,261,200.465	707,280,231.284	1,064,046,107.814
2056	3		270,847,150.014	490,036.755	17,507,491.065	678,088,078.257	966,932,756.091
2056	4		156,450,527.076	3,790,329.816	17,685,704.018	684,990,499.523	862,917,060.433
2056	5		56,374,067.686	18,828,540.409	16,897,666.984	654,468,792.226	746,569,067.305
2056	6		10,315,245.188	98,705,080.244	18,386,307.577	712,125,793.719	839,532,426.727
2056	7		274,168.098	235,828,489.310	20,968,581.215	812,140,636.659	1,069,211,875.282
2056	8		0.000	259,575,918.959	20,645,878.222	799,641,926.713	1,079,863,723.895

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	Actual	Heating Usage	Cooling Usage	Lighting Usage	Other Usage	Total Usage
2056	9		354,349.458	187,157,385.549	19,358,919.698	749,796,336.110	956,666,990.815
2056	10		17,321,824.667	57,283,191.025	17,256,942.052	668,383,986.535	760,245,944.278
2056	11		90,502,445.834	4,950,535.284	16,677,894.619	645,956,720.441	758,087,596.177
2056	12		206,788,005.987	55,294.975	20,305,277.291	786,450,006.179	1,013,598,584.432
2057	1		299,480,224.918	0.000	20,999,037.805	822,897,350.596	1,143,376,613.319
2057	2		338,500,098.917	0.000	18,107,845.695	709,599,096.213	1,066,207,040.825
2057	3		270,844,207.436	491,499.862	17,361,853.627	680,365,618.829	969,063,179.754
2057	4		156,449,196.883	3,801,654.023	17,539,708.182	687,335,273.524	865,125,832.612
2057	5		56,373,674.763	18,884,814.416	16,760,646.950	656,805,902.145	748,825,038.273
2057	6		10,315,201.770	99,000,314.540	18,234,479.892	714,561,559.067	842,111,555.269
2057	7		274,167.635	236,534,354.332	20,787,620.507	814,612,459.846	1,072,208,602.319
2057	8		0.000	260,352,421.182	20,466,392.077	802,024,358.124	1,082,843,171.384
2057	9		354,348.619	187,717,254.020	19,195,476.568	752,220,504.477	959,487,583.684
2057	10		17,321,812.063	57,454,613.275	17,114,984.780	670,691,474.641	762,582,884.759
2057	11		90,502,396.372	4,965,348.423	16,541,788.509	648,229,412.467	760,238,945.771
2057	12		206,787,509.114	55,460.300	20,132,577.480	788,943,037.426	1,015,918,584.320

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	Customers	Heating Energy	CoolingEnergy	Lighting Energy	Other Energy	Total Energy
2000	1	104.486	30,895.203	0.000	13,656.699	73,176.106	117,728.008
2000	2	104.522	37,997.669	0.000	11,229.835	51,631.494	100,858.998
2000	3	104.570	18,963.279	371.084	11,053.593	60,732.326	91,120.281
2000	4	104.351	13,577.764	226.017	10,678.420	56,143.939	80,626.140
2000	5	104.357	6,241.288	5,069.786	10,446.526	53,940.485	75,698.085
2000	6	104.551	762.934	11,432.180	11,153.545	57,564.321	80,912.980
2000	7	104.688	74.707	23,334.926	11,581.065	57,539.061	92,529.759
2000	8	104.726	0.000	23,955.994	11,664.497	55,946.641	91,567.132
2000	9	104.684	116.150	28,117.273	11,794.903	54,339.611	94,367.937
2000	10	104.722	2,696.898	7,019.119	10,646.267	58,066.543	78,428.827
2000	11	104.759	7,284.596	477.447	10,726.419	56,566.040	75,054.503
2000	12	104.829	31,700.566	0.000	12,930.732	61,844.564	106,475.862
2001	1	105.067	46,319.993	0.000	14,020.174	67,956.285	128,296.452
2001	2	105.015	37,054.042	0.000	11,532.114	62,704.999	111,291.155
2001	3	105.108	30,603.057	0.000	11,349.275	56,510.911	98,463.243
2001	4	104.880	19,410.384	478.155	10,963.247	54,819.952	85,671.738
2001	5	102.778	3,441.425	5,698.796	10,623.573	54,575.115	74,338.908
2001	6	105.070	1,184.779	9,720.026	11,433.101	65,232.257	87,570.164
2001	7	105.042	134.282	27,174.828	11,850.106	56,318.294	95,477.510
2001	8	105.229	0.000	45,274.234	11,947.551	52,214.770	109,436.555
2001	9	105.127	40.751	25,624.881	12,079.890	57,421.254	95,166.776
2001	10	105.115	2,258.172	3,749.252	10,910.334	58,115.950	75,033.708
2001	11	105.196	7,232.783	198.474	10,998.067	57,794.062	76,223.386
2001	12	105.242	11,977.809	0.000	13,235.785	70,740.243	95,953.836
2002	1	105.532	31,892.949	0.000	14,360.218	70,772.314	117,025.481
2002	2	105.630	27,419.239	0.000	11,835.623	60,117.112	99,371.974
2002	3	105.450	27,577.117	0.000	11,643.283	60,365.141	99,585.541
2002	4	104.079	21,339.621	1,813.634	11,206.341	57,352.648	91,712.245
2002	5	105.681	7,923.439	3,925.919	11,026.535	57,437.295	80,313.188
2002	6	105.617	3,010.270	9,682.504	11,740.688	60,118.443	84,551.905
2002	7	105.623	0.000	44,990.038	12,174.879	54,787.035	111,951.951
2002	8	105.801	0.000	48,662.400	12,270.164	55,898.528	116,831.093
2002	9	105.920	0.000	32,205.910	12,428.116	57,977.689	102,611.715
2002	10	105.882	1,974.358	13,690.869	11,234.722	53,618.951	80,518.900

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	Customers	Heating Energy	CoolingEnergy	Lighting Energy	Other Energy	Total Energy
2002	11	105.858	14,376.085	851.709	11,321.800	58,342.619	84,892.213
2002	12	106.057	28,589.994	0.000	13,628.972	68,492.025	110,710.991
2003	1	106.335	35,548.640	0.000	15,248.489	75,342.828	126,139.957
2003	2	109.269	45,420.406	0.000	12,327.920	58,963.190	116,711.516
2003	3	106.356	38,009.972	0.000	11,743.522	55,146.246	104,899.740
2003	4	106.220	15,823.037	586.300	11,355.593	60,090.926	87,855.856
2003	5	106.335	6,251.529	1,419.710	11,108.414	58,052.170	76,831.823
2003	6	106.227	1,639.371	2,648.392	11,826.588	65,099.595	81,213.945
2003	7	106.284	86.000	25,735.375	12,347.267	61,480.824	99,649.466
2003	8	106.347	0.000	27,723.466	12,459.733	62,209.435	102,392.634
2003	9	106.262	5.646	29,351.052	12,384.607	58,739.955	100,481.260
2003	10	106.388	3,759.411	4,831.870	11,283.686	59,162.358	79,037.324
2003	11	106.378	9,528.602	143.442	11,216.907	57,935.062	78,824.013
2003	12	106.568	21,781.910	0.000	13,819.793	72,517.324	108,119.027
2004	1	106.759	32,910.021	0.000	15,421.226	77,064.028	125,395.275
2004	2	106.753	46,755.728	0.000	12,308.051	58,223.464	117,287.243
2004	3	106.991	29,937.174	0.000	11,536.061	58,744.893	100,218.128
2004	4	106.898	16,052.172	861.090	11,570.258	59,223.503	87,707.023
2004	5	106.805	5,667.367	7,892.529	11,557.251	55,107.398	80,224.545
2004	6	107.004	637.736	14,774.823	12,035.646	57,602.404	85,050.609
2004	7	106.965	5.777	22,113.383	12,217.021	60,839.685	95,175.866
2004	8	107.227	0.000	22,216.375	12,521.292	60,624.415	95,362.081
2004	9	107.146	0.000	18,582.871	12,654.323	63,432.941	94,670.135
2004	10	107.418	2,278.406	6,603.963	11,393.662	60,960.473	81,236.504
2004	11	107.457	7,996.592	394.068	11,423.149	59,633.702	79,447.511
2004	12	107.544	22,011.670	28.457	14,076.758	72,733.759	108,850.644
2005	1	107.514	37,273.435	0.000	15,405.072	76,893.560	129,572.066
2005	2	106.548	40,427.293	0.000	12,193.406	60,233.690	112,854.389
2005	3	108.451	34,230.023	0.000	12,619.663	68,459.400	115,309.086
2005	4	107.970	19,597.207	276.775	11,663.674	58,434.374	89,972.030
2005	5	107.575	6,995.382	1,714.500	10,967.557	56,554.915	76,232.355
2005	6	107.694	1,024.769	11,857.215	11,969.569	65,217.305	90,068.858
2005	7	107.582	0.000	37,816.539	12,214.430	67,208.317	117,239.286
2005	8	107.891	0.000	40,303.123	12,442.333	69,870.686	122,616.142

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	Customers	Heating Energy	CoolingEnergy	Lighting Energy	Other Energy	Total Energy
2005	9	107.703	0.000	26,558.850	12,921.160	71,020.825	110,500.835
2005	10	107.924	1,392.116	12,763.930	11,592.951	57,923.887	83,672.884
2005	11	107.714	9,180.978	1,064.243	11,775.594	59,909.893	81,930.708
2005	12	108.111	31,429.361	0.000	13,563.420	68,990.532	113,983.313
2006	1	108.242	34,157.914	0.000	15,486.924	79,865.324	129,510.162
2006	2	107.012	28,443.703	0.000	12,534.261	66,455.385	107,433.350
2006	3	109.786	32,609.419	0.000	11,911.765	60,788.795	105,309.979
2006	4	108.167	18,580.686	153.048	11,489.425	57,407.023	87,630.182
2006	5	108.298	4,418.899	275.654	11,483.947	60,443.267	76,621.766
2006	6	108.242	2,286.770	10,739.669	12,179.332	64,813.134	90,018.905
2006	7	108.233	0.000	22,889.334	12,864.128	71,912.690	107,666.151
2006	8	108.580	0.000	37,606.215	12,602.874	71,052.659	121,261.748
2006	9	108.384	92.504	16,006.464	12,645.559	69,336.489	98,081.016
2006	10	108.611	3,253.319	1,822.242	11,838.250	64,474.140	81,387.950
2006	11	108.473	14,833.259	70.099	11,974.417	61,474.194	88,351.970
2006	12	108.570	21,675.818	0.000	13,642.391	75,166.595	110,484.804
2007	1	108.726	25,401.848	0.000	15,113.142	83,403.302	123,918.292
2007	2	108.783	44,589.227	0.000	12,058.593	67,195.526	123,843.346
2007	3	109.082	40,225.110	42.445	11,454.115	60,280.291	112,001.960
2007	4	108.933	16,106.963	1,120.379	11,718.704	65,408.716	94,354.762
2007	5	108.793	6,229.054	2,734.334	10,987.113	58,875.528	78,826.030
2007	6	108.971	385.451	17,467.231	11,706.156	64,119.488	93,678.326
2007	7	108.912	0.000	29,614.340	12,233.195	67,549.630	109,397.166
2007	8	109.055	0.000	31,452.945	12,045.839	67,142.723	110,641.507
2007	9	108.881	80.267	26,987.785	12,676.495	71,764.536	111,509.083
2007	10	109.002	824.734	14,356.840	10,953.225	57,419.740	83,554.538
2007	11	108.911	8,914.112	2,916.912	11,733.588	62,467.128	86,031.740
2007	12	109.064	28,164.950	0.000	13,634.994	75,969.023	117,768.968
2008	1	109.268	35,428.628	0.000	14,716.808	84,947.401	135,092.837
2008	2	109.458	43,643.806	0.000	11,774.213	71,491.185	126,909.203
2008	3	109.390	39,885.394	0.000	11,106.999	64,179.986	115,172.379
2008	4	109.143	22,179.145	27.602	11,055.388	64,818.573	98,080.708
2008	5	109.112	6,672.205	705.801	10,737.132	60,293.388	78,408.526
2008	6	109.096	1,950.844	11,364.136	11,261.213	62,585.297	87,161.490

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	Customers	Heating Energy	CoolingEnergy	Lighting Energy	Other Energy	Total Energy
2008	7	109.198	0.748	23,547.383	11,955.033	66,619.203	102,122.366
2008	8	109.218	0.000	29,521.425	12,129.667	71,765.289	113,416.381
2008	9	109.231	0.000	18,847.684	11,809.379	68,496.267	99,153.330
2008	10	109.267	1,488.976	5,783.753	10,910.328	63,344.112	81,527.168
2008	11	109.005	11,383.548	629.731	11,339.917	64,347.480	87,700.676
2008	12	109.312	33,264.843	0.000	12,782.047	74,544.042	120,590.932
2009	1	109.390	43,836.850	0.000	14,138.616	89,241.551	147,217.017
2009	2	108.999	49,926.647	0.000	11,467.789	72,175.451	133,569.887
2009	3	110.263	32,407.321	0.000	10,812.579	68,500.083	111,719.983
2009	4	109.396	17,587.782	54.510	10,839.966	67,766.344	96,248.602
2009	5	109.271	6,798.720	1,706.961	10,567.189	62,438.325	81,511.195
2009	6	109.196	1,030.352	7,038.726	10,885.757	62,856.725	81,811.560
2009	7	109.210	0.738	20,872.021	11,353.047	65,320.216	97,546.023
2009	8	109.190	0.000	20,375.119	11,329.941	66,763.354	98,468.414
2009	9	109.188	0.000	14,147.711	11,649.571	69,988.320	95,785.602
2009	10	109.179	4,275.092	3,200.410	10,626.721	65,905.700	84,007.922
2009	11	109.133	10,099.899	0.000	10,972.524	67,471.912	88,544.334
2009	12	109.351	23,505.753	0.000	12,631.072	78,537.697	114,674.522
2010	1	109.502	41,693.639	0.000	12,086.094	87,080.500	140,860.233
2010	2	107.628	41,664.964	0.000	9,858.598	73,932.545	125,456.107
2010	3	111.530	32,784.601	0.000	9,381.617	67,917.842	110,084.060
2010	4	109.314	12,099.741	1,513.876	9,354.272	65,137.973	88,105.862
2010	5	109.185	4,489.612	1,596.239	8,947.295	62,490.263	77,523.409
2010	6	109.369	963.369	15,903.970	9,491.192	66,123.132	92,481.663
2010	7	109.296	0.000	31,953.179	9,950.487	76,840.610	118,744.276
2010	8	109.234	0.000	41,636.595	10,008.811	78,931.861	130,577.268
2010	9	109.234	0.000	27,720.187	9,918.698	71,801.805	109,440.690
2010	10	109.301	1,731.125	6,454.084	9,077.435	62,344.695	79,607.338
2010	11	109.407	9,183.518	626.820	9,266.510	63,055.116	82,131.963
2010	12	109.347	27,968.160	0.000	10,869.365	79,645.475	118,483.001
2011	1	109.413	41,274.938	0.000	11,010.252	89,558.265	141,843.455
2011	2	107.045	44,668.165	0.000	8,482.464	68,925.905	122,076.535
2011	3	112.172	32,597.419	0.000	8,286.930	67,544.673	108,429.022
2011	4	109.171	20,071.402	424.253	8,071.196	65,580.982	94,147.833

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	Customers	Heating Energy	CoolingEnergy	Lighting Energy	Other Energy	Total Energy
2011	5	109.140	7,160.373	2,129.461	8,248.397	67,308.350	84,846.582
2011	6	109.123	944.874	15,781.738	8,592.873	66,898.937	92,218.422
2011	7	108.972	0.000	29,876.024	9,298.019	73,714.340	112,888.383
2011	8	109.114	0.000	44,126.680	9,008.741	72,218.756	125,354.177
2011	9	108.938	163.386	22,480.013	8,995.684	69,663.894	101,302.976
2011	10	108.876	1,896.220	3,622.288	8,255.799	63,928.799	77,703.106
2011	11	109.025	8,463.224	600.937	8,518.030	68,262.632	85,844.823
2011	12	108.957	19,553.998	0.000	9,603.051	78,895.616	108,052.665
2012	1	109.081	29,147.376	0.000	10,500.711	82,523.815	122,171.902
2012	2	109.153	32,885.959	0.000	8,455.355	70,480.413	111,821.727
2012	3	109.049	23,252.161	1,357.657	8,201.877	67,550.451	100,362.146
2012	4	108.969	6,745.373	4,066.459	8,112.403	61,209.906	80,134.141
2012	5	109.017	5,626.607	2,790.446	7,960.167	63,035.951	79,413.172
2012	6	108.904	373.052	17,715.501	8,374.915	66,547.603	93,011.071
2012	7	109.030	33.385	44,958.602	8,997.479	80,199.518	134,188.984
2012	8	109.118	0.000	39,664.193	8,745.346	72,881.548	121,291.087
2012	9	108.946	64.433	20,422.294	8,848.408	71,313.947	100,649.082
2012	10	109.002	3,134.288	3,386.233	8,051.547	64,562.281	79,134.350
2012	11	108.982	12,464.753	788.892	8,446.476	66,114.818	87,814.940
2012	12	108.980	19,310.153	0.000	9,455.497	77,733.482	106,499.132
2013	1	109.296	31,402.798	0.000	9,576.825	85,181.605	126,161.228
2013	2	109.178	37,042.872	0.000	7,529.123	72,659.915	117,231.910
2013	3	109.165	33,448.254	0.000	7,328.337	70,553.076	111,329.666
2013	4	109.180	24,023.944	0.000	7,484.608	71,474.041	102,982.593
2013	5	109.031	6,899.260	2,938.621	6,989.371	63,023.834	79,851.086
2013	6	109.093	1,322.701	12,183.536	7,570.473	64,871.862	85,948.572
2013	7	109.068	19.036	26,897.247	7,988.788	72,743.098	107,648.169
2013	8	109.052	0.000	21,959.968	7,907.398	71,417.373	101,284.738
2013	9	108.990	2.121	24,758.947	7,937.827	70,772.918	103,471.813
2013	10	108.976	922.581	9,201.855	7,195.210	61,434.225	78,753.871
2013	11	109.066	11,206.180	831.689	7,613.775	67,978.219	87,629.864
2013	12	109.240	28,958.289	0.000	8,476.942	77,604.100	115,039.331
2014	1	109.268	45,142.719	0.000	9,371.651	90,442.627	144,956.997
2014	2	109.199	52,898.602	0.000	7,210.287	70,950.220	131,059.109

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	Customers	Heating Energy	CoolingEnergy	Lighting Energy	Other Energy	Total Energy
2014	3	109.302	45,662.490	0.000	7,085.676	69,459.189	122,207.354
2014	4	109.104	24,554.001	78.732	6,888.614	66,708.789	98,230.136
2014	5	108.922	6,644.258	2,284.559	7,024.031	66,421.075	82,373.923
2014	6	108.819	1,515.653	14,718.302	7,071.870	62,054.914	85,360.739
2014	7	108.747	0.000	25,204.740	7,680.462	68,385.444	101,270.647
2014	8	108.711	0.000	18,873.728	7,487.547	66,768.336	93,129.611
2014	9	108.724	144.913	25,787.614	7,588.117	67,513.997	101,034.642
2014	10	108.701	2,081.329	3,873.963	6,911.646	63,841.016	76,707.954
2014	11	108.741	12,286.543	101.846	7,088.829	64,447.817	83,925.034
2014	12	108.921	30,405.397	0.000	8,236.135	79,638.206	118,279.738
2015	1	109.065	38,490.606	0.000	8,495.283	85,559.681	132,545.570
2015	2	109.122	46,254.739	0.000	6,695.497	68,876.709	121,826.944
2015	3	109.206	48,281.615	0.000	6,396.434	62,235.746	116,913.795
2015	4	108.928	19,729.751	32.084	6,518.337	65,536.984	91,817.156
2015	5	108.836	6,029.995	2,990.325	6,061.706	61,087.370	76,169.396
2015	6	108.787	993.571	13,291.878	6,561.691	63,177.291	84,024.430
2015	7	108.858	9.141	18,502.821	6,966.897	69,096.499	94,575.357
2015	8	108.851	0.000	29,841.414	7,021.564	72,421.788	109,284.766
2015	9	108.902	9.967	22,576.712	6,987.877	70,593.720	100,168.276
2015	10	108.873	1,517.997	6,627.602	6,327.619	64,120.987	78,594.206
2015	11	108.944	7,552.476	156.293	6,022.350	62,043.193	75,774.312
2015	12	108.989	19,656.369	0.000	7,679.320	74,602.965	101,938.654
2016	1	109.076	30,843.924	0.000	6,189.275	83,526.923	120,560.122
2016	2	109.220	41,704.621	0.000	5,226.965	65,755.256	112,686.842
2016	3	109.237	30,082.304	0.000	4,990.555	61,661.105	96,733.964
2016	4	106.935	16,583.486	13.715	5,072.597	64,399.036	86,068.834
2016	5	109.078	7,490.322	562.756	4,793.365	62,866.250	75,712.693
2016	6	109.117	1,494.863	13,559.478	5,212.769	68,210.515	88,477.625
2016	7	109.188	0.000	24,008.370	5,914.626	76,220.029	106,143.026
2016	8	109.210	0.000	35,461.058	5,851.389	78,712.182	120,024.629
2016	9	109.231	0.000	27,282.110	5,423.655	77,247.542	109,953.307
2016	10	109.112	624.693	9,491.648	5,007.133	66,646.619	81,770.094
2016	11	109.312	6,877.447	912.217	4,795.570	62,632.611	75,217.846
2016	12	109.486	25,912.837	11.855	5,877.378	73,279.361	105,081.431

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	Customers	Heating Energy	CoolingEnergy	Lighting Energy	Other Energy	Total Energy
2017	1	109.592	41,021.669	0.000	5,290.019	82,827.069	129,138.757
2017	2	109.638	32,721.404	0.000	4,481.534	68,209.616	105,412.554
2017	3	109.792	24,614.833	0.000	4,239.757	63,667.175	92,521.765
2017	4	109.560	18,772.469	245.499	4,258.911	63,827.340	87,104.219
2017	5	109.583	5,972.966	2,098.926	3,955.294	60,886.902	72,914.088
2017	6	109.645	1,340.163	9,900.391	4,496.772	69,289.556	85,026.882
2017	7	109.668	0.000	22,309.724	5,080.816	75,956.876	103,347.417
2017	8	109.688	0.000	21,970.740	5,083.604	78,352.039	105,406.383
2017	9	109.782	0.000	11,097.934	4,732.691	74,876.106	90,706.730
2017	10	109.793	294.319	12,727.443	4,241.705	66,088.438	83,351.906
2017	11	109.862	12,554.444	727.334	4,087.324	64,049.921	81,419.023
2017	12	110.013	26,379.563	0.000	5,056.095	74,639.132	106,074.791
2018	1	110.159	48,437.571	0.000	4,593.092	82,768.792	135,799.456
2018	2	110.173	42,470.258	0.000	3,834.288	65,580.418	111,884.964
2018	3	110.147	31,688.079	0.000	3,667.776	64,308.892	99,664.747
2018	4	110.146	27,140.459	0.000	3,828.182	68,011.537	98,980.178
2018	5	110.088	11,185.373	2,058.559	3,593.643	63,528.369	80,365.944
2018	6	110.071	232.171	14,718.510	3,806.033	73,364.156	92,120.869
2018	7	110.277	0.000	27,281.251	4,429.770	84,292.589	116,003.610
2018	8	110.224	0.000	26,839.229	4,362.951	77,976.162	109,178.342
2018	9	110.154	0.000	25,658.204	4,059.937	77,757.797	107,475.938
2018	10	110.280	2,360.787	10,248.323	3,592.987	64,285.384	80,487.482
2018	11	110.164	16,649.417	1,104.691	3,503.439	61,951.316	83,208.862
2018	12	110.207	31,201.197	0.000	4,386.575	75,947.489	111,535.261
2019	1	110.381	31,774.483	0.000	3,961.719	82,391.747	118,127.949
2019	2	110.410	46,148.305	0.000	3,276.976	67,550.311	116,975.592
2019	3	110.475	38,114.247	0.000	3,119.998	64,638.600	105,872.845
2019	4	110.226	21,242.837	0.000	3,160.697	63,401.140	87,804.674
2019	5	110.382	7,738.155	208.614	3,149.355	67,694.319	78,790.443
2019	6	110.131	1,589.606	4,645.669	3,326.467	67,823.933	77,385.675
2019	7	110.274	0.000	26,257.864	3,916.358	81,627.573	111,801.795
2019	8	110.296	0.000	28,904.681	3,750.966	77,624.709	110,280.356
2019	9	110.259	0.000	16,795.602	3,603.229	76,258.886	96,657.717
2019	10	110.231	1,061.624	12,159.056	3,089.040	63,213.738	79,523.458

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	Customers	Heating Energy	CoolingEnergy	Lighting Energy	Other Energy	Total Energy
2019	11	110.283	13,958.397	575.372	2,962.221	63,368.372	80,864.362
2019	12	110.464	27,345.112	0.000	3,786.681	76,549.679	107,681.472
2020	1	110.627	26,714.021	0.000	3,888.579	84,342.092	114,944.692
2020	2	110.659	32,479.591	0.000	3,237.513	66,439.002	102,156.107
2020	3	110.630	29,471.285	0.000	3,147.235	65,094.447	97,712.967
2020	4	110.628	16,226.605	71.866	3,207.896	72,711.949	92,218.315
2020	5	111.045	10,677.253	513.550	3,046.475	69,956.873	84,194.150
2020	6	110.905	1,747.566	14,495.680	3,276.737	74,532.724	94,052.708
2020	7	110.974	0.000	33,536.087	3,763.733	84,995.952	122,295.772
2020	8	110.992	0.000	32,584.013	3,802.097	85,815.896	122,202.005
2020	9	111.000	46.562	24,195.264	3,411.737	77,534.076	105,187.639
2020	10	110.809	1,906.013	3,209.831	3,124.264	69,253.747	77,493.855
2020	11	110.931	9,764.155	234.426	3,011.610	67,387.793	80,397.984
2020	12	111.041	20,685.774	124.942	3,675.912	77,442.222	101,928.850
2021	1	111.125	31,941.729	0.000	3,667.019	84,862.603	120,471.352
2021	2	110.964	40,189.861	0.000	3,160.874	72,452.354	115,803.089
2021	3	111.080	32,178.827	53.434	3,026.175	69,364.838	104,623.274
2021	4	110.396	18,509.831	411.627	3,038.664	69,651.107	91,611.229
2021	5	110.407	6,667.075	2,044.236	2,892.387	66,298.196	77,901.894
2021	6	110.431	1,219.537	10,714.204	3,157.654	72,378.555	87,469.950
2021	7	110.405	32.383	25,577.363	3,625.327	83,098.372	112,333.445
2021	8	110.457	0.000	28,153.389	3,574.831	81,940.914	113,669.135
2021	9	110.391	41.795	20,274.218	3,330.069	76,330.574	99,976.656
2021	10	110.421	2,042.040	6,202.969	2,957.715	67,795.612	78,998.336
2021	11	110.425	10,661.529	535.751	2,856.425	65,473.883	79,527.588
2021	12	110.459	24,347.066	5.982	3,509.303	80,438.915	108,301.266
2022	1	110.432	35,109.025	0.000	3,561.619	83,846.451	122,517.095
2022	2	110.423	39,655.598	0.000	3,056.839	71,963.097	114,675.535
2022	3	110.563	31,748.222	52.842	2,926.498	68,894.643	103,622.205
2022	4	110.505	18,317.766	408.278	2,946.041	69,354.721	91,026.806
2022	5	110.543	6,598.312	2,027.668	2,803.844	66,007.155	77,436.979
2022	6	110.592	1,207.118	10,628.461	3,062.618	72,099.144	86,997.342
2022	7	110.589	32.064	25,379.835	3,520.576	82,880.217	111,812.691
2022	8	110.661	0.000	27,942.179	3,472.552	81,749.665	113,164.396

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	Customers	Heating Energy	CoolingEnergy	Lighting Energy	Other Energy	Total Energy
2022	9	110.611	41.408	20,129.506	3,233.322	76,117.780	99,522.016
2022	10	110.652	2,024.065	6,161.299	2,870.325	67,572.246	78,627.936
2022	11	110.665	10,573.076	532.409	2,771.673	65,249.810	79,126.968
2022	12	110.703	24,158.613	5.947	3,407.750	80,224.119	107,796.429
2023	1	110.679	35,103.521	0.000	3,493.444	84,013.199	122,610.165
2023	2	110.670	39,673.818	0.000	2,999.245	72,128.291	114,801.354
2023	3	110.807	31,781.296	52.505	2,872.296	69,075.319	103,781.417
2023	4	110.747	18,346.932	405.888	2,892.554	69,562.511	91,207.886
2023	5	110.781	6,612.610	2,016.842	2,753.832	66,226.402	77,609.687
2023	6	110.827	1,210.327	10,576.394	3,008.602	72,353.326	87,148.650
2023	7	110.821	32.163	25,265.015	3,458.991	83,184.642	111,940.811
2023	8	110.890	0.000	27,822.449	3,412.129	82,057.669	113,292.248
2023	9	110.838	41.556	20,046.717	3,177.807	76,422.513	99,688.594
2023	10	110.879	2,031.759	6,136.948	2,821.470	67,853.020	78,843.196
2023	11	110.892	10,614.743	530.350	2,724.745	65,526.890	79,396.727
2023	12	110.931	24,255.140	5.924	3,349.482	80,551.095	108,161.641
2024	1	110.908	35,007.162	0.000	3,442.748	84,038.697	122,488.607
2024	2	110.902	39,557.200	0.000	2,955.191	72,137.254	114,649.645
2024	3	111.042	31,682.557	52.265	2,829.861	69,077.904	103,642.587
2024	4	110.985	18,286.015	403.954	2,849.778	69,564.096	91,103.843
2024	5	111.023	6,589.599	2,006.910	2,712.657	66,216.921	77,526.087
2024	6	111.072	1,206.004	10,523.292	2,964.011	72,352.562	87,045.869
2024	7	111.069	32.046	25,136.457	3,409.398	83,224.609	111,802.510
2024	8	111.142	0.000	27,680.669	3,363.578	82,106.135	113,150.382
2024	9	111.094	41.407	19,944.958	3,131.814	76,448.702	99,566.881
2024	10	111.138	2,024.480	6,105.864	2,779.669	67,852.703	78,762.715
2024	11	111.154	10,577.334	527.690	2,683.937	65,515.849	79,304.809
2024	12	111.196	24,170.284	5.895	3,299.921	80,552.253	108,028.354
2025	1	111.175	34,899.668	0.000	3,399.852	84,079.159	122,378.679
2025	2	111.171	39,442.100	0.000	2,918.435	72,173.612	114,534.147
2025	3	111.313	31,593.355	52.060	2,794.844	69,117.173	103,557.433
2025	4	111.257	18,237.752	402.422	2,815.088	69,617.810	91,073.073
2025	5	111.295	6,572.762	1,999.447	2,679.622	66,267.696	77,519.527
2025	6	111.345	1,203.057	10,485.130	2,928.463	72,421.594	87,038.245

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	Customers	Heating Energy	CoolingEnergy	Lighting Energy	Other Energy	Total Energy
2025	7	111.343	31.972	25,047.927	3,370.048	83,342.110	111,792.057
2025	8	111.415	0.000	27,584.019	3,325.060	82,229.536	113,138.615
2025	9	111.366	41.314	19,875.824	3,095.435	76,550.853	99,563.425
2025	10	111.410	2,019.935	6,084.729	2,746.655	67,925.431	78,776.749
2025	11	111.425	10,553.576	525.860	2,651.618	65,575.150	79,306.205
2025	12	111.464	24,119.013	5.875	3,260.567	80,634.597	108,020.052
2026	1	111.442	34,807.442	0.000	3,358.709	84,145.599	122,311.750
2026	2	111.434	39,337.369	0.000	2,882.920	72,225.673	114,445.962
2026	3	111.573	31,509.751	51.888	2,760.867	69,167.885	103,490.392
2026	4	111.513	18,189.572	401.092	2,781.149	69,676.006	91,047.819
2026	5	111.547	6,555.336	1,992.803	2,647.152	66,318.977	77,514.267
2026	6	111.592	1,199.774	10,449.668	2,893.173	72,482.534	87,025.149
2026	7	111.584	31.883	24,962.093	3,330.568	83,440.585	111,765.129
2026	8	111.651	0.000	27,489.254	3,286.276	82,330.939	113,106.470
2026	9	111.596	41.198	19,807.534	3,058.736	76,630.368	99,537.836
2026	10	111.632	2,014.369	6,063.942	2,713.385	67,978.311	78,770.006
2026	11	111.640	10,524.928	524.076	2,619.101	65,616.219	79,284.324
2026	12	111.673	24,054.272	5.855	3,220.654	80,686.915	107,967.696
2027	1	111.643	34,668.701	0.000	3,326.515	84,190.218	122,185.434
2027	2	111.629	39,179.697	0.000	2,855.105	72,259.384	114,294.186
2027	3	111.760	31,383.909	51.709	2,734.246	69,200.588	103,370.453
2027	4	111.694	18,116.044	399.695	2,754.509	69,713.409	90,983.656
2027	5	111.722	6,529.062	1,985.902	2,621.738	66,353.118	77,489.819
2027	6	111.760	1,195.001	10,413.671	2,865.628	72,525.702	87,000.003
2027	7	111.747	31.755	24,875.344	3,299.709	83,511.782	111,718.589
2027	8	111.809	0.000	27,393.536	3,255.978	82,405.016	113,054.531
2027	9	111.749	41.037	19,739.929	3,030.295	76,693.240	99,504.502
2027	10	111.782	2,006.450	6,043.136	2,687.589	68,019.742	78,756.917
2027	11	111.787	10,483.585	522.276	2,593.862	65,647.618	79,247.341
2027	12	111.816	23,956.837	5.834	3,189.324	80,718.076	107,870.071
2028	1	111.784	34,546.363	0.000	3,298.244	84,257.660	122,102.267
2028	2	111.768	39,041.430	0.000	2,830.832	72,317.069	114,189.331
2028	3	111.898	31,274.443	51.567	2,711.138	69,259.319	103,296.466
2028	4	111.830	18,052.166	398.581	2,731.421	69,777.484	90,959.652

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	Customers	Heating Energy	CoolingEnergy	Lighting Energy	Other Energy	Total Energy
2028	5	111.857	6,505.269	1,980.218	2,599.584	66,409.540	77,494.611
2028	6	111.895	1,190.964	10,385.876	2,841.923	72,600.392	87,019.155
2028	7	111.881	31.653	24,812.018	3,273.235	83,618.782	111,735.688
2028	8	111.942	0.000	27,326.583	3,230.188	82,519.093	113,075.865
2028	9	111.882	40.914	19,692.212	3,006.266	76,798.727	99,538.119
2028	10	111.914	2,000.546	6,028.775	2,666.082	68,108.329	78,803.732
2028	11	111.918	10,453.353	521.056	2,572.991	65,730.183	79,277.583
2028	12	111.948	23,891.137	5.821	3,163.596	80,817.919	107,878.473
2029	1	111.915	34,456.970	0.000	3,276.781	84,370.162	122,103.913
2029	2	111.899	38,945.486	0.000	2,812.710	72,421.320	114,179.516
2029	3	112.029	31,201.502	51.478	2,694.082	69,366.887	103,313.948
2029	4	111.961	18,014.045	397.953	2,714.837	69,901.299	91,028.134
2029	5	111.989	6,492.987	1,977.392	2,584.191	66,537.437	77,592.007
2029	6	112.027	1,188.551	10,369.861	2,824.721	72,730.571	87,113.705
2029	7	112.014	31.587	24,772.847	3,253.471	83,769.958	111,827.863
2029	8	112.076	0.000	27,283.014	3,210.732	82,669.519	113,163.265
2029	9	112.016	40.828	19,660.889	2,988.276	76,941.763	99,631.756
2029	10	112.049	1,996.582	6,019.734	2,650.204	68,237.120	78,903.640
2029	11	112.055	10,433.126	520.292	2,557.622	65,853.336	79,364.376
2029	12	112.086	23,844.096	5.813	3,144.177	80,955.877	107,949.962
2030	1	112.055	34,393.894	0.000	3,078.519	84,523.676	121,996.089
2030	2	112.039	38,874.770	0.000	2,642.613	72,555.457	114,072.839
2030	3	112.170	31,146.961	51.432	2,531.489	69,504.440	103,234.323
2030	4	112.103	17,984.230	397.632	2,551.596	70,056.511	90,989.968
2030	5	112.131	6,483.228	1,976.010	2,429.342	66,699.898	77,588.478
2030	6	112.170	1,186.939	10,363.825	2,656.342	72,932.422	87,139.528
2030	7	112.156	31.550	24,761.640	3,060.533	84,029.870	111,883.593
2030	8	112.218	0.000	27,274.269	3,020.543	82,931.892	113,226.704
2030	9	112.158	40.796	19,657.902	2,811.165	77,183.218	99,693.082
2030	10	112.190	1,995.339	6,019.452	2,492.638	68,437.769	78,945.199
2030	11	112.194	10,427.738	520.308	2,405.104	66,034.434	79,387.585
2030	12	112.224	23,836.790	5.814	2,956.735	81,179.990	107,979.329
2031	1	112.190	34,426.132	0.000	2,939.983	84,831.981	122,198.095
2031	2	112.174	38,910.380	0.000	2,523.949	72,827.513	114,261.842

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	Customers	Heating Energy	CoolingEnergy	Lighting Energy	Other Energy	Total Energy
2031	3	112.302	31,174.404	51.519	2,417.999	69,770.355	103,414.276
2031	4	112.232	17,999.316	398.287	2,437.477	70,332.400	91,167.480
2031	5	112.257	6,488.340	1,979.195	2,320.990	66,971.196	77,759.721
2031	6	112.293	1,187.808	10,380.115	2,537.848	73,228.553	87,334.323
2031	7	112.276	31.571	24,799.670	2,923.622	84,359.900	112,114.763
2031	8	112.334	0.000	27,315.052	2,885.175	83,250.518	113,450.744
2031	9	112.270	40.818	19,685.913	2,685.203	77,480.423	99,892.357
2031	10	112.298	1,996.168	6,027.541	2,380.643	68,692.466	79,096.818
2031	11	112.298	10,431.367	520.980	2,296.656	66,269.072	79,518.076
2031	12	112.324	23,844.616	5.821	2,822.705	81,447.995	108,121.137
2032	1	112.287	34,416.395	0.000	2,856.278	85,112.746	122,385.420
2032	2	112.265	38,897.461	0.000	2,452.286	73,074.386	114,424.132
2032	3	112.390	31,162.624	51.585	2,349.443	70,009.847	103,573.500
2032	4	112.317	17,991.640	398.785	2,368.523	70,578.383	91,337.331
2032	5	112.339	6,485.249	1,981.580	2,255.534	67,211.476	77,933.837
2032	6	112.371	1,187.188	10,392.205	2,466.037	73,484.154	87,529.584
2032	7	112.352	31.553	24,827.552	2,840.275	84,635.892	112,335.272
2032	8	112.408	0.000	27,344.770	2,802.721	83,516.834	113,664.325
2032	9	112.342	40.791	19,706.644	2,608.753	77,736.866	100,093.054
2032	10	112.370	1,994.825	6,033.746	2,312.914	68,921.324	79,262.810
2032	11	112.368	10,424.057	521.503	2,231.182	66,485.834	79,662.576
2032	12	112.393	23,827.308	5.827	2,741.460	81,691.340	108,265.935
2033	1	112.355	34,387.870	0.000	2,826.223	85,407.380	122,621.473
2033	2	112.333	38,860.867	0.000	2,426.682	73,333.400	114,620.949
2033	3	112.456	31,129.474	51.660	2,324.904	70,257.710	103,763.748
2033	4	112.382	17,970.160	399.322	2,343.770	70,827.814	91,541.065
2033	5	112.401	6,476.669	1,984.051	2,232.037	67,451.310	78,144.068
2033	6	112.430	1,185.456	10,404.046	2,439.738	73,727.954	87,757.194
2033	7	112.408	31.503	24,853.183	2,808.960	84,885.689	112,579.335
2033	8	112.459	0.000	27,369.852	2,771.477	83,752.973	113,894.302
2033	9	112.388	40.714	19,722.340	2,579.999	77,966.581	100,309.634
2033	10	112.409	1,990.736	6,037.777	2,287.503	69,127.454	79,443.469
2033	11	112.401	10,401.027	521.784	2,206.495	66,679.441	79,808.748
2033	12	112.419	23,770.839	5.829	2,710.034	81,896.196	108,382.899

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	Customers	Heating Energy	CoolingEnergy	Lighting Energy	Other Energy	Total Energy
2034	1	112.374	34,301.312	0.000	2,804.555	85,646.779	122,752.646
2034	2	112.345	38,760.734	0.000	2,408.299	73,545.731	114,714.764
2034	3	112.462	31,047.524	51.706	2,307.345	70,462.774	103,869.349
2034	4	112.380	17,921.796	399.652	2,326.123	71,036.200	91,683.770
2034	5	112.394	6,458.884	1,985.588	2,215.387	67,654.515	78,314.375
2034	6	112.418	1,182.142	10,411.637	2,421.008	73,933.854	87,948.641
2034	7	112.392	31.414	24,870.303	2,786.393	85,092.137	112,780.247
2034	8	112.440	0.000	27,387.799	2,749.005	83,950.388	114,087.192
2034	9	112.367	40.596	19,734.712	2,559.661	78,168.109	100,503.078
2034	10	112.386	1,984.892	6,041.423	2,269.834	69,317.238	79,613.387
2034	11	112.378	10,370.305	522.092	2,189.551	66,865.498	79,947.446
2034	12	112.396	23,700.188	5.833	2,688.283	82,096.011	108,490.315
2035	1	112.352	34,206.478	0.000	2,795.748	85,887.022	122,889.247
2035	2	112.324	38,653.139	0.000	2,401.107	73,763.414	114,817.660
2035	3	112.442	30,960.840	51.771	2,300.583	70,675.282	103,988.476
2035	4	112.363	17,871.577	400.154	2,319.433	71,254.344	91,845.508
2035	5	112.378	6,440.704	1,988.066	2,209.250	67,869.468	78,507.489
2035	6	112.404	1,178.799	10,424.528	2,413.766	74,152.326	88,169.420
2035	7	112.377	31.324	24,900.751	2,776.980	85,310.462	113,019.517
2035	8	112.426	0.000	27,420.947	2,739.554	84,160.706	114,321.207
2035	9	112.353	40.479	19,758.191	2,551.549	78,385.101	100,735.320
2035	10	112.372	1,979.109	6,048.472	2,263.103	69,523.871	79,814.555
2035	11	112.363	10,339.797	522.688	2,183.196	67,069.074	80,114.756
2035	12	112.379	23,629.718	5.839	2,679.472	82,314.951	108,629.980
2036	1	112.333	34,118.654	0.000	2,792.326	86,145.347	123,056.327
2036	2	112.303	38,553.220	0.000	2,398.535	73,996.618	114,948.373
2036	3	112.419	30,880.164	51.866	2,298.234	70,902.257	104,132.522
2036	4	112.337	17,824.603	400.882	2,317.149	71,485.787	92,028.421
2036	5	112.350	6,423.642	1,991.644	2,207.316	68,097.345	78,719.947
2036	6	112.374	1,175.648	10,443.047	2,411.031	74,382.126	88,411.852
2036	7	112.346	31.240	24,944.522	2,772.589	85,536.451	113,284.802
2036	8	112.392	0.000	27,468.554	2,735.005	84,376.967	114,580.526
2036	9	112.317	40.368	19,792.181	2,548.106	78,610.971	100,991.625
2036	10	112.335	1,973.674	6,058.792	2,260.627	69,742.049	80,035.143

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	Customers	Heating Energy	CoolingEnergy	Lighting Energy	Other Energy	Total Energy
2036	11	112.324	10,311.240	523.572	2,181.023	67,286.207	80,302.042
2036	12	112.339	23,564.128	5.849	2,675.739	82,548.559	108,794.275
2037	1	112.292	34,030.986	0.000	2,789.623	86,411.036	123,231.645
2037	2	112.261	38,453.849	0.000	2,396.624	74,237.557	115,088.030
2037	3	112.375	30,800.324	51.994	2,296.553	71,137.759	104,286.630
2037	4	112.291	17,778.361	401.869	2,315.542	71,725.985	92,221.757
2037	5	112.301	6,406.903	1,996.520	2,206.058	68,334.601	78,944.082
2037	6	112.322	1,172.572	10,468.475	2,409.012	74,621.281	88,671.339
2037	7	112.291	31.158	25,004.754	2,768.859	85,767.855	113,572.625
2037	8	112.333	0.000	27,534.341	2,731.073	84,597.419	114,862.832
2037	9	112.254	40.260	19,839.110	2,545.294	78,842.735	101,267.399
2037	10	112.267	1,968.346	6,072.998	2,258.770	69,967.406	80,267.520
2037	11	112.251	10,283.113	524.784	2,179.456	67,510.583	80,497.936
2037	12	112.260	23,499.190	5.862	2,672.639	82,787.376	108,965.068
2038	1	112.209	33,931.446	0.000	2,785.688	86,660.110	123,377.244
2038	2	112.172	38,339.988	0.000	2,393.606	74,462.804	115,196.398
2038	3	112.281	30,708.277	52.098	2,293.771	71,357.042	104,411.188
2038	4	112.191	17,724.645	402.653	2,312.768	71,948.017	92,388.083
2038	5	112.196	6,387.372	2,000.360	2,203.674	68,554.209	79,145.615
2038	6	112.212	1,168.962	10,488.287	2,405.707	74,839.258	88,902.214
2038	7	112.176	31.061	25,051.354	2,763.536	85,970.981	113,816.932
2038	8	112.214	0.000	27,584.934	2,725.536	84,788.845	115,099.315
2038	9	112.131	40.133	19,875.012	2,541.013	79,048.512	101,504.671
2038	10	112.141	1,962.090	6,083.849	2,255.658	70,171.399	80,472.997
2038	11	112.122	10,250.270	525.713	2,176.732	67,716.061	80,668.776
2038	12	112.129	23,423.666	5.873	2,668.112	83,002.424	109,100.074
2039	1	112.075	33,822.407	0.000	2,781.392	86,885.276	123,489.075
2039	2	112.036	38,216.602	0.000	2,390.365	74,670.350	115,277.317
2039	3	112.144	30,609.225	52.179	2,290.815	71,560.610	104,512.828
2039	4	112.053	17,667.411	403.275	2,309.877	72,156.056	92,536.619
2039	5	112.057	6,366.708	2,003.434	2,201.231	68,762.177	79,333.550
2039	6	112.072	1,165.178	10,504.358	2,402.387	75,045.909	89,117.832
2039	7	112.035	30.960	25,089.650	2,758.228	86,161.667	114,040.505
2039	8	112.072	0.000	27,626.943	2,720.053	84,969.162	115,316.157

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	Customers	Heating Energy	CoolingEnergy	Lighting Energy	Other Energy	Total Energy
2039	9	111.989	40.003	19,905.310	2,536.858	79,246.504	101,728.676
2039	10	111.998	1,955.742	6,093.122	2,252.705	70,370.127	80,671.696
2039	11	111.979	10,217.103	526.512	2,174.175	67,916.993	80,834.783
2039	12	111.986	23,347.998	5.882	2,663.838	83,213.133	109,230.851
2040	1	111.932	33,727.451	0.000	2,735.535	87,103.203	123,566.189
2040	2	111.893	38,109.327	0.000	2,351.377	74,871.083	115,331.787
2040	3	112.000	30,523.434	52.265	2,253.649	71,759.288	104,588.636
2040	4	111.909	17,617.914	403.946	2,272.544	72,360.924	92,655.328
2040	5	111.912	6,348.853	2,006.755	2,166.019	68,969.048	79,490.675
2040	6	111.927	1,161.911	10,521.752	2,363.503	75,257.205	89,304.372
2040	7	111.889	30.873	25,131.088	2,712.294	86,363.192	114,237.448
2040	8	111.925	0.000	27,672.400	2,674.504	85,159.895	115,506.799
2040	9	111.840	39.890	19,937.845	2,495.127	79,448.289	101,921.151
2040	10	111.847	1,950.208	6,103.007	2,216.190	70,566.559	80,835.964
2040	11	111.826	10,188.082	527.360	2,139.076	68,111.142	80,965.661
2040	12	111.831	23,281.447	5.891	2,619.757	83,416.693	109,323.788
2041	1	111.775	33,636.448	0.000	2,696.875	87,302.901	123,636.224
2041	2	111.735	38,005.862	0.000	2,318.550	75,055.829	115,380.241
2041	3	111.840	30,439.936	52.348	2,222.348	71,941.571	104,656.203
2041	4	111.746	17,569.289	404.573	2,241.081	72,547.989	92,762.933
2041	5	111.748	6,331.207	2,009.835	2,136.367	69,158.217	79,635.626
2041	6	111.759	1,158.653	10,537.654	2,330.660	75,447.831	89,474.798
2041	7	111.719	30.786	25,168.578	2,673.306	86,539.933	114,412.603
2041	8	111.754	0.000	27,713.236	2,635.800	85,325.803	115,674.839
2041	9	111.667	39.776	19,966.977	2,459.743	79,626.484	102,092.980
2041	10	111.673	1,944.615	6,111.851	2,185.297	70,742.179	80,983.942
2041	11	111.649	10,158.709	528.116	2,109.395	68,285.091	81,081.313
2041	12	111.652	23,213.973	5.899	2,582.337	83,595.102	109,397.311
2042	1	111.595	33,537.537	0.000	2,663.751	87,477.534	123,678.822
2042	2	111.553	37,893.790	0.000	2,290.471	75,219.027	115,403.288
2042	3	111.656	30,349.991	52.414	2,195.603	72,103.553	104,701.561
2042	4	111.561	17,517.213	405.082	2,214.219	72,714.900	92,851.414
2042	5	111.560	6,312.387	2,012.342	2,111.102	69,328.568	79,764.399
2042	6	111.571	1,155.201	10,550.710	2,302.639	75,618.632	89,627.182

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	Customers	Heating Energy	CoolingEnergy	Lighting Energy	Other Energy	Total Energy
2042	7	111.529	30.694	25,199.482	2,639.908	86,694.547	114,564.631
2042	8	111.561	0.000	27,746.925	2,602.621	85,470.041	115,819.586
2042	9	111.472	39.656	19,990.951	2,429.478	79,784.012	102,244.097
2042	10	111.475	1,938.729	6,119.103	2,158.938	70,899.494	81,116.265
2042	11	111.449	10,127.802	528.734	2,084.083	68,441.246	81,181.865
2042	12	111.450	23,143.002	5.906	2,550.286	83,751.353	109,450.547
2043	1	111.390	33,450.843	0.000	2,636.326	87,643.546	123,730.715
2043	2	111.346	37,795.274	0.000	2,267.279	75,374.724	115,437.278
2043	3	111.447	30,270.625	52.489	2,173.526	72,257.942	104,754.582
2043	4	111.350	17,471.181	405.653	2,192.055	72,873.927	92,942.815
2043	5	111.347	6,295.728	2,015.152	2,090.310	69,491.461	79,892.650
2043	6	111.354	1,152.137	10,565.295	2,279.467	75,779.891	89,776.791
2043	7	111.310	30.612	25,234.024	2,612.027	86,835.709	114,712.372
2043	8	111.341	0.000	27,784.695	2,574.892	85,601.181	115,960.768
2043	9	111.249	39.550	20,017.942	2,404.351	79,931.616	102,393.459
2043	10	111.250	1,933.511	6,127.305	2,137.197	71,050.189	81,248.202
2043	11	111.224	10,100.527	529.441	2,063.290	68,593.186	81,286.444
2043	12	111.222	23,080.608	5.914	2,523.784	83,902.132	109,512.439
2044	1	111.162	33,364.402	0.000	2,608.871	87,791.104	123,764.377
2044	2	111.117	37,697.515	0.000	2,244.080	75,515.536	115,457.132
2044	3	111.218	30,192.302	52.557	2,151.467	72,399.007	104,795.333
2044	4	111.120	17,425.904	406.181	2,169.935	73,020.467	93,022.488
2044	5	111.118	6,279.397	2,017.775	2,069.567	69,642.980	80,009.719
2044	6	111.127	1,149.152	10,579.087	2,256.401	75,930.144	89,914.784
2044	7	111.083	30.533	25,266.992	2,584.356	86,966.159	114,848.041
2044	8	111.115	0.000	27,821.104	2,547.414	85,723.036	116,091.555
2044	9	111.026	39.448	20,044.311	2,379.455	80,071.029	102,534.243
2044	10	111.030	1,928.539	6,135.418	2,115.648	71,193.668	81,373.274
2044	11	111.006	10,074.630	530.147	2,042.678	68,738.157	81,385.612
2044	12	111.008	23,021.649	5.922	2,497.590	84,046.400	109,571.561
2045	1	110.951	33,281.216	0.000	2,580.974	87,926.547	123,788.737
2045	2	110.909	37,603.701	0.000	2,220.485	75,645.714	115,469.900
2045	3	111.013	30,117.403	52.627	2,129.040	72,530.443	104,829.513
2045	4	110.919	17,382.770	406.725	2,147.452	73,157.685	93,094.632

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	Customers	Heating Energy	CoolingEnergy	Lighting Energy	Other Energy	Total Energy
2045	5	110.919	6,263.904	2,020.492	2,048.464	69,785.434	80,118.294
2045	6	110.930	1,146.322	10,593.386	2,233.015	76,072.580	90,045.303
2045	7	110.889	30.458	25,301.281	2,556.511	87,093.171	114,981.421
2045	8	110.923	0.000	27,858.936	2,519.798	85,842.468	116,221.202
2045	9	110.834	39.351	20,071.524	2,354.302	80,204.471	102,669.648
2045	10	110.838	1,923.787	6,143.740	2,093.773	71,328.994	81,490.294
2045	11	110.814	10,049.762	530.864	2,021.697	68,873.562	81,475.885
2045	12	110.815	22,964.640	5.930	2,471.013	84,180.481	109,622.063
2046	1	110.758	33,201.655	0.000	2,553.243	88,055.029	123,809.927
2046	2	110.715	37,513.311	0.000	2,196.964	75,767.853	115,478.128
2046	3	110.818	30,044.625	52.694	2,106.638	72,652.738	104,856.696
2046	4	110.722	17,340.425	407.235	2,124.959	73,284.557	93,157.176
2046	5	110.720	6,248.503	2,022.989	2,027.279	69,915.820	80,214.591
2046	6	110.729	1,143.479	10,606.281	2,209.523	76,200.977	90,160.260
2046	7	110.685	30.382	25,331.511	2,528.554	87,203.544	115,093.990
2046	8	110.716	0.000	27,891.566	2,492.011	85,943.275	116,326.851
2046	9	110.625	39.250	20,094.479	2,328.878	80,317.231	102,779.839
2046	10	110.626	1,918.803	6,150.602	2,071.560	71,442.957	81,583.922
2046	11	110.600	10,023.422	531.442	2,000.311	68,985.776	81,540.951
2046	12	110.599	22,903.771	5.936	2,443.926	84,284.942	109,638.575
2047	1	110.539	33,122.436	0.000	2,525.037	88,161.553	123,809.027
2047	2	110.494	37,422.762	0.000	2,172.984	75,869.618	115,465.364
2047	3	110.595	29,971.303	52.751	2,083.754	72,754.169	104,861.977
2047	4	110.497	17,297.612	407.663	2,101.949	73,389.427	93,196.650
2047	5	110.493	6,232.912	2,025.064	2,005.583	70,024.840	80,288.400
2047	6	110.501	1,140.599	10,616.939	2,185.485	76,306.105	90,249.128
2047	7	110.455	30.304	25,356.422	2,500.030	87,288.430	115,175.187
2047	8	110.485	0.000	27,918.588	2,463.707	86,020.223	116,402.519
2047	9	110.394	39.149	20,113.705	2,302.990	80,408.784	102,864.629
2047	10	110.394	1,913.835	6,156.420	2,048.955	71,539.162	81,658.373
2047	11	110.367	9,997.343	531.940	1,978.597	69,082.604	81,590.483
2047	12	110.366	22,843.980	5.942	2,416.544	84,373.510	109,639.976
2048	1	110.306	33,043.720	0.000	2,497.752	88,248.328	123,789.800
2048	2	110.262	37,333.559	0.000	2,149.835	75,956.048	115,439.442

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	Customers	Heating Energy	CoolingEnergy	Lighting Energy	Other Energy	Total Energy
2048	3	110.363	29,899.702	52.797	2,061.717	72,842.712	104,856.927
2048	4	110.265	17,256.168	408.021	2,079.848	73,483.315	93,227.352
2048	5	110.261	6,217.950	2,026.842	1,984.795	70,124.997	80,354.584
2048	6	110.269	1,137.855	10,626.227	2,162.504	76,403.645	90,330.231
2048	7	110.224	30.231	25,378.565	2,472.812	87,367.166	115,248.774
2048	8	110.254	0.000	27,942.846	2,436.725	86,092.157	116,471.728
2048	9	110.163	39.054	20,131.048	2,278.325	80,495.721	102,944.148
2048	10	110.163	1,909.170	6,161.667	2,027.422	71,631.053	81,729.312
2048	11	110.135	9,972.856	532.388	1,957.906	69,174.963	81,638.112
2048	12	110.134	22,787.797	5.947	2,390.433	84,456.625	109,640.801
2049	1	110.075	32,981.018	0.000	2,472.582	88,345.637	123,799.237
2049	2	110.031	37,262.555	0.000	2,128.518	76,052.170	115,443.242
2049	3	110.131	29,842.628	52.854	2,041.428	72,940.447	104,877.357
2049	4	110.033	17,223.070	408.456	2,059.488	73,585.732	93,276.746
2049	5	110.030	6,205.986	2,028.990	1,965.653	70,232.984	80,433.612
2049	6	110.037	1,135.653	10,637.389	2,141.278	76,508.102	90,422.422
2049	7	109.993	30.173	25,405.086	2,447.561	87,451.632	115,334.451
2049	8	110.022	0.000	27,971.852	2,411.671	86,169.257	116,552.780
2049	9	109.931	38.978	20,151.818	2,255.478	80,588.478	103,034.752
2049	10	109.931	1,905.418	6,168.000	2,007.535	71,729.444	81,810.398
2049	11	109.904	9,953.196	532.933	1,938.830	69,274.589	81,699.547
2049	12	109.902	22,742.621	5.953	2,366.291	84,547.847	109,662.713
2050	1	109.843	32,925.631	0.000	2,449.388	88,446.051	123,821.070
2050	2	109.800	37,199.851	0.000	2,108.895	76,151.045	115,459.791
2050	3	109.901	29,792.261	52.908	2,022.762	73,040.818	104,908.749
2050	4	109.803	17,193.941	408.869	2,040.776	73,691.273	93,334.860
2050	5	109.800	6,195.456	2,031.038	1,948.080	70,344.094	80,518.669
2050	6	109.808	1,133.726	10,648.147	2,121.790	76,616.662	90,520.324
2050	7	109.764	30.121	25,430.638	2,424.299	87,540.086	115,425.144
2050	8	109.794	0.000	28,000.053	2,388.602	86,251.091	116,639.746
2050	9	109.704	38.911	20,172.106	2,234.505	80,686.750	103,132.273
2050	10	109.705	1,902.169	6,174.225	1,989.341	71,833.995	81,899.730
2050	11	109.678	9,936.214	533.471	1,921.408	69,380.987	81,772.080
2050	12	109.678	22,703.903	5.959	2,344.217	84,648.374	109,702.452

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	Customers	Heating Energy	CoolingEnergy	Lighting Energy	Other Energy	Total Energy
2051	1	109.616	32,852.276	0.000	2,423.592	88,541.398	123,817.267
2051	2	109.572	37,116.595	0.000	2,087.006	76,244.839	115,448.440
2051	3	109.672	29,725.370	52.956	2,001.915	73,136.211	104,916.452
2051	4	109.575	17,155.275	409.244	2,019.867	73,792.065	93,376.452
2051	5	109.572	6,181.497	2,032.893	1,928.407	70,450.727	80,593.524
2051	6	109.580	1,131.174	10,657.899	2,100.045	76,721.199	90,610.317
2051	7	109.536	30.053	25,453.824	2,398.522	87,625.517	115,507.916
2051	8	109.567	0.000	28,025.689	2,363.067	86,330.235	116,718.991
2051	9	109.478	38.823	20,190.577	2,211.188	80,781.629	103,222.217
2051	10	109.480	1,897.885	6,179.904	1,969.026	71,934.690	81,981.505
2051	11	109.454	9,913.848	533.963	1,901.920	69,483.095	81,832.826
2051	12	109.455	22,652.930	5.964	2,319.650	84,744.068	109,722.613
2052	1	109.391	32,779.282	0.000	2,398.020	88,635.688	123,812.990
2052	2	109.345	37,033.803	0.000	2,065.301	76,337.726	115,436.829
2052	3	109.445	29,658.896	53.004	1,981.243	73,230.785	104,923.929
2052	4	109.348	17,116.878	409.614	1,999.135	73,892.111	93,417.738
2052	5	109.345	6,167.644	2,034.725	1,908.896	70,556.671	80,667.936
2052	6	109.354	1,128.642	10,667.545	2,078.487	76,825.128	90,699.803
2052	7	109.309	29.986	25,476.782	2,372.990	87,710.532	115,590.289
2052	8	109.342	0.000	28,051.104	2,337.779	86,409.069	116,797.953
2052	9	109.253	38.737	20,208.911	2,188.088	80,876.171	103,311.906
2052	10	109.256	1,893.648	6,185.549	1,948.893	72,035.065	82,063.156
2052	11	109.231	9,891.741	534.453	1,882.605	69,584.917	81,893.716
2052	12	109.234	22,602.583	5.970	2,295.316	84,839.545	109,743.414
2053	1	109.167	32,707.113	0.000	2,372.689	88,729.640	123,809.442
2053	2	109.120	36,951.879	0.000	2,043.794	76,430.208	115,425.881
2053	3	109.219	29,593.061	53.052	1,960.755	73,324.876	104,931.744
2053	4	109.122	17,078.814	409.979	1,978.584	73,991.590	93,458.967
2053	5	109.119	6,153.899	2,036.535	1,889.547	70,661.951	80,741.932
2053	6	109.129	1,126.128	10,677.062	2,057.114	76,928.321	90,788.625
2053	7	109.084	29.919	25,499.391	2,347.692	87,794.864	115,671.866
2053	8	109.118	0.000	28,076.094	2,312.725	86,487.203	116,876.022
2053	9	109.029	38.650	20,226.908	2,165.186	80,969.815	103,400.558
2053	10	109.033	1,889.423	6,191.081	1,928.922	72,134.415	82,143.841

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	Customers	Heating Energy	CoolingEnergy	Lighting Energy	Other Energy	Total Energy
2053	11	109.009	9,869.682	534.932	1,863.438	69,685.587	81,953.639
2053	12	109.014	22,552.294	5.975	2,271.182	84,933.654	109,763.105
2054	1	108.944	32,635.069	0.000	2,347.570	88,822.227	123,804.867
2054	2	108.895	36,870.153	0.000	2,022.463	76,521.506	115,414.121
2054	3	108.994	29,527.433	53.098	1,940.434	73,417.880	104,938.845
2054	4	108.898	17,040.898	410.338	1,958.199	74,090.062	93,499.498
2054	5	108.895	6,140.218	2,038.313	1,870.352	70,766.293	80,815.178
2054	6	108.905	1,123.628	10,686.427	2,035.920	77,030.663	90,876.637
2054	7	108.860	29.852	25,521.675	2,322.629	87,878.557	115,752.713
2054	8	108.895	0.000	28,100.760	2,287.907	86,564.826	116,953.494
2054	9	108.807	38.564	20,244.698	2,142.492	81,062.921	103,488.675
2054	10	108.812	1,885.236	6,196.557	1,909.124	72,233.258	82,224.175
2054	11	108.789	9,847.830	535.407	1,844.438	69,785.789	82,013.464
2054	12	108.795	22,502.520	5.981	2,247.272	85,027.357	109,783.129
2055	1	108.722	32,563.861	0.000	2,322.692	88,914.538	123,801.092
2055	2	108.673	36,789.480	0.000	2,001.333	76,612.660	115,403.474
2055	3	108.771	29,462.743	53.145	1,920.306	73,510.875	104,947.070
2055	4	108.674	17,003.580	410.699	1,938.012	74,188.669	93,540.960
2055	5	108.672	6,126.773	2,040.103	1,851.342	70,870.880	80,889.099
2055	6	108.682	1,121.174	10,695.875	2,014.937	77,133.415	90,965.402
2055	7	108.638	29.787	25,544.214	2,297.832	87,962.885	115,834.719
2055	8	108.673	0.000	28,125.774	2,263.359	86,643.208	117,032.341
2055	9	108.586	38.480	20,262.788	2,120.041	81,156.892	103,578.201
2055	10	108.592	1,881.151	6,202.141	1,889.538	72,333.042	82,305.872
2055	11	108.570	9,826.546	535.892	1,825.642	69,887.062	82,075.142
2055	12	108.577	22,454.114	5.986	2,223.633	85,122.461	109,806.193
2056	1	108.501	32,494.697	0.000	2,298.100	89,008.429	123,801.226
2056	2	108.451	36,711.194	0.000	1,980.447	76,705.298	115,396.939
2056	3	108.548	29,400.033	53.193	1,900.411	73,605.398	104,959.035
2056	4	108.452	16,967.446	411.071	1,918.058	74,288.909	93,585.484
2056	5	108.450	6,113.769	2,041.956	1,832.552	70,977.152	80,965.428
2056	6	108.461	1,118.804	10,705.671	1,994.201	77,238.014	91,056.689
2056	7	108.416	29.724	25,567.628	2,273.334	88,049.201	115,919.887
2056	8	108.453	0.000	28,151.801	2,239.109	86,723.609	117,114.518

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	Customers	Heating Energy	CoolingEnergy	Lighting Energy	Other Energy	Total Energy
2056	9	108.367	38.400	20,281.645	2,097.864	81,253.021	103,670.929
2056	10	108.373	1,877.224	6,207.971	1,870.193	72,435.012	82,390.400
2056	11	108.352	9,806.112	536.400	1,807.082	69,990.639	82,140.233
2056	12	108.361	22,407.707	5.992	2,200.295	85,220.325	109,834.319
2057	1	108.282	32,428.396	0.000	2,273.823	89,105.185	123,807.404
2057	2	108.231	36,636.130	0.000	1,959.826	76,800.463	115,396.419
2057	3	108.328	29,339.890	53.243	1,880.767	73,702.342	104,976.242
2057	4	108.232	16,932.783	411.460	1,898.355	74,391.557	93,634.155
2057	5	108.229	6,101.292	2,043.893	1,813.996	71,085.745	81,044.926
2057	6	108.241	1,116.530	10,715.910	1,973.722	77,344.983	91,151.145
2057	7	108.196	29.664	25,592.096	2,249.140	88,137.894	116,008.793
2057	8	108.234	0.000	28,178.978	2,215.159	86,806.287	117,200.424
2057	9	108.148	38.322	20,301.324	2,075.960	81,351.458	103,767.064
2057	10	108.156	1,873.455	6,214.051	1,851.085	72,539.192	82,477.783
2057	11	108.135	9,786.496	536.929	1,788.750	70,096.423	82,208.597
2057	12	108.146	22,363.154	5.998	2,177.249	85,320.700	109,867.101

COMMERCIAL ENERGY

Indiana Michigan Power Company-Indiana
Long-Term Commercial Energy Model Inputs

Year	Month	Sales	XHeat	XCool	XOther	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	apr20on	20-Jun
1998	1	342,610.35	54,868.42	0.00	351,235.53	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1998	2	292,069.61	56,039.05	0.00	315,569.66	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1998	3	298,441.30	46,155.78	0.00	313,964.83	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1998	4	297,305.43	29,212.56	1,924.81	318,035.59	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1998	5	298,594.58	6,658.82	8,609.25	317,041.61	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1998	6	328,463.66	365.84	50,478.38	330,109.93	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1998	7	361,711.87	130.01	110,985.19	327,527.19	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
1998	8	345,924.63	0.00	88,153.89	311,444.54	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
1998	9	359,449.19	0.00	76,344.11	327,661.27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00
1998	10	310,996.27	1,829.41	37,873.73	313,228.32	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00
1998	11	289,951.16	16,272.71	2,418.07	307,147.28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
1998	12	327,049.14	29,084.61	0.00	343,308.65	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1999	1	333,418.54	72,257.70	0.00	353,065.35	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1999	2	307,474.81	61,474.72	0.00	316,883.32	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1999	3	303,750.98	57,537.72	0.00	315,435.20	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1999	4	302,554.09	34,039.91	0.00	319,798.91	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1999	5	333,518.57	8,168.97	4,795.67	319,405.71	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1999	6	296,870.33	457.84	48,474.66	332,268.93	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1999	7	375,921.65	0.00	115,942.49	330,403.09	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
1999	8	364,479.06	0.00	146,153.24	314,597.38	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
1999	9	350,077.66	21.17	57,073.69	331,716.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00
1999	10	310,929.63	3,926.85	18,013.83	317,659.81	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00
1999	11	292,319.13	15,478.53	461.82	311,902.56	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
1999	12	328,041.32	34,088.02	0.00	349,280.28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2000	1	343,289.80	61,493.92	0.00	360,229.42	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2000	2	328,201.17	81,433.51	0.00	324,210.50	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2000	3	303,835.91	39,095.92	0.00	322,510.69	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2000	4	296,691.21	24,002.90	0.00	327,057.03	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2000	5	314,078.41	8,501.84	15,149.67	326,089.70	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2000	6	336,600.92	635.24	35,699.28	340,092.91	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2000	7	357,728.43	23.55	77,766.02	337,919.82	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
2000	8	355,329.40	0.00	82,293.42	321,617.67	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
2000	9	374,489.78	70.71	70,728.84	338,279.75	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00

Indiana Michigan Power Company-Indiana
Long-Term Commercial Energy Model Inputs

Year	Month	Sales	XHeat	XCool	XOther	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	apr20on	20-Jun
2000	10	323,600.10	3,793.96	16,344.57	323,178.57	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00
2000	11	306,473.58	13,191.03	2,183.56	316,440.46	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
2000	12	355,961.94	59,162.97	0.00	353,281.14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2001	1	359,812.99	87,297.73	0.00	363,081.70	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2001	2	324,432.91	65,601.54	0.00	325,368.05	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2001	3	317,878.15	52,437.74	0.00	323,084.01	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2001	4	314,642.49	34,942.02	2,992.06	326,762.56	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2001	5	323,655.75	7,001.17	16,031.94	325,356.99	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2001	6	329,421.69	755.28	26,774.94	338,234.40	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2001	7	360,151.59	131.73	78,383.55	335,592.46	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
2001	8	388,368.33	0.00	118,116.34	319,142.97	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
2001	9	371,170.04	32.94	65,778.23	335,784.23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00
2001	10	319,116.08	3,920.21	8,965.76	321,051.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00
2001	11	300,184.72	13,849.00	288.13	314,811.96	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
2001	12	328,372.18	23,247.90	0.00	351,994.57	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2002	1	350,566.33	54,198.72	0.00	362,973.01	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2002	2	316,049.42	46,286.79	0.00	326,219.78	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2002	3	310,820.37	45,671.25	0.00	324,456.33	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2002	4	319,383.04	34,736.87	5,508.65	328,951.43	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2002	5	310,857.10	11,008.54	12,960.38	328,192.66	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2002	6	341,099.91	4,116.41	31,624.08	342,023.94	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2002	7	390,064.86	0.00	124,035.06	340,053.94	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
2002	8	388,613.23	0.00	137,565.80	323,784.53	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
2002	9	390,114.51	17.61	88,470.12	341,065.76	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00
2002	10	336,752.71	3,746.39	34,433.74	326,309.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00
2002	11	306,295.81	25,366.32	2,236.04	320,120.83	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
2002	12	349,722.08	51,005.58	0.00	358,136.85	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2003	1	364,687.07	63,164.62	0.00	368,888.69	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2003	2	345,225.55	81,689.67	0.00	331,521.40	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2003	3	330,795.09	69,258.64	0.00	329,874.66	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2003	4	309,781.87	28,242.67	151.37	334,372.76	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2003	5	319,126.41	10,219.82	1,570.92	333,656.50	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2003	6	322,039.98	1,206.48	8,760.19	347,548.54	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Indiana Michigan Power Company-Indiana
Long-Term Commercial Energy Model Inputs

Year	Month	Sales	XHeat	XCool	XOther	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	apr20on	20-Jun
2003	7	368,687.04	12.50	71,636.30	345,817.87	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
2003	8	363,079.73	0.00	83,123.48	327,348.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
2003	9	392,392.43	2.51	73,437.06	354,178.45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00
2003	10	317,567.91	6,218.40	7,913.69	326,412.42	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00
2003	11	301,904.09	17,191.21	360.69	321,479.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
2003	12	348,434.29	39,351.19	55.55	363,447.56	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2004	1	364,744.40	57,511.83	0.00	376,785.29	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2004	2	349,077.22	81,256.61	0.00	336,210.86	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2004	3	327,199.02	51,908.01	0.00	334,339.66	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2004	4	320,234.49	26,121.01	1,508.94	342,642.11	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2004	5	326,916.29	7,852.76	16,833.82	338,893.26	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2004	6	363,328.99	686.56	41,606.62	353,087.96	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2004	7	374,909.98	0.00	65,214.95	348,397.62	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
2004	8	355,640.69	0.00	58,650.34	331,662.52	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
2004	9	378,746.46	0.00	52,274.35	349,107.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00
2004	10	338,487.94	3,620.65	18,296.90	334,845.24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00
2004	11	314,090.17	12,281.22	1,167.61	329,917.64	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
2004	12	351,508.91	35,767.58	83.44	371,433.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2005	1	363,418.09	62,973.79	0.00	374,889.14	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2005	2	344,770.86	71,229.37	0.00	337,281.07	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2005	3	335,779.67	56,843.11	0.00	337,660.36	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2005	4	329,337.96	30,435.59	403.85	346,309.94	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2005	5	319,755.75	12,591.44	4,730.01	336,180.64	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2005	6	364,907.44	2,096.96	36,789.20	354,671.72	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2005	7	409,181.64	0.00	118,586.91	354,550.74	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
2005	8	400,084.55	0.00	133,728.19	333,802.88	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
2005	9	399,790.21	0.00	81,941.63	347,122.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00
2005	10	364,679.92	1,729.09	38,143.20	341,836.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00
2005	11	316,067.58	15,255.45	3,091.48	332,245.83	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
2005	12	359,379.45	53,846.32	0.00	364,898.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2006	1	374,280.09	55,314.18	0.00	377,846.95	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2006	2	343,285.70	45,490.65	0.00	341,126.59	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2006	3	333,364.56	50,843.63	0.00	337,004.28	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Indiana Michigan Power Company-Indiana
Long-Term Commercial Energy Model Inputs

Year	Month	Sales	XHeat	XCool	XOther	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	apr20on	20-Jun
2006	4	315,645.76	28,654.51	423.09	333,389.23	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2006	5	327,682.19	6,120.76	818.99	344,612.34	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2006	6	364,095.45	2,362.88	36,816.57	354,029.50	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2006	7	406,662.94	0.00	85,227.55	351,512.76	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
2006	8	399,074.52	0.00	127,513.46	339,838.74	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
2006	9	395,111.08	134.83	52,980.34	352,401.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00
2006	10	338,651.39	4,659.41	4,890.29	335,185.93	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00
2006	11	333,389.65	24,314.26	446.74	341,923.33	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
2006	12	359,885.50	35,673.12	0.00	365,354.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2007	1	369,029.95	39,742.61	0.00	374,811.93	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2007	2	368,672.08	72,146.51	0.00	346,047.13	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2007	3	353,947.12	66,251.18	28.42	334,243.95	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2007	4	340,851.46	24,933.47	1,791.43	344,268.71	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2007	5	341,265.72	9,472.57	9,031.47	336,357.83	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2007	6	388,267.42	646.44	63,635.32	348,371.72	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2007	7	406,038.80	0.00	93,632.84	352,561.99	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
2007	8	409,790.28	0.00	111,226.18	339,706.78	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
2007	9	419,466.13	115.09	92,992.48	349,759.14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00
2007	10	375,985.09	1,159.84	45,712.35	337,397.73	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00
2007	11	342,904.54	14,133.62	9,697.36	336,084.71	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
2007	12	370,416.09	44,592.04	0.00	365,527.37	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2008	1	389,453.14	53,527.12	0.00	368,953.95	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2008	2	370,721.84	64,056.34	0.00	337,402.10	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2008	3	354,583.12	60,755.91	0.00	330,799.99	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2008	4	332,968.39	32,029.46	106.39	330,006.51	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2008	5	327,175.62	7,747.65	4,174.81	325,047.49	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2008	6	366,596.07	1,783.26	41,193.85	343,684.80	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2008	7	400,782.93	2.29	79,541.19	344,376.90	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
2008	8	390,932.66	0.00	100,120.43	319,839.77	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
2008	9	397,098.59	0.00	74,075.25	330,882.38	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00
2008	10	356,391.44	2,009.00	20,023.47	321,428.83	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00
2008	11	338,211.52	16,096.12	1,293.19	325,186.19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
2008	12	365,017.65	47,843.53	0.00	346,171.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Indiana Michigan Power Company-Indiana
Long-Term Commercial Energy Model Inputs

Year	Month	Sales	XHeat	XCool	XOther	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	apr20on	20-Jun
2009	1	394,538.83	60,204.99	0.00	348,551.35	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2009	2	366,825.20	70,866.57	0.00	314,143.89	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2009	3	332,585.37	42,603.32	0.00	304,664.75	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2009	4	328,150.27	21,957.50	221.62	308,741.46	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2009	5	324,226.60	8,443.57	11,054.61	305,259.76	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2009	6	350,857.01	908.45	27,789.44	312,736.33	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2009	7	386,570.33	0.00	78,433.02	320,486.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
2009	8	367,950.30	0.00	63,039.24	302,198.45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
2009	9	379,199.41	0.00	45,313.34	313,045.68	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00
2009	10	348,123.72	4,873.11	13,756.01	313,077.87	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00
2009	11	320,684.42	13,305.53	0.00	303,514.23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
2009	12	363,678.63	31,135.55	0.00	337,653.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2010	1	390,926.18	57,988.81	0.00	343,695.81	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2010	2	342,435.27	59,644.02	0.00	302,246.81	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2010	3	340,871.70	45,466.56	0.00	299,960.34	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2010	4	329,090.86	15,331.50	3,564.20	316,965.05	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2010	5	318,589.81	3,603.30	8,273.83	307,862.73	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2010	6	375,075.77	736.35	76,115.38	322,202.51	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2010	7	399,476.81	0.00	136,901.48	320,418.23	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
2010	8	402,478.91	0.00	154,153.97	310,048.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
2010	9	395,922.01	0.00	94,185.81	318,835.21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00
2010	10	379,838.48	1,701.49	27,505.69	311,640.66	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00
2010	11	277,649.07	13,130.15	2,457.93	306,823.32	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
2010	12	353,758.39	42,651.83	0.00	339,353.23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2011	1	378,609.01	61,496.42	0.00	337,101.29	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2011	2	345,121.52	66,338.96	0.00	309,788.24	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2011	3	338,340.98	45,226.22	0.00	295,525.79	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2011	4	303,703.99	26,185.06	889.81	289,129.73	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2011	5	325,502.94	8,082.34	7,263.54	311,490.33	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2011	6	369,072.07	1,128.98	65,705.82	322,415.84	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2011	7	386,329.25	0.00	121,566.29	314,193.45	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
2011	8	424,529.46	0.00	174,388.90	311,127.77	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
2011	9	379,601.74	173.07	82,049.59	314,340.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00

Indiana Michigan Power Company-Indiana
Long-Term Commercial Energy Model Inputs

Year	Month	Sales	XHeat	XCool	XOther	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	apr20on	20-Jun
2011	10	326,165.69	2,077.47	11,026.61	303,045.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00
2011	11	311,472.83	11,720.94	341.16	298,388.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
2011	12	356,457.82	27,749.83	0.00	334,573.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2012	1	362,330.73	40,864.07	0.00	329,684.33	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2012	2	329,502.49	46,702.40	0.00	294,460.29	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2012	3	327,433.34	32,971.20	2,821.09	297,137.99	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2012	4	325,983.55	8,720.14	9,105.82	309,255.17	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2012	5	325,382.51	6,573.12	11,625.09	301,377.07	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2012	6	365,095.56	218.84	65,947.09	311,107.87	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2012	7	410,627.82	20.65	159,111.53	310,161.33	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
2012	8	394,399.88	0.00	138,550.91	301,299.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
2012	9	376,476.64	141.58	68,095.94	308,408.84	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00
2012	10	323,549.61	4,720.32	10,073.97	296,775.32	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00
2012	11	316,102.21	17,499.65	986.53	299,285.53	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
2012	12	336,189.94	29,611.48	0.00	319,319.65	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2013	1	352,664.60	45,779.06	0.00	323,675.31	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2013	2	339,328.75	52,650.52	0.00	293,783.98	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2013	3	334,492.40	47,493.62	0.00	299,916.46	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2013	4	320,807.93	32,493.56	0.00	299,264.23	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2013	5	315,125.07	8,342.70	9,442.71	292,110.58	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2013	6	351,502.60	854.70	50,130.39	307,844.83	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2013	7	377,752.17	0.00	101,710.90	304,053.56	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
2013	8	364,621.96	0.00	80,205.86	295,273.14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
2013	9	381,913.28	39.64	78,738.55	303,629.67	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00
2013	10	344,515.39	1,344.87	28,807.11	296,378.84	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00
2013	11	317,239.56	16,611.61	2,567.44	295,089.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
2013	12	349,952.26	41,463.93	0.00	318,745.22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2014	1	378,861.61	56,969.47	0.00	330,136.66	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2014	2	349,751.11	70,015.26	0.00	288,646.38	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2014	3	340,598.81	60,673.35	0.00	289,341.73	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2014	4	316,409.28	31,370.29	0.00	291,917.97	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2014	5	318,113.79	7,695.81	6,665.19	300,889.68	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2014	6	350,135.74	1,561.36	51,306.61	301,732.94	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Indiana Michigan Power Company-Indiana
Long-Term Commercial Energy Model Inputs

Year	Month	Sales	XHeat	XCool	XOther	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	apr20on	20-Jun
2014	7	368,620.01	0.00	96,149.91	301,217.26	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
2014	8	355,340.62	0.00	61,755.08	292,670.93	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
2014	9	378,858.17	100.54	77,291.38	302,766.94	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00
2014	10	323,674.50	2,814.35	8,082.85	292,336.75	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00
2014	11	314,126.32	17,128.51	155.27	291,518.45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
2014	12	361,778.87	40,470.90	0.00	321,998.59	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2015	1	365,872.23	48,414.86	0.00	322,174.44	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2015	2	343,014.46	58,281.99	0.00	288,158.33	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2015	3	340,763.97	60,372.94	0.00	288,318.31	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2015	4	320,123.96	24,890.81	0.00	298,729.49	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2015	5	311,344.33	6,574.92	13,156.24	292,107.14	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2015	6	350,064.05	665.21	54,431.10	297,783.77	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2015	7	362,974.69	4.73	71,072.29	300,526.72	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
2015	8	370,345.44	0.00	99,288.42	284,425.97	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
2015	9	378,348.56	0.00	77,612.92	299,424.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00
2015	10	329,564.92	1,260.17	25,717.76	285,361.16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00
2015	11	305,843.14	8,135.72	678.44	285,520.97	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
2015	12	343,874.01	22,752.29	0.00	322,975.77	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2016	1	345,499.58	33,260.76	0.00	314,479.94	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2016	2	332,849.44	46,237.49	0.00	286,083.31	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2016	3	318,029.44	31,624.13	0.00	285,900.53	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2016	4	307,275.38	17,069.70	0.00	292,360.26	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2016	5	301,161.42	6,885.23	788.41	284,604.19	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2016	6	346,935.73	1,218.28	57,220.49	297,044.08	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2016	7	375,384.40	0.00	96,100.73	297,063.08	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
2016	8	394,392.55	0.00	142,021.77	286,896.27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
2016	9	394,550.59	0.00	106,807.51	294,719.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00
2016	10	348,511.08	416.15	41,673.19	287,547.66	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00
2016	11	307,551.27	6,829.79	7,010.39	284,683.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
2016	12	350,821.39	30,381.76	279.47	321,333.61	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2017	1	359,316.45	44,720.91	0.00	316,785.83	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2017	2	317,317.32	34,229.58	0.00	282,442.89	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2017	3	306,273.83	26,190.13	0.00	282,650.97	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Indiana Michigan Power Company-Indiana
Long-Term Commercial Energy Model Inputs

Year	Month	Sales	XHeat	XCool	XOther	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	apr20on	20-Jun
2017	4	301,815.02	18,500.37	1,782.02	286,719.27	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2017	5	297,874.56	4,828.68	11,784.33	281,055.02	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2017	6	333,525.34	946.84	45,090.00	294,676.54	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2017	7	363,971.35	0.00	98,865.72	298,085.20	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
2017	8	364,460.65	0.00	92,437.07	290,509.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
2017	9	348,084.95	0.00	44,566.89	294,537.93	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00
2017	10	340,139.59	223.24	46,886.26	290,044.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00
2017	11	300,827.57	13,329.16	5,058.06	283,048.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
2017	12	340,618.27	28,356.11	0.00	321,446.61	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2018	1	365,026.79	56,290.09	0.00	316,668.93	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2018	2	324,959.17	47,042.42	0.00	283,556.48	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2018	3	304,488.39	32,414.99	0.00	282,553.66	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2018	4	311,984.71	28,593.48	181.68	293,332.69	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2018	5	305,077.69	9,814.43	10,083.90	286,756.11	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2018	6	353,453.84	103.67	80,052.89	297,652.46	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2018	7	377,354.96	0.00	128,160.76	295,077.85	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
2018	8	367,778.07	0.00	107,510.82	287,013.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
2018	9	378,618.75	0.00	111,071.96	294,342.39	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00
2018	10	335,430.47	2,165.72	55,401.46	285,559.91	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00
2018	11	302,297.31	16,884.11	7,833.13	290,052.26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
2018	12	342,429.46	33,557.47	0.00	317,350.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2019	1	333,692.24	34,019.72	0.00	313,626.36	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2019	2	330,434.67	49,916.98	0.00	286,824.61	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2019	3	313,055.33	41,547.12	0.00	280,430.19	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2019	4	293,811.08	21,569.27	0.00	286,954.36	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2019	5	294,808.53	6,321.21	2,661.00	292,938.22	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2019	6	324,003.72	1,060.24	42,383.62	297,487.80	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2019	7	362,005.68	0.00	129,420.53	294,000.87	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
2019	8	368,361.58	0.00	122,613.97	282,851.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
2019	9	359,808.95	0.00	67,886.86	286,473.38	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00
2019	10	330,663.12	1,227.52	42,925.05	280,987.55	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00
2019	11	297,111.31	16,171.15	2,492.93	280,137.26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
2019	12	332,955.87	32,884.12	0.00	304,655.64	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Indiana Michigan Power Company-Indiana
Long-Term Commercial Energy Model Inputs

Year	Month	Sales	XHeat	XCool	XOther	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	apr20on	20-Jun
2020	1	337,666.98	32,446.52	0.00	309,554.40	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2020	2	309,778.34	37,516.30	0.00	272,151.31	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2020	3	300,794.97	35,035.48	0.00	272,352.21	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2020	4	269,227.91	18,919.49	0.00	281,398.93	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2020	5	255,258.98	10,890.94	1,581.48	275,504.48	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2020	6	298,701.74	1,845.67	52,392.32	282,005.26	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00
2020	7	348,999.95	0.00	122,109.64	280,975.04	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	0.00
2020	8	351,476.66	0.00	113,999.38	274,138.46	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0.00
2020	9	350,878.23	42.47	73,642.58	278,637.54	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00
2020	10	301,212.00	2,545.47	9,352.59	278,859.42	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	0.00
2020	11	288,134.49	11,308.62	954.07	275,407.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2020	12	314,042.70	24,535.05	376.65	301,140.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2021	1	322,715.18	36,436.89	0.00	298,865.81	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2021	2		46,847.52	0.00	272,522.69	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2021	3		37,256.53	90.88	270,340.26	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2021	4		20,657.12	1,047.59	276,102.96	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2021	5		6,622.18	7,621.53	274,500.03	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2021	6		945.95	43,980.13	284,582.46	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2021	7		10.08	100,322.67	284,433.34	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	0.00
2021	8		0.00	105,183.29	273,821.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0.00
2021	9		37.14	73,193.18	282,938.77	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00
2021	10		2,197.11	22,584.04	274,676.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	0.00
2021	11		12,439.96	2,061.71	272,962.43	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2021	12		29,174.64	26.22	300,934.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2022	1		42,124.06	0.00	303,602.75	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2022	2		47,096.59	0.00	273,503.14	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2022	3		37,456.42	91.81	271,326.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2022	4		20,748.21	1,057.33	276,846.27	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2022	5		6,646.49	7,686.75	275,036.55	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2022	6		948.82	44,328.16	284,956.56	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2022	7		10.11	101,068.87	284,672.93	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	0.00
2022	8		0.00	105,934.19	273,970.36	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0.00
2022	9		37.22	73,706.43	283,057.46	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00

Indiana Michigan Power Company-Indiana
Long-Term Commercial Energy Model Inputs

Year	Month	Sales	XHeat	XCool	XOther	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	apr20on	20-Jun
2022	10		2,201.78	22,742.17	274,788.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	0.00
2022	11		12,467.13	2,076.27	273,090.83	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2022	12		29,244.00	26.42	301,133.78	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2023	1		41,938.65	0.00	304,469.05	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2023	2		46,943.64	0.00	274,601.46	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2023	3		37,378.68	92.55	272,735.91	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2023	4		20,730.31	1,067.15	278,623.10	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2023	5		6,648.88	7,767.66	277,140.29	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2023	6		950.30	44,848.72	287,482.25	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2023	7		10.13	102,367.90	287,511.08	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	0.00
2023	8		0.00	107,404.65	276,982.64	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0.00
2023	9		37.40	74,804.14	286,455.33	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00
2023	10		2,214.26	23,103.55	278,360.33	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	0.00
2023	11		12,549.48	2,111.22	276,897.76	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2023	12		29,461.97	26.88	305,588.96	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2024	1		42,151.55	0.00	308,802.31	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2024	2		47,128.39	0.00	278,193.52	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2024	3		37,483.22	93.89	275,990.17	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2024	4		20,763.87	1,081.33	281,616.43	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2024	5		6,651.83	7,861.59	279,789.18	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2024	6		949.63	45,338.81	289,895.93	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2024	7		10.12	103,374.58	289,611.32	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	0.00
2024	8		0.00	108,349.40	278,719.26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0.00
2024	9		37.25	75,386.34	287,961.83	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00
2024	10		2,203.65	23,260.57	279,550.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	0.00
2024	11		12,477.62	2,123.57	277,820.16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2024	12		29,267.46	27.02	306,336.92	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2025	1		41,787.44	0.00	309,517.71	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2025	2		46,719.10	0.00	278,824.90	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2025	3		37,156.45	94.12	276,607.26	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2025	4		20,582.45	1,083.92	282,240.57	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2025	5		6,593.63	7,880.32	280,405.63	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2025	6		941.31	45,446.10	290,529.89	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00

Indiana Michigan Power Company-Indiana
Long-Term Commercial Energy Model Inputs

Year	Month	Sales	XHeat	XCool	XOther	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	apr20on	20-Jun
2025	7		10.03	103,616.13	290,236.06	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	0.00
2025	8		0.00	108,597.64	279,307.78	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0.00
2025	9		36.92	75,555.59	288,556.62	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00
2025	10		2,183.95	23,311.47	280,111.86	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	0.00
2025	11		12,365.32	2,128.10	278,362.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2025	12		29,002.33	27.07	306,916.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2026	1		41,402.88	0.00	309,258.19	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2026	2		46,276.61	0.00	278,515.66	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2026	3		36,794.93	94.54	276,228.38	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2026	4		20,376.84	1,088.42	281,779.95	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2026	5		6,526.10	7,911.07	279,876.57	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2026	6		931.44	45,612.32	289,911.22	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2026	7		9.92	103,972.54	289,555.15	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	0.00
2026	8		0.00	108,949.49	278,597.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0.00
2026	9		36.51	75,786.15	287,768.28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00
2026	10		2,159.37	23,378.50	279,297.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	0.00
2026	11		12,224.22	2,133.88	277,509.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2026	12		28,667.53	27.14	305,934.27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2027	1		40,952.17	0.00	308,563.33	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2027	2		45,773.36	0.00	277,892.95	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2027	3		36,395.36	94.75	275,615.15	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2027	4		20,156.20	1,090.88	281,163.29	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2027	5		6,455.66	7,929.21	279,273.81	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2027	6		921.42	45,718.55	289,297.27	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2027	7		9.81	104,219.48	288,955.26	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	0.00
2027	8		0.00	109,213.76	278,033.87	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0.00
2027	9		36.13	75,973.77	287,200.91	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00
2027	10		2,136.55	23,437.50	278,760.19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	0.00
2027	11		12,095.63	2,139.36	276,988.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2027	12		28,367.26	27.21	305,373.96	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2028	1		40,562.95	0.00	308,366.09	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2028	2		45,341.54	0.00	277,735.12	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2028	3		36,054.29	95.24	275,475.97	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00

Indiana Michigan Power Company-Indiana
Long-Term Commercial Energy Model Inputs

Year	Month	Sales	XHeat	XCool	XOther	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	apr20on	20-Jun
2028	4		19,968.20	1,096.66	281,033.79	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2028	5		6,395.63	7,971.45	279,153.52	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2028	6		912.87	45,963.25	289,179.72	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2028	7		9.72	104,777.99	288,839.72	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	0.00
2028	8		0.00	109,798.45	277,921.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0.00
2028	9		35.79	76,379.24	287,079.79	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00
2028	10		2,116.65	23,561.91	278,634.68	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	0.00
2028	11		11,982.48	2,150.64	276,852.85	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2028	12		28,100.71	27.36	305,211.98	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2029	1		40,151.59	0.00	308,362.31	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2029	2		44,876.76	0.00	277,700.96	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2029	3		35,680.60	95.89	275,410.38	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2029	4		19,759.11	1,104.03	280,936.70	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2029	5		6,327.99	8,024.16	279,027.19	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2029	6		903.12	46,262.18	289,017.63	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2029	7		9.62	105,448.86	288,648.90	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	0.00
2029	8		0.00	110,491.02	277,711.38	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0.00
2029	9		35.40	76,853.72	286,835.82	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00
2029	10		2,093.24	23,706.14	278,372.71	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	0.00
2029	11		11,848.95	2,163.62	276,569.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2029	12		27,785.29	27.52	304,874.23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2030	1		39,689.71	0.00	307,260.99	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2030	2		44,360.92	0.00	276,711.66	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2030	3		35,271.10	96.56	274,434.13	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2030	4		19,532.59	1,111.72	279,944.46	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2030	5		6,255.55	8,080.19	278,046.39	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2030	6		892.80	46,586.04	288,006.74	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2030	7		9.51	106,188.34	287,642.81	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	0.00
2030	8		0.00	111,267.00	276,746.24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0.00
2030	9		35.00	77,394.47	285,842.67	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00
2030	10		2,069.41	23,873.20	277,411.94	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	0.00
2030	11		11,714.19	2,178.89	275,617.58	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2030	12		27,469.54	27.71	303,828.23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00

Indiana Michigan Power Company-Indiana
Long-Term Commercial Energy Model Inputs

Year	Month	Sales	XHeat	XCool	XOther	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	apr20on	20-Jun
2031	1		39,291.01	0.00	306,635.46	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2031	2		43,915.74	0.00	276,151.12	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2031	3		34,917.42	96.96	273,880.43	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2031	4		19,336.97	1,116.37	279,383.21	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2031	5		6,192.97	8,114.07	277,492.08	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2031	6		883.88	46,781.84	287,435.60	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2031	7		9.41	106,636.50	287,077.37	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	0.00
2031	8		0.00	111,738.51	276,206.97	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0.00
2031	9		34.65	77,723.69	285,290.28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00
2031	10		2,048.87	23,975.21	276,881.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	0.00
2031	11		11,598.16	2,188.24	275,095.49	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2031	12		27,197.94	27.83	303,258.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2032	1		38,880.76	0.00	306,325.83	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2032	2		43,456.62	0.00	275,868.56	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2032	3		34,551.93	97.53	273,596.67	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2032	4		19,134.09	1,122.92	279,086.80	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2032	5		6,127.85	8,161.46	277,191.19	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2032	6		874.56	47,054.08	287,117.73	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2032	7		9.31	107,254.40	286,752.77	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	0.00
2032	8		0.00	112,383.12	275,887.64	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0.00
2032	9		34.28	78,170.27	284,953.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00
2032	10		2,027.08	24,112.35	276,547.57	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	0.00
2032	11		11,474.54	2,200.71	274,757.44	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2032	12		26,907.55	27.99	302,879.80	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2033	1		38,446.04	0.00	306,064.35	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2033	2		42,972.07	0.00	275,641.61	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2033	3		34,167.71	98.00	273,379.99	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2033	4		18,922.13	1,128.37	278,877.69	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2033	5		6,060.25	8,201.46	276,996.39	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2033	6		864.96	47,286.92	286,929.73	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2033	7		9.21	107,790.57	286,579.46	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	0.00
2033	8		0.00	112,950.81	275,735.26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0.00
2033	9		33.91	78,569.53	284,812.42	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00

Indiana Michigan Power Company-Indiana
Long-Term Commercial Energy Model Inputs

Year	Month	Sales	XHeat	XCool	XOther	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	apr20on	20-Jun
2033	10		2,005.24	24,236.83	276,425.35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	0.00
2033	11		11,351.57	2,212.20	274,651.74	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2033	12		26,620.60	28.14	302,779.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2034	1		38,007.87	0.00	306,129.20	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2034	2		42,483.45	0.00	275,707.42	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2034	3		33,780.14	98.66	273,452.82	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2034	4		18,708.00	1,135.94	278,959.56	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2034	5		5,991.82	8,256.71	277,084.53	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2034	6		855.21	47,606.53	287,027.29	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2034	7		9.11	108,521.32	286,682.70	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	0.00
2034	8		0.00	113,718.35	275,838.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0.00
2034	9		33.53	79,104.58	284,923.66	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00
2034	10		1,982.78	24,402.30	276,538.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	0.00
2034	11		11,224.52	2,227.32	274,766.75	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2034	12		26,322.94	28.33	302,909.42	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2035	1		37,601.87	0.00	306,498.33	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2035	2		42,030.11	0.00	276,042.92	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2035	3		33,420.02	99.38	273,788.37	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2035	4		18,508.73	1,144.25	279,304.43	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2035	5		5,928.06	8,317.21	277,430.29	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2035	6		846.12	47,955.89	287,388.52	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2035	7		9.01	109,318.92	287,046.72	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	0.00
2035	8		0.00	114,555.48	276,192.44	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0.00
2035	9		33.17	79,687.95	285,292.52	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00
2035	10		1,961.79	24,582.54	276,899.23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	0.00
2035	11		11,105.88	2,243.80	275,129.19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2035	12		26,045.00	28.54	303,312.43	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2036	1		37,177.15	0.00	307,068.83	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2036	2		41,555.82	0.00	276,559.70	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2036	3		33,043.32	100.18	274,304.54	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2036	4		18,300.16	1,153.48	279,831.86	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2036	5		5,861.25	8,384.32	277,953.76	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2036	6		836.58	48,342.77	287,930.29	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00

Indiana Michigan Power Company-Indiana
Long-Term Commercial Energy Model Inputs

Year	Month	Sales	XHeat	XCool	XOther	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	apr20on	20-Jun
2036	7		8.91	110,200.09	287,585.90	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	0.00
2036	8		0.00	115,477.74	276,708.56	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0.00
2036	9		32.80	80,328.46	285,821.95	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00
2036	10		1,939.60	24,779.80	277,409.46	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	0.00
2036	11		10,980.06	2,261.77	275,631.86	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2036	12		25,749.54	28.77	303,861.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2037	1		36,736.22	0.00	307,737.28	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2037	2		41,062.50	0.00	277,158.66	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2037	3		32,650.83	101.04	274,896.72	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2037	4		18,082.82	1,163.42	280,436.35	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2037	5		5,791.68	8,456.61	278,555.98	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2037	6		826.66	48,759.98	288,556.62	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2037	7		8.80	111,152.18	288,214.14	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	0.00
2037	8		0.00	116,477.33	277,317.57	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0.00
2037	9		32.41	81,025.08	286,455.53	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00
2037	10		1,916.71	24,995.25	278,030.64	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	0.00
2037	11		10,850.75	2,281.49	276,255.28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2037	12		25,446.81	29.02	304,555.37	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2038	1		36,297.05	0.00	308,518.99	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2038	2		40,570.67	0.00	277,856.24	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2038	3		32,258.88	101.84	275,581.13	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2038	4		17,865.29	1,172.61	281,127.51	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2038	5		5,721.86	8,523.15	279,235.20	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2038	6		816.67	49,142.33	289,252.57	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2038	7		8.70	112,021.13	288,902.49	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	0.00
2038	8		0.00	117,384.66	277,972.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0.00
2038	9		32.02	81,654.42	287,125.32	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00
2038	10		1,893.37	25,188.70	278,672.98	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	0.00
2038	11		10,718.32	2,299.09	276,886.92	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2038	12		25,135.67	29.24	305,244.81	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2039	1		35,864.32	0.00	309,328.31	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2039	2		40,087.30	0.00	278,587.24	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2039	3		31,874.73	102.76	276,307.81	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00

Indiana Michigan Power Company-Indiana
Long-Term Commercial Energy Model Inputs

Year	Month	Sales	XHeat	XCool	XOther	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	apr20on	20-Jun
2039	4		17,652.74	1,183.16	281,871.81	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2039	5		5,653.84	8,599.94	279,977.46	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2039	6		806.97	49,585.80	290,025.64	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2039	7		8.59	113,033.42	289,678.15	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	0.00
2039	8		0.00	118,447.61	278,723.67	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0.00
2039	9		31.64	82,395.29	287,906.66	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00
2039	10		1,871.01	25,417.69	279,436.27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	0.00
2039	11		10,591.97	2,320.04	277,650.71	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2039	12		24,839.83	29.51	306,092.63	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2040	1		35,444.34	0.00	309,483.45	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2040	2		39,619.16	0.00	278,736.07	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2040	3		31,503.47	103.62	276,464.02	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2040	4		17,447.50	1,193.09	282,037.11	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2040	5		5,588.18	8,672.23	280,145.51	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2040	6		797.61	50,003.35	290,203.86	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2040	7		8.49	113,986.42	289,859.15	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	0.00
2040	8		0.00	119,446.51	278,898.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0.00
2040	9		31.27	83,089.92	288,086.35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00
2040	10		1,849.32	25,631.95	279,610.46	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	0.00
2040	11		10,469.12	2,339.58	277,821.42	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2040	12		24,551.48	29.76	306,277.68	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2041	1		35,038.91	0.00	309,907.04	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2041	2		39,164.15	0.00	279,104.55	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2041	3		31,140.26	104.63	276,816.99	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2041	4		17,245.67	1,204.64	282,386.30	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2041	5		5,523.36	8,755.94	280,482.93	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2041	6		788.33	50,483.91	290,541.48	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2041	7		8.40	115,078.05	290,186.66	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	0.00
2041	8		0.00	120,586.26	279,203.89	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0.00
2041	9		30.90	83,880.38	288,393.71	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00
2041	10		1,827.56	25,875.01	279,900.21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	0.00
2041	11		10,345.66	2,361.70	278,102.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2041	12		24,261.30	30.04	306,578.81	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00

Indiana Michigan Power Company-Indiana
Long-Term Commercial Energy Model Inputs

Year	Month	Sales	XHeat	XCool	XOther	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	apr20on	20-Jun
2042	1		34,610.14	0.00	310,391.64	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2042	2		38,684.16	0.00	279,535.69	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2042	3		30,757.92	105.62	277,238.38	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2042	4		17,033.52	1,216.07	282,809.38	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2042	5		5,455.30	8,838.83	280,897.35	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2042	6		778.60	50,960.88	290,965.08	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2042	7		8.29	116,162.43	290,602.57	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	0.00
2042	8		0.00	121,720.67	279,599.74	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0.00
2042	9		30.52	84,667.61	288,796.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00
2042	10		1,804.86	26,117.30	280,284.97	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	0.00
2042	11		10,216.92	2,383.76	278,478.46	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2042	12		23,959.04	30.32	306,989.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2043	1		34,190.79	0.00	311,130.42	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2043	2		38,216.36	0.00	280,207.70	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2043	3		30,386.87	106.57	277,913.02	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2043	4		16,828.56	1,227.04	283,506.43	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2043	5		5,389.83	8,918.79	281,598.58	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2043	6		769.28	51,423.76	291,702.14	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2043	7		8.19	117,221.99	291,349.79	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	0.00
2043	8		0.00	122,835.99	280,330.21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0.00
2043	9		30.16	85,447.32	289,563.94	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00
2043	10		1,783.57	26,359.01	281,042.86	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	0.00
2043	11		10,096.87	2,405.94	279,244.80	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2043	12		23,678.59	30.60	307,848.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2044	1		33,790.43	0.00	312,175.10	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2044	2		37,769.66	0.00	281,154.47	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2044	3		30,032.32	107.76	278,857.95	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2044	4		16,632.39	1,240.76	284,473.39	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2044	5		5,327.05	9,018.61	282,562.15	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2044	6		760.33	51,999.61	292,702.11	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2044	7		8.10	118,535.31	292,350.16	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	0.00
2044	8		0.00	124,212.10	281,292.52	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0.00
2044	9		29.81	86,404.27	290,556.95	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00

Indiana Michigan Power Company-Indiana
Long-Term Commercial Energy Model Inputs

Year	Month	Sales	XHeat	XCool	XOther	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	apr20on	20-Jun
2044	10		1,762.80	26,654.13	282,005.73	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	0.00
2044	11		9,979.27	2,432.87	280,200.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2044	12		23,402.65	30.94	308,899.16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2045	1		33,395.24	0.00	313,421.09	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2045	2		37,325.68	0.00	282,259.64	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2045	3		29,677.43	108.87	279,936.57	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2045	4		16,435.00	1,253.47	285,559.04	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2045	5		5,263.53	9,110.48	283,624.35	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2045	6		751.22	52,526.58	293,787.17	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2045	7		8.00	119,730.60	293,419.30	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	0.00
2045	8		0.00	125,458.82	282,308.14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0.00
2045	9		29.45	87,267.35	291,592.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00
2045	10		1,741.36	26,919.16	282,997.61	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	0.00
2045	11		9,857.43	2,456.94	281,172.33	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2045	12		23,116.00	31.25	309,958.42	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2046	1		32,990.66	0.00	314,685.11	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2046	2		36,872.69	0.00	283,391.88	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2046	3		29,316.54	110.15	281,052.53	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2046	4		16,234.73	1,268.12	286,690.23	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2046	5		5,199.26	9,216.74	284,740.26	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2046	6		742.03	53,137.67	294,934.46	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2046	7		7.90	121,119.95	294,556.44	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	0.00
2046	8		0.00	126,910.88	283,393.80	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0.00
2046	9		29.08	88,274.37	292,703.49	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00
2046	10		1,719.82	27,228.78	284,065.69	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	0.00
2046	11		9,735.17	2,485.12	282,224.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2046	12		22,828.40	31.61	311,105.66	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2047	1		32,583.28	0.00	316,059.81	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2047	2		36,417.52	0.00	284,631.01	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2047	3		28,954.80	111.34	282,282.93	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2047	4		16,034.44	1,281.87	287,945.81	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2047	5		5,135.12	9,316.69	285,987.70	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2047	6		732.87	53,713.90	296,226.38	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00

Indiana Michigan Power Company-Indiana
Long-Term Commercial Energy Model Inputs

Year	Month	Sales	XHeat	XCool	XOther	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	apr20on	20-Jun
2047	7		7.80	122,433.40	295,846.74	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	0.00
2047	8		0.00	128,286.29	284,633.37	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0.00
2047	9		28.72	89,230.94	293,983.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00
2047	10		1,698.59	27,523.79	285,307.28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	0.00
2047	11		9,614.91	2,512.02	283,455.28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2047	12		22,546.32	31.95	312,462.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2048	1		32,183.36	0.00	317,613.39	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2048	2		35,970.17	0.00	286,027.14	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2048	3		28,598.93	112.46	283,665.69	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2048	4		15,837.13	1,294.77	289,352.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2048	5		5,071.87	9,410.34	287,381.15	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2048	6		723.84	54,253.24	297,666.64	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2048	7		7.71	123,662.05	297,283.45	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	0.00
2048	8		0.00	129,573.49	286,015.19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0.00
2048	9		28.37	90,126.17	295,410.32	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00
2048	10		1,677.64	27,799.91	286,691.95	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	0.00
2048	11		9,496.38	2,537.24	284,833.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2048	12		22,268.54	32.27	313,983.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2049	1		31,713.55	0.00	319,398.66	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2049	2		35,446.48	0.00	287,646.27	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2049	3		28,183.68	113.75	285,282.85	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2049	4		15,607.96	1,309.69	291,016.04	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2049	5		4,998.73	9,519.26	289,048.48	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2049	6		713.44	54,884.17	299,409.69	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2049	7		7.60	125,106.35	299,039.03	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	0.00
2049	8		0.00	131,093.40	287,718.66	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0.00
2049	9		27.97	91,187.77	297,184.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00
2049	10		1,653.86	28,128.81	288,428.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	0.00
2049	11		9,362.23	2,567.38	286,571.21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2049	12		21,954.91	32.65	315,912.74	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2050	1		31,260.35	0.00	321,555.19	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2050	2		34,939.92	0.00	289,588.34	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2050	3		27,780.83	115.18	287,208.07	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00

Indiana Michigan Power Company-Indiana
Long-Term Commercial Energy Model Inputs

Year	Month	Sales	XHeat	XCool	XOther	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	apr20on	20-Jun
2050	4		15,384.83	1,326.15	292,979.26	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2050	5		4,927.26	9,638.90	290,997.95	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2050	6		703.24	55,573.68	301,427.46	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2050	7		7.49	126,677.41	301,052.76	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	0.00
2050	8		0.00	132,738.68	289,654.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0.00
2050	9		27.57	92,331.77	299,181.73	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00
2050	10		1,630.17	28,481.49	290,364.75	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	0.00
2050	11		9,228.04	2,599.55	288,493.77	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2050	12		21,640.11	33.06	318,030.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2051	1		30,857.98	0.00	323,558.83	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2051	2		34,490.49	0.00	291,395.31	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2051	3		27,423.65	116.52	289,001.87	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2051	4		15,187.13	1,341.55	294,811.18	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2051	5		4,863.99	9,750.92	292,819.86	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2051	6		694.21	56,219.81	303,316.09	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2051	7		7.39	128,150.81	302,940.40	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	0.00
2051	8		0.00	134,282.87	291,470.85	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0.00
2051	9		27.21	93,406.33	301,059.71	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00
2051	10		1,609.26	28,813.03	292,188.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	0.00
2051	11		9,109.74	2,629.82	290,306.53	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2051	12		21,362.76	33.45	320,029.68	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2052	1		30,461.42	0.00	325,623.10	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2052	2		34,047.55	0.00	293,256.93	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2052	3		27,071.62	117.88	290,849.90	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2052	4		14,992.28	1,357.16	296,698.44	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2052	5		4,801.62	9,864.45	294,696.78	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2052	6		685.31	56,874.65	305,261.74	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2052	7		7.30	129,644.06	304,885.02	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	0.00
2052	8		0.00	135,847.87	293,342.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0.00
2052	9		26.86	94,495.39	302,994.38	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00
2052	10		1,588.66	29,149.04	294,066.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	0.00
2052	11		8,993.14	2,660.50	292,174.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2052	12		21,089.40	33.84	322,089.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00

Indiana Michigan Power Company-Indiana
Long-Term Commercial Energy Model Inputs

Year	Month	Sales	XHeat	XCool	XOther	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	apr20on	20-Jun
2053	1		30,070.58	0.00	327,748.66	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2053	2		33,610.99	0.00	295,173.79	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2053	3		26,724.66	119.25	292,752.75	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2053	4		14,800.24	1,372.98	298,641.67	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2053	5		4,740.15	9,979.51	296,629.32	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2053	6		676.54	57,538.30	307,265.05	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2053	7		7.20	131,157.43	306,887.26	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	0.00
2053	8		0.00	137,433.98	295,269.63	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0.00
2053	9		26.52	95,599.14	304,986.37	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00
2053	10		1,568.35	29,489.59	296,000.55	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	0.00
2053	11		8,878.22	2,691.60	294,096.81	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2053	12		20,819.98	34.23	324,210.16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2054	1		29,685.35	0.00	329,936.22	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2054	2		33,180.70	0.00	297,146.52	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2054	3		26,382.68	120.64	294,711.05	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2054	4		14,610.95	1,389.01	300,641.51	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2054	5		4,679.57	10,096.12	298,618.12	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2054	6		667.90	58,210.88	309,326.66	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2054	7		7.11	132,691.20	308,947.78	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	0.00
2054	8		0.00	139,041.49	297,252.86	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0.00
2054	9		26.18	96,717.79	307,036.34	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00
2054	10		1,548.34	29,834.74	297,990.93	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	0.00
2054	11		8,764.96	2,723.11	296,075.58	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2054	12		20,554.43	34.64	326,392.64	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2055	1		29,305.66	0.00	332,186.49	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2055	2		32,756.58	0.00	299,175.77	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2055	3		26,045.61	122.05	296,725.44	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2055	4		14,424.39	1,405.26	302,698.61	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2055	5		4,619.85	10,214.29	300,663.84	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2055	6		659.38	58,892.54	311,447.27	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2055	7		7.02	134,245.65	311,067.25	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	0.00
2055	8		0.00	140,670.69	299,292.86	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0.00
2055	9		25.85	97,851.54	309,144.97	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00

Indiana Michigan Power Company-Indiana
Long-Term Commercial Energy Model Inputs

Year	Month	Sales	XHeat	XCool	XOther	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	apr20on	20-Jun
2055	10		1,528.61	30,184.56	300,038.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	0.00
2055	11		8,653.31	2,755.05	298,110.97	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2055	12		20,292.68	35.04	328,637.56	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2056	1		28,931.40	0.00	334,500.21	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2056	2		32,338.53	0.00	301,262.21	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2056	3		25,713.37	123.48	298,796.58	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2056	4		14,240.49	1,421.73	304,813.64	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2056	5		4,560.99	10,334.06	302,767.14	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2056	6		650.98	59,583.38	313,627.56	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2056	7		6.93	135,821.07	313,246.38	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	0.00
2056	8		0.00	142,321.88	301,390.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0.00
2056	9		25.52	99,000.60	311,312.95	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00
2056	10		1,509.16	30,539.10	302,143.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	0.00
2056	11		8,543.26	2,787.42	300,203.65	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2056	12		20,034.68	35.45	330,945.67	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2057	1		28,562.49	0.00	336,878.12	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2057	2		31,926.46	0.00	303,406.51	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2057	3		25,385.87	124.93	300,925.16	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2057	4		14,059.21	1,438.41	306,987.30	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2057	5		4,502.97	10,455.44	304,928.71	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2057	6		642.70	60,283.53	315,868.26	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
2057	7		6.84	137,417.74	315,485.87	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	0.00
2057	8		0.00	143,995.37	303,545.86	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0.00
2057	9		25.20	100,165.18	313,541.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00
2057	10		1,490.00	30,898.44	304,306.62	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	0.00
2057	11		8,434.79	2,820.23	302,354.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2057	12		19,780.37	35.87	333,317.72	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00

Indiana Michigan Power Company-Indiana
Long-Term Commercial Energy Model Inputs

Year	Month	Jun-99	Mar09on	May-99	D07on	jul15on	D00on	10-Nov	Sep11on	20-May	feb17on	20-Apr	XMissing	YMissing
1998	1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
1998	2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
1998	3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
1998	4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
1998	5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
1998	6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
1998	7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
1998	8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
1998	9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
1998	10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
1998	11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
1998	12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
1999	1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
1999	2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
1999	3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
1999	4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
1999	5	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
1999	6	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
1999	7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
1999	8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
1999	9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
1999	10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
1999	11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
1999	12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
2000	1	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0	0
2000	2	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0	0
2000	3	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0	0
2000	4	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0	0
2000	5	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0	0
2000	6	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0	0
2000	7	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0	0
2000	8	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0	0
2000	9	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0	0

Indiana Michigan Power Company-Indiana
Long-Term Commercial Energy Model Inputs

Year	Month	Jun-99	Mar09on	May-99	D07on	jul15on	D00on	10-Nov	Sep11on	20-May	feb17on	20-Apr	XMissing	YMissing
2000	10	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0	0
2000	11	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0	0
2000	12	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0	0
2001	1	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0	0
2001	2	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0	0
2001	3	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0	0
2001	4	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0	0
2001	5	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0	0
2001	6	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0	0
2001	7	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0	0
2001	8	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0	0
2001	9	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0	0
2001	10	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0	0
2001	11	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0	0
2001	12	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0	0
2002	1	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0	0
2002	2	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0	0
2002	3	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0	0
2002	4	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0	0
2002	5	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0	0
2002	6	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0	0
2002	7	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0	0
2002	8	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0	0
2002	9	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0	0
2002	10	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0	0
2002	11	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0	0
2002	12	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0	0
2003	1	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0	0
2003	2	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0	0
2003	3	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0	0
2003	4	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0	0
2003	5	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0	0
2003	6	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0	0

Indiana Michigan Power Company-Indiana
Long-Term Commercial Energy Model Inputs

Year	Month	Jun-99	Mar09on	May-99	D07on	jul15on	D00on	10-Nov	Sep11on	20-May	feb17on	20-Apr	XMissing	YMissing
2003	7	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0	0
2003	8	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0	0
2003	9	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0	0
2003	10	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0	0
2003	11	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0	0
2003	12	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0	0
2004	1	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0	0
2004	2	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0	0
2004	3	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0	0
2004	4	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0	0
2004	5	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0	0
2004	6	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0	0
2004	7	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0	0
2004	8	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0	0
2004	9	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0	0
2004	10	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0	0
2004	11	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0	0
2004	12	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0	0
2005	1	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0	0
2005	2	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0	0
2005	3	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0	0
2005	4	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0	0
2005	5	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0	0
2005	6	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0	0
2005	7	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0	0
2005	8	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0	0
2005	9	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0	0
2005	10	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0	0
2005	11	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0	0
2005	12	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0	0
2006	1	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0	0
2006	2	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0	0
2006	3	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0	0

Indiana Michigan Power Company-Indiana
Long-Term Commercial Energy Model Inputs

Year	Month	Jun-99	Mar09on	May-99	D07on	jul15on	D00on	10-Nov	Sep11on	20-May	feb17on	20-Apr	XMissing	YMissing
2006	4	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0	0
2006	5	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0	0
2006	6	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0	0
2006	7	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0	0
2006	8	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0	0
2006	9	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0	0
2006	10	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0	0
2006	11	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0	0
2006	12	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0	0
2007	1	0.00	0.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0	0
2007	2	0.00	0.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0	0
2007	3	0.00	0.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0	0
2007	4	0.00	0.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0	0
2007	5	0.00	0.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0	0
2007	6	0.00	0.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0	0
2007	7	0.00	0.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0	0
2007	8	0.00	0.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0	0
2007	9	0.00	0.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0	0
2007	10	0.00	0.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0	0
2007	11	0.00	0.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0	0
2007	12	0.00	0.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0	0
2008	1	0.00	0.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0	0
2008	2	0.00	0.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0	0
2008	3	0.00	0.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0	0
2008	4	0.00	0.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0	0
2008	5	0.00	0.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0	0
2008	6	0.00	0.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0	0
2008	7	0.00	0.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0	0
2008	8	0.00	0.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0	0
2008	9	0.00	0.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0	0
2008	10	0.00	0.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0	0
2008	11	0.00	0.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0	0
2008	12	0.00	0.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0	0

Indiana Michigan Power Company-Indiana
Long-Term Commercial Energy Model Inputs

Year	Month	Jun-99	Mar09on	May-99	D07on	jul15on	D00on	10-Nov	Sep11on	20-May	feb17on	20-Apr	XMissing	YMissing
2009	1	0.00	0.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0	0
2009	2	0.00	0.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0	0
2009	3	0.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0	0
2009	4	0.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0	0
2009	5	0.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0	0
2009	6	0.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0	0
2009	7	0.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0	0
2009	8	0.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0	0
2009	9	0.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0	0
2009	10	0.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0	0
2009	11	0.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0	0
2009	12	0.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0	0
2010	1	0.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0	0
2010	2	0.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0	0
2010	3	0.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0	0
2010	4	0.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0	0
2010	5	0.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0	0
2010	6	0.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0	0
2010	7	0.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0	0
2010	8	0.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0	0
2010	9	0.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0	0
2010	10	0.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0	0
2010	11	0.00	1.00	0.00	1.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0	0
2010	12	0.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0	0
2011	1	0.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0	0
2011	2	0.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0	0
2011	3	0.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0	0
2011	4	0.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0	0
2011	5	0.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0	0
2011	6	0.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0	0
2011	7	0.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0	0
2011	8	0.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0	0
2011	9	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	0	0

Indiana Michigan Power Company-Indiana
Long-Term Commercial Energy Model Inputs

Year	Month	Jun-99	Mar09on	May-99	D07on	jul15on	D00on	10-Nov	Sep11on	20-May	feb17on	20-Apr	XMissing	YMissing
2011	10	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	0	0
2011	11	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	0	0
2011	12	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	0	0
2012	1	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	0	0
2012	2	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	0	0
2012	3	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	0	0
2012	4	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	0	0
2012	5	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	0	0
2012	6	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	0	0
2012	7	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	0	0
2012	8	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	0	0
2012	9	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	0	0
2012	10	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	0	0
2012	11	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	0	0
2012	12	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	0	0
2013	1	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	0	0
2013	2	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	0	0
2013	3	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	0	0
2013	4	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	0	0
2013	5	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	0	0
2013	6	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	0	0
2013	7	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	0	0
2013	8	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	0	0
2013	9	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	0	0
2013	10	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	0	0
2013	11	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	0	0
2013	12	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	0	0
2014	1	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	0	0
2014	2	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	0	0
2014	3	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	0	0
2014	4	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	0	0
2014	5	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	0	0
2014	6	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	0	0

Indiana Michigan Power Company-Indiana
Long-Term Commercial Energy Model Inputs

Year	Month	Jun-99	Mar09on	May-99	D07on	jul15on	D00on	10-Nov	Sep11on	20-May	feb17on	20-Apr	XMissing	YMissing
2014	7	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	0	0
2014	8	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	0	0
2014	9	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	0	0
2014	10	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	0	0
2014	11	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	0	0
2014	12	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	0	0
2015	1	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	0	0
2015	2	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	0	0
2015	3	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	0	0
2015	4	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	0	0
2015	5	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	0	0
2015	6	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	0	0
2015	7	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00	0.00	0	0
2015	8	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00	0.00	0	0
2015	9	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00	0.00	0	0
2015	10	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00	0.00	0	0
2015	11	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00	0.00	0	0
2015	12	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00	0.00	0	0
2016	1	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00	0.00	0	0
2016	2	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00	0.00	0	0
2016	3	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00	0.00	0	0
2016	4	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00	0.00	0	0
2016	5	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00	0.00	0	0
2016	6	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00	0.00	0	0
2016	7	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00	0.00	0	0
2016	8	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00	0.00	0	0
2016	9	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00	0.00	0	0
2016	10	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00	0.00	0	0
2016	11	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00	0.00	0	0
2016	12	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00	0.00	0	0
2017	1	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00	0.00	0	0
2017	2	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	0
2017	3	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	0

Indiana Michigan Power Company-Indiana
Long-Term Commercial Energy Model Inputs

Year	Month	Jun-99	Mar09on	May-99	D07on	jul15on	D00on	10-Nov	Sep11on	20-May	feb17on	20-Apr	XMissing	YMissing
2017	4	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	0
2017	5	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	0
2017	6	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	0
2017	7	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	0
2017	8	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	0
2017	9	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	0
2017	10	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	0
2017	11	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	0
2017	12	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	0
2018	1	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	0
2018	2	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	0
2018	3	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	0
2018	4	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	0
2018	5	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	0
2018	6	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	0
2018	7	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	0
2018	8	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	0
2018	9	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	0
2018	10	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	0
2018	11	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	0
2018	12	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	0
2019	1	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	0
2019	2	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	0
2019	3	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	0
2019	4	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	0
2019	5	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	0
2019	6	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	0
2019	7	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	0
2019	8	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	0
2019	9	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	0
2019	10	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	0
2019	11	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	0
2019	12	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	0

Indiana Michigan Power Company-Indiana
Long-Term Commercial Energy Model Inputs

Year	Month	Jun-99	Mar09on	May-99	D07on	jul15on	D00on	10-Nov	Sep11on	20-May	feb17on	20-Apr	XMissing	YMissing
2020	1	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	0
2020	2	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	0
2020	3	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	0
2020	4	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	1.00	0	0
2020	5	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	0	0
2020	6	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	0
2020	7	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	0
2020	8	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	0
2020	9	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	0
2020	10	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	0
2020	11	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	0
2020	12	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	0
2021	1	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	0
2021	2	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2021	3	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2021	4	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2021	5	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2021	6	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2021	7	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2021	8	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2021	9	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2021	10	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2021	11	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2021	12	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2022	1	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2022	2	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2022	3	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2022	4	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2022	5	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2022	6	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2022	7	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2022	8	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2022	9	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1

Indiana Michigan Power Company-Indiana
Long-Term Commercial Energy Model Inputs

Year	Month	Jun-99	Mar09on	May-99	D07on	jul15on	D00on	10-Nov	Sep11on	20-May	feb17on	20-Apr	XMissing	YMissing
2022	10	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2022	11	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2022	12	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2023	1	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2023	2	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2023	3	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2023	4	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2023	5	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2023	6	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2023	7	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2023	8	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2023	9	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2023	10	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2023	11	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2023	12	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2024	1	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2024	2	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2024	3	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2024	4	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2024	5	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2024	6	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2024	7	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2024	8	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2024	9	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2024	10	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2024	11	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2024	12	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2025	1	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2025	2	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2025	3	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2025	4	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2025	5	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2025	6	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1

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Year	Month	Jun-99	Mar09on	May-99	D07on	jul15on	D00on	10-Nov	Sep11on	20-May	feb17on	20-Apr	XMissing	YMissing
2025	7	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2025	8	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2025	9	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2025	10	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2025	11	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2025	12	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2026	1	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2026	2	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2026	3	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2026	4	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2026	5	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2026	6	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2026	7	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2026	8	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2026	9	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2026	10	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2026	11	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2026	12	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2027	1	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2027	2	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2027	3	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2027	4	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2027	5	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2027	6	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2027	7	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2027	8	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2027	9	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2027	10	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2027	11	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2027	12	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2028	1	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2028	2	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2028	3	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1

Indiana Michigan Power Company-Indiana
Long-Term Commercial Energy Model Inputs

Year	Month	Jun-99	Mar09on	May-99	D07on	jul15on	D00on	10-Nov	Sep11on	20-May	feb17on	20-Apr	XMissing	YMissing
2028	4	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2028	5	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2028	6	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2028	7	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2028	8	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2028	9	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2028	10	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2028	11	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2028	12	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2029	1	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2029	2	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2029	3	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2029	4	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2029	5	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2029	6	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2029	7	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2029	8	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2029	9	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2029	10	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2029	11	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2029	12	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2030	1	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2030	2	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2030	3	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2030	4	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2030	5	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2030	6	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2030	7	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2030	8	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2030	9	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2030	10	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2030	11	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2030	12	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1

Indiana Michigan Power Company-Indiana
Long-Term Commercial Energy Model Inputs

Year	Month	Jun-99	Mar09on	May-99	D07on	jul15on	D00on	10-Nov	Sep11on	20-May	feb17on	20-Apr	XMissing	YMissing
2031	1	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2031	2	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2031	3	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2031	4	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2031	5	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2031	6	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2031	7	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2031	8	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2031	9	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2031	10	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2031	11	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2031	12	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2032	1	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2032	2	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2032	3	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2032	4	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2032	5	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2032	6	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2032	7	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2032	8	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2032	9	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2032	10	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2032	11	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2032	12	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2033	1	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2033	2	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2033	3	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2033	4	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2033	5	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2033	6	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2033	7	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2033	8	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2033	9	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1

Indiana Michigan Power Company-Indiana
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Year	Month	Jun-99	Mar09on	May-99	D07on	jul15on	D00on	10-Nov	Sep11on	20-May	feb17on	20-Apr	XMissing	YMissing
2033	10	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2033	11	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2033	12	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2034	1	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2034	2	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2034	3	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2034	4	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2034	5	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2034	6	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2034	7	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2034	8	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2034	9	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2034	10	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2034	11	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2034	12	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2035	1	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2035	2	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2035	3	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2035	4	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2035	5	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2035	6	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2035	7	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2035	8	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2035	9	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2035	10	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2035	11	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2035	12	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2036	1	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2036	2	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2036	3	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2036	4	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2036	5	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2036	6	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1

Indiana Michigan Power Company-Indiana
Long-Term Commercial Energy Model Inputs

Year	Month	Jun-99	Mar09on	May-99	D07on	jul15on	D00on	10-Nov	Sep11on	20-May	feb17on	20-Apr	XMissing	YMissing
2036	7	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2036	8	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2036	9	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2036	10	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2036	11	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2036	12	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2037	1	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2037	2	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2037	3	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2037	4	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2037	5	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2037	6	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2037	7	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2037	8	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2037	9	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2037	10	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2037	11	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2037	12	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2038	1	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2038	2	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2038	3	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2038	4	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2038	5	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2038	6	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2038	7	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2038	8	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2038	9	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2038	10	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2038	11	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2038	12	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2039	1	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2039	2	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2039	3	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1

Indiana Michigan Power Company-Indiana
Long-Term Commercial Energy Model Inputs

Year	Month	Jun-99	Mar09on	May-99	D07on	jul15on	D00on	10-Nov	Sep11on	20-May	feb17on	20-Apr	XMissing	YMissing
2039	4	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2039	5	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2039	6	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2039	7	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2039	8	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2039	9	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2039	10	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2039	11	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2039	12	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2040	1	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2040	2	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2040	3	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2040	4	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2040	5	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2040	6	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2040	7	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2040	8	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2040	9	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2040	10	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2040	11	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2040	12	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2041	1	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2041	2	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2041	3	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2041	4	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2041	5	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2041	6	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2041	7	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2041	8	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2041	9	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2041	10	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2041	11	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2041	12	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1

Indiana Michigan Power Company-Indiana
Long-Term Commercial Energy Model Inputs

Year	Month	Jun-99	Mar09on	May-99	D07on	jul15on	D00on	10-Nov	Sep11on	20-May	feb17on	20-Apr	XMissing	YMissing
2042	1	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2042	2	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2042	3	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2042	4	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2042	5	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2042	6	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2042	7	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2042	8	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2042	9	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2042	10	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2042	11	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2042	12	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2043	1	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2043	2	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2043	3	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2043	4	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2043	5	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2043	6	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2043	7	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2043	8	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2043	9	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2043	10	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2043	11	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2043	12	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2044	1	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2044	2	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2044	3	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2044	4	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2044	5	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2044	6	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2044	7	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2044	8	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2044	9	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1

Indiana Michigan Power Company-Indiana
Long-Term Commercial Energy Model Inputs

Year	Month	Jun-99	Mar09on	May-99	D07on	jul15on	D00on	10-Nov	Sep11on	20-May	feb17on	20-Apr	XMissing	YMissing
2044	10	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2044	11	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2044	12	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2045	1	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2045	2	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2045	3	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2045	4	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2045	5	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2045	6	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2045	7	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2045	8	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2045	9	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2045	10	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2045	11	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2045	12	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2046	1	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2046	2	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2046	3	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2046	4	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2046	5	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2046	6	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2046	7	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2046	8	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2046	9	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2046	10	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2046	11	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2046	12	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2047	1	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2047	2	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2047	3	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2047	4	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2047	5	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2047	6	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1

Indiana Michigan Power Company-Indiana
Long-Term Commercial Energy Model Inputs

Year	Month	Jun-99	Mar09on	May-99	D07on	jul15on	D00on	10-Nov	Sep11on	20-May	feb17on	20-Apr	XMissing	YMissing
2047	7	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2047	8	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2047	9	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2047	10	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2047	11	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2047	12	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2048	1	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2048	2	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2048	3	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2048	4	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2048	5	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2048	6	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2048	7	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2048	8	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2048	9	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2048	10	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2048	11	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2048	12	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2049	1	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2049	2	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2049	3	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2049	4	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2049	5	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2049	6	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2049	7	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2049	8	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2049	9	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2049	10	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2049	11	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2049	12	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2050	1	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2050	2	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2050	3	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1

Indiana Michigan Power Company-Indiana
Long-Term Commercial Energy Model Inputs

Year	Month	Jun-99	Mar09on	May-99	D07on	jul15on	D00on	10-Nov	Sep11on	20-May	feb17on	20-Apr	XMissing	YMissing
2050	4	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2050	5	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2050	6	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2050	7	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2050	8	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2050	9	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2050	10	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2050	11	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2050	12	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2051	1	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2051	2	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2051	3	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2051	4	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2051	5	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2051	6	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2051	7	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2051	8	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2051	9	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2051	10	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2051	11	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2051	12	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2052	1	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2052	2	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2052	3	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2052	4	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2052	5	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2052	6	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2052	7	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2052	8	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2052	9	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2052	10	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2052	11	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2052	12	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1

Indiana Michigan Power Company-Indiana
Long-Term Commercial Energy Model Inputs

Year	Month	Jun-99	Mar09on	May-99	D07on	jul15on	D00on	10-Nov	Sep11on	20-May	feb17on	20-Apr	XMissing	YMissing
2053	1	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2053	2	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2053	3	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2053	4	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2053	5	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2053	6	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2053	7	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2053	8	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2053	9	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2053	10	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2053	11	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2053	12	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2054	1	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2054	2	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2054	3	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2054	4	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2054	5	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2054	6	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2054	7	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2054	8	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2054	9	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2054	10	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2054	11	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2054	12	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2055	1	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2055	2	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2055	3	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2055	4	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2055	5	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2055	6	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2055	7	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2055	8	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2055	9	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1

Indiana Michigan Power Company-Indiana
Long-Term Commercial Energy Model Inputs

Year	Month	Jun-99	Mar09on	May-99	D07on	jul15on	D00on	10-Nov	Sep11on	20-May	feb17on	20-Apr	XMissing	YMissing
2055	10	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2055	11	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2055	12	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2056	1	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2056	2	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2056	3	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2056	4	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2056	5	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2056	6	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2056	7	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2056	8	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2056	9	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2056	10	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2056	11	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2056	12	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2057	1	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2057	2	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2057	3	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2057	4	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2057	5	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2057	6	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2057	7	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2057	8	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2057	9	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2057	10	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2057	11	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1
2057	12	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0	1

Indiana Michigan Power Company-Indiana
Long-Term Commercial Energy Model Coefficients

Variable	Coefficient	StdErr	T-Stat	P-Value	Definition
CONST	39877.707	25086.544	1.590	11.32%	Constant term
CommercialVars.XHeat	0.316	0.065	4.866	0.00%	Commercial Heating Component
CommercialVars.XCool	0.448	0.031	14.271	0.00%	Commercial Cooling Component
CommercialVars.XOther	0.792	0.072	11.030	0.00%	Commercial Other Component
BinaryVars.Jan	3712.132	2341.324	1.585	11.41%	January
BinaryVars.Feb	3620.646	3374.858	1.073	28.44%	February
BinaryVars.Mar	-2076.327	3203.066	-0.648	51.74%	March
BinaryVars.Apr	-10190.809	2950.803	-3.454	0.07%	April
BinaryVars.May	-6304.366	3556.122	-1.773	7.75%	May
BinaryVars.Jun	3969.802	3781.882	1.050	29.49%	June
BinaryVars.Jul	11195.219	4831.175	2.317	2.13%	July
BinaryVars.Aug	16304.095	5374.555	3.034	0.27%	August
BinaryVars.Sep	25016.748	4279.405	5.846	0.00%	September
BinaryVars.Oct	11189.221	3839.885	2.914	0.39%	October
BinaryVars.Nov	-5264.977	3456.983	-1.523	12.90%	November
BinaryVars.apr20on	-7928.854	3065.045	-2.587	1.02%	Binary Variable-April 2020 On
BinaryVars.jun20	-20325.868	7776.514	-2.614	0.95%	Binary Variable-June 2020
BinaryVars.Jun99	-32131.245	7421.058	-4.330	0.00%	Binary Variable-June 1999
BinaryVars.Mar09on	7069.005	2671.818	2.646	0.87%	Binary Variable-March 2009 On
BinaryVars.May99	42109.032	7420.412	5.675	0.00%	Binary Variable-May 1999
BinaryVars.D07on	23727.418	1599.044	14.839	0.00%	Binary Variable-2007 On
BinaryVars.jul15on	1518.231	2061.465	0.736	46.21%	Binary Variable-2015 On
BinaryVars.D00on	11816.418	2058.512	5.740	0.00%	Binary Variable-2000 On
BinaryVars.Nov10	-47961.220	7382.735	-6.496	0.00%	Binary Variable-November 2010
BinaryVars.Sep11on	-15.258	1869.406	-0.008	99.35%	Binary Variable-September 2011 On
BinaryVars.may20	-28446.083	7787.916	-3.653	0.03%	Binary Variable-May 2020
BinaryVars.feb17on	-8522.315	2011.891	-4.236	0.00%	Binary Variable-February 2017 On
BinaryVars.apr20	-17087.963	7770.535	-2.199	2.88%	Binary Variable-April 2020

Indiana Michigan Power Company-Indiana
Long-Term Commercial Energy Model Statistics

Model Statistics	
Iterations	1
Adjusted Observations	277
Deg. of Freedom for Error	249
R-Squared	0.952
Adjusted R-Squared	0.947
AIC	17.830
BIC	18.196
F-Statistic	184.588
Prob (F-Statistic)	0.0000
Log-Likelihood	-2,834.49
Model Sum of Squares	250,888,590,349.63
Sum of Squared Errors	12,534,698,056.76
Mean Squared Error	50,340,152.84
Std. Error of Regression	7,095.08
Mean Abs. Dev. (MAD)	4,929.19
Mean Abs. % Err. (MAPE)	1.43%
Durbin-Watson Statistic	1.340
Durbin-H Statistic	#NA
Ljung-Box Statistic	102.08
Prob (Ljung-Box)	0.0000
Skewness	0.403
Kurtosis	4.719
Jarque-Bera	41.623
Prob (Jarque-Bera)	0.0000

Forecast Statistics	
Forecast Observations	0
Mean Abs. Dev. (MAD)	0.00
Mean Abs. % Err. (MAPE)	0.00%
Avg. Forecast Error	0.00
Mean % Error	0.00%
Root Mean-Square Error	0.00
Theil's Inequality Coefficient	0.0000
-- Bias Proportion	0.00%
-- Variance Proportion	0.00%
-- Covariance Proportion	0.00%

Indiana Michigan Power Company-Indiana
Long-Term Commercial Energy Model Output

Year	Month	Pred	CONST	XHeat	XCool	XOther	Jan	Feb	Mar	Apr	May
1998	1	339,243.701	39,877.707	17,320.583	0.000	278,333.279	3,712.132	0.000	0.000	0.000	0.000
1998	2	311,258.664	39,877.707	17,690.119	0.000	250,070.193	0.000	3,620.646	0.000	0.000	0.000
1998	3	301,170.060	39,877.707	14,570.219	0.000	248,798.462	0.000	0.000	-2,076.327	0.000	0.000
1998	4	291,794.767	39,877.707	9,221.672	861.898	252,024.299	0.000	0.000	0.000	-10,190.809	0.000
1998	5	290,767.072	39,877.707	2,102.022	3,855.078	251,236.631	0.000	0.000	0.000	0.000	-6,304.366
1998	6	328,158.877	39,877.707	115.486	22,603.386	261,592.497	0.000	0.000	0.000	0.000	0.000
1998	7	360,357.134	39,877.707	41.042	49,697.341	259,545.825	0.000	0.000	0.000	0.000	0.000
1998	8	342,456.944	39,877.707	0.000	39,473.860	246,801.282	0.000	0.000	0.000	0.000	0.000
1998	9	358,732.166	39,877.707	0.000	34,185.635	259,652.077	0.000	0.000	0.000	0.000	0.000
1998	10	316,818.478	39,877.707	577.499	16,959.232	248,214.819	0.000	0.000	0.000	0.000	0.000
1998	11	284,228.347	39,877.707	5,136.886	1,082.770	243,395.962	0.000	0.000	0.000	0.000	0.000
1998	12	321,110.680	39,877.707	9,181.279	0.000	272,051.694	0.000	0.000	0.000	0.000	0.000
1999	1	346,183.084	39,877.707	22,809.942	0.000	279,783.304	3,712.132	0.000	0.000	0.000	0.000
1999	2	314,015.568	39,877.707	19,406.025	0.000	251,111.191	0.000	3,620.646	0.000	0.000	0.000
1999	3	305,928.235	39,877.707	18,163.212	0.000	249,963.644	0.000	0.000	-2,076.327	0.000	0.000
1999	4	293,854.064	39,877.707	10,745.545	0.000	253,421.621	0.000	0.000	0.000	-10,190.809	0.000
1999	5	333,518.570	39,877.707	2,578.739	2,147.422	253,110.037	0.000	0.000	0.000	0.000	-6,304.366
1999	6	296,870.325	39,877.707	144.530	21,706.155	263,303.377	0.000	0.000	0.000	0.000	0.000
1999	7	364,814.869	39,877.707	0.000	51,917.140	261,824.803	0.000	0.000	0.000	0.000	0.000
1999	8	370,926.541	39,877.707	0.000	65,445.017	249,299.722	0.000	0.000	0.000	0.000	0.000
1999	9	353,323.206	39,877.707	6.682	25,556.658	262,865.411	0.000	0.000	0.000	0.000	0.000
1999	10	312,099.349	39,877.707	1,239.607	8,066.297	251,726.517	0.000	0.000	0.000	0.000	0.000
1999	11	286,869.945	39,877.707	4,886.182	206.797	247,164.237	0.000	0.000	0.000	0.000	0.000
1999	12	327,422.295	39,877.707	10,760.733	0.000	276,783.856	0.000	0.000	0.000	0.000	0.000
2000	1	360,278.748	39,877.707	19,412.087	0.000	285,460.404	3,712.132	0.000	0.000	0.000	0.000
2000	2	337,938.831	39,877.707	25,706.513	0.000	256,917.547	0.000	3,620.646	0.000	0.000	0.000
2000	3	317,529.946	39,877.707	12,341.600	0.000	255,570.549	0.000	0.000	-2,076.327	0.000	0.000
2000	4	308,253.682	39,877.707	7,577.112	0.000	259,173.255	0.000	0.000	0.000	-10,190.809	0.000
2000	5	313,264.055	39,877.707	2,683.817	6,783.773	258,406.706	0.000	0.000	0.000	0.000	-6,304.366
2000	6	341,353.422	39,877.707	200.529	15,985.552	269,503.414	0.000	0.000	0.000	0.000	0.000
2000	7	365,500.492	39,877.707	7.434	34,822.342	267,781.371	0.000	0.000	0.000	0.000	0.000
2000	8	359,710.744	39,877.707	0.000	36,849.639	254,862.885	0.000	0.000	0.000	0.000	0.000
2000	9	376,470.997	39,877.707	22.321	31,671.208	268,066.595	0.000	0.000	0.000	0.000	0.000

Indiana Michigan Power Company-Indiana
Long-Term Commercial Energy Model Output

Year	Month	Pred	CONST	XHeat	XCool	XOther	Jan	Feb	Mar	Apr	May
2000	10	327,499.640	39,877.707	1,197.658	7,318.828	256,099.807	0.000	0.000	0.000	0.000	0.000
2000	11	302,331.237	39,877.707	4,164.077	977.761	250,760.251	0.000	0.000	0.000	0.000	0.000
2000	12	350,324.690	39,877.707	18,676.263	0.000	279,954.302	0.000	0.000	0.000	0.000	0.000
2001	1	370,684.622	39,877.707	27,557.700	0.000	287,720.665	3,712.132	0.000	0.000	0.000	0.000
2001	2	333,858.361	39,877.707	20,708.757	0.000	257,834.834	0.000	3,620.646	0.000	0.000	0.000
2001	3	322,195.944	39,877.707	16,553.277	0.000	256,024.869	0.000	0.000	-2,076.327	0.000	0.000
2001	4	312,813.334	39,877.707	11,030.318	1,339.793	258,939.907	0.000	0.000	0.000	-10,190.809	0.000
2001	5	312,604.763	39,877.707	2,210.094	7,178.837	257,826.072	0.000	0.000	0.000	0.000	-6,304.366
2001	6	335,922.381	39,877.707	238.424	11,989.377	268,030.653	0.000	0.000	0.000	0.000	0.000
2001	7	363,966.865	39,877.707	41.585	35,098.863	265,937.073	0.000	0.000	0.000	0.000	0.000
2001	8	373,790.602	39,877.707	0.000	52,890.553	252,901.829	0.000	0.000	0.000	0.000	0.000
2001	9	372,264.722	39,877.707	10.400	29,454.408	266,089.041	0.000	0.000	0.000	0.000	0.000
2001	10	322,549.609	39,877.707	1,237.511	4,014.720	254,414.031	0.000	0.000	0.000	0.000	0.000
2001	11	300,399.712	39,877.707	4,371.783	129.021	249,469.760	0.000	0.000	0.000	0.000	0.000
2001	12	337,967.676	39,877.707	7,338.777	0.000	278,934.773	0.000	0.000	0.000	0.000	0.000
2002	1	360,149.967	39,877.707	17,109.174	0.000	287,634.536	3,712.132	0.000	0.000	0.000	0.000
2002	2	328,436.131	39,877.707	14,611.575	0.000	258,509.785	0.000	3,620.646	0.000	0.000	0.000
2002	3	321,147.414	39,877.707	14,417.265	0.000	257,112.351	0.000	0.000	-2,076.327	0.000	0.000
2002	4	315,610.008	39,877.707	10,965.557	2,466.683	260,674.453	0.000	0.000	0.000	-10,190.809	0.000
2002	5	314,741.499	39,877.707	3,475.121	5,803.445	260,073.174	0.000	0.000	0.000	0.000	-6,304.366
2002	6	342,157.755	39,877.707	1,299.447	14,160.741	271,033.640	0.000	0.000	0.000	0.000	0.000
2002	7	387,902.731	39,877.707	0.000	55,540.857	269,472.529	0.000	0.000	0.000	0.000	0.000
2002	8	386,177.913	39,877.707	0.000	61,599.702	256,579.991	0.000	0.000	0.000	0.000	0.000
2002	9	386,606.235	39,877.707	5.560	39,615.462	270,274.340	0.000	0.000	0.000	0.000	0.000
2002	10	338,065.393	39,877.707	1,182.642	15,418.862	258,580.542	0.000	0.000	0.000	0.000	0.000
2002	11	309,114.644	39,877.707	8,007.510	1,001.262	253,676.724	0.000	0.000	0.000	0.000	0.000
2002	12	351,597.469	39,877.707	16,101.179	0.000	283,802.164	0.000	0.000	0.000	0.000	0.000
2003	1	367,668.103	39,877.707	19,939.485	0.000	292,322.361	3,712.132	0.000	0.000	0.000	0.000
2003	2	343,813.149	39,877.707	25,787.376	0.000	262,711.002	0.000	3,620.646	0.000	0.000	0.000
2003	3	332,887.072	39,877.707	21,863.214	0.000	261,406.060	0.000	0.000	-2,076.327	0.000	0.000
2003	4	315,457.131	39,877.707	8,915.502	67.781	264,970.532	0.000	0.000	0.000	-10,190.809	0.000
2003	5	313,722.271	39,877.707	3,226.142	703.432	264,402.938	0.000	0.000	0.000	0.000	-6,304.366
2003	6	335,379.011	39,877.707	380.856	3,922.667	275,411.561	0.000	0.000	0.000	0.000	0.000

Indiana Michigan Power Company-Indiana
Long-Term Commercial Energy Model Output

Year	Month	Pred	CONST	XHeat	XCool	XOther	Jan	Feb	Mar	Apr	May
2003	7	369,010.948	39,877.707	3.947	32,077.556	274,040.101	0.000	0.000	0.000	0.000	0.000
2003	8	364,623.510	39,877.707	0.000	37,221.325	259,403.964	0.000	0.000	0.000	0.000	0.000
2003	9	390,260.941	39,877.707	0.791	32,883.908	280,665.369	0.000	0.000	0.000	0.000	0.000
2003	10	327,052.400	39,877.707	1,962.993	3,543.619	258,662.442	0.000	0.000	0.000	0.000	0.000
2003	11	306,770.687	39,877.707	5,426.832	161.511	254,753.196	0.000	0.000	0.000	0.000	0.000
2003	12	352,151.769	39,877.707	12,422.182	24.874	288,010.588	0.000	0.000	0.000	0.000	0.000
2004	1	372,141.243	39,877.707	18,155.041	0.000	298,579.945	3,712.132	0.000	0.000	0.000	0.000
2004	2	347,392.564	39,877.707	25,650.671	0.000	266,427.123	0.000	3,620.646	0.000	0.000	0.000
2004	3	330,948.159	39,877.707	16,386.056	0.000	264,944.305	0.000	0.000	-2,076.327	0.000	0.000
2004	4	321,948.244	39,877.707	8,245.748	675.679	271,523.502	0.000	0.000	0.000	-10,190.809	0.000
2004	5	323,959.349	39,877.707	2,478.918	7,537.909	268,552.762	0.000	0.000	0.000	0.000	-6,304.366
2004	6	354,312.637	39,877.707	216.730	18,630.761	279,801.219	0.000	0.000	0.000	0.000	0.000
2004	7	368,175.930	39,877.707	0.000	29,202.183	276,084.403	0.000	0.000	0.000	0.000	0.000
2004	8	357,083.703	39,877.707	0.000	26,262.656	262,822.827	0.000	0.000	0.000	0.000	0.000
2004	9	376,765.384	39,877.707	0.000	23,407.593	276,646.918	0.000	0.000	0.000	0.000	0.000
2004	10	337,564.297	39,877.707	1,142.947	8,193.052	265,344.951	0.000	0.000	0.000	0.000	0.000
2004	11	312,268.972	39,877.707	3,876.873	522.837	261,440.114	0.000	0.000	0.000	0.000	0.000
2004	12	357,361.040	39,877.707	11,290.928	37.362	294,338.625	0.000	0.000	0.000	0.000	0.000
2005	1	372,362.857	39,877.707	19,879.242	0.000	297,077.358	3,712.132	0.000	0.000	0.000	0.000
2005	2	345,075.288	39,877.707	22,485.321	0.000	267,275.196	0.000	3,620.646	0.000	0.000	0.000
2005	3	335,137.504	39,877.707	17,943.940	0.000	267,575.766	0.000	0.000	-2,076.327	0.000	0.000
2005	4	325,721.942	39,877.707	9,607.752	180.837	274,430.037	0.000	0.000	0.000	-10,190.809	0.000
2005	5	317,885.751	39,877.707	3,974.802	2,118.019	266,403.171	0.000	0.000	0.000	0.000	-6,304.366
2005	6	353,855.734	39,877.707	661.958	16,473.598	281,056.251	0.000	0.000	0.000	0.000	0.000
2005	7	396,950.996	39,877.707	0.000	53,101.265	280,960.386	0.000	0.000	0.000	0.000	0.000
2005	8	392,398.441	39,877.707	0.000	59,881.281	264,518.940	0.000	0.000	0.000	0.000	0.000
2005	9	388,476.679	39,877.707	0.000	36,692.112	275,073.695	0.000	0.000	0.000	0.000	0.000
2005	10	351,394.027	39,877.707	545.830	17,079.895	270,884.955	0.000	0.000	0.000	0.000	0.000
2005	11	315,914.295	39,877.707	4,815.763	1,384.316	263,285.069	0.000	0.000	0.000	0.000	0.000
2005	12	357,852.163	39,877.707	16,997.930	0.000	289,160.109	0.000	0.000	0.000	0.000	0.000
2006	1	372,288.801	39,877.707	17,461.298	0.000	299,421.247	3,712.132	0.000	0.000	0.000	0.000
2006	2	339,997.570	39,877.707	14,360.255	0.000	270,322.545	0.000	3,620.646	0.000	0.000	0.000
2006	3	332,723.712	39,877.707	16,050.056	0.000	267,055.858	0.000	0.000	-2,076.327	0.000	0.000

Indiana Michigan Power Company-Indiana
Long-Term Commercial Energy Model Output

Year	Month	Pred	CONST	XHeat	XCool	XOther	Jan	Feb	Mar	Apr	May
2006	4	314,929.421	39,877.707	9,045.509	189.454	264,191.142	0.000	0.000	0.000	-10,190.809	0.000
2006	5	320,773.452	39,877.707	1,932.170	366.729	273,084.794	0.000	0.000	0.000	0.000	-6,304.366
2006	6	353,443.010	39,877.707	745.901	16,485.852	280,547.330	0.000	0.000	0.000	0.000	0.000
2006	7	379,605.800	39,877.707	0.000	38,163.493	278,552.962	0.000	0.000	0.000	0.000	0.000
2006	8	394,398.643	39,877.707	0.000	57,098.427	269,301.997	0.000	0.000	0.000	0.000	0.000
2006	9	379,734.013	39,877.707	42.562	23,723.724	279,256.854	0.000	0.000	0.000	0.000	0.000
2006	10	332,158.919	39,877.707	1,470.859	2,189.792	265,614.923	0.000	0.000	0.000	0.000	0.000
2006	11	325,258.501	39,877.707	7,675.400	200.044	270,953.910	0.000	0.000	0.000	0.000	0.000
2006	12	352,476.629	39,877.707	11,261.109	0.000	289,521.396	0.000	0.000	0.000	0.000	0.000
2007	1	388,695.592	39,877.707	12,545.743	0.000	297,016.174	3,712.132	0.000	0.000	0.000	0.000
2007	2	376,038.807	39,877.707	22,774.840	0.000	274,221.779	0.000	3,620.646	0.000	0.000	0.000
2007	3	359,140.233	39,877.707	20,913.831	12.725	264,868.461	0.000	0.000	-2,076.327	0.000	0.000
2007	4	346,716.261	39,877.707	7,870.870	802.171	272,812.487	0.000	0.000	0.000	-10,190.809	0.000
2007	5	342,695.157	39,877.707	2,990.254	4,044.142	266,543.584	0.000	0.000	0.000	0.000	-6,304.366
2007	6	384,154.135	39,877.707	204.065	28,494.848	276,063.877	0.000	0.000	0.000	0.000	0.000
2007	7	407,928.421	39,877.707	0.000	41,927.243	279,384.415	0.000	0.000	0.000	0.000	0.000
2007	8	410,728.318	39,877.707	0.000	49,805.254	269,197.426	0.000	0.000	0.000	0.000	0.000
2007	9	419,278.453	39,877.707	36.332	41,640.502	277,163.328	0.000	0.000	0.000	0.000	0.000
2007	10	374,813.779	39,877.707	366.132	20,469.238	267,367.645	0.000	0.000	0.000	0.000	0.000
2007	11	345,287.664	39,877.707	4,461.628	4,342.316	266,327.154	0.000	0.000	0.000	0.000	0.000
2007	12	379,156.842	39,877.707	14,076.587	0.000	289,658.712	0.000	0.000	0.000	0.000	0.000
2008	1	388,404.915	39,877.707	16,897.167	0.000	292,374.073	3,712.132	0.000	0.000	0.000	0.000
2008	2	366,634.269	39,877.707	20,220.977	0.000	267,371.103	0.000	3,620.646	0.000	0.000	0.000
2008	3	354,663.653	39,877.707	19,179.113	0.000	262,139.324	0.000	0.000	-2,076.327	0.000	0.000
2008	4	336,899.815	39,877.707	10,110.895	47.642	261,510.545	0.000	0.000	0.000	-10,190.809	0.000
2008	5	331,013.136	39,877.707	2,445.737	1,869.412	257,580.809	0.000	0.000	0.000	0.000	-6,304.366
2008	6	370,749.977	39,877.707	562.929	18,445.928	272,349.775	0.000	0.000	0.000	0.000	0.000
2008	7	395,132.937	39,877.707	0.723	35,617.234	272,898.217	0.000	0.000	0.000	0.000	0.000
2008	8	390,011.926	39,877.707	0.000	44,832.282	253,454.006	0.000	0.000	0.000	0.000	0.000
2008	9	395,812.584	39,877.707	0.000	33,169.678	262,204.615	0.000	0.000	0.000	0.000	0.000
2008	10	350,924.375	39,877.707	634.189	8,966.181	254,713.240	0.000	0.000	0.000	0.000	0.000
2008	11	333,507.497	39,877.707	5,081.139	579.069	257,690.723	0.000	0.000	0.000	0.000	0.000
2008	12	364,844.487	39,877.707	15,103.002	0.000	274,319.942	0.000	0.000	0.000	0.000	0.000

Indiana Michigan Power Company-Indiana
Long-Term Commercial Energy Model Output

Year	Month	Pred	CONST	XHeat	XCool	XOther	Jan	Feb	Mar	Apr	May
2009	1	374,345.105	39,877.707	19,005.202	0.000	276,206.228	3,712.132	0.000	0.000	0.000	0.000
2009	2	350,353.337	39,877.707	22,370.794	0.000	248,940.354	0.000	3,620.646	0.000	0.000	0.000
2009	3	335,291.720	39,877.707	13,448.798	0.000	241,428.700	0.000	0.000	-2,076.327	0.000	0.000
2009	4	323,989.663	39,877.707	6,931.430	99.239	244,659.255	0.000	0.000	0.000	-10,190.809	0.000
2009	5	325,701.889	39,877.707	2,665.422	4,950.072	241,900.211	0.000	0.000	0.000	0.000	-6,304.366
2009	6	347,015.728	39,877.707	286.776	12,443.654	247,824.947	0.000	0.000	0.000	0.000	0.000
2009	7	382,772.884	39,877.707	0.000	35,121.016	253,966.100	0.000	0.000	0.000	0.000	0.000
2009	8	366,496.890	39,877.707	0.000	28,227.936	239,474.310	0.000	0.000	0.000	0.000	0.000
2009	9	375,867.954	39,877.707	0.000	20,290.566	248,070.092	0.000	0.000	0.000	0.000	0.000
2009	10	349,473.406	39,877.707	1,538.317	6,159.717	248,095.601	0.000	0.000	0.000	0.000	0.000
2009	11	321,942.775	39,877.707	4,200.222	0.000	240,516.982	0.000	0.000	0.000	0.000	0.000
2009	12	359,889.585	39,877.707	9,828.712	0.000	267,570.325	0.000	0.000	0.000	0.000	0.000
2010	1	376,866.789	39,877.707	18,305.611	0.000	272,358.498	3,712.132	0.000	0.000	0.000	0.000
2010	2	344,451.945	39,877.707	18,828.118	0.000	239,512.632	0.000	3,620.646	0.000	0.000	0.000
2010	3	332,467.610	39,877.707	14,352.650	0.000	237,700.739	0.000	0.000	-2,076.327	0.000	0.000
2010	4	329,911.461	39,877.707	4,839.770	1,595.989	251,175.963	0.000	0.000	0.000	-10,190.809	0.000
2010	5	324,991.453	39,877.707	1,137.472	3,704.886	243,962.913	0.000	0.000	0.000	0.000	-6,304.366
2010	6	376,102.344	39,877.707	232.446	34,083.213	255,326.335	0.000	0.000	0.000	0.000	0.000
2010	7	408,900.396	39,877.707	0.000	61,302.229	253,912.399	0.000	0.000	0.000	0.000	0.000
2010	8	413,517.177	39,877.707	0.000	69,027.608	245,694.925	0.000	0.000	0.000	0.000	0.000
2010	9	402,340.105	39,877.707	0.000	42,174.856	252,657.952	0.000	0.000	0.000	0.000	0.000
2010	10	353,490.181	39,877.707	537.118	12,316.596	246,956.697	0.000	0.000	0.000	0.000	0.000
2010	11	277,649.071	39,877.707	4,144.859	1,100.619	243,139.242	0.000	0.000	0.000	0.000	0.000
2010	12	364,871.916	39,877.707	13,464.110	0.000	268,917.258	0.000	0.000	0.000	0.000	0.000
2011	1	372,748.289	39,877.707	19,412.875	0.000	267,132.734	3,712.132	0.000	0.000	0.000	0.000
2011	2	352,541.506	39,877.707	20,941.544	0.000	245,488.767	0.000	3,620.646	0.000	0.000	0.000
2011	3	328,877.625	39,877.707	14,276.782	0.000	234,186.622	0.000	0.000	-2,076.327	0.000	0.000
2011	4	310,082.271	39,877.707	8,265.966	398.440	229,118.125	0.000	0.000	0.000	-10,190.809	0.000
2011	5	328,827.631	39,877.707	2,551.390	3,252.491	246,837.567	0.000	0.000	0.000	0.000	-6,304.366
2011	6	371,734.108	39,877.707	356.390	29,421.984	255,495.384	0.000	0.000	0.000	0.000	0.000
2011	7	397,100.780	39,877.707	0.000	54,435.384	248,979.628	0.000	0.000	0.000	0.000	0.000
2011	8	423,433.381	39,877.707	0.000	78,088.479	246,550.259	0.000	0.000	0.000	0.000	0.000
2011	9	393,383.037	39,877.707	54.634	36,740.455	249,095.909	0.000	0.000	0.000	0.000	0.000

Indiana Michigan Power Company-Indiana
Long-Term Commercial Energy Model Output

Year	Month	Pred	CONST	XHeat	XCool	XOther	Jan	Feb	Mar	Apr	May
2011	10	339,403.023	39,877.707	655.804	4,937.537	240,145.170	0.000	0.000	0.000	0.000	0.000
2011	11	317,517.939	39,877.707	3,700.008	152.764	236,454.854	0.000	0.000	0.000	0.000	0.000
2011	12	356,364.550	39,877.707	8,759.925	0.000	265,129.334	0.000	0.000	0.000	0.000	0.000
2012	1	360,342.414	39,877.707	12,899.759	0.000	261,255.232	3,712.132	0.000	0.000	0.000	0.000
2012	2	334,180.986	39,877.707	14,742.775	0.000	233,342.275	0.000	3,620.646	0.000	0.000	0.000
2012	3	327,534.576	39,877.707	10,408.181	1,263.240	235,464.192	0.000	0.000	-2,076.327	0.000	0.000
2012	4	324,180.984	39,877.707	2,752.728	4,077.436	245,066.339	0.000	0.000	0.000	-10,190.809	0.000
2012	5	322,274.828	39,877.707	2,074.969	5,205.524	238,823.410	0.000	0.000	0.000	0.000	-6,304.366
2012	6	362,578.692	39,877.707	69.081	29,530.023	246,534.495	0.000	0.000	0.000	0.000	0.000
2012	7	410,708.969	39,877.707	6.518	71,247.523	245,784.419	0.000	0.000	0.000	0.000	0.000
2012	8	399,581.869	39,877.707	0.000	62,040.815	238,761.668	0.000	0.000	0.000	0.000	0.000
2012	9	382,424.643	39,877.707	44.692	30,492.239	244,395.673	0.000	0.000	0.000	0.000	0.000
2012	10	334,842.356	39,877.707	1,490.087	4,510.960	235,176.798	0.000	0.000	0.000	0.000	0.000
2012	11	320,342.256	39,877.707	5,524.200	441.752	237,165.991	0.000	0.000	0.000	0.000	0.000
2012	12	344,864.732	39,877.707	9,347.601	0.000	253,041.841	0.000	0.000	0.000	0.000	0.000
2013	1	357,132.168	39,877.707	14,451.300	0.000	256,493.445	3,712.132	0.000	0.000	0.000	0.000
2013	2	335,522.717	39,877.707	16,620.445	0.000	232,806.336	0.000	3,620.646	0.000	0.000	0.000
2013	3	333,057.473	39,877.707	14,992.542	0.000	237,665.968	0.000	0.000	-2,076.327	0.000	0.000
2013	4	319,690.997	39,877.707	10,257.402	0.000	237,149.114	0.000	0.000	0.000	-10,190.809	0.000
2013	5	314,513.066	39,877.707	2,633.582	4,228.292	231,480.267	0.000	0.000	0.000	0.000	-6,304.366
2013	6	353,111.190	39,877.707	269.807	22,447.564	243,948.727	0.000	0.000	0.000	0.000	0.000
2013	7	380,159.351	39,877.707	0.000	45,544.466	240,944.375	0.000	0.000	0.000	0.000	0.000
2013	8	368,680.661	39,877.707	0.000	35,914.864	233,986.411	0.000	0.000	0.000	0.000	0.000
2013	9	383,370.846	39,877.707	12.513	35,257.828	240,608.466	0.000	0.000	0.000	0.000	0.000
2013	10	341,851.020	39,877.707	424.542	12,899.351	234,862.615	0.000	0.000	0.000	0.000	0.000
2013	11	317,444.559	39,877.707	5,243.868	1,149.656	233,840.722	0.000	0.000	0.000	0.000	0.000
2013	12	348,151.050	39,877.707	13,089.122	0.000	252,586.637	0.000	0.000	0.000	0.000	0.000
2014	1	365,784.931	39,877.707	17,983.829	0.000	261,613.679	3,712.132	0.000	0.000	0.000	0.000
2014	2	336,933.093	39,877.707	22,102.059	0.000	228,735.098	0.000	3,620.646	0.000	0.000	0.000
2014	3	328,838.134	39,877.707	19,153.051	0.000	229,286.119	0.000	0.000	-2,076.327	0.000	0.000
2014	4	313,514.929	39,877.707	9,902.812	0.000	231,327.636	0.000	0.000	0.000	-10,190.809	0.000
2014	5	320,022.044	39,877.707	2,429.373	2,984.564	238,437.182	0.000	0.000	0.000	0.000	-6,304.366
2014	6	349,017.648	39,877.707	492.883	22,974.254	239,105.417	0.000	0.000	0.000	0.000	0.000

Indiana Michigan Power Company-Indiana
Long-Term Commercial Energy Model Output

Year	Month	Pred	CONST	XHeat	XCool	XOther	Jan	Feb	Mar	Apr	May
2014	7	375,421.629	39,877.707	0.000	43,054.345	238,696.774	0.000	0.000	0.000	0.000	0.000
2014	8	358,356.607	39,877.707	0.000	27,652.909	231,924.312	0.000	0.000	0.000	0.000	0.000
2014	9	382,058.384	39,877.707	31.738	34,609.808	239,924.799	0.000	0.000	0.000	0.000	0.000
2014	10	329,831.801	39,877.707	888.421	3,619.368	231,659.500	0.000	0.000	0.000	0.000	0.000
2014	11	313,697.926	39,877.707	5,407.039	69.529	231,011.045	0.000	0.000	0.000	0.000	0.000
2014	12	350,415.675	39,877.707	12,775.647	0.000	255,164.738	0.000	0.000	0.000	0.000	0.000
2015	1	356,774.872	39,877.707	15,283.354	0.000	255,304.095	3,712.132	0.000	0.000	0.000	0.000
2015	2	332,842.445	39,877.707	18,398.159	0.000	228,348.350	0.000	3,620.646	0.000	0.000	0.000
2015	3	327,932.306	39,877.707	19,058.222	0.000	228,475.121	0.000	0.000	-2,076.327	0.000	0.000
2015	4	316,867.247	39,877.707	7,857.402	0.000	236,725.363	0.000	0.000	0.000	-10,190.809	0.000
2015	5	315,615.156	39,877.707	2,075.538	5,891.148	231,477.545	0.000	0.000	0.000	0.000	-6,304.366
2015	6	347,004.365	39,877.707	209.989	24,373.348	235,975.935	0.000	0.000	0.000	0.000	0.000
2015	7	365,164.795	39,877.707	1.493	31,825.003	238,149.557	0.000	0.000	0.000	0.000	0.000
2015	8	370,148.008	39,877.707	0.000	44,459.720	225,390.671	0.000	0.000	0.000	0.000	0.000
2015	9	381,039.842	39,877.707	0.000	34,753.789	237,275.783	0.000	0.000	0.000	0.000	0.000
2015	10	333,228.295	39,877.707	397.803	11,515.991	226,131.757	0.000	0.000	0.000	0.000	0.000
2015	11	307,858.975	39,877.707	2,568.244	303.792	226,258.395	0.000	0.000	0.000	0.000	0.000
2015	12	347,114.947	39,877.707	7,182.327	0.000	255,939.098	0.000	0.000	0.000	0.000	0.000
2016	1	347,411.897	39,877.707	10,499.585	0.000	249,206.657	3,712.132	0.000	0.000	0.000	0.000
2016	2	328,914.198	39,877.707	14,596.014	0.000	226,704.016	0.000	3,620.646	0.000	0.000	0.000
2016	3	318,459.310	39,877.707	9,982.942	0.000	226,559.173	0.000	0.000	-2,076.327	0.000	0.000
2016	4	310,869.312	39,877.707	5,388.476	0.000	231,678.123	0.000	0.000	0.000	-10,190.809	0.000
2016	5	305,747.585	39,877.707	2,173.494	353.035	225,531.900	0.000	0.000	0.000	0.000	-6,304.366
2016	6	349,360.076	39,877.707	384.581	25,622.393	235,389.778	0.000	0.000	0.000	0.000	0.000
2016	7	373,625.897	39,877.707	0.000	43,032.324	235,404.831	0.000	0.000	0.000	0.000	0.000
2016	8	391,240.867	39,877.707	0.000	63,595.010	227,348.240	0.000	0.000	0.000	0.000	0.000
2016	9	390,384.280	39,877.707	0.000	47,826.646	233,547.364	0.000	0.000	0.000	0.000	0.000
2016	10	341,839.107	39,877.707	131.369	18,660.568	227,864.426	0.000	0.000	0.000	0.000	0.000
2016	11	309,618.039	39,877.707	2,155.993	3,139.139	225,594.364	0.000	0.000	0.000	0.000	0.000
2016	12	348,347.205	39,877.707	9,590.758	125.142	254,637.783	0.000	0.000	0.000	0.000	0.000
2017	1	352,856.860	39,877.707	14,117.267	0.000	251,033.938	3,712.132	0.000	0.000	0.000	0.000
2017	2	313,716.468	39,877.707	10,805.419	0.000	223,819.196	0.000	3,620.646	0.000	0.000	0.000
2017	3	305,646.533	39,877.707	8,267.566	0.000	223,984.088	0.000	0.000	-2,076.327	0.000	0.000

Indiana Michigan Power Company-Indiana
Long-Term Commercial Energy Model Output

Year	Month	Pred	CONST	XHeat	XCool	XOther	Jan	Feb	Mar	Apr	May
2017	4	299,126.433	39,877.707	5,840.102	797.961	227,207.973	0.000	0.000	0.000	-10,190.809	0.000
2017	5	298,687.357	39,877.707	1,524.293	5,276.827	222,719.396	0.000	0.000	0.000	0.000	-6,304.366
2017	6	333,444.104	39,877.707	298.892	20,190.561	233,513.642	0.000	0.000	0.000	0.000	0.000
2017	7	367,151.665	39,877.707	0.000	44,270.441	236,214.798	0.000	0.000	0.000	0.000	0.000
2017	8	363,378.347	39,877.707	0.000	41,391.799	230,211.247	0.000	0.000	0.000	0.000	0.000
2017	9	353,848.075	39,877.707	0.000	19,956.320	233,403.799	0.000	0.000	0.000	0.000	0.000
2017	10	337,568.796	39,877.707	70.471	20,994.893	229,843.003	0.000	0.000	0.000	0.000	0.000
2017	11	300,977.867	39,877.707	4,207.682	2,264.914	224,299.042	0.000	0.000	0.000	0.000	0.000
2017	12	339,149.848	39,877.707	8,951.313	0.000	254,727.328	0.000	0.000	0.000	0.000	0.000
2018	1	347,894.008	39,877.707	17,769.367	0.000	250,941.302	3,712.132	0.000	0.000	0.000	0.000
2018	2	318,643.618	39,877.707	14,850.109	0.000	224,701.656	0.000	3,620.646	0.000	0.000	0.000
2018	3	307,534.457	39,877.707	10,232.599	0.000	223,906.979	0.000	0.000	-2,076.327	0.000	0.000
2018	4	306,836.712	39,877.707	9,026.244	81.353	232,448.718	0.000	0.000	0.000	-10,190.809	0.000
2018	5	304,017.581	39,877.707	3,098.168	4,515.404	227,237.168	0.000	0.000	0.000	0.000	-6,304.366
2018	6	351,191.982	39,877.707	32.725	35,846.367	235,871.881	0.000	0.000	0.000	0.000	0.000
2018	7	377,886.359	39,877.707	0.000	57,388.280	233,831.653	0.000	0.000	0.000	0.000	0.000
2018	8	367,357.660	39,877.707	0.000	48,141.577	227,440.781	0.000	0.000	0.000	0.000	0.000
2018	9	383,472.993	39,877.707	0.000	49,736.194	233,248.844	0.000	0.000	0.000	0.000	0.000
2018	10	338,441.210	39,877.707	683.664	24,807.861	226,289.256	0.000	0.000	0.000	0.000	0.000
2018	11	308,892.833	39,877.707	5,329.888	3,507.545	229,849.171	0.000	0.000	0.000	0.000	0.000
2018	12	337,545.567	39,877.707	10,593.250	0.000	251,481.111	0.000	0.000	0.000	0.000	0.000
2019	1	338,452.755	39,877.707	10,739.170	0.000	248,530.246	3,712.132	0.000	0.000	0.000	0.000
2019	2	322,140.841	39,877.707	15,757.537	0.000	227,291.452	0.000	3,620.646	0.000	0.000	0.000
2019	3	308,734.517	39,877.707	13,115.383	0.000	222,224.254	0.000	0.000	-2,076.327	0.000	0.000
2019	4	299,483.542	39,877.707	6,808.877	0.000	227,394.268	0.000	0.000	0.000	-10,190.809	0.000
2019	5	304,489.961	39,877.707	1,995.448	1,191.550	232,136.122	0.000	0.000	0.000	0.000	-6,304.366
2019	6	334,495.785	39,877.707	334.693	18,978.687	235,741.397	0.000	0.000	0.000	0.000	0.000
2019	7	377,597.022	39,877.707	0.000	57,952.385	232,978.211	0.000	0.000	0.000	0.000	0.000
2019	8	370,822.464	39,877.707	0.000	54,904.516	224,142.646	0.000	0.000	0.000	0.000	0.000
2019	9	357,899.698	39,877.707	0.000	30,398.616	227,013.127	0.000	0.000	0.000	0.000	0.000
2019	10	328,934.987	39,877.707	387.496	19,221.130	222,665.933	0.000	0.000	0.000	0.000	0.000
2019	11	298,419.475	39,877.707	5,104.827	1,116.294	221,992.125	0.000	0.000	0.000	0.000	0.000
2019	12	327,273.376	39,877.707	10,380.689	0.000	241,421.480	0.000	0.000	0.000	0.000	0.000

Indiana Michigan Power Company-Indiana
Long-Term Commercial Energy Model Output

Year	Month	Pred	CONST	XHeat	XCool	XOther	Jan	Feb	Mar	Apr	May
2020	1	334,729.347	39,877.707	10,242.551	0.000	245,303.456	3,712.132	0.000	0.000	0.000	0.000
2020	2	306,598.539	39,877.707	11,842.953	0.000	215,663.733	0.000	3,620.646	0.000	0.000	0.000
2020	3	300,277.634	39,877.707	11,059.820	0.000	215,822.934	0.000	0.000	-2,076.327	0.000	0.000
2020	4	269,227.912	39,877.707	5,972.408	0.000	222,991.924	0.000	0.000	0.000	-10,190.809	0.000
2020	5	255,258.981	39,877.707	3,437.995	708.159	218,320.923	0.000	0.000	0.000	0.000	-6,304.366
2020	6	298,701.743	39,877.707	582.630	23,460.420	223,472.407	0.000	0.000	0.000	0.000	0.000
2020	7	356,072.276	39,877.707	0.000	54,678.688	222,656.016	0.000	0.000	0.000	0.000	0.000
2020	8	352,131.928	39,877.707	0.000	51,047.048	217,238.432	0.000	0.000	0.000	0.000	0.000
2020	9	346,352.132	39,877.707	13.408	32,975.937	220,803.687	0.000	0.000	0.000	0.000	0.000
2020	10	304,702.567	39,877.707	803.542	4,187.936	220,979.515	0.000	0.000	0.000	0.000	0.000
2020	11	284,518.247	39,877.707	3,569.847	427.218	218,243.807	0.000	0.000	0.000	0.000	0.000
2020	12	314,091.974	39,877.707	7,745.098	168.656	238,635.868	0.000	0.000	0.000	0.000	0.000
2021	1	319,590.081	39,877.707	11,502.212	0.000	236,833.384	3,712.132	0.000	0.000	0.000	0.000
2021	2	301,909.613	39,877.707	14,788.584	0.000	215,958.031	0.000	3,620.646	0.000	0.000	0.000
2021	3	291,496.258	39,877.707	11,760.950	40.695	214,228.589	0.000	0.000	-2,076.327	0.000	0.000
2021	4	283,136.751	39,877.707	6,520.934	469.092	218,795.182	0.000	0.000	0.000	-10,190.809	0.000
2021	5	284,266.191	39,877.707	2,090.457	3,412.795	217,524.952	0.000	0.000	0.000	0.000	-6,304.366
2021	6	317,019.028	39,877.707	298.613	19,693.579	225,514.681	0.000	0.000	0.000	0.000	0.000
2021	7	349,060.103	39,877.707	3.182	44,922.840	225,396.509	0.000	0.000	0.000	0.000	0.000
2021	8	347,932.700	39,877.707	0.000	47,099.346	216,986.907	0.000	0.000	0.000	0.000	0.000
2021	9	349,557.682	39,877.707	11.725	32,774.699	224,212.157	0.000	0.000	0.000	0.000	0.000
2021	10	307,202.389	39,877.707	693.573	10,112.762	217,664.480	0.000	0.000	0.000	0.000	0.000
2021	11	283,434.059	39,877.707	3,926.984	923.198	216,306.502	0.000	0.000	0.000	0.000	0.000
2021	12	315,236.199	39,877.707	9,209.701	11.743	238,472.402	0.000	0.000	0.000	0.000	0.000
2022	1	325,139.125	39,877.707	13,297.509	0.000	240,587.132	3,712.132	0.000	0.000	0.000	0.000
2022	2	302,765.185	39,877.707	14,867.211	0.000	216,734.976	0.000	3,620.646	0.000	0.000	0.000
2022	3	292,340.915	39,877.707	11,824.052	41.112	215,009.725	0.000	0.000	-2,076.327	0.000	0.000
2022	4	283,758.900	39,877.707	6,549.689	473.454	219,384.214	0.000	0.000	0.000	-10,190.809	0.000
2022	5	284,728.233	39,877.707	2,098.131	3,442.000	217,950.115	0.000	0.000	0.000	0.000	-6,304.366
2022	6	317,472.229	39,877.707	299.518	19,849.421	225,811.136	0.000	0.000	0.000	0.000	0.000
2022	7	349,584.116	39,877.707	3.190	45,256.977	225,586.377	0.000	0.000	0.000	0.000	0.000
2022	8	348,387.256	39,877.707	0.000	47,435.586	217,105.222	0.000	0.000	0.000	0.000	0.000
2022	9	349,881.584	39,877.707	11.750	33,004.526	224,306.207	0.000	0.000	0.000	0.000	0.000

Indiana Michigan Power Company-Indiana
Long-Term Commercial Energy Model Output

Year	Month	Pred	CONST	XHeat	XCool	XOther	Jan	Feb	Mar	Apr	May
2022	10	307,363.721	39,877.707	695.046	10,183.571	217,753.531	0.000	0.000	0.000	0.000	0.000
2022	11	283,550.903	39,877.707	3,935.560	929.719	216,408.248	0.000	0.000	0.000	0.000	0.000
2022	12	315,416.399	39,877.707	9,231.597	11.828	238,630.621	0.000	0.000	0.000	0.000	0.000
2023	1	325,767.087	39,877.707	13,238.979	0.000	241,273.624	3,712.132	0.000	0.000	0.000	0.000
2023	2	303,587.256	39,877.707	14,818.928	0.000	217,605.329	0.000	3,620.646	0.000	0.000	0.000
2023	3	293,433.973	39,877.707	11,799.511	41.444	216,126.994	0.000	0.000	-2,076.327	0.000	0.000
2023	4	285,165.682	39,877.707	6,544.039	477.853	220,792.246	0.000	0.000	0.000	-10,190.809	0.000
2023	5	286,432.301	39,877.707	2,098.885	3,478.228	219,617.202	0.000	0.000	0.000	0.000	-6,304.366
2023	6	319,707.254	39,877.707	299.987	20,082.518	227,812.595	0.000	0.000	0.000	0.000	0.000
2023	7	352,414.871	39,877.707	3.199	45,838.659	227,835.442	0.000	0.000	0.000	0.000	0.000
2023	8	351,432.759	39,877.707	0.000	48,094.033	219,492.279	0.000	0.000	0.000	0.000	0.000
2023	9	353,065.787	39,877.707	11.805	33,496.062	226,998.819	0.000	0.000	0.000	0.000	0.000
2023	10	310,359.965	39,877.707	698.987	10,345.390	220,584.015	0.000	0.000	0.000	0.000	0.000
2023	11	286,609.318	39,877.707	3,961.555	945.371	219,425.018	0.000	0.000	0.000	0.000	0.000
2023	12	319,015.879	39,877.707	9,300.404	12.038	242,161.085	0.000	0.000	0.000	0.000	0.000
2024	1	329,268.145	39,877.707	13,306.184	0.000	244,707.477	3,712.132	0.000	0.000	0.000	0.000
2024	2	306,492.075	39,877.707	14,877.248	0.000	220,451.829	0.000	3,620.646	0.000	0.000	0.000
2024	3	296,046.382	39,877.707	11,832.511	42.044	218,705.802	0.000	0.000	-2,076.327	0.000	0.000
2024	4	287,554.652	39,877.707	6,554.633	484.200	223,164.276	0.000	0.000	0.000	-10,190.809	0.000
2024	5	288,574.387	39,877.707	2,099.817	3,520.289	221,716.294	0.000	0.000	0.000	0.000	-6,304.366
2024	6	321,839.193	39,877.707	299.775	20,301.973	229,725.290	0.000	0.000	0.000	0.000	0.000
2024	7	354,529.953	39,877.707	3.193	46,289.433	229,499.755	0.000	0.000	0.000	0.000	0.000
2024	8	353,231.969	39,877.707	0.000	48,517.078	220,868.444	0.000	0.000	0.000	0.000	0.000
2024	9	354,520.253	39,877.707	11.760	33,756.763	228,192.630	0.000	0.000	0.000	0.000	0.000
2024	10	311,369.911	39,877.707	695.638	10,415.701	221,526.998	0.000	0.000	0.000	0.000	0.000
2024	11	287,323.109	39,877.707	3,938.870	950.901	220,155.963	0.000	0.000	0.000	0.000	0.000
2024	12	319,547.248	39,877.707	9,239.003	12.097	242,753.795	0.000	0.000	0.000	0.000	0.000
2025	1	329,720.117	39,877.707	13,191.245	0.000	245,274.387	3,712.132	0.000	0.000	0.000	0.000
2025	2	306,863.202	39,877.707	14,748.045	0.000	220,952.159	0.000	3,620.646	0.000	0.000	0.000
2025	3	296,432.339	39,877.707	11,729.357	42.145	219,194.811	0.000	0.000	-2,076.327	0.000	0.000
2025	4	287,993.143	39,877.707	6,497.363	485.360	223,658.877	0.000	0.000	0.000	-10,190.809	0.000
2025	5	289,052.902	39,877.707	2,081.443	3,528.678	222,204.795	0.000	0.000	0.000	0.000	-6,304.366
2025	6	322,386.984	39,877.707	297.147	20,350.016	230,227.667	0.000	0.000	0.000	0.000	0.000

Indiana Michigan Power Company-Indiana
Long-Term Commercial Energy Model Output

Year	Month	Pred	CONST	XHeat	XCool	XOther	Jan	Feb	Mar	Apr	May
2025	7	355,133.162	39,877.707	3.165	46,397.599	229,994.827	0.000	0.000	0.000	0.000	0.000
2025	8	353,809.495	39,877.707	0.000	48,628.234	221,334.814	0.000	0.000	0.000	0.000	0.000
2025	9	355,067.269	39,877.707	11.656	33,832.548	228,663.965	0.000	0.000	0.000	0.000	0.000
2025	10	311,831.479	39,877.707	689.417	10,438.493	221,971.995	0.000	0.000	0.000	0.000	0.000
2025	11	287,719.146	39,877.707	3,903.420	952.927	220,585.424	0.000	0.000	0.000	0.000	0.000
2025	12	319,922.622	39,877.707	9,155.307	12.122	243,212.840	0.000	0.000	0.000	0.000	0.000
2026	1	329,393.066	39,877.707	13,069.849	0.000	245,068.732	3,712.132	0.000	0.000	0.000	0.000
2026	2	306,478.465	39,877.707	14,608.364	0.000	220,707.103	0.000	3,620.646	0.000	0.000	0.000
2026	3	296,018.162	39,877.707	11,615.235	42.331	218,894.570	0.000	0.000	-2,076.327	0.000	0.000
2026	4	287,565.235	39,877.707	6,432.456	487.378	223,293.858	0.000	0.000	0.000	-10,190.809	0.000
2026	5	288,626.097	39,877.707	2,060.124	3,542.445	221,785.541	0.000	0.000	0.000	0.000	-6,304.366
2026	6	321,968.038	39,877.707	294.032	20,424.448	229,737.405	0.000	0.000	0.000	0.000	0.000
2026	7	354,753.140	39,877.707	3.131	46,557.194	229,455.243	0.000	0.000	0.000	0.000	0.000
2026	8	353,403.822	39,877.707	0.000	48,785.787	220,771.587	0.000	0.000	0.000	0.000	0.000
2026	9	354,545.668	39,877.707	11.527	33,935.790	228,039.252	0.000	0.000	0.000	0.000	0.000
2026	10	311,208.407	39,877.707	681.658	10,468.507	221,326.667	0.000	0.000	0.000	0.000	0.000
2026	11	287,001.158	39,877.707	3,858.880	955.516	219,909.386	0.000	0.000	0.000	0.000	0.000
2026	12	319,038.847	39,877.707	9,049.619	12.154	242,434.722	0.000	0.000	0.000	0.000	0.000
2027	1	328,700.156	39,877.707	12,927.572	0.000	244,518.099	3,712.132	0.000	0.000	0.000	0.000
2027	2	305,826.138	39,877.707	14,449.499	0.000	220,213.641	0.000	3,620.646	0.000	0.000	0.000
2027	3	295,406.174	39,877.707	11,489.102	42.426	218,408.622	0.000	0.000	-2,076.327	0.000	0.000
2027	4	287,008.018	39,877.707	6,362.806	488.478	222,805.190	0.000	0.000	0.000	-10,190.809	0.000
2027	5	288,134.337	39,877.707	2,037.888	3,550.568	221,307.894	0.000	0.000	0.000	0.000	-6,304.366
2027	6	321,525.924	39,877.707	290.869	20,472.015	229,250.887	0.000	0.000	0.000	0.000	0.000
2027	7	354,388.302	39,877.707	3.098	46,667.769	228,979.863	0.000	0.000	0.000	0.000	0.000
2027	8	353,075.887	39,877.707	0.000	48,904.124	220,325.315	0.000	0.000	0.000	0.000	0.000
2027	9	354,179.959	39,877.707	11.404	34,019.804	227,589.651	0.000	0.000	0.000	0.000	0.000
2027	10	310,801.835	39,877.707	674.456	10,494.926	220,900.879	0.000	0.000	0.000	0.000	0.000
2027	11	286,550.229	39,877.707	3,818.288	957.972	219,496.594	0.000	0.000	0.000	0.000	0.000
2027	12	318,500.084	39,877.707	8,954.832	12.185	241,990.714	0.000	0.000	0.000	0.000	0.000
2028	1	328,420.985	39,877.707	12,804.703	0.000	244,361.798	3,712.132	0.000	0.000	0.000	0.000
2028	2	305,564.757	39,877.707	14,313.185	0.000	220,088.573	0.000	3,620.646	0.000	0.000	0.000
2028	3	295,188.434	39,877.707	11,381.433	42.649	218,298.327	0.000	0.000	-2,076.327	0.000	0.000

Indiana Michigan Power Company-Indiana
Long-Term Commercial Energy Model Output

Year	Month	Pred	CONST	XHeat	XCool	XOther	Jan	Feb	Mar	Apr	May
2028	4	286,848.641	39,877.707	6,303.458	491.066	222,702.574	0.000	0.000	0.000	-10,190.809	0.000
2028	5	288,038.977	39,877.707	2,018.941	3,569.484	221,212.566	0.000	0.000	0.000	0.000	-6,304.366
2028	6	321,539.650	39,877.707	288.171	20,581.589	229,157.736	0.000	0.000	0.000	0.000	0.000
2028	7	354,546.808	39,877.707	3.069	46,917.858	228,888.309	0.000	0.000	0.000	0.000	0.000
2028	8	353,248.454	39,877.707	0.000	49,165.940	220,236.067	0.000	0.000	0.000	0.000	0.000
2028	9	354,265.433	39,877.707	11.298	34,201.364	227,493.670	0.000	0.000	0.000	0.000	0.000
2028	10	310,751.801	39,877.707	668.172	10,550.636	220,801.420	0.000	0.000	0.000	0.000	0.000
2028	11	286,412.388	39,877.707	3,782.568	963.021	219,389.424	0.000	0.000	0.000	0.000	0.000
2028	12	318,287.643	39,877.707	8,870.687	12.249	241,862.354	0.000	0.000	0.000	0.000	0.000
2029	1	328,288.131	39,877.707	12,674.849	0.000	244,358.798	3,712.132	0.000	0.000	0.000	0.000
2029	2	305,390.967	39,877.707	14,166.465	0.000	220,061.503	0.000	3,620.646	0.000	0.000	0.000
2029	3	295,018.789	39,877.707	11,263.469	42.940	218,246.356	0.000	0.000	-2,076.327	0.000	0.000
2029	4	286,708.995	39,877.707	6,237.454	494.366	222,625.632	0.000	0.000	0.000	-10,190.809	0.000
2029	5	287,941.118	39,877.707	1,997.586	3,593.087	221,112.458	0.000	0.000	0.000	0.000	-6,304.366
2029	6	321,541.984	39,877.707	285.092	20,715.445	229,029.292	0.000	0.000	0.000	0.000	0.000
2029	7	354,695.970	39,877.707	3.036	47,218.265	228,737.097	0.000	0.000	0.000	0.000	0.000
2029	8	353,392.268	39,877.707	0.000	49,476.061	220,069.759	0.000	0.000	0.000	0.000	0.000
2029	9	354,284.439	39,877.707	11.174	34,413.832	227,300.332	0.000	0.000	0.000	0.000	0.000
2029	10	310,601.400	39,877.707	660.782	10,615.219	220,593.824	0.000	0.000	0.000	0.000	0.000
2029	11	286,151.148	39,877.707	3,740.416	968.833	219,164.523	0.000	0.000	0.000	0.000	0.000
2029	12	317,920.496	39,877.707	8,771.119	12.322	241,594.703	0.000	0.000	0.000	0.000	0.000
2030	1	327,269.596	39,877.707	12,529.044	0.000	243,486.068	3,712.132	0.000	0.000	0.000	0.000
2030	2	304,444.167	39,877.707	14,003.629	0.000	219,277.540	0.000	3,620.646	0.000	0.000	0.000
2030	3	294,116.199	39,877.707	11,134.199	43.238	217,472.736	0.000	0.000	-2,076.327	0.000	0.000
2030	4	285,854.639	39,877.707	6,165.947	497.810	221,839.339	0.000	0.000	0.000	-10,190.809	0.000
2030	5	287,166.120	39,877.707	1,974.719	3,618.177	220,335.238	0.000	0.000	0.000	0.000	-6,304.366
2030	6	320,882.673	39,877.707	281.834	20,860.461	228,228.224	0.000	0.000	0.000	0.000	0.000
2030	7	354,229.789	39,877.707	3.001	47,549.391	227,939.825	0.000	0.000	0.000	0.000	0.000
2030	8	352,974.918	39,877.707	0.000	49,823.530	219,304.940	0.000	0.000	0.000	0.000	0.000
2030	9	353,739.440	39,877.707	11.047	34,655.969	226,513.324	0.000	0.000	0.000	0.000	0.000
2030	10	309,907.330	39,877.707	653.260	10,690.027	219,832.469	0.000	0.000	0.000	0.000	0.000
2030	11	285,361.466	39,877.707	3,697.876	975.672	218,410.543	0.000	0.000	0.000	0.000	0.000
2030	12	316,992.017	39,877.707	8,671.444	12.409	240,765.811	0.000	0.000	0.000	0.000	0.000

Indiana Michigan Power Company-Indiana
Long-Term Commercial Energy Model Output

Year	Month	Pred	CONST	XHeat	XCool	XOther	Jan	Feb	Mar	Apr	May
2031	1	326,648.044	39,877.707	12,403.183	0.000	242,990.376	3,712.132	0.000	0.000	0.000	0.000
2031	2	303,859.443	39,877.707	13,863.095	0.000	218,833.350	0.000	3,620.646	0.000	0.000	0.000
2031	3	293,565.958	39,877.707	11,022.551	43.419	217,033.963	0.000	0.000	-2,076.327	0.000	0.000
2031	4	285,350.219	39,877.707	6,104.196	499.891	221,394.589	0.000	0.000	0.000	-10,190.809	0.000
2031	5	286,722.275	39,877.707	1,954.965	3,633.346	219,895.978	0.000	0.000	0.000	0.000	-6,304.366
2031	6	320,514.933	39,877.707	279.017	20,948.137	227,775.624	0.000	0.000	0.000	0.000	0.000
2031	7	353,982.364	39,877.707	2.971	47,750.069	227,491.752	0.000	0.000	0.000	0.000	0.000
2031	8	352,758.721	39,877.707	0.000	50,034.666	218,877.607	0.000	0.000	0.000	0.000	0.000
2031	9	353,449.015	39,877.707	10.937	34,803.390	226,075.587	0.000	0.000	0.000	0.000	0.000
2031	10	309,525.839	39,877.707	646.777	10,735.703	219,411.785	0.000	0.000	0.000	0.000	0.000
2031	11	284,915.309	39,877.707	3,661.248	979.860	217,996.826	0.000	0.000	0.000	0.000	0.000
2031	12	316,454.563	39,877.707	8,585.706	12.463	240,314.041	0.000	0.000	0.000	0.000	0.000
2032	1	326,273.173	39,877.707	12,273.679	0.000	242,745.010	3,712.132	0.000	0.000	0.000	0.000
2032	2	303,490.595	39,877.707	13,718.163	0.000	218,609.434	0.000	3,620.646	0.000	0.000	0.000
2032	3	293,225.967	39,877.707	10,907.175	43.674	216,809.093	0.000	0.000	-2,076.327	0.000	0.000
2032	4	285,054.213	39,877.707	6,040.152	502.823	221,159.696	0.000	0.000	0.000	-10,190.809	0.000
2032	5	286,484.506	39,877.707	1,934.408	3,654.569	219,657.542	0.000	0.000	0.000	0.000	-6,304.366
2032	6	320,382.006	39,877.707	276.077	21,070.043	227,523.730	0.000	0.000	0.000	0.000	0.000
2032	7	354,001.795	39,877.707	2.940	48,026.755	227,234.527	0.000	0.000	0.000	0.000	0.000
2032	8	352,794.310	39,877.707	0.000	50,323.309	218,624.554	0.000	0.000	0.000	0.000	0.000
2032	9	353,382.306	39,877.707	10.821	35,003.362	225,809.022	0.000	0.000	0.000	0.000	0.000
2032	10	309,316.096	39,877.707	639.899	10,797.114	219,147.510	0.000	0.000	0.000	0.000	0.000
2032	11	284,613.977	39,877.707	3,622.225	985.441	217,728.936	0.000	0.000	0.000	0.000	0.000
2032	12	316,063.157	39,877.707	8,494.039	12.533	240,014.233	0.000	0.000	0.000	0.000	0.000
2033	1	325,928.732	39,877.707	12,136.448	0.000	242,537.799	3,712.132	0.000	0.000	0.000	0.000
2033	2	303,157.786	39,877.707	13,565.202	0.000	218,429.586	0.000	3,620.646	0.000	0.000	0.000
2033	3	292,933.187	39,877.707	10,785.889	43.884	216,637.388	0.000	0.000	-2,076.327	0.000	0.000
2033	4	284,824.042	39,877.707	5,973.241	505.263	220,993.995	0.000	0.000	0.000	-10,190.809	0.000
2033	5	286,326.703	39,877.707	1,913.069	3,672.477	219,503.171	0.000	0.000	0.000	0.000	-6,304.366
2033	6	320,334.256	39,877.707	273.045	21,174.306	227,374.751	0.000	0.000	0.000	0.000	0.000
2033	7	354,104.510	39,877.707	2.908	48,266.843	227,097.188	0.000	0.000	0.000	0.000	0.000
2033	8	352,927.759	39,877.707	0.000	50,577.511	218,503.800	0.000	0.000	0.000	0.000	0.000
2033	9	353,448.863	39,877.707	10.704	35,182.144	225,696.915	0.000	0.000	0.000	0.000	0.000

Indiana Michigan Power Company-Indiana
Long-Term Commercial Energy Model Output

Year	Month	Pred	CONST	XHeat	XCool	XOther	Jan	Feb	Mar	Apr	May
2033	10	309,268.087	39,877.707	633.005	10,852.852	219,050.656	0.000	0.000	0.000	0.000	0.000
2033	11	284,496.545	39,877.707	3,583.407	990.585	217,645.179	0.000	0.000	0.000	0.000	0.000
2033	12	315,893.010	39,877.707	8,403.455	12.599	239,934.604	0.000	0.000	0.000	0.000	0.000
2034	1	325,841.807	39,877.707	11,998.129	0.000	242,589.194	3,712.132	0.000	0.000	0.000	0.000
2034	2	303,055.697	39,877.707	13,410.959	0.000	218,481.739	0.000	3,620.646	0.000	0.000	0.000
2034	3	292,868.847	39,877.707	10,663.543	44.178	216,695.102	0.000	0.000	-2,076.327	0.000	0.000
2034	4	284,824.714	39,877.707	5,905.646	508.655	221,058.869	0.000	0.000	0.000	-10,190.809	0.000
2034	5	286,399.691	39,877.707	1,891.466	3,697.218	219,573.020	0.000	0.000	0.000	0.000	-6,304.366
2034	6	320,551.608	39,877.707	269.968	21,317.422	227,452.064	0.000	0.000	0.000	0.000	0.000
2034	7	354,513.505	39,877.707	2.875	48,594.059	227,178.999	0.000	0.000	0.000	0.000	0.000
2034	8	353,353.654	39,877.707	0.000	50,921.205	218,586.001	0.000	0.000	0.000	0.000	0.000
2034	9	353,776.478	39,877.707	10.584	35,421.728	225,785.065	0.000	0.000	0.000	0.000	0.000
2034	10	309,424.405	39,877.707	625.913	10,926.946	219,139.973	0.000	0.000	0.000	0.000	0.000
2034	11	284,554.345	39,877.707	3,543.299	997.358	217,736.313	0.000	0.000	0.000	0.000	0.000
2034	12	315,902.240	39,877.707	8,309.490	12.686	240,037.712	0.000	0.000	0.000	0.000	0.000
2035	1	326,006.155	39,877.707	11,869.966	0.000	242,881.704	3,712.132	0.000	0.000	0.000	0.000
2035	2	303,178.452	39,877.707	13,267.851	0.000	218,747.603	0.000	3,620.646	0.000	0.000	0.000
2035	3	293,021.396	39,877.707	10,549.860	44.501	216,961.010	0.000	0.000	-2,076.327	0.000	0.000
2035	4	285,038.815	39,877.707	5,842.740	512.376	221,332.155	0.000	0.000	0.000	-10,190.809	0.000
2035	5	286,680.651	39,877.707	1,871.340	3,724.310	219,847.014	0.000	0.000	0.000	0.000	-6,304.366
2035	6	320,991.428	39,877.707	267.098	21,473.859	227,738.317	0.000	0.000	0.000	0.000	0.000
2035	7	355,159.088	39,877.707	2.844	48,951.213	227,467.458	0.000	0.000	0.000	0.000	0.000
2035	8	354,008.598	39,877.707	0.000	51,296.059	218,866.092	0.000	0.000	0.000	0.000	0.000
2035	9	354,329.890	39,877.707	10.472	35,682.954	226,077.363	0.000	0.000	0.000	0.000	0.000
2035	10	309,784.694	39,877.707	619.289	11,007.655	219,426.176	0.000	0.000	0.000	0.000	0.000
2035	11	284,811.489	39,877.707	3,505.847	1,004.738	218,023.529	0.000	0.000	0.000	0.000	0.000
2035	12	316,133.952	39,877.707	8,221.752	12.780	240,357.068	0.000	0.000	0.000	0.000	0.000
2036	1	326,324.166	39,877.707	11,735.892	0.000	243,333.790	3,712.132	0.000	0.000	0.000	0.000
2036	2	303,438.246	39,877.707	13,118.128	0.000	219,157.120	0.000	3,620.646	0.000	0.000	0.000
2036	3	293,311.872	39,877.707	10,430.946	44.860	217,370.041	0.000	0.000	-2,076.327	0.000	0.000
2036	4	285,395.066	39,877.707	5,776.901	516.511	221,750.111	0.000	0.000	0.000	-10,190.809	0.000
2036	5	287,104.433	39,877.707	1,850.250	3,754.362	220,261.834	0.000	0.000	0.000	0.000	-6,304.366
2036	6	321,590.976	39,877.707	264.087	21,647.095	228,167.639	0.000	0.000	0.000	0.000	0.000

Indiana Michigan Power Company-Indiana
Long-Term Commercial Energy Model Output

Year	Month	Pred	CONST	XHeat	XCool	XOther	Jan	Feb	Mar	Apr	May
2036	7	355,980.899	39,877.707	2.812	49,345.784	227,894.730	0.000	0.000	0.000	0.000	0.000
2036	8	354,830.562	39,877.707	0.000	51,709.030	219,275.085	0.000	0.000	0.000	0.000	0.000
2036	9	355,036.118	39,877.707	10.353	35,969.763	226,496.901	0.000	0.000	0.000	0.000	0.000
2036	10	310,270.350	39,877.707	612.283	11,095.987	219,830.507	0.000	0.000	0.000	0.000	0.000
2036	11	285,178.152	39,877.707	3,466.129	1,012.785	218,421.864	0.000	0.000	0.000	0.000	0.000
2036	12	316,476.284	39,877.707	8,128.484	12.882	240,792.566	0.000	0.000	0.000	0.000	0.000
2037	1	326,714.689	39,877.707	11,596.701	0.000	243,863.503	3,712.132	0.000	0.000	0.000	0.000
2037	2	303,757.163	39,877.707	12,962.400	0.000	219,631.765	0.000	3,620.646	0.000	0.000	0.000
2037	3	293,657.625	39,877.707	10,307.047	45.246	217,839.307	0.000	0.000	-2,076.327	0.000	0.000
2037	4	285,809.929	39,877.707	5,708.290	520.961	222,229.135	0.000	0.000	0.000	-10,190.809	0.000
2037	5	287,592.056	39,877.707	1,828.287	3,786.731	220,739.052	0.000	0.000	0.000	0.000	-6,304.366
2037	6	322,270.991	39,877.707	260.955	21,833.917	228,663.964	0.000	0.000	0.000	0.000	0.000
2037	7	356,905.041	39,877.707	2.779	49,772.116	228,392.574	0.000	0.000	0.000	0.000	0.000
2037	8	355,760.770	39,877.707	0.000	52,156.632	219,757.690	0.000	0.000	0.000	0.000	0.000
2037	9	355,850.003	39,877.707	10.231	36,281.695	226,998.977	0.000	0.000	0.000	0.000	0.000
2037	10	310,851.846	39,877.707	605.058	11,192.463	220,322.751	0.000	0.000	0.000	0.000	0.000
2037	11	285,640.186	39,877.707	3,425.310	1,021.614	218,915.887	0.000	0.000	0.000	0.000	0.000
2037	12	316,930.292	39,877.707	8,032.919	12.995	241,342.026	0.000	0.000	0.000	0.000	0.000
2038	1	327,195.507	39,877.707	11,458.066	0.000	244,482.957	3,712.132	0.000	0.000	0.000	0.000
2038	2	304,154.690	39,877.707	12,807.141	0.000	220,184.551	0.000	3,620.646	0.000	0.000	0.000
2038	3	294,076.610	39,877.707	10,183.317	45.604	218,381.664	0.000	0.000	-2,076.327	0.000	0.000
2038	4	286,293.083	39,877.707	5,639.624	525.074	222,776.841	0.000	0.000	0.000	-10,190.809	0.000
2038	5	288,138.055	39,877.707	1,806.247	3,816.525	221,277.297	0.000	0.000	0.000	0.000	-6,304.366
2038	6	322,990.549	39,877.707	257.802	22,005.124	229,215.469	0.000	0.000	0.000	0.000	0.000
2038	7	357,839.588	39,877.707	2.745	50,161.219	228,938.052	0.000	0.000	0.000	0.000	0.000
2038	8	356,685.792	39,877.707	0.000	52,562.916	220,276.428	0.000	0.000	0.000	0.000	0.000
2038	9	356,662.460	39,877.707	10.107	36,563.505	227,529.748	0.000	0.000	0.000	0.000	0.000
2038	10	311,440.120	39,877.707	597.688	11,279.085	220,831.773	0.000	0.000	0.000	0.000	0.000
2038	11	286,106.799	39,877.707	3,383.505	1,029.496	219,416.423	0.000	0.000	0.000	0.000	0.000
2038	12	317,378.516	39,877.707	7,934.700	13.094	241,888.369	0.000	0.000	0.000	0.000	0.000
2039	1	327,700.247	39,877.707	11,321.466	0.000	245,124.296	3,712.132	0.000	0.000	0.000	0.000
2039	2	304,581.381	39,877.707	12,654.554	0.000	220,763.830	0.000	3,620.646	0.000	0.000	0.000
2039	3	294,531.605	39,877.707	10,062.051	46.014	218,957.515	0.000	0.000	-2,076.327	0.000	0.000

Indiana Michigan Power Company-Indiana
Long-Term Commercial Energy Model Output

Year	Month	Pred	CONST	XHeat	XCool	XOther	Jan	Feb	Mar	Apr	May
2039	4	286,820.516	39,877.707	5,572.525	529.799	223,366.649	0.000	0.000	0.000	-10,190.809	0.000
2039	5	288,739.168	39,877.707	1,784.776	3,850.911	221,865.495	0.000	0.000	0.000	0.000	-6,304.366
2039	6	323,798.678	39,877.707	254.741	22,203.704	229,828.078	0.000	0.000	0.000	0.000	0.000
2039	7	358,907.499	39,877.707	2.713	50,614.503	229,552.712	0.000	0.000	0.000	0.000	0.000
2039	8	357,757.278	39,877.707	0.000	53,038.889	220,871.941	0.000	0.000	0.000	0.000	0.000
2039	9	357,613.251	39,877.707	9.987	36,895.252	228,148.911	0.000	0.000	0.000	0.000	0.000
2039	10	312,140.459	39,877.707	590.631	11,381.623	221,436.631	0.000	0.000	0.000	0.000	0.000
2039	11	286,681.554	39,877.707	3,343.618	1,038.875	220,021.685	0.000	0.000	0.000	0.000	0.000
2039	12	317,957.091	39,877.707	7,841.311	13.214	242,560.213	0.000	0.000	0.000	0.000	0.000
2040	1	327,690.609	39,877.707	11,188.887	0.000	245,247.238	3,712.132	0.000	0.000	0.000	0.000
2040	2	304,551.534	39,877.707	12,506.772	0.000	220,881.763	0.000	3,620.646	0.000	0.000	0.000
2040	3	294,538.576	39,877.707	9,944.854	46.399	219,081.297	0.000	0.000	-2,076.327	0.000	0.000
2040	4	286,891.165	39,877.707	5,507.736	534.245	223,497.641	0.000	0.000	0.000	-10,190.809	0.000
2040	5	288,883.982	39,877.707	1,764.049	3,883.283	221,998.664	0.000	0.000	0.000	0.000	-6,304.366
2040	6	324,123.928	39,877.707	251.787	22,390.677	229,969.310	0.000	0.000	0.000	0.000	0.000
2040	7	359,477.640	39,877.707	2.681	51,041.244	229,696.143	0.000	0.000	0.000	0.000	0.000
2040	8	358,343.027	39,877.707	0.000	53,486.180	221,010.399	0.000	0.000	0.000	0.000	0.000
2040	9	358,066.576	39,877.707	9.871	37,206.298	228,291.306	0.000	0.000	0.000	0.000	0.000
2040	10	312,367.594	39,877.707	583.785	11,477.567	221,574.668	0.000	0.000	0.000	0.000	0.000
2040	11	286,786.792	39,877.707	3,304.837	1,047.624	220,156.956	0.000	0.000	0.000	0.000	0.000
2040	12	318,012.814	39,877.707	7,750.284	13.325	242,706.853	0.000	0.000	0.000	0.000	0.000
2041	1	327,898.295	39,877.707	11,060.904	0.000	245,582.906	3,712.132	0.000	0.000	0.000	0.000
2041	2	304,699.896	39,877.707	12,363.137	0.000	221,173.761	0.000	3,620.646	0.000	0.000	0.000
2041	3	294,704.082	39,877.707	9,830.198	46.851	219,361.009	0.000	0.000	-2,076.327	0.000	0.000
2041	4	287,109.346	39,877.707	5,444.026	539.420	223,774.357	0.000	0.000	0.000	-10,190.809	0.000
2041	5	289,168.385	39,877.707	1,743.585	3,920.764	222,266.049	0.000	0.000	0.000	0.000	-6,304.366
2041	6	324,603.726	39,877.707	248.855	22,605.864	230,236.852	0.000	0.000	0.000	0.000	0.000
2041	7	360,225.953	39,877.707	2.650	51,530.055	229,955.676	0.000	0.000	0.000	0.000	0.000
2041	8	359,095.475	39,877.707	0.000	53,996.543	221,252.484	0.000	0.000	0.000	0.000	0.000
2041	9	358,663.976	39,877.707	9.756	37,560.251	228,534.869	0.000	0.000	0.000	0.000	0.000
2041	10	312,699.170	39,877.707	576.916	11,586.402	221,804.278	0.000	0.000	0.000	0.000	0.000
2041	11	286,980.172	39,877.707	3,265.866	1,057.530	220,379.400	0.000	0.000	0.000	0.000	0.000
2041	12	318,159.969	39,877.707	7,658.683	13.451	242,945.482	0.000	0.000	0.000	0.000	0.000

Indiana Michigan Power Company-Indiana
Long-Term Commercial Energy Model Output

Year	Month	Pred	CONST	XHeat	XCool	XOther	Jan	Feb	Mar	Apr	May
2042	1	328,146.959	39,877.707	10,925.550	0.000	245,966.924	3,712.132	0.000	0.000	0.000	0.000
2042	2	304,890.030	39,877.707	12,211.617	0.000	221,515.414	0.000	3,620.646	0.000	0.000	0.000
2042	3	294,917.763	39,877.707	9,709.503	47.296	219,694.939	0.000	0.000	-2,076.327	0.000	0.000
2042	4	287,382.759	39,877.707	5,377.056	544.538	224,109.623	0.000	0.000	0.000	-10,190.809	0.000
2042	5	289,512.423	39,877.707	1,722.101	3,957.885	222,594.451	0.000	0.000	0.000	0.000	-6,304.366
2042	6	325,149.913	39,877.707	245.784	22,819.443	230,572.532	0.000	0.000	0.000	0.000	0.000
2042	7	361,041.072	39,877.707	2.617	52,015.623	230,285.260	0.000	0.000	0.000	0.000	0.000
2042	8	359,917.129	39,877.707	0.000	54,504.511	221,566.170	0.000	0.000	0.000	0.000	0.000
2042	9	359,335.358	39,877.707	9.635	37,912.764	228,853.859	0.000	0.000	0.000	0.000	0.000
2042	10	313,105.392	39,877.707	569.749	11,694.896	222,109.173	0.000	0.000	0.000	0.000	0.000
2042	11	287,247.633	39,877.707	3,225.223	1,067.410	220,677.624	0.000	0.000	0.000	0.000	0.000
2042	12	318,390.042	39,877.707	7,563.268	13.576	243,270.846	0.000	0.000	0.000	0.000	0.000
2043	1	328,600.018	39,877.707	10,793.174	0.000	246,552.360	3,712.132	0.000	0.000	0.000	0.000
2043	2	305,274.886	39,877.707	12,063.946	0.000	222,047.941	0.000	3,620.646	0.000	0.000	0.000
2043	3	295,335.668	39,877.707	9,592.371	47.721	220,229.551	0.000	0.000	-2,076.327	0.000	0.000
2043	4	287,875.336	39,877.707	5,312.354	549.447	224,661.991	0.000	0.000	0.000	-10,190.809	0.000
2043	5	290,083.244	39,877.707	1,701.433	3,993.688	223,150.137	0.000	0.000	0.000	0.000	-6,304.366
2043	6	325,938.314	39,877.707	242.843	23,026.713	231,156.603	0.000	0.000	0.000	0.000	0.000
2043	7	362,107.623	39,877.707	2.586	52,490.080	230,877.385	0.000	0.000	0.000	0.000	0.000
2043	8	360,995.405	39,877.707	0.000	55,003.934	222,145.024	0.000	0.000	0.000	0.000	0.000
2043	9	360,292.732	39,877.707	9.521	38,261.901	229,462.210	0.000	0.000	0.000	0.000	0.000
2043	10	313,807.493	39,877.707	563.027	11,803.133	222,709.759	0.000	0.000	0.000	0.000	0.000
2043	11	287,826.946	39,877.707	3,187.328	1,077.341	221,284.903	0.000	0.000	0.000	0.000	0.000
2043	12	318,982.040	39,877.707	7,474.736	13.703	243,951.248	0.000	0.000	0.000	0.000	0.000
2044	1	329,301.487	39,877.707	10,666.790	0.000	247,380.213	3,712.132	0.000	0.000	0.000	0.000
2044	2	305,884.136	39,877.707	11,922.933	0.000	222,798.205	0.000	3,620.646	0.000	0.000	0.000
2044	3	295,973.077	39,877.707	9,480.448	48.254	220,978.349	0.000	0.000	-2,076.327	0.000	0.000
2044	4	288,585.811	39,877.707	5,250.426	555.590	225,428.252	0.000	0.000	0.000	-10,190.809	0.000
2044	5	290,871.696	39,877.707	1,681.617	4,038.384	223,913.708	0.000	0.000	0.000	0.000	-6,304.366
2044	6	326,985.763	39,877.707	240.017	23,284.569	231,949.024	0.000	0.000	0.000	0.000	0.000
2044	7	363,488.407	39,877.707	2.556	53,078.160	231,670.118	0.000	0.000	0.000	0.000	0.000
2044	8	362,374.182	39,877.707	0.000	55,620.136	222,907.599	0.000	0.000	0.000	0.000	0.000
2044	9	361,508.031	39,877.707	9.410	38,690.411	230,249.110	0.000	0.000	0.000	0.000	0.000

Indiana Michigan Power Company-Indiana
Long-Term Commercial Energy Model Output

Year	Month	Pred	CONST	XHeat	XCool	XOther	Jan	Feb	Mar	Apr	May
2044	10	314,696.108	39,877.707	556.472	11,935.282	223,472.780	0.000	0.000	0.000	0.000	0.000
2044	11	288,558.909	39,877.707	3,150.204	1,089.397	222,041.933	0.000	0.000	0.000	0.000	0.000
2044	12	319,728.059	39,877.707	7,387.628	13.856	244,784.222	0.000	0.000	0.000	0.000	0.000
2045	1	330,164.107	39,877.707	10,542.038	0.000	248,367.584	3,712.132	0.000	0.000	0.000	0.000
2045	2	306,619.760	39,877.707	11,782.780	0.000	223,673.982	0.000	3,620.646	0.000	0.000	0.000
2045	3	296,716.285	39,877.707	9,368.420	48.751	221,833.089	0.000	0.000	-2,076.327	0.000	0.000
2045	4	289,389.502	39,877.707	5,188.116	561.281	226,288.561	0.000	0.000	0.000	-10,190.809	0.000
2045	5	291,734.511	39,877.707	1,661.565	4,079.522	224,755.437	0.000	0.000	0.000	0.000	-6,304.366
2045	6	328,078.703	39,877.707	237.142	23,520.538	232,808.869	0.000	0.000	0.000	0.000	0.000
2045	7	364,870.844	39,877.707	2.525	53,613.393	232,517.354	0.000	0.000	0.000	0.000	0.000
2045	8	363,737.258	39,877.707	0.000	56,178.396	223,712.415	0.000	0.000	0.000	0.000	0.000
2045	9	362,714.675	39,877.707	9.296	39,076.881	231,069.398	0.000	0.000	0.000	0.000	0.000
2045	10	315,594.018	39,877.707	549.705	12,053.956	224,258.783	0.000	0.000	0.000	0.000	0.000
2045	11	289,301.651	39,877.707	3,111.744	1,100.177	222,812.355	0.000	0.000	0.000	0.000	0.000
2045	12	320,477.107	39,877.707	7,297.139	13.993	245,623.623	0.000	0.000	0.000	0.000	0.000
2046	1	331,038.046	39,877.707	10,414.323	0.000	249,369.239	3,712.132	0.000	0.000	0.000	0.000
2046	2	307,374.002	39,877.707	11,639.783	0.000	224,571.221	0.000	3,620.646	0.000	0.000	0.000
2046	3	297,487.267	39,877.707	9,254.494	49.322	222,717.425	0.000	0.000	-2,076.327	0.000	0.000
2046	4	290,229.249	39,877.707	5,124.897	567.843	227,184.966	0.000	0.000	0.000	-10,190.809	0.000
2046	5	292,646.090	39,877.707	1,641.275	4,127.103	225,639.726	0.000	0.000	0.000	0.000	-6,304.366
2046	6	329,258.593	39,877.707	234.240	23,794.174	233,718.026	0.000	0.000	0.000	0.000	0.000
2046	7	366,394.055	39,877.707	2.494	54,235.522	233,418.467	0.000	0.000	0.000	0.000	0.000
2046	8	365,247.791	39,877.707	0.000	56,828.603	224,572.740	0.000	0.000	0.000	0.000	0.000
2046	9	364,046.208	39,877.707	9.181	39,527.810	231,950.117	0.000	0.000	0.000	0.000	0.000
2046	10	316,572.253	39,877.707	542.905	12,192.599	225,105.175	0.000	0.000	0.000	0.000	0.000
2046	11	290,109.078	39,877.707	3,073.150	1,112.794	223,645.759	0.000	0.000	0.000	0.000	0.000
2046	12	321,295.600	39,877.707	7,206.353	14.153	246,532.742	0.000	0.000	0.000	0.000	0.000
2047	1	331,998.819	39,877.707	10,285.724	0.000	250,458.611	3,712.132	0.000	0.000	0.000	0.000
2047	2	308,212.253	39,877.707	11,496.097	0.000	225,553.158	0.000	3,620.646	0.000	0.000	0.000
2047	3	298,348.622	39,877.707	9,140.302	49.857	223,692.438	0.000	0.000	-2,076.327	0.000	0.000
2047	4	291,167.151	39,877.707	5,061.669	574.000	228,179.938	0.000	0.000	0.000	-10,190.809	0.000
2047	5	293,659.127	39,877.707	1,621.028	4,171.860	226,628.253	0.000	0.000	0.000	0.000	-6,304.366
2047	6	330,537.498	39,877.707	231.350	24,052.198	234,741.795	0.000	0.000	0.000	0.000	0.000

Indiana Michigan Power Company-Indiana
Long-Term Commercial Energy Model Output

Year	Month	Pred	CONST	XHeat	XCool	XOther	Jan	Feb	Mar	Apr	May
2047	7	368,004.655	39,877.707	2.464	54,823.662	234,440.958	0.000	0.000	0.000	0.000	0.000
2047	8	366,845.961	39,877.707	0.000	57,444.491	225,555.023	0.000	0.000	0.000	0.000	0.000
2047	9	365,488.689	39,877.707	9.068	39,956.147	232,964.374	0.000	0.000	0.000	0.000	0.000
2047	10	317,681.534	39,877.707	536.202	12,324.698	226,089.059	0.000	0.000	0.000	0.000	0.000
2047	11	291,058.862	39,877.707	3,035.184	1,124.841	224,621.462	0.000	0.000	0.000	0.000	0.000
2047	12	322,281.585	39,877.707	7,117.307	14.306	247,607.620	0.000	0.000	0.000	0.000	0.000
2048	1	333,103.697	39,877.707	10,159.480	0.000	251,689.733	3,712.132	0.000	0.000	0.000	0.000
2048	2	309,177.378	39,877.707	11,354.879	0.000	226,659.501	0.000	3,620.646	0.000	0.000	0.000
2048	3	299,332.541	39,877.707	9,027.964	50.359	224,788.193	0.000	0.000	-2,076.327	0.000	0.000
2048	4	292,224.964	39,877.707	4,999.385	579.776	229,294.260	0.000	0.000	0.000	-10,190.809	0.000
2048	5	294,785.318	39,877.707	1,601.063	4,213.793	227,732.475	0.000	0.000	0.000	0.000	-6,304.366
2048	6	331,917.480	39,877.707	228.498	24,293.708	235,883.120	0.000	0.000	0.000	0.000	0.000
2048	7	369,693.295	39,877.707	2.433	55,373.830	235,579.460	0.000	0.000	0.000	0.000	0.000
2048	8	368,517.358	39,877.707	0.000	58,020.874	226,650.037	0.000	0.000	0.000	0.000	0.000
2048	9	367,020.187	39,877.707	8.956	40,357.015	234,095.116	0.000	0.000	0.000	0.000	0.000
2048	10	318,895.833	39,877.707	529.588	12,448.343	227,186.328	0.000	0.000	0.000	0.000	0.000
2048	11	292,124.695	39,877.707	2,997.769	1,136.135	225,713.416	0.000	0.000	0.000	0.000	0.000
2048	12	323,399.362	39,877.707	7,029.618	14.450	248,812.942	0.000	0.000	0.000	0.000	0.000
2049	1	334,370.102	39,877.707	10,011.170	0.000	253,104.447	3,712.132	0.000	0.000	0.000	0.000
2049	2	310,295.130	39,877.707	11,189.562	0.000	227,942.570	0.000	3,620.646	0.000	0.000	0.000
2049	3	300,483.538	39,877.707	8,896.880	50.937	226,069.696	0.000	0.000	-2,076.327	0.000	0.000
2049	4	293,477.956	39,877.707	4,927.040	586.458	230,612.915	0.000	0.000	0.000	-10,190.809	0.000
2049	5	296,132.263	39,877.707	1,577.974	4,262.569	229,053.733	0.000	0.000	0.000	0.000	-6,304.366
2049	6	333,577.975	39,877.707	225.215	24,576.229	237,264.376	0.000	0.000	0.000	0.000	0.000
2049	7	371,731.188	39,877.707	2.398	56,020.564	236,970.654	0.000	0.000	0.000	0.000	0.000
2049	8	370,547.848	39,877.707	0.000	58,701.467	227,999.933	0.000	0.000	0.000	0.000	0.000
2049	9	368,901.038	39,877.707	8.829	40,832.381	235,500.728	0.000	0.000	0.000	0.000	0.000
2049	10	320,411.419	39,877.707	522.083	12,595.616	228,562.146	0.000	0.000	0.000	0.000	0.000
2049	11	293,473.069	39,877.707	2,955.420	1,149.629	227,090.646	0.000	0.000	0.000	0.000	0.000
2049	12	324,829.658	39,877.707	6,930.614	14.622	250,342.070	0.000	0.000	0.000	0.000	0.000
2050	1	335,935.960	39,877.707	9,868.106	0.000	254,813.370	3,712.132	0.000	0.000	0.000	0.000
2050	2	311,674.196	39,877.707	11,029.656	0.000	229,481.542	0.000	3,620.646	0.000	0.000	0.000
2050	3	301,882.638	39,877.707	8,769.711	51.578	227,595.325	0.000	0.000	-2,076.327	0.000	0.000

Indiana Michigan Power Company-Indiana
Long-Term Commercial Energy Model Output

Year	Month	Pred	CONST	XHeat	XCool	XOther	Jan	Feb	Mar	Apr	May
2050	4	294,970.624	39,877.707	4,856.603	593.829	232,168.649	0.000	0.000	0.000	-10,190.809	0.000
2050	5	297,708.119	39,877.707	1,555.413	4,316.142	230,598.577	0.000	0.000	0.000	0.000	-6,304.366
2050	6	335,482.468	39,877.707	221.994	24,884.980	238,863.340	0.000	0.000	0.000	0.000	0.000
2050	7	374,030.414	39,877.707	2.364	56,724.059	238,566.419	0.000	0.000	0.000	0.000	0.000
2050	8	372,818.264	39,877.707	0.000	59,438.197	229,533.620	0.000	0.000	0.000	0.000	0.000
2050	9	370,996.184	39,877.707	8.702	41,344.647	237,083.735	0.000	0.000	0.000	0.000	0.000
2050	10	322,096.523	39,877.707	514.603	12,753.541	230,096.805	0.000	0.000	0.000	0.000	0.000
2050	11	294,968.639	39,877.707	2,913.061	1,164.036	228,614.166	0.000	0.000	0.000	0.000	0.000
2050	12	326,408.501	39,877.707	6,831.241	14.805	252,020.103	0.000	0.000	0.000	0.000	0.000
2051	1	337,396.711	39,877.707	9,741.089	0.000	256,401.138	3,712.132	0.000	0.000	0.000	0.000
2051	2	312,964.243	39,877.707	10,887.782	0.000	230,913.463	0.000	3,620.646	0.000	0.000	0.000
2051	3	303,191.963	39,877.707	8,656.957	52.176	229,016.805	0.000	0.000	-2,076.327	0.000	0.000
2051	4	296,366.795	39,877.707	4,794.194	600.726	233,620.332	0.000	0.000	0.000	-10,190.809	0.000
2051	5	299,182.059	39,877.707	1,535.438	4,366.304	232,042.331	0.000	0.000	0.000	0.000	-6,304.366
2051	6	337,265.577	39,877.707	219.144	25,174.308	240,359.971	0.000	0.000	0.000	0.000	0.000
2051	7	376,185.988	39,877.707	2.334	57,383.823	240,062.260	0.000	0.000	0.000	0.000	0.000
2051	8	374,949.425	39,877.707	0.000	60,129.658	230,973.320	0.000	0.000	0.000	0.000	0.000
2051	9	372,965.431	39,877.707	8.590	41,825.819	238,571.921	0.000	0.000	0.000	0.000	0.000
2051	10	323,683.265	39,877.707	508.004	12,901.998	231,541.688	0.000	0.000	0.000	0.000	0.000
2051	11	296,381.349	39,877.707	2,875.716	1,177.591	230,050.668	0.000	0.000	0.000	0.000	0.000
2051	12	327,905.512	39,877.707	6,743.686	14.978	253,604.497	0.000	0.000	0.000	0.000	0.000
2052	1	338,907.337	39,877.707	9,615.906	0.000	258,036.947	3,712.132	0.000	0.000	0.000	0.000
2052	2	314,299.635	39,877.707	10,747.956	0.000	232,388.681	0.000	3,620.646	0.000	0.000	0.000
2052	3	304,545.890	39,877.707	8,545.830	52.783	230,481.252	0.000	0.000	-2,076.327	0.000	0.000
2052	4	297,807.821	39,877.707	4,732.686	607.715	235,115.877	0.000	0.000	0.000	-10,190.809	0.000
2052	5	300,700.554	39,877.707	1,515.751	4,417.140	233,529.676	0.000	0.000	0.000	0.000	-6,304.366
2052	6	339,097.802	39,877.707	216.335	25,467.530	241,901.783	0.000	0.000	0.000	0.000	0.000
2052	7	378,395.605	39,877.707	2.304	58,052.474	241,603.255	0.000	0.000	0.000	0.000	0.000
2052	8	377,133.381	39,877.707	0.000	60,830.441	232,456.493	0.000	0.000	0.000	0.000	0.000
2052	9	374,986.092	39,877.707	8.480	42,313.481	240,105.030	0.000	0.000	0.000	0.000	0.000
2052	10	325,315.736	39,877.707	501.500	13,052.460	233,030.203	0.000	0.000	0.000	0.000	0.000
2052	11	297,838.141	39,877.707	2,838.909	1,191.329	231,530.529	0.000	0.000	0.000	0.000	0.000
2052	12	329,451.609	39,877.707	6,657.394	15.152	255,236.710	0.000	0.000	0.000	0.000	0.000

Indiana Michigan Power Company-Indiana
Long-Term Commercial Energy Model Output

Year	Month	Pred	CONST	XHeat	XCool	XOther	Jan	Feb	Mar	Apr	May
2053	1	340,468.343	39,877.707	9,492.526	0.000	259,721.332	3,712.132	0.000	0.000	0.000	0.000
2053	2	315,680.820	39,877.707	10,610.144	0.000	233,907.678	0.000	3,620.646	0.000	0.000	0.000
2053	3	305,944.873	39,877.707	8,436.303	53.398	231,989.147	0.000	0.000	-2,076.327	0.000	0.000
2053	4	299,294.177	39,877.707	4,672.063	614.798	236,655.772	0.000	0.000	0.000	-10,190.809	0.000
2053	5	302,264.096	39,877.707	1,496.348	4,468.660	235,061.102	0.000	0.000	0.000	0.000	-6,304.366
2053	6	340,979.705	39,877.707	213.567	25,764.701	243,489.282	0.000	0.000	0.000	0.000	0.000
2053	7	380,659.893	39,877.707	2.274	58,730.137	243,189.910	0.000	0.000	0.000	0.000	0.000
2053	8	379,370.749	39,877.707	0.000	61,540.675	233,983.627	0.000	0.000	0.000	0.000	0.000
2053	9	377,058.760	39,877.707	8.372	42,807.722	241,683.565	0.000	0.000	0.000	0.000	0.000
2053	10	326,994.454	39,877.707	495.089	13,204.953	234,562.838	0.000	0.000	0.000	0.000	0.000
2053	11	299,339.496	39,877.707	2,802.632	1,205.252	233,054.237	0.000	0.000	0.000	0.000	0.000
2053	12	331,047.307	39,877.707	6,572.344	15.330	256,917.281	0.000	0.000	0.000	0.000	0.000
2054	1	342,080.248	39,877.707	9,370.920	0.000	261,454.843	3,712.132	0.000	0.000	0.000	0.000
2054	2	317,108.262	39,877.707	10,474.312	0.000	235,470.952	0.000	3,620.646	0.000	0.000	0.000
2054	3	307,389.380	39,877.707	8,328.351	54.021	233,540.983	0.000	0.000	-2,076.327	0.000	0.000
2054	4	300,826.355	39,877.707	4,612.311	621.977	238,240.524	0.000	0.000	0.000	-10,190.809	0.000
2054	5	303,873.193	39,877.707	1,477.223	4,520.874	236,637.109	0.000	0.000	0.000	0.000	-6,304.366
2054	6	342,911.860	39,877.707	210.838	26,065.876	245,122.991	0.000	0.000	0.000	0.000	0.000
2054	7	382,979.498	39,877.707	2.245	59,416.934	244,822.747	0.000	0.000	0.000	0.000	0.000
2054	8	381,662.162	39,877.707	0.000	62,260.491	235,555.224	0.000	0.000	0.000	0.000	0.000
2054	9	379,184.046	39,877.707	8.265	43,308.634	243,308.047	0.000	0.000	0.000	0.000	0.000
2054	10	328,719.950	39,877.707	488.771	13,359.506	236,140.098	0.000	0.000	0.000	0.000	0.000
2054	11	300,885.910	39,877.707	2,766.876	1,219.363	234,622.296	0.000	0.000	0.000	0.000	0.000
2054	12	332,693.143	39,877.707	6,488.516	15.509	258,646.765	0.000	0.000	0.000	0.000	0.000
2055	1	343,743.591	39,877.707	9,251.060	0.000	263,238.047	3,712.132	0.000	0.000	0.000	0.000
2055	2	318,582.440	39,877.707	10,340.429	0.000	237,079.014	0.000	3,620.646	0.000	0.000	0.000
2055	3	308,879.893	39,877.707	8,221.946	54.652	235,137.269	0.000	0.000	-2,076.327	0.000	0.000
2055	4	302,404.862	39,877.707	4,553.416	629.252	239,870.651	0.000	0.000	0.000	-10,190.809	0.000
2055	5	305,528.367	39,877.707	1,458.372	4,573.792	238,258.217	0.000	0.000	0.000	0.000	-6,304.366
2055	6	344,894.858	39,877.707	208.149	26,371.108	246,803.447	0.000	0.000	0.000	0.000	0.000
2055	7	385,355.084	39,877.707	2.217	60,112.992	246,502.304	0.000	0.000	0.000	0.000	0.000
2055	8	384,008.270	39,877.707	0.000	62,990.020	237,171.803	0.000	0.000	0.000	0.000	0.000
2055	9	381,362.578	39,877.707	8.160	43,816.307	244,979.010	0.000	0.000	0.000	0.000	0.000

Indiana Michigan Power Company-Indiana
Long-Term Commercial Energy Model Output

Year	Month	Pred	CONST	XHeat	XCool	XOther	Jan	Feb	Mar	Apr	May
2055	10	330,492.770	39,877.707	482.543	13,516.148	237,762.505	0.000	0.000	0.000	0.000	0.000
2055	11	302,477.895	39,877.707	2,731.633	1,233.665	236,235.222	0.000	0.000	0.000	0.000	0.000
2055	12	334,389.665	39,877.707	6,405.890	15.691	260,425.731	0.000	0.000	0.000	0.000	0.000
2056	1	345,458.927	39,877.707	9,132.915	0.000	265,071.528	3,712.132	0.000	0.000	0.000	0.000
2056	2	320,103.850	39,877.707	10,208.462	0.000	238,732.391	0.000	3,620.646	0.000	0.000	0.000
2056	3	310,416.910	39,877.707	8,117.065	55.292	236,778.528	0.000	0.000	-2,076.327	0.000	0.000
2056	4	304,030.221	39,877.707	4,495.364	636.625	241,546.690	0.000	0.000	0.000	-10,190.809	0.000
2056	5	307,230.156	39,877.707	1,439.791	4,627.421	239,924.958	0.000	0.000	0.000	0.000	-6,304.366
2056	6	346,929.308	39,877.707	205.498	26,680.455	248,531.201	0.000	0.000	0.000	0.000	0.000
2056	7	387,787.330	39,877.707	2.188	60,818.438	248,229.132	0.000	0.000	0.000	0.000	0.000
2056	8	386,409.738	39,877.707	0.000	63,729.396	238,833.895	0.000	0.000	0.000	0.000	0.000
2056	9	383,594.999	39,877.707	8.056	44,330.837	246,697.006	0.000	0.000	0.000	0.000	0.000
2056	10	332,313.477	39,877.707	476.405	13,674.906	239,430.592	0.000	0.000	0.000	0.000	0.000
2056	11	304,115.977	39,877.707	2,696.894	1,248.161	237,893.547	0.000	0.000	0.000	0.000	0.000
2056	12	336,137.442	39,877.707	6,324.447	15.876	262,254.767	0.000	0.000	0.000	0.000	0.000
2057	1	347,226.828	39,877.707	9,016.459	0.000	266,955.884	3,712.132	0.000	0.000	0.000	0.000
2057	2	321,673.002	39,877.707	10,078.380	0.000	240,431.624	0.000	3,620.646	0.000	0.000	0.000
2057	3	312,000.946	39,877.707	8,013.681	55.941	238,465.299	0.000	0.000	-2,076.327	0.000	0.000
2057	4	305,702.970	39,877.707	4,438.140	644.097	243,269.189	0.000	0.000	0.000	-10,190.809	0.000
2057	5	308,979.113	39,877.707	1,421.474	4,681.774	241,637.878	0.000	0.000	0.000	0.000	-6,304.366
2057	6	349,015.834	39,877.707	202.885	26,993.973	250,306.822	0.000	0.000	0.000	0.000	0.000
2057	7	390,276.935	39,877.707	2.161	61,533.402	250,003.801	0.000	0.000	0.000	0.000	0.000
2057	8	388,867.251	39,877.707	0.000	64,478.756	240,542.048	0.000	0.000	0.000	0.000	0.000
2057	9	385,881.971	39,877.707	7.954	44,852.317	248,462.600	0.000	0.000	0.000	0.000	0.000
2057	10	334,182.648	39,877.707	470.354	13,835.811	241,144.909	0.000	0.000	0.000	0.000	0.000
2057	11	305,800.697	39,877.707	2,662.651	1,262.852	239,597.819	0.000	0.000	0.000	0.000	0.000
2057	12	337,937.058	39,877.707	6,244.165	16.062	264,134.478	0.000	0.000	0.000	0.000	0.000

Indiana Michigan Power Company-Indiana
Long-Term Commercial Energy Model Output

Year	Month	Jun	Jul	Aug	Sep	Oct	Nov	apr20on	20-Jun	Jun-99	Mar09on	May-99
1998	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1998	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1998	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1998	4	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1998	5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1998	6	3,969.802	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1998	7	0.000	11,195.219	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1998	8	0.000	0.000	16,304.095	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1998	9	0.000	0.000	0.000	25,016.748	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1998	10	0.000	0.000	0.000	0.000	11,189.221	0.000	0.000	0.000	0.000	0.000	0.000
1998	11	0.000	0.000	0.000	0.000	0.000	-5,264.977	0.000	0.000	0.000	0.000	0.000
1998	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1999	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1999	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1999	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1999	4	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1999	5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	42,109.032
1999	6	3,969.802	0.000	0.000	0.000	0.000	0.000	0.000	0.000	-32,131.245	0.000	0.000
1999	7	0.000	11,195.219	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1999	8	0.000	0.000	16,304.095	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1999	9	0.000	0.000	0.000	25,016.748	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1999	10	0.000	0.000	0.000	0.000	11,189.221	0.000	0.000	0.000	0.000	0.000	0.000
1999	11	0.000	0.000	0.000	0.000	0.000	-5,264.977	0.000	0.000	0.000	0.000	0.000
1999	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2000	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2000	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2000	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2000	4	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2000	5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2000	6	3,969.802	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2000	7	0.000	11,195.219	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2000	8	0.000	0.000	16,304.095	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2000	9	0.000	0.000	0.000	25,016.748	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Indiana Michigan Power Company-Indiana
Long-Term Commercial Energy Model Output

Year	Month	Jun	Jul	Aug	Sep	Oct	Nov	apr20on	20-Jun	Jun-99	Mar09on	May-99
2000	10	0.000	0.000	0.000	0.000	11,189.221	0.000	0.000	0.000	0.000	0.000	0.000
2000	11	0.000	0.000	0.000	0.000	0.000	-5,264.977	0.000	0.000	0.000	0.000	0.000
2000	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2001	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2001	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2001	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2001	4	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2001	5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2001	6	3,969.802	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2001	7	0.000	11,195.219	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2001	8	0.000	0.000	16,304.095	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2001	9	0.000	0.000	0.000	25,016.748	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2001	10	0.000	0.000	0.000	0.000	11,189.221	0.000	0.000	0.000	0.000	0.000	0.000
2001	11	0.000	0.000	0.000	0.000	0.000	-5,264.977	0.000	0.000	0.000	0.000	0.000
2001	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2002	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2002	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2002	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2002	4	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2002	5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2002	6	3,969.802	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2002	7	0.000	11,195.219	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2002	8	0.000	0.000	16,304.095	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2002	9	0.000	0.000	0.000	25,016.748	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2002	10	0.000	0.000	0.000	0.000	11,189.221	0.000	0.000	0.000	0.000	0.000	0.000
2002	11	0.000	0.000	0.000	0.000	0.000	-5,264.977	0.000	0.000	0.000	0.000	0.000
2002	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2003	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2003	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2003	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2003	4	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2003	5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2003	6	3,969.802	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Indiana Michigan Power Company-Indiana
Long-Term Commercial Energy Model Output

Year	Month	Jun	Jul	Aug	Sep	Oct	Nov	apr20on	20-Jun	Jun-99	Mar09on	May-99
2003	7	0.000	11,195.219	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2003	8	0.000	0.000	16,304.095	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2003	9	0.000	0.000	0.000	25,016.748	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2003	10	0.000	0.000	0.000	0.000	11,189.221	0.000	0.000	0.000	0.000	0.000	0.000
2003	11	0.000	0.000	0.000	0.000	0.000	-5,264.977	0.000	0.000	0.000	0.000	0.000
2003	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2004	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2004	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2004	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2004	4	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2004	5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2004	6	3,969.802	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2004	7	0.000	11,195.219	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2004	8	0.000	0.000	16,304.095	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2004	9	0.000	0.000	0.000	25,016.748	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2004	10	0.000	0.000	0.000	0.000	11,189.221	0.000	0.000	0.000	0.000	0.000	0.000
2004	11	0.000	0.000	0.000	0.000	0.000	-5,264.977	0.000	0.000	0.000	0.000	0.000
2004	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2005	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2005	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2005	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2005	4	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2005	5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2005	6	3,969.802	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2005	7	0.000	11,195.219	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2005	8	0.000	0.000	16,304.095	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2005	9	0.000	0.000	0.000	25,016.748	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2005	10	0.000	0.000	0.000	0.000	11,189.221	0.000	0.000	0.000	0.000	0.000	0.000
2005	11	0.000	0.000	0.000	0.000	0.000	-5,264.977	0.000	0.000	0.000	0.000	0.000
2005	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2006	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2006	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2006	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Indiana Michigan Power Company-Indiana
Long-Term Commercial Energy Model Output

Year	Month	Jun	Jul	Aug	Sep	Oct	Nov	apr20on	20-Jun	Jun-99	Mar09on	May-99
2006	4	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2006	5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2006	6	3,969.802	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2006	7	0.000	11,195.219	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2006	8	0.000	0.000	16,304.095	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2006	9	0.000	0.000	0.000	25,016.748	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2006	10	0.000	0.000	0.000	0.000	11,189.221	0.000	0.000	0.000	0.000	0.000	0.000
2006	11	0.000	0.000	0.000	0.000	0.000	-5,264.977	0.000	0.000	0.000	0.000	0.000
2006	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2007	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2007	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2007	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2007	4	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2007	5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2007	6	3,969.802	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2007	7	0.000	11,195.219	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2007	8	0.000	0.000	16,304.095	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2007	9	0.000	0.000	0.000	25,016.748	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2007	10	0.000	0.000	0.000	0.000	11,189.221	0.000	0.000	0.000	0.000	0.000	0.000
2007	11	0.000	0.000	0.000	0.000	0.000	-5,264.977	0.000	0.000	0.000	0.000	0.000
2007	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2008	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2008	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2008	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2008	4	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2008	5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2008	6	3,969.802	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2008	7	0.000	11,195.219	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2008	8	0.000	0.000	16,304.095	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2008	9	0.000	0.000	0.000	25,016.748	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2008	10	0.000	0.000	0.000	0.000	11,189.221	0.000	0.000	0.000	0.000	0.000	0.000
2008	11	0.000	0.000	0.000	0.000	0.000	-5,264.977	0.000	0.000	0.000	0.000	0.000
2008	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Indiana Michigan Power Company-Indiana
Long-Term Commercial Energy Model Output

Year	Month	Jun	Jul	Aug	Sep	Oct	Nov	apr20on	20-Jun	Jun-99	Mar09on	May-99
2009	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2009	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2009	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	7,069.005	0.000
2009	4	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	7,069.005	0.000
2009	5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	7,069.005	0.000
2009	6	3,969.802	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	7,069.005	0.000
2009	7	0.000	11,195.219	0.000	0.000	0.000	0.000	0.000	0.000	0.000	7,069.005	0.000
2009	8	0.000	0.000	16,304.095	0.000	0.000	0.000	0.000	0.000	0.000	7,069.005	0.000
2009	9	0.000	0.000	0.000	25,016.748	0.000	0.000	0.000	0.000	0.000	7,069.005	0.000
2009	10	0.000	0.000	0.000	0.000	11,189.221	0.000	0.000	0.000	0.000	7,069.005	0.000
2009	11	0.000	0.000	0.000	0.000	0.000	-5,264.977	0.000	0.000	0.000	7,069.005	0.000
2009	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	7,069.005	0.000
2010	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	7,069.005	0.000
2010	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	7,069.005	0.000
2010	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	7,069.005	0.000
2010	4	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	7,069.005	0.000
2010	5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	7,069.005	0.000
2010	6	3,969.802	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	7,069.005	0.000
2010	7	0.000	11,195.219	0.000	0.000	0.000	0.000	0.000	0.000	0.000	7,069.005	0.000
2010	8	0.000	0.000	16,304.095	0.000	0.000	0.000	0.000	0.000	0.000	7,069.005	0.000
2010	9	0.000	0.000	0.000	25,016.748	0.000	0.000	0.000	0.000	0.000	7,069.005	0.000
2010	10	0.000	0.000	0.000	0.000	11,189.221	0.000	0.000	0.000	0.000	7,069.005	0.000
2010	11	0.000	0.000	0.000	0.000	0.000	-5,264.977	0.000	0.000	0.000	7,069.005	0.000
2010	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	7,069.005	0.000
2011	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	7,069.005	0.000
2011	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	7,069.005	0.000
2011	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	7,069.005	0.000
2011	4	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	7,069.005	0.000
2011	5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	7,069.005	0.000
2011	6	3,969.802	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	7,069.005	0.000
2011	7	0.000	11,195.219	0.000	0.000	0.000	0.000	0.000	0.000	0.000	7,069.005	0.000
2011	8	0.000	0.000	16,304.095	0.000	0.000	0.000	0.000	0.000	0.000	7,069.005	0.000
2011	9	0.000	0.000	0.000	25,016.748	0.000	0.000	0.000	0.000	0.000	7,069.005	0.000

Indiana Michigan Power Company-Indiana
Long-Term Commercial Energy Model Output

Year	Month	Jun	Jul	Aug	Sep	Oct	Nov	apr20on	20-Jun	Jun-99	Mar09on	May-99
2011	10	0.000	0.000	0.000	0.000	11,189.221	0.000	0.000	0.000	0.000	7,069.005	0.000
2011	11	0.000	0.000	0.000	0.000	0.000	-5,264.977	0.000	0.000	0.000	7,069.005	0.000
2011	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	7,069.005	0.000
2012	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	7,069.005	0.000
2012	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	7,069.005	0.000
2012	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	7,069.005	0.000
2012	4	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	7,069.005	0.000
2012	5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	7,069.005	0.000
2012	6	3,969.802	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	7,069.005	0.000
2012	7	0.000	11,195.219	0.000	0.000	0.000	0.000	0.000	0.000	0.000	7,069.005	0.000
2012	8	0.000	0.000	16,304.095	0.000	0.000	0.000	0.000	0.000	0.000	7,069.005	0.000
2012	9	0.000	0.000	0.000	25,016.748	0.000	0.000	0.000	0.000	0.000	7,069.005	0.000
2012	10	0.000	0.000	0.000	0.000	11,189.221	0.000	0.000	0.000	0.000	7,069.005	0.000
2012	11	0.000	0.000	0.000	0.000	0.000	-5,264.977	0.000	0.000	0.000	7,069.005	0.000
2012	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	7,069.005	0.000
2013	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	7,069.005	0.000
2013	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	7,069.005	0.000
2013	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	7,069.005	0.000
2013	4	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	7,069.005	0.000
2013	5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	7,069.005	0.000
2013	6	3,969.802	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	7,069.005	0.000
2013	7	0.000	11,195.219	0.000	0.000	0.000	0.000	0.000	0.000	0.000	7,069.005	0.000
2013	8	0.000	0.000	16,304.095	0.000	0.000	0.000	0.000	0.000	0.000	7,069.005	0.000
2013	9	0.000	0.000	0.000	25,016.748	0.000	0.000	0.000	0.000	0.000	7,069.005	0.000
2013	10	0.000	0.000	0.000	0.000	11,189.221	0.000	0.000	0.000	0.000	7,069.005	0.000
2013	11	0.000	0.000	0.000	0.000	0.000	-5,264.977	0.000	0.000	0.000	7,069.005	0.000
2013	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	7,069.005	0.000
2014	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	7,069.005	0.000
2014	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	7,069.005	0.000
2014	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	7,069.005	0.000
2014	4	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	7,069.005	0.000
2014	5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	7,069.005	0.000
2014	6	3,969.802	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	7,069.005	0.000

Indiana Michigan Power Company-Indiana
Long-Term Commercial Energy Model Output

Year	Month	Jun	Jul	Aug	Sep	Oct	Nov	apr20on	20-Jun	Jun-99	Mar09on	May-99
2014	7	0.000	11,195.219	0.000	0.000	0.000	0.000	0.000	0.000	0.000	7,069.005	0.000
2014	8	0.000	0.000	16,304.095	0.000	0.000	0.000	0.000	0.000	0.000	7,069.005	0.000
2014	9	0.000	0.000	0.000	25,016.748	0.000	0.000	0.000	0.000	0.000	7,069.005	0.000
2014	10	0.000	0.000	0.000	0.000	11,189.221	0.000	0.000	0.000	0.000	7,069.005	0.000
2014	11	0.000	0.000	0.000	0.000	0.000	-5,264.977	0.000	0.000	0.000	7,069.005	0.000
2014	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	7,069.005	0.000
2015	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	7,069.005	0.000
2015	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	7,069.005	0.000
2015	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	7,069.005	0.000
2015	4	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	7,069.005	0.000
2015	5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	7,069.005	0.000
2015	6	3,969.802	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	7,069.005	0.000
2015	7	0.000	11,195.219	0.000	0.000	0.000	0.000	0.000	0.000	0.000	7,069.005	0.000
2015	8	0.000	0.000	16,304.095	0.000	0.000	0.000	0.000	0.000	0.000	7,069.005	0.000
2015	9	0.000	0.000	0.000	25,016.748	0.000	0.000	0.000	0.000	0.000	7,069.005	0.000
2015	10	0.000	0.000	0.000	0.000	11,189.221	0.000	0.000	0.000	0.000	7,069.005	0.000
2015	11	0.000	0.000	0.000	0.000	0.000	-5,264.977	0.000	0.000	0.000	7,069.005	0.000
2015	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	7,069.005	0.000
2016	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	7,069.005	0.000
2016	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	7,069.005	0.000
2016	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	7,069.005	0.000
2016	4	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	7,069.005	0.000
2016	5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	7,069.005	0.000
2016	6	3,969.802	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	7,069.005	0.000
2016	7	0.000	11,195.219	0.000	0.000	0.000	0.000	0.000	0.000	0.000	7,069.005	0.000
2016	8	0.000	0.000	16,304.095	0.000	0.000	0.000	0.000	0.000	0.000	7,069.005	0.000
2016	9	0.000	0.000	0.000	25,016.748	0.000	0.000	0.000	0.000	0.000	7,069.005	0.000
2016	10	0.000	0.000	0.000	0.000	11,189.221	0.000	0.000	0.000	0.000	7,069.005	0.000
2016	11	0.000	0.000	0.000	0.000	0.000	-5,264.977	0.000	0.000	0.000	7,069.005	0.000
2016	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	7,069.005	0.000
2017	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	7,069.005	0.000
2017	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	7,069.005	0.000
2017	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	7,069.005	0.000

Indiana Michigan Power Company-Indiana
Long-Term Commercial Energy Model Output

Year	Month	Jun	Jul	Aug	Sep	Oct	Nov	apr20on	20-Jun	Jun-99	Mar09on	May-99
2017	4	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	7,069.005	0.000
2017	5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	7,069.005	0.000
2017	6	3,969.802	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	7,069.005	0.000
2017	7	0.000	11,195.219	0.000	0.000	0.000	0.000	0.000	0.000	0.000	7,069.005	0.000
2017	8	0.000	0.000	16,304.095	0.000	0.000	0.000	0.000	0.000	0.000	7,069.005	0.000
2017	9	0.000	0.000	0.000	25,016.748	0.000	0.000	0.000	0.000	0.000	7,069.005	0.000
2017	10	0.000	0.000	0.000	0.000	11,189.221	0.000	0.000	0.000	0.000	7,069.005	0.000
2017	11	0.000	0.000	0.000	0.000	0.000	-5,264.977	0.000	0.000	0.000	7,069.005	0.000
2017	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	7,069.005	0.000
2018	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	7,069.005	0.000
2018	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	7,069.005	0.000
2018	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	7,069.005	0.000
2018	4	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	7,069.005	0.000
2018	5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	7,069.005	0.000
2018	6	3,969.802	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	7,069.005	0.000
2018	7	0.000	11,195.219	0.000	0.000	0.000	0.000	0.000	0.000	0.000	7,069.005	0.000
2018	8	0.000	0.000	16,304.095	0.000	0.000	0.000	0.000	0.000	0.000	7,069.005	0.000
2018	9	0.000	0.000	0.000	25,016.748	0.000	0.000	0.000	0.000	0.000	7,069.005	0.000
2018	10	0.000	0.000	0.000	0.000	11,189.221	0.000	0.000	0.000	0.000	7,069.005	0.000
2018	11	0.000	0.000	0.000	0.000	0.000	-5,264.977	0.000	0.000	0.000	7,069.005	0.000
2018	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	7,069.005	0.000
2019	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	7,069.005	0.000
2019	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	7,069.005	0.000
2019	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	7,069.005	0.000
2019	4	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	7,069.005	0.000
2019	5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	7,069.005	0.000
2019	6	3,969.802	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	7,069.005	0.000
2019	7	0.000	11,195.219	0.000	0.000	0.000	0.000	0.000	0.000	0.000	7,069.005	0.000
2019	8	0.000	0.000	16,304.095	0.000	0.000	0.000	0.000	0.000	0.000	7,069.005	0.000
2019	9	0.000	0.000	0.000	25,016.748	0.000	0.000	0.000	0.000	0.000	7,069.005	0.000
2019	10	0.000	0.000	0.000	0.000	11,189.221	0.000	0.000	0.000	0.000	7,069.005	0.000
2019	11	0.000	0.000	0.000	0.000	0.000	-5,264.977	0.000	0.000	0.000	7,069.005	0.000
2019	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	7,069.005	0.000

Indiana Michigan Power Company-Indiana
Long-Term Commercial Energy Model Output

Year	Month	Jun	Jul	Aug	Sep	Oct	Nov	apr20on	20-Jun	Jun-99	Mar09on	May-99
2020	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	7,069.005	0.000
2020	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	7,069.005	0.000
2020	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	7,069.005	0.000
2020	4	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2020	5	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2020	6	3,969.802	0.000	0.000	0.000	0.000	0.000	-7,928.854	-20,325.868	0.000	7,069.005	0.000
2020	7	0.000	11,195.219	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2020	8	0.000	0.000	16,304.095	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2020	9	0.000	0.000	0.000	25,016.748	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2020	10	0.000	0.000	0.000	0.000	11,189.221	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2020	11	0.000	0.000	0.000	0.000	0.000	-5,264.977	-7,928.854	0.000	0.000	7,069.005	0.000
2020	12	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2021	1	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2021	2	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2021	3	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2021	4	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2021	5	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2021	6	3,969.802	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2021	7	0.000	11,195.219	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2021	8	0.000	0.000	16,304.095	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2021	9	0.000	0.000	0.000	25,016.748	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2021	10	0.000	0.000	0.000	0.000	11,189.221	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2021	11	0.000	0.000	0.000	0.000	0.000	-5,264.977	-7,928.854	0.000	0.000	7,069.005	0.000
2021	12	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2022	1	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2022	2	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2022	3	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2022	4	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2022	5	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2022	6	3,969.802	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2022	7	0.000	11,195.219	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2022	8	0.000	0.000	16,304.095	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2022	9	0.000	0.000	0.000	25,016.748	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000

Indiana Michigan Power Company-Indiana
Long-Term Commercial Energy Model Output

Year	Month	Jun	Jul	Aug	Sep	Oct	Nov	apr20on	20-Jun	Jun-99	Mar09on	May-99
2022	10	0.000	0.000	0.000	0.000	11,189.221	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2022	11	0.000	0.000	0.000	0.000	0.000	-5,264.977	-7,928.854	0.000	0.000	7,069.005	0.000
2022	12	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2023	1	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2023	2	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2023	3	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2023	4	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2023	5	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2023	6	3,969.802	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2023	7	0.000	11,195.219	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2023	8	0.000	0.000	16,304.095	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2023	9	0.000	0.000	0.000	25,016.748	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2023	10	0.000	0.000	0.000	0.000	11,189.221	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2023	11	0.000	0.000	0.000	0.000	0.000	-5,264.977	-7,928.854	0.000	0.000	7,069.005	0.000
2023	12	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2024	1	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2024	2	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2024	3	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2024	4	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2024	5	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2024	6	3,969.802	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2024	7	0.000	11,195.219	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2024	8	0.000	0.000	16,304.095	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2024	9	0.000	0.000	0.000	25,016.748	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2024	10	0.000	0.000	0.000	0.000	11,189.221	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2024	11	0.000	0.000	0.000	0.000	0.000	-5,264.977	-7,928.854	0.000	0.000	7,069.005	0.000
2024	12	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2025	1	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2025	2	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2025	3	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2025	4	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2025	5	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2025	6	3,969.802	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000

Indiana Michigan Power Company-Indiana
Long-Term Commercial Energy Model Output

Year	Month	Jun	Jul	Aug	Sep	Oct	Nov	apr20on	20-Jun	Jun-99	Mar09on	May-99
2025	7	0.000	11,195.219	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2025	8	0.000	0.000	16,304.095	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2025	9	0.000	0.000	0.000	25,016.748	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2025	10	0.000	0.000	0.000	0.000	11,189.221	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2025	11	0.000	0.000	0.000	0.000	0.000	-5,264.977	-7,928.854	0.000	0.000	7,069.005	0.000
2025	12	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2026	1	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2026	2	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2026	3	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2026	4	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2026	5	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2026	6	3,969.802	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2026	7	0.000	11,195.219	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2026	8	0.000	0.000	16,304.095	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2026	9	0.000	0.000	0.000	25,016.748	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2026	10	0.000	0.000	0.000	0.000	11,189.221	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2026	11	0.000	0.000	0.000	0.000	0.000	-5,264.977	-7,928.854	0.000	0.000	7,069.005	0.000
2026	12	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2027	1	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2027	2	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2027	3	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2027	4	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2027	5	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2027	6	3,969.802	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2027	7	0.000	11,195.219	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2027	8	0.000	0.000	16,304.095	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2027	9	0.000	0.000	0.000	25,016.748	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2027	10	0.000	0.000	0.000	0.000	11,189.221	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2027	11	0.000	0.000	0.000	0.000	0.000	-5,264.977	-7,928.854	0.000	0.000	7,069.005	0.000
2027	12	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2028	1	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2028	2	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2028	3	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000

Indiana Michigan Power Company-Indiana
Long-Term Commercial Energy Model Output

Year	Month	Jun	Jul	Aug	Sep	Oct	Nov	apr20on	20-Jun	Jun-99	Mar09on	May-99
2028	4	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2028	5	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2028	6	3,969.802	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2028	7	0.000	11,195.219	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2028	8	0.000	0.000	16,304.095	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2028	9	0.000	0.000	0.000	25,016.748	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2028	10	0.000	0.000	0.000	0.000	11,189.221	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2028	11	0.000	0.000	0.000	0.000	0.000	-5,264.977	-7,928.854	0.000	0.000	7,069.005	0.000
2028	12	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2029	1	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2029	2	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2029	3	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2029	4	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2029	5	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2029	6	3,969.802	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2029	7	0.000	11,195.219	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2029	8	0.000	0.000	16,304.095	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2029	9	0.000	0.000	0.000	25,016.748	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2029	10	0.000	0.000	0.000	0.000	11,189.221	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2029	11	0.000	0.000	0.000	0.000	0.000	-5,264.977	-7,928.854	0.000	0.000	7,069.005	0.000
2029	12	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2030	1	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2030	2	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2030	3	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2030	4	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2030	5	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2030	6	3,969.802	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2030	7	0.000	11,195.219	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2030	8	0.000	0.000	16,304.095	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2030	9	0.000	0.000	0.000	25,016.748	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2030	10	0.000	0.000	0.000	0.000	11,189.221	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2030	11	0.000	0.000	0.000	0.000	0.000	-5,264.977	-7,928.854	0.000	0.000	7,069.005	0.000
2030	12	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000

Indiana Michigan Power Company-Indiana
Long-Term Commercial Energy Model Output

Year	Month	Jun	Jul	Aug	Sep	Oct	Nov	apr20on	20-Jun	Jun-99	Mar09on	May-99
2031	1	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2031	2	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2031	3	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2031	4	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2031	5	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2031	6	3,969.802	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2031	7	0.000	11,195.219	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2031	8	0.000	0.000	16,304.095	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2031	9	0.000	0.000	0.000	25,016.748	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2031	10	0.000	0.000	0.000	0.000	11,189.221	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2031	11	0.000	0.000	0.000	0.000	0.000	-5,264.977	-7,928.854	0.000	0.000	7,069.005	0.000
2031	12	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2032	1	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2032	2	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2032	3	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2032	4	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2032	5	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2032	6	3,969.802	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2032	7	0.000	11,195.219	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2032	8	0.000	0.000	16,304.095	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2032	9	0.000	0.000	0.000	25,016.748	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2032	10	0.000	0.000	0.000	0.000	11,189.221	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2032	11	0.000	0.000	0.000	0.000	0.000	-5,264.977	-7,928.854	0.000	0.000	7,069.005	0.000
2032	12	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2033	1	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2033	2	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2033	3	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2033	4	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2033	5	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2033	6	3,969.802	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2033	7	0.000	11,195.219	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2033	8	0.000	0.000	16,304.095	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2033	9	0.000	0.000	0.000	25,016.748	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000

Indiana Michigan Power Company-Indiana
Long-Term Commercial Energy Model Output

Year	Month	Jun	Jul	Aug	Sep	Oct	Nov	apr20on	20-Jun	Jun-99	Mar09on	May-99
2033	10	0.000	0.000	0.000	0.000	11,189.221	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2033	11	0.000	0.000	0.000	0.000	0.000	-5,264.977	-7,928.854	0.000	0.000	7,069.005	0.000
2033	12	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2034	1	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2034	2	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2034	3	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2034	4	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2034	5	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2034	6	3,969.802	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2034	7	0.000	11,195.219	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2034	8	0.000	0.000	16,304.095	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2034	9	0.000	0.000	0.000	25,016.748	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2034	10	0.000	0.000	0.000	0.000	11,189.221	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2034	11	0.000	0.000	0.000	0.000	0.000	-5,264.977	-7,928.854	0.000	0.000	7,069.005	0.000
2034	12	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2035	1	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2035	2	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2035	3	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2035	4	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2035	5	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2035	6	3,969.802	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2035	7	0.000	11,195.219	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2035	8	0.000	0.000	16,304.095	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2035	9	0.000	0.000	0.000	25,016.748	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2035	10	0.000	0.000	0.000	0.000	11,189.221	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2035	11	0.000	0.000	0.000	0.000	0.000	-5,264.977	-7,928.854	0.000	0.000	7,069.005	0.000
2035	12	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2036	1	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2036	2	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2036	3	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2036	4	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2036	5	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2036	6	3,969.802	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000

Indiana Michigan Power Company-Indiana
Long-Term Commercial Energy Model Output

Year	Month	Jun	Jul	Aug	Sep	Oct	Nov	apr20on	20-Jun	Jun-99	Mar09on	May-99
2036	7	0.000	11,195.219	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2036	8	0.000	0.000	16,304.095	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2036	9	0.000	0.000	0.000	25,016.748	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2036	10	0.000	0.000	0.000	0.000	11,189.221	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2036	11	0.000	0.000	0.000	0.000	0.000	-5,264.977	-7,928.854	0.000	0.000	7,069.005	0.000
2036	12	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2037	1	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2037	2	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2037	3	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2037	4	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2037	5	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2037	6	3,969.802	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2037	7	0.000	11,195.219	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2037	8	0.000	0.000	16,304.095	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2037	9	0.000	0.000	0.000	25,016.748	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2037	10	0.000	0.000	0.000	0.000	11,189.221	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2037	11	0.000	0.000	0.000	0.000	0.000	-5,264.977	-7,928.854	0.000	0.000	7,069.005	0.000
2037	12	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2038	1	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2038	2	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2038	3	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2038	4	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2038	5	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2038	6	3,969.802	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2038	7	0.000	11,195.219	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2038	8	0.000	0.000	16,304.095	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2038	9	0.000	0.000	0.000	25,016.748	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2038	10	0.000	0.000	0.000	0.000	11,189.221	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2038	11	0.000	0.000	0.000	0.000	0.000	-5,264.977	-7,928.854	0.000	0.000	7,069.005	0.000
2038	12	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2039	1	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2039	2	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2039	3	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000

Indiana Michigan Power Company-Indiana
Long-Term Commercial Energy Model Output

Year	Month	Jun	Jul	Aug	Sep	Oct	Nov	apr20on	20-Jun	Jun-99	Mar09on	May-99
2039	4	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2039	5	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2039	6	3,969.802	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2039	7	0.000	11,195.219	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2039	8	0.000	0.000	16,304.095	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2039	9	0.000	0.000	0.000	25,016.748	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2039	10	0.000	0.000	0.000	0.000	11,189.221	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2039	11	0.000	0.000	0.000	0.000	0.000	-5,264.977	-7,928.854	0.000	0.000	7,069.005	0.000
2039	12	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2040	1	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2040	2	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2040	3	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2040	4	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2040	5	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2040	6	3,969.802	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2040	7	0.000	11,195.219	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2040	8	0.000	0.000	16,304.095	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2040	9	0.000	0.000	0.000	25,016.748	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2040	10	0.000	0.000	0.000	0.000	11,189.221	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2040	11	0.000	0.000	0.000	0.000	0.000	-5,264.977	-7,928.854	0.000	0.000	7,069.005	0.000
2040	12	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2041	1	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2041	2	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2041	3	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2041	4	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2041	5	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2041	6	3,969.802	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2041	7	0.000	11,195.219	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2041	8	0.000	0.000	16,304.095	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2041	9	0.000	0.000	0.000	25,016.748	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2041	10	0.000	0.000	0.000	0.000	11,189.221	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2041	11	0.000	0.000	0.000	0.000	0.000	-5,264.977	-7,928.854	0.000	0.000	7,069.005	0.000
2041	12	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000

Indiana Michigan Power Company-Indiana
Long-Term Commercial Energy Model Output

Year	Month	Jun	Jul	Aug	Sep	Oct	Nov	apr20on	20-Jun	Jun-99	Mar09on	May-99
2042	1	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2042	2	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2042	3	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2042	4	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2042	5	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2042	6	3,969.802	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2042	7	0.000	11,195.219	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2042	8	0.000	0.000	16,304.095	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2042	9	0.000	0.000	0.000	25,016.748	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2042	10	0.000	0.000	0.000	0.000	11,189.221	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2042	11	0.000	0.000	0.000	0.000	0.000	-5,264.977	-7,928.854	0.000	0.000	7,069.005	0.000
2042	12	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2043	1	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2043	2	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2043	3	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2043	4	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2043	5	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2043	6	3,969.802	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2043	7	0.000	11,195.219	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2043	8	0.000	0.000	16,304.095	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2043	9	0.000	0.000	0.000	25,016.748	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2043	10	0.000	0.000	0.000	0.000	11,189.221	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2043	11	0.000	0.000	0.000	0.000	0.000	-5,264.977	-7,928.854	0.000	0.000	7,069.005	0.000
2043	12	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2044	1	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2044	2	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2044	3	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2044	4	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2044	5	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2044	6	3,969.802	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2044	7	0.000	11,195.219	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2044	8	0.000	0.000	16,304.095	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2044	9	0.000	0.000	0.000	25,016.748	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000

Indiana Michigan Power Company-Indiana
Long-Term Commercial Energy Model Output

Year	Month	Jun	Jul	Aug	Sep	Oct	Nov	apr20on	20-Jun	Jun-99	Mar09on	May-99
2044	10	0.000	0.000	0.000	0.000	11,189.221	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2044	11	0.000	0.000	0.000	0.000	0.000	-5,264.977	-7,928.854	0.000	0.000	7,069.005	0.000
2044	12	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2045	1	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2045	2	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2045	3	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2045	4	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2045	5	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2045	6	3,969.802	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2045	7	0.000	11,195.219	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2045	8	0.000	0.000	16,304.095	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2045	9	0.000	0.000	0.000	25,016.748	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2045	10	0.000	0.000	0.000	0.000	11,189.221	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2045	11	0.000	0.000	0.000	0.000	0.000	-5,264.977	-7,928.854	0.000	0.000	7,069.005	0.000
2045	12	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2046	1	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2046	2	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2046	3	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2046	4	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2046	5	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2046	6	3,969.802	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2046	7	0.000	11,195.219	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2046	8	0.000	0.000	16,304.095	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2046	9	0.000	0.000	0.000	25,016.748	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2046	10	0.000	0.000	0.000	0.000	11,189.221	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2046	11	0.000	0.000	0.000	0.000	0.000	-5,264.977	-7,928.854	0.000	0.000	7,069.005	0.000
2046	12	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2047	1	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2047	2	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2047	3	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2047	4	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2047	5	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2047	6	3,969.802	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000

Indiana Michigan Power Company-Indiana
Long-Term Commercial Energy Model Output

Year	Month	Jun	Jul	Aug	Sep	Oct	Nov	apr20on	20-Jun	Jun-99	Mar09on	May-99
2047	7	0.000	11,195.219	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2047	8	0.000	0.000	16,304.095	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2047	9	0.000	0.000	0.000	25,016.748	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2047	10	0.000	0.000	0.000	0.000	11,189.221	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2047	11	0.000	0.000	0.000	0.000	0.000	-5,264.977	-7,928.854	0.000	0.000	7,069.005	0.000
2047	12	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2048	1	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2048	2	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2048	3	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2048	4	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2048	5	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2048	6	3,969.802	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2048	7	0.000	11,195.219	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2048	8	0.000	0.000	16,304.095	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2048	9	0.000	0.000	0.000	25,016.748	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2048	10	0.000	0.000	0.000	0.000	11,189.221	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2048	11	0.000	0.000	0.000	0.000	0.000	-5,264.977	-7,928.854	0.000	0.000	7,069.005	0.000
2048	12	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2049	1	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2049	2	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2049	3	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2049	4	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2049	5	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2049	6	3,969.802	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2049	7	0.000	11,195.219	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2049	8	0.000	0.000	16,304.095	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2049	9	0.000	0.000	0.000	25,016.748	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2049	10	0.000	0.000	0.000	0.000	11,189.221	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2049	11	0.000	0.000	0.000	0.000	0.000	-5,264.977	-7,928.854	0.000	0.000	7,069.005	0.000
2049	12	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2050	1	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2050	2	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2050	3	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000

Indiana Michigan Power Company-Indiana
Long-Term Commercial Energy Model Output

Year	Month	Jun	Jul	Aug	Sep	Oct	Nov	apr20on	20-Jun	Jun-99	Mar09on	May-99
2050	4	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2050	5	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2050	6	3,969.802	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2050	7	0.000	11,195.219	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2050	8	0.000	0.000	16,304.095	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2050	9	0.000	0.000	0.000	25,016.748	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2050	10	0.000	0.000	0.000	0.000	11,189.221	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2050	11	0.000	0.000	0.000	0.000	0.000	-5,264.977	-7,928.854	0.000	0.000	7,069.005	0.000
2050	12	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2051	1	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2051	2	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2051	3	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2051	4	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2051	5	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2051	6	3,969.802	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2051	7	0.000	11,195.219	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2051	8	0.000	0.000	16,304.095	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2051	9	0.000	0.000	0.000	25,016.748	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2051	10	0.000	0.000	0.000	0.000	11,189.221	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2051	11	0.000	0.000	0.000	0.000	0.000	-5,264.977	-7,928.854	0.000	0.000	7,069.005	0.000
2051	12	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2052	1	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2052	2	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2052	3	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2052	4	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2052	5	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2052	6	3,969.802	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2052	7	0.000	11,195.219	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2052	8	0.000	0.000	16,304.095	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2052	9	0.000	0.000	0.000	25,016.748	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2052	10	0.000	0.000	0.000	0.000	11,189.221	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2052	11	0.000	0.000	0.000	0.000	0.000	-5,264.977	-7,928.854	0.000	0.000	7,069.005	0.000
2052	12	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000

Indiana Michigan Power Company-Indiana
Long-Term Commercial Energy Model Output

Year	Month	Jun	Jul	Aug	Sep	Oct	Nov	apr20on	20-Jun	Jun-99	Mar09on	May-99
2053	1	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2053	2	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2053	3	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2053	4	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2053	5	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2053	6	3,969.802	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2053	7	0.000	11,195.219	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2053	8	0.000	0.000	16,304.095	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2053	9	0.000	0.000	0.000	25,016.748	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2053	10	0.000	0.000	0.000	0.000	11,189.221	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2053	11	0.000	0.000	0.000	0.000	0.000	-5,264.977	-7,928.854	0.000	0.000	7,069.005	0.000
2053	12	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2054	1	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2054	2	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2054	3	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2054	4	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2054	5	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2054	6	3,969.802	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2054	7	0.000	11,195.219	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2054	8	0.000	0.000	16,304.095	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2054	9	0.000	0.000	0.000	25,016.748	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2054	10	0.000	0.000	0.000	0.000	11,189.221	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2054	11	0.000	0.000	0.000	0.000	0.000	-5,264.977	-7,928.854	0.000	0.000	7,069.005	0.000
2054	12	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2055	1	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2055	2	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2055	3	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2055	4	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2055	5	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2055	6	3,969.802	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2055	7	0.000	11,195.219	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2055	8	0.000	0.000	16,304.095	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2055	9	0.000	0.000	0.000	25,016.748	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000

Indiana Michigan Power Company-Indiana
Long-Term Commercial Energy Model Output

Year	Month	Jun	Jul	Aug	Sep	Oct	Nov	apr20on	20-Jun	Jun-99	Mar09on	May-99
2055	10	0.000	0.000	0.000	0.000	11,189.221	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2055	11	0.000	0.000	0.000	0.000	0.000	-5,264.977	-7,928.854	0.000	0.000	7,069.005	0.000
2055	12	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2056	1	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2056	2	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2056	3	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2056	4	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2056	5	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2056	6	3,969.802	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2056	7	0.000	11,195.219	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2056	8	0.000	0.000	16,304.095	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2056	9	0.000	0.000	0.000	25,016.748	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2056	10	0.000	0.000	0.000	0.000	11,189.221	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2056	11	0.000	0.000	0.000	0.000	0.000	-5,264.977	-7,928.854	0.000	0.000	7,069.005	0.000
2056	12	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2057	1	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2057	2	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2057	3	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2057	4	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2057	5	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2057	6	3,969.802	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2057	7	0.000	11,195.219	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2057	8	0.000	0.000	16,304.095	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2057	9	0.000	0.000	0.000	25,016.748	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2057	10	0.000	0.000	0.000	0.000	11,189.221	0.000	-7,928.854	0.000	0.000	7,069.005	0.000
2057	11	0.000	0.000	0.000	0.000	0.000	-5,264.977	-7,928.854	0.000	0.000	7,069.005	0.000
2057	12	0.000	0.000	0.000	0.000	0.000	0.000	-7,928.854	0.000	0.000	7,069.005	0.000

Indiana Michigan Power Company-Indiana
Long-Term Commercial Energy Model Output

Year	Month	D07on	jul15on	D00on	10-Nov	Sep11on	20-May	feb17on	20-Apr	X-Missing	Heating
1998	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	17,320.583
1998	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	17,690.119
1998	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	14,570.219
1998	4	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	9,221.672
1998	5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	2,102.022
1998	6	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	115.486
1998	7	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	41.042
1998	8	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1998	9	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1998	10	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	577.499
1998	11	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	5,136.886
1998	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	9,181.279
1999	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	22,809.942
1999	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	19,406.025
1999	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	18,163.212
1999	4	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	10,745.545
1999	5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	2,578.739
1999	6	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	144.530
1999	7	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1999	8	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1999	9	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	6.682
1999	10	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1,239.607
1999	11	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	4,886.182
1999	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	10,760.733
2000	1	0.000	0.000	11,816.418	0.000	0.000	0.000	0.000	0.000	0.000	19,412.087
2000	2	0.000	0.000	11,816.418	0.000	0.000	0.000	0.000	0.000	0.000	25,706.513
2000	3	0.000	0.000	11,816.418	0.000	0.000	0.000	0.000	0.000	0.000	12,341.600
2000	4	0.000	0.000	11,816.418	0.000	0.000	0.000	0.000	0.000	0.000	7,577.112
2000	5	0.000	0.000	11,816.418	0.000	0.000	0.000	0.000	0.000	0.000	2,683.817
2000	6	0.000	0.000	11,816.418	0.000	0.000	0.000	0.000	0.000	0.000	200.529
2000	7	0.000	0.000	11,816.418	0.000	0.000	0.000	0.000	0.000	0.000	7.434
2000	8	0.000	0.000	11,816.418	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2000	9	0.000	0.000	11,816.418	0.000	0.000	0.000	0.000	0.000	0.000	22.321

Indiana Michigan Power Company-Indiana
Long-Term Commercial Energy Model Output

Year	Month	D07on	jul15on	D00on	10-Nov	Sep11on	20-May	feb17on	20-Apr	X-Missing	Heating
2000	10	0.000	0.000	11,816.418	0.000	0.000	0.000	0.000	0.000	0.000	1,197.658
2000	11	0.000	0.000	11,816.418	0.000	0.000	0.000	0.000	0.000	0.000	4,164.077
2000	12	0.000	0.000	11,816.418	0.000	0.000	0.000	0.000	0.000	0.000	18,676.263
2001	1	0.000	0.000	11,816.418	0.000	0.000	0.000	0.000	0.000	0.000	27,557.700
2001	2	0.000	0.000	11,816.418	0.000	0.000	0.000	0.000	0.000	0.000	20,708.757
2001	3	0.000	0.000	11,816.418	0.000	0.000	0.000	0.000	0.000	0.000	16,553.277
2001	4	0.000	0.000	11,816.418	0.000	0.000	0.000	0.000	0.000	0.000	11,030.318
2001	5	0.000	0.000	11,816.418	0.000	0.000	0.000	0.000	0.000	0.000	2,210.094
2001	6	0.000	0.000	11,816.418	0.000	0.000	0.000	0.000	0.000	0.000	238.424
2001	7	0.000	0.000	11,816.418	0.000	0.000	0.000	0.000	0.000	0.000	41.585
2001	8	0.000	0.000	11,816.418	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2001	9	0.000	0.000	11,816.418	0.000	0.000	0.000	0.000	0.000	0.000	10.400
2001	10	0.000	0.000	11,816.418	0.000	0.000	0.000	0.000	0.000	0.000	1,237.511
2001	11	0.000	0.000	11,816.418	0.000	0.000	0.000	0.000	0.000	0.000	4,371.783
2001	12	0.000	0.000	11,816.418	0.000	0.000	0.000	0.000	0.000	0.000	7,338.777
2002	1	0.000	0.000	11,816.418	0.000	0.000	0.000	0.000	0.000	0.000	17,109.174
2002	2	0.000	0.000	11,816.418	0.000	0.000	0.000	0.000	0.000	0.000	14,611.575
2002	3	0.000	0.000	11,816.418	0.000	0.000	0.000	0.000	0.000	0.000	14,417.265
2002	4	0.000	0.000	11,816.418	0.000	0.000	0.000	0.000	0.000	0.000	10,965.557
2002	5	0.000	0.000	11,816.418	0.000	0.000	0.000	0.000	0.000	0.000	3,475.121
2002	6	0.000	0.000	11,816.418	0.000	0.000	0.000	0.000	0.000	0.000	1,299.447
2002	7	0.000	0.000	11,816.418	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2002	8	0.000	0.000	11,816.418	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2002	9	0.000	0.000	11,816.418	0.000	0.000	0.000	0.000	0.000	0.000	5.560
2002	10	0.000	0.000	11,816.418	0.000	0.000	0.000	0.000	0.000	0.000	1,182.642
2002	11	0.000	0.000	11,816.418	0.000	0.000	0.000	0.000	0.000	0.000	8,007.510
2002	12	0.000	0.000	11,816.418	0.000	0.000	0.000	0.000	0.000	0.000	16,101.179
2003	1	0.000	0.000	11,816.418	0.000	0.000	0.000	0.000	0.000	0.000	19,939.485
2003	2	0.000	0.000	11,816.418	0.000	0.000	0.000	0.000	0.000	0.000	25,787.376
2003	3	0.000	0.000	11,816.418	0.000	0.000	0.000	0.000	0.000	0.000	21,863.214
2003	4	0.000	0.000	11,816.418	0.000	0.000	0.000	0.000	0.000	0.000	8,915.502
2003	5	0.000	0.000	11,816.418	0.000	0.000	0.000	0.000	0.000	0.000	3,226.142
2003	6	0.000	0.000	11,816.418	0.000	0.000	0.000	0.000	0.000	0.000	380.856

Indiana Michigan Power Company-Indiana
Long-Term Commercial Energy Model Output

Year	Month	D07on	jul15on	D00on	10-Nov	Sep11on	20-May	feb17on	20-Apr	X-Missing	Heating
2003	7	0.000	0.000	11,816.418	0.000	0.000	0.000	0.000	0.000	0.000	3.947
2003	8	0.000	0.000	11,816.418	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2003	9	0.000	0.000	11,816.418	0.000	0.000	0.000	0.000	0.000	0.000	0.791
2003	10	0.000	0.000	11,816.418	0.000	0.000	0.000	0.000	0.000	0.000	1,962.993
2003	11	0.000	0.000	11,816.418	0.000	0.000	0.000	0.000	0.000	0.000	5,426.832
2003	12	0.000	0.000	11,816.418	0.000	0.000	0.000	0.000	0.000	0.000	12,422.182
2004	1	0.000	0.000	11,816.418	0.000	0.000	0.000	0.000	0.000	0.000	18,155.041
2004	2	0.000	0.000	11,816.418	0.000	0.000	0.000	0.000	0.000	0.000	25,650.671
2004	3	0.000	0.000	11,816.418	0.000	0.000	0.000	0.000	0.000	0.000	16,386.056
2004	4	0.000	0.000	11,816.418	0.000	0.000	0.000	0.000	0.000	0.000	8,245.748
2004	5	0.000	0.000	11,816.418	0.000	0.000	0.000	0.000	0.000	0.000	2,478.918
2004	6	0.000	0.000	11,816.418	0.000	0.000	0.000	0.000	0.000	0.000	216.730
2004	7	0.000	0.000	11,816.418	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2004	8	0.000	0.000	11,816.418	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2004	9	0.000	0.000	11,816.418	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2004	10	0.000	0.000	11,816.418	0.000	0.000	0.000	0.000	0.000	0.000	1,142.947
2004	11	0.000	0.000	11,816.418	0.000	0.000	0.000	0.000	0.000	0.000	3,876.873
2004	12	0.000	0.000	11,816.418	0.000	0.000	0.000	0.000	0.000	0.000	11,290.928
2005	1	0.000	0.000	11,816.418	0.000	0.000	0.000	0.000	0.000	0.000	19,879.242
2005	2	0.000	0.000	11,816.418	0.000	0.000	0.000	0.000	0.000	0.000	22,485.321
2005	3	0.000	0.000	11,816.418	0.000	0.000	0.000	0.000	0.000	0.000	17,943.940
2005	4	0.000	0.000	11,816.418	0.000	0.000	0.000	0.000	0.000	0.000	9,607.752
2005	5	0.000	0.000	11,816.418	0.000	0.000	0.000	0.000	0.000	0.000	3,974.802
2005	6	0.000	0.000	11,816.418	0.000	0.000	0.000	0.000	0.000	0.000	661.958
2005	7	0.000	0.000	11,816.418	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2005	8	0.000	0.000	11,816.418	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2005	9	0.000	0.000	11,816.418	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2005	10	0.000	0.000	11,816.418	0.000	0.000	0.000	0.000	0.000	0.000	545.830
2005	11	0.000	0.000	11,816.418	0.000	0.000	0.000	0.000	0.000	0.000	4,815.763
2005	12	0.000	0.000	11,816.418	0.000	0.000	0.000	0.000	0.000	0.000	16,997.930
2006	1	0.000	0.000	11,816.418	0.000	0.000	0.000	0.000	0.000	0.000	17,461.298
2006	2	0.000	0.000	11,816.418	0.000	0.000	0.000	0.000	0.000	0.000	14,360.255
2006	3	0.000	0.000	11,816.418	0.000	0.000	0.000	0.000	0.000	0.000	16,050.056

Indiana Michigan Power Company-Indiana
Long-Term Commercial Energy Model Output

Year	Month	D07on	jul15on	D00on	10-Nov	Sep11on	20-May	feb17on	20-Apr	X-Missing	Heating
2006	4	0.000	0.000	11,816.418	0.000	0.000	0.000	0.000	0.000	0.000	9,045.509
2006	5	0.000	0.000	11,816.418	0.000	0.000	0.000	0.000	0.000	0.000	1,932.170
2006	6	0.000	0.000	11,816.418	0.000	0.000	0.000	0.000	0.000	0.000	745.901
2006	7	0.000	0.000	11,816.418	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2006	8	0.000	0.000	11,816.418	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2006	9	0.000	0.000	11,816.418	0.000	0.000	0.000	0.000	0.000	0.000	42.562
2006	10	0.000	0.000	11,816.418	0.000	0.000	0.000	0.000	0.000	0.000	1,470.859
2006	11	0.000	0.000	11,816.418	0.000	0.000	0.000	0.000	0.000	0.000	7,675.400
2006	12	0.000	0.000	11,816.418	0.000	0.000	0.000	0.000	0.000	0.000	11,261.109
2007	1	23,727.418	0.000	11,816.418	0.000	0.000	0.000	0.000	0.000	0.000	12,545.743
2007	2	23,727.418	0.000	11,816.418	0.000	0.000	0.000	0.000	0.000	0.000	22,774.840
2007	3	23,727.418	0.000	11,816.418	0.000	0.000	0.000	0.000	0.000	0.000	20,913.831
2007	4	23,727.418	0.000	11,816.418	0.000	0.000	0.000	0.000	0.000	0.000	7,870.870
2007	5	23,727.418	0.000	11,816.418	0.000	0.000	0.000	0.000	0.000	0.000	2,990.254
2007	6	23,727.418	0.000	11,816.418	0.000	0.000	0.000	0.000	0.000	0.000	204.065
2007	7	23,727.418	0.000	11,816.418	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2007	8	23,727.418	0.000	11,816.418	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2007	9	23,727.418	0.000	11,816.418	0.000	0.000	0.000	0.000	0.000	0.000	36.332
2007	10	23,727.418	0.000	11,816.418	0.000	0.000	0.000	0.000	0.000	0.000	366.132
2007	11	23,727.418	0.000	11,816.418	0.000	0.000	0.000	0.000	0.000	0.000	4,461.628
2007	12	23,727.418	0.000	11,816.418	0.000	0.000	0.000	0.000	0.000	0.000	14,076.587
2008	1	23,727.418	0.000	11,816.418	0.000	0.000	0.000	0.000	0.000	0.000	16,897.167
2008	2	23,727.418	0.000	11,816.418	0.000	0.000	0.000	0.000	0.000	0.000	20,220.977
2008	3	23,727.418	0.000	11,816.418	0.000	0.000	0.000	0.000	0.000	0.000	19,179.113
2008	4	23,727.418	0.000	11,816.418	0.000	0.000	0.000	0.000	0.000	0.000	10,110.895
2008	5	23,727.418	0.000	11,816.418	0.000	0.000	0.000	0.000	0.000	0.000	2,445.737
2008	6	23,727.418	0.000	11,816.418	0.000	0.000	0.000	0.000	0.000	0.000	562.929
2008	7	23,727.418	0.000	11,816.418	0.000	0.000	0.000	0.000	0.000	0.000	0.723
2008	8	23,727.418	0.000	11,816.418	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2008	9	23,727.418	0.000	11,816.418	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2008	10	23,727.418	0.000	11,816.418	0.000	0.000	0.000	0.000	0.000	0.000	634.189
2008	11	23,727.418	0.000	11,816.418	0.000	0.000	0.000	0.000	0.000	0.000	5,081.139
2008	12	23,727.418	0.000	11,816.418	0.000	0.000	0.000	0.000	0.000	0.000	15,103.002

Indiana Michigan Power Company-Indiana
Long-Term Commercial Energy Model Output

Year	Month	D07on	jul15on	D00on	10-Nov	Sep11on	20-May	feb17on	20-Apr	X-Missing	Heating
2009	1	23,727.418	0.000	11,816.418	0.000	0.000	0.000	0.000	0.000	0.000	19,005.202
2009	2	23,727.418	0.000	11,816.418	0.000	0.000	0.000	0.000	0.000	0.000	22,370.794
2009	3	23,727.418	0.000	11,816.418	0.000	0.000	0.000	0.000	0.000	0.000	13,448.798
2009	4	23,727.418	0.000	11,816.418	0.000	0.000	0.000	0.000	0.000	0.000	6,931.430
2009	5	23,727.418	0.000	11,816.418	0.000	0.000	0.000	0.000	0.000	0.000	2,665.422
2009	6	23,727.418	0.000	11,816.418	0.000	0.000	0.000	0.000	0.000	0.000	286.776
2009	7	23,727.418	0.000	11,816.418	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2009	8	23,727.418	0.000	11,816.418	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2009	9	23,727.418	0.000	11,816.418	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2009	10	23,727.418	0.000	11,816.418	0.000	0.000	0.000	0.000	0.000	0.000	1,538.317
2009	11	23,727.418	0.000	11,816.418	0.000	0.000	0.000	0.000	0.000	0.000	4,200.222
2009	12	23,727.418	0.000	11,816.418	0.000	0.000	0.000	0.000	0.000	0.000	9,828.712
2010	1	23,727.418	0.000	11,816.418	0.000	0.000	0.000	0.000	0.000	0.000	18,305.611
2010	2	23,727.418	0.000	11,816.418	0.000	0.000	0.000	0.000	0.000	0.000	18,828.118
2010	3	23,727.418	0.000	11,816.418	0.000	0.000	0.000	0.000	0.000	0.000	14,352.650
2010	4	23,727.418	0.000	11,816.418	0.000	0.000	0.000	0.000	0.000	0.000	4,839.770
2010	5	23,727.418	0.000	11,816.418	0.000	0.000	0.000	0.000	0.000	0.000	1,137.472
2010	6	23,727.418	0.000	11,816.418	0.000	0.000	0.000	0.000	0.000	0.000	232.446
2010	7	23,727.418	0.000	11,816.418	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2010	8	23,727.418	0.000	11,816.418	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2010	9	23,727.418	0.000	11,816.418	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2010	10	23,727.418	0.000	11,816.418	0.000	0.000	0.000	0.000	0.000	0.000	537.118
2010	11	23,727.418	0.000	11,816.418	-47,961.220	0.000	0.000	0.000	0.000	0.000	4,144.859
2010	12	23,727.418	0.000	11,816.418	0.000	0.000	0.000	0.000	0.000	0.000	13,464.110
2011	1	23,727.418	0.000	11,816.418	0.000	0.000	0.000	0.000	0.000	0.000	19,412.875
2011	2	23,727.418	0.000	11,816.418	0.000	0.000	0.000	0.000	0.000	0.000	20,941.544
2011	3	23,727.418	0.000	11,816.418	0.000	0.000	0.000	0.000	0.000	0.000	14,276.782
2011	4	23,727.418	0.000	11,816.418	0.000	0.000	0.000	0.000	0.000	0.000	8,265.966
2011	5	23,727.418	0.000	11,816.418	0.000	0.000	0.000	0.000	0.000	0.000	2,551.390
2011	6	23,727.418	0.000	11,816.418	0.000	0.000	0.000	0.000	0.000	0.000	356.390
2011	7	23,727.418	0.000	11,816.418	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2011	8	23,727.418	0.000	11,816.418	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2011	9	23,727.418	0.000	11,816.418	0.000	-15.258	0.000	0.000	0.000	0.000	54.634

Indiana Michigan Power Company-Indiana
Long-Term Commercial Energy Model Output

Year	Month	D07on	jul15on	D00on	10-Nov	Sep11on	20-May	feb17on	20-Apr	X-Missing	Heating
2011	10	23,727.418	0.000	11,816.418	0.000	-15.258	0.000	0.000	0.000	0.000	655.804
2011	11	23,727.418	0.000	11,816.418	0.000	-15.258	0.000	0.000	0.000	0.000	3,700.008
2011	12	23,727.418	0.000	11,816.418	0.000	-15.258	0.000	0.000	0.000	0.000	8,759.925
2012	1	23,727.418	0.000	11,816.418	0.000	-15.258	0.000	0.000	0.000	0.000	12,899.759
2012	2	23,727.418	0.000	11,816.418	0.000	-15.258	0.000	0.000	0.000	0.000	14,742.775
2012	3	23,727.418	0.000	11,816.418	0.000	-15.258	0.000	0.000	0.000	0.000	10,408.181
2012	4	23,727.418	0.000	11,816.418	0.000	-15.258	0.000	0.000	0.000	0.000	2,752.728
2012	5	23,727.418	0.000	11,816.418	0.000	-15.258	0.000	0.000	0.000	0.000	2,074.969
2012	6	23,727.418	0.000	11,816.418	0.000	-15.258	0.000	0.000	0.000	0.000	69.081
2012	7	23,727.418	0.000	11,816.418	0.000	-15.258	0.000	0.000	0.000	0.000	6.518
2012	8	23,727.418	0.000	11,816.418	0.000	-15.258	0.000	0.000	0.000	0.000	0.000
2012	9	23,727.418	0.000	11,816.418	0.000	-15.258	0.000	0.000	0.000	0.000	44.692
2012	10	23,727.418	0.000	11,816.418	0.000	-15.258	0.000	0.000	0.000	0.000	1,490.087
2012	11	23,727.418	0.000	11,816.418	0.000	-15.258	0.000	0.000	0.000	0.000	5,524.200
2012	12	23,727.418	0.000	11,816.418	0.000	-15.258	0.000	0.000	0.000	0.000	9,347.601
2013	1	23,727.418	0.000	11,816.418	0.000	-15.258	0.000	0.000	0.000	0.000	14,451.300
2013	2	23,727.418	0.000	11,816.418	0.000	-15.258	0.000	0.000	0.000	0.000	16,620.445
2013	3	23,727.418	0.000	11,816.418	0.000	-15.258	0.000	0.000	0.000	0.000	14,992.542
2013	4	23,727.418	0.000	11,816.418	0.000	-15.258	0.000	0.000	0.000	0.000	10,257.402
2013	5	23,727.418	0.000	11,816.418	0.000	-15.258	0.000	0.000	0.000	0.000	2,633.582
2013	6	23,727.418	0.000	11,816.418	0.000	-15.258	0.000	0.000	0.000	0.000	269.807
2013	7	23,727.418	0.000	11,816.418	0.000	-15.258	0.000	0.000	0.000	0.000	0.000
2013	8	23,727.418	0.000	11,816.418	0.000	-15.258	0.000	0.000	0.000	0.000	0.000
2013	9	23,727.418	0.000	11,816.418	0.000	-15.258	0.000	0.000	0.000	0.000	12.513
2013	10	23,727.418	0.000	11,816.418	0.000	-15.258	0.000	0.000	0.000	0.000	424.542
2013	11	23,727.418	0.000	11,816.418	0.000	-15.258	0.000	0.000	0.000	0.000	5,243.868
2013	12	23,727.418	0.000	11,816.418	0.000	-15.258	0.000	0.000	0.000	0.000	13,089.122
2014	1	23,727.418	0.000	11,816.418	0.000	-15.258	0.000	0.000	0.000	0.000	17,983.829
2014	2	23,727.418	0.000	11,816.418	0.000	-15.258	0.000	0.000	0.000	0.000	22,102.059
2014	3	23,727.418	0.000	11,816.418	0.000	-15.258	0.000	0.000	0.000	0.000	19,153.051
2014	4	23,727.418	0.000	11,816.418	0.000	-15.258	0.000	0.000	0.000	0.000	9,902.812
2014	5	23,727.418	0.000	11,816.418	0.000	-15.258	0.000	0.000	0.000	0.000	2,429.373
2014	6	23,727.418	0.000	11,816.418	0.000	-15.258	0.000	0.000	0.000	0.000	492.883

Indiana Michigan Power Company-Indiana
Long-Term Commercial Energy Model Output

Year	Month	D07on	jul15on	D00on	10-Nov	Sep11on	20-May	feb17on	20-Apr	X-Missing	Heating
2014	7	23,727.418	0.000	11,816.418	0.000	-15.258	0.000	0.000	0.000	0.000	0.000
2014	8	23,727.418	0.000	11,816.418	0.000	-15.258	0.000	0.000	0.000	0.000	0.000
2014	9	23,727.418	0.000	11,816.418	0.000	-15.258	0.000	0.000	0.000	0.000	31.738
2014	10	23,727.418	0.000	11,816.418	0.000	-15.258	0.000	0.000	0.000	0.000	888.421
2014	11	23,727.418	0.000	11,816.418	0.000	-15.258	0.000	0.000	0.000	0.000	5,407.039
2014	12	23,727.418	0.000	11,816.418	0.000	-15.258	0.000	0.000	0.000	0.000	12,775.647
2015	1	23,727.418	0.000	11,816.418	0.000	-15.258	0.000	0.000	0.000	0.000	15,283.354
2015	2	23,727.418	0.000	11,816.418	0.000	-15.258	0.000	0.000	0.000	0.000	18,398.159
2015	3	23,727.418	0.000	11,816.418	0.000	-15.258	0.000	0.000	0.000	0.000	19,058.222
2015	4	23,727.418	0.000	11,816.418	0.000	-15.258	0.000	0.000	0.000	0.000	7,857.402
2015	5	23,727.418	0.000	11,816.418	0.000	-15.258	0.000	0.000	0.000	0.000	2,075.538
2015	6	23,727.418	0.000	11,816.418	0.000	-15.258	0.000	0.000	0.000	0.000	209.989
2015	7	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	0.000	0.000	0.000	1.493
2015	8	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	0.000	0.000	0.000	0.000
2015	9	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	0.000	0.000	0.000	0.000
2015	10	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	0.000	0.000	0.000	397.803
2015	11	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	0.000	0.000	0.000	2,568.244
2015	12	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	0.000	0.000	0.000	7,182.327
2016	1	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	0.000	0.000	0.000	10,499.585
2016	2	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	0.000	0.000	0.000	14,596.014
2016	3	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	0.000	0.000	0.000	9,982.942
2016	4	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	0.000	0.000	0.000	5,388.476
2016	5	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	0.000	0.000	0.000	2,173.494
2016	6	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	0.000	0.000	0.000	384.581
2016	7	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	0.000	0.000	0.000	0.000
2016	8	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	0.000	0.000	0.000	0.000
2016	9	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	0.000	0.000	0.000	0.000
2016	10	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	0.000	0.000	0.000	131.369
2016	11	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	0.000	0.000	0.000	2,155.993
2016	12	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	0.000	0.000	0.000	9,590.758
2017	1	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	0.000	0.000	0.000	14,117.267
2017	2	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	10,805.419
2017	3	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	8,267.566

Indiana Michigan Power Company-Indiana
Long-Term Commercial Energy Model Output

Year	Month	D07on	jul15on	D00on	10-Nov	Sep11on	20-May	feb17on	20-Apr	X-Missing	Heating
2017	4	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	5,840.102
2017	5	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	1,524.293
2017	6	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	298.892
2017	7	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	0.000
2017	8	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	0.000
2017	9	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	0.000
2017	10	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	70.471
2017	11	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	4,207.682
2017	12	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	8,951.313
2018	1	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	17,769.367
2018	2	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	14,850.109
2018	3	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	10,232.599
2018	4	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	9,026.244
2018	5	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	3,098.168
2018	6	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	32.725
2018	7	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	0.000
2018	8	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	0.000
2018	9	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	0.000
2018	10	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	683.664
2018	11	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	5,329.888
2018	12	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	10,593.250
2019	1	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	10,739.170
2019	2	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	15,757.537
2019	3	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	13,115.383
2019	4	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	6,808.877
2019	5	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	1,995.448
2019	6	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	334.693
2019	7	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	0.000
2019	8	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	0.000
2019	9	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	0.000
2019	10	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	387.496
2019	11	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	5,104.827
2019	12	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	10,380.689

Indiana Michigan Power Company-Indiana
Long-Term Commercial Energy Model Output

Year	Month	D07on	jul15on	D00on	10-Nov	Sep11on	20-May	feb17on	20-Apr	X-Missing	Heating
2020	1	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	10,242.551
2020	2	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	11,842.953
2020	3	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	11,059.820
2020	4	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	-17,087.963	0.000	5,972.408
2020	5	23,727.418	1,518.231	11,816.418	0.000	-15.258	-28,446.083	-8,522.315	0.000	0.000	3,437.995
2020	6	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	582.630
2020	7	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	0.000
2020	8	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	0.000
2020	9	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	13.408
2020	10	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	803.542
2020	11	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	3,569.847
2020	12	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	7,745.098
2021	1	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	11,502.212
2021	2	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	14,788.584
2021	3	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	11,760.950
2021	4	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	6,520.934
2021	5	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	2,090.457
2021	6	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	298.613
2021	7	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	3.182
2021	8	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	0.000
2021	9	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	11.725
2021	10	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	693.573
2021	11	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	3,926.984
2021	12	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	9,209.701
2022	1	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	13,297.509
2022	2	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	14,867.211
2022	3	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	11,824.052
2022	4	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	6,549.689
2022	5	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	2,098.131
2022	6	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	299.518
2022	7	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	3.190
2022	8	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	0.000
2022	9	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	11.750

Indiana Michigan Power Company-Indiana
Long-Term Commercial Energy Model Output

Year	Month	D07on	jul15on	D00on	10-Nov	Sep11on	20-May	feb17on	20-Apr	X-Missing	Heating
2022	10	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	695.046
2022	11	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	3,935.560
2022	12	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	9,231.597
2023	1	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	13,238.979
2023	2	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	14,818.928
2023	3	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	11,799.511
2023	4	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	6,544.039
2023	5	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	2,098.885
2023	6	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	299.987
2023	7	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	3.199
2023	8	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	0.000
2023	9	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	11.805
2023	10	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	698.987
2023	11	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	3,961.555
2023	12	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	9,300.404
2024	1	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	13,306.184
2024	2	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	14,877.248
2024	3	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	11,832.511
2024	4	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	6,554.633
2024	5	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	2,099.817
2024	6	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	299.775
2024	7	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	3.193
2024	8	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	0.000
2024	9	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	11.760
2024	10	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	695.638
2024	11	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	3,938.870
2024	12	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	9,239.003
2025	1	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	13,191.245
2025	2	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	14,748.045
2025	3	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	11,729.357
2025	4	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	6,497.363
2025	5	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	2,081.443
2025	6	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	297.147

Indiana Michigan Power Company-Indiana
Long-Term Commercial Energy Model Output

Year	Month	D07on	jul15on	D00on	10-Nov	Sep11on	20-May	feb17on	20-Apr	X-Missing	Heating
2025	7	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	3.165
2025	8	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	0.000
2025	9	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	11.656
2025	10	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	689.417
2025	11	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	3,903.420
2025	12	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	9,155.307
2026	1	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	13,069.849
2026	2	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	14,608.364
2026	3	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	11,615.235
2026	4	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	6,432.456
2026	5	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	2,060.124
2026	6	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	294.032
2026	7	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	3.131
2026	8	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	0.000
2026	9	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	11.527
2026	10	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	681.658
2026	11	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	3,858.880
2026	12	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	9,049.619
2027	1	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	12,927.572
2027	2	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	14,449.499
2027	3	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	11,489.102
2027	4	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	6,362.806
2027	5	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	2,037.888
2027	6	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	290.869
2027	7	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	3.098
2027	8	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	0.000
2027	9	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	11.404
2027	10	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	674.456
2027	11	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	3,818.288
2027	12	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	8,954.832
2028	1	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	12,804.703
2028	2	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	14,313.185
2028	3	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	11,381.433

Indiana Michigan Power Company-Indiana
Long-Term Commercial Energy Model Output

Year	Month	D07on	jul15on	D00on	10-Nov	Sep11on	20-May	feb17on	20-Apr	X-Missing	Heating
2028	4	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	6,303.458
2028	5	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	2,018.941
2028	6	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	288.171
2028	7	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	3.069
2028	8	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	0.000
2028	9	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	11.298
2028	10	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	668.172
2028	11	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	3,782.568
2028	12	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	8,870.687
2029	1	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	12,674.849
2029	2	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	14,166.465
2029	3	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	11,263.469
2029	4	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	6,237.454
2029	5	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	1,997.586
2029	6	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	285.092
2029	7	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	3.036
2029	8	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	0.000
2029	9	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	11.174
2029	10	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	660.782
2029	11	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	3,740.416
2029	12	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	8,771.119
2030	1	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	12,529.044
2030	2	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	14,003.629
2030	3	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	11,134.199
2030	4	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	6,165.947
2030	5	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	1,974.719
2030	6	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	281.834
2030	7	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	3.001
2030	8	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	0.000
2030	9	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	11.047
2030	10	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	653.260
2030	11	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	3,697.876
2030	12	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	8,671.444

Indiana Michigan Power Company-Indiana
Long-Term Commercial Energy Model Output

Year	Month	D07on	jul15on	D00on	10-Nov	Sep11on	20-May	feb17on	20-Apr	X-Missing	Heating
2031	1	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	12,403.183
2031	2	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	13,863.095
2031	3	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	11,022.551
2031	4	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	6,104.196
2031	5	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	1,954.965
2031	6	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	279.017
2031	7	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	2.971
2031	8	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	0.000
2031	9	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	10.937
2031	10	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	646.777
2031	11	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	3,661.248
2031	12	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	8,585.706
2032	1	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	12,273.679
2032	2	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	13,718.163
2032	3	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	10,907.175
2032	4	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	6,040.152
2032	5	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	1,934.408
2032	6	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	276.077
2032	7	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	2.940
2032	8	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	0.000
2032	9	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	10.821
2032	10	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	639.899
2032	11	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	3,622.225
2032	12	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	8,494.039
2033	1	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	12,136.448
2033	2	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	13,565.202
2033	3	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	10,785.889
2033	4	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	5,973.241
2033	5	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	1,913.069
2033	6	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	273.045
2033	7	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	2.908
2033	8	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	0.000
2033	9	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	10.704

Indiana Michigan Power Company-Indiana
Long-Term Commercial Energy Model Output

Year	Month	D07on	jul15on	D00on	10-Nov	Sep11on	20-May	feb17on	20-Apr	X-Missing	Heating
2033	10	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	633.005
2033	11	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	3,583.407
2033	12	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	8,403.455
2034	1	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	11,998.129
2034	2	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	13,410.959
2034	3	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	10,663.543
2034	4	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	5,905.646
2034	5	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	1,891.466
2034	6	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	269.968
2034	7	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	2.875
2034	8	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	0.000
2034	9	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	10.584
2034	10	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	625.913
2034	11	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	3,543.299
2034	12	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	8,309.490
2035	1	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	11,869.966
2035	2	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	13,267.851
2035	3	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	10,549.860
2035	4	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	5,842.740
2035	5	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	1,871.340
2035	6	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	267.098
2035	7	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	2.844
2035	8	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	0.000
2035	9	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	10.472
2035	10	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	619.289
2035	11	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	3,505.847
2035	12	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	8,221.752
2036	1	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	11,735.892
2036	2	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	13,118.128
2036	3	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	10,430.946
2036	4	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	5,776.901
2036	5	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	1,850.250
2036	6	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	264.087

Indiana Michigan Power Company-Indiana
Long-Term Commercial Energy Model Output

Year	Month	D07on	jul15on	D00on	10-Nov	Sep11on	20-May	feb17on	20-Apr	X-Missing	Heating
2036	7	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	2.812
2036	8	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	0.000
2036	9	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	10.353
2036	10	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	612.283
2036	11	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	3,466.129
2036	12	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	8,128.484
2037	1	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	11,596.701
2037	2	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	12,962.400
2037	3	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	10,307.047
2037	4	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	5,708.290
2037	5	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	1,828.287
2037	6	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	260.955
2037	7	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	2.779
2037	8	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	0.000
2037	9	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	10.231
2037	10	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	605.058
2037	11	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	3,425.310
2037	12	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	8,032.919
2038	1	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	11,458.066
2038	2	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	12,807.141
2038	3	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	10,183.317
2038	4	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	5,639.624
2038	5	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	1,806.247
2038	6	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	257.802
2038	7	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	2.745
2038	8	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	0.000
2038	9	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	10.107
2038	10	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	597.688
2038	11	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	3,383.505
2038	12	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	7,934.700
2039	1	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	11,321.466
2039	2	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	12,654.554
2039	3	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	10,062.051

Indiana Michigan Power Company-Indiana
Long-Term Commercial Energy Model Output

Year	Month	D07on	jul15on	D00on	10-Nov	Sep11on	20-May	feb17on	20-Apr	X-Missing	Heating
2039	4	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	5,572.525
2039	5	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	1,784.776
2039	6	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	254.741
2039	7	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	2.713
2039	8	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	0.000
2039	9	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	9.987
2039	10	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	590.631
2039	11	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	3,343.618
2039	12	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	7,841.311
2040	1	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	11,188.887
2040	2	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	12,506.772
2040	3	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	9,944.854
2040	4	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	5,507.736
2040	5	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	1,764.049
2040	6	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	251.787
2040	7	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	2.681
2040	8	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	0.000
2040	9	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	9.871
2040	10	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	583.785
2040	11	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	3,304.837
2040	12	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	7,750.284
2041	1	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	11,060.904
2041	2	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	12,363.137
2041	3	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	9,830.198
2041	4	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	5,444.026
2041	5	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	1,743.585
2041	6	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	248.855
2041	7	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	2.650
2041	8	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	0.000
2041	9	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	9.756
2041	10	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	576.916
2041	11	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	3,265.866
2041	12	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	7,658.683

Indiana Michigan Power Company-Indiana
Long-Term Commercial Energy Model Output

Year	Month	D07on	jul15on	D00on	10-Nov	Sep11on	20-May	feb17on	20-Apr	X-Missing	Heating
2042	1	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	10,925.550
2042	2	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	12,211.617
2042	3	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	9,709.503
2042	4	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	5,377.056
2042	5	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	1,722.101
2042	6	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	245.784
2042	7	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	2.617
2042	8	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	0.000
2042	9	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	9.635
2042	10	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	569.749
2042	11	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	3,225.223
2042	12	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	7,563.268
2043	1	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	10,793.174
2043	2	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	12,063.946
2043	3	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	9,592.371
2043	4	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	5,312.354
2043	5	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	1,701.433
2043	6	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	242.843
2043	7	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	2.586
2043	8	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	0.000
2043	9	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	9.521
2043	10	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	563.027
2043	11	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	3,187.328
2043	12	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	7,474.736
2044	1	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	10,666.790
2044	2	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	11,922.933
2044	3	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	9,480.448
2044	4	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	5,250.426
2044	5	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	1,681.617
2044	6	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	240.017
2044	7	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	2.556
2044	8	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	0.000
2044	9	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	9.410

Indiana Michigan Power Company-Indiana
Long-Term Commercial Energy Model Output

Year	Month	D07on	jul15on	D00on	10-Nov	Sep11on	20-May	feb17on	20-Apr	X-Missing	Heating
2044	10	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	556.472
2044	11	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	3,150.204
2044	12	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	7,387.628
2045	1	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	10,542.038
2045	2	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	11,782.780
2045	3	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	9,368.420
2045	4	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	5,188.116
2045	5	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	1,661.565
2045	6	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	237.142
2045	7	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	2.525
2045	8	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	0.000
2045	9	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	9.296
2045	10	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	549.705
2045	11	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	3,111.744
2045	12	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	7,297.139
2046	1	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	10,414.323
2046	2	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	11,639.783
2046	3	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	9,254.494
2046	4	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	5,124.897
2046	5	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	1,641.275
2046	6	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	234.240
2046	7	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	2.494
2046	8	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	0.000
2046	9	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	9.181
2046	10	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	542.905
2046	11	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	3,073.150
2046	12	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	7,206.353
2047	1	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	10,285.724
2047	2	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	11,496.097
2047	3	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	9,140.302
2047	4	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	5,061.669
2047	5	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	1,621.028
2047	6	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	231.350

Indiana Michigan Power Company-Indiana
Long-Term Commercial Energy Model Output

Year	Month	D07on	jul15on	D00on	10-Nov	Sep11on	20-May	feb17on	20-Apr	X-Missing	Heating
2047	7	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	2.464
2047	8	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	0.000
2047	9	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	9.068
2047	10	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	536.202
2047	11	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	3,035.184
2047	12	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	7,117.307
2048	1	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	10,159.480
2048	2	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	11,354.879
2048	3	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	9,027.964
2048	4	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	4,999.385
2048	5	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	1,601.063
2048	6	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	228.498
2048	7	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	2.433
2048	8	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	0.000
2048	9	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	8.956
2048	10	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	529.588
2048	11	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	2,997.769
2048	12	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	7,029.618
2049	1	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	10,011.170
2049	2	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	11,189.562
2049	3	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	8,896.880
2049	4	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	4,927.040
2049	5	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	1,577.974
2049	6	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	225.215
2049	7	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	2.398
2049	8	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	0.000
2049	9	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	8.829
2049	10	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	522.083
2049	11	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	2,955.420
2049	12	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	6,930.614
2050	1	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	9,868.106
2050	2	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	11,029.656
2050	3	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	8,769.711

Indiana Michigan Power Company-Indiana
Long-Term Commercial Energy Model Output

Year	Month	D07on	jul15on	D00on	10-Nov	Sep11on	20-May	feb17on	20-Apr	X-Missing	Heating
2050	4	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	4,856.603
2050	5	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	1,555.413
2050	6	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	221.994
2050	7	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	2.364
2050	8	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	0.000
2050	9	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	8.702
2050	10	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	514.603
2050	11	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	2,913.061
2050	12	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	6,831.241
2051	1	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	9,741.089
2051	2	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	10,887.782
2051	3	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	8,656.957
2051	4	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	4,794.194
2051	5	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	1,535.438
2051	6	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	219.144
2051	7	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	2.334
2051	8	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	0.000
2051	9	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	8.590
2051	10	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	508.004
2051	11	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	2,875.716
2051	12	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	6,743.686
2052	1	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	9,615.906
2052	2	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	10,747.956
2052	3	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	8,545.830
2052	4	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	4,732.686
2052	5	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	1,515.751
2052	6	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	216.335
2052	7	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	2.304
2052	8	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	0.000
2052	9	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	8.480
2052	10	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	501.500
2052	11	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	2,838.909
2052	12	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	6,657.394

Indiana Michigan Power Company-Indiana
Long-Term Commercial Energy Model Output

Year	Month	D07on	jul15on	D00on	10-Nov	Sep11on	20-May	feb17on	20-Apr	X-Missing	Heating
2053	1	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	9,492.526
2053	2	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	10,610.144
2053	3	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	8,436.303
2053	4	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	4,672.063
2053	5	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	1,496.348
2053	6	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	213.567
2053	7	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	2.274
2053	8	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	0.000
2053	9	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	8.372
2053	10	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	495.089
2053	11	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	2,802.632
2053	12	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	6,572.344
2054	1	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	9,370.920
2054	2	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	10,474.312
2054	3	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	8,328.351
2054	4	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	4,612.311
2054	5	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	1,477.223
2054	6	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	210.838
2054	7	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	2.245
2054	8	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	0.000
2054	9	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	8.265
2054	10	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	488.771
2054	11	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	2,766.876
2054	12	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	6,488.516
2055	1	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	9,251.060
2055	2	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	10,340.429
2055	3	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	8,221.946
2055	4	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	4,553.416
2055	5	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	1,458.372
2055	6	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	208.149
2055	7	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	2.217
2055	8	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	0.000
2055	9	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	8.160

Indiana Michigan Power Company-Indiana
Long-Term Commercial Energy Model Output

Year	Month	D07on	jul15on	D00on	10-Nov	Sep11on	20-May	feb17on	20-Apr	X-Missing	Heating
2055	10	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	482.543
2055	11	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	2,731.633
2055	12	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	6,405.890
2056	1	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	9,132.915
2056	2	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	10,208.462
2056	3	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	8,117.065
2056	4	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	4,495.364
2056	5	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	1,439.791
2056	6	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	205.498
2056	7	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	2.188
2056	8	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	0.000
2056	9	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	8.056
2056	10	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	476.405
2056	11	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	2,696.894
2056	12	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	6,324.447
2057	1	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	9,016.459
2057	2	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	10,078.380
2057	3	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	8,013.681
2057	4	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	4,438.140
2057	5	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	1,421.474
2057	6	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	202.885
2057	7	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	2.161
2057	8	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	0.000
2057	9	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	7.954
2057	10	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	470.354
2057	11	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	2,662.651
2057	12	23,727.418	1,518.231	11,816.418	0.000	-15.258	0.000	-8,522.315	0.000	0.000	6,244.165

Indiana Michigan Power Company-Indiana
Long-Term Commercial Energy Model Output

Year	Month	Cooling	Other	Total	Actual	Heating	Cooling	Other
1998	1	0.000	321,923.117986985	339,243.701	342,610.35	17,320.583	0.000	325,289.765915824
1998	2	0.000	293,568.545286472	311,258.664	292,069.61	17,690.119	0.000	274,379.494962796
1998	3	0.000	286,599.840929343	301,170.060	298,441.30	14,570.219	0.000	283,871.084156056
1998	4	861.898	281,711.196474358	291,794.767	297,305.43	9,221.672	861.898	287,221.859747448
1998	5	3,855.078	284,809.971780271	290,767.072	298,594.58	2,102.022	3,855.078	292,637.481334894
1998	6	22,603.386	305,440.005166241	328,158.877	328,463.66	115.486	22,603.386	305,744.789138565
1998	7	49,697.341	310,618.751568134	360,357.134	361,711.87	41.042	49,697.341	311,973.490104399
1998	8	39,473.860	302,983.083588919	342,456.944	345,924.63	0.000	39,473.860	306,450.765840744
1998	9	34,185.635	324,546.531884492	358,732.166	359,449.19	0.000	34,185.635	325,263.558415387
1998	10	16,959.232	299,281.747521347	316,818.478	310,996.27	577.499	16,959.232	293,459.534153651
1998	11	1,082.770	278,008.691349318	284,228.347	289,951.16	5,136.886	1,082.770	283,731.499889314
1998	12	0.000	311,929.400263544	321,110.680	327,049.14	9,181.279	0.000	317,867.856759458
1999	1	0.000	323,373.142720905	346,183.084	333,418.54	22,809.942	0.000	310,608.594383861
1999	2	0.000	294,609.543430812	314,015.568	307,474.81	19,406.025	0.000	288,068.784144031
1999	3	0.000	287,765.022989109	305,928.235	303,750.98	18,163.212	0.000	285,587.766026214
1999	4	0.000	283,108.518697886	293,854.064	302,554.09	10,745.545	0.000	291,808.547096364
1999	5	2,147.422	328,792.409682817	333,518.570	333,518.57	2,578.739	2,147.422	328,792.409682916
1999	6	21,706.155	275,019.640458012	296,870.325	296,870.33	144.530	21,706.155	275,019.640458087
1999	7	51,917.140	312,897.729392833	364,814.869	375,921.65	0.000	51,917.140	324,004.510483535
1999	8	65,445.017	305,481.523821509	370,926.541	364,479.06	0.000	65,445.017	299,034.040965052
1999	9	25,556.658	327,759.865958132	353,323.206	350,077.66	6.682	25,556.658	324,514.323181312
1999	10	8,066.297	302,793.444886378	312,099.349	310,929.63	1,239.607	8,066.297	301,623.720815429
1999	11	206.797	281,776.966157490	286,869.945	292,319.13	4,886.182	206.797	287,226.151101813
1999	12	0.000	316,661.562234636	327,422.295	328,041.32	10,760.733	0.000	317,280.585474389
2000	1	0.000	340,866.661183654	360,278.748	343,289.80	19,412.087	0.000	323,877.717248384
2000	2	0.000	312,232.317998242	337,938.831	328,201.17	25,706.513	0.000	302,494.657353395
2000	3	0.000	305,188.346231478	317,529.946	303,835.91	12,341.600	0.000	291,494.311479613
2000	4	0.000	300,676.570946923	308,253.682	296,691.21	7,577.112	0.000	289,114.095461480
2000	5	6,783.773	303,796.464605812	313,264.055	314,078.41	2,683.817	6,783.773	304,610.816496950
2000	6	15,985.552	325,167.340604087	341,353.422	336,600.92	200.529	15,985.552	320,414.835099007
2000	7	34,822.342	330,670.715879297	365,500.492	357,728.43	7.434	34,822.342	322,898.650267980
2000	8	36,849.639	322,861.104738028	359,710.744	355,329.40	0.000	36,849.639	318,479.761568605
2000	9	31,671.208	344,777.467902744	376,470.997	374,489.78	22.321	31,671.208	342,796.253715504

Indiana Michigan Power Company-Indiana
Long-Term Commercial Energy Model Output

Year	Month	Cooling	Other	Total	Actual	Heating	Cooling	Other
2000	10	7,318.828	318,983.154020038	327,499.640	323,600.10	1,197.658	7,318.828	315,083.617825971
2000	11	977.761	297,189.398357963	302,331.237	306,473.58	4,164.077	977.761	301,331.739463446
2000	12	0.000	331,648.427383426	350,324.690	355,961.94	18,676.263	0.000	337,285.681134309
2001	1	0.000	343,126.922325607	370,684.622	359,812.99	27,557.700	0.000	332,255.293202833
2001	2	0.000	313,149.604622879	333,858.361	324,432.91	20,708.757	0.000	303,724.156153096
2001	3	0.000	305,642.666764660	322,195.944	317,878.15	16,553.277	0.000	301,324.875657260
2001	4	1,339.793	300,443.223127439	312,813.334	314,642.49	11,030.318	1,339.793	302,272.379255899
2001	5	7,178.837	303,215.831259176	312,604.763	323,655.75	2,210.094	7,178.837	314,266.814417187
2001	6	11,989.377	323,694.579619045	335,922.381	329,421.69	238.424	11,989.377	317,193.888725011
2001	7	35,098.863	328,826.417119312	363,966.865	360,151.59	41.585	35,098.863	325,011.146561545
2001	8	52,890.553	320,900.049570458	373,790.602	388,368.33	0.000	52,890.553	335,477.779432276
2001	9	29,454.408	342,799.914066721	372,264.722	371,170.04	10.400	29,454.408	341,705.227310669
2001	10	4,014.720	317,297.377454860	322,549.609	319,116.08	1,237.511	4,014.720	313,863.845625629
2001	11	129.021	295,898.907759070	300,399.712	300,184.72	4,371.783	129.021	295,683.913699127
2001	12	0.000	330,628.898218979	337,967.676	328,372.18	7,338.777	0.000	321,033.401717892
2002	1	0.000	343,040.793155902	360,149.967	350,566.33	17,109.174	0.000	333,457.159731033
2002	2	0.000	313,824.555289768	328,436.131	316,049.42	14,611.575	0.000	301,437.845707400
2002	3	0.000	306,730.148237810	321,147.414	310,820.37	14,417.265	0.000	296,403.108691720
2002	4	2,466.683	302,177.768687347	315,610.008	319,383.04	10,965.557	2,466.683	305,950.798401274
2002	5	5,803.445	305,462.933206366	314,741.499	310,857.10	3,475.121	5,803.445	301,578.529137686
2002	6	14,160.741	326,697.567322364	342,157.755	341,099.91	1,299.447	14,160.741	325,639.721416356
2002	7	55,540.857	332,361.873354927	387,902.731	390,064.86	0.000	55,540.857	334,523.997585409
2002	8	61,599.702	324,578.210975372	386,177.913	388,613.23	0.000	61,599.702	327,013.528734953
2002	9	39,615.462	346,985.212946521	386,606.235	390,114.51	5.560	39,615.462	350,493.484967121
2002	10	15,418.862	321,463.888587225	338,065.393	336,752.71	1,182.642	15,418.862	320,151.209148211
2002	11	1,001.262	300,105.871892260	309,114.644	306,295.81	8,007.510	1,001.262	297,287.035612518
2002	12	0.000	335,496.289186106	351,597.469	349,722.08	16,101.179	0.000	333,620.902567670
2003	1	0.000	347,728.617698420	367,668.103	364,687.07	19,939.485	0.000	344,747.582175153
2003	2	0.000	318,025.772491468	343,813.149	345,225.55	25,787.376	0.000	319,438.168788796
2003	3	0.000	311,023.857957129	332,887.072	330,795.09	21,863.214	0.000	308,931.872300202
2003	4	67.781	306,473.847806968	315,457.131	309,781.87	8,915.502	67.781	300,798.589564998
2003	5	703.432	309,792.697452829	313,722.271	319,126.41	3,226.142	703.432	315,196.836680178
2003	6	3,922.667	331,075.487781988	335,379.011	322,039.98	380.856	3,922.667	317,736.460305750

Indiana Michigan Power Company-Indiana
Long-Term Commercial Energy Model Output

Year	Month	Cooling	Other	Total	Actual	Heating	Cooling	Other
2003	7	32,077.556	336,929.445866038	369,010.948	368,687.04	3.947	32,077.556	336,605.534455847
2003	8	37,221.325	327,402.184690207	364,623.510	363,079.73	0.000	37,221.325	325,858.407808428
2003	9	32,883.908	357,376.242347102	390,260.941	392,392.43	0.791	32,883.908	359,507.728254015
2003	10	3,543.619	321,545.788246768	327,052.400	317,567.91	1,962.993	3,543.619	312,061.301959396
2003	11	161.511	301,182.343187205	306,770.687	301,904.09	5,426.832	161.511	296,315.744316811
2003	12	24.874	339,704.713383248	352,151.769	348,434.29	12,422.182	24.874	335,987.236658998
2004	1	0.000	353,986.201731815	372,141.243	364,744.40	18,155.041	0.000	346,589.355891934
2004	2	0.000	321,741.893371543	347,392.564	349,077.22	25,650.671	0.000	323,426.550094689
2004	3	0.000	314,562.103052123	330,948.159	327,199.02	16,386.056	0.000	310,812.962005879
2004	4	675.679	313,026.817775811	321,948.244	320,234.49	8,245.748	675.679	311,313.066550462
2004	5	7,537.909	313,942.521027872	323,959.349	326,916.29	2,478.918	7,537.909	316,899.464288925
2004	6	18,630.761	335,465.146221779	354,312.637	363,328.99	216.730	18,630.761	344,481.502265206
2004	7	29,202.183	338,973.747416475	368,175.930	374,909.98	0.000	29,202.183	345,707.800321020
2004	8	26,262.656	330,821.046995138	357,083.703	355,640.69	0.000	26,262.656	329,378.031896644
2004	9	23,407.593	353,357.791536890	376,765.384	378,746.46	0.000	23,407.593	355,338.868064005
2004	10	8,193.052	328,228.297363889	337,564.297	338,487.94	1,142.947	8,193.052	329,151.941780582
2004	11	522.837	307,869.261955509	312,268.972	314,090.17	3,876.873	522.837	309,690.463035322
2004	12	37.362	346,032.750373436	357,361.040	351,508.91	11,290.928	37.362	340,180.621157352
2005	1	0.000	352,483.614810325	372,362.857	363,418.09	19,879.242	0.000	343,538.846144153
2005	2	0.000	322,589.966845299	345,075.288	344,770.86	22,485.321	0.000	322,285.534962324
2005	3	0.000	317,193.563346459	335,137.504	335,779.67	17,943.940	0.000	317,835.731632406
2005	4	180.837	315,933.352869481	325,721.942	329,337.96	9,607.752	180.837	319,549.370700145
2005	5	2,118.019	311,792.930062220	317,885.751	319,755.75	3,974.802	2,118.019	313,662.924297999
2005	6	16,473.598	336,720.178195094	353,855.734	364,907.44	661.958	16,473.598	347,771.881599403
2005	7	53,101.265	343,849.730316417	396,950.996	409,181.64	0.000	53,101.265	356,080.371693316
2005	8	59,881.281	332,517.160199290	392,398.441	400,084.55	0.000	59,881.281	340,203.264339480
2005	9	36,692.112	351,784.567630797	388,476.679	399,790.21	0.000	36,692.112	363,098.100483395
2005	10	17,079.895	333,768.301593575	351,394.027	364,679.92	545.830	17,079.895	347,054.193955803
2005	11	1,384.316	309,714.216384797	315,914.295	316,067.58	4,815.763	1,384.316	309,867.503541185
2005	12	0.000	340,854.233746823	357,852.163	359,379.45	16,997.930	0.000	342,381.515263267
2006	1	0.000	354,827.503908479	372,288.801	374,280.09	17,461.298	0.000	356,818.793470718
2006	2	0.000	325,637.315301034	339,997.570	343,285.70	14,360.255	0.000	328,925.447877927
2006	3	0.000	316,673.655828919	332,723.712	333,364.56	16,050.056	0.000	317,314.499860097

Indiana Michigan Power Company-Indiana
Long-Term Commercial Energy Model Output

Year	Month	Cooling	Other	Total	Actual	Heating	Cooling	Other
2006	4	189.454	305,694.457830437	314,929.421	315,645.76	9,045.509	189.454	306,410.800383646
2006	5	366.729	318,474.553517753	320,773.452	327,682.19	1,932.170	366.729	325,383.290149128
2006	6	16,485.852	336,211.257058382	353,443.010	364,095.45	745.901	16,485.852	346,863.691728216
2006	7	38,163.493	341,442.306778320	379,605.800	406,662.94	0.000	38,163.493	368,499.451066735
2006	8	57,098.427	337,300.216741993	394,398.643	399,074.52	0.000	57,098.427	341,976.095445973
2006	9	23,723.724	355,967.727265443	379,734.013	395,111.08	42.562	23,723.724	371,344.797933135
2006	10	2,189.792	328,498.269187477	332,158.919	338,651.39	1,470.859	2,189.792	334,990.734801892
2006	11	200.044	317,383.057398032	325,258.501	333,389.65	7,675.400	200.044	325,514.207989179
2006	12	0.000	341,215.520773894	352,476.629	359,885.50	11,261.109	0.000	348,624.389416733
2007	1	0.000	376,149.848802972	388,695.592	369,029.95	12,545.743	0.000	356,484.204044152
2007	2	0.000	353,263.967383612	376,038.807	368,672.08	22,774.840	0.000	345,897.239096652
2007	3	12.725	338,213.676624333	359,140.233	353,947.12	20,913.831	12.725	333,020.558181160
2007	4	802.171	338,043.220363348	346,716.261	340,851.46	7,870.870	802.171	332,178.422597763
2007	5	4,044.142	335,660.761217870	342,695.157	341,265.72	2,990.254	4,044.142	334,231.319908682
2007	6	28,494.848	355,455.222230821	384,154.135	388,267.42	204.065	28,494.848	359,568.506943479
2007	7	41,927.243	366,001.177283434	407,928.421	406,038.80	0.000	41,927.243	364,111.553542036
2007	8	49,805.254	360,923.064410692	410,728.318	409,790.28	0.000	49,805.254	359,985.027175640
2007	9	41,640.502	377,601.618681606	419,278.453	419,466.13	36.332	41,640.502	377,789.299884004
2007	10	20,469.238	353,978.409711298	374,813.779	375,985.09	366.132	20,469.238	355,149.723465300
2007	11	4,342.316	336,483.719311169	345,287.664	342,904.54	4,461.628	4,342.316	334,100.599782274
2007	12	0.000	365,080.255256640	379,156.842	370,416.09	14,076.587	0.000	356,339.500128732
2008	1	0.000	371,507.748000207	388,404.915	389,453.14	16,897.167	0.000	372,555.968161318
2008	2	0.000	346,413.291519109	366,634.269	370,721.84	20,220.977	0.000	350,500.858606557
2008	3	0.000	335,484.540003813	354,663.653	354,583.12	19,179.113	0.000	335,404.011068720
2008	4	47.642	326,741.278617241	336,899.815	332,968.39	10,110.895	47.642	322,809.852810645
2008	5	1,869.412	326,697.986366686	331,013.136	327,175.62	2,445.737	1,869.412	322,860.473345084
2008	6	18,445.928	351,741.120447409	370,749.977	366,596.07	562.929	18,445.928	347,587.212289497
2008	7	35,617.234	359,514.980079071	395,132.937	400,782.93	0.723	35,617.234	365,164.976470963
2008	8	44,832.282	345,179.643825161	390,011.926	390,932.66	0.000	44,832.282	346,100.373733747
2008	9	33,169.678	362,642.906037852	395,812.584	397,098.59	0.000	33,169.678	363,928.915894563
2008	10	8,966.181	341,324.004357900	350,924.375	356,391.44	634.189	8,966.181	346,791.066197112
2008	11	579.069	327,847.288533557	333,507.497	338,211.52	5,081.139	579.069	332,551.314698810
2008	12	0.000	349,741.484876084	364,844.487	365,017.65	15,103.002	0.000	349,914.649246353

Indiana Michigan Power Company-Indiana
Long-Term Commercial Energy Model Output

Year	Month	Cooling	Other	Total	Actual	Heating	Cooling	Other
2009	1	0.000	355,339.902940277	374,345.105	394,538.83	19,005.202	0.000	375,533.631799508
2009	2	0.000	327,982.543072105	350,353.337	366,825.20	22,370.794	0.000	344,454.400883867
2009	3	0.000	321,842.921596114	335,291.720	332,585.37	13,448.798	0.000	319,136.576035702
2009	4	99.239	316,958.994540612	323,989.663	328,150.27	6,931.430	99.239	321,119.601526093
2009	5	4,950.072	318,086.393876387	325,701.889	324,226.60	2,665.422	4,950.072	316,611.103374062
2009	6	12,443.654	334,285.296940305	347,015.728	350,857.01	286.776	12,443.654	338,126.581189412
2009	7	35,121.016	347,651.868295478	382,772.884	386,570.33	0.000	35,121.016	351,449.312484932
2009	8	28,227.936	338,268.954040862	366,496.890	367,950.30	0.000	28,227.936	339,722.361856531
2009	9	20,290.566	355,577.388754271	375,867.954	379,199.41	0.000	20,290.566	358,908.842277824
2009	10	6,159.717	341,775.371378872	349,473.406	348,123.72	1,538.317	6,159.717	340,425.682722975
2009	11	0.000	317,742.553271212	321,942.775	320,684.42	4,200.222	0.000	316,484.194241797
2009	12	0.000	350,060.873800147	359,889.585	363,678.63	9,828.712	0.000	353,849.919406805
2010	1	0.000	358,561.178761668	376,866.789	390,926.18	18,305.611	0.000	372,620.569362932
2010	2	0.000	325,623.826289258	344,451.945	342,435.27	18,828.118	0.000	323,607.151530103
2010	3	0.000	318,114.959714577	332,467.610	340,871.70	14,352.650	0.000	326,519.048192405
2010	4	1,595.989	323,475.702339134	329,911.461	329,090.86	4,839.770	1,595.989	322,655.104257520
2010	5	3,704.886	320,149.095433810	324,991.453	318,589.81	1,137.472	3,704.886	313,747.455566471
2010	6	34,083.213	341,786.684994997	376,102.344	375,075.77	232.446	34,083.213	340,760.111517296
2010	7	61,302.229	347,598.166851791	408,900.396	399,476.81	0.000	61,302.229	338,174.579017646
2010	8	69,027.608	344,489.568661462	413,517.177	402,478.91	0.000	69,027.608	333,451.303143032
2010	9	42,174.856	360,165.248803975	402,340.105	395,922.01	0.000	42,174.856	353,747.149506362
2010	10	12,316.596	340,636.466764243	353,490.181	379,838.48	537.118	12,316.596	366,984.762830698
2010	11	1,100.619	272,403.592949573	277,649.071	277,649.07	4,144.859	1,100.619	272,403.592949670
2010	12	0.000	351,407.806248298	364,871.916	353,758.39	13,464.110	0.000	340,294.283069523
2011	1	0.000	353,335.414174104	372,748.289	378,609.01	19,412.875	0.000	359,196.133130187
2011	2	0.000	331,599.961698056	352,541.506	345,121.52	20,941.544	0.000	324,179.972984165
2011	3	0.000	314,600.843026416	328,877.625	338,340.98	14,276.782	0.000	324,064.202315851
2011	4	398.440	301,417.864559194	310,082.271	303,703.99	8,265.966	398.440	295,039.584979308
2011	5	3,252.491	323,023.749494858	328,827.631	325,502.94	2,551.390	3,252.491	319,699.056375782
2011	6	29,421.984	341,955.734397701	371,734.108	369,072.07	356.390	29,421.984	339,293.695030142
2011	7	54,435.384	342,665.395674406	397,100.780	386,329.25	0.000	54,435.384	331,893.864812979
2011	8	78,088.479	345,344.902688331	423,433.381	424,529.46	0.000	78,088.479	346,440.984333838
2011	9	36,740.455	356,587.947479314	393,383.037	379,601.74	54.634	36,740.455	342,806.648584338

Indiana Michigan Power Company-Indiana
Long-Term Commercial Energy Model Output

Year	Month	Cooling	Other	Total	Actual	Heating	Cooling	Other
2011	10	4,937.537	333,809.681849237	339,403.023	326,165.69	655.804	4,937.537	320,572.345313579
2011	11	152.764	313,665.167314523	317,517.939	311,472.83	3,700.008	152.764	307,620.062435017
2011	12	0.000	347,604.625078192	356,364.550	356,457.82	8,759.925	0.000	347,697.898002196
2012	1	0.000	347,442.654959987	360,342.414	362,330.73	12,899.759	0.000	349,430.969019153
2012	2	0.000	319,438.211166834	334,180.986	329,502.49	14,742.775	0.000	314,759.715368826
2012	3	1,263.240	315,863.155551822	327,534.576	327,433.34	10,408.181	1,263.240	315,761.916457504
2012	4	4,077.436	317,350.820115586	324,180.984	325,983.55	2,752.728	4,077.436	319,153.382194735
2012	5	5,205.524	314,994.334731354	322,274.828	325,382.51	2,074.969	5,205.524	318,102.019459522
2012	6	29,530.023	332,979.588035033	362,578.692	365,095.56	69.081	29,530.023	335,496.454435662
2012	7	71,247.523	339,454.928759492	410,708.969	410,627.82	6.518	71,247.523	339,373.780419700
2012	8	62,040.815	337,541.053704624	399,581.869	394,399.88	0.000	62,040.815	332,359.059924126
2012	9	30,492.239	351,887.712096287	382,424.643	376,476.64	44.692	30,492.239	345,939.708674403
2012	10	4,510.960	328,841.309866726	334,842.356	323,549.61	1,490.087	4,510.960	317,548.560832280
2012	11	441.752	314,376.304145058	320,342.256	316,102.21	5,524.200	441.752	310,136.261892975
2012	12	0.000	335,517.131507695	344,864.732	336,189.94	9,347.601	0.000	326,842.338052478
2013	1	0.000	342,680.867943957	357,132.168	352,664.60	14,451.300	0.000	338,213.304115625
2013	2	0.000	318,902.272475897	335,522.717	339,328.75	16,620.445	0.000	322,708.307129959
2013	3	0.000	318,064.930986228	333,057.473	334,492.40	14,992.542	0.000	319,499.853651221
2013	4	0.000	309,433.595408855	319,690.997	320,807.93	10,257.402	0.000	310,550.527191925
2013	5	4,228.292	307,651.191818718	314,513.066	315,125.07	2,633.582	4,228.292	308,263.192548694
2013	6	22,447.564	330,393.819240837	353,111.190	351,502.60	269.807	22,447.564	328,785.225339858
2013	7	45,544.466	334,614.884954611	380,159.351	377,752.17	0.000	45,544.466	332,207.702512023
2013	8	35,914.864	332,765.796520594	368,680.661	364,621.96	0.000	35,914.864	328,707.090665232
2013	9	35,257.828	348,100.504359917	383,370.846	381,913.28	12.513	35,257.828	346,642.941026280
2013	10	12,899.351	328,527.127016319	341,851.020	344,515.39	424.542	12,899.351	331,191.499976660
2013	11	1,149.656	311,051.034976174	317,444.559	317,239.56	5,243.868	1,149.656	310,846.038965837
2013	12	0.000	335,061.928063647	348,151.050	349,952.26	13,089.122	0.000	336,863.141947844
2014	1	0.000	347,801.102125241	365,784.931	378,861.61	17,983.829	0.000	360,877.779685738
2014	2	0.000	314,831.034175284	336,933.093	349,751.11	22,102.059	0.000	327,649.052348660
2014	3	0.000	309,685.082340374	328,838.134	340,598.81	19,153.051	0.000	321,445.756516246
2014	4	0.000	303,612.116914668	313,514.929	316,409.28	9,902.812	0.000	306,506.465882773
2014	5	2,984.564	314,608.106886540	320,022.044	318,113.79	2,429.373	2,984.564	312,699.854250996
2014	6	22,974.254	325,550.510027769	349,017.648	350,135.74	492.883	22,974.254	326,668.605360465

Indiana Michigan Power Company-Indiana
Long-Term Commercial Energy Model Output

Year	Month	Cooling	Other	Total	Actual	Heating	Cooling	Other
2014	7	43,054.345	332,367.284440007	375,421.629	368,620.01	0.000	43,054.345	325,565.661216878
2014	8	27,652.909	330,703.697814826	358,356.607	355,340.62	0.000	27,652.909	327,687.711310012
2014	9	34,609.808	347,416.837740813	382,058.384	378,858.17	31.738	34,609.808	344,216.626142419
2014	10	3,619.368	325,324.011855548	329,831.801	323,674.50	888.421	3,619.368	319,166.708245457
2014	11	69.529	308,221.358056650	313,697.926	314,126.32	5,407.039	69.529	308,649.749860570
2014	12	0.000	337,640.028606578	350,415.675	361,778.87	12,775.647	0.000	349,003.224406857
2015	1	0.000	341,491.517501631	356,774.872	365,872.23	15,283.354	0.000	350,588.875520541
2015	2	0.000	314,444.286313023	332,842.445	343,014.46	18,398.159	0.000	324,616.296977416
2015	3	0.000	308,874.084372924	327,932.306	340,763.97	19,058.222	0.000	321,705.752415630
2015	4	0.000	309,009.844219922	316,867.247	320,123.96	7,857.402	0.000	312,266.556656355
2015	5	5,891.148	307,648.469633808	315,615.156	311,344.33	2,075.538	5,891.148	303,377.641098417
2015	6	24,373.348	322,421.027457343	347,004.365	350,064.05	209.989	24,373.348	325,480.716580152
2015	7	31,825.003	333,338.298626527	365,164.795	362,974.69	1.493	31,825.003	331,148.198109164
2015	8	44,459.720	325,688.288198045	370,148.008	370,345.44	0.000	44,459.720	325,885.714999730
2015	9	34,753.789	346,286.052767312	381,039.842	378,348.56	0.000	34,753.789	343,594.775117523
2015	10	11,515.991	321,314.500844487	333,228.295	329,564.92	397.803	11,515.991	317,651.123868012
2015	11	303.792	304,986.939308730	307,858.975	305,843.14	2,568.244	303.792	302,971.108129403
2015	12	0.000	339,932.619691227	347,114.947	343,874.01	7,182.327	0.000	336,691.681735860
2016	1	0.000	336,912.311390541	347,411.897	345,499.58	10,499.585	0.000	334,999.994511603
2016	2	0.000	314,318.183387413	328,914.198	332,849.44	14,596.014	0.000	318,253.426628867
2016	3	0.000	308,476.367264028	318,459.310	318,029.44	9,982.942	0.000	308,046.500678869
2016	4	0.000	305,480.835933970	310,869.312	307,275.38	5,388.476	0.000	301,886.899082828
2016	5	353.035	303,221.055741601	305,747.585	301,161.42	2,173.494	353.035	298,634.893838897
2016	6	25,622.393	323,353.101613852	349,360.076	346,935.73	384.581	25,622.393	320,928.757529619
2016	7	43,032.324	330,593.572761515	373,625.897	375,384.40	0.000	43,032.324	332,352.078631764
2016	8	63,595.010	327,645.857020991	391,240.867	394,392.55	0.000	63,595.010	330,797.542345945
2016	9	47,826.646	342,557.633534862	390,384.280	394,550.59	0.000	47,826.646	346,723.939835178
2016	10	18,660.568	323,047.169856331	341,839.107	348,511.08	131.369	18,660.568	329,719.140974720
2016	11	3,139.139	304,322.908378297	309,618.039	307,551.27	2,155.993	3,139.139	302,256.142902572
2016	12	125.142	338,631.305069087	348,347.205	350,821.39	9,590.758	125.142	341,105.489449939
2017	1	0.000	338,739.592615180	352,856.860	359,316.45	14,117.267	0.000	345,199.185634288
2017	2	0.000	302,911.048809762	313,716.468	317,317.32	10,805.419	0.000	306,511.901283591
2017	3	0.000	297,378.967543039	305,646.533	306,273.83	8,267.566	0.000	298,006.265104974

Indiana Michigan Power Company-Indiana
Long-Term Commercial Energy Model Output

Year	Month	Cooling	Other	Total	Actual	Heating	Cooling	Other
2017	4	797.961	292,488.370225021	299,126.433	301,815.02	5,840.102	797.961	295,176.955465984
2017	5	5,276.827	291,886.237240577	298,687.357	297,874.56	1,524.293	5,276.827	291,073.439918030
2017	6	20,190.561	312,954.650948775	333,444.104	333,525.34	298.892	20,190.561	313,035.884000577
2017	7	44,270.441	322,881.224166149	367,151.665	363,971.35	0.000	44,270.441	319,700.906287417
2017	8	41,391.799	321,986.548732420	363,378.347	364,460.65	0.000	41,391.799	323,068.854388252
2017	9	19,956.320	333,891.754231721	353,848.075	348,084.95	0.000	19,956.320	328,128.626525121
2017	10	20,994.893	316,503.430918811	337,568.796	340,139.59	70.471	20,994.893	319,074.226274156
2017	11	2,264.914	294,505.270955325	300,977.867	300,827.57	4,207.682	2,264.914	294,354.970225358
2017	12	0.000	330,198.535029922	339,149.848	340,618.27	8,951.313	0.000	331,666.959407163
2018	1	0.000	330,124.640730274	347,894.008	365,026.79	17,769.367	0.000	347,257.419645437
2018	2	0.000	303,793.508693010	318,643.618	324,959.17	14,850.109	0.000	310,109.056956763
2018	3	0.000	297,301.857961624	307,534.457	304,488.39	10,232.599	0.000	294,255.790268797
2018	4	81.353	297,729.115327582	306,836.712	311,984.71	9,026.244	81.353	302,877.115087377
2018	5	4,515.404	296,404.008662310	304,017.581	305,077.69	3,098.168	4,515.404	297,464.116852920
2018	6	35,846.367	315,312.890052183	351,191.982	353,453.84	32.725	35,846.367	317,574.750294001
2018	7	57,388.280	320,498.078806514	377,886.359	377,354.96	0.000	57,388.280	319,966.682649376
2018	8	48,141.577	319,216.082896446	367,357.660	367,778.07	0.000	48,141.577	319,636.496155602
2018	9	49,736.194	333,736.799154651	383,472.993	378,618.75	0.000	49,736.194	328,882.560030684
2018	10	24,807.861	312,949.684591409	338,441.210	335,430.47	683.664	24,807.861	309,938.941494108
2018	11	3,507.545	300,055.400280406	308,892.833	302,297.31	5,329.888	3,507.545	293,459.880040181
2018	12	0.000	326,952.317334296	337,545.567	342,429.46	10,593.250	0.000	331,836.210360113
2019	1	0.000	327,713.585240319	338,452.755	333,692.24	10,739.170	0.000	322,953.068313741
2019	2	0.000	306,383.304757066	322,140.841	330,434.67	15,757.537	0.000	314,677.129412370
2019	3	0.000	295,619.133370374	308,734.517	313,055.33	13,115.383	0.000	299,939.942769255
2019	4	0.000	292,674.665312767	299,483.542	293,811.08	6,808.877	0.000	287,002.203201246
2019	5	1,191.550	301,302.962925716	304,489.961	294,808.53	1,995.448	1,191.550	291,621.533603905
2019	6	18,978.687	315,182.405919434	334,495.785	324,003.72	334.693	18,978.687	304,690.343489083
2019	7	57,952.385	319,644.637558243	377,597.022	362,005.68	0.000	57,952.385	304,053.291223562
2019	8	54,904.516	315,917.947609759	370,822.464	368,361.58	0.000	54,904.516	313,457.058947007
2019	9	30,398.616	327,501.081702956	357,899.698	359,808.95	0.000	30,398.616	329,410.329521806
2019	10	19,221.130	309,326.361081353	328,934.987	330,663.12	387.496	19,221.130	311,054.489067304
2019	11	1,116.294	292,198.353964601	298,419.475	297,111.31	5,104.827	1,116.294	290,890.191913349
2019	12	0.000	316,892.686771985	327,273.376	332,955.87	10,380.689	0.000	322,575.179552364

Indiana Michigan Power Company-Indiana
Long-Term Commercial Energy Model Output

Year	Month	Cooling	Other	Total	Actual	Heating	Cooling	Other
2020	1	0.000	324,486.795134792	334,729.347	337,666.98	10,242.551	0.000	327,424.429556830
2020	2	0.000	294,755.585672478	306,598.539	309,778.34	11,842.953	0.000	297,935.390799711
2020	3	0.000	289,217.813768270	300,277.634	300,794.97	11,059.820	0.000	289,735.153996664
2020	4	0.000	263,255.503677082	269,227.912	269,227.91	5,972.408	0.000	263,255.503677145
2020	5	708.159	251,112.827287086	255,258.981	255,258.98	3,437.995	708.159	251,112.827287156
2020	6	23,460.420	274,658.693006748	298,701.743	298,701.74	582.630	23,460.420	274,658.693006794
2020	7	54,678.688	301,393.588007158	356,072.276	348,999.95	0.000	54,678.688	294,321.264039110
2020	8	51,047.048	301,084.879803631	352,131.928	351,476.66	0.000	51,047.048	300,429.612238951
2020	9	32,975.937	313,362.787311556	346,352.132	350,878.23	13.408	32,975.937	317,888.888852006
2020	10	4,187.936	299,711.088819884	304,702.567	301,212.00	803.542	4,187.936	296,220.516446389
2020	11	427.218	280,521.181797483	284,518.247	288,134.49	3,569.847	427.218	284,137.421000159
2020	12	168.656	306,178.220070405	314,091.974	314,042.70	7,745.098	168.656	306,128.948053753
2021	1	0.000	308,087.868948994	319,590.081	322,715.18	11,502.212	0.000	311,212.964129079
2021	2	0.000	287,121.028759030	301,909.613	0.00	14,788.584	0.000	287,121.028759030
2021	3	40.695	279,694.613698658	291,496.258	0.00	11,760.950	40.695	279,694.613698658
2021	4	469.092	276,146.724992413	283,136.751		6,520.934	469.092	276,146.724992413
2021	5	3,412.795	278,762.938649134	284,266.191		2,090.457	3,412.795	278,762.938649134
2021	6	19,693.579	297,026.835572148	317,019.028		298.613	19,693.579	297,026.835572148
2021	7	44,922.840	304,134.081136698	349,060.103		3.182	44,922.840	304,134.081136698
2021	8	47,099.346	300,833.354428527	347,932.700		0.000	47,099.346	300,833.354428527
2021	9	32,774.699	316,771.257071275	349,557.682		11.725	32,774.699	316,771.257071275
2021	10	10,112.762	296,396.053449619	307,202.389		693.573	10,112.762	296,396.053449619
2021	11	923.198	278,583.876811562	283,434.059		3,926.984	923.198	278,583.876811562
2021	12	11.743	306,014.754716682	315,236.199		9,209.701	11.743	306,014.754716682
2022	1	0.000	311,841.616800182	325,139.125		13,297.509	0.000	311,841.616800182
2022	2	0.000	287,897.973809905	302,765.185		14,867.211	0.000	287,897.973809905
2022	3	41.112	280,475.750289659	292,340.915		11,824.052	41.112	280,475.750289659
2022	4	473.454	276,735.756674951	283,758.900		6,549.689	473.454	276,735.756674951
2022	5	3,442.000	279,188.101739872	284,728.233		2,098.131	3,442.000	279,188.101739872
2022	6	19,849.421	297,323.290221702	317,472.229		299.518	19,849.421	297,323.290221702
2022	7	45,256.977	304,323.948567512	349,584.116		3.190	45,256.977	304,323.948567512
2022	8	47,435.586	300,951.669552247	348,387.256		0.000	47,435.586	300,951.669552247
2022	9	33,004.526	316,865.307774434	349,881.584		11.750	33,004.526	316,865.307774434

Indiana Michigan Power Company-Indiana
Long-Term Commercial Energy Model Output

Year	Month	Cooling	Other	Total	Actual	Heating	Cooling	Other
2022	10	10,183.571	296,485.104641593	307,363.721		695.046	10,183.571	296,485.104641593
2022	11	929.719	278,685.623268106	283,550.903		3,935.560	929.719	278,685.623268106
2022	12	11.828	306,172.973538374	315,416.399		9,231.597	11.828	306,172.973538374
2023	1	0.000	312,528.108378883	325,767.087		13,238.979	0.000	312,528.108378883
2023	2	0.000	288,768.327564958	303,587.256		14,818.928	0.000	288,768.327564958
2023	3	41.444	281,593.018702472	293,433.973		11,799.511	41.444	281,593.018702472
2023	4	477.853	278,143.789509605	285,165.682		6,544.039	477.853	278,143.789509605
2023	5	3,478.228	280,855.188355686	286,432.301		2,098.885	3,478.228	280,855.188355686
2023	6	20,082.518	299,324.749624002	319,707.254		299.987	20,082.518	299,324.749624002
2023	7	45,838.659	306,573.013473952	352,414.871		3.199	45,838.659	306,573.013473952
2023	8	48,094.033	303,338.726635248	351,432.759		0.000	48,094.033	303,338.726635248
2023	9	33,496.062	319,557.919184494	353,065.787		11.805	33,496.062	319,557.919184494
2023	10	10,345.390	299,315.588772000	310,359.965		698.987	10,345.390	299,315.588772000
2023	11	945.371	281,702.392662701	286,609.318		3,961.555	945.371	281,702.392662701
2023	12	12.038	309,703.437410297	319,015.879		9,300.404	12.038	309,703.437410297
2024	1	0.000	315,961.961375069	329,268.145		13,306.184	0.000	315,961.961375069
2024	2	0.000	291,614.826837591	306,492.075		14,877.248	0.000	291,614.826837591
2024	3	42.044	284,171.826602671	296,046.382		11,832.511	42.044	284,171.826602671
2024	4	484.200	280,515.819382317	287,554.652		6,554.633	484.200	280,515.819382317
2024	5	3,520.289	282,954.280265291	288,574.387		2,099.817	3,520.289	282,954.280265291
2024	6	20,301.973	301,237.444671843	321,839.193		299.775	20,301.973	301,237.444671843
2024	7	46,289.433	308,237.327046345	354,529.953		3.193	46,289.433	308,237.327046345
2024	8	48,517.078	304,714.891068532	353,231.969		0.000	48,517.078	304,714.891068532
2024	9	33,756.763	320,751.729948786	354,520.253		11.760	33,756.763	320,751.729948786
2024	10	10,415.701	300,258.571828230	311,369.911		695.638	10,415.701	300,258.571828230
2024	11	950.901	282,433.337536246	287,323.109		3,938.870	950.901	282,433.337536246
2024	12	12.097	310,296.147445302	319,547.248		9,239.003	12.097	310,296.147445302
2025	1	0.000	316,528.871669404	329,720.117		13,191.245	0.000	316,528.871669404
2025	2	0.000	292,115.157119424	306,863.202		14,748.045	0.000	292,115.157119424
2025	3	42.145	284,660.836358504	296,432.339		11,729.357	42.145	284,660.836358504
2025	4	485.360	281,010.419821519	287,993.143		6,497.363	485.360	281,010.419821519
2025	5	3,528.678	283,442.781642336	289,052.902		2,081.443	3,528.678	283,442.781642336
2025	6	20,350.016	301,739.821602137	322,386.984		297.147	20,350.016	301,739.821602137

Indiana Michigan Power Company-Indiana
Long-Term Commercial Energy Model Output

Year	Month	Cooling	Other	Total	Actual	Heating	Cooling	Other
2025	7	46,397.599	308,732.398789316	355,133.162		3.165	46,397.599	308,732.398789316
2025	8	48,628.234	305,181.261271565	353,809.495		0.000	48,628.234	305,181.261271565
2025	9	33,832.548	321,223.065534651	355,067.269		11.656	33,832.548	321,223.065534651
2025	10	10,438.493	300,703.568527715	311,831.479		689.417	10,438.493	300,703.568527715
2025	11	952.927	282,862.798529751	287,719.146		3,903.420	952.927	282,862.798529751
2025	12	12.122	310,755.192800001	319,922.622		9,155.307	12.122	310,755.192800001
2026	1	0.000	316,323.216930962	329,393.066		13,069.849	0.000	316,323.216930962
2026	2	0.000	291,870.100776556	306,478.465		14,608.364	0.000	291,870.100776556
2026	3	42.331	284,360.595042903	296,018.162		11,615.235	42.331	284,360.595042903
2026	4	487.378	280,645.400878898	287,565.235		6,432.456	487.378	280,645.400878898
2026	5	3,542.445	283,023.527367298	288,626.097		2,060.124	3,542.445	283,023.527367298
2026	6	20,424.448	301,249.558805873	321,968.038		294.032	20,424.448	301,249.558805873
2026	7	46,557.194	308,192.815055794	354,753.140		3.131	46,557.194	308,192.815055794
2026	8	48,785.787	304,618.034142333	353,403.822		0.000	48,785.787	304,618.034142333
2026	9	33,935.790	320,598.352052523	354,545.668		11.527	33,935.790	320,598.352052523
2026	10	10,468.507	300,058.241341973	311,208.407		681.658	10,468.507	300,058.241341973
2026	11	955.516	282,186.761214886	287,001.158		3,858.880	955.516	282,186.761214886
2026	12	12.154	309,977.074485715	319,038.847		9,049.619	12.154	309,977.074485715
2027	1	0.000	315,772.583902429	328,700.156		12,927.572	0.000	315,772.583902429
2027	2	0.000	291,376.639360937	305,826.138		14,449.499	0.000	291,376.639360937
2027	3	42.426	283,874.646692535	295,406.174		11,489.102	42.426	283,874.646692535
2027	4	488.478	280,156.733545027	287,008.018		6,362.806	488.478	280,156.733545027
2027	5	3,550.568	282,545.880850123	288,134.337		2,037.888	3,550.568	282,545.880850123
2027	6	20,472.015	300,763.041102836	321,525.924		290.869	20,472.015	300,763.041102836
2027	7	46,667.769	307,717.434705936	354,388.302		3.098	46,667.769	307,717.434705936
2027	8	48,904.124	304,171.762841072	353,075.887		0.000	48,904.124	304,171.762841072
2027	9	34,019.804	320,148.751059719	354,179.959		11.404	34,019.804	320,148.751059719
2027	10	10,494.926	299,632.452438491	310,801.835		674.456	10,494.926	299,632.452438491
2027	11	957.972	281,773.969216190	286,550.229		3,818.288	957.972	281,773.969216190
2027	12	12.185	309,533.065957552	318,500.084		8,954.832	12.185	309,533.065957552
2028	1	0.000	315,616.282642596	328,420.985		12,804.703	0.000	315,616.282642596
2028	2	0.000	291,251.571291848	305,564.757		14,313.185	0.000	291,251.571291848
2028	3	42.649	283,764.352290306	295,188.434		11,381.433	42.649	283,764.352290306

Indiana Michigan Power Company-Indiana
Long-Term Commercial Energy Model Output

Year	Month	Cooling	Other	Total	Actual	Heating	Cooling	Other
2028	4	491.066	280,054.117230554	286,848.641		6,303.458	491.066	280,054.117230554
2028	5	3,569.484	282,450.552122263	288,038.977		2,018.941	3,569.484	282,450.552122263
2028	6	20,581.589	300,669.890132253	321,539.650		288.171	20,581.589	300,669.890132253
2028	7	46,917.858	307,625.880807060	354,546.808		3.069	46,917.858	307,625.880807060
2028	8	49,165.940	304,082.514559738	353,248.454		0.000	49,165.940	304,082.514559738
2028	9	34,201.364	320,052.770398038	354,265.433		11.298	34,201.364	320,052.770398038
2028	10	10,550.636	299,532.993567502	310,751.801		668.172	10,550.636	299,532.993567502
2028	11	963.021	281,666.798649395	286,412.388		3,782.568	963.021	281,666.798649395
2028	12	12.249	309,404.706383074	318,287.643		8,870.687	12.249	309,404.706383074
2029	1	0.000	315,613.282151576	328,288.131		12,674.849	0.000	315,613.282151576
2029	2	0.000	291,224.501410056	305,390.967		14,166.465	0.000	291,224.501410056
2029	3	42.940	283,712.381085156	295,018.789		11,263.469	42.940	283,712.381085156
2029	4	494.366	279,977.174722641	286,708.995		6,237.454	494.366	279,977.174722641
2029	5	3,593.087	282,350.444745539	287,941.118		1,997.586	3,593.087	282,350.444745539
2029	6	20,715.445	300,541.446598561	321,541.984		285.092	20,715.445	300,541.446598561
2029	7	47,218.265	307,474.669091917	354,695.970		3.036	47,218.265	307,474.669091917
2029	8	49,476.061	303,916.206884254	353,392.268		0.000	49,476.061	303,916.206884254
2029	9	34,413.832	319,859.432585387	354,284.439		11.174	34,413.832	319,859.432585387
2029	10	10,615.219	299,325.397824641	310,601.400		660.782	10,615.219	299,325.397824641
2029	11	968.833	281,441.898371532	286,151.148		3,740.416	968.833	281,441.898371532
2029	12	12.322	309,137.055113808	317,920.496		8,771.119	12.322	309,137.055113808
2030	1	0.000	314,740.552191272	327,269.596		12,529.044	0.000	314,740.552191272
2030	2	0.000	290,440.538077215	304,444.167		14,003.629	0.000	290,440.538077215
2030	3	43.238	282,938.761438789	294,116.199		11,134.199	43.238	282,938.761438789
2030	4	497.810	279,190.881847654	285,854.639		6,165.947	497.810	279,190.881847654
2030	5	3,618.177	281,573.223995743	287,166.120		1,974.719	3,618.177	281,573.223995743
2030	6	20,860.461	299,740.378097953	320,882.673		281.834	20,860.461	299,740.378097953
2030	7	47,549.391	306,677.396492782	354,229.789		3.001	47,549.391	306,677.396492782
2030	8	49,823.530	303,151.387773393	352,974.918		0.000	49,823.530	303,151.387773393
2030	9	34,655.969	319,072.424594108	353,739.440		11.047	34,655.969	319,072.424594108
2030	10	10,690.027	298,564.043359734	309,907.330		653.260	10,690.027	298,564.043359734
2030	11	975.672	280,687.918441543	285,361.466		3,697.876	975.672	280,687.918441543
2030	12	12.409	308,308.163880227	316,992.017		8,671.444	12.409	308,308.163880227

Indiana Michigan Power Company-Indiana
Long-Term Commercial Energy Model Output

Year	Month	Cooling	Other	Total	Actual	Heating	Cooling	Other
2031	1	0.000	314,244.860748182	326,648.044		12,403.183	0.000	314,244.860748182
2031	2	0.000	289,996.348124818	303,859.443		13,863.095	0.000	289,996.348124818
2031	3	43.419	282,499.987952877	293,565.958		11,022.551	43.419	282,499.987952877
2031	4	499.891	278,746.131631115	285,350.219		6,104.196	499.891	278,746.131631115
2031	5	3,633.346	281,133.964588257	286,722.275		1,954.965	3,633.346	281,133.964588257
2031	6	20,948.137	299,287.778727257	320,514.933		279.017	20,948.137	299,287.778727257
2031	7	47,750.069	306,229.324011600	353,982.364		2.971	47,750.069	306,229.324011600
2031	8	50,034.666	302,724.054339446	352,758.721		0.000	50,034.666	302,724.054339446
2031	9	34,803.390	318,634.687273443	353,449.015		10.937	34,803.390	318,634.687273443
2031	10	10,735.703	298,143.359232515	309,525.839		646.777	10,735.703	298,143.359232515
2031	11	979.860	280,274.200968981	284,915.309		3,661.248	979.860	280,274.200968981
2031	12	12.463	307,856.393756613	316,454.563		8,585.706	12.463	307,856.393756613
2032	1	0.000	313,999.494604565	326,273.173		12,273.679	0.000	313,999.494604565
2032	2	0.000	289,772.431680314	303,490.595		13,718.163	0.000	289,772.431680314
2032	3	43.674	282,275.118031135	293,225.967		10,907.175	43.674	282,275.118031135
2032	4	502.823	278,511.238727957	285,054.213		6,040.152	502.823	278,511.238727957
2032	5	3,654.569	280,895.528720980	286,484.506		1,934.408	3,654.569	280,895.528720980
2032	6	21,070.043	299,035.884726607	320,382.006		276.077	21,070.043	299,035.884726607
2032	7	48,026.755	305,972.099344563	354,001.795		2.940	48,026.755	305,972.099344563
2032	8	50,323.309	302,471.001247262	352,794.310		0.000	50,323.309	302,471.001247262
2032	9	35,003.362	318,368.122760844	353,382.306		10.821	35,003.362	318,368.122760844
2032	10	10,797.114	297,879.083421064	309,316.096		639.899	10,797.114	297,879.083421064
2032	11	985.441	280,006.310644291	284,613.977		3,622.225	985.441	280,006.310644291
2032	12	12.533	307,556.585354673	316,063.157		8,494.039	12.533	307,556.585354673
2033	1	0.000	313,792.283266039	325,928.732		12,136.448	0.000	313,792.283266039
2033	2	0.000	289,592.584024265	303,157.786		13,565.202	0.000	289,592.584024265
2033	3	43.884	282,103.413461374	292,933.187		10,785.889	43.884	282,103.413461374
2033	4	505.263	278,345.537740826	284,824.042		5,973.241	505.263	278,345.537740826
2033	5	3,672.477	280,741.157672662	286,326.703		1,913.069	3,672.477	280,741.157672662
2033	6	21,174.306	298,886.905738495	320,334.256		273.045	21,174.306	298,886.905738495
2033	7	48,266.843	305,834.759911441	354,104.510		2.908	48,266.843	305,834.759911441
2033	8	50,577.511	302,350.247335635	352,927.759		0.000	50,577.511	302,350.247335635
2033	9	35,182.144	318,256.015588341	353,448.863		10.704	35,182.144	318,256.015588341

Indiana Michigan Power Company-Indiana
Long-Term Commercial Energy Model Output

Year	Month	Cooling	Other	Total	Actual	Heating	Cooling	Other
2033	10	10,852.852	297,782.229996128	309,268.087		633.005	10,852.852	297,782.229996128
2033	11	990.585	279,922.554054807	284,496.545		3,583.407	990.585	279,922.554054807
2033	12	12.599	307,476.956265231	315,893.010		8,403.455	12.599	307,476.956265231
2034	1	0.000	313,843.678209406	325,841.807		11,998.129	0.000	313,843.678209406
2034	2	0.000	289,644.737372687	303,055.697		13,410.959	0.000	289,644.737372687
2034	3	44.178	282,161.126580006	292,868.847		10,663.543	44.178	282,161.126580006
2034	4	508.655	278,410.412518720	284,824.714		5,905.646	508.655	278,410.412518720
2034	5	3,697.218	280,811.006875221	286,399.691		1,891.466	3,697.218	280,811.006875221
2034	6	21,317.422	298,964.218240150	320,551.608		269.968	21,317.422	298,964.218240150
2034	7	48,594.059	305,916.570853312	354,513.505		2.875	48,594.059	305,916.570853312
2034	8	50,921.205	302,432.448957872	353,353.654		0.000	50,921.205	302,432.448957872
2034	9	35,421.728	318,344.165659404	353,776.478		10.584	35,421.728	318,344.165659404
2034	10	10,926.946	297,871.546406135	309,424.405		625.913	10,926.946	297,871.546406135
2034	11	997.358	280,013.687704805	284,554.345		3,543.299	997.358	280,013.687704805
2034	12	12.686	307,580.064423405	315,902.240		8,309.490	12.686	307,580.064423405
2035	1	0.000	314,136.188643316	326,006.155		11,869.966	0.000	314,136.188643316
2035	2	0.000	289,910.601190507	303,178.452		13,267.851	0.000	289,910.601190507
2035	3	44.501	282,427.034832702	293,021.396		10,549.860	44.501	282,427.034832702
2035	4	512.376	278,683.698297644	285,038.815		5,842.740	512.376	278,683.698297644
2035	5	3,724.310	281,085.000548312	286,680.651		1,871.340	3,724.310	281,085.000548312
2035	6	21,473.859	299,250.470992016	320,991.428		267.098	21,473.859	299,250.470992016
2035	7	48,951.213	306,205.030063428	355,159.088		2.844	48,951.213	306,205.030063428
2035	8	51,296.059	302,712.539341100	354,008.598		0.000	51,296.059	302,712.539341100
2035	9	35,682.954	318,636.463499437	354,329.890		10.472	35,682.954	318,636.463499437
2035	10	11,007.655	298,157.749905470	309,784.694		619.289	11,007.655	298,157.749905470
2035	11	1,004.738	280,300.904384750	284,811.489		3,505.847	1,004.738	280,300.904384750
2035	12	12.780	307,899.420804833	316,133.952		8,221.752	12.780	307,899.420804833
2036	1	0.000	314,588.274714733	326,324.166		11,735.892	0.000	314,588.274714733
2036	2	0.000	290,320.117929749	303,438.246		13,118.128	0.000	290,320.117929749
2036	3	44.860	282,836.066173087	293,311.872		10,430.946	44.860	282,836.066173087
2036	4	516.511	279,101.653806142	285,395.066		5,776.901	516.511	279,101.653806142
2036	5	3,754.362	281,499.820452527	287,104.433		1,850.250	3,754.362	281,499.820452527
2036	6	21,647.095	299,679.793200940	321,590.976		264.087	21,647.095	299,679.793200940

Indiana Michigan Power Company-Indiana
Long-Term Commercial Energy Model Output

Year	Month	Cooling	Other	Total	Actual	Heating	Cooling	Other
2036	7	49,345.784	306,632.302126381	355,980.899		2.812	49,345.784	306,632.302126381
2036	8	51,709.030	303,121.532324129	354,830.562		0.000	51,709.030	303,121.532324129
2036	9	35,969.763	319,056.001386245	355,036.118		10.353	35,969.763	319,056.001386245
2036	10	11,095.987	298,562.080663855	310,270.350		612.283	11,095.987	298,562.080663855
2036	11	1,012.785	280,699.238534442	285,178.152		3,466.129	1,012.785	280,699.238534442
2036	12	12.882	308,334.918642414	316,476.284		8,128.484	12.882	308,334.918642414
2037	1	0.000	315,117.987357419	326,714.689		11,596.701	0.000	315,117.987357419
2037	2	0.000	290,794.762715475	303,757.163		12,962.400	0.000	290,794.762715475
2037	3	45.246	283,305.332205847	293,657.625		10,307.047	45.246	283,305.332205847
2037	4	520.961	279,580.677813027	285,809.929		5,708.290	520.961	279,580.677813027
2037	5	3,786.731	281,977.038360068	287,592.056		1,828.287	3,786.731	281,977.038360068
2037	6	21,833.917	300,176.118717625	322,270.991		260.955	21,833.917	300,176.118717625
2037	7	49,772.116	307,130.145418847	356,905.041		2.779	49,772.116	307,130.145418847
2037	8	52,156.632	303,604.137697203	355,760.770		0.000	52,156.632	303,604.137697203
2037	9	36,281.695	319,558.077265418	355,850.003		10.231	36,281.695	319,558.077265418
2037	10	11,192.463	299,054.324786639	310,851.846		605.058	11,192.463	299,054.324786639
2037	11	1,021.614	281,193.262269541	285,640.186		3,425.310	1,021.614	281,193.262269541
2037	12	12.995	308,884.378289375	316,930.292		8,032.919	12.995	308,884.378289375
2038	1	0.000	315,737.441053964	327,195.507		11,458.066	0.000	315,737.441053964
2038	2	0.000	291,347.549047290	304,154.690		12,807.141	0.000	291,347.549047290
2038	3	45.604	283,847.688962570	294,076.610		10,183.317	45.604	283,847.688962570
2038	4	525.074	280,128.384348921	286,293.083		5,639.624	525.074	280,128.384348921
2038	5	3,816.525	282,515.283165708	288,138.055		1,806.247	3,816.525	282,515.283165708
2038	6	22,005.124	300,727.623043310	322,990.549		257.802	22,005.124	300,727.623043310
2038	7	50,161.219	307,675.624198910	357,839.588		2.745	50,161.219	307,675.624198910
2038	8	52,562.916	304,122.875724545	356,685.792		0.000	52,562.916	304,122.875724545
2038	9	36,563.505	320,088.848197824	356,662.460		10.107	36,563.505	320,088.848197824
2038	10	11,279.085	299,563.346942197	311,440.120		597.688	11,279.085	299,563.346942197
2038	11	1,029.496	281,693.798234638	286,106.799		3,383.505	1,029.496	281,693.798234638
2038	12	13.094	309,430.721045314	317,378.516		7,934.700	13.094	309,430.721045314
2039	1	0.000	316,378.780940222	327,700.247		11,321.466	0.000	316,378.780940222
2039	2	0.000	291,926.827645022	304,581.381		12,654.554	0.000	291,926.827645022
2039	3	46.014	284,423.539975201	294,531.605		10,062.051	46.014	284,423.539975201

Indiana Michigan Power Company-Indiana
Long-Term Commercial Energy Model Output

Year	Month	Cooling	Other	Total	Actual	Heating	Cooling	Other
2039	4	529.799	280,718.192022011	286,820.516		5,572.525	529.799	280,718.192022011
2039	5	3,850.911	283,103.481760315	288,739.168		1,784.776	3,850.911	283,103.481760315
2039	6	22,203.704	301,340.232403274	323,798.678		254.741	22,203.704	301,340.232403274
2039	7	50,614.503	308,290.283999119	358,907.499		2.713	50,614.503	308,290.283999119
2039	8	53,038.889	304,718.388709466	357,757.278		0.000	53,038.889	304,718.388709466
2039	9	36,895.252	320,708.011184880	357,613.251		9.987	36,895.252	320,708.011184880
2039	10	11,381.623	300,168.204858305	312,140.459		590.631	11,381.623	300,168.204858305
2039	11	1,038.875	282,299.060122442	286,681.554		3,343.618	1,038.875	282,299.060122442
2039	12	13.214	310,102.565819296	317,957.091		7,841.311	13.214	310,102.565819296
2040	1	0.000	316,501.722090799	327,690.609		11,188.887	0.000	316,501.722090799
2040	2	0.000	292,044.761268437	304,551.534		12,506.772	0.000	292,044.761268437
2040	3	46.399	284,547.322185859	294,538.576		9,944.854	46.399	284,547.322185859
2040	4	534.245	280,849.183659263	286,891.165		5,507.736	534.245	280,849.183659263
2040	5	3,883.283	283,236.650049076	288,883.982		1,764.049	3,883.283	283,236.650049076
2040	6	22,390.677	301,481.463954567	324,123.928		251.787	22,390.677	301,481.463954567
2040	7	51,041.244	308,433.714790641	359,477.640		2.681	51,041.244	308,433.714790641
2040	8	53,486.180	304,856.846583951	358,343.027		0.000	53,486.180	304,856.846583951
2040	9	37,206.298	320,850.406642902	358,066.576		9.871	37,206.298	320,850.406642902
2040	10	11,477.567	300,306.241470647	312,367.594		583.785	11,477.567	300,306.241470647
2040	11	1,047.624	282,434.331253358	286,786.792		3,304.837	1,047.624	282,434.331253358
2040	12	13.325	310,249.205224177	318,012.814		7,750.284	13.325	310,249.205224177
2041	1	0.000	316,837.390921301	327,898.295		11,060.904	0.000	316,837.390921301
2041	2	0.000	292,336.758680664	304,699.896		12,363.137	0.000	292,336.758680664
2041	3	46.851	284,827.033574428	294,704.082		9,830.198	46.851	284,827.033574428
2041	4	539.420	281,125.900376437	287,109.346		5,444.026	539.420	281,125.900376437
2041	5	3,920.764	283,504.035889430	289,168.385		1,743.585	3,920.764	283,504.035889430
2041	6	22,605.864	301,749.006470970	324,603.726		248.855	22,605.864	301,749.006470970
2041	7	51,530.055	308,693.248003910	360,225.953		2.650	51,530.055	308,693.248003910
2041	8	53,996.543	305,098.931681852	359,095.475		0.000	53,996.543	305,098.931681852
2041	9	37,560.251	321,093.969457430	358,663.976		9.756	37,560.251	321,093.969457430
2041	10	11,586.402	300,535.852087011	312,699.170		576.916	11,586.402	300,535.852087011
2041	11	1,057.530	282,656.775436706	286,980.172		3,265.866	1,057.530	282,656.775436706
2041	12	13.451	310,487.834676875	318,159.969		7,658.683	13.451	310,487.834676875

Indiana Michigan Power Company-Indiana
Long-Term Commercial Energy Model Output

Year	Month	Cooling	Other	Total	Actual	Heating	Cooling	Other
2042	1	0.000	317,221.408902094	328,146.959		10,925.550	0.000	317,221.408902094
2042	2	0.000	292,678.412529151	304,890.030		12,211.617	0.000	292,678.412529151
2042	3	47.296	285,160.963830670	294,917.763		9,709.503	47.296	285,160.963830670
2042	4	544.538	281,461.165714553	287,382.759		5,377.056	544.538	281,461.165714553
2042	5	3,957.885	283,832.437843009	289,512.423		1,722.101	3,957.885	283,832.437843009
2042	6	22,819.443	302,084.686071090	325,149.913		245.784	22,819.443	302,084.686071090
2042	7	52,015.623	309,022.831739736	361,041.072		2.617	52,015.623	309,022.831739736
2042	8	54,504.511	305,412.617549743	359,917.129		0.000	54,504.511	305,412.617549743
2042	9	37,912.764	321,412.959716779	359,335.358		9.635	37,912.764	321,412.959716779
2042	10	11,694.896	300,840.747071245	313,105.392		569.749	11,694.896	300,840.747071245
2042	11	1,067.410	282,954.999195793	287,247.633		3,225.223	1,067.410	282,954.999195793
2042	12	13.576	310,813.198283339	318,390.042		7,563.268	13.576	310,813.198283339
2043	1	0.000	317,806.844033770	328,600.018		10,793.174	0.000	317,806.844033770
2043	2	0.000	293,210.939400011	305,274.886		12,063.946	0.000	293,210.939400011
2043	3	47.721	285,695.575589276	295,335.668		9,592.371	47.721	285,695.575589276
2043	4	549.447	282,013.534450386	287,875.336		5,312.354	549.447	282,013.534450386
2043	5	3,993.688	284,388.123660320	290,083.244		1,701.433	3,993.688	284,388.123660320
2043	6	23,026.713	302,668.757770616	325,938.314		242.843	23,026.713	302,668.757770616
2043	7	52,490.080	309,614.957382134	362,107.623		2.586	52,490.080	309,614.957382134
2043	8	55,003.934	305,991.471085914	360,995.405		0.000	55,003.934	305,991.471085914
2043	9	38,261.901	322,021.310199673	360,292.732		9.521	38,261.901	322,021.310199673
2043	10	11,803.133	301,441.333028387	313,807.493		563.027	11,803.133	301,441.333028387
2043	11	1,077.341	283,562.278225544	287,826.946		3,187.328	1,077.341	283,562.278225544
2043	12	13.703	311,493.600472711	318,982.040		7,474.736	13.703	311,493.600472711
2044	1	0.000	318,634.697200693	329,301.487		10,666.790	0.000	318,634.697200693
2044	2	0.000	293,961.202736980	305,884.136		11,922.933	0.000	293,961.202736980
2044	3	48.254	286,444.374271953	295,973.077		9,480.448	48.254	286,444.374271953
2044	4	555.590	282,779.795374485	288,585.811		5,250.426	555.590	282,779.795374485
2044	5	4,038.384	285,151.694490741	290,871.696		1,681.617	4,038.384	285,151.694490741
2044	6	23,284.569	303,461.177948601	326,985.763		240.017	23,284.569	303,461.177948601
2044	7	53,078.160	310,407.690334395	363,488.407		2.556	53,078.160	310,407.690334395
2044	8	55,620.136	306,754.046116415	362,374.182		0.000	55,620.136	306,754.046116415
2044	9	38,690.411	322,808.210618823	361,508.031		9.410	38,690.411	322,808.210618823

Indiana Michigan Power Company-Indiana
Long-Term Commercial Energy Model Output

Year	Month	Cooling	Other	Total	Actual	Heating	Cooling	Other
2044	10	11,935.282	302,204.353890185	314,696.108		556.472	11,935.282	302,204.353890185
2044	11	1,089.397	284,319.307683934	288,558.909		3,150.204	1,089.397	284,319.307683934
2044	12	13.856	312,326.574725381	319,728.059		7,387.628	13.856	312,326.574725381
2045	1	0.000	319,622.068530860	330,164.107		10,542.038	0.000	319,622.068530860
2045	2	0.000	294,836.980197726	306,619.760		11,782.780	0.000	294,836.980197726
2045	3	48.751	287,299.113891339	296,716.285		9,368.420	48.751	287,299.113891339
2045	4	561.281	283,640.104396019	289,389.502		5,188.116	561.281	283,640.104396019
2045	5	4,079.522	285,993.423797172	291,734.511		1,661.565	4,079.522	285,993.423797172
2045	6	23,520.538	304,321.023229974	328,078.703		237.142	23,520.538	304,321.023229974
2045	7	53,613.393	311,254.925977152	364,870.844		2.525	53,613.393	311,254.925977152
2045	8	56,178.396	307,558.862379404	363,737.258		0.000	56,178.396	307,558.862379404
2045	9	39,076.881	323,628.498297774	362,714.675		9.296	39,076.881	323,628.498297774
2045	10	12,053.956	302,990.357365240	315,594.018		549.705	12,053.956	302,990.357365240
2045	11	1,100.177	285,089.730220275	289,301.651		3,111.744	1,100.177	285,089.730220275
2045	12	13.993	313,165.975157118	320,477.107		7,297.139	13.993	313,165.975157118
2046	1	0.000	320,623.723725426	331,038.046		10,414.323	0.000	320,623.723725426
2046	2	0.000	295,734.219119671	307,374.002		11,639.783	0.000	295,734.219119671
2046	3	49.322	288,183.450268413	297,487.267		9,254.494	49.322	288,183.450268413
2046	4	567.843	284,536.508669070	290,229.249		5,124.897	567.843	284,536.508669070
2046	5	4,127.103	286,877.712557202	292,646.090		1,641.275	4,127.103	286,877.712557202
2046	6	23,794.174	305,230.179851699	329,258.593		234.240	23,794.174	305,230.179851699
2046	7	54,235.522	312,156.038516951	366,394.055		2.494	54,235.522	312,156.038516951
2046	8	56,828.603	308,419.187861607	365,247.791		0.000	56,828.603	308,419.187861607
2046	9	39,527.810	324,509.217789369	364,046.208		9.181	39,527.810	324,509.217789369
2046	10	12,192.599	303,836.748596121	316,572.253		542.905	12,192.599	303,836.748596121
2046	11	1,112.794	285,923.134164198	290,109.078		3,073.150	1,112.794	285,923.134164198
2046	12	14.153	314,075.094219328	321,295.600		7,206.353	14.153	314,075.094219328
2047	1	0.000	321,713.095723359	331,998.819		10,285.724	0.000	321,713.095723359
2047	2	0.000	296,716.156502220	308,212.253		11,496.097	0.000	296,716.156502220
2047	3	49.857	289,158.463264064	298,348.622		9,140.302	49.857	289,158.463264064
2047	4	574.000	285,531.481415326	291,167.151		5,061.669	574.000	285,531.481415326
2047	5	4,171.860	287,866.239216728	293,659.127		1,621.028	4,171.860	287,866.239216728
2047	6	24,052.198	306,253.949297044	330,537.498		231.350	24,052.198	306,253.949297044

Indiana Michigan Power Company-Indiana
Long-Term Commercial Energy Model Output

Year	Month	Cooling	Other	Total	Actual	Heating	Cooling	Other
2047	7	54,823.662	313,178.529594954	368,004.655		2.464	54,823.662	313,178.529594954
2047	8	57,444.491	309,401.470383777	366,845.961		0.000	57,444.491	309,401.470383777
2047	9	39,956.147	325,523.474253296	365,488.689		9.068	39,956.147	325,523.474253296
2047	10	12,324.698	304,820.632936193	317,681.534		536.202	12,324.698	304,820.632936193
2047	11	1,124.841	286,898.837273393	291,058.862		3,035.184	1,124.841	286,898.837273393
2047	12	14.306	315,149.972563729	322,281.585		7,117.307	14.306	315,149.972563729
2048	1	0.000	322,944.217671183	333,103.697		10,159.480	0.000	322,944.217671183
2048	2	0.000	297,822.499518460	309,177.378		11,354.879	0.000	297,822.499518460
2048	3	50.359	290,254.218096586	299,332.541		9,027.964	50.359	290,254.218096586
2048	4	579.776	286,645.803109486	292,224.964		4,999.385	579.776	286,645.803109486
2048	5	4,213.793	288,970.461845414	294,785.318		1,601.063	4,213.793	288,970.461845414
2048	6	24,293.708	307,395.273886096	331,917.480		228.498	24,293.708	307,395.273886096
2048	7	55,373.830	314,317.031727858	369,693.295		2.433	55,373.830	314,317.031727858
2048	8	58,020.874	310,496.484212613	368,517.358		0.000	58,020.874	310,496.484212613
2048	9	40,357.015	326,654.216362338	367,020.187		8.956	40,357.015	326,654.216362338
2048	10	12,448.343	305,917.901764264	318,895.833		529.588	12,448.343	305,917.901764264
2048	11	1,136.135	287,990.790864194	292,124.695		2,997.769	1,136.135	287,990.790864194
2048	12	14.450	316,355.294521388	323,399.362		7,029.618	14.450	316,355.294521388
2049	1	0.000	324,358.931889889	334,370.102		10,011.170	0.000	324,358.931889889
2049	2	0.000	299,105.567703122	310,295.130		11,189.562	0.000	299,105.567703122
2049	3	50.937	291,535.720603401	300,483.538		8,896.880	50.937	291,535.720603401
2049	4	586.458	287,964.458221468	293,477.956		4,927.040	586.458	287,964.458221468
2049	5	4,262.569	290,291.719809033	296,132.263		1,577.974	4,262.569	290,291.719809033
2049	6	24,576.229	308,776.530749158	333,577.975		225.215	24,576.229	308,776.530749158
2049	7	56,020.564	315,708.225761069	371,731.188		2.398	56,020.564	315,708.225761069
2049	8	58,701.467	311,846.380737378	370,547.848		0.000	58,701.467	311,846.380737378
2049	9	40,832.381	328,059.828896389	368,901.038		8.829	40,832.381	328,059.828896389
2049	10	12,595.616	307,293.720004799	320,411.419		522.083	12,595.616	307,293.720004799
2049	11	1,149.629	289,368.020713334	293,473.069		2,955.420	1,149.629	289,368.020713334
2049	12	14.622	317,884.422181600	324,829.658		6,930.614	14.622	317,884.422181600
2050	1	0.000	326,067.854393042	335,935.960		9,868.106	0.000	326,067.854393042
2050	2	0.000	300,644.539752738	311,674.196		11,029.656	0.000	300,644.539752738
2050	3	51.578	293,061.349687838	301,882.638		8,769.711	51.578	293,061.349687838

Indiana Michigan Power Company-Indiana
Long-Term Commercial Energy Model Output

Year	Month	Cooling	Other	Total	Actual	Heating	Cooling	Other
2050	4	593.829	289,520.192017241	294,970.624		4,856.603	593.829	289,520.192017241
2050	5	4,316.142	291,836.563719313	297,708.119		1,555.413	4,316.142	291,836.563719313
2050	6	24,884.980	310,375.494662913	335,482.468		221.994	24,884.980	310,375.494662913
2050	7	56,724.059	317,303.990739121	374,030.414		2.364	56,724.059	317,303.990739121
2050	8	59,438.197	313,380.067634734	372,818.264		0.000	59,438.197	313,380.067634734
2050	9	41,344.647	329,642.835058489	370,996.184		8.702	41,344.647	329,642.835058489
2050	10	12,753.541	308,828.379215278	322,096.523		514.603	12,753.541	308,828.379215278
2050	11	1,164.036	290,891.541353373	294,968.639		2,913.061	1,164.036	290,891.541353373
2050	12	14.805	319,562.455022203	326,408.501		6,831.241	14.805	319,562.455022203
2051	1	0.000	327,655.622313676	337,396.711		9,741.089	0.000	327,655.622313676
2051	2	0.000	302,076.460756897	312,964.243		10,887.782	0.000	302,076.460756897
2051	3	52.176	294,482.829679948	303,191.963		8,656.957	52.176	294,482.829679948
2051	4	600.726	290,971.875496258	296,366.795		4,794.194	600.726	290,971.875496258
2051	5	4,366.304	293,280.317306454	299,182.059		1,535.438	4,366.304	293,280.317306454
2051	6	25,174.308	311,872.125040722	337,265.577		219.144	25,174.308	311,872.125040722
2051	7	57,383.823	318,799.831712289	376,185.988		2.334	57,383.823	318,799.831712289
2051	8	60,129.658	314,819.767298360	374,949.425		0.000	60,129.658	314,819.767298360
2051	9	41,825.819	331,131.021771284	372,965.431		8.590	41,825.819	331,131.021771284
2051	10	12,901.998	310,273.262361686	323,683.265		508.004	12,901.998	310,273.262361686
2051	11	1,177.591	292,328.042507310	296,381.349		2,875.716	1,177.591	292,328.042507310
2051	12	14.978	321,146.848938428	327,905.512		6,743.686	14.978	321,146.848938428
2052	1	0.000	329,291.431603981	338,907.337		9,615.906	0.000	329,291.431603981
2052	2	0.000	303,551.678664664	314,299.635		10,747.956	0.000	303,551.678664664
2052	3	52.783	295,947.277384368	304,545.890		8,545.830	52.783	295,947.277384368
2052	4	607.715	292,467.419884394	297,807.821		4,732.686	607.715	292,467.419884394
2052	5	4,417.140	294,767.662755078	300,700.554		1,515.751	4,417.140	294,767.662755078
2052	6	25,467.530	313,413.936918030	339,097.802		216.335	25,467.530	313,413.936918030
2052	7	58,052.474	320,340.826531615	378,395.605		2.304	58,052.474	320,340.826531615
2052	8	60,830.441	316,302.940186085	377,133.381		0.000	60,830.441	316,302.940186085
2052	9	42,313.481	332,664.130422814	374,986.092		8.480	42,313.481	332,664.130422814
2052	10	13,052.460	311,761.776425399	325,315.736		501.500	13,052.460	311,761.776425399
2052	11	1,191.329	293,807.903512534	297,838.141		2,838.909	1,191.329	293,807.903512534
2052	12	15.152	322,779.062478615	329,451.609		6,657.394	15.152	322,779.062478615

Indiana Michigan Power Company-Indiana
Long-Term Commercial Energy Model Output

Year	Month	Cooling	Other	Total	Actual	Heating	Cooling	Other
2053	1	0.000	330,975.816599079	340,468.343		9,492.526	0.000	330,975.816599079
2053	2	0.000	305,070.675990200	315,680.820		10,610.144	0.000	305,070.675990200
2053	3	53.398	297,455.172327070	305,944.873		8,436.303	53.398	297,455.172327070
2053	4	614.798	294,007.315370355	299,294.177		4,672.063	614.798	294,007.315370355
2053	5	4,468.660	296,299.088058866	302,264.096		1,496.348	4,468.660	296,299.088058866
2053	6	25,764.701	315,001.436611893	340,979.705		213.567	25,764.701	315,001.436611893
2053	7	58,730.137	321,927.481704137	380,659.893		2.274	58,730.137	321,927.481704137
2053	8	61,540.675	317,830.074167736	379,370.749		0.000	61,540.675	317,830.074167736
2053	9	42,807.722	334,242.665670671	377,058.760		8.372	42,807.722	334,242.665670671
2053	10	13,204.953	313,294.411484397	326,994.454		495.089	13,204.953	313,294.411484397
2053	11	1,205.252	295,331.612109791	299,339.496		2,802.632	1,205.252	295,331.612109791
2053	12	15.330	324,459.633798477	331,047.307		6,572.344	15.330	324,459.633798477
2054	1	0.000	332,709.327753814	342,080.248		9,370.920	0.000	332,709.327753814
2054	2	0.000	306,633.949786955	317,108.262		10,474.312	0.000	306,633.949786955
2054	3	54.021	299,007.008471798	307,389.380		8,328.351	54.021	299,007.008471798
2054	4	621.977	295,592.066893599	300,826.355		4,612.311	621.977	295,592.066893599
2054	5	4,520.874	297,875.095882098	303,873.193		1,477.223	4,520.874	297,875.095882098
2054	6	26,065.876	316,635.145656547	342,911.860		210.838	26,065.876	316,635.145656547
2054	7	59,416.934	323,560.318955847	382,979.498		2.245	59,416.934	323,560.318955847
2054	8	62,260.491	319,401.671778132	381,662.162		0.000	62,260.491	319,401.671778132
2054	9	43,308.634	335,867.147337343	379,184.046		8.265	43,308.634	335,867.147337343
2054	10	13,359.506	314,871.672363745	328,719.950		488.771	13,359.506	314,871.672363745
2054	11	1,219.363	296,899.670695444	300,885.910		2,766.876	1,219.363	296,899.670695444
2054	12	15.509	326,189.117228335	332,693.143		6,488.516	15.509	326,189.117228335
2055	1	0.000	334,492.531834865	343,743.591		9,251.060	0.000	334,492.531834865
2055	2	0.000	308,242.011821508	318,582.440		10,340.429	0.000	308,242.011821508
2055	3	54.652	300,603.294393164	308,879.893		8,221.946	54.652	300,603.294393164
2055	4	629.252	297,222.194321497	302,404.862		4,553.416	629.252	297,222.194321497
2055	5	4,573.792	299,496.203736264	305,528.367		1,458.372	4,573.792	299,496.203736264
2055	6	26,371.108	318,315.600986864	344,894.858		208.149	26,371.108	318,315.600986864
2055	7	60,112.992	325,239.875415452	385,355.084		2.217	60,112.992	325,239.875415452
2055	8	62,990.020	321,018.250394263	384,008.270		0.000	62,990.020	321,018.250394263
2055	9	43,816.307	337,538.110593580	381,362.578		8.160	43,816.307	337,538.110593580

Indiana Michigan Power Company-Indiana
Long-Term Commercial Energy Model Output

Year	Month	Cooling	Other	Total	Actual	Heating	Cooling	Other
2055	10	13,516.148	316,494.078813494	330,492.770		482.543	13,516.148	316,494.078813494
2055	11	1,233.665	298,512.596498972	302,477.895		2,731.633	1,233.665	298,512.596498972
2055	12	15.691	327,968.083468965	334,389.665		6,405.890	15.691	327,968.083468965
2056	1	0.000	336,326.012119224	345,458.927		9,132.915	0.000	336,326.012119224
2056	2	0.000	309,895.388753159	320,103.850		10,208.462	0.000	309,895.388753159
2056	3	55.292	302,244.553455448	310,416.910		8,117.065	55.292	302,244.553455448
2056	4	636.625	298,898.232632307	304,030.221		4,495.364	636.625	298,898.232632307
2056	5	4,627.421	301,162.944162455	307,230.156		1,439.791	4,627.421	301,162.944162455
2056	6	26,680.455	320,043.355127833	346,929.308		205.498	26,680.455	320,043.355127833
2056	7	60,818.438	326,966.703804147	387,787.330		2.188	60,818.438	326,966.703804147
2056	8	63,729.396	322,680.342418275	386,409.738		0.000	63,729.396	322,680.342418275
2056	9	44,330.837	339,256.106147769	383,594.999		8.056	44,330.837	339,256.106147769
2056	10	13,674.906	318,162.165692444	332,313.477		476.405	13,674.906	318,162.165692444
2056	11	1,248.161	300,170.921766290	304,115.977		2,696.894	1,248.161	300,170.921766290
2056	12	15.876	329,797.119793888	336,137.442		6,324.447	15.876	329,797.119793888
2057	1	0.000	338,210.368599114	347,226.828		9,016.459	0.000	338,210.368599114
2057	2	0.000	311,594.622319330	321,673.002		10,078.380	0.000	311,594.622319330
2057	3	55.941	303,931.323997170	312,000.946		8,013.681	55.941	303,931.323997170
2057	4	644.097	300,620.732104059	305,702.970		4,438.140	644.097	300,620.732104059
2057	5	4,681.774	302,875.864919645	308,979.113		1,421.474	4,681.774	302,875.864919645
2057	6	26,993.973	321,818.976390123	349,015.834		202.885	26,993.973	321,818.976390123
2057	7	61,533.402	328,741.372631493	390,276.935		2.161	61,533.402	328,741.372631493
2057	8	64,478.756	324,388.495466336	388,867.251		0.000	64,478.756	324,388.495466336
2057	9	44,852.317	341,021.700441408	385,881.971		7.954	44,852.317	341,021.700441408
2057	10	13,835.811	319,876.483157832	334,182.648		470.354	13,835.811	319,876.483157832
2057	11	1,262.852	301,875.193948956	305,800.697		2,662.651	1,262.852	301,875.193948956
2057	12	16.062	331,676.830258149	337,937.058		6,244.165	16.062	331,676.830258149

Indiana Michigan Power Company-Indiana
Long-Term Commercial Energy Model Output

Year	Month	Total
1998	1	342,610.349
1998	2	292,069.614
1998	3	298,441.303
1998	4	297,305.430
1998	5	298,594.582
1998	6	328,463.661
1998	7	361,711.873
1998	8	345,924.626
1998	9	359,449.193
1998	10	310,996.265
1998	11	289,951.156
1998	12	327,049.136
1999	1	333,418.536
1999	2	307,474.809
1999	3	303,750.978
1999	4	302,554.092
1999	5	333,518.570
1999	6	296,870.325
1999	7	375,921.650
1999	8	364,479.058
1999	9	350,077.663
1999	10	310,929.625
1999	11	292,319.130
1999	12	328,041.318
2000	1	343,289.804
2000	2	328,201.170
2000	3	303,835.911
2000	4	296,691.207
2000	5	314,078.407
2000	6	336,600.916
2000	7	357,728.426
2000	8	355,329.401
2000	9	374,489.783

Indiana Michigan Power Company-Indiana
Long-Term Commercial Energy Model Output

Year	Month	Total
2000	10	323,600.104
2000	11	306,473.578
2000	12	355,961.944
2001	1	359,812.993
2001	2	324,432.913
2001	3	317,878.153
2001	4	314,642.490
2001	5	323,655.746
2001	6	329,421.690
2001	7	360,151.594
2001	8	388,368.332
2001	9	371,170.035
2001	10	319,116.077
2001	11	300,184.718
2001	12	328,372.179
2002	1	350,566.334
2002	2	316,049.421
2002	3	310,820.374
2002	4	319,383.038
2002	5	310,857.095
2002	6	341,099.909
2002	7	390,064.855
2002	8	388,613.231
2002	9	390,114.507
2002	10	336,752.714
2002	11	306,295.808
2002	12	349,722.082
2003	1	364,687.067
2003	2	345,225.545
2003	3	330,795.086
2003	4	309,781.873
2003	5	319,126.410
2003	6	322,039.984

Indiana Michigan Power Company-Indiana
Long-Term Commercial Energy Model Output

Year	Month	Total
2003	7	368,687.037
2003	8	363,079.733
2003	9	392,392.427
2003	10	317,567.914
2003	11	301,904.088
2003	12	348,434.292
2004	1	364,744.397
2004	2	349,077.221
2004	3	327,199.018
2004	4	320,234.493
2004	5	326,916.292
2004	6	363,328.993
2004	7	374,909.983
2004	8	355,640.688
2004	9	378,746.461
2004	10	338,487.941
2004	11	314,090.173
2004	12	351,508.911
2005	1	363,418.088
2005	2	344,770.856
2005	3	335,779.672
2005	4	329,337.960
2005	5	319,755.745
2005	6	364,907.437
2005	7	409,181.637
2005	8	400,084.545
2005	9	399,790.212
2005	10	364,679.919
2005	11	316,067.582
2005	12	359,379.445
2006	1	374,280.091
2006	2	343,285.703
2006	3	333,364.556

Indiana Michigan Power Company-Indiana
Long-Term Commercial Energy Model Output

Year	Month	Total
2006	4	315,645.764
2006	5	327,682.189
2006	6	364,095.445
2006	7	406,662.944
2006	8	399,074.522
2006	9	395,111.084
2006	10	338,651.385
2006	11	333,389.652
2006	12	359,885.498
2007	1	369,029.947
2007	2	368,672.079
2007	3	353,947.115
2007	4	340,851.463
2007	5	341,265.716
2007	6	388,267.420
2007	7	406,038.797
2007	8	409,790.281
2007	9	419,466.134
2007	10	375,985.093
2007	11	342,904.544
2007	12	370,416.087
2008	1	389,453.135
2008	2	370,721.836
2008	3	354,583.124
2008	4	332,968.389
2008	5	327,175.623
2008	6	366,596.069
2008	7	400,782.933
2008	8	390,932.656
2008	9	397,098.594
2008	10	356,391.437
2008	11	338,211.523
2008	12	365,017.651

Indiana Michigan Power Company-Indiana
Long-Term Commercial Energy Model Output

Year	Month	Total
2009	1	394,538.834
2009	2	366,825.195
2009	3	332,585.374
2009	4	328,150.270
2009	5	324,226.598
2009	6	350,857.012
2009	7	386,570.328
2009	8	367,950.298
2009	9	379,199.408
2009	10	348,123.717
2009	11	320,684.416
2009	12	363,678.631
2010	1	390,926.180
2010	2	342,435.270
2010	3	340,871.698
2010	4	329,090.863
2010	5	318,589.813
2010	6	375,075.771
2010	7	399,476.808
2010	8	402,478.911
2010	9	395,922.006
2010	10	379,838.477
2010	11	277,649.071
2010	12	353,758.393
2011	1	378,609.008
2011	2	345,121.517
2011	3	338,340.984
2011	4	303,703.991
2011	5	325,502.938
2011	6	369,072.069
2011	7	386,329.249
2011	8	424,529.463
2011	9	379,601.738

Indiana Michigan Power Company-Indiana
Long-Term Commercial Energy Model Output

Year	Month	Total
2011	10	326,165.686
2011	11	311,472.834
2011	12	356,457.823
2012	1	362,330.728
2012	2	329,502.490
2012	3	327,433.337
2012	4	325,983.546
2012	5	325,382.513
2012	6	365,095.558
2012	7	410,627.821
2012	8	394,399.875
2012	9	376,476.640
2012	10	323,549.607
2012	11	316,102.214
2012	12	336,189.939
2013	1	352,664.604
2013	2	339,328.752
2013	3	334,492.396
2013	4	320,807.929
2013	5	315,125.067
2013	6	351,502.596
2013	7	377,752.169
2013	8	364,621.955
2013	9	381,913.283
2013	10	344,515.393
2013	11	317,239.563
2013	12	349,952.264
2014	1	378,861.609
2014	2	349,751.111
2014	3	340,598.808
2014	4	316,409.278
2014	5	318,113.791
2014	6	350,135.743

Indiana Michigan Power Company-Indiana
Long-Term Commercial Energy Model Output

Year	Month	Total
2014	7	368,620.006
2014	8	355,340.620
2014	9	378,858.172
2014	10	323,674.497
2014	11	314,126.318
2014	12	361,778.871
2015	1	365,872.230
2015	2	343,014.456
2015	3	340,763.974
2015	4	320,123.959
2015	5	311,344.327
2015	6	350,064.054
2015	7	362,974.694
2015	8	370,345.435
2015	9	378,348.564
2015	10	329,564.918
2015	11	305,843.144
2015	12	343,874.009
2016	1	345,499.580
2016	2	332,849.441
2016	3	318,029.443
2016	4	307,275.375
2016	5	301,161.423
2016	6	346,935.732
2016	7	375,384.403
2016	8	394,392.552
2016	9	394,550.586
2016	10	348,511.078
2016	11	307,551.274
2016	12	350,821.389
2017	1	359,316.453
2017	2	317,317.320
2017	3	306,273.831

Indiana Michigan Power Company-Indiana
Long-Term Commercial Energy Model Output

Year	Month	Total
2017	4	301,815.018
2017	5	297,874.560
2017	6	333,525.337
2017	7	363,971.347
2017	8	364,460.653
2017	9	348,084.947
2017	10	340,139.591
2017	11	300,827.566
2017	12	340,618.272
2018	1	365,026.787
2018	2	324,959.166
2018	3	304,488.389
2018	4	311,984.712
2018	5	305,077.689
2018	6	353,453.842
2018	7	377,354.963
2018	8	367,778.073
2018	9	378,618.754
2018	10	335,430.467
2018	11	302,297.313
2018	12	342,429.460
2019	1	333,692.238
2019	2	330,434.666
2019	3	313,055.326
2019	4	293,811.080
2019	5	294,808.532
2019	6	324,003.723
2019	7	362,005.676
2019	8	368,361.575
2019	9	359,808.946
2019	10	330,663.115
2019	11	297,111.313
2019	12	332,955.869

Indiana Michigan Power Company-Indiana
Long-Term Commercial Energy Model Output

Year	Month	Total
2020	1	337,666.981
2020	2	309,778.344
2020	3	300,794.974
2020	4	269,227.912
2020	5	255,258.981
2020	6	298,701.743
2020	7	348,999.952
2020	8	351,476.660
2020	9	350,878.234
2020	10	301,211.995
2020	11	288,134.486
2020	12	314,042.702
2021	1	322,715.176
2021	2	301,909.613
2021	3	291,496.258
2021	4	283,136.751
2021	5	284,266.191
2021	6	317,019.028
2021	7	349,060.103
2021	8	347,932.700
2021	9	349,557.682
2021	10	307,202.389
2021	11	283,434.059
2021	12	315,236.199
2022	1	325,139.125
2022	2	302,765.185
2022	3	292,340.915
2022	4	283,758.900
2022	5	284,728.233
2022	6	317,472.229
2022	7	349,584.116
2022	8	348,387.256
2022	9	349,881.584

Indiana Michigan Power Company-Indiana
Long-Term Commercial Energy Model Output

Year	Month	Total
2022	10	307,363.721
2022	11	283,550.903
2022	12	315,416.399
2023	1	325,767.087
2023	2	303,587.256
2023	3	293,433.973
2023	4	285,165.682
2023	5	286,432.301
2023	6	319,707.254
2023	7	352,414.871
2023	8	351,432.759
2023	9	353,065.787
2023	10	310,359.965
2023	11	286,609.318
2023	12	319,015.879
2024	1	329,268.145
2024	2	306,492.075
2024	3	296,046.382
2024	4	287,554.652
2024	5	288,574.387
2024	6	321,839.193
2024	7	354,529.953
2024	8	353,231.969
2024	9	354,520.253
2024	10	311,369.911
2024	11	287,323.109
2024	12	319,547.248
2025	1	329,720.117
2025	2	306,863.202
2025	3	296,432.339
2025	4	287,993.143
2025	5	289,052.902
2025	6	322,386.984

Indiana Michigan Power Company-Indiana
Long-Term Commercial Energy Model Output

Year	Month	Total
2025	7	355,133.162
2025	8	353,809.495
2025	9	355,067.269
2025	10	311,831.479
2025	11	287,719.146
2025	12	319,922.622
2026	1	329,393.066
2026	2	306,478.465
2026	3	296,018.162
2026	4	287,565.235
2026	5	288,626.097
2026	6	321,968.038
2026	7	354,753.140
2026	8	353,403.822
2026	9	354,545.668
2026	10	311,208.407
2026	11	287,001.158
2026	12	319,038.847
2027	1	328,700.156
2027	2	305,826.138
2027	3	295,406.174
2027	4	287,008.018
2027	5	288,134.337
2027	6	321,525.924
2027	7	354,388.302
2027	8	353,075.887
2027	9	354,179.959
2027	10	310,801.835
2027	11	286,550.229
2027	12	318,500.084
2028	1	328,420.985
2028	2	305,564.757
2028	3	295,188.434

Indiana Michigan Power Company-Indiana
Long-Term Commercial Energy Model Output

Year	Month	Total
2028	4	286,848.641
2028	5	288,038.977
2028	6	321,539.650
2028	7	354,546.808
2028	8	353,248.454
2028	9	354,265.433
2028	10	310,751.801
2028	11	286,412.388
2028	12	318,287.643
2029	1	328,288.131
2029	2	305,390.967
2029	3	295,018.789
2029	4	286,708.995
2029	5	287,941.118
2029	6	321,541.984
2029	7	354,695.970
2029	8	353,392.268
2029	9	354,284.439
2029	10	310,601.400
2029	11	286,151.148
2029	12	317,920.496
2030	1	327,269.596
2030	2	304,444.167
2030	3	294,116.199
2030	4	285,854.639
2030	5	287,166.120
2030	6	320,882.673
2030	7	354,229.789
2030	8	352,974.918
2030	9	353,739.440
2030	10	309,907.330
2030	11	285,361.466
2030	12	316,992.017

Indiana Michigan Power Company-Indiana
Long-Term Commercial Energy Model Output

Year	Month	Total
2031	1	326,648.044
2031	2	303,859.443
2031	3	293,565.958
2031	4	285,350.219
2031	5	286,722.275
2031	6	320,514.933
2031	7	353,982.364
2031	8	352,758.721
2031	9	353,449.015
2031	10	309,525.839
2031	11	284,915.309
2031	12	316,454.563
2032	1	326,273.173
2032	2	303,490.595
2032	3	293,225.967
2032	4	285,054.213
2032	5	286,484.506
2032	6	320,382.006
2032	7	354,001.795
2032	8	352,794.310
2032	9	353,382.306
2032	10	309,316.096
2032	11	284,613.977
2032	12	316,063.157
2033	1	325,928.732
2033	2	303,157.786
2033	3	292,933.187
2033	4	284,824.042
2033	5	286,326.703
2033	6	320,334.256
2033	7	354,104.510
2033	8	352,927.759
2033	9	353,448.863

Indiana Michigan Power Company-Indiana
Long-Term Commercial Energy Model Output

Year	Month	Total
2033	10	309,268.087
2033	11	284,496.545
2033	12	315,893.010
2034	1	325,841.807
2034	2	303,055.697
2034	3	292,868.847
2034	4	284,824.714
2034	5	286,399.691
2034	6	320,551.608
2034	7	354,513.505
2034	8	353,353.654
2034	9	353,776.478
2034	10	309,424.405
2034	11	284,554.345
2034	12	315,902.240
2035	1	326,006.155
2035	2	303,178.452
2035	3	293,021.396
2035	4	285,038.815
2035	5	286,680.651
2035	6	320,991.428
2035	7	355,159.088
2035	8	354,008.598
2035	9	354,329.890
2035	10	309,784.694
2035	11	284,811.489
2035	12	316,133.952
2036	1	326,324.166
2036	2	303,438.246
2036	3	293,311.872
2036	4	285,395.066
2036	5	287,104.433
2036	6	321,590.976

Indiana Michigan Power Company-Indiana
Long-Term Commercial Energy Model Output

Year	Month	Total
2036	7	355,980.899
2036	8	354,830.562
2036	9	355,036.118
2036	10	310,270.350
2036	11	285,178.152
2036	12	316,476.284
2037	1	326,714.689
2037	2	303,757.163
2037	3	293,657.625
2037	4	285,809.929
2037	5	287,592.056
2037	6	322,270.991
2037	7	356,905.041
2037	8	355,760.770
2037	9	355,850.003
2037	10	310,851.846
2037	11	285,640.186
2037	12	316,930.292
2038	1	327,195.507
2038	2	304,154.690
2038	3	294,076.610
2038	4	286,293.083
2038	5	288,138.055
2038	6	322,990.549
2038	7	357,839.588
2038	8	356,685.792
2038	9	356,662.460
2038	10	311,440.120
2038	11	286,106.799
2038	12	317,378.516
2039	1	327,700.247
2039	2	304,581.381
2039	3	294,531.605

Indiana Michigan Power Company-Indiana
Long-Term Commercial Energy Model Output

Year	Month	Total
2039	4	286,820.516
2039	5	288,739.168
2039	6	323,798.678
2039	7	358,907.499
2039	8	357,757.278
2039	9	357,613.251
2039	10	312,140.459
2039	11	286,681.554
2039	12	317,957.091
2040	1	327,690.609
2040	2	304,551.534
2040	3	294,538.576
2040	4	286,891.165
2040	5	288,883.982
2040	6	324,123.928
2040	7	359,477.640
2040	8	358,343.027
2040	9	358,066.576
2040	10	312,367.594
2040	11	286,786.792
2040	12	318,012.814
2041	1	327,898.295
2041	2	304,699.896
2041	3	294,704.082
2041	4	287,109.346
2041	5	289,168.385
2041	6	324,603.726
2041	7	360,225.953
2041	8	359,095.475
2041	9	358,663.976
2041	10	312,699.170
2041	11	286,980.172
2041	12	318,159.969

Indiana Michigan Power Company-Indiana
Long-Term Commercial Energy Model Output

Year	Month	Total
2042	1	328,146.959
2042	2	304,890.030
2042	3	294,917.763
2042	4	287,382.759
2042	5	289,512.423
2042	6	325,149.913
2042	7	361,041.072
2042	8	359,917.129
2042	9	359,335.358
2042	10	313,105.392
2042	11	287,247.633
2042	12	318,390.042
2043	1	328,600.018
2043	2	305,274.886
2043	3	295,335.668
2043	4	287,875.336
2043	5	290,083.244
2043	6	325,938.314
2043	7	362,107.623
2043	8	360,995.405
2043	9	360,292.732
2043	10	313,807.493
2043	11	287,826.946
2043	12	318,982.040
2044	1	329,301.487
2044	2	305,884.136
2044	3	295,973.077
2044	4	288,585.811
2044	5	290,871.696
2044	6	326,985.763
2044	7	363,488.407
2044	8	362,374.182
2044	9	361,508.031

Indiana Michigan Power Company-Indiana
Long-Term Commercial Energy Model Output

Year	Month	Total
2044	10	314,696.108
2044	11	288,558.909
2044	12	319,728.059
2045	1	330,164.107
2045	2	306,619.760
2045	3	296,716.285
2045	4	289,389.502
2045	5	291,734.511
2045	6	328,078.703
2045	7	364,870.844
2045	8	363,737.258
2045	9	362,714.675
2045	10	315,594.018
2045	11	289,301.651
2045	12	320,477.107
2046	1	331,038.046
2046	2	307,374.002
2046	3	297,487.267
2046	4	290,229.249
2046	5	292,646.090
2046	6	329,258.593
2046	7	366,394.055
2046	8	365,247.791
2046	9	364,046.208
2046	10	316,572.253
2046	11	290,109.078
2046	12	321,295.600
2047	1	331,998.819
2047	2	308,212.253
2047	3	298,348.622
2047	4	291,167.151
2047	5	293,659.127
2047	6	330,537.498

Indiana Michigan Power Company-Indiana
Long-Term Commercial Energy Model Output

Year	Month	Total
2047	7	368,004.655
2047	8	366,845.961
2047	9	365,488.689
2047	10	317,681.534
2047	11	291,058.862
2047	12	322,281.585
2048	1	333,103.697
2048	2	309,177.378
2048	3	299,332.541
2048	4	292,224.964
2048	5	294,785.318
2048	6	331,917.480
2048	7	369,693.295
2048	8	368,517.358
2048	9	367,020.187
2048	10	318,895.833
2048	11	292,124.695
2048	12	323,399.362
2049	1	334,370.102
2049	2	310,295.130
2049	3	300,483.538
2049	4	293,477.956
2049	5	296,132.263
2049	6	333,577.975
2049	7	371,731.188
2049	8	370,547.848
2049	9	368,901.038
2049	10	320,411.419
2049	11	293,473.069
2049	12	324,829.658
2050	1	335,935.960
2050	2	311,674.196
2050	3	301,882.638

Indiana Michigan Power Company-Indiana
Long-Term Commercial Energy Model Output

Year	Month	Total
2050	4	294,970.624
2050	5	297,708.119
2050	6	335,482.468
2050	7	374,030.414
2050	8	372,818.264
2050	9	370,996.184
2050	10	322,096.523
2050	11	294,968.639
2050	12	326,408.501
2051	1	337,396.711
2051	2	312,964.243
2051	3	303,191.963
2051	4	296,366.795
2051	5	299,182.059
2051	6	337,265.577
2051	7	376,185.988
2051	8	374,949.425
2051	9	372,965.431
2051	10	323,683.265
2051	11	296,381.349
2051	12	327,905.512
2052	1	338,907.337
2052	2	314,299.635
2052	3	304,545.890
2052	4	297,807.821
2052	5	300,700.554
2052	6	339,097.802
2052	7	378,395.605
2052	8	377,133.381
2052	9	374,986.092
2052	10	325,315.736
2052	11	297,838.141
2052	12	329,451.609

Indiana Michigan Power Company-Indiana
Long-Term Commercial Energy Model Output

Year	Month	Total
2053	1	340,468.343
2053	2	315,680.820
2053	3	305,944.873
2053	4	299,294.177
2053	5	302,264.096
2053	6	340,979.705
2053	7	380,659.893
2053	8	379,370.749
2053	9	377,058.760
2053	10	326,994.454
2053	11	299,339.496
2053	12	331,047.307
2054	1	342,080.248
2054	2	317,108.262
2054	3	307,389.380
2054	4	300,826.355
2054	5	303,873.193
2054	6	342,911.860
2054	7	382,979.498
2054	8	381,662.162
2054	9	379,184.046
2054	10	328,719.950
2054	11	300,885.910
2054	12	332,693.143
2055	1	343,743.591
2055	2	318,582.440
2055	3	308,879.893
2055	4	302,404.862
2055	5	305,528.367
2055	6	344,894.858
2055	7	385,355.084
2055	8	384,008.270
2055	9	381,362.578

Indiana Michigan Power Company-Indiana
Long-Term Commercial Energy Model Output

Year	Month	Total
2055	10	330,492.770
2055	11	302,477.895
2055	12	334,389.665
2056	1	345,458.927
2056	2	320,103.850
2056	3	310,416.910
2056	4	304,030.221
2056	5	307,230.156
2056	6	346,929.308
2056	7	387,787.330
2056	8	386,409.738
2056	9	383,594.999
2056	10	332,313.477
2056	11	304,115.977
2056	12	336,137.442
2057	1	347,226.828
2057	2	321,673.002
2057	3	312,000.946
2057	4	305,702.970
2057	5	308,979.113
2057	6	349,015.834
2057	7	390,276.935
2057	8	388,867.251
2057	9	385,881.971
2057	10	334,182.648
2057	11	305,800.697
2057	12	337,937.058

Indiana Michigan Power Company-Michigan
Long-Term Commercial Model Inputs

Year	Month	Sales	XHeat	XCool	XOther	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	D07on	D09on	d0506
2000	1	61,044.89	10,627.18	0.00	72,677.56	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2000	2	56,730.97	13,102.35	0.00	65,817.57	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2000	3	53,322.89	6,548.99	182.43	65,408.83	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2000	4	51,092.46	4,705.91	111.48	65,831.36	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2000	5	53,782.93	2,165.66	2,503.30	65,308.95	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2000	6	58,730.32	264.42	5,638.85	68,485.40	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2000	7	62,705.25	25.83	11,487.28	67,131.73	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2000	8	64,237.57	0.00	11,775.66	65,192.82	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
2000	9	67,782.25	40.05	13,805.05	67,260.71	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
2000	10	58,393.30	929.42	3,442.85	64,394.71	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00
2000	11	55,034.35	2,503.14	233.54	62,684.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00
2000	12	61,982.63	10,734.07	0.00	69,884.33	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2001	1	64,458.59	15,046.25	0.00	71,755.15	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2001	2	59,913.54	12,020.31	0.00	64,679.52	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2001	3	55,197.01	9,903.87	0.00	64,027.47	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2001	4	52,491.08	6,283.27	225.75	64,221.04	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2001	5	55,121.96	1,126.34	2,720.17	63,577.82	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2001	6	60,321.17	382.38	4,576.05	66,596.06	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2001	7	65,291.05	43.29	12,782.64	65,268.10	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2001	8	71,839.08	0.00	21,258.27	63,474.62	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
2001	9	68,984.16	13.14	12,053.54	65,611.96	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
2001	10	57,138.58	730.17	1,768.20	63,012.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00
2001	11	52,680.61	2,338.00	93.60	61,562.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00
2001	12	58,403.80	3,873.49	0.00	69,552.70	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2002	1	63,109.91	9,964.75	0.00	71,721.44	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2002	2	56,764.51	8,588.64	0.00	64,985.37	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2002	3	56,608.22	8,665.07	0.00	64,652.96	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2002	4	57,282.37	6,772.52	872.09	65,152.86	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2002	5	53,996.31	2,502.89	1,878.47	64,745.83	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2002	6	60,145.78	953.22	4,644.56	68,044.51	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2002	7	71,819.09	0.00	21,580.82	66,832.95	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2002	8	73,361.53	0.00	23,328.85	65,046.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
2002	9	71,185.81	0.00	15,442.49	67,219.65	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
2002	10	61,028.08	625.69	6,575.41	64,483.49	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00

Indiana Michigan Power Company-Michigan
Long-Term Commercial Model Inputs

Year	Month	Sales	XHeat	XCool	XOther	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	D07on	D09on	d0506
2002	11	55,714.83	4,547.96	408.49	62,897.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00
2002	12	62,975.29	9,006.93	0.00	70,829.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2003	1	65,864.77	10,840.48	0.00	72,841.23	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2003	2	63,111.13	13,653.51	0.00	65,841.84	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2003	3	58,824.27	11,596.07	0.00	65,329.96	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2003	4	56,375.86	4,837.50	281.05	65,669.60	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2003	5	54,794.67	1,913.04	681.05	65,138.12	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2003	6	58,224.13	501.72	1,270.93	68,335.10	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2003	7	67,881.29	26.28	12,335.97	67,727.80	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2003	8	69,656.13	0.00	13,285.00	65,682.75	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
2003	9	69,562.52	1.73	14,074.90	66,399.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
2003	10	58,086.23	1,143.53	2,308.20	64,285.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00
2003	11	53,949.94	2,914.16	68.83	62,484.95	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00
2003	12	63,093.95	6,638.10	0.00	71,531.74	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2004	1	65,262.41	9,714.87	0.00	73,661.48	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2004	2	62,796.50	13,825.03	0.00	66,444.71	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2004	3	57,696.18	8,861.89	0.00	64,399.25	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2004	4	56,098.97	4,766.15	420.16	67,425.16	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2004	5	58,240.03	1,687.39	3,861.75	67,621.05	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2004	6	62,304.79	190.02	7,235.32	69,472.90	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2004	7	65,598.18	1.72	10,837.57	67,829.37	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2004	8	66,162.16	0.00	10,884.07	65,983.81	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
2004	9	70,317.61	0.00	9,118.52	69,402.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
2004	10	61,212.63	685.56	3,261.65	65,908.64	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00
2004	11	55,320.06	2,401.66	194.35	63,900.81	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00
2004	12	64,458.40	6,528.62	13.90	73,516.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2005	1	66,961.94	11,018.92	0.00	73,704.76	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00
2005	2	62,307.55	12,002.97	0.00	66,818.05	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00
2005	3	63,312.86	10,071.93	0.00	70,067.89	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00
2005	4	58,788.44	5,833.74	150.69	67,644.03	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00
2005	5	54,773.71	2,068.36	929.07	64,552.14	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00
2005	6	65,772.11	304.02	6,444.21	70,231.55	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00
2005	7	73,945.57	0.00	20,684.68	67,010.72	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00
2005	8	76,812.97	0.00	21,865.94	66,330.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00

Indiana Michigan Power Company-Michigan
Long-Term Commercial Model Inputs

Year	Month	Sales	XHeat	XCool	XOther	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	D07on	D09on	d0506
2005	9	76,297.48	0.00	14,429.72	70,286.96	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00
2005	10	63,956.93	410.81	6,912.18	66,363.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00
2005	11	55,991.55	2,727.36	579.70	65,440.37	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	1.00
2005	12	64,231.04	9,285.75	0.00	71,103.57	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00
2006	1	67,056.86	9,749.15	0.00	74,659.14	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00
2006	2	60,240.91	8,216.95	0.00	67,576.97	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00
2006	3	58,364.80	9,207.08	0.00	65,067.51	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00
2006	4	55,903.70	5,339.22	84.08	65,656.33	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00
2006	5	56,515.80	1,273.70	151.81	67,046.89	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00
2006	6	64,070.35	655.85	5,893.28	69,467.50	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00
2006	7	72,516.58	0.00	12,561.01	69,772.84	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00
2006	8	75,592.76	0.00	20,707.24	66,950.53	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2006	9	71,147.64	26.81	8,862.06	67,709.80	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00
2006	10	60,922.50	942.33	1,008.02	66,466.27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00
2006	11	58,349.41	4,284.93	38.70	65,493.32	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	1.00
2006	12	64,276.49	6,219.21	0.00	71,451.58	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00
2007	1	67,281.39	7,114.93	0.00	74,964.88	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
2007	2	66,137.29	12,474.61	0.00	68,057.46	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
2007	3	62,649.61	11,227.33	23.54	64,666.02	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
2007	4	60,947.70	4,491.91	621.20	68,779.93	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
2007	5	60,260.59	1,753.37	1,528.13	66,512.77	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
2007	6	70,260.60	107.47	9,690.46	68,643.24	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
2007	7	77,911.67	0.00	16,508.03	68,707.42	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
2007	8	78,899.67	0.00	17,571.47	63,321.44	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0.00	0.00
2007	9	81,035.07	22.62	15,109.15	71,442.65	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
2007	10	68,307.77	231.50	8,013.62	64,346.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	0.00	0.00
2007	11	62,630.76	2,522.21	1,638.50	65,906.51	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00
2007	12	69,745.23	7,825.00	0.00	73,321.74	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
2008	1	73,007.22	9,501.20	0.00	74,621.56	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
2008	2	68,364.21	11,727.64	0.00	66,414.89	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
2008	3	65,473.30	10,731.49	0.00	65,210.54	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
2008	4	62,608.78	5,982.91	15.35	66,452.64	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
2008	5	60,400.80	1,785.35	389.97	64,826.29	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
2008	6	67,853.81	520.92	6,264.72	67,523.11	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00

Indiana Michigan Power Company-Michigan
Long-Term Commercial Model Inputs

Year	Month	Sales	XHeat	XCool	XOther	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	D07on	D09on	d0506
2008	7	75,461.54	0.20	12,889.91	67,051.69	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
2008	8	79,555.53	0.00	16,107.03	64,902.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0.00	0.00
2008	9	77,706.84	0.00	10,264.47	65,507.32	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
2008	10	67,377.47	391.87	3,137.77	63,271.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	0.00	0.00
2008	11	63,454.35	2,986.24	340.32	63,139.16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00
2008	12	68,838.98	8,593.04	0.00	66,138.26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
2009	1	74,462.76	10,935.85	0.00	69,087.48	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2009	2	68,553.69	12,404.58	0.00	61,522.09	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2009	3	63,917.87	7,917.31	0.00	59,562.71	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2009	4	61,742.29	4,364.70	28.66	61,434.23	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2009	5	61,244.27	1,663.74	887.19	60,518.37	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2009	6	64,829.25	251.61	3,651.47	61,199.79	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2009	7	72,155.02	0.18	10,846.74	60,520.47	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2009	8	73,187.40	0.00	10,570.70	58,023.21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0.00
2009	9	73,067.94	0.00	7,348.79	61,633.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00
2009	10	64,546.86	1,051.32	1,671.36	59,532.38	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00
2009	11	62,275.67	2,493.95	0.00	59,700.26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	0.00
2009	12	68,496.22	5,871.43	0.00	65,568.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2010	1	72,218.79	10,167.07	0.00	66,572.92	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2010	2	67,006.06	10,320.61	0.00	61,147.69	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2010	3	62,881.01	8,097.92	0.00	58,887.67	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2010	4	60,935.72	3,032.24	827.19	62,464.05	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2010	5	58,830.83	1,129.67	875.77	60,470.85	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2010	6	69,493.83	242.27	8,726.82	62,864.81	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2010	7	77,777.46	0.00	17,537.82	62,877.41	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2010	8	82,799.26	0.00	23,164.53	61,557.81	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0.00
2010	9	76,109.55	0.00	15,440.53	62,657.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00
2010	10	64,720.59	446.56	3,615.15	60,627.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00
2010	11	59,205.18	2,358.49	349.58	59,731.14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	0.00
2010	12	65,693.36	7,192.11	0.00	66,890.70	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2011	1	71,333.54	10,246.11	0.00	65,626.18	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2011	2	61,712.91	11,186.02	0.00	59,255.36	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2011	3	65,102.35	7,990.76	0.00	57,712.55	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2011	4	58,548.69	4,983.94	236.27	57,923.10	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00

Indiana Michigan Power Company-Michigan
Long-Term Commercial Model Inputs

Year	Month	Sales	XHeat	XCool	XOther	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	D07on	D09on	d0506
2011	5	60,106.94	1,772.27	1,182.25	60,699.98	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2011	6	67,813.01	233.17	8,736.72	61,212.20	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2011	7	77,276.59	0.00	16,328.36	62,384.81	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2011	8	81,753.55	0.00	24,496.72	58,081.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0.00
2011	9	74,858.46	40.12	12,380.84	60,016.57	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00
2011	10	63,849.09	468.08	2,003.03	58,400.92	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00
2011	11	60,418.91	2,081.26	331.18	58,030.51	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	0.00
2011	12	63,432.16	4,787.85	0.00	61,631.63	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2012	1	68,729.93	6,956.35	0.00	62,076.81	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2012	2	62,834.83	7,899.34	0.00	56,587.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2012	3	62,129.09	5,603.59	751.15	56,449.27	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2012	4	60,220.76	1,636.39	2,260.92	57,694.16	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2012	5	60,488.27	1,355.73	1,542.95	57,119.18	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2012	6	70,242.31	89.71	9,780.48	58,511.47	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2012	7	88,033.90	7.98	24,703.04	59,069.73	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2012	8	80,772.40	0.00	21,870.00	55,708.35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0.00
2012	9	75,207.90	15.50	11,277.49	58,448.51	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00
2012	10	62,515.82	757.68	1,877.35	56,491.22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00
2012	11	60,847.43	3,012.78	437.37	56,624.22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	0.00
2012	12	65,161.03	4,661.77	0.00	61,009.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2013	1	68,216.51	7,406.79	0.00	62,090.29	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2013	2	63,998.95	8,806.57	0.00	55,582.27	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2013	3	63,183.75	7,974.85	0.00	55,807.19	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2013	4	62,619.44	5,772.95	0.00	58,171.16	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2013	5	61,513.73	1,661.41	1,640.07	55,980.80	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2013	6	66,747.58	317.59	6,785.01	58,686.74	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2013	7	75,968.76	4.57	14,976.46	58,475.95	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2013	8	74,176.97	0.00	12,208.93	56,118.84	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0.00
2013	9	78,603.01	0.51	13,781.52	58,047.87	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00
2013	10	66,412.95	223.88	5,169.20	56,169.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00
2013	11	61,967.58	2,709.59	465.74	56,745.79	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	0.00
2013	12	67,923.76	6,953.93	0.00	60,598.54	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2014	1	72,933.72	9,852.04	0.00	62,671.95	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2014	2	66,759.48	11,553.18	0.00	54,869.45	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00

Indiana Michigan Power Company-Michigan
Long-Term Commercial Model Inputs

Year	Month	Sales	XHeat	XCool	XOther	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	D07on	D09on	d0506
2014	3	66,097.60	10,033.61	0.00	55,355.95	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2014	4	61,165.28	5,424.30	43.81	55,675.75	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2014	5	61,052.46	1,476.42	1,277.71	57,784.12	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2014	6	66,408.59	337.29	8,244.29	57,374.45	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2014	7	72,078.90	0.00	14,119.47	57,965.35	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2014	8	70,682.06	0.00	10,584.20	55,187.23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0.00
2014	9	76,399.58	32.33	14,476.87	57,748.85	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00
2014	10	62,083.85	468.55	2,190.44	55,813.22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00
2014	11	60,339.62	2,765.68	57.57	55,666.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	0.00
2014	12	68,675.30	6,772.80	0.00	60,854.95	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2015	1	72,656.61	7,887.53	0.00	62,030.03	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2015	2	66,248.38	9,516.89	0.00	55,134.45	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2015	3	65,753.86	9,912.64	0.00	54,971.09	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2015	4	61,657.38	4,096.24	18.02	57,284.42	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2015	5	60,062.69	1,248.30	1,676.41	55,671.36	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2015	6	67,014.21	206.65	7,480.93	57,359.43	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2015	7	71,181.12	1.90	10,420.20	57,559.77	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2015	8	78,003.32	0.00	16,719.75	55,561.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0.00
2015	9	76,521.97	2.06	12,667.19	57,169.98	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00
2015	10	65,977.68	317.12	3,743.01	55,624.33	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00
2015	11	60,029.93	1,579.15	88.33	54,925.45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	0.00
2015	12	66,018.87	4,113.99	0.00	61,096.66	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2016	1	69,030.56	6,202.47	0.00	62,207.56	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2016	2	65,037.15	8,394.66	0.00	55,537.21	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2016	3	61,573.89	6,061.57	0.00	54,784.74	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2016	4	60,555.87	3,414.91	7.91	57,198.47	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2016	5	58,721.36	1,518.86	320.17	55,442.97	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2016	6	69,552.81	303.04	7,716.12	57,544.09	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2016	7	78,849.07	0.00	13,708.16	57,465.04	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2016	8	82,978.27	0.00	20,208.22	55,149.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0.00
2016	9	79,295.02	0.00	15,575.17	56,671.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00
2016	10	69,257.38	128.40	5,460.68	55,982.36	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00
2016	11	61,629.37	1,412.43	524.23	55,450.39	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	0.00
2016	12	67,014.01	5,318.56	6.81	59,961.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00

Indiana Michigan Power Company-Michigan
Long-Term Commercial Model Inputs

Year	Month	Sales	XHeat	XCool	XOther	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	D07on	D09on	d0506
2017	1	72,007.94	8,236.91	0.00	61,820.75	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2017	2	63,734.61	6,625.33	0.00	55,201.88	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2017	3	60,727.11	4,997.05	0.00	54,744.65	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2017	4	59,622.97	3,829.40	141.38	55,422.12	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2017	5	58,319.70	1,219.48	1,209.34	54,739.46	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2017	6	67,913.69	272.89	5,691.77	57,625.29	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2017	7	76,439.96	0.00	12,786.21	56,813.24	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2017	8	77,850.38	0.00	12,585.73	55,178.55	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0.00
2017	9	74,271.29	0.00	6,398.39	57,157.79	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00
2017	10	69,004.82	60.08	7,322.14	55,167.66	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00
2017	11	60,749.03	2,565.54	418.59	54,701.89	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	0.00
2017	12	66,761.78	5,332.88	0.00	59,700.75	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2018	1	72,755.98	9,728.68	0.00	61,466.18	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2018	2	64,571.21	8,530.12	0.00	54,304.72	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2018	3	61,809.01	6,407.09	0.00	54,332.51	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2018	4	62,367.86	5,465.30	0.00	56,318.02	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2018	5	61,165.25	2,247.42	1,179.31	54,816.31	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2018	6	70,764.88	47.98	8,620.75	56,902.65	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2018	7	77,345.25	0.00	15,811.25	56,370.72	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2018	8	77,790.31	0.00	15,531.12	54,226.77	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0.00
2018	9	76,901.78	0.00	14,886.25	56,194.87	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00
2018	10	64,186.95	482.72	5,945.67	53,561.26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00
2018	11	58,087.89	3,413.74	642.39	54,273.93	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	0.00
2018	12	67,171.11	6,378.46	0.00	59,992.58	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2019	1	65,818.34	6,458.08	0.00	60,799.80	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2019	2	63,364.67	9,402.47	0.00	53,759.32	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2019	3	62,442.96	7,801.95	0.00	53,448.15	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2019	4	58,178.61	4,364.65	0.00	54,574.18	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2019	5	57,788.06	1,576.34	120.61	56,104.48	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2019	6	61,857.63	324.01	2,687.86	56,009.71	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2019	7	75,363.30	0.00	15,125.64	56,335.36	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2019	8	75,551.76	0.00	16,589.57	52,780.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0.00
2019	9	74,213.31	0.00	9,632.16	56,246.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00
2019	10	62,836.53	215.52	6,986.89	52,949.69	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00

Indiana Michigan Power Company-Michigan
Long-Term Commercial Model Inputs

Year	Month	Sales	XHeat	XCool	XOther	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	D07on	D09on	d0506
2019	11	57,704.48	2,807.11	327.74	52,151.46	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	0.00
2019	12	64,896.12	5,418.38	0.00	57,183.64	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2020	1	63,800.39	5,230.76	0.00	58,611.82	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2020	2	60,705.44	6,372.11	0.00	51,543.85	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2020	3	59,556.78	5,824.10	0.00	51,265.96	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2020	4	52,175.40	3,208.12	40.22	52,938.70	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2020	5	48,833.65	2,100.62	285.96	52,174.48	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2020	6	57,474.86	343.06	8,055.03	52,695.67	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2020	7	73,089.38	0.00	18,593.04	52,580.77	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2020	8	78,128.90	0.00	18,056.35	52,234.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0.00
2020	9	70,488.93	9.17	13,461.17	51,730.86	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00
2020	10	60,615.35	376.62	1,790.57	51,831.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00
2020	11	54,418.74	1,917.69	130.12	50,623.91	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	0.00
2020	12	59,385.70	4,061.91	69.34	55,561.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2021	1	64,032.16	6,256.44	0.00	56,501.70	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2021	2		7,785.71	0.00	51,032.56	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2021	3		6,305.43	29.65	50,508.61	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2021	4		3,663.47	230.51	51,977.75	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2021	5		1,322.33	1,147.19	51,551.30	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2021	6		242.31	6,024.55	53,217.87	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2021	7		6.45	14,411.06	53,129.65	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2021	8		0.00	15,892.52	51,124.43	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0.00
2021	9		8.39	11,510.03	53,205.62	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00
2021	10		412.17	3,536.25	51,376.85	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00
2021	11		2,146.05	304.78	51,063.51	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	0.00
2021	12		4,916.09	3.41	55,974.33	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2022	1		7,060.03	0.00	57,462.48	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2022	2		7,885.86	0.00	51,604.35	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2022	3		6,388.01	30.19	51,086.36	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2022	4		3,711.86	234.69	52,578.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2022	5		1,339.86	1,168.06	52,149.18	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2022	6		245.55	6,134.91	53,841.81	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2022	7		6.54	14,679.39	53,768.47	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2022	8		0.00	16,196.93	51,766.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0.00

Indiana Michigan Power Company-Michigan
Long-Term Commercial Model Inputs

Year	Month	Sales	XHeat	XCool	XOther	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	D07on	D09on	d0506
2022	9		8.51	11,731.63	53,878.83	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00
2022	10		417.93	3,603.12	52,009.42	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00
2022	11		2,178.42	310.88	51,748.73	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	0.00
2022	12		5,000.86	3.49	56,846.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2023	1		7,122.09	0.00	58,393.12	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2023	2		7,954.54	0.00	52,435.82	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2023	3		6,443.30	30.76	51,906.68	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2023	4		3,743.75	239.12	53,418.92	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2023	5		1,351.23	1,189.94	52,977.94	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2023	6		247.60	6,248.87	54,688.74	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2023	7		6.59	14,948.40	54,600.85	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2023	8		0.00	16,488.16	52,549.85	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0.00
2023	9		8.58	11,937.88	54,672.85	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00
2023	10		420.82	3,664.85	52,752.66	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00
2023	11		2,192.41	316.06	52,463.42	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	0.00
2023	12		5,030.51	3.54	57,603.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2024	1		7,145.71	0.00	59,121.53	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2024	2		7,970.31	0.00	53,019.35	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2024	3		6,447.41	31.14	52,413.91	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2024	4		3,741.05	241.73	53,867.65	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2024	5		1,348.53	1,201.39	53,354.58	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2024	6		246.81	6,301.53	55,012.48	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2024	7		6.56	15,058.49	54,866.20	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2024	8		0.00	16,593.83	52,755.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0.00
2024	9		8.53	12,003.78	54,837.95	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00
2024	10		417.93	3,682.05	52,868.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00
2024	11		2,175.69	317.30	52,538.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	0.00
2024	12		4,988.55	3.55	57,643.86	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2025	1		7,073.33	0.00	59,169.06	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2025	2		7,891.10	0.00	53,072.25	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2025	3		6,384.62	31.18	52,476.77	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2025	4		3,705.38	242.11	53,943.36	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2025	5		1,335.91	1,203.52	53,439.12	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2025	6		244.54	6,313.53	55,107.14	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00

Indiana Michigan Power Company-Michigan
Long-Term Commercial Model Inputs

Year	Month	Sales	XHeat	XCool	XOther	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	D07on	D09on	d0506
2025	7		6.50	15,088.34	54,964.84	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2025	8		0.00	16,627.00	52,850.83	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0.00
2025	9		8.45	12,027.38	54,935.67	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00
2025	10		414.07	3,689.03	52,958.92	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00
2025	11		2,155.39	317.87	52,623.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	0.00
2025	12		4,941.44	3.56	57,730.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2026	1		7,005.07	0.00	59,099.92	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2026	2		7,812.39	0.00	52,992.86	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2026	3		6,318.88	31.30	52,381.21	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2026	4		3,666.06	242.96	53,828.04	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2026	5		1,321.37	1,207.42	53,309.95	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2026	6		241.82	6,332.56	54,961.17	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2026	7		6.43	15,131.22	54,809.87	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2026	8		0.00	16,672.35	52,695.81	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0.00
2026	9		8.35	12,059.28	54,770.39	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00
2026	10		409.30	3,698.66	52,797.44	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00
2026	11		2,130.55	318.70	52,462.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	0.00
2026	12		4,884.53	3.57	57,554.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2027	1		6,930.16	0.00	58,985.50	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2027	2		7,730.11	0.00	52,898.89	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2027	3		6,253.31	31.38	52,296.55	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2027	4		3,628.57	243.66	53,749.19	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2027	5		1,308.03	1,211.05	53,238.95	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2027	6		239.40	6,352.24	54,893.85	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2027	7		6.36	15,179.35	54,746.72	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2027	8		0.00	16,725.99	52,637.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0.00
2027	9		8.27	12,098.07	54,709.24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00
2027	10		405.24	3,710.45	52,736.87	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00
2027	11		2,109.31	319.70	52,398.93	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	0.00
2027	12		4,835.47	3.58	57,480.39	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2028	1		6,866.36	0.00	58,972.30	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2028	2		7,658.43	0.00	52,883.51	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2028	3		6,194.85	31.55	52,277.35	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2028	4		3,594.31	244.92	53,724.45	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00

Indiana Michigan Power Company-Michigan
Long-Term Commercial Model Inputs

Year	Month	Sales	XHeat	XCool	XOther	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	D07on	D09on	d0506
2028	5		1,295.56	1,217.21	53,209.44	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2028	6		237.10	6,383.99	54,858.48	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2028	7		6.30	15,253.97	54,706.97	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2028	8		0.00	16,806.97	52,594.93	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0.00
2028	9		8.19	12,155.84	54,661.91	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00
2028	10		401.23	3,727.94	52,688.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00
2028	11		2,088.31	321.19	52,347.55	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	0.00
2028	12		4,787.08	3.60	57,421.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2029	1		6,792.53	0.00	58,941.74	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2029	2		7,575.31	0.00	52,850.69	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2029	3		6,126.97	31.75	52,239.35	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2029	4		3,554.56	246.42	53,679.89	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2029	5		1,281.10	1,224.53	53,159.80	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2029	6		234.43	6,421.72	54,801.46	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2029	7		6.23	15,342.43	54,644.10	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2029	8		0.00	16,902.48	52,528.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0.00
2029	9		8.09	12,223.44	54,586.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00
2029	10		396.52	3,748.21	52,608.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00
2029	11		2,063.55	322.89	52,261.92	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	0.00
2029	12		4,729.73	3.62	57,319.98	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2030	1		6,708.98	0.00	58,695.55	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2030	2		7,481.95	0.00	52,628.63	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2030	3		6,051.34	31.94	52,018.87	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2030	4		3,510.64	247.92	53,452.59	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2030	5		1,265.26	1,231.94	52,934.33	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2030	6		231.53	6,460.57	54,569.10	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2030	7		6.15	15,435.42	54,412.98	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2030	8		0.00	17,005.27	52,307.28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0.00
2030	9		7.99	12,298.14	54,357.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00
2030	10		391.66	3,771.25	52,390.55	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00
2030	11		2,038.32	324.89	52,047.61	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	0.00
2030	12		4,672.12	3.64	57,087.58	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2031	1		6,636.35	0.00	58,541.51	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2031	2		7,401.26	0.00	52,492.74	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00

Indiana Michigan Power Company-Michigan
Long-Term Commercial Model Inputs

Year	Month	Sales	XHeat	XCool	XOther	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	D07on	D09on	d0506
2031	3		5,986.33	32.05	51,886.79	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2031	4		3,473.07	248.78	53,319.09	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2031	5		1,251.76	1,236.28	52,804.06	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2031	6		229.07	6,483.52	54,436.42	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2031	7		6.09	15,490.57	54,281.82	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2031	8		0.00	17,066.24	52,181.86	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0.00
2031	9		7.91	12,342.32	54,228.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00
2031	10		387.51	3,784.81	52,265.36	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00
2031	11		2,016.72	326.06	51,923.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	0.00
2031	12		4,622.59	3.65	56,950.64	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2032	1		6,562.14	0.00	58,448.96	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2032	2		7,318.20	0.00	52,407.68	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2032	3		5,918.93	32.21	51,800.68	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2032	4		3,433.81	250.03	53,228.19	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2032	5		1,237.56	1,242.46	52,711.89	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2032	6		226.46	6,515.69	54,339.54	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2032	7		6.02	15,567.03	54,183.79	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2032	8		0.00	17,150.17	52,086.67	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0.00
2032	9		7.82	12,402.87	54,128.43	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00
2032	10		383.08	3,803.35	52,169.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00
2032	11		1,993.65	327.65	51,827.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	0.00
2032	12		4,569.72	3.67	56,845.94	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2033	1		6,483.96	0.00	58,365.37	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2033	2		7,231.44	0.00	52,335.80	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2033	3		5,849.11	32.34	51,732.80	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2033	4		3,393.55	251.08	53,162.27	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2033	5		1,223.14	1,247.76	52,650.35	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2033	6		223.84	6,543.95	54,279.84	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2033	7		5.95	15,635.57	54,127.80	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2033	8		0.00	17,226.75	52,036.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0.00
2033	9		7.73	12,459.01	54,079.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00
2033	10		378.73	3,820.79	52,124.62	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00
2033	11		1,971.14	329.17	51,786.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	0.00
2033	12		4,518.37	3.69	56,803.64	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00

Indiana Michigan Power Company-Michigan
Long-Term Commercial Model Inputs

Year	Month	Sales	XHeat	XCool	XOther	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	D07on	D09on	d0506
2034	1		6,406.32	0.00	58,352.18	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2034	2		7,145.00	0.00	52,325.02	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2034	3		5,779.31	32.54	51,723.16	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2034	4		3,353.11	252.61	53,153.36	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2034	5		1,208.58	1,255.39	52,642.43	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2034	6		221.18	6,584.10	54,272.53	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2034	7		5.88	15,731.72	54,121.28	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2034	8		0.00	17,332.93	52,030.54	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0.00
2034	9		7.64	12,535.97	54,074.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00
2034	10		374.25	3,844.44	52,120.45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00
2034	11		1,947.85	331.22	51,782.63	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	0.00
2034	12		4,465.04	3.71	56,800.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2035	1		6,333.91	0.00	58,393.10	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2035	2		7,064.29	0.00	52,362.12	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2035	3		5,714.07	32.76	51,760.21	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2035	4		3,315.28	254.30	53,191.79	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2035	5		1,194.96	1,263.78	52,680.74	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2035	6		218.68	6,628.09	54,312.17	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2035	7		5.81	15,836.84	54,160.81	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2035	8		0.00	17,448.71	52,068.42	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0.00
2035	9		7.55	12,619.66	54,113.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00
2035	10		370.03	3,870.09	52,157.93	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00
2035	11		1,925.86	333.42	51,819.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	0.00
2035	12		4,414.57	3.73	56,840.36	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2036	1		6,257.50	0.00	58,462.58	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2036	2		6,979.00	0.00	52,423.86	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2036	3		5,645.01	33.00	51,820.63	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2036	4		3,275.15	256.14	53,252.72	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2036	5		1,180.46	1,272.87	52,739.80	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2036	6		216.02	6,675.58	54,371.58	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2036	7		5.74	15,949.82	54,218.44	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2036	8		0.00	17,572.61	52,122.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0.00
2036	9		7.46	12,708.86	54,167.35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00
2036	10		365.48	3,897.31	52,208.32	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00

Indiana Michigan Power Company-Michigan
Long-Term Commercial Model Inputs

Year	Month	Sales	XHeat	XCool	XOther	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	D07on	D09on	d0506
2036	11		1,902.14	335.76	51,867.87	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	0.00
2036	12		4,360.06	3.76	56,891.64	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2037	1		6,176.90	0.00	58,534.42	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2037	2		6,888.97	0.00	52,487.22	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2037	3		5,572.10	33.24	51,882.41	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2037	4		3,232.82	258.07	53,315.91	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2037	5		1,165.20	1,282.47	52,802.28	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2037	6		213.23	6,725.97	54,436.12	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2037	7		5.67	16,070.33	54,283.17	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2037	8		0.00	17,705.58	52,184.96	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0.00
2037	9		7.36	12,805.25	54,233.61	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00
2037	10		360.78	3,926.96	52,273.34	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00
2037	11		1,877.71	338.32	51,933.76	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	0.00
2037	12		4,304.20	3.79	56,965.46	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2038	1		6,096.57	0.00	58,624.48	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2038	2		6,799.21	0.00	52,566.73	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2038	3		5,499.36	33.47	51,959.71	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2038	4		3,190.54	259.83	53,393.94	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2038	5		1,149.93	1,291.19	52,878.14	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2038	6		210.43	6,771.48	54,512.81	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2038	7		5.59	16,178.61	54,358.07	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2038	8		0.00	17,824.32	52,255.33	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0.00
2038	9		7.26	12,890.69	54,304.87	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00
2038	10		356.00	3,953.02	52,340.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00
2038	11		1,852.74	340.55	51,998.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	0.00
2038	12		4,246.80	3.81	57,034.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2039	1		6,017.05	0.00	58,714.97	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2039	2		6,710.48	0.00	52,647.54	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2039	3		5,427.57	33.73	52,039.35	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2039	4		3,148.88	261.86	53,475.61	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2039	5		1,134.92	1,301.28	52,958.98	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2039	6		207.68	6,824.42	54,596.27	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2039	7		5.52	16,305.16	54,441.59	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2039	8		0.00	17,963.92	52,336.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0.00

Indiana Michigan Power Company-Michigan
Long-Term Commercial Model Inputs

Year	Month	Sales	XHeat	XCool	XOther	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	D07on	D09on	d0506
2039	9		7.17	12,991.79	54,389.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00
2039	10		351.36	3,984.07	52,422.28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00
2039	11		1,828.65	343.23	52,080.51	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	0.00
2039	12		4,191.63	3.84	57,125.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2040	1		5,939.20	0.00	58,681.16	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2040	2		6,623.84	0.00	52,618.61	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2040	3		5,357.62	33.97	52,012.01	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2040	4		3,108.34	263.72	53,448.28	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2040	5		1,120.32	1,310.56	52,932.44	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2040	6		205.01	6,873.11	54,569.16	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2040	7		5.45	16,421.48	54,414.47	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2040	8		0.00	18,091.92	52,309.61	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0.00
2040	9		7.08	13,084.20	54,361.22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00
2040	10		346.83	4,012.34	52,394.23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00
2040	11		1,805.03	345.66	52,051.61	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	0.00
2040	12		4,137.39	3.87	57,092.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2041	1		5,863.29	0.00	58,689.49	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2041	2		6,538.82	0.00	52,623.26	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2041	3		5,288.57	34.26	52,013.77	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2041	4		3,068.13	265.91	53,447.52	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2041	5		1,105.77	1,321.36	52,929.25	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2041	6		202.34	6,929.45	54,563.53	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2041	7		5.38	16,555.46	54,406.75	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2041	8		0.00	18,238.89	52,300.37	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0.00
2041	9		6.98	13,190.08	54,349.91	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00
2041	10		342.27	4,044.70	52,381.85	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00
2041	11		1,781.24	348.44	52,037.98	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	0.00
2041	12		4,082.76	3.90	57,075.82	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2042	1		5,783.46	0.00	58,706.55	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2042	2		6,449.68	0.00	52,637.62	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2042	3		5,216.38	34.54	52,027.03	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2042	4		3,026.20	268.06	53,460.16	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2042	5		1,090.64	1,332.03	52,940.82	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2042	6		199.57	6,985.27	54,574.47	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00

Indiana Michigan Power Company-Michigan
Long-Term Commercial Model Inputs

Year	Month	Sales	XHeat	XCool	XOther	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	D07on	D09on	d0506
2042	7		5.30	16,688.51	54,416.66	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2042	8		0.00	18,385.12	52,308.87	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0.00
2042	9		6.89	13,295.55	54,357.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00
2042	10		337.55	4,076.95	52,388.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00
2042	11		1,756.65	351.21	52,043.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	0.00
2042	12		4,026.32	3.93	57,080.26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2043	1		5,705.46	0.00	58,770.48	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2043	2		6,362.84	0.00	52,696.08	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2043	3		5,146.27	34.80	52,086.13	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2043	4		2,985.61	270.10	53,522.46	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2043	5		1,076.05	1,342.20	53,004.20	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2043	6		196.91	7,038.88	54,641.71	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2043	7		5.23	16,817.21	54,485.77	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2043	8		0.00	18,527.67	52,377.49	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0.00
2043	9		6.80	13,399.25	54,431.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00
2043	10		333.10	4,108.95	52,461.80	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00
2043	11		1,733.59	353.99	52,118.89	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	0.00
2043	12		3,973.68	3.96	57,166.28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2044	1		5,630.85	0.00	58,891.74	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2044	2		6,279.77	0.00	52,805.95	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2044	3		5,079.18	35.14	52,195.75	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2044	4		2,946.72	272.74	53,635.65	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2044	5		1,062.04	1,355.34	53,116.63	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2044	6		194.34	7,107.77	54,757.72	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2044	7		5.16	16,981.77	54,601.28	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2044	8		0.00	18,708.83	52,488.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0.00
2044	9		6.71	13,530.09	54,545.69	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00
2044	10		328.75	4,149.00	52,571.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00
2044	11		1,710.92	357.43	52,226.46	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	0.00
2044	12		3,921.63	4.00	57,283.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2045	1		5,556.78	0.00	59,043.91	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2045	2		6,196.70	0.00	52,938.49	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2045	3		5,011.61	35.45	52,322.74	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2045	4		2,907.31	275.12	53,762.24	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00

Indiana Michigan Power Company-Michigan
Long-Term Commercial Model Inputs

Year	Month	Sales	XHeat	XCool	XOther	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	D07on	D09on	d0506
2045	5		1,047.76	1,367.04	53,238.30	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2045	6		191.72	7,168.66	54,879.51	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2045	7		5.09	17,126.18	54,719.34	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2045	8		0.00	18,866.80	52,598.49	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0.00
2045	9		6.62	13,643.54	54,657.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00
2045	10		324.24	4,183.55	52,675.53	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00
2045	11		1,687.32	360.39	52,327.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	0.00
2045	12		3,867.31	4.04	57,390.52	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2046	1		5,480.51	0.00	59,189.21	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2046	2		6,111.48	0.00	53,067.27	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2046	3		4,942.54	35.80	52,448.48	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2046	4		2,867.15	277.87	53,889.77	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2046	5		1,033.26	1,380.70	53,362.94	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2046	6		189.06	7,240.07	55,006.31	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2046	7		5.02	17,296.27	54,844.11	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2046	8		0.00	19,053.59	52,716.80	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0.00
2046	9		6.52	13,778.16	54,778.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00
2046	10		319.70	4,224.68	52,790.42	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00
2046	11		1,663.63	363.92	52,439.54	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	0.00
2046	12		3,812.89	4.08	57,511.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2047	1		5,403.92	0.00	59,352.57	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2047	2		6,026.12	0.00	53,214.13	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2047	3		4,873.54	36.13	52,594.01	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2047	4		2,827.14	280.43	54,039.66	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2047	5		1,018.84	1,393.39	53,511.63	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2047	6		186.42	7,306.67	55,159.78	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2047	7		4.95	17,455.39	54,997.23	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2047	8		0.00	19,228.88	52,864.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0.00
2047	9		6.43	13,904.92	54,931.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00
2047	10		315.24	4,263.55	52,937.86	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00
2047	11		1,640.44	367.26	52,585.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	0.00
2047	12		3,759.73	4.11	57,672.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2048	1		5,329.02	0.00	59,551.38	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2048	2		5,942.53	0.00	53,391.86	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00

Indiana Michigan Power Company-Michigan
Long-Term Commercial Model Inputs

Year	Month	Sales	XHeat	XCool	XOther	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	D07on	D09on	d0506
2048	3		4,805.90	36.44	52,769.19	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2048	4		2,787.86	282.79	54,218.86	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2048	5		1,004.67	1,405.13	53,688.36	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2048	6		183.83	7,368.14	55,341.30	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2048	7		4.88	17,602.06	55,177.67	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2048	8		0.00	19,390.30	53,037.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0.00
2048	9		6.34	14,021.56	55,110.68	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00
2048	10		310.84	4,299.29	53,110.46	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00
2048	11		1,617.55	370.34	52,757.23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	0.00
2048	12		3,707.26	4.15	57,859.73	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2049	1		5,242.48	0.00	59,788.60	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2049	2		5,846.21	0.00	53,606.17	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2049	3		4,728.15	36.79	52,982.72	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2049	4		2,742.87	285.57	54,440.48	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2049	5		988.50	1,418.98	53,910.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2049	6		180.88	7,441.03	55,571.95	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2049	7		4.81	17,776.88	55,409.72	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2049	8		0.00	19,583.60	53,262.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0.00
2049	9		6.24	14,161.88	55,346.62	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00
2049	10		305.90	4,342.49	53,339.88	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00
2049	11		1,591.87	374.08	52,987.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	0.00
2049	12		3,648.55	4.19	58,114.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2050	1		5,158.33	0.00	60,086.90	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2050	2		5,752.31	0.00	53,873.07	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2050	3		4,652.16	37.19	53,245.92	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2050	4		2,698.76	288.63	54,710.26	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2050	5		972.59	1,434.19	54,176.48	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2050	6		177.96	7,520.72	55,845.95	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2050	7		4.73	17,967.03	55,682.24	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2050	8		0.00	19,792.83	53,523.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0.00
2050	9		6.14	14,312.99	55,617.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00
2050	10		300.95	4,388.76	53,600.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00
2050	11		1,566.13	378.06	53,244.94	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	0.00
2050	12		3,589.50	4.23	58,395.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00

Indiana Michigan Power Company-Michigan
Long-Term Commercial Model Inputs

Year	Month	Sales	XHeat	XCool	XOther	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	D07on	D09on	d0506
2051	1		5,082.76	0.00	60,354.59	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2051	2		5,668.02	0.00	54,112.98	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2051	3		4,583.99	37.55	53,482.93	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2051	4		2,659.20	291.45	54,953.67	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2051	5		958.33	1,448.19	54,417.37	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2051	6		175.35	7,594.10	56,094.11	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2051	7		4.66	18,142.27	55,929.49	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2051	8		0.00	19,985.81	53,760.80	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0.00
2051	9		6.05	14,452.49	55,863.98	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00
2051	10		296.54	4,431.52	53,837.56	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00
2051	11		1,543.14	381.74	53,480.58	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	0.00
2051	12		3,536.79	4.27	58,654.19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2052	1		5,008.31	0.00	60,631.06	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2052	2		5,584.99	0.00	54,360.76	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2052	3		4,516.83	37.92	53,727.73	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2052	4		2,620.24	294.30	55,205.07	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2052	5		944.29	1,462.33	54,666.18	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2052	6		172.78	7,668.22	56,350.43	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2052	7		4.59	18,319.30	56,184.90	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2052	8		0.00	20,180.76	54,006.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0.00
2052	9		5.96	14,593.42	56,118.70	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00
2052	10		292.19	4,474.72	54,082.85	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00
2052	11		1,520.49	385.46	53,724.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	0.00
2052	12		3,484.87	4.32	58,920.94	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2053	1		4,934.97	0.00	60,916.38	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2053	2		5,503.20	0.00	54,616.48	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2053	3		4,450.67	38.29	53,980.37	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2053	4		2,581.85	297.17	55,464.53	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2053	5		930.45	1,476.61	54,922.98	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2053	6		170.25	7,743.10	56,614.98	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2053	7		4.52	18,498.13	56,448.51	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2053	8		0.00	20,377.70	54,259.34	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0.00
2053	9		5.88	14,735.78	56,381.63	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00
2053	10		287.90	4,518.35	54,336.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00

Indiana Michigan Power Company-Michigan
Long-Term Commercial Model Inputs

Year	Month	Sales	XHeat	XCool	XOther	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	D07on	D09on	d0506
2053	11		1,498.19	389.22	53,975.32	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	0.00
2053	12		3,433.73	4.36	59,196.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2054	1		4,862.72	0.00	61,210.60	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2054	2		5,422.62	0.00	54,880.19	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2054	3		4,385.50	38.66	54,240.91	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2054	4		2,544.04	300.08	55,732.11	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2054	5		916.82	1,491.04	55,187.81	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2054	6		167.76	7,818.74	56,887.83	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2054	7		4.46	18,678.78	56,720.39	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2054	8		0.00	20,576.64	54,520.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0.00
2054	9		5.79	14,879.59	56,652.81	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00
2054	10		283.68	4,562.43	54,597.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00
2054	11		1,476.21	393.01	54,234.53	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	0.00
2054	12		3,383.35	4.40	59,480.34	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2055	1		4,791.55	0.00	61,513.80	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2055	2		5,343.25	0.00	55,151.94	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2055	3		4,321.30	39.04	54,509.40	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2055	4		2,506.79	303.01	56,007.87	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2055	5		903.40	1,505.61	55,460.74	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2055	6		165.30	7,895.15	57,169.02	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2055	7		4.39	18,861.27	57,000.59	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2055	8		0.00	20,777.61	54,789.66	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0.00
2055	9		5.70	15,024.87	56,932.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00
2055	10		279.52	4,606.96	54,866.35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00
2055	11		1,454.57	396.85	54,501.70	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	0.00
2055	12		3,333.73	4.44	59,773.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2056	1		4,721.44	0.00	61,826.05	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2056	2		5,265.06	0.00	55,431.81	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2056	3		4,258.05	39.42	54,785.91	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2056	4		2,470.10	305.98	56,291.86	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2056	5		890.17	1,520.34	55,741.84	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2056	6		162.88	7,972.34	57,458.62	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2056	7		4.33	19,045.63	57,289.19	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2056	8		0.00	20,980.63	55,066.89	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0.00

Indiana Michigan Power Company-Michigan
Long-Term Commercial Model Inputs

Year	Month	Sales	XHeat	XCool	XOther	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	D07on	D09on	d0506
2056	9		5.62	15,171.63	57,220.19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00
2056	10		275.42	4,651.94	55,143.59	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00
2056	11		1,433.25	400.72	54,776.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	0.00
2056	12		3,284.85	4.49	60,074.69	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2057	1		4,652.37	0.00	62,147.41	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2057	2		5,188.03	0.00	55,719.85	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2057	3		4,195.75	39.81	55,070.50	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2057	4		2,433.95	308.97	56,584.16	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2057	5		877.14	1,535.21	56,031.16	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2057	6		160.49	8,050.32	57,756.71	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2057	7		4.26	19,231.86	57,586.24	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2057	8		0.00	21,185.72	55,352.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0.00
2057	9		5.54	15,319.88	57,516.52	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00
2057	10		271.39	4,697.39	55,428.98	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00
2057	11		1,412.24	404.63	55,060.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	0.00
2057	12		3,236.70	4.53	60,385.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00

Indiana Michigan Power Company-Michigan
Long-Term Commercial Model Inputs

Year	Month	Aug10on	12-Jul	D12on	11-Feb	11-Mar	aug15on	Sep18on	D12onNov	D16onAug	D16onMay	D16onJul	mayjun20	mar20on
2000	1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2000	2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2000	3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2000	4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2000	5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2000	6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2000	7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2000	8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2000	9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2000	10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2000	11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2000	12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2001	1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2001	2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2001	3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2001	4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2001	5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2001	6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2001	7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2001	8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2001	9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2001	10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2001	11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2001	12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2002	1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2002	2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2002	3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2002	4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2002	5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2002	6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2002	7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2002	8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2002	9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2002	10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Indiana Michigan Power Company-Michigan
Long-Term Commercial Model Inputs

Year	Month	Aug10on	12-Jul	D12on	11-Feb	11-Mar	aug15on	Sep18on	D12onNov	D16onAug	D16onMay	D16onJul	mayjun20	mar20on
2002	11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2002	12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2003	1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2003	2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2003	3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2003	4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2003	5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2003	6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2003	7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2003	8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2003	9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2003	10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2003	11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2003	12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2004	1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2004	2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2004	3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2004	4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2004	5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2004	6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2004	7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2004	8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2004	9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2004	10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2004	11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2004	12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2005	1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2005	2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2005	3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2005	4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2005	5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2005	6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2005	7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2005	8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Indiana Michigan Power Company-Michigan
Long-Term Commercial Model Inputs

Year	Month	Aug10on	12-Jul	D12on	11-Feb	11-Mar	aug15on	Sep18on	D12onNov	D16onAug	D16onMay	D16onJul	mayjun20	mar20on
2005	9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2005	10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2005	11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2005	12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2006	1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2006	2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2006	3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2006	4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2006	5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2006	6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2006	7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2006	8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2006	9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2006	10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2006	11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2006	12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2007	1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2007	2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2007	3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2007	4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2007	5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2007	6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2007	7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2007	8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2007	9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2007	10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2007	11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2007	12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2008	1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2008	2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2008	3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2008	4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2008	5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2008	6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Indiana Michigan Power Company-Michigan
Long-Term Commercial Model Inputs

Year	Month	Aug10on	12-Jul	D12on	11-Feb	11-Mar	aug15on	Sep18on	D12onNov	D16onAug	D16onMay	D16onJul	mayjun20	mar20on
2008	7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2008	8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2008	9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2008	10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2008	11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2008	12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2009	1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2009	2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2009	3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2009	4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2009	5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2009	6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2009	7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2009	8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2009	9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2009	10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2009	11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2009	12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2010	1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2010	2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2010	3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2010	4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2010	5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2010	6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2010	7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2010	8	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2010	9	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2010	10	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2010	11	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2010	12	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2011	1	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2011	2	1.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2011	3	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2011	4	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Indiana Michigan Power Company-Michigan
Long-Term Commercial Model Inputs

Year	Month	Aug10on	12-Jul	D12on	11-Feb	11-Mar	aug15on	Sep18on	D12onNov	D16onAug	D16onMay	D16onJul	mayjun20	mar20on
2011	5	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2011	6	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2011	7	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2011	8	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2011	9	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2011	10	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2011	11	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2011	12	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2012	1	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2012	2	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2012	3	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2012	4	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2012	5	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2012	6	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2012	7	1.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2012	8	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2012	9	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2012	10	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2012	11	1.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
2012	12	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2013	1	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2013	2	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2013	3	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2013	4	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2013	5	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2013	6	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2013	7	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2013	8	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2013	9	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2013	10	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2013	11	1.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
2013	12	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2014	1	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2014	2	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Indiana Michigan Power Company-Michigan
Long-Term Commercial Model Inputs

Year	Month	Aug10on	12-Jul	D12on	11-Feb	11-Mar	aug15on	Sep18on	D12onNov	D16onAug	D16onMay	D16onJul	mayjun20	mar20on
2014	3	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2014	4	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2014	5	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2014	6	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2014	7	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2014	8	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2014	9	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2014	10	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2014	11	1.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
2014	12	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2015	1	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2015	2	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2015	3	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2015	4	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2015	5	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2015	6	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2015	7	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2015	8	1.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2015	9	1.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2015	10	1.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2015	11	1.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
2015	12	1.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2016	1	1.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2016	2	1.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2016	3	1.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2016	4	1.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2016	5	1.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00
2016	6	1.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2016	7	1.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
2016	8	1.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00
2016	9	1.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2016	10	1.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2016	11	1.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
2016	12	1.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Indiana Michigan Power Company-Michigan
Long-Term Commercial Model Inputs

Year	Month	Aug10on	12-Jul	D12on	11-Feb	11-Mar	aug15on	Sep18on	D12onNov	D16onAug	D16onMay	D16onJul	mayjun20	mar20on
2017	1	1.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2017	2	1.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2017	3	1.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2017	4	1.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2017	5	1.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00
2017	6	1.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2017	7	1.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
2017	8	1.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00
2017	9	1.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2017	10	1.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2017	11	1.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
2017	12	1.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2018	1	1.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2018	2	1.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2018	3	1.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2018	4	1.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2018	5	1.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00
2018	6	1.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2018	7	1.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
2018	8	1.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00
2018	9	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
2018	10	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
2018	11	1.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
2018	12	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
2019	1	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
2019	2	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
2019	3	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
2019	4	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
2019	5	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00	0.00
2019	6	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
2019	7	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	0.00	0.00
2019	8	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	1.00	0.00	0.00	0.00	0.00
2019	9	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
2019	10	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00

Indiana Michigan Power Company-Michigan
Long-Term Commercial Model Inputs

Year	Month	Aug10on	12-Jul	D12on	11-Feb	11-Mar	aug15on	Sep18on	D12onNov	D16onAug	D16onMay	D16onJul	mayjun20	mar20on
2019	11	1.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
2019	12	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
2020	1	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
2020	2	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
2020	3	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2020	4	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2020	5	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00
2020	6	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	1.00	1.00
2020	7	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	0.00	1.00
2020	8	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	1.00	0.00	0.00	0.00	1.00
2020	9	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2020	10	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2020	11	1.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	0.00	0.00	0.00	1.00
2020	12	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2021	1	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2021	2	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2021	3	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2021	4	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2021	5	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00
2021	6	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2021	7	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	0.00	1.00
2021	8	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	1.00	0.00	0.00	0.00	1.00
2021	9	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2021	10	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2021	11	1.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	0.00	0.00	0.00	1.00
2021	12	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2022	1	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2022	2	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2022	3	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2022	4	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2022	5	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00
2022	6	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2022	7	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	0.00	1.00
2022	8	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	1.00	0.00	0.00	0.00	1.00

Indiana Michigan Power Company-Michigan
Long-Term Commercial Model Inputs

Year	Month	Aug10on	12-Jul	D12on	11-Feb	11-Mar	aug15on	Sep18on	D12onNov	D16onAug	D16onMay	D16onJul	mayjun20	mar20on
2022	9	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2022	10	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2022	11	1.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	0.00	0.00	0.00	1.00
2022	12	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2023	1	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2023	2	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2023	3	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2023	4	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2023	5	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00
2023	6	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2023	7	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	0.00	1.00
2023	8	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	1.00	0.00	0.00	0.00	1.00
2023	9	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2023	10	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2023	11	1.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	0.00	0.00	0.00	1.00
2023	12	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2024	1	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2024	2	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2024	3	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2024	4	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2024	5	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00
2024	6	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2024	7	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	0.00	1.00
2024	8	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	1.00	0.00	0.00	0.00	1.00
2024	9	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2024	10	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2024	11	1.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	0.00	0.00	0.00	1.00
2024	12	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2025	1	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2025	2	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2025	3	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2025	4	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2025	5	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00
2025	6	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00

Indiana Michigan Power Company-Michigan
Long-Term Commercial Model Inputs

Year	Month	Aug10on	12-Jul	D12on	11-Feb	11-Mar	aug15on	Sep18on	D12onNov	D16onAug	D16onMay	D16onJul	mayjun20	mar20on
2025	7	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	0.00	1.00
2025	8	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	1.00	0.00	0.00	0.00	1.00
2025	9	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2025	10	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2025	11	1.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	0.00	0.00	0.00	1.00
2025	12	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2026	1	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2026	2	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2026	3	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2026	4	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2026	5	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00
2026	6	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2026	7	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	0.00	1.00
2026	8	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	1.00	0.00	0.00	0.00	1.00
2026	9	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2026	10	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2026	11	1.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	0.00	0.00	0.00	1.00
2026	12	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2027	1	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2027	2	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2027	3	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2027	4	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2027	5	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00
2027	6	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2027	7	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	0.00	1.00
2027	8	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	1.00	0.00	0.00	0.00	1.00
2027	9	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2027	10	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2027	11	1.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	0.00	0.00	0.00	1.00
2027	12	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2028	1	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2028	2	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2028	3	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2028	4	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00

Indiana Michigan Power Company-Michigan
Long-Term Commercial Model Inputs

Year	Month	Aug10on	12-Jul	D12on	11-Feb	11-Mar	aug15on	Sep18on	D12onNov	D16onAug	D16onMay	D16onJul	mayjun20	mar20on
2028	5	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00
2028	6	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2028	7	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	0.00	1.00
2028	8	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	1.00	0.00	0.00	0.00	1.00
2028	9	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2028	10	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2028	11	1.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	0.00	0.00	0.00	1.00
2028	12	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2029	1	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2029	2	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2029	3	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2029	4	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2029	5	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00
2029	6	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2029	7	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	0.00	1.00
2029	8	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	1.00	0.00	0.00	0.00	1.00
2029	9	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2029	10	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2029	11	1.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	0.00	0.00	0.00	1.00
2029	12	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2030	1	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2030	2	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2030	3	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2030	4	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2030	5	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00
2030	6	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2030	7	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	0.00	1.00
2030	8	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	1.00	0.00	0.00	0.00	1.00
2030	9	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2030	10	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2030	11	1.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	0.00	0.00	0.00	1.00
2030	12	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2031	1	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2031	2	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00

Indiana Michigan Power Company-Michigan
Long-Term Commercial Model Inputs

Year	Month	Aug10on	12-Jul	D12on	11-Feb	11-Mar	aug15on	Sep18on	D12onNov	D16onAug	D16onMay	D16onJul	mayjun20	mar20on
2031	3	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2031	4	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2031	5	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00
2031	6	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2031	7	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	0.00	1.00
2031	8	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	1.00	0.00	0.00	0.00	1.00
2031	9	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2031	10	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2031	11	1.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	0.00	0.00	0.00	1.00
2031	12	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2032	1	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2032	2	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2032	3	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2032	4	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2032	5	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00
2032	6	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2032	7	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	0.00	1.00
2032	8	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	1.00	0.00	0.00	0.00	1.00
2032	9	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2032	10	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2032	11	1.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	0.00	0.00	0.00	1.00
2032	12	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2033	1	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2033	2	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2033	3	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2033	4	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2033	5	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00
2033	6	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2033	7	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	0.00	1.00
2033	8	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	1.00	0.00	0.00	0.00	1.00
2033	9	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2033	10	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2033	11	1.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	0.00	0.00	0.00	1.00
2033	12	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00

Indiana Michigan Power Company-Michigan
Long-Term Commercial Model Inputs

Year	Month	Aug10on	12-Jul	D12on	11-Feb	11-Mar	aug15on	Sep18on	D12onNov	D16onAug	D16onMay	D16onJul	mayjun20	mar20on
2034	1	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2034	2	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2034	3	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2034	4	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2034	5	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00
2034	6	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2034	7	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	0.00	1.00
2034	8	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	1.00	0.00	0.00	0.00	1.00
2034	9	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2034	10	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2034	11	1.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	0.00	0.00	0.00	1.00
2034	12	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2035	1	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2035	2	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2035	3	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2035	4	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2035	5	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00
2035	6	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2035	7	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	0.00	1.00
2035	8	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	1.00	0.00	0.00	0.00	1.00
2035	9	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2035	10	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2035	11	1.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	0.00	0.00	0.00	1.00
2035	12	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2036	1	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2036	2	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2036	3	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2036	4	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2036	5	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00
2036	6	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2036	7	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	0.00	1.00
2036	8	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	1.00	0.00	0.00	0.00	1.00
2036	9	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2036	10	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00

Indiana Michigan Power Company-Michigan
Long-Term Commercial Model Inputs

Year	Month	Aug10on	12-Jul	D12on	11-Feb	11-Mar	aug15on	Sep18on	D12onNov	D16onAug	D16onMay	D16onJul	mayjun20	mar20on
2036	11	1.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	0.00	0.00	0.00	1.00
2036	12	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2037	1	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2037	2	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2037	3	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2037	4	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2037	5	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00
2037	6	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2037	7	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	0.00	1.00
2037	8	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	1.00	0.00	0.00	0.00	1.00
2037	9	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2037	10	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2037	11	1.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	0.00	0.00	0.00	1.00
2037	12	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2038	1	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2038	2	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2038	3	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2038	4	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2038	5	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00
2038	6	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2038	7	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	0.00	1.00
2038	8	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	1.00	0.00	0.00	0.00	1.00
2038	9	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2038	10	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2038	11	1.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	0.00	0.00	0.00	1.00
2038	12	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2039	1	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2039	2	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2039	3	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2039	4	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2039	5	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00
2039	6	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2039	7	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	0.00	1.00
2039	8	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	1.00	0.00	0.00	0.00	1.00

Indiana Michigan Power Company-Michigan
Long-Term Commercial Model Inputs

Year	Month	Aug10on	12-Jul	D12on	11-Feb	11-Mar	aug15on	Sep18on	D12onNov	D16onAug	D16onMay	D16onJul	mayjun20	mar20on
2039	9	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2039	10	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2039	11	1.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	0.00	0.00	0.00	1.00
2039	12	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2040	1	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2040	2	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2040	3	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2040	4	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2040	5	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00
2040	6	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2040	7	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	0.00	1.00
2040	8	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	1.00	0.00	0.00	0.00	1.00
2040	9	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2040	10	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2040	11	1.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	0.00	0.00	0.00	1.00
2040	12	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2041	1	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2041	2	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2041	3	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2041	4	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2041	5	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00
2041	6	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2041	7	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	0.00	1.00
2041	8	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	1.00	0.00	0.00	0.00	1.00
2041	9	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2041	10	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2041	11	1.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	0.00	0.00	0.00	1.00
2041	12	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2042	1	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2042	2	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2042	3	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2042	4	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2042	5	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00
2042	6	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00

Indiana Michigan Power Company-Michigan
Long-Term Commercial Model Inputs

Year	Month	Aug10on	12-Jul	D12on	11-Feb	11-Mar	aug15on	Sep18on	D12onNov	D16onAug	D16onMay	D16onJul	mayjun20	mar20on
2042	7	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	0.00	1.00
2042	8	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	1.00	0.00	0.00	0.00	1.00
2042	9	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2042	10	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2042	11	1.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	0.00	0.00	0.00	1.00
2042	12	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2043	1	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2043	2	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2043	3	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2043	4	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2043	5	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00
2043	6	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2043	7	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	0.00	1.00
2043	8	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	1.00	0.00	0.00	0.00	1.00
2043	9	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2043	10	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2043	11	1.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	0.00	0.00	0.00	1.00
2043	12	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2044	1	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2044	2	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2044	3	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2044	4	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2044	5	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00
2044	6	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2044	7	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	0.00	1.00
2044	8	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	1.00	0.00	0.00	0.00	1.00
2044	9	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2044	10	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2044	11	1.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	0.00	0.00	0.00	1.00
2044	12	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2045	1	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2045	2	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2045	3	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2045	4	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00

Indiana Michigan Power Company-Michigan
Long-Term Commercial Model Inputs

Year	Month	Aug10on	12-Jul	D12on	11-Feb	11-Mar	aug15on	Sep18on	D12onNov	D16onAug	D16onMay	D16onJul	mayjun20	mar20on
2045	5	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00
2045	6	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2045	7	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	0.00	1.00
2045	8	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	1.00	0.00	0.00	0.00	1.00
2045	9	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2045	10	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2045	11	1.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	0.00	0.00	0.00	1.00
2045	12	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2046	1	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2046	2	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2046	3	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2046	4	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2046	5	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00
2046	6	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2046	7	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	0.00	1.00
2046	8	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	1.00	0.00	0.00	0.00	1.00
2046	9	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2046	10	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2046	11	1.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	0.00	0.00	0.00	1.00
2046	12	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2047	1	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2047	2	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2047	3	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2047	4	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2047	5	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00
2047	6	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2047	7	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	0.00	1.00
2047	8	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	1.00	0.00	0.00	0.00	1.00
2047	9	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2047	10	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2047	11	1.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	0.00	0.00	0.00	1.00
2047	12	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2048	1	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2048	2	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00

Indiana Michigan Power Company-Michigan
Long-Term Commercial Model Inputs

Year	Month	Aug10on	12-Jul	D12on	11-Feb	11-Mar	aug15on	Sep18on	D12onNov	D16onAug	D16onMay	D16onJul	mayjun20	mar20on
2048	3	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2048	4	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2048	5	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00
2048	6	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2048	7	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	0.00	1.00
2048	8	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	1.00	0.00	0.00	0.00	1.00
2048	9	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2048	10	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2048	11	1.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	0.00	0.00	0.00	1.00
2048	12	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2049	1	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2049	2	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2049	3	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2049	4	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2049	5	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00
2049	6	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2049	7	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	0.00	1.00
2049	8	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	1.00	0.00	0.00	0.00	1.00
2049	9	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2049	10	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2049	11	1.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	0.00	0.00	0.00	1.00
2049	12	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2050	1	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2050	2	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2050	3	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2050	4	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2050	5	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00
2050	6	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2050	7	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	0.00	1.00
2050	8	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	1.00	0.00	0.00	0.00	1.00
2050	9	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2050	10	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2050	11	1.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	0.00	0.00	0.00	1.00
2050	12	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00

Indiana Michigan Power Company-Michigan
Long-Term Commercial Model Inputs

Year	Month	Aug10on	12-Jul	D12on	11-Feb	11-Mar	aug15on	Sep18on	D12onNov	D16onAug	D16onMay	D16onJul	mayjun20	mar20on
2051	1	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2051	2	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2051	3	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2051	4	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2051	5	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00
2051	6	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2051	7	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	0.00	1.00
2051	8	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	1.00	0.00	0.00	0.00	1.00
2051	9	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2051	10	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2051	11	1.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	0.00	0.00	0.00	1.00
2051	12	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2052	1	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2052	2	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2052	3	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2052	4	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2052	5	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00
2052	6	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2052	7	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	0.00	1.00
2052	8	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	1.00	0.00	0.00	0.00	1.00
2052	9	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2052	10	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2052	11	1.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	0.00	0.00	0.00	1.00
2052	12	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2053	1	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2053	2	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2053	3	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2053	4	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2053	5	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00
2053	6	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2053	7	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	0.00	1.00
2053	8	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	1.00	0.00	0.00	0.00	1.00
2053	9	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2053	10	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00

Indiana Michigan Power Company-Michigan
Long-Term Commercial Model Inputs

Year	Month	Aug10on	12-Jul	D12on	11-Feb	11-Mar	aug15on	Sep18on	D12onNov	D16onAug	D16onMay	D16onJul	mayjun20	mar20on
2053	11	1.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	0.00	0.00	0.00	1.00
2053	12	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2054	1	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2054	2	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2054	3	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2054	4	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2054	5	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00
2054	6	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2054	7	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	0.00	1.00
2054	8	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	1.00	0.00	0.00	0.00	1.00
2054	9	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2054	10	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2054	11	1.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	0.00	0.00	0.00	1.00
2054	12	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2055	1	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2055	2	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2055	3	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2055	4	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2055	5	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00
2055	6	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2055	7	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	0.00	1.00
2055	8	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	1.00	0.00	0.00	0.00	1.00
2055	9	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2055	10	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2055	11	1.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	0.00	0.00	0.00	1.00
2055	12	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2056	1	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2056	2	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2056	3	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2056	4	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2056	5	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00
2056	6	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2056	7	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	0.00	1.00
2056	8	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	1.00	0.00	0.00	0.00	1.00

Indiana Michigan Power Company-Michigan
Long-Term Commercial Model Inputs

Year	Month	Aug10on	12-Jul	D12on	11-Feb	11-Mar	aug15on	Sep18on	D12onNov	D16onAug	D16onMay	D16onJul	mayjun20	mar20on
2056	9	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2056	10	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2056	11	1.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	0.00	0.00	0.00	1.00
2056	12	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2057	1	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2057	2	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2057	3	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2057	4	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2057	5	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00
2057	6	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2057	7	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	0.00	1.00
2057	8	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	1.00	0.00	0.00	0.00	1.00
2057	9	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2057	10	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
2057	11	1.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	0.00	0.00	0.00	1.00
2057	12	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00

Indiana Michigan Power Company-Michigan
Long-Term Commercial Model Inputs

Year	Month	20-Apr	XMissing	YMissing
2000	1	0.00	0	0
2000	2	0.00	0	0
2000	3	0.00	0	0
2000	4	0.00	0	0
2000	5	0.00	0	0
2000	6	0.00	0	0
2000	7	0.00	0	0
2000	8	0.00	0	0
2000	9	0.00	0	0
2000	10	0.00	0	0
2000	11	0.00	0	0
2000	12	0.00	0	0
2001	1	0.00	0	0
2001	2	0.00	0	0
2001	3	0.00	0	0
2001	4	0.00	0	0
2001	5	0.00	0	0
2001	6	0.00	0	0
2001	7	0.00	0	0
2001	8	0.00	0	0
2001	9	0.00	0	0
2001	10	0.00	0	0
2001	11	0.00	0	0
2001	12	0.00	0	0
2002	1	0.00	0	0
2002	2	0.00	0	0
2002	3	0.00	0	0
2002	4	0.00	0	0
2002	5	0.00	0	0
2002	6	0.00	0	0
2002	7	0.00	0	0
2002	8	0.00	0	0
2002	9	0.00	0	0
2002	10	0.00	0	0

Indiana Michigan Power Company-Michigan
Long-Term Commercial Model Inputs

Year	Month	20-Apr	XMissing	YMissing
2002	11	0.00	0	0
2002	12	0.00	0	0
2003	1	0.00	0	0
2003	2	0.00	0	0
2003	3	0.00	0	0
2003	4	0.00	0	0
2003	5	0.00	0	0
2003	6	0.00	0	0
2003	7	0.00	0	0
2003	8	0.00	0	0
2003	9	0.00	0	0
2003	10	0.00	0	0
2003	11	0.00	0	0
2003	12	0.00	0	0
2004	1	0.00	0	0
2004	2	0.00	0	0
2004	3	0.00	0	0
2004	4	0.00	0	0
2004	5	0.00	0	0
2004	6	0.00	0	0
2004	7	0.00	0	0
2004	8	0.00	0	0
2004	9	0.00	0	0
2004	10	0.00	0	0
2004	11	0.00	0	0
2004	12	0.00	0	0
2005	1	0.00	0	0
2005	2	0.00	0	0
2005	3	0.00	0	0
2005	4	0.00	0	0
2005	5	0.00	0	0
2005	6	0.00	0	0
2005	7	0.00	0	0
2005	8	0.00	0	0

Indiana Michigan Power Company-Michigan
Long-Term Commercial Model Inputs

Year	Month	20-Apr	XMissing	YMissing
2005	9	0.00	0	0
2005	10	0.00	0	0
2005	11	0.00	0	0
2005	12	0.00	0	0
2006	1	0.00	0	0
2006	2	0.00	0	0
2006	3	0.00	0	0
2006	4	0.00	0	0
2006	5	0.00	0	0
2006	6	0.00	0	0
2006	7	0.00	0	0
2006	8	0.00	0	0
2006	9	0.00	0	0
2006	10	0.00	0	0
2006	11	0.00	0	0
2006	12	0.00	0	0
2007	1	0.00	0	0
2007	2	0.00	0	0
2007	3	0.00	0	0
2007	4	0.00	0	0
2007	5	0.00	0	0
2007	6	0.00	0	0
2007	7	0.00	0	0
2007	8	0.00	0	0
2007	9	0.00	0	0
2007	10	0.00	0	0
2007	11	0.00	0	0
2007	12	0.00	0	0
2008	1	0.00	0	0
2008	2	0.00	0	0
2008	3	0.00	0	0
2008	4	0.00	0	0
2008	5	0.00	0	0
2008	6	0.00	0	0

Indiana Michigan Power Company-Michigan
Long-Term Commercial Model Inputs

Year	Month	20-Apr	XMissing	YMissing
2008	7	0.00	0	0
2008	8	0.00	0	0
2008	9	0.00	0	0
2008	10	0.00	0	0
2008	11	0.00	0	0
2008	12	0.00	0	0
2009	1	0.00	0	0
2009	2	0.00	0	0
2009	3	0.00	0	0
2009	4	0.00	0	0
2009	5	0.00	0	0
2009	6	0.00	0	0
2009	7	0.00	0	0
2009	8	0.00	0	0
2009	9	0.00	0	0
2009	10	0.00	0	0
2009	11	0.00	0	0
2009	12	0.00	0	0
2010	1	0.00	0	0
2010	2	0.00	0	0
2010	3	0.00	0	0
2010	4	0.00	0	0
2010	5	0.00	0	0
2010	6	0.00	0	0
2010	7	0.00	0	0
2010	8	0.00	0	0
2010	9	0.00	0	0
2010	10	0.00	0	0
2010	11	0.00	0	0
2010	12	0.00	0	0
2011	1	0.00	0	0
2011	2	0.00	0	0
2011	3	0.00	0	0
2011	4	0.00	0	0

Indiana Michigan Power Company-Michigan
Long-Term Commercial Model Inputs

Year	Month	20-Apr	XMissing	YMissing
2011	5	0.00	0	0
2011	6	0.00	0	0
2011	7	0.00	0	0
2011	8	0.00	0	0
2011	9	0.00	0	0
2011	10	0.00	0	0
2011	11	0.00	0	0
2011	12	0.00	0	0
2012	1	0.00	0	0
2012	2	0.00	0	0
2012	3	0.00	0	0
2012	4	0.00	0	0
2012	5	0.00	0	0
2012	6	0.00	0	0
2012	7	0.00	0	0
2012	8	0.00	0	0
2012	9	0.00	0	0
2012	10	0.00	0	0
2012	11	0.00	0	0
2012	12	0.00	0	0
2013	1	0.00	0	0
2013	2	0.00	0	0
2013	3	0.00	0	0
2013	4	0.00	0	0
2013	5	0.00	0	0
2013	6	0.00	0	0
2013	7	0.00	0	0
2013	8	0.00	0	0
2013	9	0.00	0	0
2013	10	0.00	0	0
2013	11	0.00	0	0
2013	12	0.00	0	0
2014	1	0.00	0	0
2014	2	0.00	0	0

Indiana Michigan Power Company-Michigan
Long-Term Commercial Model Inputs

Year	Month	20-Apr	XMissing	YMissing
2014	3	0.00	0	0
2014	4	0.00	0	0
2014	5	0.00	0	0
2014	6	0.00	0	0
2014	7	0.00	0	0
2014	8	0.00	0	0
2014	9	0.00	0	0
2014	10	0.00	0	0
2014	11	0.00	0	0
2014	12	0.00	0	0
2015	1	0.00	0	0
2015	2	0.00	0	0
2015	3	0.00	0	0
2015	4	0.00	0	0
2015	5	0.00	0	0
2015	6	0.00	0	0
2015	7	0.00	0	0
2015	8	0.00	0	0
2015	9	0.00	0	0
2015	10	0.00	0	0
2015	11	0.00	0	0
2015	12	0.00	0	0
2016	1	0.00	0	0
2016	2	0.00	0	0
2016	3	0.00	0	0
2016	4	0.00	0	0
2016	5	0.00	0	0
2016	6	0.00	0	0
2016	7	0.00	0	0
2016	8	0.00	0	0
2016	9	0.00	0	0
2016	10	0.00	0	0
2016	11	0.00	0	0
2016	12	0.00	0	0

Indiana Michigan Power Company-Michigan
Long-Term Commercial Model Inputs

Year	Month	20-Apr	XMissing	YMissing
2017	1	0.00	0	0
2017	2	0.00	0	0
2017	3	0.00	0	0
2017	4	0.00	0	0
2017	5	0.00	0	0
2017	6	0.00	0	0
2017	7	0.00	0	0
2017	8	0.00	0	0
2017	9	0.00	0	0
2017	10	0.00	0	0
2017	11	0.00	0	0
2017	12	0.00	0	0
2018	1	0.00	0	0
2018	2	0.00	0	0
2018	3	0.00	0	0
2018	4	0.00	0	0
2018	5	0.00	0	0
2018	6	0.00	0	0
2018	7	0.00	0	0
2018	8	0.00	0	0
2018	9	0.00	0	0
2018	10	0.00	0	0
2018	11	0.00	0	0
2018	12	0.00	0	0
2019	1	0.00	0	0
2019	2	0.00	0	0
2019	3	0.00	0	0
2019	4	0.00	0	0
2019	5	0.00	0	0
2019	6	0.00	0	0
2019	7	0.00	0	0
2019	8	0.00	0	0
2019	9	0.00	0	0
2019	10	0.00	0	0

Indiana Michigan Power Company-Michigan
Long-Term Commercial Model Inputs

Year	Month	20-Apr	XMissing	YMissing
2019	11	0.00	0	0
2019	12	0.00	0	0
2020	1	0.00	0	0
2020	2	0.00	0	0
2020	3	0.00	0	0
2020	4	1.00	0	0
2020	5	0.00	0	0
2020	6	0.00	0	0
2020	7	0.00	0	0
2020	8	0.00	0	0
2020	9	0.00	0	0
2020	10	0.00	0	0
2020	11	0.00	0	0
2020	12	0.00	0	0
2021	1	0.00	0	0
2021	2	0.00	0	1
2021	3	0.00	0	1
2021	4	0.00	0	1
2021	5	0.00	0	1
2021	6	0.00	0	1
2021	7	0.00	0	1
2021	8	0.00	0	1
2021	9	0.00	0	1
2021	10	0.00	0	1
2021	11	0.00	0	1
2021	12	0.00	0	1
2022	1	0.00	0	1
2022	2	0.00	0	1
2022	3	0.00	0	1
2022	4	0.00	0	1
2022	5	0.00	0	1
2022	6	0.00	0	1
2022	7	0.00	0	1
2022	8	0.00	0	1

Indiana Michigan Power Company-Michigan
Long-Term Commercial Model Inputs

Year	Month	20-Apr	XMissing	YMissing
2022	9	0.00	0	1
2022	10	0.00	0	1
2022	11	0.00	0	1
2022	12	0.00	0	1
2023	1	0.00	0	1
2023	2	0.00	0	1
2023	3	0.00	0	1
2023	4	0.00	0	1
2023	5	0.00	0	1
2023	6	0.00	0	1
2023	7	0.00	0	1
2023	8	0.00	0	1
2023	9	0.00	0	1
2023	10	0.00	0	1
2023	11	0.00	0	1
2023	12	0.00	0	1
2024	1	0.00	0	1
2024	2	0.00	0	1
2024	3	0.00	0	1
2024	4	0.00	0	1
2024	5	0.00	0	1
2024	6	0.00	0	1
2024	7	0.00	0	1
2024	8	0.00	0	1
2024	9	0.00	0	1
2024	10	0.00	0	1
2024	11	0.00	0	1
2024	12	0.00	0	1
2025	1	0.00	0	1
2025	2	0.00	0	1
2025	3	0.00	0	1
2025	4	0.00	0	1
2025	5	0.00	0	1
2025	6	0.00	0	1

Indiana Michigan Power Company-Michigan
Long-Term Commercial Model Inputs

Year	Month	20-Apr	XMissing	YMissing
2025	7	0.00	0	1
2025	8	0.00	0	1
2025	9	0.00	0	1
2025	10	0.00	0	1
2025	11	0.00	0	1
2025	12	0.00	0	1
2026	1	0.00	0	1
2026	2	0.00	0	1
2026	3	0.00	0	1
2026	4	0.00	0	1
2026	5	0.00	0	1
2026	6	0.00	0	1
2026	7	0.00	0	1
2026	8	0.00	0	1
2026	9	0.00	0	1
2026	10	0.00	0	1
2026	11	0.00	0	1
2026	12	0.00	0	1
2027	1	0.00	0	1
2027	2	0.00	0	1
2027	3	0.00	0	1
2027	4	0.00	0	1
2027	5	0.00	0	1
2027	6	0.00	0	1
2027	7	0.00	0	1
2027	8	0.00	0	1
2027	9	0.00	0	1
2027	10	0.00	0	1
2027	11	0.00	0	1
2027	12	0.00	0	1
2028	1	0.00	0	1
2028	2	0.00	0	1
2028	3	0.00	0	1
2028	4	0.00	0	1

Indiana Michigan Power Company-Michigan
Long-Term Commercial Model Inputs

Year	Month	20-Apr	XMissing	YMissing
2028	5	0.00	0	1
2028	6	0.00	0	1
2028	7	0.00	0	1
2028	8	0.00	0	1
2028	9	0.00	0	1
2028	10	0.00	0	1
2028	11	0.00	0	1
2028	12	0.00	0	1
2029	1	0.00	0	1
2029	2	0.00	0	1
2029	3	0.00	0	1
2029	4	0.00	0	1
2029	5	0.00	0	1
2029	6	0.00	0	1
2029	7	0.00	0	1
2029	8	0.00	0	1
2029	9	0.00	0	1
2029	10	0.00	0	1
2029	11	0.00	0	1
2029	12	0.00	0	1
2030	1	0.00	0	1
2030	2	0.00	0	1
2030	3	0.00	0	1
2030	4	0.00	0	1
2030	5	0.00	0	1
2030	6	0.00	0	1
2030	7	0.00	0	1
2030	8	0.00	0	1
2030	9	0.00	0	1
2030	10	0.00	0	1
2030	11	0.00	0	1
2030	12	0.00	0	1
2031	1	0.00	0	1
2031	2	0.00	0	1

Indiana Michigan Power Company-Michigan
Long-Term Commercial Model Inputs

Year	Month	20-Apr	XMissing	YMissing
2031	3	0.00	0	1
2031	4	0.00	0	1
2031	5	0.00	0	1
2031	6	0.00	0	1
2031	7	0.00	0	1
2031	8	0.00	0	1
2031	9	0.00	0	1
2031	10	0.00	0	1
2031	11	0.00	0	1
2031	12	0.00	0	1
2032	1	0.00	0	1
2032	2	0.00	0	1
2032	3	0.00	0	1
2032	4	0.00	0	1
2032	5	0.00	0	1
2032	6	0.00	0	1
2032	7	0.00	0	1
2032	8	0.00	0	1
2032	9	0.00	0	1
2032	10	0.00	0	1
2032	11	0.00	0	1
2032	12	0.00	0	1
2033	1	0.00	0	1
2033	2	0.00	0	1
2033	3	0.00	0	1
2033	4	0.00	0	1
2033	5	0.00	0	1
2033	6	0.00	0	1
2033	7	0.00	0	1
2033	8	0.00	0	1
2033	9	0.00	0	1
2033	10	0.00	0	1
2033	11	0.00	0	1
2033	12	0.00	0	1

Indiana Michigan Power Company-Michigan
Long-Term Commercial Model Inputs

Year	Month	20-Apr	XMissing	YMissing
2034	1	0.00	0	1
2034	2	0.00	0	1
2034	3	0.00	0	1
2034	4	0.00	0	1
2034	5	0.00	0	1
2034	6	0.00	0	1
2034	7	0.00	0	1
2034	8	0.00	0	1
2034	9	0.00	0	1
2034	10	0.00	0	1
2034	11	0.00	0	1
2034	12	0.00	0	1
2035	1	0.00	0	1
2035	2	0.00	0	1
2035	3	0.00	0	1
2035	4	0.00	0	1
2035	5	0.00	0	1
2035	6	0.00	0	1
2035	7	0.00	0	1
2035	8	0.00	0	1
2035	9	0.00	0	1
2035	10	0.00	0	1
2035	11	0.00	0	1
2035	12	0.00	0	1
2036	1	0.00	0	1
2036	2	0.00	0	1
2036	3	0.00	0	1
2036	4	0.00	0	1
2036	5	0.00	0	1
2036	6	0.00	0	1
2036	7	0.00	0	1
2036	8	0.00	0	1
2036	9	0.00	0	1
2036	10	0.00	0	1

Indiana Michigan Power Company-Michigan
Long-Term Commercial Model Inputs

Year	Month	20-Apr	XMissing	YMissing
2036	11	0.00	0	1
2036	12	0.00	0	1
2037	1	0.00	0	1
2037	2	0.00	0	1
2037	3	0.00	0	1
2037	4	0.00	0	1
2037	5	0.00	0	1
2037	6	0.00	0	1
2037	7	0.00	0	1
2037	8	0.00	0	1
2037	9	0.00	0	1
2037	10	0.00	0	1
2037	11	0.00	0	1
2037	12	0.00	0	1
2038	1	0.00	0	1
2038	2	0.00	0	1
2038	3	0.00	0	1
2038	4	0.00	0	1
2038	5	0.00	0	1
2038	6	0.00	0	1
2038	7	0.00	0	1
2038	8	0.00	0	1
2038	9	0.00	0	1
2038	10	0.00	0	1
2038	11	0.00	0	1
2038	12	0.00	0	1
2039	1	0.00	0	1
2039	2	0.00	0	1
2039	3	0.00	0	1
2039	4	0.00	0	1
2039	5	0.00	0	1
2039	6	0.00	0	1
2039	7	0.00	0	1
2039	8	0.00	0	1

Indiana Michigan Power Company-Michigan
Long-Term Commercial Model Inputs

Year	Month	20-Apr	XMissing	YMissing
2039	9	0.00	0	1
2039	10	0.00	0	1
2039	11	0.00	0	1
2039	12	0.00	0	1
2040	1	0.00	0	1
2040	2	0.00	0	1
2040	3	0.00	0	1
2040	4	0.00	0	1
2040	5	0.00	0	1
2040	6	0.00	0	1
2040	7	0.00	0	1
2040	8	0.00	0	1
2040	9	0.00	0	1
2040	10	0.00	0	1
2040	11	0.00	0	1
2040	12	0.00	0	1
2041	1	0.00	0	1
2041	2	0.00	0	1
2041	3	0.00	0	1
2041	4	0.00	0	1
2041	5	0.00	0	1
2041	6	0.00	0	1
2041	7	0.00	0	1
2041	8	0.00	0	1
2041	9	0.00	0	1
2041	10	0.00	0	1
2041	11	0.00	0	1
2041	12	0.00	0	1
2042	1	0.00	0	1
2042	2	0.00	0	1
2042	3	0.00	0	1
2042	4	0.00	0	1
2042	5	0.00	0	1
2042	6	0.00	0	1

Indiana Michigan Power Company-Michigan
Long-Term Commercial Model Inputs

Year	Month	20-Apr	XMissing	YMissing
2042	7	0.00	0	1
2042	8	0.00	0	1
2042	9	0.00	0	1
2042	10	0.00	0	1
2042	11	0.00	0	1
2042	12	0.00	0	1
2043	1	0.00	0	1
2043	2	0.00	0	1
2043	3	0.00	0	1
2043	4	0.00	0	1
2043	5	0.00	0	1
2043	6	0.00	0	1
2043	7	0.00	0	1
2043	8	0.00	0	1
2043	9	0.00	0	1
2043	10	0.00	0	1
2043	11	0.00	0	1
2043	12	0.00	0	1
2044	1	0.00	0	1
2044	2	0.00	0	1
2044	3	0.00	0	1
2044	4	0.00	0	1
2044	5	0.00	0	1
2044	6	0.00	0	1
2044	7	0.00	0	1
2044	8	0.00	0	1
2044	9	0.00	0	1
2044	10	0.00	0	1
2044	11	0.00	0	1
2044	12	0.00	0	1
2045	1	0.00	0	1
2045	2	0.00	0	1
2045	3	0.00	0	1
2045	4	0.00	0	1

Indiana Michigan Power Company-Michigan
Long-Term Commercial Model Inputs

Year	Month	20-Apr	XMissing	YMissing
2045	5	0.00	0	1
2045	6	0.00	0	1
2045	7	0.00	0	1
2045	8	0.00	0	1
2045	9	0.00	0	1
2045	10	0.00	0	1
2045	11	0.00	0	1
2045	12	0.00	0	1
2046	1	0.00	0	1
2046	2	0.00	0	1
2046	3	0.00	0	1
2046	4	0.00	0	1
2046	5	0.00	0	1
2046	6	0.00	0	1
2046	7	0.00	0	1
2046	8	0.00	0	1
2046	9	0.00	0	1
2046	10	0.00	0	1
2046	11	0.00	0	1
2046	12	0.00	0	1
2047	1	0.00	0	1
2047	2	0.00	0	1
2047	3	0.00	0	1
2047	4	0.00	0	1
2047	5	0.00	0	1
2047	6	0.00	0	1
2047	7	0.00	0	1
2047	8	0.00	0	1
2047	9	0.00	0	1
2047	10	0.00	0	1
2047	11	0.00	0	1
2047	12	0.00	0	1
2048	1	0.00	0	1
2048	2	0.00	0	1

Indiana Michigan Power Company-Michigan
Long-Term Commercial Model Inputs

Year	Month	20-Apr	XMissing	YMissing
2048	3	0.00	0	1
2048	4	0.00	0	1
2048	5	0.00	0	1
2048	6	0.00	0	1
2048	7	0.00	0	1
2048	8	0.00	0	1
2048	9	0.00	0	1
2048	10	0.00	0	1
2048	11	0.00	0	1
2048	12	0.00	0	1
2049	1	0.00	0	1
2049	2	0.00	0	1
2049	3	0.00	0	1
2049	4	0.00	0	1
2049	5	0.00	0	1
2049	6	0.00	0	1
2049	7	0.00	0	1
2049	8	0.00	0	1
2049	9	0.00	0	1
2049	10	0.00	0	1
2049	11	0.00	0	1
2049	12	0.00	0	1
2050	1	0.00	0	1
2050	2	0.00	0	1
2050	3	0.00	0	1
2050	4	0.00	0	1
2050	5	0.00	0	1
2050	6	0.00	0	1
2050	7	0.00	0	1
2050	8	0.00	0	1
2050	9	0.00	0	1
2050	10	0.00	0	1
2050	11	0.00	0	1
2050	12	0.00	0	1

Indiana Michigan Power Company-Michigan
Long-Term Commercial Model Inputs

Year	Month	20-Apr	XMissing	YMissing
2051	1	0.00	0	1
2051	2	0.00	0	1
2051	3	0.00	0	1
2051	4	0.00	0	1
2051	5	0.00	0	1
2051	6	0.00	0	1
2051	7	0.00	0	1
2051	8	0.00	0	1
2051	9	0.00	0	1
2051	10	0.00	0	1
2051	11	0.00	0	1
2051	12	0.00	0	1
2052	1	0.00	0	1
2052	2	0.00	0	1
2052	3	0.00	0	1
2052	4	0.00	0	1
2052	5	0.00	0	1
2052	6	0.00	0	1
2052	7	0.00	0	1
2052	8	0.00	0	1
2052	9	0.00	0	1
2052	10	0.00	0	1
2052	11	0.00	0	1
2052	12	0.00	0	1
2053	1	0.00	0	1
2053	2	0.00	0	1
2053	3	0.00	0	1
2053	4	0.00	0	1
2053	5	0.00	0	1
2053	6	0.00	0	1
2053	7	0.00	0	1
2053	8	0.00	0	1
2053	9	0.00	0	1
2053	10	0.00	0	1

Indiana Michigan Power Company-Michigan
Long-Term Commercial Model Inputs

Year	Month	20-Apr	XMissing	YMissing
2053	11	0.00	0	1
2053	12	0.00	0	1
2054	1	0.00	0	1
2054	2	0.00	0	1
2054	3	0.00	0	1
2054	4	0.00	0	1
2054	5	0.00	0	1
2054	6	0.00	0	1
2054	7	0.00	0	1
2054	8	0.00	0	1
2054	9	0.00	0	1
2054	10	0.00	0	1
2054	11	0.00	0	1
2054	12	0.00	0	1
2055	1	0.00	0	1
2055	2	0.00	0	1
2055	3	0.00	0	1
2055	4	0.00	0	1
2055	5	0.00	0	1
2055	6	0.00	0	1
2055	7	0.00	0	1
2055	8	0.00	0	1
2055	9	0.00	0	1
2055	10	0.00	0	1
2055	11	0.00	0	1
2055	12	0.00	0	1
2056	1	0.00	0	1
2056	2	0.00	0	1
2056	3	0.00	0	1
2056	4	0.00	0	1
2056	5	0.00	0	1
2056	6	0.00	0	1
2056	7	0.00	0	1
2056	8	0.00	0	1

Indiana Michigan Power Company-Michigan
Long-Term Commercial Model Inputs

Year	Month	20-Apr	XMissing	YMissing
2056	9	0.00	0	1
2056	10	0.00	0	1
2056	11	0.00	0	1
2056	12	0.00	0	1
2057	1	0.00	0	1
2057	2	0.00	0	1
2057	3	0.00	0	1
2057	4	0.00	0	1
2057	5	0.00	0	1
2057	6	0.00	0	1
2057	7	0.00	0	1
2057	8	0.00	0	1
2057	9	0.00	0	1
2057	10	0.00	0	1
2057	11	0.00	0	1
2057	12	0.00	0	1

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Coefficients

Variable	Coefficient	StdErr	T-Stat	P-Value	Definition
CommercialVars.XHeat	0.692	0.082	8.482	0.00%	Commercial Heating Component
CommercialVars.XCool	0.648	0.046	14.212	0.00%	Commercial Cooling Component
CommercialVars.XOther	0.796	0.010	81.796	0.00%	Commercial Other Component
BinaryVars.Jan	-358.862	479.107	-0.749	45.46%	January
BinaryVars.Feb	-672.993	552.246	-1.219	22.43%	February
BinaryVars.Mar	-1223.557	470.974	-2.598	1.00%	March
BinaryVars.Apr	-2151.183	443.616	-4.849	0.00%	April
BinaryVars.May	-439.204	599.392	-0.733	46.45%	May
BinaryVars.Jun	2247.092	709.117	3.169	0.18%	June
BinaryVars.Jul	4917.441	960.020	5.122	0.00%	July
BinaryVars.Aug	7615.153	1027.437	7.412	0.00%	August
BinaryVars.Sep	7994.249	854.637	9.354	0.00%	September
BinaryVars.Oct	4132.048	627.923	6.581	0.00%	October
BinaryVars.Nov	1586.702	574.819	2.760	0.63%	November
BinaryVars.D07on	7367.367	342.372	21.519	0.00%	Binary Variable-2007 On
BinaryVars.D09on	4263.425	438.856	9.715	0.00%	Binary Variable-2009 On
BinaryVars.d0506	2075.084	344.455	6.024	0.00%	Binary Variable-2005 and 2006
BinaryVars.Aug10on	-1100.897	503.087	-2.188	2.97%	Binary Variable-August 2010 On
BinaryVars.Jul12	5715.713	1544.610	3.700	0.03%	Binary Variable-July 2012
BinaryVars.D12on	3820.778	438.826	8.707	0.00%	Binary Variabe-2012 On
BinaryVars.Feb11	-3073.579	1497.468	-2.053	4.13%	Binary Variable-February 2011
BinaryVars.Mar11	4307.438	1496.161	2.879	0.44%	Binary Variable-March 2011
BinaryVars.aug15on	1529.017	343.378	4.453	0.00%	Binary Variable-August 2015 On
BinaryVars.Sep18on	-1757.519	407.757	-4.310	0.00%	Binary Variable-September 2018 On
BinaryVars.D12onNov	-2192.373	658.860	-3.328	0.10%	Binary Variable-2012 On Novembers
BinaryVars.D16onAug	2044.323	767.545	2.663	0.83%	Binary Variable-2016 On Augusts
BinaryVars.D16onMay	-1624.294	794.537	-2.044	4.21%	Binary Variable-2016 On Mays
BinaryVars.D16onJul	1807.816	778.982	2.321	2.12%	Binary Variable-2016 On Julys
BinaryVars.mayjun20	-6059.792	1191.362	-5.086	0.00%	Binary Variable-May and June 2020
BinaryVars.mar20on	-301.728	606.370	-0.498	61.93%	Binary Variable-March 2020 On
BinaryVars.apr20	-3895.519	1538.008	-2.533	1.20%	Binary Variable-April 2020

Indiana Michigan Power Company-Michigan
Long-Term Comercial Energy Model Statistics

Model Statistics	
Iterations	1
Adjusted Observations	253
Deg. of Freedom for Error	222
R-Squared	0.966
Adjusted R-Squared	0.961
AIC	14.616
BIC	15.049
F-Statistic	#NA
Prob (F-Statistic)	#NA
Log-Likelihood	-2,176.97
Model Sum of Squares	12,388,952,856.46
Sum of Squared Errors	441,103,014.12
Mean Squared Error	1,986,950.51
Std. Error of Regression	1,409.59
Mean Abs. Dev. (MAD)	989.98
Mean Abs. % Err. (MAPE)	1.53%
Durbin-Watson Statistic	1.016
Durbin-H Statistic	#NA
Ljung-Box Statistic	117.16
Prob (Ljung-Box)	0.0000
Skewness	-0.374
Kurtosis	3.776
Jarque-Bera	12.241
Prob (Jarque-Bera)	0.0022

Forecast Statistics	
Forecast Observations	0
Mean Abs. Dev. (MAD)	0.00
Mean Abs. % Err. (MAPE)	0.00%
Avg. Forecast Error	0.00
Mean % Error	0.00%
Root Mean-Square Error	0.00
Theil's Inequality Coefficient	0.0000
-- Bias Proportion	0.00%
-- Variance Proportion	0.00%
-- Covariance Proportion	0.00%

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	Pred	XHeat	XCool	XOther	Jan	Feb	Mar	Apr	May	Jun	Jul
2000	1	64,871.641	7,358.596	0.000	57,871.906	-358.862	0.000	0.000	0.000	0.000	0.000	0.000
2000	2	60,808.900	9,072.479	0.000	52,409.415	0.000	-672.993	0.000	0.000	0.000	0.000	0.000
2000	3	55,513.327	4,534.726	118.221	52,083.937	0.000	0.000	-1,223.557	0.000	0.000	0.000	0.000
2000	4	53,599.976	3,258.518	72.245	52,420.396	0.000	0.000	0.000	-2,151.183	0.000	0.000	0.000
2000	5	54,686.982	1,499.570	1,622.211	52,004.405	0.000	0.000	0.000	0.000	-439.204	0.000	0.000
2000	6	60,618.091	183.090	3,654.146	54,533.763	0.000	0.000	0.000	0.000	0.000	2,247.092	0.000
2000	7	65,835.287	17.888	7,444.099	53,455.860	0.000	0.000	0.000	0.000	0.000	0.000	4,917.441
2000	8	67,158.066	0.000	7,630.981	51,911.932	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2000	9	70,526.627	27.734	8,946.085	53,558.558	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2000	10	58,283.094	643.560	2,231.071	51,276.416	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2000	11	53,385.638	1,733.252	151.338	49,914.345	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2000	12	63,080.308	7,432.604	0.000	55,647.703	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2001	1	67,197.040	10,418.498	0.000	57,137.403	-358.862	0.000	0.000	0.000	0.000	0.000	0.000
2001	2	59,153.454	8,323.243	0.000	51,503.204	0.000	-672.993	0.000	0.000	0.000	0.000	0.000
2001	3	56,618.173	6,857.747	0.000	50,983.983	0.000	0.000	-1,223.557	0.000	0.000	0.000	0.000
2001	4	53,483.963	4,350.732	146.293	51,138.122	0.000	0.000	0.000	-2,151.183	0.000	0.000	0.000
2001	5	52,729.399	779.915	1,762.750	50,625.939	0.000	0.000	0.000	0.000	-439.204	0.000	0.000
2001	6	58,506.596	264.774	2,965.418	53,029.312	0.000	0.000	0.000	0.000	0.000	2,247.092	0.000
2001	7	65,202.830	29.976	8,283.536	51,971.877	0.000	0.000	0.000	0.000	0.000	0.000	4,917.441
2001	8	71,934.909	0.000	13,775.993	50,543.763	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2001	9	68,060.085	9.096	7,811.052	52,245.688	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2001	10	55,959.276	505.594	1,145.848	50,175.787	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2001	11	52,287.355	1,618.904	60.658	49,021.090	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2001	12	58,065.765	2,682.128	0.000	55,383.636	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2002	1	63,651.609	6,899.908	0.000	57,110.562	-358.862	0.000	0.000	0.000	0.000	0.000	0.000
2002	2	57,020.798	5,947.043	0.000	51,746.749	0.000	-672.993	0.000	0.000	0.000	0.000	0.000
2002	3	56,258.464	5,999.968	0.000	51,482.054	0.000	0.000	-1,223.557	0.000	0.000	0.000	0.000
2002	4	54,983.574	4,689.503	565.139	51,880.115	0.000	0.000	0.000	-2,151.183	0.000	0.000	0.000
2002	5	54,067.183	1,733.079	1,217.304	51,556.004	0.000	0.000	0.000	0.000	-439.204	0.000	0.000
2002	6	60,099.634	660.041	3,009.811	54,182.690	0.000	0.000	0.000	0.000	0.000	2,247.092	0.000
2002	7	72,120.406	0.000	13,985.021	53,217.944	0.000	0.000	0.000	0.000	0.000	0.000	4,917.441
2002	8	74,528.034	0.000	15,117.791	51,795.090	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2002	9	71,527.308	0.000	10,007.195	53,525.864	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2002	10	60,173.464	433.247	4,261.065	51,347.105	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	Pred	XHeat	XCool	XOther	Jan	Feb	Mar	Apr	May	Jun	Jul
2002	11	55,084.430	3,149.147	264.716	50,083.864	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2002	12	62,637.326	6,236.684	0.000	56,400.643	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2003	1	65,149.665	7,506.292	0.000	58,002.235	-358.862	0.000	0.000	0.000	0.000	0.000	0.000
2003	2	61,209.863	9,454.117	0.000	52,428.739	0.000	-672.993	0.000	0.000	0.000	0.000	0.000
2003	3	58,827.056	8,029.480	0.000	52,021.134	0.000	0.000	-1,223.557	0.000	0.000	0.000	0.000
2003	4	53,672.176	3,349.639	182.132	52,291.588	0.000	0.000	0.000	-2,151.183	0.000	0.000	0.000
2003	5	53,195.164	1,324.650	441.341	51,868.377	0.000	0.000	0.000	0.000	-439.204	0.000	0.000
2003	6	57,832.176	347.405	823.604	54,414.076	0.000	0.000	0.000	0.000	0.000	2,247.092	0.000
2003	7	66,860.212	18.196	7,994.078	53,930.498	0.000	0.000	0.000	0.000	0.000	0.000	4,917.441
2003	8	68,526.288	0.000	8,609.081	52,302.054	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2003	9	69,989.591	1.195	9,120.959	52,873.188	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2003	10	57,609.097	791.815	1,495.784	51,189.451	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2003	11	53,404.866	2,017.859	44.602	49,755.703	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2003	12	61,555.934	4,596.427	0.000	56,959.507	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2004	1	65,023.407	6,726.883	0.000	58,655.386	-358.862	0.000	0.000	0.000	0.000	0.000	0.000
2004	2	61,808.687	9,572.888	0.000	52,908.793	0.000	-672.993	0.000	0.000	0.000	0.000	0.000
2004	3	56,192.726	6,136.252	0.000	51,280.031	0.000	0.000	-1,223.557	0.000	0.000	0.000	0.000
2004	4	55,110.832	3,300.229	272.278	53,689.508	0.000	0.000	0.000	-2,151.183	0.000	0.000	0.000
2004	5	57,077.219	1,168.402	2,502.531	53,845.491	0.000	0.000	0.000	0.000	-439.204	0.000	0.000
2004	6	62,387.461	131.573	4,688.702	55,320.093	0.000	0.000	0.000	0.000	0.000	2,247.092	0.000
2004	7	65,953.076	1.192	7,023.067	54,011.375	0.000	0.000	0.000	0.000	0.000	0.000	4,917.441
2004	8	67,210.141	0.000	7,053.200	52,541.787	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2004	9	69,167.208	0.000	5,909.074	55,263.884	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2004	10	59,202.328	474.705	2,113.646	52,481.929	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2004	11	54,258.760	1,662.982	125.943	50,883.132	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2004	12	63,069.265	4,520.618	9.006	58,539.641	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2005	1	68,035.914	7,629.845	0.000	58,689.846	-358.862	0.000	0.000	0.000	0.000	0.000	0.000
2005	2	62,919.403	8,311.232	0.000	53,206.080	0.000	-672.993	0.000	0.000	0.000	0.000	0.000
2005	3	63,619.516	6,974.122	0.000	55,793.867	0.000	0.000	-1,223.557	0.000	0.000	0.000	0.000
2005	4	57,924.811	4,039.464	97.653	53,863.793	0.000	0.000	0.000	-2,151.183	0.000	0.000	0.000
2005	5	55,071.916	1,432.195	602.066	51,401.774	0.000	0.000	0.000	0.000	-439.204	0.000	0.000
2005	6	64,632.928	210.516	4,176.043	55,924.193	0.000	0.000	0.000	0.000	0.000	2,247.092	0.000
2005	7	73,756.314	0.000	13,404.294	53,359.495	0.000	0.000	0.000	0.000	0.000	0.000	4,917.441
2005	8	76,677.517	0.000	14,169.784	52,817.497	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	Pred	XHeat	XCool	XOther	Jan	Feb	Mar	Apr	May	Jun	Jul
2005	9	75,388.540	0.000	9,350.894	55,968.313	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2005	10	63,814.765	284.456	4,479.302	52,843.876	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2005	11	58,035.009	1,888.507	375.663	52,109.053	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2005	12	65,123.392	6,429.743	0.000	56,618.565	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2006	1	67,916.641	6,750.615	0.000	59,449.804	-358.862	0.000	0.000	0.000	0.000	0.000	0.000
2006	2	60,902.160	5,689.677	0.000	53,810.393	0.000	-672.993	0.000	0.000	0.000	0.000	0.000
2006	3	59,038.947	6,375.271	0.000	51,812.149	0.000	0.000	-1,223.557	0.000	0.000	0.000	0.000
2006	4	55,956.453	3,697.043	54.487	52,281.022	0.000	0.000	0.000	-2,151.183	0.000	0.000	0.000
2006	5	56,004.507	881.947	98.377	53,388.303	0.000	0.000	0.000	0.000	-439.204	0.000	0.000
2006	6	63,911.117	454.130	3,819.022	55,315.790	0.000	0.000	0.000	0.000	0.000	2,247.092	0.000
2006	7	70,691.366	0.000	8,139.910	55,558.931	0.000	0.000	0.000	0.000	0.000	0.000	4,917.441
2006	8	76,420.720	0.000	13,418.913	53,311.570	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2006	9	69,746.936	18.562	5,742.878	53,916.163	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2006	10	60,438.815	652.497	653.228	52,925.959	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2006	11	58,805.104	2,967.022	25.080	52,151.215	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2006	12	63,277.140	4,306.378	0.000	56,895.677	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2007	1	71,628.367	4,926.602	0.000	59,693.260	-358.862	0.000	0.000	0.000	0.000	0.000	0.000
2007	2	69,525.190	8,637.814	0.000	54,193.002	0.000	-672.993	0.000	0.000	0.000	0.000	0.000
2007	3	65,425.671	7,774.156	15.252	51,492.454	0.000	0.000	-1,223.557	0.000	0.000	0.000	0.000
2007	4	63,497.370	3,110.338	402.559	54,768.289	0.000	0.000	0.000	-2,151.183	0.000	0.000	0.000
2007	5	62,095.516	1,214.088	990.274	52,962.991	0.000	0.000	0.000	0.000	-439.204	0.000	0.000
2007	6	70,628.035	74.415	6,279.711	54,659.449	0.000	0.000	0.000	0.000	0.000	2,247.092	0.000
2007	7	77,693.058	0.000	10,697.697	54,710.553	0.000	0.000	0.000	0.000	0.000	0.000	4,917.441
2007	8	76,791.144	0.000	11,386.837	50,421.788	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2007	9	82,057.025	15.662	9,791.181	56,888.566	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2007	10	68,090.431	160.296	5,193.063	51,237.657	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2007	11	64,242.560	1,746.456	1,061.799	52,480.237	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2007	12	71,170.502	5,418.276	0.000	58,384.859	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2008	1	73,007.311	6,578.928	0.000	59,419.877	-358.862	0.000	0.000	0.000	0.000	0.000	0.000
2008	2	67,700.005	8,120.583	0.000	52,885.048	0.000	-672.993	0.000	0.000	0.000	0.000	0.000
2008	3	65,500.678	7,430.820	0.000	51,926.048	0.000	0.000	-1,223.557	0.000	0.000	0.000	0.000
2008	4	62,283.995	4,142.756	9.950	52,915.106	0.000	0.000	0.000	-2,151.183	0.000	0.000	0.000
2008	5	60,037.184	1,236.232	252.711	51,620.077	0.000	0.000	0.000	0.000	-439.204	0.000	0.000
2008	6	67,802.390	360.703	4,059.724	53,767.504	0.000	0.000	0.000	0.000	0.000	2,247.092	0.000

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	Pred	XHeat	XCool	XOther	Jan	Feb	Mar	Apr	May	Jun	Jul
2008	7	74,030.113	0.137	8,353.047	53,392.122	0.000	0.000	0.000	0.000	0.000	0.000	4,917.441
2008	8	77,100.720	0.000	10,437.838	51,680.362	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2008	9	74,175.669	0.000	6,651.686	52,162.367	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2008	10	64,185.981	271.345	2,033.369	50,381.853	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2008	11	61,519.018	2,067.767	220.541	50,276.641	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2008	12	65,982.231	5,950.090	0.000	52,664.774	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2009	1	73,857.446	7,572.325	0.000	55,013.190	-358.862	0.000	0.000	0.000	0.000	0.000	0.000
2009	2	68,536.112	8,589.318	0.000	48,988.995	0.000	-672.993	0.000	0.000	0.000	0.000	0.000
2009	3	63,318.204	5,482.196	0.000	47,428.773	0.000	0.000	-1,223.557	0.000	0.000	0.000	0.000
2009	4	61,439.467	3,022.253	18.576	48,919.030	0.000	0.000	0.000	-2,151.183	0.000	0.000	0.000
2009	5	61,108.286	1,152.023	574.927	48,189.749	0.000	0.000	0.000	0.000	-439.204	0.000	0.000
2009	6	65,150.718	174.220	2,366.262	48,732.352	0.000	0.000	0.000	0.000	0.000	2,247.092	0.000
2009	7	71,768.796	0.125	7,029.012	48,191.425	0.000	0.000	0.000	0.000	0.000	0.000	4,917.441
2009	8	72,298.973	0.000	6,850.128	46,202.900	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2009	9	73,464.792	0.000	4,762.238	49,077.513	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2009	10	64,978.518	727.965	1,083.093	47,404.620	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2009	11	62,482.687	1,726.888	0.000	47,538.305	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2009	12	67,907.283	4,065.565	0.000	52,210.926	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2010	1	71,322.817	7,039.999	0.000	53,010.888	-358.862	0.000	0.000	0.000	0.000	0.000	0.000
2010	2	66,794.982	7,146.316	0.000	48,690.867	0.000	-672.993	0.000	0.000	0.000	0.000	0.000
2010	3	62,905.740	5,607.257	0.000	46,891.249	0.000	0.000	-1,223.557	0.000	0.000	0.000	0.000
2010	4	61,854.327	2,099.615	536.042	49,739.062	0.000	0.000	0.000	-2,151.183	0.000	0.000	0.000
2010	5	60,693.242	782.216	567.528	48,151.910	0.000	0.000	0.000	0.000	-439.204	0.000	0.000
2010	6	69,759.061	167.754	5,655.239	50,058.184	0.000	0.000	0.000	0.000	0.000	2,247.092	0.000
2010	7	77,981.481	0.000	11,365.032	50,068.217	0.000	0.000	0.000	0.000	0.000	0.000	4,917.441
2010	8	82,173.800	0.000	15,011.311	49,017.441	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2010	9	78,423.090	0.000	10,005.926	49,893.019	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2010	10	65,590.850	309.213	2,342.725	48,276.969	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2010	11	61,539.125	1,633.093	226.540	47,562.895	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2010	12	68,773.863	4,980.041	0.000	53,263.926	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2011	1	69,522.772	7,094.729	0.000	52,257.009	-358.862	0.000	0.000	0.000	0.000	0.000	0.000
2011	2	61,712.914	7,745.553	0.000	47,184.038	0.000	-672.993	0.000	0.000	0.000	0.000	0.000
2011	3	65,102.353	5,533.051	0.000	45,955.527	0.000	0.000	-1,223.557	0.000	0.000	0.000	0.000
2011	4	58,106.036	3,451.036	153.107	46,123.182	0.000	0.000	0.000	-2,151.183	0.000	0.000	0.000

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	Pred	XHeat	XCool	XOther	Jan	Feb	Mar	Apr	May	Jun	Jul
2011	5	60,418.362	1,227.173	766.131	48,334.367	0.000	0.000	0.000	0.000	-439.204	0.000	0.000
2011	6	67,342.335	161.456	5,661.654	48,742.239	0.000	0.000	0.000	0.000	0.000	2,247.092	0.000
2011	7	75,704.570	0.000	10,581.268	49,675.966	0.000	0.000	0.000	0.000	0.000	0.000	4,917.441
2011	8	80,268.669	0.000	15,874.611	46,249.010	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2011	9	74,365.247	27.777	8,023.153	47,790.173	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2011	10	62,787.741	324.112	1,298.025	46,503.662	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2011	11	59,981.051	1,441.129	214.616	46,208.710	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2011	12	62,921.375	3,315.260	0.000	49,076.219	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2012	1	68,239.317	4,816.792	0.000	49,430.713	-358.862	0.000	0.000	0.000	0.000	0.000	0.000
2012	2	64,206.699	5,469.749	0.000	45,059.270	0.000	-672.993	0.000	0.000	0.000	0.000	0.000
2012	3	62,443.583	3,880.105	486.765	44,949.597	0.000	0.000	-1,223.557	0.000	0.000	0.000	0.000
2012	4	60,738.598	1,133.087	1,465.144	45,940.877	0.000	0.000	0.000	-2,151.183	0.000	0.000	0.000
2012	5	61,333.128	938.747	999.881	45,483.031	0.000	0.000	0.000	0.000	-439.204	0.000	0.000
2012	6	69,589.623	62.118	6,338.047	46,591.693	0.000	0.000	0.000	0.000	0.000	2,247.092	0.000
2012	7	88,033.895	5.529	16,008.313	47,036.226	0.000	0.000	0.000	0.000	0.000	0.000	4,917.441
2012	8	80,497.857	0.000	14,172.416	44,359.615	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2012	9	76,205.363	10.731	7,308.153	46,541.556	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2012	10	65,206.939	524.639	1,216.576	44,983.002	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2012	11	61,203.475	2,086.140	283.431	45,088.901	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2012	12	66,159.163	3,227.957	0.000	48,580.533	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2013	1	68,561.951	5,128.695	0.000	49,441.444	-358.862	0.000	0.000	0.000	0.000	0.000	0.000
2013	2	64,034.840	6,097.943	0.000	44,259.216	0.000	-672.993	0.000	0.000	0.000	0.000	0.000
2013	3	63,087.470	5,522.040	0.000	44,438.314	0.000	0.000	-1,223.557	0.000	0.000	0.000	0.000
2013	4	62,517.568	3,997.374	0.000	46,320.704	0.000	0.000	0.000	-2,151.183	0.000	0.000	0.000
2013	5	60,701.251	1,150.411	1,062.812	44,576.558	0.000	0.000	0.000	0.000	-439.204	0.000	0.000
2013	6	67,945.820	219.908	4,396.891	46,731.256	0.000	0.000	0.000	0.000	0.000	2,247.092	0.000
2013	7	75,539.875	3.163	9,705.194	46,563.403	0.000	0.000	0.000	0.000	0.000	0.000	4,917.441
2013	8	74,564.061	0.000	7,911.753	44,686.481	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2013	9	77,498.642	0.352	8,930.835	46,222.531	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2013	10	66,714.751	155.024	3,349.799	44,727.207	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2013	11	61,108.727	1,876.207	301.811	45,185.706	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2013	12	67,419.386	4,815.122	0.000	48,253.591	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2014	1	70,718.284	6,821.862	0.000	49,904.611	-358.862	0.000	0.000	0.000	0.000	0.000	0.000
2014	2	65,369.078	7,999.787	0.000	43,691.610	0.000	-672.993	0.000	0.000	0.000	0.000	0.000

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	Pred	XHeat	XCool	XOther	Jan	Feb	Mar	Apr	May	Jun	Jul
2014	3	64,153.707	6,947.588	0.000	44,079.002	0.000	0.000	-1,223.557	0.000	0.000	0.000	0.000
2014	4	60,317.488	3,755.953	28.388	44,333.657	0.000	0.000	0.000	-2,151.183	0.000	0.000	0.000
2014	5	61,774.295	1,022.317	827.997	46,012.512	0.000	0.000	0.000	0.000	-439.204	0.000	0.000
2014	6	67,860.169	233.553	5,342.548	45,686.303	0.000	0.000	0.000	0.000	0.000	2,247.092	0.000
2014	7	74,574.781	0.000	9,149.840	46,156.826	0.000	0.000	0.000	0.000	0.000	0.000	4,917.441
2014	8	72,769.363	0.000	6,858.879	43,944.657	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2014	9	77,733.186	22.386	9,381.448	45,984.430	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2014	10	64,669.750	324.438	1,419.470	44,443.121	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2014	11	60,023.253	1,915.045	37.308	44,325.896	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2014	12	67,498.136	4,689.697	0.000	48,457.766	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2015	1	68,846.843	5,461.573	0.000	49,393.458	-358.862	0.000	0.000	0.000	0.000	0.000	0.000
2015	2	64,170.095	6,589.790	0.000	43,902.624	0.000	-672.993	0.000	0.000	0.000	0.000	0.000
2015	3	63,763.486	6,863.826	0.000	43,772.544	0.000	0.000	-1,223.557	0.000	0.000	0.000	0.000
2015	4	60,662.146	2,836.368	11.679	45,614.609	0.000	0.000	0.000	-2,151.183	0.000	0.000	0.000
2015	5	60,192.353	864.359	1,086.364	44,330.160	0.000	0.000	0.000	0.000	-439.204	0.000	0.000
2015	6	67,263.060	143.090	4,847.867	45,674.338	0.000	0.000	0.000	0.000	0.000	2,247.092	0.000
2015	7	71,855.898	1.318	6,752.600	45,833.867	0.000	0.000	0.000	0.000	0.000	0.000	4,917.441
2015	8	78,572.091	0.000	10,834.897	44,242.351	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2015	9	77,607.573	1.430	8,208.720	45,523.483	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2015	10	66,949.615	219.585	2,425.583	44,292.709	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2015	11	60,160.914	1,093.450	57.241	43,736.203	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2015	12	67,378.582	2,848.659	0.000	48,650.233	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2016	1	69,350.431	4,294.782	0.000	49,534.820	-358.862	0.000	0.000	0.000	0.000	0.000	0.000
2016	2	65,242.760	5,812.728	0.000	44,223.335	0.000	-672.993	0.000	0.000	0.000	0.000	0.000
2016	3	62,477.509	4,197.221	0.000	43,624.155	0.000	0.000	-1,223.557	0.000	0.000	0.000	0.000
2016	4	61,644.396	2,364.594	5.129	45,546.166	0.000	0.000	0.000	-2,151.183	0.000	0.000	0.000
2016	5	59,223.671	1,051.704	207.482	44,148.293	0.000	0.000	0.000	0.000	-439.204	0.000	0.000
2016	6	69,158.275	209.836	5,000.274	45,821.383	0.000	0.000	0.000	0.000	0.000	2,247.092	0.000
2016	7	77,246.675	0.000	8,883.296	45,758.432	0.000	0.000	0.000	0.000	0.000	0.000	4,917.441
2016	8	82,548.963	0.000	13,095.533	43,914.263	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2016	9	79,094.061	0.000	10,093.177	45,126.945	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2016	10	68,217.130	88.908	3,538.682	44,577.802	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2016	11	60,745.948	978.009	339.714	44,154.205	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2016	12	67,312.926	3,682.741	4.411	47,746.084	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	Pred	XHeat	XCool	XOther	Jan	Feb	Mar	Apr	May	Jun	Jul
2017	1	70,451.136	5,703.492	0.000	49,226.816	-358.862	0.000	0.000	0.000	0.000	0.000	0.000
2017	2	63,750.604	4,587.584	0.000	43,956.322	0.000	-672.993	0.000	0.000	0.000	0.000	0.000
2017	3	61,708.479	3,460.115	0.000	43,592.232	0.000	0.000	-1,223.557	0.000	0.000	0.000	0.000
2017	4	60,603.413	2,651.596	91.619	44,131.692	0.000	0.000	0.000	-2,151.183	0.000	0.000	0.000
2017	5	59,032.389	844.408	783.687	43,588.102	0.000	0.000	0.000	0.000	-439.204	0.000	0.000
2017	6	67,890.218	188.959	3,688.436	45,886.041	0.000	0.000	0.000	0.000	0.000	2,247.092	0.000
2017	7	76,130.212	0.000	8,285.846	45,239.419	0.000	0.000	0.000	0.000	0.000	0.000	4,917.441
2017	8	77,632.841	0.000	8,155.932	43,937.743	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2017	9	73,534.068	0.000	4,146.349	45,513.780	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2017	10	68,727.372	41.602	4,744.963	43,929.069	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2017	11	60,879.928	1,776.464	271.259	43,558.185	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2017	12	67,111.036	3,692.656	0.000	47,538.690	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2018	1	71,201.745	6,736.445	0.000	48,944.472	-358.862	0.000	0.000	0.000	0.000	0.000	0.000
2018	2	64,355.144	5,906.522	0.000	43,241.926	0.000	-672.993	0.000	0.000	0.000	0.000	0.000
2018	3	62,356.662	4,436.472	0.000	43,264.057	0.000	0.000	-1,223.557	0.000	0.000	0.000	0.000
2018	4	62,357.934	3,784.344	0.000	44,845.083	0.000	0.000	0.000	-2,151.183	0.000	0.000	0.000
2018	5	59,785.907	1,556.186	764.231	43,649.298	0.000	0.000	0.000	0.000	-439.204	0.000	0.000
2018	6	69,057.128	33.225	5,586.505	45,310.617	0.000	0.000	0.000	0.000	0.000	2,247.092	0.000
2018	7	77,738.152	0.000	10,246.161	44,887.043	0.000	0.000	0.000	0.000	0.000	0.000	4,917.441
2018	8	78,783.653	0.000	10,064.634	43,179.853	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2018	9	76,510.180	0.000	9,646.736	44,747.024	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2018	10	65,091.359	334.250	3,852.970	42,649.920	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2018	11	59,513.976	2,363.779	416.288	43,217.407	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2018	12	66,309.888	4,416.646	0.000	47,771.070	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2019	1	66,648.939	4,471.779	0.000	48,413.850	-358.862	0.000	0.000	0.000	0.000	0.000	0.000
2019	2	62,767.373	6,510.563	0.000	42,807.632	0.000	-672.993	0.000	0.000	0.000	0.000	0.000
2019	3	60,860.785	5,402.318	0.000	42,559.853	0.000	0.000	-1,223.557	0.000	0.000	0.000	0.000
2019	4	58,449.701	3,022.220	0.000	43,456.492	0.000	0.000	0.000	-2,151.183	0.000	0.000	0.000
2019	5	57,903.387	1,091.504	78.161	44,675.048	0.000	0.000	0.000	0.000	-439.204	0.000	0.000
2019	6	62,935.016	224.354	1,741.816	44,599.583	0.000	0.000	0.000	0.000	0.000	2,247.092	0.000
2019	7	75,508.188	0.000	9,801.867	44,858.893	0.000	0.000	0.000	0.000	0.000	0.000	4,917.441
2019	8	76,560.086	0.000	10,750.540	42,027.898	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2019	9	73,146.239	0.000	6,241.928	44,787.890	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2019	10	65,094.104	149.235	4,527.713	42,162.936	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	Pred	XHeat	XCool	XOther	Jan	Feb	Mar	Apr	May	Jun	Jul
2019	11	57,199.934	1,943.729	212.383	41,527.321	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2019	12	63,408.391	3,751.858	0.000	45,534.361	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2020	1	64,056.855	3,621.946	0.000	46,671.600	-358.862	0.000	0.000	0.000	0.000	0.000	0.000
2020	2	58,904.919	4,412.249	0.000	41,043.493	0.000	-672.993	0.000	0.000	0.000	0.000	0.000
2020	3	57,451.893	4,032.791	0.000	40,822.216	0.000	0.000	-1,223.557	0.000	0.000	0.000	0.000
2020	4	52,175.395	2,221.405	26.064	42,154.185	0.000	0.000	0.000	-2,151.183	0.000	0.000	0.000
2020	5	48,882.657	1,454.537	185.314	41,545.652	0.000	0.000	0.000	0.000	-439.204	0.000	0.000
2020	6	57,425.856	237.543	5,219.903	41,960.667	0.000	0.000	0.000	0.000	0.000	2,247.092	0.000
2020	7	74,463.726	0.000	12,048.849	41,869.176	0.000	0.000	0.000	0.000	0.000	0.000	4,917.441
2020	8	76,774.075	0.000	11,701.057	41,593.098	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2020	9	71,736.690	6.348	8,723.242	41,192.406	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2020	10	60,645.965	260.785	1,160.346	41,272.343	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2020	11	54,937.921	1,327.869	84.322	40,310.956	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2020	12	60,920.576	2,812.597	44.936	44,242.599	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2021	1	62,785.086	4,332.157	0.000	44,991.347	-358.862	0.000	0.000	0.000	0.000	0.000	0.000
2021	2	59,174.887	5,391.073	0.000	40,636.364	0.000	-672.993	0.000	0.000	0.000	0.000	0.000
2021	3	57,201.322	4,366.074	19.216	40,219.145	0.000	0.000	-1,223.557	0.000	0.000	0.000	0.000
2021	4	55,744.345	2,536.705	149.379	41,389.000	0.000	0.000	0.000	-2,151.183	0.000	0.000	0.000
2021	5	54,465.400	915.621	743.412	41,049.421	0.000	0.000	0.000	0.000	-439.204	0.000	0.000
2021	6	62,515.895	167.784	3,904.088	42,376.487	0.000	0.000	0.000	0.000	0.000	2,247.092	0.000
2021	7	72,195.200	4.464	9,338.797	42,306.239	0.000	0.000	0.000	0.000	0.000	0.000	4,917.441
2021	8	74,488.265	0.000	10,298.829	40,709.517	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2021	9	71,646.086	5.813	7,458.847	42,366.734	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2021	10	61,440.007	285.403	2,291.597	40,910.516	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2021	11	55,559.284	1,485.996	197.508	40,661.007	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2021	12	61,798.119	3,404.057	2.211	44,571.408	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2022	1	64,106.560	4,888.583	0.000	45,756.395	-358.862	0.000	0.000	0.000	0.000	0.000	0.000
2022	2	59,699.537	5,460.419	0.000	41,091.667	0.000	-672.993	0.000	0.000	0.000	0.000	0.000
2022	3	57,718.908	4,423.261	19.563	40,679.198	0.000	0.000	-1,223.557	0.000	0.000	0.000	0.000
2022	4	56,258.529	2,570.209	152.089	41,866.970	0.000	0.000	0.000	-2,151.183	0.000	0.000	0.000
2022	5	54,967.143	927.760	756.935	41,525.503	0.000	0.000	0.000	0.000	-439.204	0.000	0.000
2022	6	63,086.489	170.030	3,975.603	42,873.321	0.000	0.000	0.000	0.000	0.000	2,247.092	0.000
2022	7	72,877.830	4.525	9,512.681	42,814.923	0.000	0.000	0.000	0.000	0.000	0.000	4,917.441
2022	8	75,196.641	0.000	10,496.095	41,220.626	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	Pred	XHeat	XCool	XOther	Jan	Feb	Mar	Apr	May	Jun	Jul
2022	9	72,325.832	5.896	7,602.450	42,902.794	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2022	10	61,991.028	289.391	2,334.930	41,414.216	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2022	11	56,131.276	1,508.407	201.463	41,206.633	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2022	12	62,551.164	3,462.754	2.260	45,265.707	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2023	1	64,890.593	4,931.561	0.000	46,497.450	-358.862	0.000	0.000	0.000	0.000	0.000	0.000
2023	2	60,409.172	5,507.973	0.000	41,753.749	0.000	-672.993	0.000	0.000	0.000	0.000	0.000
2023	3	58,410.765	4,461.541	19.932	41,332.405	0.000	0.000	-1,223.557	0.000	0.000	0.000	0.000
2023	4	56,953.085	2,592.290	154.955	42,536.581	0.000	0.000	0.000	-2,151.183	0.000	0.000	0.000
2023	5	55,649.137	935.636	771.119	42,185.435	0.000	0.000	0.000	0.000	-439.204	0.000	0.000
2023	6	63,836.154	171.446	4,049.455	43,547.717	0.000	0.000	0.000	0.000	0.000	2,247.092	0.000
2023	7	73,715.002	4.562	9,687.013	43,477.727	0.000	0.000	0.000	0.000	0.000	0.000	4,917.441
2023	8	76,009.299	0.000	10,684.824	41,844.555	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2023	9	73,091.801	5.939	7,736.106	43,535.063	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2023	10	62,624.864	291.388	2,374.934	42,006.050	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2023	11	56,713.414	1,518.097	204.817	41,775.727	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2023	12	63,174.339	3,483.286	2.296	45,868.313	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2024	1	65,486.966	4,947.915	0.000	47,077.469	-358.862	0.000	0.000	0.000	0.000	0.000	0.000
2024	2	60,884.750	5,518.893	0.000	42,218.407	0.000	-672.993	0.000	0.000	0.000	0.000	0.000
2024	3	58,817.760	4,464.390	20.177	41,736.307	0.000	0.000	-1,223.557	0.000	0.000	0.000	0.000
2024	4	57,310.222	2,590.421	156.646	42,893.896	0.000	0.000	0.000	-2,151.183	0.000	0.000	0.000
2024	5	55,954.593	933.765	778.537	42,485.345	0.000	0.000	0.000	0.000	-439.204	0.000	0.000
2024	6	64,127.517	170.901	4,083.580	43,805.501	0.000	0.000	0.000	0.000	0.000	2,247.092	0.000
2024	7	73,997.619	4.542	9,758.354	43,689.022	0.000	0.000	0.000	0.000	0.000	0.000	4,917.441
2024	8	76,241.226	0.000	10,753.299	42,008.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2024	9	73,265.936	5.903	7,778.809	43,666.531	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2024	10	62,726.232	289.386	2,386.081	42,098.273	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2024	11	56,762.350	1,506.515	205.621	41,835.440	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2024	12	63,177.804	3,454.227	2.303	45,900.831	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2025	1	65,474.698	4,897.796	0.000	47,115.320	-358.862	0.000	0.000	0.000	0.000	0.000	0.000
2025	2	60,872.026	5,464.048	0.000	42,260.528	0.000	-672.993	0.000	0.000	0.000	0.000	0.000
2025	3	58,824.366	4,420.914	20.205	41,786.361	0.000	0.000	-1,223.557	0.000	0.000	0.000	0.000
2025	4	57,346.056	2,565.722	156.895	42,954.178	0.000	0.000	0.000	-2,151.183	0.000	0.000	0.000
2025	5	56,014.555	925.028	779.915	42,552.667	0.000	0.000	0.000	0.000	-439.204	0.000	0.000
2025	6	64,209.099	169.325	4,091.359	43,880.879	0.000	0.000	0.000	0.000	0.000	2,247.092	0.000

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	Pred	XHeat	XCool	XOther	Jan	Feb	Mar	Apr	May	Jun	Jul
2025	7	74,095.472	4.501	9,777.699	43,767.572	0.000	0.000	0.000	0.000	0.000	0.000	4,917.441
2025	8	76,338.933	0.000	10,774.792	42,084.222	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2025	9	73,358.986	5.849	7,794.105	43,744.339	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2025	10	62,800.097	286.714	2,390.603	42,170.288	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2025	11	56,816.102	1,492.459	205.991	41,902.879	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2025	12	63,213.916	3,421.606	2.307	45,969.559	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2026	1	65,372.376	4,850.532	0.000	47,060.263	-358.862	0.000	0.000	0.000	0.000	0.000	0.000
2026	2	60,754.309	5,409.546	0.000	42,197.314	0.000	-672.993	0.000	0.000	0.000	0.000	0.000
2026	3	58,702.826	4,375.391	20.283	41,710.266	0.000	0.000	-1,223.557	0.000	0.000	0.000	0.000
2026	4	57,227.560	2,538.497	157.448	42,862.354	0.000	0.000	0.000	-2,151.183	0.000	0.000	0.000
2026	5	55,904.154	914.956	782.447	42,449.806	0.000	0.000	0.000	0.000	-439.204	0.000	0.000
2026	6	64,103.315	167.442	4,103.689	43,764.648	0.000	0.000	0.000	0.000	0.000	2,247.092	0.000
2026	7	73,999.807	4.450	9,805.487	43,644.170	0.000	0.000	0.000	0.000	0.000	0.000	4,917.441
2026	8	76,244.883	0.000	10,804.181	41,960.782	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2026	9	73,247.977	5.782	7,814.773	43,612.729	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2026	10	62,674.450	283.413	2,396.845	42,041.701	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2026	11	56,671.192	1,475.257	206.526	41,774.635	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2026	12	63,034.323	3,382.205	2.313	45,829.361	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2027	1	65,229.392	4,798.660	0.000	46,969.150	-358.862	0.000	0.000	0.000	0.000	0.000	0.000
2027	2	60,622.504	5,352.569	0.000	42,122.486	0.000	-672.993	0.000	0.000	0.000	0.000	0.000
2027	3	58,590.069	4,329.988	20.338	41,642.856	0.000	0.000	-1,223.557	0.000	0.000	0.000	0.000
2027	4	57,139.264	2,512.536	157.900	42,799.567	0.000	0.000	0.000	-2,151.183	0.000	0.000	0.000
2027	5	55,840.733	905.719	784.794	42,393.274	0.000	0.000	0.000	0.000	-439.204	0.000	0.000
2027	6	64,060.785	165.770	4,116.442	43,711.038	0.000	0.000	0.000	0.000	0.000	2,247.092	0.000
2027	7	73,980.663	4.406	9,836.676	43,593.881	0.000	0.000	0.000	0.000	0.000	0.000	4,917.441
2027	8	76,232.821	0.000	10,838.942	41,913.959	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2027	9	73,224.371	5.725	7,839.912	43,564.041	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2027	10	62,631.051	280.603	2,404.481	41,993.476	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2027	11	56,606.873	1,460.553	207.173	41,724.374	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2027	12	62,941.656	3,348.232	2.320	45,770.660	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2028	1	65,174.701	4,754.481	0.000	46,958.638	-358.862	0.000	0.000	0.000	0.000	0.000	0.000
2028	2	60,560.631	5,302.936	0.000	42,110.244	0.000	-672.993	0.000	0.000	0.000	0.000	0.000
2028	3	58,534.411	4,289.510	20.445	41,627.570	0.000	0.000	-1,223.557	0.000	0.000	0.000	0.000
2028	4	57,096.658	2,488.816	158.718	42,779.863	0.000	0.000	0.000	-2,151.183	0.000	0.000	0.000

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	Pred	XHeat	XCool	XOther	Jan	Feb	Mar	Apr	May	Jun	Jul
2028	5	55,812.592	897.084	788.788	42,369.775	0.000	0.000	0.000	0.000	-439.204	0.000	0.000
2028	6	64,051.603	164.175	4,137.016	43,682.878	0.000	0.000	0.000	0.000	0.000	2,247.092	0.000
2028	7	73,997.325	4.363	9,885.029	43,562.232	0.000	0.000	0.000	0.000	0.000	0.000	4,917.441
2028	8	76,251.789	0.000	10,891.421	41,880.449	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2028	9	73,224.060	5.669	7,877.352	43,526.347	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2028	10	62,600.748	277.825	2,415.818	41,954.613	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2028	11	56,552.383	1,446.011	208.138	41,683.461	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2028	12	62,860.962	3,314.728	2.331	45,723.459	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2029	1	65,099.248	4,703.363	0.000	46,934.303	-358.862	0.000	0.000	0.000	0.000	0.000	0.000
2029	2	60,476.937	5,245.383	0.000	42,084.104	0.000	-672.993	0.000	0.000	0.000	0.000	0.000
2029	3	58,457.273	4,242.504	20.573	41,597.310	0.000	0.000	-1,223.557	0.000	0.000	0.000	0.000
2029	4	57,034.622	2,461.290	159.690	42,744.382	0.000	0.000	0.000	-2,151.183	0.000	0.000	0.000
2029	5	55,767.792	887.070	793.534	42,330.242	0.000	0.000	0.000	0.000	-439.204	0.000	0.000
2029	6	64,028.794	162.325	4,161.464	43,637.470	0.000	0.000	0.000	0.000	0.000	2,247.092	0.000
2029	7	74,004.538	4.314	9,942.354	43,512.170	0.000	0.000	0.000	0.000	0.000	0.000	4,917.441
2029	8	76,260.707	0.000	10,953.313	41,827.474	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2029	9	73,207.473	5.603	7,921.156	43,466.022	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2029	10	62,547.258	274.565	2,428.950	41,891.252	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2029	11	56,468.160	1,428.864	209.243	41,615.279	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2029	12	62,740.720	3,275.010	2.343	45,642.923	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2030	1	64,845.364	4,645.511	0.000	46,738.271	-358.862	0.000	0.000	0.000	0.000	0.000	0.000
2030	2	60,235.471	5,180.735	0.000	41,907.285	0.000	-672.993	0.000	0.000	0.000	0.000	0.000
2030	3	58,229.465	4,190.137	20.698	41,421.744	0.000	0.000	-1,223.557	0.000	0.000	0.000	0.000
2030	4	56,824.182	2,430.876	160.657	42,563.389	0.000	0.000	0.000	-2,151.183	0.000	0.000	0.000
2030	5	55,582.092	876.103	798.334	42,150.710	0.000	0.000	0.000	0.000	-439.204	0.000	0.000
2030	6	63,866.944	160.318	4,186.643	43,452.448	0.000	0.000	0.000	0.000	0.000	2,247.092	0.000
2030	7	73,880.708	4.260	10,002.615	43,328.132	0.000	0.000	0.000	0.000	0.000	0.000	4,917.441
2030	8	76,151.245	0.000	11,019.924	41,651.402	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2030	9	73,074.137	5.534	7,969.565	43,284.345	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2030	10	62,385.276	271.197	2,443.885	41,717.703	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2030	11	56,281.340	1,411.397	210.539	41,444.631	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2030	12	62,515.795	3,235.125	2.358	45,457.869	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2031	1	64,672.408	4,595.215	0.000	46,615.611	-358.862	0.000	0.000	0.000	0.000	0.000	0.000
2031	2	60,071.392	5,124.862	0.000	41,799.080	0.000	-672.993	0.000	0.000	0.000	0.000	0.000

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	Pred	XHeat	XCool	XOther	Jan	Feb	Mar	Apr	May	Jun	Jul
2031	3	58,079.351	4,145.126	20.769	41,316.570	0.000	0.000	-1,223.557	0.000	0.000	0.000	0.000
2031	4	56,692.428	2,404.863	161.217	42,457.088	0.000	0.000	0.000	-2,151.183	0.000	0.000	0.000
2031	5	55,471.826	866.759	801.145	42,046.975	0.000	0.000	0.000	0.000	-439.204	0.000	0.000
2031	6	63,774.454	158.613	4,201.512	43,346.794	0.000	0.000	0.000	0.000	0.000	2,247.092	0.000
2031	7	73,811.956	4.215	10,038.351	43,223.690	0.000	0.000	0.000	0.000	0.000	0.000	4,917.441
2031	8	76,090.882	0.000	11,059.434	41,551.528	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2031	9	72,999.210	5.475	7,998.193	43,180.849	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2031	10	62,291.500	268.324	2,452.667	41,618.017	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2031	11	56,167.983	1,396.441	211.295	41,345.474	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2031	12	62,372.460	3,200.823	2.366	45,348.827	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2032	1	64,547.327	4,543.830	0.000	46,541.915	-358.862	0.000	0.000	0.000	0.000	0.000	0.000
2032	2	59,946.149	5,067.354	0.000	41,731.345	0.000	-672.993	0.000	0.000	0.000	0.000	0.000
2032	3	57,964.210	4,098.450	20.874	41,247.999	0.000	0.000	-1,223.557	0.000	0.000	0.000	0.000
2032	4	56,593.668	2,377.676	162.029	42,384.703	0.000	0.000	0.000	-2,151.183	0.000	0.000	0.000
2032	5	55,392.605	856.926	805.149	41,973.585	0.000	0.000	0.000	0.000	-439.204	0.000	0.000
2032	6	63,716.360	156.808	4,222.364	43,269.653	0.000	0.000	0.000	0.000	0.000	2,247.092	0.000
2032	7	73,783.405	4.167	10,087.904	43,145.633	0.000	0.000	0.000	0.000	0.000	0.000	4,917.441
2032	8	76,069.476	0.000	11,113.824	41,475.732	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2032	9	72,959.088	5.413	8,037.430	43,101.553	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2032	10	62,223.764	265.254	2,464.684	41,541.334	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2032	11	56,076.842	1,380.463	212.330	41,269.276	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2032	12	62,252.495	3,164.214	2.378	45,265.459	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2033	1	64,426.634	4,489.696	0.000	46,475.357	-358.862	0.000	0.000	0.000	0.000	0.000	0.000
2033	2	59,828.835	5,007.276	0.000	41,674.109	0.000	-672.993	0.000	0.000	0.000	0.000	0.000
2033	3	57,861.908	4,050.108	20.960	41,193.953	0.000	0.000	-1,223.557	0.000	0.000	0.000	0.000
2033	4	56,513.981	2,349.800	162.709	42,332.212	0.000	0.000	0.000	-2,151.183	0.000	0.000	0.000
2033	5	55,337.050	846.939	808.585	41,924.580	0.000	0.000	0.000	0.000	-439.204	0.000	0.000
2033	6	63,685.314	154.991	4,240.675	43,222.112	0.000	0.000	0.000	0.000	0.000	2,247.092	0.000
2033	7	73,783.181	4.119	10,132.316	43,101.045	0.000	0.000	0.000	0.000	0.000	0.000	4,917.441
2033	8	76,078.838	0.000	11,163.453	41,435.466	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2033	9	72,956.178	5.351	8,073.811	43,062.323	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2033	10	62,196.669	262.246	2,475.985	41,505.947	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2033	11	56,029.375	1,364.882	213.315	41,236.404	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2033	12	62,183.273	3,128.664	2.389	45,231.776	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	Pred	XHeat	XCool	XOther	Jan	Feb	Mar	Apr	May	Jun	Jul
2034	1	64,362.373	4,435.940	0.000	46,464.851	-358.862	0.000	0.000	0.000	0.000	0.000	0.000
2034	2	59,760.400	4,947.422	0.000	41,665.527	0.000	-672.993	0.000	0.000	0.000	0.000	0.000
2034	3	57,806.021	4,001.774	21.088	41,186.273	0.000	0.000	-1,223.557	0.000	0.000	0.000	0.000
2034	4	56,479.882	2,321.801	163.702	42,325.119	0.000	0.000	0.000	-2,151.183	0.000	0.000	0.000
2034	5	55,325.616	836.862	813.533	41,918.275	0.000	0.000	0.000	0.000	-439.204	0.000	0.000
2034	6	63,703.669	153.150	4,266.693	43,216.291	0.000	0.000	0.000	0.000	0.000	2,247.092	0.000
2034	7	73,840.254	4.070	10,194.626	43,095.857	0.000	0.000	0.000	0.000	0.000	0.000	4,917.441
2034	8	76,143.215	0.000	11,232.256	41,431.039	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2034	9	73,001.968	5.288	8,123.682	43,058.306	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2034	10	62,205.575	259.144	2,491.312	41,502.628	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2034	11	56,011.797	1,348.754	214.638	41,233.631	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2034	12	62,143.850	3,091.732	2.404	45,229.271	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2035	1	64,344.817	4,385.800	0.000	46,497.435	-358.862	0.000	0.000	0.000	0.000	0.000	0.000
2035	2	59,734.054	4,891.538	0.000	41,695.065	0.000	-672.993	0.000	0.000	0.000	0.000	0.000
2035	3	57,790.494	3,956.601	21.229	41,215.779	0.000	0.000	-1,223.557	0.000	0.000	0.000	0.000
2035	4	56,485.378	2,295.607	164.794	42,355.717	0.000	0.000	0.000	-2,151.183	0.000	0.000	0.000
2035	5	55,352.116	827.425	818.967	41,948.778	0.000	0.000	0.000	0.000	-439.204	0.000	0.000
2035	6	63,762.018	151.423	4,295.204	43,247.855	0.000	0.000	0.000	0.000	0.000	2,247.092	0.000
2035	7	73,939.811	4.024	10,262.750	43,127.337	0.000	0.000	0.000	0.000	0.000	0.000	4,917.441
2035	8	76,248.407	0.000	11,307.286	41,461.201	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2035	9	73,087.339	5.228	8,177.918	43,089.500	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2035	10	62,249.114	256.219	2,507.931	41,532.472	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2035	11	56,027.338	1,333.523	216.069	41,262.973	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2035	12	62,140.664	3,056.787	2.420	45,261.013	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2036	1	64,347.232	4,332.892	0.000	46,552.759	-358.862	0.000	0.000	0.000	0.000	0.000	0.000
2036	2	59,724.157	4,832.478	0.000	41,744.229	0.000	-672.993	0.000	0.000	0.000	0.000	0.000
2036	3	57,790.941	3,908.783	21.382	41,263.890	0.000	0.000	-1,223.557	0.000	0.000	0.000	0.000
2036	4	56,507.296	2,267.814	165.983	42,404.239	0.000	0.000	0.000	-2,151.183	0.000	0.000	0.000
2036	5	55,394.994	817.387	824.856	41,995.805	0.000	0.000	0.000	0.000	-439.204	0.000	0.000
2036	6	63,838.255	149.582	4,325.973	43,295.165	0.000	0.000	0.000	0.000	0.000	2,247.092	0.000
2036	7	74,058.858	3.975	10,335.959	43,173.224	0.000	0.000	0.000	0.000	0.000	0.000	4,917.441
2036	8	76,371.459	0.000	11,387.575	41,503.964	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2036	9	73,188.117	5.164	8,235.719	43,132.541	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2036	10	62,303.740	253.072	2,525.575	41,572.602	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	Pred	XHeat	XCool	XOther	Jan	Feb	Mar	Apr	May	Jun	Jul
2036	11	56,050.955	1,317.099	217.582	41,301.501	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2036	12	62,143.771	3,019.044	2.437	45,301.847	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2037	1	64,348.628	4,277.083	0.000	46,609.963	-358.862	0.000	0.000	0.000	0.000	0.000	0.000
2037	2	59,712.269	4,770.138	0.000	41,794.681	0.000	-672.993	0.000	0.000	0.000	0.000	0.000
2037	3	57,789.808	3,858.295	21.544	41,313.083	0.000	0.000	-1,223.557	0.000	0.000	0.000	0.000
2037	4	56,529.557	2,238.509	167.236	42,454.551	0.000	0.000	0.000	-2,151.183	0.000	0.000	0.000
2037	5	55,440.405	806.823	831.081	42,045.555	0.000	0.000	0.000	0.000	-439.204	0.000	0.000
2037	6	63,920.368	147.649	4,358.628	43,346.555	0.000	0.000	0.000	0.000	0.000	2,247.092	0.000
2037	7	74,188.439	3.924	10,414.052	43,224.762	0.000	0.000	0.000	0.000	0.000	0.000	4,917.441
2037	8	76,507.667	0.000	11,473.749	41,553.999	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2037	9	73,303.280	5.097	8,298.188	43,185.302	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2037	10	62,371.465	249.816	2,544.788	41,624.370	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2037	11	56,088.173	1,300.188	219.242	41,353.969	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2037	12	62,163.892	2,980.363	2.455	45,360.630	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2038	1	64,364.717	4,221.454	0.000	46,681.681	-358.862	0.000	0.000	0.000	0.000	0.000	0.000
2038	2	59,713.424	4,707.984	0.000	41,857.990	0.000	-672.993	0.000	0.000	0.000	0.000	0.000
2038	3	57,801.142	3,807.928	21.691	41,374.637	0.000	0.000	-1,223.557	0.000	0.000	0.000	0.000
2038	4	56,563.552	2,209.229	168.377	42,516.686	0.000	0.000	0.000	-2,151.183	0.000	0.000	0.000
2038	5	55,495.886	796.248	836.728	42,105.964	0.000	0.000	0.000	0.000	-439.204	0.000	0.000
2038	6	64,008.997	145.710	4,388.124	43,407.628	0.000	0.000	0.000	0.000	0.000	2,247.092	0.000
2038	7	74,318.199	3.872	10,484.221	43,284.405	0.000	0.000	0.000	0.000	0.000	0.000	4,917.441
2038	8	76,640.642	0.000	11,550.695	41,610.028	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2038	9	73,415.323	5.030	8,353.552	43,242.049	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2038	10	62,438.222	246.503	2,561.673	41,677.555	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2038	11	56,123.639	1,282.896	220.689	41,405.281	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2038	12	62,178.767	2,940.616	2.472	45,415.236	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2039	1	64,381.706	4,166.393	0.000	46,753.731	-358.862	0.000	0.000	0.000	0.000	0.000	0.000
2039	2	59,716.345	4,646.550	0.000	41,922.346	0.000	-672.993	0.000	0.000	0.000	0.000	0.000
2039	3	57,815.020	3,758.221	21.861	41,438.052	0.000	0.000	-1,223.557	0.000	0.000	0.000	0.000
2039	4	56,601.055	2,180.383	169.693	42,581.718	0.000	0.000	0.000	-2,151.183	0.000	0.000	0.000
2039	5	55,556.402	785.851	843.267	42,170.337	0.000	0.000	0.000	0.000	-439.204	0.000	0.000
2039	6	64,107.851	143.807	4,422.426	43,474.083	0.000	0.000	0.000	0.000	0.000	2,247.092	0.000
2039	7	74,466.669	3.822	10,566.235	43,350.912	0.000	0.000	0.000	0.000	0.000	0.000	4,917.441
2039	8	76,795.413	0.000	11,641.156	41,674.337	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	Pred	XHeat	XCool	XOther	Jan	Feb	Mar	Apr	May	Jun	Jul
2039	9	73,548.091	4.964	8,419.068	43,309.366	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2039	10	62,520.554	243.294	2,581.797	41,742.972	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2039	11	56,174.241	1,266.213	222.426	41,470.829	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2039	12	62,213.086	2,902.415	2.491	45,487.737	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2040	1	64,300.885	4,112.492	0.000	46,726.811	-358.862	0.000	0.000	0.000	0.000	0.000	0.000
2040	2	59,633.308	4,586.556	0.000	41,899.302	0.000	-672.993	0.000	0.000	0.000	0.000	0.000
2040	3	57,744.966	3,709.786	22.016	41,416.277	0.000	0.000	-1,223.557	0.000	0.000	0.000	0.000
2040	4	56,552.438	2,152.315	170.901	42,559.961	0.000	0.000	0.000	-2,151.183	0.000	0.000	0.000
2040	5	55,531.173	775.743	849.280	42,149.205	0.000	0.000	0.000	0.000	-439.204	0.000	0.000
2040	6	64,115.968	141.958	4,453.980	43,452.495	0.000	0.000	0.000	0.000	0.000	2,247.092	0.000
2040	7	74,520.397	3.772	10,641.609	43,329.315	0.000	0.000	0.000	0.000	0.000	0.000	4,917.441
2040	8	76,857.279	0.000	11,724.107	41,653.253	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2040	9	73,585.463	4.900	8,478.954	43,286.915	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2040	10	62,513.404	240.156	2,600.118	41,720.638	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2040	11	56,136.440	1,249.858	223.999	41,447.810	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2040	12	62,149.286	2,864.861	2.509	45,461.472	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2041	1	64,254.946	4,059.924	0.000	46,733.440	-358.862	0.000	0.000	0.000	0.000	0.000	0.000
2041	2	59,578.147	4,527.687	0.000	41,903.010	0.000	-672.993	0.000	0.000	0.000	0.000	0.000
2041	3	57,698.743	3,661.971	22.200	41,417.685	0.000	0.000	-1,223.557	0.000	0.000	0.000	0.000
2041	4	56,525.398	2,124.471	172.318	42,559.349	0.000	0.000	0.000	-2,151.183	0.000	0.000	0.000
2041	5	55,525.560	765.672	856.279	42,146.664	0.000	0.000	0.000	0.000	-439.204	0.000	0.000
2041	6	64,146.150	140.109	4,490.493	43,448.013	0.000	0.000	0.000	0.000	0.000	2,247.092	0.000
2041	7	74,601.028	3.723	10,728.431	43,323.173	0.000	0.000	0.000	0.000	0.000	0.000	4,917.441
2041	8	76,945.165	0.000	11,819.349	41,645.897	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2041	9	73,645.004	4.836	8,547.565	43,277.910	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2041	10	62,521.350	236.997	2,621.084	41,710.778	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2041	11	56,110.917	1,233.384	225.800	41,436.960	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2041	12	62,098.515	2,827.034	2.529	45,448.509	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2042	1	64,213.263	4,004.650	0.000	46,747.031	-358.862	0.000	0.000	0.000	0.000	0.000	0.000
2042	2	59,527.853	4,465.963	0.000	41,914.440	0.000	-672.993	0.000	0.000	0.000	0.000	0.000
2042	3	57,659.492	3,611.985	22.380	41,428.242	0.000	0.000	-1,223.557	0.000	0.000	0.000	0.000
2042	4	56,507.824	2,095.433	173.712	42,569.418	0.000	0.000	0.000	-2,151.183	0.000	0.000	0.000
2042	5	55,531.208	755.193	863.192	42,155.877	0.000	0.000	0.000	0.000	-439.204	0.000	0.000
2042	6	64,189.117	138.189	4,526.666	43,456.726	0.000	0.000	0.000	0.000	0.000	2,247.092	0.000

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	Pred	XHeat	XCool	XOther	Jan	Feb	Mar	Apr	May	Jun	Jul
2042	7	74,695.088	3.672	10,814.654	43,331.061	0.000	0.000	0.000	0.000	0.000	0.000	4,917.441
2042	8	77,046.687	0.000	11,914.106	41,652.662	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2042	9	73,719.409	4.769	8,615.912	43,284.035	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2042	10	62,543.988	233.730	2,641.985	41,715.781	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2042	11	56,099.764	1,216.357	227.596	41,441.038	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2042	12	62,062.986	2,787.950	2.549	45,452.044	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2043	1	64,210.157	3,950.641	0.000	46,797.934	-358.862	0.000	0.000	0.000	0.000	0.000	0.000
2043	2	59,514.270	4,405.829	0.000	41,960.991	0.000	-672.993	0.000	0.000	0.000	0.000	0.000
2043	3	57,658.178	3,563.439	22.549	41,475.303	0.000	0.000	-1,223.557	0.000	0.000	0.000	0.000
2043	4	56,530.650	2,067.331	175.033	42,619.025	0.000	0.000	0.000	-2,151.183	0.000	0.000	0.000
2043	5	55,578.165	745.089	869.786	42,206.345	0.000	0.000	0.000	0.000	-439.204	0.000	0.000
2043	6	64,275.551	136.345	4,561.402	43,510.268	0.000	0.000	0.000	0.000	0.000	2,247.092	0.000
2043	7	74,833.470	3.623	10,898.055	43,386.091	0.000	0.000	0.000	0.000	0.000	0.000	4,917.441
2043	8	77,193.713	0.000	12,006.488	41,707.306	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2043	9	73,845.316	4.706	8,683.116	43,342.801	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2043	10	62,620.303	230.651	2,662.722	41,774.439	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2043	11	56,145.946	1,200.393	229.393	41,501.386	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2043	12	62,095.053	2,751.499	2.569	45,520.541	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2044	1	64,255.052	3,898.978	0.000	46,894.492	-358.862	0.000	0.000	0.000	0.000	0.000	0.000
2044	2	59,544.237	4,348.308	0.000	42,048.479	0.000	-672.993	0.000	0.000	0.000	0.000	0.000
2044	3	57,699.232	3,516.985	22.770	41,562.590	0.000	0.000	-1,223.557	0.000	0.000	0.000	0.000
2044	4	56,595.561	2,040.401	176.745	42,709.153	0.000	0.000	0.000	-2,151.183	0.000	0.000	0.000
2044	5	55,666.500	735.387	878.298	42,295.869	0.000	0.000	0.000	0.000	-439.204	0.000	0.000
2044	6	64,410.795	134.570	4,606.051	43,602.639	0.000	0.000	0.000	0.000	0.000	2,247.092	0.000
2044	7	75,032.045	3.576	11,004.697	43,478.072	0.000	0.000	0.000	0.000	0.000	0.000	4,917.441
2044	8	77,399.193	0.000	12,123.880	41,795.394	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2044	9	74,021.046	4.645	8,767.905	43,433.803	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2044	10	62,730.282	227.639	2,688.679	41,861.472	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2044	11	56,218.140	1,184.697	231.625	41,587.045	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2044	12	62,151.990	2,715.460	2.594	45,613.492	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2045	1	64,324.928	3,847.687	0.000	47,015.659	-358.862	0.000	0.000	0.000	0.000	0.000	0.000
2045	2	59,592.258	4,290.789	0.000	42,154.019	0.000	-672.993	0.000	0.000	0.000	0.000	0.000
2045	3	57,753.757	3,470.196	22.969	41,663.705	0.000	0.000	-1,223.557	0.000	0.000	0.000	0.000
2045	4	56,670.616	2,013.111	178.283	42,809.961	0.000	0.000	0.000	-2,151.183	0.000	0.000	0.000

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	Pred	XHeat	XCool	XOther	Jan	Feb	Mar	Apr	May	Jun	Jul
2045	5	55,761.080	725.501	885.880	42,392.754	0.000	0.000	0.000	0.000	-439.204	0.000	0.000
2045	6	64,545.417	132.752	4,645.506	43,699.624	0.000	0.000	0.000	0.000	0.000	2,247.092	0.000
2045	7	75,219.587	3.528	11,098.276	43,572.083	0.000	0.000	0.000	0.000	0.000	0.000	4,917.441
2045	8	77,589.458	0.000	12,226.251	41,883.288	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2045	9	74,183.283	4.581	8,841.421	43,522.588	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2045	10	62,832.696	224.511	2,711.067	41,944.627	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2045	11	56,283.997	1,168.350	233.541	41,667.333	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2045	12	62,200.001	2,677.848	2.615	45,699.094	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2046	1	64,387.824	3,794.878	0.000	47,131.364	-358.862	0.000	0.000	0.000	0.000	0.000	0.000
2046	2	59,635.798	4,231.780	0.000	42,256.568	0.000	-672.993	0.000	0.000	0.000	0.000	0.000
2046	3	57,806.291	3,422.371	23.200	41,763.833	0.000	0.000	-1,223.557	0.000	0.000	0.000	0.000
2046	4	56,746.146	1,985.305	180.071	42,911.510	0.000	0.000	0.000	-2,151.183	0.000	0.000	0.000
2046	5	55,859.140	715.458	894.733	42,492.003	0.000	0.000	0.000	0.000	-439.204	0.000	0.000
2046	6	64,690.822	130.911	4,691.785	43,800.591	0.000	0.000	0.000	0.000	0.000	2,247.092	0.000
2046	7	75,429.117	3.479	11,208.501	43,671.437	0.000	0.000	0.000	0.000	0.000	0.000	4,917.441
2046	8	77,804.711	0.000	12,347.298	41,977.493	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2046	9	74,366.904	4.517	8,928.660	43,619.033	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2046	10	62,947.694	221.368	2,737.722	42,036.113	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2046	11	56,359.267	1,151.952	235.829	41,756.714	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2046	12	62,258.683	2,640.165	2.641	45,795.433	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2047	1	64,464.869	3,741.845	0.000	47,261.442	-358.862	0.000	0.000	0.000	0.000	0.000	0.000
2047	2	59,693.633	4,172.672	0.000	42,373.510	0.000	-672.993	0.000	0.000	0.000	0.000	0.000
2047	3	57,874.610	3,374.594	23.414	41,879.716	0.000	0.000	-1,223.557	0.000	0.000	0.000	0.000
2047	4	56,839.448	1,957.603	181.725	43,030.860	0.000	0.000	0.000	-2,151.183	0.000	0.000	0.000
2047	5	55,975.788	705.478	902.959	42,610.405	0.000	0.000	0.000	0.000	-439.204	0.000	0.000
2047	6	64,854.352	129.085	4,734.938	43,922.794	0.000	0.000	0.000	0.000	0.000	2,247.092	0.000
2047	7	75,654.102	3.430	11,311.613	43,793.359	0.000	0.000	0.000	0.000	0.000	0.000	4,917.441
2047	8	78,035.519	0.000	12,460.892	42,094.707	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2047	9	74,570.804	4.454	9,010.807	43,740.850	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2047	10	63,087.198	218.281	2,762.910	42,153.515	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2047	11	56,461.990	1,135.890	237.998	41,873.328	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2047	12	62,349.762	2,603.353	2.665	45,923.301	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2048	1	64,571.314	3,689.981	0.000	47,419.751	-358.862	0.000	0.000	0.000	0.000	0.000	0.000
2048	2	59,777.282	4,114.797	0.000	42,515.035	0.000	-672.993	0.000	0.000	0.000	0.000	0.000

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	Pred	XHeat	XCool	XOther	Jan	Feb	Mar	Apr	May	Jun	Jul
2048	3	57,967.463	3,327.758	23.611	42,019.208	0.000	0.000	-1,223.557	0.000	0.000	0.000	0.000
2048	4	56,956.479	1,930.405	183.259	43,173.555	0.000	0.000	0.000	-2,151.183	0.000	0.000	0.000
2048	5	56,114.312	695.668	910.566	42,751.132	0.000	0.000	0.000	0.000	-439.204	0.000	0.000
2048	6	65,036.936	127.288	4,774.774	44,067.339	0.000	0.000	0.000	0.000	0.000	2,247.092	0.000
2048	7	75,892.787	3.382	11,406.664	43,937.040	0.000	0.000	0.000	0.000	0.000	0.000	4,917.441
2048	8	78,277.883	0.000	12,565.497	42,232.466	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2048	9	74,789.176	4.392	9,086.389	43,883.702	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2048	10	63,244.756	215.237	2,786.070	42,290.958	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2048	11	56,584.491	1,120.042	239.992	42,009.683	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2048	12	62,462.871	2,567.024	2.687	46,072.717	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2049	1	64,700.285	3,630.057	0.000	47,608.646	-358.862	0.000	0.000	0.000	0.000	0.000	0.000
2049	2	59,881.230	4,048.096	0.000	42,685.684	0.000	-672.993	0.000	0.000	0.000	0.000	0.000
2049	3	58,083.890	3,273.921	23.842	42,189.241	0.000	0.000	-1,223.557	0.000	0.000	0.000	0.000
2049	4	57,103.600	1,899.252	185.057	43,350.031	0.000	0.000	0.000	-2,151.183	0.000	0.000	0.000
2049	5	56,288.567	684.469	919.539	42,927.614	0.000	0.000	0.000	0.000	-439.204	0.000	0.000
2049	6	65,265.790	125.244	4,822.013	44,250.998	0.000	0.000	0.000	0.000	0.000	2,247.092	0.000
2049	7	76,190.797	3.328	11,519.950	44,121.818	0.000	0.000	0.000	0.000	0.000	0.000	4,917.441
2049	8	78,582.330	0.000	12,690.763	42,411.648	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2049	9	75,067.910	4.322	9,177.321	44,071.573	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2049	10	63,452.008	211.812	2,814.061	42,473.644	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2049	11	56,752.218	1,102.264	242.413	42,192.768	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2049	12	62,624.782	2,526.373	2.715	46,275.251	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2050	1	64,879.555	3,571.793	0.000	47,846.181	-358.862	0.000	0.000	0.000	0.000	0.000	0.000
2050	2	60,028.740	3,983.081	0.000	42,898.209	0.000	-672.993	0.000	0.000	0.000	0.000	0.000
2050	3	58,241.113	3,221.304	24.098	42,398.824	0.000	0.000	-1,223.557	0.000	0.000	0.000	0.000
2050	4	57,289.863	1,868.706	187.043	43,564.853	0.000	0.000	0.000	-2,151.183	0.000	0.000	0.000
2050	5	56,499.605	673.452	929.397	43,139.811	0.000	0.000	0.000	0.000	-439.204	0.000	0.000
2050	6	65,533.595	123.227	4,873.651	44,469.183	0.000	0.000	0.000	0.000	0.000	2,247.092	0.000
2050	7	76,530.965	3.274	11,643.170	44,338.820	0.000	0.000	0.000	0.000	0.000	0.000	4,917.441
2050	8	78,925.968	0.000	12,826.345	42,619.703	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2050	9	75,381.383	4.253	9,275.246	44,287.191	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2050	10	63,685.800	208.390	2,844.049	42,680.870	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2050	11	56,942.244	1,084.438	244.993	42,398.040	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2050	12	62,808.408	2,485.482	2.743	46,499.739	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	Pred	XHeat	XCool	XOther	Jan	Feb	Mar	Apr	May	Jun	Jul
2051	1	65,040.380	3,519.462	0.000	48,059.336	-358.862	0.000	0.000	0.000	0.000	0.000	0.000
2051	2	60,161.413	3,924.718	0.000	43,089.245	0.000	-672.993	0.000	0.000	0.000	0.000	0.000
2051	3	58,382.869	3,174.097	24.334	42,587.552	0.000	0.000	-1,223.557	0.000	0.000	0.000	0.000
2051	4	57,458.116	1,841.316	188.869	43,758.670	0.000	0.000	0.000	-2,151.183	0.000	0.000	0.000
2051	5	56,690.619	663.579	938.468	43,331.626	0.000	0.000	0.000	0.000	-439.204	0.000	0.000
2051	6	65,776.940	121.420	4,921.202	44,666.783	0.000	0.000	0.000	0.000	0.000	2,247.092	0.000
2051	7	76,841.367	3.226	11,756.734	44,535.706	0.000	0.000	0.000	0.000	0.000	0.000	4,917.441
2051	8	79,240.138	0.000	12,951.406	42,808.812	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2051	9	75,668.072	4.190	9,365.649	44,483.540	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2051	10	63,899.517	205.331	2,871.759	42,869.936	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2051	11	57,116.352	1,068.519	247.378	42,585.681	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2051	12	62,977.535	2,448.985	2.770	46,705.336	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2052	1	65,208.978	3,467.912	0.000	48,279.484	-358.862	0.000	0.000	0.000	0.000	0.000	0.000
2052	2	60,301.227	3,867.225	0.000	43,286.552	0.000	-672.993	0.000	0.000	0.000	0.000	0.000
2052	3	58,531.531	3,127.594	24.571	42,782.479	0.000	0.000	-1,223.557	0.000	0.000	0.000	0.000
2052	4	57,633.168	1,814.335	190.714	43,958.859	0.000	0.000	0.000	-2,151.183	0.000	0.000	0.000
2052	5	56,888.182	653.854	947.631	43,529.752	0.000	0.000	0.000	0.000	-439.204	0.000	0.000
2052	6	66,027.302	119.640	4,969.236	44,870.890	0.000	0.000	0.000	0.000	0.000	2,247.092	0.000
2052	7	77,159.415	3.179	11,871.454	44,739.081	0.000	0.000	0.000	0.000	0.000	0.000	4,917.441
2052	8	79,561.819	0.000	13,077.740	43,004.159	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2052	9	75,962.166	4.129	9,456.973	44,686.371	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2052	10	64,119.811	202.319	2,899.750	43,065.251	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2052	11	57,296.931	1,052.838	249.789	42,779.531	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2052	12	63,154.019	2,413.035	2.797	46,917.743	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2053	1	65,385.387	3,417.129	0.000	48,506.676	-358.862	0.000	0.000	0.000	0.000	0.000	0.000
2053	2	60,448.214	3,810.588	0.000	43,490.175	0.000	-672.993	0.000	0.000	0.000	0.000	0.000
2053	3	58,687.132	3,081.783	24.811	42,983.651	0.000	0.000	-1,223.557	0.000	0.000	0.000	0.000
2053	4	57,815.059	1,787.756	192.577	44,165.465	0.000	0.000	0.000	-2,151.183	0.000	0.000	0.000
2053	5	57,092.340	644.274	956.887	43,734.233	0.000	0.000	0.000	0.000	-439.204	0.000	0.000
2053	6	66,284.733	117.887	5,017.760	45,081.550	0.000	0.000	0.000	0.000	0.000	2,247.092	0.000
2053	7	77,485.166	3.132	11,987.342	44,948.991	0.000	0.000	0.000	0.000	0.000	0.000	4,917.441
2053	8	79,891.068	0.000	13,205.360	43,205.789	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2053	9	76,263.720	4.068	9,549.226	44,895.732	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2053	10	64,346.729	199.351	2,928.027	43,266.860	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	Pred	XHeat	XCool	XOther	Jan	Feb	Mar	Apr	May	Jun	Jul
2053	11	57,484.021	1,037.392	252.224	42,979.633	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2053	12	63,337.900	2,377.623	2.824	47,137.009	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2054	1	65,569.647	3,367.103	0.000	48,740.962	-358.862	0.000	0.000	0.000	0.000	0.000	0.000
2054	2	60,602.406	3,754.796	0.000	43,700.161	0.000	-672.993	0.000	0.000	0.000	0.000	0.000
2054	3	58,849.708	3,036.656	25.054	43,191.111	0.000	0.000	-1,223.557	0.000	0.000	0.000	0.000
2054	4	58,003.827	1,761.574	194.459	44,378.534	0.000	0.000	0.000	-2,151.183	0.000	0.000	0.000
2054	5	57,303.136	634.837	966.237	43,945.116	0.000	0.000	0.000	0.000	-439.204	0.000	0.000
2054	6	66,549.283	116.160	5,066.778	45,298.810	0.000	0.000	0.000	0.000	0.000	2,247.092	0.000
2054	7	77,818.679	3.087	12,104.410	45,165.482	0.000	0.000	0.000	0.000	0.000	0.000	4,917.441
2054	8	80,227.946	0.000	13,334.281	43,413.745	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2054	9	76,572.791	4.009	9,642.420	45,111.669	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2054	10	64,580.318	196.428	2,956.592	43,474.807	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2054	11	57,677.665	1,022.176	254.683	43,186.033	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2054	12	63,529.219	2,342.741	2.852	47,363.182	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2055	1	65,761.799	3,317.821	0.000	48,982.396	-358.862	0.000	0.000	0.000	0.000	0.000	0.000
2055	2	60,763.839	3,699.834	0.000	43,916.555	0.000	-672.993	0.000	0.000	0.000	0.000	0.000
2055	3	59,019.294	2,992.201	25.299	43,404.908	0.000	0.000	-1,223.557	0.000	0.000	0.000	0.000
2055	4	58,199.517	1,735.782	196.361	44,598.114	0.000	0.000	0.000	-2,151.183	0.000	0.000	0.000
2055	5	57,520.617	625.540	975.682	44,162.448	0.000	0.000	0.000	0.000	-439.204	0.000	0.000
2055	6	66,821.007	114.459	5,116.295	45,522.718	0.000	0.000	0.000	0.000	0.000	2,247.092	0.000
2055	7	78,160.016	3.041	12,222.671	45,388.604	0.000	0.000	0.000	0.000	0.000	0.000	4,917.441
2055	8	80,572.512	0.000	13,464.516	43,628.077	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2055	9	76,889.438	3.950	9,736.564	45,334.231	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2055	10	64,820.627	193.549	2,985.448	43,689.139	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2055	11	57,877.905	1,007.188	257.168	43,398.776	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2055	12	63,728.018	2,308.381	2.880	47,596.314	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2056	1	65,961.886	3,269.273	0.000	49,231.031	-358.862	0.000	0.000	0.000	0.000	0.000	0.000
2056	2	60,932.548	3,645.690	0.000	44,139.408	0.000	-672.993	0.000	0.000	0.000	0.000	0.000
2056	3	59,195.929	2,948.408	25.547	43,625.088	0.000	0.000	-1,223.557	0.000	0.000	0.000	0.000
2056	4	58,402.171	1,710.374	198.282	44,824.255	0.000	0.000	0.000	-2,151.183	0.000	0.000	0.000
2056	5	57,744.831	616.383	985.224	44,386.278	0.000	0.000	0.000	0.000	-439.204	0.000	0.000
2056	6	67,099.961	112.783	5,166.317	45,753.326	0.000	0.000	0.000	0.000	0.000	2,247.092	0.000
2056	7	78,509.240	2.997	12,342.137	45,618.406	0.000	0.000	0.000	0.000	0.000	0.000	4,917.441
2056	8	80,924.828	0.000	13,596.078	43,848.831	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	Pred	XHeat	XCool	XOther	Jan	Feb	Mar	Apr	May	Jun	Jul
2056	9	77,213.720	3.892	9,831.668	45,563.468	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2056	10	65,067.707	190.712	3,014.598	43,909.905	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2056	11	58,084.787	992.424	259.678	43,617.912	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2056	12	63,934.343	2,274.534	2.908	47,836.457	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2057	1	66,169.953	3,221.448	0.000	49,486.923	-358.862	0.000	0.000	0.000	0.000	0.000	0.000
2057	2	61,108.572	3,592.353	0.000	44,368.769	0.000	-672.993	0.000	0.000	0.000	0.000	0.000
2057	3	59,379.653	2,905.267	25.797	43,851.703	0.000	0.000	-1,223.557	0.000	0.000	0.000	0.000
2057	4	58,611.835	1,685.344	200.222	45,057.009	0.000	0.000	0.000	-2,151.183	0.000	0.000	0.000
2057	5	57,975.827	607.361	994.863	44,616.657	0.000	0.000	0.000	0.000	-439.204	0.000	0.000
2057	6	67,386.201	111.132	5,216.848	45,990.686	0.000	0.000	0.000	0.000	0.000	2,247.092	0.000
2057	7	78,866.416	2.953	12,462.821	45,854.942	0.000	0.000	0.000	0.000	0.000	0.000	4,917.441
2057	8	81,284.959	0.000	13,728.982	44,076.058	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2057	9	77,545.701	3.835	9,927.742	45,799.432	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2057	10	65,321.611	187.918	3,044.046	44,137.156	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2057	11	58,298.356	977.881	262.214	43,843.489	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2057	12	64,148.239	2,241.193	2.936	48,083.666	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	Aug	Sep	Oct	Nov	D07on	D09on	d0506	Aug10on	12-Jul	D12on	11-Feb	11-Mar
2000	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2000	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2000	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2000	4	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2000	5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2000	6	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2000	7	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2000	8	7,615.153	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2000	9	0.000	7,994.249	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2000	10	0.000	0.000	4,132.048	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2000	11	0.000	0.000	0.000	1,586.702	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2000	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2001	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2001	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2001	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2001	4	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2001	5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2001	6	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2001	7	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2001	8	7,615.153	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2001	9	0.000	7,994.249	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2001	10	0.000	0.000	4,132.048	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2001	11	0.000	0.000	0.000	1,586.702	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2001	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2002	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2002	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2002	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2002	4	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2002	5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2002	6	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2002	7	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2002	8	7,615.153	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2002	9	0.000	7,994.249	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2002	10	0.000	0.000	4,132.048	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	Aug	Sep	Oct	Nov	D07on	D09on	d0506	Aug10on	12-Jul	D12on	11-Feb	11-Mar
2002	11	0.000	0.000	0.000	1,586.702	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2002	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2003	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2003	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2003	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2003	4	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2003	5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2003	6	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2003	7	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2003	8	7,615.153	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2003	9	0.000	7,994.249	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2003	10	0.000	0.000	4,132.048	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2003	11	0.000	0.000	0.000	1,586.702	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2003	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2004	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2004	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2004	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2004	4	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2004	5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2004	6	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2004	7	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2004	8	7,615.153	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2004	9	0.000	7,994.249	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2004	10	0.000	0.000	4,132.048	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2004	11	0.000	0.000	0.000	1,586.702	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2004	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2005	1	0.000	0.000	0.000	0.000	0.000	0.000	2,075.084	0.000	0.000	0.000	0.000	0.000
2005	2	0.000	0.000	0.000	0.000	0.000	0.000	2,075.084	0.000	0.000	0.000	0.000	0.000
2005	3	0.000	0.000	0.000	0.000	0.000	0.000	2,075.084	0.000	0.000	0.000	0.000	0.000
2005	4	0.000	0.000	0.000	0.000	0.000	0.000	2,075.084	0.000	0.000	0.000	0.000	0.000
2005	5	0.000	0.000	0.000	0.000	0.000	0.000	2,075.084	0.000	0.000	0.000	0.000	0.000
2005	6	0.000	0.000	0.000	0.000	0.000	0.000	2,075.084	0.000	0.000	0.000	0.000	0.000
2005	7	0.000	0.000	0.000	0.000	0.000	0.000	2,075.084	0.000	0.000	0.000	0.000	0.000
2005	8	7,615.153	0.000	0.000	0.000	0.000	0.000	2,075.084	0.000	0.000	0.000	0.000	0.000

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	Aug	Sep	Oct	Nov	D07on	D09on	d0506	Aug10on	12-Jul	D12on	11-Feb	11-Mar
2005	9	0.000	7,994.249	0.000	0.000	0.000	0.000	2,075.084	0.000	0.000	0.000	0.000	0.000
2005	10	0.000	0.000	4,132.048	0.000	0.000	0.000	2,075.084	0.000	0.000	0.000	0.000	0.000
2005	11	0.000	0.000	0.000	1,586.702	0.000	0.000	2,075.084	0.000	0.000	0.000	0.000	0.000
2005	12	0.000	0.000	0.000	0.000	0.000	0.000	2,075.084	0.000	0.000	0.000	0.000	0.000
2006	1	0.000	0.000	0.000	0.000	0.000	0.000	2,075.084	0.000	0.000	0.000	0.000	0.000
2006	2	0.000	0.000	0.000	0.000	0.000	0.000	2,075.084	0.000	0.000	0.000	0.000	0.000
2006	3	0.000	0.000	0.000	0.000	0.000	0.000	2,075.084	0.000	0.000	0.000	0.000	0.000
2006	4	0.000	0.000	0.000	0.000	0.000	0.000	2,075.084	0.000	0.000	0.000	0.000	0.000
2006	5	0.000	0.000	0.000	0.000	0.000	0.000	2,075.084	0.000	0.000	0.000	0.000	0.000
2006	6	0.000	0.000	0.000	0.000	0.000	0.000	2,075.084	0.000	0.000	0.000	0.000	0.000
2006	7	0.000	0.000	0.000	0.000	0.000	0.000	2,075.084	0.000	0.000	0.000	0.000	0.000
2006	8	7,615.153	0.000	0.000	0.000	0.000	0.000	2,075.084	0.000	0.000	0.000	0.000	0.000
2006	9	0.000	7,994.249	0.000	0.000	0.000	0.000	2,075.084	0.000	0.000	0.000	0.000	0.000
2006	10	0.000	0.000	4,132.048	0.000	0.000	0.000	2,075.084	0.000	0.000	0.000	0.000	0.000
2006	11	0.000	0.000	0.000	1,586.702	0.000	0.000	2,075.084	0.000	0.000	0.000	0.000	0.000
2006	12	0.000	0.000	0.000	0.000	0.000	0.000	2,075.084	0.000	0.000	0.000	0.000	0.000
2007	1	0.000	0.000	0.000	0.000	7,367.367	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2007	2	0.000	0.000	0.000	0.000	7,367.367	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2007	3	0.000	0.000	0.000	0.000	7,367.367	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2007	4	0.000	0.000	0.000	0.000	7,367.367	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2007	5	0.000	0.000	0.000	0.000	7,367.367	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2007	6	0.000	0.000	0.000	0.000	7,367.367	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2007	7	0.000	0.000	0.000	0.000	7,367.367	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2007	8	7,615.153	0.000	0.000	0.000	7,367.367	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2007	9	0.000	7,994.249	0.000	0.000	7,367.367	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2007	10	0.000	0.000	4,132.048	0.000	7,367.367	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2007	11	0.000	0.000	0.000	1,586.702	7,367.367	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2007	12	0.000	0.000	0.000	0.000	7,367.367	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2008	1	0.000	0.000	0.000	0.000	7,367.367	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2008	2	0.000	0.000	0.000	0.000	7,367.367	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2008	3	0.000	0.000	0.000	0.000	7,367.367	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2008	4	0.000	0.000	0.000	0.000	7,367.367	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2008	5	0.000	0.000	0.000	0.000	7,367.367	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2008	6	0.000	0.000	0.000	0.000	7,367.367	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	Aug	Sep	Oct	Nov	D07on	D09on	d0506	Aug10on	12-Jul	D12on	11-Feb	11-Mar
2008	7	0.000	0.000	0.000	0.000	7,367.367	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2008	8	7,615.153	0.000	0.000	0.000	7,367.367	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2008	9	0.000	7,994.249	0.000	0.000	7,367.367	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2008	10	0.000	0.000	4,132.048	0.000	7,367.367	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2008	11	0.000	0.000	0.000	1,586.702	7,367.367	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2008	12	0.000	0.000	0.000	0.000	7,367.367	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2009	1	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	0.000	0.000	0.000	0.000	0.000
2009	2	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	0.000	0.000	0.000	0.000	0.000
2009	3	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	0.000	0.000	0.000	0.000	0.000
2009	4	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	0.000	0.000	0.000	0.000	0.000
2009	5	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	0.000	0.000	0.000	0.000	0.000
2009	6	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	0.000	0.000	0.000	0.000	0.000
2009	7	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	0.000	0.000	0.000	0.000	0.000
2009	8	7,615.153	0.000	0.000	0.000	7,367.367	4,263.425	0.000	0.000	0.000	0.000	0.000	0.000
2009	9	0.000	7,994.249	0.000	0.000	7,367.367	4,263.425	0.000	0.000	0.000	0.000	0.000	0.000
2009	10	0.000	0.000	4,132.048	0.000	7,367.367	4,263.425	0.000	0.000	0.000	0.000	0.000	0.000
2009	11	0.000	0.000	0.000	1,586.702	7,367.367	4,263.425	0.000	0.000	0.000	0.000	0.000	0.000
2009	12	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	0.000	0.000	0.000	0.000	0.000
2010	1	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	0.000	0.000	0.000	0.000	0.000
2010	2	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	0.000	0.000	0.000	0.000	0.000
2010	3	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	0.000	0.000	0.000	0.000	0.000
2010	4	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	0.000	0.000	0.000	0.000	0.000
2010	5	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	0.000	0.000	0.000	0.000	0.000
2010	6	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	0.000	0.000	0.000	0.000	0.000
2010	7	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	0.000	0.000	0.000	0.000	0.000
2010	8	7,615.153	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	0.000	0.000	0.000
2010	9	0.000	7,994.249	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	0.000	0.000	0.000
2010	10	0.000	0.000	4,132.048	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	0.000	0.000	0.000
2010	11	0.000	0.000	0.000	1,586.702	7,367.367	4,263.425	0.000	-1,100.897	0.000	0.000	0.000	0.000
2010	12	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	0.000	0.000	0.000
2011	1	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	0.000	0.000	0.000
2011	2	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	0.000	-3,073.579	0.000
2011	3	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	0.000	0.000	4,307.438
2011	4	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	0.000	0.000	0.000

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	Aug	Sep	Oct	Nov	D07on	D09on	d0506	Aug10on	12-Jul	D12on	11-Feb	11-Mar
2011	5	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	0.000	0.000	0.000
2011	6	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	0.000	0.000	0.000
2011	7	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	0.000	0.000	0.000
2011	8	7,615.153	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	0.000	0.000	0.000
2011	9	0.000	7,994.249	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	0.000	0.000	0.000
2011	10	0.000	0.000	4,132.048	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	0.000	0.000	0.000
2011	11	0.000	0.000	0.000	1,586.702	7,367.367	4,263.425	0.000	-1,100.897	0.000	0.000	0.000	0.000
2011	12	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	0.000	0.000	0.000
2012	1	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2012	2	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2012	3	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2012	4	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2012	5	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2012	6	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2012	7	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	5,715.713	3,820.778	0.000	0.000
2012	8	7,615.153	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2012	9	0.000	7,994.249	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2012	10	0.000	0.000	4,132.048	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2012	11	0.000	0.000	0.000	1,586.702	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2012	12	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2013	1	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2013	2	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2013	3	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2013	4	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2013	5	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2013	6	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2013	7	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2013	8	7,615.153	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2013	9	0.000	7,994.249	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2013	10	0.000	0.000	4,132.048	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2013	11	0.000	0.000	0.000	1,586.702	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2013	12	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2014	1	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2014	2	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	Aug	Sep	Oct	Nov	D07on	D09on	d0506	Aug10on	12-Jul	D12on	11-Feb	11-Mar
2014	3	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2014	4	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2014	5	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2014	6	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2014	7	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2014	8	7,615.153	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2014	9	0.000	7,994.249	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2014	10	0.000	0.000	4,132.048	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2014	11	0.000	0.000	0.000	1,586.702	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2014	12	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2015	1	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2015	2	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2015	3	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2015	4	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2015	5	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2015	6	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2015	7	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2015	8	7,615.153	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2015	9	0.000	7,994.249	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2015	10	0.000	0.000	4,132.048	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2015	11	0.000	0.000	0.000	1,586.702	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2015	12	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2016	1	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2016	2	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2016	3	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2016	4	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2016	5	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2016	6	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2016	7	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2016	8	7,615.153	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2016	9	0.000	7,994.249	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2016	10	0.000	0.000	4,132.048	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2016	11	0.000	0.000	0.000	1,586.702	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2016	12	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	Aug	Sep	Oct	Nov	D07on	D09on	d0506	Aug10on	12-Jul	D12on	11-Feb	11-Mar
2017	1	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2017	2	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2017	3	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2017	4	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2017	5	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2017	6	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2017	7	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2017	8	7,615.153	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2017	9	0.000	7,994.249	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2017	10	0.000	0.000	4,132.048	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2017	11	0.000	0.000	0.000	1,586.702	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2017	12	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2018	1	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2018	2	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2018	3	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2018	4	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2018	5	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2018	6	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2018	7	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2018	8	7,615.153	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2018	9	0.000	7,994.249	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2018	10	0.000	0.000	4,132.048	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2018	11	0.000	0.000	0.000	1,586.702	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2018	12	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2019	1	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2019	2	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2019	3	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2019	4	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2019	5	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2019	6	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2019	7	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2019	8	7,615.153	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2019	9	0.000	7,994.249	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2019	10	0.000	0.000	4,132.048	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	Aug	Sep	Oct	Nov	D07on	D09on	d0506	Aug10on	12-Jul	D12on	11-Feb	11-Mar
2019	11	0.000	0.000	0.000	1,586.702	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2019	12	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2020	1	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2020	2	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2020	3	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2020	4	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2020	5	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2020	6	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2020	7	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2020	8	7,615.153	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2020	9	0.000	7,994.249	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2020	10	0.000	0.000	4,132.048	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2020	11	0.000	0.000	0.000	1,586.702	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2020	12	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2021	1	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2021	2	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2021	3	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2021	4	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2021	5	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2021	6	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2021	7	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2021	8	7,615.153	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2021	9	0.000	7,994.249	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2021	10	0.000	0.000	4,132.048	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2021	11	0.000	0.000	0.000	1,586.702	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2021	12	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2022	1	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2022	2	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2022	3	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2022	4	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2022	5	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2022	6	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2022	7	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2022	8	7,615.153	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	Aug	Sep	Oct	Nov	D07on	D09on	d0506	Aug10on	12-Jul	D12on	11-Feb	11-Mar
2022	9	0.000	7,994.249	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2022	10	0.000	0.000	4,132.048	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2022	11	0.000	0.000	0.000	1,586.702	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2022	12	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2023	1	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2023	2	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2023	3	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2023	4	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2023	5	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2023	6	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2023	7	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2023	8	7,615.153	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2023	9	0.000	7,994.249	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2023	10	0.000	0.000	4,132.048	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2023	11	0.000	0.000	0.000	1,586.702	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2023	12	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2024	1	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2024	2	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2024	3	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2024	4	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2024	5	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2024	6	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2024	7	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2024	8	7,615.153	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2024	9	0.000	7,994.249	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2024	10	0.000	0.000	4,132.048	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2024	11	0.000	0.000	0.000	1,586.702	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2024	12	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2025	1	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2025	2	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2025	3	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2025	4	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2025	5	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2025	6	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	Aug	Sep	Oct	Nov	D07on	D09on	d0506	Aug10on	12-Jul	D12on	11-Feb	11-Mar
2025	7	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2025	8	7,615.153	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2025	9	0.000	7,994.249	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2025	10	0.000	0.000	4,132.048	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2025	11	0.000	0.000	0.000	1,586.702	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2025	12	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2026	1	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2026	2	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2026	3	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2026	4	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2026	5	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2026	6	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2026	7	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2026	8	7,615.153	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2026	9	0.000	7,994.249	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2026	10	0.000	0.000	4,132.048	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2026	11	0.000	0.000	0.000	1,586.702	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2026	12	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2027	1	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2027	2	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2027	3	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2027	4	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2027	5	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2027	6	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2027	7	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2027	8	7,615.153	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2027	9	0.000	7,994.249	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2027	10	0.000	0.000	4,132.048	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2027	11	0.000	0.000	0.000	1,586.702	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2027	12	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2028	1	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2028	2	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2028	3	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2028	4	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	Aug	Sep	Oct	Nov	D07on	D09on	d0506	Aug10on	12-Jul	D12on	11-Feb	11-Mar
2028	5	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2028	6	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2028	7	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2028	8	7,615.153	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2028	9	0.000	7,994.249	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2028	10	0.000	0.000	4,132.048	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2028	11	0.000	0.000	0.000	1,586.702	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2028	12	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2029	1	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2029	2	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2029	3	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2029	4	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2029	5	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2029	6	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2029	7	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2029	8	7,615.153	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2029	9	0.000	7,994.249	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2029	10	0.000	0.000	4,132.048	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2029	11	0.000	0.000	0.000	1,586.702	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2029	12	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2030	1	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2030	2	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2030	3	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2030	4	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2030	5	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2030	6	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2030	7	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2030	8	7,615.153	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2030	9	0.000	7,994.249	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2030	10	0.000	0.000	4,132.048	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2030	11	0.000	0.000	0.000	1,586.702	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2030	12	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2031	1	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2031	2	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	Aug	Sep	Oct	Nov	D07on	D09on	d0506	Aug10on	12-Jul	D12on	11-Feb	11-Mar
2031	3	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2031	4	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2031	5	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2031	6	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2031	7	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2031	8	7,615.153	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2031	9	0.000	7,994.249	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2031	10	0.000	0.000	4,132.048	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2031	11	0.000	0.000	0.000	1,586.702	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2031	12	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2032	1	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2032	2	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2032	3	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2032	4	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2032	5	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2032	6	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2032	7	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2032	8	7,615.153	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2032	9	0.000	7,994.249	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2032	10	0.000	0.000	4,132.048	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2032	11	0.000	0.000	0.000	1,586.702	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2032	12	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2033	1	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2033	2	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2033	3	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2033	4	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2033	5	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2033	6	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2033	7	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2033	8	7,615.153	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2033	9	0.000	7,994.249	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2033	10	0.000	0.000	4,132.048	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2033	11	0.000	0.000	0.000	1,586.702	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2033	12	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	Aug	Sep	Oct	Nov	D07on	D09on	d0506	Aug10on	12-Jul	D12on	11-Feb	11-Mar
2034	1	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2034	2	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2034	3	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2034	4	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2034	5	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2034	6	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2034	7	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2034	8	7,615.153	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2034	9	0.000	7,994.249	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2034	10	0.000	0.000	4,132.048	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2034	11	0.000	0.000	0.000	1,586.702	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2034	12	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2035	1	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2035	2	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2035	3	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2035	4	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2035	5	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2035	6	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2035	7	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2035	8	7,615.153	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2035	9	0.000	7,994.249	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2035	10	0.000	0.000	4,132.048	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2035	11	0.000	0.000	0.000	1,586.702	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2035	12	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2036	1	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2036	2	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2036	3	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2036	4	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2036	5	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2036	6	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2036	7	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2036	8	7,615.153	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2036	9	0.000	7,994.249	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2036	10	0.000	0.000	4,132.048	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	Aug	Sep	Oct	Nov	D07on	D09on	d0506	Aug10on	12-Jul	D12on	11-Feb	11-Mar
2036	11	0.000	0.000	0.000	1,586.702	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2036	12	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2037	1	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2037	2	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2037	3	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2037	4	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2037	5	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2037	6	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2037	7	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2037	8	7,615.153	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2037	9	0.000	7,994.249	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2037	10	0.000	0.000	4,132.048	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2037	11	0.000	0.000	0.000	1,586.702	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2037	12	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2038	1	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2038	2	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2038	3	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2038	4	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2038	5	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2038	6	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2038	7	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2038	8	7,615.153	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2038	9	0.000	7,994.249	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2038	10	0.000	0.000	4,132.048	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2038	11	0.000	0.000	0.000	1,586.702	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2038	12	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2039	1	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2039	2	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2039	3	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2039	4	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2039	5	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2039	6	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2039	7	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2039	8	7,615.153	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	Aug	Sep	Oct	Nov	D07on	D09on	d0506	Aug10on	12-Jul	D12on	11-Feb	11-Mar
2039	9	0.000	7,994.249	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2039	10	0.000	0.000	4,132.048	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2039	11	0.000	0.000	0.000	1,586.702	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2039	12	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2040	1	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2040	2	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2040	3	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2040	4	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2040	5	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2040	6	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2040	7	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2040	8	7,615.153	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2040	9	0.000	7,994.249	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2040	10	0.000	0.000	4,132.048	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2040	11	0.000	0.000	0.000	1,586.702	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2040	12	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2041	1	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2041	2	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2041	3	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2041	4	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2041	5	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2041	6	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2041	7	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2041	8	7,615.153	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2041	9	0.000	7,994.249	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2041	10	0.000	0.000	4,132.048	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2041	11	0.000	0.000	0.000	1,586.702	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2041	12	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2042	1	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2042	2	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2042	3	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2042	4	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2042	5	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2042	6	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	Aug	Sep	Oct	Nov	D07on	D09on	d0506	Aug10on	12-Jul	D12on	11-Feb	11-Mar
2042	7	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2042	8	7,615.153	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2042	9	0.000	7,994.249	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2042	10	0.000	0.000	4,132.048	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2042	11	0.000	0.000	0.000	1,586.702	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2042	12	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2043	1	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2043	2	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2043	3	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2043	4	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2043	5	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2043	6	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2043	7	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2043	8	7,615.153	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2043	9	0.000	7,994.249	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2043	10	0.000	0.000	4,132.048	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2043	11	0.000	0.000	0.000	1,586.702	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2043	12	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2044	1	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2044	2	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2044	3	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2044	4	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2044	5	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2044	6	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2044	7	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2044	8	7,615.153	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2044	9	0.000	7,994.249	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2044	10	0.000	0.000	4,132.048	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2044	11	0.000	0.000	0.000	1,586.702	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2044	12	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2045	1	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2045	2	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2045	3	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2045	4	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	Aug	Sep	Oct	Nov	D07on	D09on	d0506	Aug10on	12-Jul	D12on	11-Feb	11-Mar
2045	5	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2045	6	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2045	7	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2045	8	7,615.153	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2045	9	0.000	7,994.249	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2045	10	0.000	0.000	4,132.048	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2045	11	0.000	0.000	0.000	1,586.702	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2045	12	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2046	1	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2046	2	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2046	3	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2046	4	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2046	5	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2046	6	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2046	7	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2046	8	7,615.153	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2046	9	0.000	7,994.249	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2046	10	0.000	0.000	4,132.048	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2046	11	0.000	0.000	0.000	1,586.702	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2046	12	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2047	1	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2047	2	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2047	3	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2047	4	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2047	5	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2047	6	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2047	7	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2047	8	7,615.153	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2047	9	0.000	7,994.249	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2047	10	0.000	0.000	4,132.048	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2047	11	0.000	0.000	0.000	1,586.702	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2047	12	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2048	1	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2048	2	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	Aug	Sep	Oct	Nov	D07on	D09on	d0506	Aug10on	12-Jul	D12on	11-Feb	11-Mar
2048	3	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2048	4	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2048	5	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2048	6	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2048	7	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2048	8	7,615.153	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2048	9	0.000	7,994.249	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2048	10	0.000	0.000	4,132.048	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2048	11	0.000	0.000	0.000	1,586.702	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2048	12	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2049	1	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2049	2	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2049	3	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2049	4	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2049	5	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2049	6	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2049	7	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2049	8	7,615.153	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2049	9	0.000	7,994.249	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2049	10	0.000	0.000	4,132.048	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2049	11	0.000	0.000	0.000	1,586.702	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2049	12	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2050	1	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2050	2	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2050	3	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2050	4	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2050	5	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2050	6	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2050	7	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2050	8	7,615.153	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2050	9	0.000	7,994.249	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2050	10	0.000	0.000	4,132.048	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2050	11	0.000	0.000	0.000	1,586.702	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2050	12	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	Aug	Sep	Oct	Nov	D07on	D09on	d0506	Aug10on	12-Jul	D12on	11-Feb	11-Mar
2051	1	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2051	2	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2051	3	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2051	4	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2051	5	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2051	6	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2051	7	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2051	8	7,615.153	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2051	9	0.000	7,994.249	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2051	10	0.000	0.000	4,132.048	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2051	11	0.000	0.000	0.000	1,586.702	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2051	12	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2052	1	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2052	2	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2052	3	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2052	4	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2052	5	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2052	6	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2052	7	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2052	8	7,615.153	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2052	9	0.000	7,994.249	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2052	10	0.000	0.000	4,132.048	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2052	11	0.000	0.000	0.000	1,586.702	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2052	12	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2053	1	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2053	2	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2053	3	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2053	4	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2053	5	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2053	6	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2053	7	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2053	8	7,615.153	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2053	9	0.000	7,994.249	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2053	10	0.000	0.000	4,132.048	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	Aug	Sep	Oct	Nov	D07on	D09on	d0506	Aug10on	12-Jul	D12on	11-Feb	11-Mar
2053	11	0.000	0.000	0.000	1,586.702	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2053	12	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2054	1	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2054	2	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2054	3	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2054	4	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2054	5	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2054	6	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2054	7	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2054	8	7,615.153	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2054	9	0.000	7,994.249	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2054	10	0.000	0.000	4,132.048	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2054	11	0.000	0.000	0.000	1,586.702	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2054	12	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2055	1	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2055	2	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2055	3	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2055	4	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2055	5	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2055	6	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2055	7	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2055	8	7,615.153	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2055	9	0.000	7,994.249	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2055	10	0.000	0.000	4,132.048	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2055	11	0.000	0.000	0.000	1,586.702	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2055	12	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2056	1	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2056	2	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2056	3	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2056	4	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2056	5	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2056	6	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2056	7	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2056	8	7,615.153	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	Aug	Sep	Oct	Nov	D07on	D09on	d0506	Aug10on	12-Jul	D12on	11-Feb	11-Mar
2056	9	0.000	7,994.249	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2056	10	0.000	0.000	4,132.048	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2056	11	0.000	0.000	0.000	1,586.702	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2056	12	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2057	1	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2057	2	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2057	3	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2057	4	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2057	5	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2057	6	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2057	7	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2057	8	7,615.153	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2057	9	0.000	7,994.249	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2057	10	0.000	0.000	4,132.048	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2057	11	0.000	0.000	0.000	1,586.702	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000
2057	12	0.000	0.000	0.000	0.000	7,367.367	4,263.425	0.000	-1,100.897	0.000	3,820.778	0.000	0.000

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	aug15on	Sep18on	D12onNov	D16onAug	D16onMay	D16onJul	mayjun20	mar20on	20-Apr	X-Missing	Heating
2000	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	7,358.596
2000	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	9,072.479
2000	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	4,534.726
2000	4	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	3,258.518
2000	5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1,499.570
2000	6	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	183.090
2000	7	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	17.888
2000	8	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2000	9	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	27.734
2000	10	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	643.560
2000	11	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1,733.252
2000	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	7,432.604
2001	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	10,418.498
2001	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	8,323.243
2001	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	6,857.747
2001	4	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	4,350.732
2001	5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	779.915
2001	6	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	264.774
2001	7	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	29.976
2001	8	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2001	9	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	9.096
2001	10	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	505.594
2001	11	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1,618.904
2001	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	2,682.128
2002	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	6,899.908
2002	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	5,947.043
2002	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	5,999.968
2002	4	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	4,689.503
2002	5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1,733.079
2002	6	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	660.041
2002	7	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2002	8	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2002	9	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2002	10	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	433.247

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	aug15on	Sep18on	D12onNov	D16onAug	D16onMay	D16onJul	mayjun20	mar20on	20-Apr	X-Missing	Heating
2002	11	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	3,149.147
2002	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	6,236.684
2003	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	7,506.292
2003	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	9,454.117
2003	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	8,029.480
2003	4	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	3,349.639
2003	5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1,324.650
2003	6	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	347.405
2003	7	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	18.196
2003	8	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2003	9	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.195
2003	10	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	791.815
2003	11	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	2,017.859
2003	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	4,596.427
2004	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	6,726.883
2004	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	9,572.888
2004	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	6,136.252
2004	4	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	3,300.229
2004	5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1,168.402
2004	6	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	131.573
2004	7	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.192
2004	8	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2004	9	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2004	10	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	474.705
2004	11	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1,662.982
2004	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	4,520.618
2005	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	7,629.845
2005	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	8,311.232
2005	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	6,974.122
2005	4	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	4,039.464
2005	5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1,432.195
2005	6	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	210.516
2005	7	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2005	8	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	aug15on	Sep18on	D12onNov	D16onAug	D16onMay	D16onJul	mayjun20	mar20on	20-Apr	X-Missing	Heating
2005	9	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2005	10	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	284.456
2005	11	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1,888.507
2005	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	6,429.743
2006	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	6,750.615
2006	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	5,689.677
2006	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	6,375.271
2006	4	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	3,697.043
2006	5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	881.947
2006	6	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	454.130
2006	7	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2006	8	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2006	9	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	18.562
2006	10	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	652.497
2006	11	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	2,967.022
2006	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	4,306.378
2007	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	4,926.602
2007	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	8,637.814
2007	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	7,774.156
2007	4	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	3,110.338
2007	5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1,214.088
2007	6	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	74.415
2007	7	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2007	8	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2007	9	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	15.662
2007	10	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	160.296
2007	11	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1,746.456
2007	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	5,418.276
2008	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	6,578.928
2008	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	8,120.583
2008	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	7,430.820
2008	4	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	4,142.756
2008	5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1,236.232
2008	6	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	360.703

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	aug15on	Sep18on	D12onNov	D16onAug	D16onMay	D16onJul	mayjun20	mar20on	20-Apr	X-Missing	Heating
2008	7	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.137
2008	8	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2008	9	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2008	10	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	271.345
2008	11	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	2,067.767
2008	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	5,950.090
2009	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	7,572.325
2009	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	8,589.318
2009	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	5,482.196
2009	4	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	3,022.253
2009	5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1,152.023
2009	6	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	174.220
2009	7	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.125
2009	8	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2009	9	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2009	10	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	727.965
2009	11	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1,726.888
2009	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	4,065.565
2010	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	7,039.999
2010	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	7,146.316
2010	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	5,607.257
2010	4	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	2,099.615
2010	5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	782.216
2010	6	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	167.754
2010	7	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2010	8	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2010	9	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2010	10	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	309.213
2010	11	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1,633.093
2010	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	4,980.041
2011	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	7,094.729
2011	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	7,745.553
2011	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	5,533.051
2011	4	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	3,451.036

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	aug15on	Sep18on	D12onNov	D16onAug	D16onMay	D16onJul	mayjun20	mar20on	20-Apr	X-Missing	Heating
2011	5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1,227.173
2011	6	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	161.456
2011	7	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2011	8	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2011	9	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	27.777
2011	10	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	324.112
2011	11	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1,441.129
2011	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	3,315.260
2012	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	4,816.792
2012	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	5,469.749
2012	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	3,880.105
2012	4	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1,133.087
2012	5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	938.747
2012	6	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	62.118
2012	7	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	5.529
2012	8	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2012	9	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	10.731
2012	10	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	524.639
2012	11	0.000	0.000	-2,192.373	0.000	0.000	0.000	0.000	0.000	0.000	0.000	2,086.140
2012	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	3,227.957
2013	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	5,128.695
2013	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	6,097.943
2013	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	5,522.040
2013	4	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	3,997.374
2013	5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1,150.411
2013	6	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	219.908
2013	7	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	3.163
2013	8	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2013	9	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.352
2013	10	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	155.024
2013	11	0.000	0.000	-2,192.373	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1,876.207
2013	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	4,815.122
2014	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	6,821.862
2014	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	7,999.787

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	aug15on	Sep18on	D12onNov	D16onAug	D16onMay	D16onJul	mayjun20	mar20on	20-Apr	X-Missing	Heating
2014	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	6,947.588
2014	4	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	3,755.953
2014	5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1,022.317
2014	6	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	233.553
2014	7	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2014	8	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2014	9	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	22.386
2014	10	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	324.438
2014	11	0.000	0.000	-2,192.373	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1,915.045
2014	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	4,689.697
2015	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	5,461.573
2015	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	6,589.790
2015	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	6,863.826
2015	4	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	2,836.368
2015	5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	864.359
2015	6	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	143.090
2015	7	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.318
2015	8	1,529.017	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2015	9	1,529.017	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.430
2015	10	1,529.017	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	219.585
2015	11	1,529.017	0.000	-2,192.373	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1,093.450
2015	12	1,529.017	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	2,848.659
2016	1	1,529.017	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	4,294.782
2016	2	1,529.017	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	5,812.728
2016	3	1,529.017	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	4,197.221
2016	4	1,529.017	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	2,364.594
2016	5	1,529.017	0.000	0.000	0.000	-1,624.294	0.000	0.000	0.000	0.000	0.000	1,051.704
2016	6	1,529.017	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	209.836
2016	7	1,529.017	0.000	0.000	0.000	0.000	1,807.816	0.000	0.000	0.000	0.000	0.000
2016	8	1,529.017	0.000	0.000	2,044.323	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2016	9	1,529.017	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2016	10	1,529.017	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	88.908
2016	11	1,529.017	0.000	-2,192.373	0.000	0.000	0.000	0.000	0.000	0.000	0.000	978.009
2016	12	1,529.017	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	3,682.741

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	aug15on	Sep18on	D12onNov	D16onAug	D16onMay	D16onJul	mayjun20	mar20on	20-Apr	X-Missing	Heating
2017	1	1,529.017	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	5,703.492
2017	2	1,529.017	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	4,587.584
2017	3	1,529.017	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	3,460.115
2017	4	1,529.017	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	2,651.596
2017	5	1,529.017	0.000	0.000	0.000	-1,624.294	0.000	0.000	0.000	0.000	0.000	844.408
2017	6	1,529.017	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	188.959
2017	7	1,529.017	0.000	0.000	0.000	0.000	1,807.816	0.000	0.000	0.000	0.000	0.000
2017	8	1,529.017	0.000	0.000	2,044.323	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2017	9	1,529.017	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2017	10	1,529.017	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	41.602
2017	11	1,529.017	0.000	-2,192.373	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1,776.464
2017	12	1,529.017	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	3,692.656
2018	1	1,529.017	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	6,736.445
2018	2	1,529.017	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	5,906.522
2018	3	1,529.017	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	4,436.472
2018	4	1,529.017	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	3,784.344
2018	5	1,529.017	0.000	0.000	0.000	-1,624.294	0.000	0.000	0.000	0.000	0.000	1,556.186
2018	6	1,529.017	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	33.225
2018	7	1,529.017	0.000	0.000	0.000	0.000	1,807.816	0.000	0.000	0.000	0.000	0.000
2018	8	1,529.017	0.000	0.000	2,044.323	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2018	9	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2018	10	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	334.250
2018	11	1,529.017	-1,757.519	-2,192.373	0.000	0.000	0.000	0.000	0.000	0.000	0.000	2,363.779
2018	12	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	4,416.646
2019	1	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	4,471.779
2019	2	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	6,510.563
2019	3	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	5,402.318
2019	4	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	3,022.220
2019	5	1,529.017	-1,757.519	0.000	0.000	-1,624.294	0.000	0.000	0.000	0.000	0.000	1,091.504
2019	6	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	224.354
2019	7	1,529.017	-1,757.519	0.000	0.000	0.000	1,807.816	0.000	0.000	0.000	0.000	0.000
2019	8	1,529.017	-1,757.519	0.000	2,044.323	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2019	9	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2019	10	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	149.235

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	aug15on	Sep18on	D12onNov	D16onAug	D16onMay	D16onJul	mayjun20	mar20on	20-Apr	X-Missing	Heating
2019	11	1,529.017	-1,757.519	-2,192.373	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1,943.729
2019	12	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	3,751.858
2020	1	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	3,621.946
2020	2	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	4,412.249
2020	3	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	4,032.791
2020	4	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	-3,895.519	0.000	2,221.405
2020	5	1,529.017	-1,757.519	0.000	0.000	-1,624.294	0.000	-6,059.792	-301.728	0.000	0.000	1,454.537
2020	6	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	-6,059.792	-301.728	0.000	0.000	237.543
2020	7	1,529.017	-1,757.519	0.000	0.000	0.000	1,807.816	0.000	-301.728	0.000	0.000	0.000
2020	8	1,529.017	-1,757.519	0.000	2,044.323	0.000	0.000	0.000	-301.728	0.000	0.000	0.000
2020	9	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	6.348
2020	10	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	260.785
2020	11	1,529.017	-1,757.519	-2,192.373	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	1,327.869
2020	12	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	2,812.597
2021	1	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	4,332.157
2021	2	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	5,391.073
2021	3	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	4,366.074
2021	4	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	2,536.705
2021	5	1,529.017	-1,757.519	0.000	0.000	-1,624.294	0.000	0.000	-301.728	0.000	0.000	915.621
2021	6	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	167.784
2021	7	1,529.017	-1,757.519	0.000	0.000	0.000	1,807.816	0.000	-301.728	0.000	0.000	4.464
2021	8	1,529.017	-1,757.519	0.000	2,044.323	0.000	0.000	0.000	-301.728	0.000	0.000	0.000
2021	9	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	5.813
2021	10	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	285.403
2021	11	1,529.017	-1,757.519	-2,192.373	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	1,485.996
2021	12	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	3,404.057
2022	1	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	4,888.583
2022	2	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	5,460.419
2022	3	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	4,423.261
2022	4	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	2,570.209
2022	5	1,529.017	-1,757.519	0.000	0.000	-1,624.294	0.000	0.000	-301.728	0.000	0.000	927.760
2022	6	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	170.030
2022	7	1,529.017	-1,757.519	0.000	0.000	0.000	1,807.816	0.000	-301.728	0.000	0.000	4.525
2022	8	1,529.017	-1,757.519	0.000	2,044.323	0.000	0.000	0.000	-301.728	0.000	0.000	0.000

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	aug15on	Sep18on	D12onNov	D16onAug	D16onMay	D16onJul	mayjun20	mar20on	20-Apr	X-Missing	Heating
2022	9	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	5.896
2022	10	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	289.391
2022	11	1,529.017	-1,757.519	-2,192.373	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	1,508.407
2022	12	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	3,462.754
2023	1	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	4,931.561
2023	2	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	5,507.973
2023	3	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	4,461.541
2023	4	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	2,592.290
2023	5	1,529.017	-1,757.519	0.000	0.000	-1,624.294	0.000	0.000	-301.728	0.000	0.000	935.636
2023	6	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	171.446
2023	7	1,529.017	-1,757.519	0.000	0.000	0.000	1,807.816	0.000	-301.728	0.000	0.000	4.562
2023	8	1,529.017	-1,757.519	0.000	2,044.323	0.000	0.000	0.000	-301.728	0.000	0.000	0.000
2023	9	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	5.939
2023	10	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	291.388
2023	11	1,529.017	-1,757.519	-2,192.373	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	1,518.097
2023	12	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	3,483.286
2024	1	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	4,947.915
2024	2	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	5,518.893
2024	3	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	4,464.390
2024	4	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	2,590.421
2024	5	1,529.017	-1,757.519	0.000	0.000	-1,624.294	0.000	0.000	-301.728	0.000	0.000	933.765
2024	6	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	170.901
2024	7	1,529.017	-1,757.519	0.000	0.000	0.000	1,807.816	0.000	-301.728	0.000	0.000	4.542
2024	8	1,529.017	-1,757.519	0.000	2,044.323	0.000	0.000	0.000	-301.728	0.000	0.000	0.000
2024	9	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	5.903
2024	10	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	289.386
2024	11	1,529.017	-1,757.519	-2,192.373	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	1,506.515
2024	12	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	3,454.227
2025	1	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	4,897.796
2025	2	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	5,464.048
2025	3	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	4,420.914
2025	4	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	2,565.722
2025	5	1,529.017	-1,757.519	0.000	0.000	-1,624.294	0.000	0.000	-301.728	0.000	0.000	925.028
2025	6	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	169.325

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	aug15on	Sep18on	D12onNov	D16onAug	D16onMay	D16onJul	mayjun20	mar20on	20-Apr	X-Missing	Heating
2025	7	1,529.017	-1,757.519	0.000	0.000	0.000	1,807.816	0.000	-301.728	0.000	0.000	4.501
2025	8	1,529.017	-1,757.519	0.000	2,044.323	0.000	0.000	0.000	-301.728	0.000	0.000	0.000
2025	9	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	5.849
2025	10	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	286.714
2025	11	1,529.017	-1,757.519	-2,192.373	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	1,492.459
2025	12	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	3,421.606
2026	1	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	4,850.532
2026	2	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	5,409.546
2026	3	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	4,375.391
2026	4	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	2,538.497
2026	5	1,529.017	-1,757.519	0.000	0.000	-1,624.294	0.000	0.000	-301.728	0.000	0.000	914.956
2026	6	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	167.442
2026	7	1,529.017	-1,757.519	0.000	0.000	0.000	1,807.816	0.000	-301.728	0.000	0.000	4.450
2026	8	1,529.017	-1,757.519	0.000	2,044.323	0.000	0.000	0.000	-301.728	0.000	0.000	0.000
2026	9	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	5.782
2026	10	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	283.413
2026	11	1,529.017	-1,757.519	-2,192.373	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	1,475.257
2026	12	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	3,382.205
2027	1	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	4,798.660
2027	2	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	5,352.569
2027	3	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	4,329.988
2027	4	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	2,512.536
2027	5	1,529.017	-1,757.519	0.000	0.000	-1,624.294	0.000	0.000	-301.728	0.000	0.000	905.719
2027	6	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	165.770
2027	7	1,529.017	-1,757.519	0.000	0.000	0.000	1,807.816	0.000	-301.728	0.000	0.000	4.406
2027	8	1,529.017	-1,757.519	0.000	2,044.323	0.000	0.000	0.000	-301.728	0.000	0.000	0.000
2027	9	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	5.725
2027	10	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	280.603
2027	11	1,529.017	-1,757.519	-2,192.373	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	1,460.553
2027	12	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	3,348.232
2028	1	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	4,754.481
2028	2	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	5,302.936
2028	3	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	4,289.510
2028	4	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	2,488.816

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	aug15on	Sep18on	D12onNov	D16onAug	D16onMay	D16onJul	mayjun20	mar20on	20-Apr	X-Missing	Heating
2028	5	1,529.017	-1,757.519	0.000	0.000	-1,624.294	0.000	0.000	-301.728	0.000	0.000	897.084
2028	6	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	164.175
2028	7	1,529.017	-1,757.519	0.000	0.000	0.000	1,807.816	0.000	-301.728	0.000	0.000	4.363
2028	8	1,529.017	-1,757.519	0.000	2,044.323	0.000	0.000	0.000	-301.728	0.000	0.000	0.000
2028	9	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	5.669
2028	10	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	277.825
2028	11	1,529.017	-1,757.519	-2,192.373	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	1,446.011
2028	12	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	3,314.728
2029	1	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	4,703.363
2029	2	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	5,245.383
2029	3	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	4,242.504
2029	4	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	2,461.290
2029	5	1,529.017	-1,757.519	0.000	0.000	-1,624.294	0.000	0.000	-301.728	0.000	0.000	887.070
2029	6	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	162.325
2029	7	1,529.017	-1,757.519	0.000	0.000	0.000	1,807.816	0.000	-301.728	0.000	0.000	4.314
2029	8	1,529.017	-1,757.519	0.000	2,044.323	0.000	0.000	0.000	-301.728	0.000	0.000	0.000
2029	9	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	5.603
2029	10	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	274.565
2029	11	1,529.017	-1,757.519	-2,192.373	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	1,428.864
2029	12	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	3,275.010
2030	1	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	4,645.511
2030	2	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	5,180.735
2030	3	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	4,190.137
2030	4	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	2,430.876
2030	5	1,529.017	-1,757.519	0.000	0.000	-1,624.294	0.000	0.000	-301.728	0.000	0.000	876.103
2030	6	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	160.318
2030	7	1,529.017	-1,757.519	0.000	0.000	0.000	1,807.816	0.000	-301.728	0.000	0.000	4.260
2030	8	1,529.017	-1,757.519	0.000	2,044.323	0.000	0.000	0.000	-301.728	0.000	0.000	0.000
2030	9	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	5.534
2030	10	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	271.197
2030	11	1,529.017	-1,757.519	-2,192.373	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	1,411.397
2030	12	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	3,235.125
2031	1	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	4,595.215
2031	2	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	5,124.862

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	aug15on	Sep18on	D12onNov	D16onAug	D16onMay	D16onJul	mayjun20	mar20on	20-Apr	X-Missing	Heating
2031	3	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	4,145.126
2031	4	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	2,404.863
2031	5	1,529.017	-1,757.519	0.000	0.000	-1,624.294	0.000	0.000	-301.728	0.000	0.000	866.759
2031	6	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	158.613
2031	7	1,529.017	-1,757.519	0.000	0.000	0.000	1,807.816	0.000	-301.728	0.000	0.000	4.215
2031	8	1,529.017	-1,757.519	0.000	2,044.323	0.000	0.000	0.000	-301.728	0.000	0.000	0.000
2031	9	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	5.475
2031	10	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	268.324
2031	11	1,529.017	-1,757.519	-2,192.373	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	1,396.441
2031	12	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	3,200.823
2032	1	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	4,543.830
2032	2	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	5,067.354
2032	3	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	4,098.450
2032	4	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	2,377.676
2032	5	1,529.017	-1,757.519	0.000	0.000	-1,624.294	0.000	0.000	-301.728	0.000	0.000	856.926
2032	6	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	156.808
2032	7	1,529.017	-1,757.519	0.000	0.000	0.000	1,807.816	0.000	-301.728	0.000	0.000	4.167
2032	8	1,529.017	-1,757.519	0.000	2,044.323	0.000	0.000	0.000	-301.728	0.000	0.000	0.000
2032	9	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	5.413
2032	10	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	265.254
2032	11	1,529.017	-1,757.519	-2,192.373	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	1,380.463
2032	12	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	3,164.214
2033	1	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	4,489.696
2033	2	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	5,007.276
2033	3	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	4,050.108
2033	4	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	2,349.800
2033	5	1,529.017	-1,757.519	0.000	0.000	-1,624.294	0.000	0.000	-301.728	0.000	0.000	846.939
2033	6	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	154.991
2033	7	1,529.017	-1,757.519	0.000	0.000	0.000	1,807.816	0.000	-301.728	0.000	0.000	4.119
2033	8	1,529.017	-1,757.519	0.000	2,044.323	0.000	0.000	0.000	-301.728	0.000	0.000	0.000
2033	9	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	5.351
2033	10	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	262.246
2033	11	1,529.017	-1,757.519	-2,192.373	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	1,364.882
2033	12	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	3,128.664

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	aug15on	Sep18on	D12onNov	D16onAug	D16onMay	D16onJul	mayjun20	mar20on	20-Apr	X-Missing	Heating
2034	1	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	4,435.940
2034	2	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	4,947.422
2034	3	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	4,001.774
2034	4	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	2,321.801
2034	5	1,529.017	-1,757.519	0.000	0.000	-1,624.294	0.000	0.000	-301.728	0.000	0.000	836.862
2034	6	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	153.150
2034	7	1,529.017	-1,757.519	0.000	0.000	0.000	1,807.816	0.000	-301.728	0.000	0.000	4.070
2034	8	1,529.017	-1,757.519	0.000	2,044.323	0.000	0.000	0.000	-301.728	0.000	0.000	0.000
2034	9	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	5.288
2034	10	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	259.144
2034	11	1,529.017	-1,757.519	-2,192.373	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	1,348.754
2034	12	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	3,091.732
2035	1	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	4,385.800
2035	2	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	4,891.538
2035	3	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	3,956.601
2035	4	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	2,295.607
2035	5	1,529.017	-1,757.519	0.000	0.000	-1,624.294	0.000	0.000	-301.728	0.000	0.000	827.425
2035	6	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	151.423
2035	7	1,529.017	-1,757.519	0.000	0.000	0.000	1,807.816	0.000	-301.728	0.000	0.000	4.024
2035	8	1,529.017	-1,757.519	0.000	2,044.323	0.000	0.000	0.000	-301.728	0.000	0.000	0.000
2035	9	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	5.228
2035	10	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	256.219
2035	11	1,529.017	-1,757.519	-2,192.373	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	1,333.523
2035	12	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	3,056.787
2036	1	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	4,332.892
2036	2	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	4,832.478
2036	3	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	3,908.783
2036	4	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	2,267.814
2036	5	1,529.017	-1,757.519	0.000	0.000	-1,624.294	0.000	0.000	-301.728	0.000	0.000	817.387
2036	6	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	149.582
2036	7	1,529.017	-1,757.519	0.000	0.000	0.000	1,807.816	0.000	-301.728	0.000	0.000	3.975
2036	8	1,529.017	-1,757.519	0.000	2,044.323	0.000	0.000	0.000	-301.728	0.000	0.000	0.000
2036	9	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	5.164
2036	10	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	253.072

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	aug15on	Sep18on	D12onNov	D16onAug	D16onMay	D16onJul	mayjun20	mar20on	20-Apr	X-Missing	Heating
2036	11	1,529.017	-1,757.519	-2,192.373	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	1,317.099
2036	12	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	3,019.044
2037	1	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	4,277.083
2037	2	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	4,770.138
2037	3	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	3,858.295
2037	4	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	2,238.509
2037	5	1,529.017	-1,757.519	0.000	0.000	-1,624.294	0.000	0.000	-301.728	0.000	0.000	806.823
2037	6	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	147.649
2037	7	1,529.017	-1,757.519	0.000	0.000	0.000	1,807.816	0.000	-301.728	0.000	0.000	3.924
2037	8	1,529.017	-1,757.519	0.000	2,044.323	0.000	0.000	0.000	-301.728	0.000	0.000	0.000
2037	9	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	5.097
2037	10	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	249.816
2037	11	1,529.017	-1,757.519	-2,192.373	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	1,300.188
2037	12	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	2,980.363
2038	1	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	4,221.454
2038	2	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	4,707.984
2038	3	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	3,807.928
2038	4	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	2,209.229
2038	5	1,529.017	-1,757.519	0.000	0.000	-1,624.294	0.000	0.000	-301.728	0.000	0.000	796.248
2038	6	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	145.710
2038	7	1,529.017	-1,757.519	0.000	0.000	0.000	1,807.816	0.000	-301.728	0.000	0.000	3.872
2038	8	1,529.017	-1,757.519	0.000	2,044.323	0.000	0.000	0.000	-301.728	0.000	0.000	0.000
2038	9	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	5.030
2038	10	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	246.503
2038	11	1,529.017	-1,757.519	-2,192.373	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	1,282.896
2038	12	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	2,940.616
2039	1	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	4,166.393
2039	2	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	4,646.550
2039	3	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	3,758.221
2039	4	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	2,180.383
2039	5	1,529.017	-1,757.519	0.000	0.000	-1,624.294	0.000	0.000	-301.728	0.000	0.000	785.851
2039	6	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	143.807
2039	7	1,529.017	-1,757.519	0.000	0.000	0.000	1,807.816	0.000	-301.728	0.000	0.000	3.822
2039	8	1,529.017	-1,757.519	0.000	2,044.323	0.000	0.000	0.000	-301.728	0.000	0.000	0.000

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	aug15on	Sep18on	D12onNov	D16onAug	D16onMay	D16onJul	mayjun20	mar20on	20-Apr	X-Missing	Heating
2039	9	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	4.964
2039	10	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	243.294
2039	11	1,529.017	-1,757.519	-2,192.373	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	1,266.213
2039	12	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	2,902.415
2040	1	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	4,112.492
2040	2	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	4,586.556
2040	3	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	3,709.786
2040	4	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	2,152.315
2040	5	1,529.017	-1,757.519	0.000	0.000	-1,624.294	0.000	0.000	-301.728	0.000	0.000	775.743
2040	6	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	141.958
2040	7	1,529.017	-1,757.519	0.000	0.000	0.000	1,807.816	0.000	-301.728	0.000	0.000	3.772
2040	8	1,529.017	-1,757.519	0.000	2,044.323	0.000	0.000	0.000	-301.728	0.000	0.000	0.000
2040	9	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	4.900
2040	10	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	240.156
2040	11	1,529.017	-1,757.519	-2,192.373	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	1,249.858
2040	12	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	2,864.861
2041	1	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	4,059.924
2041	2	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	4,527.687
2041	3	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	3,661.971
2041	4	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	2,124.471
2041	5	1,529.017	-1,757.519	0.000	0.000	-1,624.294	0.000	0.000	-301.728	0.000	0.000	765.672
2041	6	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	140.109
2041	7	1,529.017	-1,757.519	0.000	0.000	0.000	1,807.816	0.000	-301.728	0.000	0.000	3.723
2041	8	1,529.017	-1,757.519	0.000	2,044.323	0.000	0.000	0.000	-301.728	0.000	0.000	0.000
2041	9	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	4.836
2041	10	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	236.997
2041	11	1,529.017	-1,757.519	-2,192.373	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	1,233.384
2041	12	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	2,827.034
2042	1	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	4,004.650
2042	2	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	4,465.963
2042	3	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	3,611.985
2042	4	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	2,095.433
2042	5	1,529.017	-1,757.519	0.000	0.000	-1,624.294	0.000	0.000	-301.728	0.000	0.000	755.193
2042	6	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	138.189

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	aug15on	Sep18on	D12onNov	D16onAug	D16onMay	D16onJul	mayjun20	mar20on	20-Apr	X-Missing	Heating
2042	7	1,529.017	-1,757.519	0.000	0.000	0.000	1,807.816	0.000	-301.728	0.000	0.000	3.672
2042	8	1,529.017	-1,757.519	0.000	2,044.323	0.000	0.000	0.000	-301.728	0.000	0.000	0.000
2042	9	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	4.769
2042	10	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	233.730
2042	11	1,529.017	-1,757.519	-2,192.373	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	1,216.357
2042	12	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	2,787.950
2043	1	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	3,950.641
2043	2	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	4,405.829
2043	3	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	3,563.439
2043	4	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	2,067.331
2043	5	1,529.017	-1,757.519	0.000	0.000	-1,624.294	0.000	0.000	-301.728	0.000	0.000	745.089
2043	6	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	136.345
2043	7	1,529.017	-1,757.519	0.000	0.000	0.000	1,807.816	0.000	-301.728	0.000	0.000	3.623
2043	8	1,529.017	-1,757.519	0.000	2,044.323	0.000	0.000	0.000	-301.728	0.000	0.000	0.000
2043	9	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	4.706
2043	10	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	230.651
2043	11	1,529.017	-1,757.519	-2,192.373	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	1,200.393
2043	12	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	2,751.499
2044	1	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	3,898.978
2044	2	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	4,348.308
2044	3	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	3,516.985
2044	4	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	2,040.401
2044	5	1,529.017	-1,757.519	0.000	0.000	-1,624.294	0.000	0.000	-301.728	0.000	0.000	735.387
2044	6	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	134.570
2044	7	1,529.017	-1,757.519	0.000	0.000	0.000	1,807.816	0.000	-301.728	0.000	0.000	3.576
2044	8	1,529.017	-1,757.519	0.000	2,044.323	0.000	0.000	0.000	-301.728	0.000	0.000	0.000
2044	9	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	4.645
2044	10	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	227.639
2044	11	1,529.017	-1,757.519	-2,192.373	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	1,184.697
2044	12	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	2,715.460
2045	1	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	3,847.687
2045	2	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	4,290.789
2045	3	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	3,470.196
2045	4	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	2,013.111

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	aug15on	Sep18on	D12onNov	D16onAug	D16onMay	D16onJul	mayjun20	mar20on	20-Apr	X-Missing	Heating
2045	5	1,529.017	-1,757.519	0.000	0.000	-1,624.294	0.000	0.000	-301.728	0.000	0.000	725.501
2045	6	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	132.752
2045	7	1,529.017	-1,757.519	0.000	0.000	0.000	1,807.816	0.000	-301.728	0.000	0.000	3.528
2045	8	1,529.017	-1,757.519	0.000	2,044.323	0.000	0.000	0.000	-301.728	0.000	0.000	0.000
2045	9	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	4.581
2045	10	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	224.511
2045	11	1,529.017	-1,757.519	-2,192.373	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	1,168.350
2045	12	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	2,677.848
2046	1	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	3,794.878
2046	2	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	4,231.780
2046	3	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	3,422.371
2046	4	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	1,985.305
2046	5	1,529.017	-1,757.519	0.000	0.000	-1,624.294	0.000	0.000	-301.728	0.000	0.000	715.458
2046	6	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	130.911
2046	7	1,529.017	-1,757.519	0.000	0.000	0.000	1,807.816	0.000	-301.728	0.000	0.000	3.479
2046	8	1,529.017	-1,757.519	0.000	2,044.323	0.000	0.000	0.000	-301.728	0.000	0.000	0.000
2046	9	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	4.517
2046	10	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	221.368
2046	11	1,529.017	-1,757.519	-2,192.373	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	1,151.952
2046	12	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	2,640.165
2047	1	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	3,741.845
2047	2	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	4,172.672
2047	3	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	3,374.594
2047	4	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	1,957.603
2047	5	1,529.017	-1,757.519	0.000	0.000	-1,624.294	0.000	0.000	-301.728	0.000	0.000	705.478
2047	6	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	129.085
2047	7	1,529.017	-1,757.519	0.000	0.000	0.000	1,807.816	0.000	-301.728	0.000	0.000	3.430
2047	8	1,529.017	-1,757.519	0.000	2,044.323	0.000	0.000	0.000	-301.728	0.000	0.000	0.000
2047	9	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	4.454
2047	10	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	218.281
2047	11	1,529.017	-1,757.519	-2,192.373	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	1,135.890
2047	12	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	2,603.353
2048	1	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	3,689.981
2048	2	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	4,114.797

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	aug15on	Sep18on	D12onNov	D16onAug	D16onMay	D16onJul	mayjun20	mar20on	20-Apr	X-Missing	Heating
2048	3	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	3,327.758
2048	4	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	1,930.405
2048	5	1,529.017	-1,757.519	0.000	0.000	-1,624.294	0.000	0.000	-301.728	0.000	0.000	695.668
2048	6	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	127.288
2048	7	1,529.017	-1,757.519	0.000	0.000	0.000	1,807.816	0.000	-301.728	0.000	0.000	3.382
2048	8	1,529.017	-1,757.519	0.000	2,044.323	0.000	0.000	0.000	-301.728	0.000	0.000	0.000
2048	9	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	4.392
2048	10	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	215.237
2048	11	1,529.017	-1,757.519	-2,192.373	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	1,120.042
2048	12	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	2,567.024
2049	1	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	3,630.057
2049	2	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	4,048.096
2049	3	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	3,273.921
2049	4	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	1,899.252
2049	5	1,529.017	-1,757.519	0.000	0.000	-1,624.294	0.000	0.000	-301.728	0.000	0.000	684.469
2049	6	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	125.244
2049	7	1,529.017	-1,757.519	0.000	0.000	0.000	1,807.816	0.000	-301.728	0.000	0.000	3.328
2049	8	1,529.017	-1,757.519	0.000	2,044.323	0.000	0.000	0.000	-301.728	0.000	0.000	0.000
2049	9	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	4.322
2049	10	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	211.812
2049	11	1,529.017	-1,757.519	-2,192.373	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	1,102.264
2049	12	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	2,526.373
2050	1	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	3,571.793
2050	2	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	3,983.081
2050	3	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	3,221.304
2050	4	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	1,868.706
2050	5	1,529.017	-1,757.519	0.000	0.000	-1,624.294	0.000	0.000	-301.728	0.000	0.000	673.452
2050	6	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	123.227
2050	7	1,529.017	-1,757.519	0.000	0.000	0.000	1,807.816	0.000	-301.728	0.000	0.000	3.274
2050	8	1,529.017	-1,757.519	0.000	2,044.323	0.000	0.000	0.000	-301.728	0.000	0.000	0.000
2050	9	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	4.253
2050	10	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	208.390
2050	11	1,529.017	-1,757.519	-2,192.373	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	1,084.438
2050	12	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	2,485.482

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	aug15on	Sep18on	D12onNov	D16onAug	D16onMay	D16onJul	mayjun20	mar20on	20-Apr	X-Missing	Heating
2051	1	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	3,519.462
2051	2	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	3,924.718
2051	3	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	3,174.097
2051	4	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	1,841.316
2051	5	1,529.017	-1,757.519	0.000	0.000	-1,624.294	0.000	0.000	-301.728	0.000	0.000	663.579
2051	6	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	121.420
2051	7	1,529.017	-1,757.519	0.000	0.000	0.000	1,807.816	0.000	-301.728	0.000	0.000	3.226
2051	8	1,529.017	-1,757.519	0.000	2,044.323	0.000	0.000	0.000	-301.728	0.000	0.000	0.000
2051	9	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	4.190
2051	10	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	205.331
2051	11	1,529.017	-1,757.519	-2,192.373	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	1,068.519
2051	12	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	2,448.985
2052	1	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	3,467.912
2052	2	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	3,867.225
2052	3	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	3,127.594
2052	4	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	1,814.335
2052	5	1,529.017	-1,757.519	0.000	0.000	-1,624.294	0.000	0.000	-301.728	0.000	0.000	653.854
2052	6	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	119.640
2052	7	1,529.017	-1,757.519	0.000	0.000	0.000	1,807.816	0.000	-301.728	0.000	0.000	3.179
2052	8	1,529.017	-1,757.519	0.000	2,044.323	0.000	0.000	0.000	-301.728	0.000	0.000	0.000
2052	9	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	4.129
2052	10	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	202.319
2052	11	1,529.017	-1,757.519	-2,192.373	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	1,052.838
2052	12	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	2,413.035
2053	1	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	3,417.129
2053	2	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	3,810.588
2053	3	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	3,081.783
2053	4	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	1,787.756
2053	5	1,529.017	-1,757.519	0.000	0.000	-1,624.294	0.000	0.000	-301.728	0.000	0.000	644.274
2053	6	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	117.887
2053	7	1,529.017	-1,757.519	0.000	0.000	0.000	1,807.816	0.000	-301.728	0.000	0.000	3.132
2053	8	1,529.017	-1,757.519	0.000	2,044.323	0.000	0.000	0.000	-301.728	0.000	0.000	0.000
2053	9	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	4.068
2053	10	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	199.351

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	aug15on	Sep18on	D12onNov	D16onAug	D16onMay	D16onJul	mayjun20	mar20on	20-Apr	X-Missing	Heating
2053	11	1,529.017	-1,757.519	-2,192.373	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	1,037.392
2053	12	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	2,377.623
2054	1	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	3,367.103
2054	2	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	3,754.796
2054	3	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	3,036.656
2054	4	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	1,761.574
2054	5	1,529.017	-1,757.519	0.000	0.000	-1,624.294	0.000	0.000	-301.728	0.000	0.000	634.837
2054	6	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	116.160
2054	7	1,529.017	-1,757.519	0.000	0.000	0.000	1,807.816	0.000	-301.728	0.000	0.000	3.087
2054	8	1,529.017	-1,757.519	0.000	2,044.323	0.000	0.000	0.000	-301.728	0.000	0.000	0.000
2054	9	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	4.009
2054	10	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	196.428
2054	11	1,529.017	-1,757.519	-2,192.373	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	1,022.176
2054	12	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	2,342.741
2055	1	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	3,317.821
2055	2	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	3,699.834
2055	3	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	2,992.201
2055	4	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	1,735.782
2055	5	1,529.017	-1,757.519	0.000	0.000	-1,624.294	0.000	0.000	-301.728	0.000	0.000	625.540
2055	6	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	114.459
2055	7	1,529.017	-1,757.519	0.000	0.000	0.000	1,807.816	0.000	-301.728	0.000	0.000	3.041
2055	8	1,529.017	-1,757.519	0.000	2,044.323	0.000	0.000	0.000	-301.728	0.000	0.000	0.000
2055	9	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	3.950
2055	10	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	193.549
2055	11	1,529.017	-1,757.519	-2,192.373	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	1,007.188
2055	12	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	2,308.381
2056	1	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	3,269.273
2056	2	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	3,645.690
2056	3	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	2,948.408
2056	4	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	1,710.374
2056	5	1,529.017	-1,757.519	0.000	0.000	-1,624.294	0.000	0.000	-301.728	0.000	0.000	616.383
2056	6	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	112.783
2056	7	1,529.017	-1,757.519	0.000	0.000	0.000	1,807.816	0.000	-301.728	0.000	0.000	2.997
2056	8	1,529.017	-1,757.519	0.000	2,044.323	0.000	0.000	0.000	-301.728	0.000	0.000	0.000

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	aug15on	Sep18on	D12onNov	D16onAug	D16onMay	D16onJul	mayjun20	mar20on	20-Apr	X-Missing	Heating
2056	9	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	3.892
2056	10	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	190.712
2056	11	1,529.017	-1,757.519	-2,192.373	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	992.424
2056	12	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	2,274.534
2057	1	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	3,221.448
2057	2	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	3,592.353
2057	3	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	2,905.267
2057	4	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	1,685.344
2057	5	1,529.017	-1,757.519	0.000	0.000	-1,624.294	0.000	0.000	-301.728	0.000	0.000	607.361
2057	6	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	111.132
2057	7	1,529.017	-1,757.519	0.000	0.000	0.000	1,807.816	0.000	-301.728	0.000	0.000	2.953
2057	8	1,529.017	-1,757.519	0.000	2,044.323	0.000	0.000	0.000	-301.728	0.000	0.000	0.000
2057	9	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	3.835
2057	10	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	187.918
2057	11	1,529.017	-1,757.519	-2,192.373	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	977.881
2057	12	1,529.017	-1,757.519	0.000	0.000	0.000	0.000	0.000	-301.728	0.000	0.000	2,241.193

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	Cooling	Other	Total	Actual	Heating	Cooling	Other	Total
2000	1	0.000	57,513.044	64,871.641	61,044.889	7,358.596	0.000	53,686.293	61,044.889
2000	2	0.000	51,736.421	60,808.900	56,730.970	9,072.479	0.000	47,658.491	56,730.970
2000	3	118.221	50,860.380	55,513.327	53,322.888	4,534.726	118.221	48,669.941	53,322.888
2000	4	72.245	50,269.213	53,599.976	51,092.464	3,258.518	72.245	47,761.701	51,092.464
2000	5	1,622.211	51,565.201	54,686.982	53,782.928	1,499.570	1,622.211	50,661.147	53,782.928
2000	6	3,654.146	56,780.855	60,618.091	58,730.319	183.090	3,654.146	54,893.083	58,730.319
2000	7	7,444.099	58,373.301	65,835.287	62,705.253	17.888	7,444.099	55,243.267	62,705.253
2000	8	7,630.981	59,527.085	67,158.066	64,237.565	0.000	7,630.981	56,606.584	64,237.565
2000	9	8,946.085	61,552.808	70,526.627	67,782.252	27.734	8,946.085	58,808.433	67,782.252
2000	10	2,231.071	55,408.464	58,283.094	58,393.299	643.560	2,231.071	55,518.668	58,393.299
2000	11	151.338	51,501.047	53,385.638	55,034.347	1,733.252	151.338	53,149.756	55,034.347
2000	12	0.000	55,647.703	63,080.308	61,982.633	7,432.604	0.000	54,550.029	61,982.633
2001	1	0.000	56,778.541	67,197.040	64,458.592	10,418.498	0.000	54,040.094	64,458.592
2001	2	0.000	50,830.211	59,153.454	59,913.538	8,323.243	0.000	51,590.295	59,913.538
2001	3	0.000	49,760.426	56,618.173	55,197.014	6,857.747	0.000	48,339.267	55,197.014
2001	4	146.293	48,986.939	53,483.963	52,491.082	4,350.732	146.293	47,994.057	52,491.082
2001	5	1,762.750	50,186.734	52,729.399	55,121.961	779.915	1,762.750	52,579.296	55,121.961
2001	6	2,965.418	55,276.403	58,506.596	60,321.169	264.774	2,965.418	57,090.976	60,321.169
2001	7	8,283.536	56,889.318	65,202.830	65,291.049	29.976	8,283.536	56,977.537	65,291.049
2001	8	13,775.993	58,158.916	71,934.909	71,839.079	0.000	13,775.993	58,063.086	71,839.079
2001	9	7,811.052	60,239.937	68,060.085	68,984.160	9.096	7,811.052	61,164.012	68,984.160
2001	10	1,145.848	54,307.834	55,959.276	57,138.582	505.594	1,145.848	55,487.140	57,138.582
2001	11	60.658	50,607.792	52,287.355	52,680.609	1,618.904	60.658	51,001.046	52,680.609
2001	12	0.000	55,383.636	58,065.765	58,403.802	2,682.128	0.000	55,721.674	58,403.802
2002	1	0.000	56,751.700	63,651.609	63,109.914	6,899.908	0.000	56,210.006	63,109.914
2002	2	0.000	51,073.756	57,020.798	56,764.506	5,947.043	0.000	50,817.463	56,764.506
2002	3	0.000	50,258.497	56,258.464	56,608.224	5,999.968	0.000	50,608.256	56,608.224
2002	4	565.139	49,728.932	54,983.574	57,282.373	4,689.503	565.139	52,027.731	57,282.373
2002	5	1,217.304	51,116.800	54,067.183	53,996.313	1,733.079	1,217.304	51,045.930	53,996.313
2002	6	3,009.811	56,429.781	60,099.634	60,145.781	660.041	3,009.811	56,475.929	60,145.781
2002	7	13,985.021	58,135.384	72,120.406	71,819.092	0.000	13,985.021	57,834.071	71,819.092
2002	8	15,117.791	59,410.243	74,528.034	73,361.530	0.000	15,117.791	58,243.739	73,361.530
2002	9	10,007.195	61,520.113	71,527.308	71,185.805	0.000	10,007.195	61,178.610	71,185.805
2002	10	4,261.065	55,479.153	60,173.464	61,028.079	433.247	4,261.065	56,333.767	61,028.079

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	Cooling	Other	Total	Actual	Heating	Cooling	Other	Total
2002	11	264.716	51,670.566	55,084.430	55,714.825	3,149.147	264.716	52,300.962	55,714.825
2002	12	0.000	56,400.643	62,637.326	62,975.287	6,236.684	0.000	56,738.603	62,975.287
2003	1	0.000	57,643.373	65,149.665	65,864.773	7,506.292	0.000	58,358.481	65,864.773
2003	2	0.000	51,755.745	61,209.863	63,111.128	9,454.117	0.000	53,657.011	63,111.128
2003	3	0.000	50,797.576	58,827.056	58,824.270	8,029.480	0.000	50,794.790	58,824.270
2003	4	182.132	50,140.405	53,672.176	56,375.862	3,349.639	182.132	52,844.091	56,375.862
2003	5	441.341	51,429.173	53,195.164	54,794.668	1,324.650	441.341	53,028.677	54,794.668
2003	6	823.604	56,661.168	57,832.176	58,224.130	347.405	823.604	57,053.122	58,224.130
2003	7	7,994.078	58,847.938	66,860.212	67,881.288	18.196	7,994.078	59,869.014	67,881.288
2003	8	8,609.081	59,917.207	68,526.288	69,656.125	0.000	8,609.081	61,047.044	69,656.125
2003	9	9,120.959	60,867.437	69,989.591	69,562.521	1.195	9,120.959	60,440.367	69,562.521
2003	10	1,495.784	55,321.499	57,609.097	58,086.225	791.815	1,495.784	55,798.626	58,086.225
2003	11	44.602	51,342.405	53,404.866	53,949.940	2,017.859	44.602	51,887.479	53,949.940
2003	12	0.000	56,959.507	61,555.934	63,093.948	4,596.427	0.000	58,497.521	63,093.948
2004	1	0.000	58,296.524	65,023.407	65,262.412	6,726.883	0.000	58,535.529	65,262.412
2004	2	0.000	52,235.799	61,808.687	62,796.496	9,572.888	0.000	53,223.608	62,796.496
2004	3	0.000	50,056.474	56,192.726	57,696.181	6,136.252	0.000	51,559.929	57,696.181
2004	4	272.278	51,538.325	55,110.832	56,098.970	3,300.229	272.278	52,526.463	56,098.970
2004	5	2,502.531	53,406.287	57,077.219	58,240.027	1,168.402	2,502.531	54,569.094	58,240.027
2004	6	4,688.702	57,567.185	62,387.461	62,304.787	131.573	4,688.702	57,484.511	62,304.787
2004	7	7,023.067	58,928.816	65,953.076	65,598.180	1.192	7,023.067	58,573.920	65,598.180
2004	8	7,053.200	60,156.940	67,210.141	66,162.160	0.000	7,053.200	59,108.960	66,162.160
2004	9	5,909.074	63,258.133	69,167.208	70,317.610	0.000	5,909.074	64,408.536	70,317.610
2004	10	2,113.646	56,613.976	59,202.328	61,212.633	474.705	2,113.646	58,624.281	61,212.633
2004	11	125.943	52,469.834	54,258.760	55,320.057	1,662.982	125.943	53,531.131	55,320.057
2004	12	9.006	58,539.641	63,069.265	64,458.398	4,520.618	9.006	59,928.774	64,458.398
2005	1	0.000	60,406.069	68,035.914	66,961.940	7,629.845	0.000	59,332.095	66,961.940
2005	2	0.000	54,608.171	62,919.403	62,307.545	8,311.232	0.000	53,996.313	62,307.545
2005	3	0.000	56,645.394	63,619.516	63,312.860	6,974.122	0.000	56,338.738	63,312.860
2005	4	97.653	53,787.693	57,924.811	58,788.440	4,039.464	97.653	54,651.323	58,788.440
2005	5	602.066	53,037.655	55,071.916	54,773.708	1,432.195	602.066	52,739.447	54,773.708
2005	6	4,176.043	60,246.369	64,632.928	65,772.112	210.516	4,176.043	61,385.553	65,772.112
2005	7	13,404.294	60,352.020	73,756.314	73,945.570	0.000	13,404.294	60,541.276	73,945.570
2005	8	14,169.784	62,507.734	76,677.517	76,812.971	0.000	14,169.784	62,643.187	76,812.971

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	Cooling	Other	Total	Actual	Heating	Cooling	Other	Total
2005	9	9,350.894	66,037.646	75,388.540	76,297.475	0.000	9,350.894	66,946.581	76,297.475
2005	10	4,479.302	59,051.008	63,814.765	63,956.934	284.456	4,479.302	59,193.177	63,956.934
2005	11	375.663	55,770.839	58,035.009	55,991.545	1,888.507	375.663	53,727.375	55,991.545
2005	12	0.000	58,693.649	65,123.392	64,231.043	6,429.743	0.000	57,801.300	64,231.043
2006	1	0.000	61,166.026	67,916.641	67,056.859	6,750.615	0.000	60,306.244	67,056.859
2006	2	0.000	55,212.483	60,902.160	60,240.912	5,689.677	0.000	54,551.235	60,240.912
2006	3	0.000	52,663.676	59,038.947	58,364.803	6,375.271	0.000	51,989.532	58,364.803
2006	4	54.487	52,204.923	55,956.453	55,903.701	3,697.043	54.487	52,152.171	55,903.701
2006	5	98.377	55,024.183	56,004.507	56,515.795	881.947	98.377	55,535.471	56,515.795
2006	6	3,819.022	59,637.965	63,911.117	64,070.345	454.130	3,819.022	59,797.193	64,070.345
2006	7	8,139.910	62,551.456	70,691.366	72,516.578	0.000	8,139.910	64,376.668	72,516.578
2006	8	13,418.913	63,001.807	76,420.720	75,592.757	0.000	13,418.913	62,173.844	75,592.757
2006	9	5,742.878	63,985.496	69,746.936	71,147.637	18.562	5,742.878	65,386.197	71,147.637
2006	10	653.228	59,133.091	60,438.815	60,922.504	652.497	653.228	59,616.779	60,922.504
2006	11	25.080	55,813.002	58,805.104	58,349.412	2,967.022	25.080	55,357.309	58,349.412
2006	12	0.000	58,970.761	63,277.140	64,276.485	4,306.378	0.000	59,970.107	64,276.485
2007	1	0.000	66,701.765	71,628.367	67,281.388	4,926.602	0.000	62,354.786	67,281.388
2007	2	0.000	60,887.376	69,525.190	66,137.287	8,637.814	0.000	57,499.473	66,137.287
2007	3	15.252	57,636.263	65,425.671	62,649.614	7,774.156	15.252	54,860.206	62,649.614
2007	4	402.559	59,984.473	63,497.370	60,947.701	3,110.338	402.559	57,434.804	60,947.701
2007	5	990.274	59,891.154	62,095.516	60,260.593	1,214.088	990.274	58,056.230	60,260.593
2007	6	6,279.711	64,273.908	70,628.035	70,260.604	74.415	6,279.711	63,906.477	70,260.604
2007	7	10,697.697	66,995.361	77,693.058	77,911.671	0.000	10,697.697	67,213.974	77,911.671
2007	8	11,386.837	65,404.307	76,791.144	78,899.669	0.000	11,386.837	67,512.832	78,899.669
2007	9	9,791.181	72,250.182	82,057.025	81,035.066	15.662	9,791.181	71,228.223	81,035.066
2007	10	5,193.063	62,737.072	68,090.431	68,307.768	160.296	5,193.063	62,954.409	68,307.768
2007	11	1,061.799	61,434.306	64,242.560	62,630.756	1,746.456	1,061.799	59,822.501	62,630.756
2007	12	0.000	65,752.226	71,170.502	69,745.231	5,418.276	0.000	64,326.955	69,745.231
2008	1	0.000	66,428.382	73,007.311	73,007.217	6,578.928	0.000	66,428.289	73,007.217
2008	2	0.000	59,579.421	67,700.005	68,364.207	8,120.583	0.000	60,243.624	68,364.207
2008	3	0.000	58,069.858	65,500.678	65,473.303	7,430.820	0.000	58,042.483	65,473.303
2008	4	9.950	58,131.289	62,283.995	62,608.776	4,142.756	9.950	58,456.070	62,608.776
2008	5	252.711	58,548.240	60,037.184	60,400.800	1,236.232	252.711	58,911.856	60,400.800
2008	6	4,059.724	63,381.963	67,802.390	67,853.809	360.703	4,059.724	63,433.382	67,853.809

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	Cooling	Other	Total	Actual	Heating	Cooling	Other	Total
2008	7	8,353.047	65,676.929	74,030.113	75,461.537	0.137	8,353.047	67,108.353	75,461.537
2008	8	10,437.838	66,662.881	77,100.720	79,555.530	0.000	10,437.838	69,117.692	79,555.530
2008	9	6,651.686	67,523.983	74,175.669	77,706.844	0.000	6,651.686	71,055.158	77,706.844
2008	10	2,033.369	61,881.267	64,185.981	67,377.467	271.345	2,033.369	65,072.753	67,377.467
2008	11	220.541	59,230.710	61,519.018	63,454.350	2,067.767	220.541	61,166.042	63,454.350
2008	12	0.000	60,032.141	65,982.231	68,838.976	5,950.090	0.000	62,888.886	68,838.976
2009	1	0.000	66,285.121	73,857.446	74,462.760	7,572.325	0.000	66,890.435	74,462.760
2009	2	0.000	59,946.794	68,536.112	68,553.690	8,589.318	0.000	59,964.372	68,553.690
2009	3	0.000	57,836.008	63,318.204	63,917.868	5,482.196	0.000	58,435.672	63,917.868
2009	4	18.576	58,398.639	61,439.467	61,742.286	3,022.253	18.576	58,701.458	61,742.286
2009	5	574.927	59,381.336	61,108.286	61,244.273	1,152.023	574.927	59,517.324	61,244.273
2009	6	2,366.262	62,610.236	65,150.718	64,829.248	174.220	2,366.262	62,288.766	64,829.248
2009	7	7,029.012	64,739.658	71,768.796	72,155.016	0.125	7,029.012	65,125.879	72,155.016
2009	8	6,850.128	65,448.845	72,298.973	73,187.401	0.000	6,850.128	66,337.273	73,187.401
2009	9	4,762.238	68,702.554	73,464.792	73,067.942	0.000	4,762.238	68,305.704	73,067.942
2009	10	1,083.093	63,167.459	64,978.518	64,546.860	727.965	1,083.093	62,735.802	64,546.860
2009	11	0.000	60,755.799	62,482.687	62,275.665	1,726.888	0.000	60,548.777	62,275.665
2009	12	0.000	63,841.718	67,907.283	68,496.222	4,065.565	0.000	64,430.657	68,496.222
2010	1	0.000	64,282.818	71,322.817	72,218.790	7,039.999	0.000	65,178.791	72,218.790
2010	2	0.000	59,648.665	66,794.982	67,006.064	7,146.316	0.000	59,859.748	67,006.064
2010	3	0.000	57,298.483	62,905.740	62,881.005	5,607.257	0.000	57,273.748	62,881.005
2010	4	536.042	59,218.670	61,854.327	60,935.719	2,099.615	536.042	58,300.062	60,935.719
2010	5	567.528	59,343.498	60,693.242	58,830.831	782.216	567.528	57,481.087	58,830.831
2010	6	5,655.239	63,936.068	69,759.061	69,493.829	167.754	5,655.239	63,670.836	69,493.829
2010	7	11,365.032	66,616.450	77,981.481	77,777.461	0.000	11,365.032	66,412.429	77,777.461
2010	8	15,011.311	67,162.489	82,173.800	82,799.257	0.000	15,011.311	67,787.946	82,799.257
2010	9	10,005.926	68,417.164	78,423.090	76,109.552	0.000	10,005.926	66,103.626	76,109.552
2010	10	2,342.725	62,938.912	65,590.850	64,720.587	309.213	2,342.725	62,068.649	64,720.587
2010	11	226.540	59,679.492	61,539.125	59,205.184	1,633.093	226.540	57,345.551	59,205.184
2010	12	0.000	63,793.821	68,773.863	65,693.355	4,980.041	0.000	60,713.314	65,693.355
2011	1	0.000	62,428.042	69,522.772	71,333.541	7,094.729	0.000	64,238.812	71,333.541
2011	2	0.000	53,967.361	61,712.914	61,712.914	7,745.553	0.000	53,967.361	61,712.914
2011	3	0.000	59,569.302	65,102.353	65,102.353	5,533.051	0.000	59,569.302	65,102.353
2011	4	153.107	54,501.894	58,106.036	58,548.685	3,451.036	153.107	54,944.542	58,548.685

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	Cooling	Other	Total	Actual	Heating	Cooling	Other	Total
2011	5	766.131	58,425.058	60,418.362	60,106.941	1,227.173	766.131	58,113.636	60,106.941
2011	6	5,661.654	61,519.226	67,342.335	67,813.012	161.456	5,661.654	61,989.903	67,813.012
2011	7	10,581.268	65,123.302	75,704.570	77,276.588	0.000	10,581.268	66,695.320	77,276.588
2011	8	15,874.611	64,394.058	80,268.669	81,753.553	0.000	15,874.611	65,878.942	81,753.553
2011	9	8,023.153	66,314.317	74,365.247	74,858.462	27.777	8,023.153	66,807.532	74,858.462
2011	10	1,298.025	61,165.604	62,787.741	63,849.091	324.112	1,298.025	62,226.954	63,849.091
2011	11	214.616	58,325.307	59,981.051	60,418.914	1,441.129	214.616	58,763.170	60,418.914
2011	12	0.000	59,606.114	62,921.375	63,432.164	3,315.260	0.000	60,116.904	63,432.164
2012	1	0.000	63,422.525	68,239.317	68,729.931	4,816.792	0.000	63,913.139	68,729.931
2012	2	0.000	58,736.950	64,206.699	62,834.833	5,469.749	0.000	57,365.084	62,834.833
2012	3	486.765	58,076.713	62,443.583	62,129.085	3,880.105	486.765	57,762.215	62,129.085
2012	4	1,465.144	58,140.367	60,738.598	60,220.758	1,133.087	1,465.144	57,622.527	60,220.758
2012	5	999.881	59,394.501	61,333.128	60,488.266	938.747	999.881	58,549.638	60,488.266
2012	6	6,338.047	63,189.458	69,589.623	70,242.310	62.118	6,338.047	63,842.145	70,242.310
2012	7	16,008.313	72,020.054	88,033.895	88,033.895	5.529	16,008.313	72,020.054	88,033.895
2012	8	14,172.416	66,325.441	80,497.857	80,772.404	0.000	14,172.416	66,599.988	80,772.404
2012	9	7,308.153	68,886.479	76,205.363	75,207.904	10.731	7,308.153	67,889.020	75,207.904
2012	10	1,216.576	63,465.724	65,206.939	62,515.816	524.639	1,216.576	60,774.600	62,515.816
2012	11	283.431	58,833.904	61,203.475	60,847.433	2,086.140	283.431	58,477.862	60,847.433
2012	12	0.000	62,931.207	66,159.163	65,161.033	3,227.957	0.000	61,933.076	65,161.033
2013	1	0.000	63,433.255	68,561.951	68,216.509	5,128.695	0.000	63,087.814	68,216.509
2013	2	0.000	57,936.896	64,034.840	63,998.954	6,097.943	0.000	57,901.011	63,998.954
2013	3	0.000	57,565.430	63,087.470	63,183.748	5,522.040	0.000	57,661.708	63,183.748
2013	4	0.000	58,520.194	62,517.568	62,619.440	3,997.374	0.000	58,622.066	62,619.440
2013	5	1,062.812	58,488.028	60,701.251	61,513.732	1,150.411	1,062.812	59,300.509	61,513.732
2013	6	4,396.891	63,329.022	67,945.820	66,747.581	219.908	4,396.891	62,130.782	66,747.581
2013	7	9,705.194	65,831.517	75,539.875	75,968.759	3.163	9,705.194	66,260.401	75,968.759
2013	8	7,911.753	66,652.307	74,564.061	74,176.972	0.000	7,911.753	66,265.219	74,176.972
2013	9	8,930.835	68,567.454	77,498.642	78,603.007	0.352	8,930.835	69,671.819	78,603.007
2013	10	3,349.799	63,209.928	66,714.751	66,412.949	155.024	3,349.799	62,908.126	66,412.949
2013	11	301.811	58,930.710	61,108.727	61,967.577	1,876.207	301.811	59,789.560	61,967.577
2013	12	0.000	62,604.264	67,419.386	67,923.761	4,815.122	0.000	63,108.639	67,923.761
2014	1	0.000	63,896.422	70,718.284	72,933.719	6,821.862	0.000	66,111.857	72,933.719
2014	2	0.000	57,369.290	65,369.078	66,759.477	7,999.787	0.000	58,759.690	66,759.477

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	Cooling	Other	Total	Actual	Heating	Cooling	Other	Total
2014	3	0.000	57,206.119	64,153.707	66,097.603	6,947.588	0.000	59,150.015	66,097.603
2014	4	28.388	56,533.147	60,317.488	61,165.277	3,755.953	28.388	57,380.937	61,165.277
2014	5	827.997	59,923.981	61,774.295	61,052.462	1,022.317	827.997	59,202.149	61,052.462
2014	6	5,342.548	62,284.068	67,860.169	66,408.586	233.553	5,342.548	60,832.486	66,408.586
2014	7	9,149.840	65,424.940	74,574.781	72,078.898	0.000	9,149.840	62,929.058	72,078.898
2014	8	6,858.879	65,910.483	72,769.363	70,682.057	0.000	6,858.879	63,823.178	70,682.057
2014	9	9,381.448	68,329.352	77,733.186	76,399.582	22.386	9,381.448	66,995.748	76,399.582
2014	10	1,419.470	62,925.842	64,669.750	62,083.846	324.438	1,419.470	60,339.938	62,083.846
2014	11	37.308	58,070.899	60,023.253	60,339.624	1,915.045	37.308	58,387.270	60,339.624
2014	12	0.000	62,808.439	67,498.136	68,675.302	4,689.697	0.000	63,985.605	68,675.302
2015	1	0.000	63,385.270	68,846.843	72,656.614	5,461.573	0.000	67,195.041	72,656.614
2015	2	0.000	57,580.304	64,170.095	66,248.380	6,589.790	0.000	59,658.590	66,248.380
2015	3	0.000	56,899.660	63,763.486	65,753.863	6,863.826	0.000	58,890.037	65,753.863
2015	4	11.679	57,814.099	60,662.146	61,657.382	2,836.368	11.679	58,809.335	61,657.382
2015	5	1,086.364	58,241.630	60,192.353	60,062.687	864.359	1,086.364	58,111.964	60,062.687
2015	6	4,847.867	62,272.103	67,263.060	67,014.212	143.090	4,847.867	62,023.255	67,014.212
2015	7	6,752.600	65,101.981	71,855.898	71,181.122	1.318	6,752.600	64,427.204	71,181.122
2015	8	10,834.897	67,737.195	78,572.091	78,003.322	0.000	10,834.897	67,168.425	78,003.322
2015	9	8,208.720	69,397.423	77,607.573	76,521.972	1.430	8,208.720	68,311.822	76,521.972
2015	10	2,425.583	64,304.446	66,949.615	65,977.680	219.585	2,425.583	63,332.512	65,977.680
2015	11	57.241	59,010.223	60,160.914	60,029.934	1,093.450	57.241	58,879.243	60,029.934
2015	12	0.000	64,529.923	67,378.582	66,018.865	2,848.659	0.000	63,170.206	66,018.865
2016	1	0.000	65,055.648	69,350.431	69,030.559	4,294.782	0.000	64,735.777	69,030.559
2016	2	0.000	59,430.032	65,242.760	65,037.148	5,812.728	0.000	59,224.420	65,037.148
2016	3	0.000	58,280.288	62,477.509	61,573.894	4,197.221	0.000	57,376.673	61,573.894
2016	4	5.129	59,274.673	61,644.396	60,555.865	2,364.594	5.129	58,186.142	60,555.865
2016	5	207.482	57,964.485	59,223.671	58,721.355	1,051.704	207.482	57,462.169	58,721.355
2016	6	5,000.274	63,948.165	69,158.275	69,552.811	209.836	5,000.274	64,342.700	69,552.811
2016	7	8,883.296	68,363.380	77,246.675	78,849.074	0.000	8,883.296	69,965.778	78,849.074
2016	8	13,095.533	69,453.429	82,548.963	82,978.274	0.000	13,095.533	69,882.741	82,978.274
2016	9	10,093.177	69,000.885	79,094.061	79,295.020	0.000	10,093.177	69,201.843	79,295.020
2016	10	3,538.682	64,589.540	68,217.130	69,257.379	88.908	3,538.682	65,629.789	69,257.379
2016	11	339.714	59,428.225	60,745.948	61,629.372	978.009	339.714	60,311.649	61,629.372
2016	12	4.411	63,625.774	67,312.926	67,014.009	3,682.741	4.411	63,326.857	67,014.009

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	Cooling	Other	Total	Actual	Heating	Cooling	Other	Total
2017	1	0.000	64,747.644	70,451.136	72,007.935	5,703.492	0.000	66,304.443	72,007.935
2017	2	0.000	59,163.019	63,750.604	63,734.605	4,587.584	0.000	59,147.021	63,734.605
2017	3	0.000	58,248.365	61,708.479	60,727.110	3,460.115	0.000	57,266.995	60,727.110
2017	4	91.619	57,860.199	60,603.413	59,622.973	2,651.596	91.619	56,879.758	59,622.973
2017	5	783.687	57,404.294	59,032.389	58,319.699	844.408	783.687	56,691.604	58,319.699
2017	6	3,688.436	64,012.823	67,890.218	67,913.693	188.959	3,688.436	64,036.298	67,913.693
2017	7	8,285.846	67,844.366	76,130.212	76,439.955	0.000	8,285.846	68,154.109	76,439.955
2017	8	8,155.932	69,476.909	77,632.841	77,850.380	0.000	8,155.932	69,694.448	77,850.380
2017	9	4,146.349	69,387.720	73,534.068	74,271.294	0.000	4,146.349	70,124.945	74,271.294
2017	10	4,744.963	63,940.807	68,727.372	69,004.819	41.602	4,744.963	64,218.254	69,004.819
2017	11	271.259	58,832.205	60,879.928	60,749.025	1,776.464	271.259	58,701.302	60,749.025
2017	12	0.000	63,418.381	67,111.036	66,761.784	3,692.656	0.000	63,069.128	66,761.784
2018	1	0.000	64,465.300	71,201.745	72,755.984	6,736.445	0.000	66,019.539	72,755.984
2018	2	0.000	58,448.623	64,355.144	64,571.214	5,906.522	0.000	58,664.692	64,571.214
2018	3	0.000	57,920.190	62,356.662	61,809.006	4,436.472	0.000	57,372.534	61,809.006
2018	4	0.000	58,573.590	62,357.934	62,367.858	3,784.344	0.000	58,583.514	62,367.858
2018	5	764.231	57,465.490	59,785.907	61,165.245	1,556.186	764.231	58,844.828	61,165.245
2018	6	5,586.505	63,437.399	69,057.128	70,764.876	33.225	5,586.505	65,145.146	70,764.876
2018	7	10,246.161	67,491.990	77,738.152	77,345.245	0.000	10,246.161	67,099.084	77,345.245
2018	8	10,064.634	68,719.019	78,783.653	77,790.311	0.000	10,064.634	67,725.677	77,790.311
2018	9	9,646.736	66,863.445	76,510.180	76,901.781	0.000	9,646.736	67,255.045	76,901.781
2018	10	3,852.970	60,904.139	65,091.359	64,186.947	334.250	3,852.970	59,999.727	64,186.947
2018	11	416.288	56,733.908	59,513.976	58,087.888	2,363.779	416.288	55,307.821	58,087.888
2018	12	0.000	61,893.242	66,309.888	67,171.108	4,416.646	0.000	62,754.462	67,171.108
2019	1	0.000	62,177.160	66,648.939	65,818.340	4,471.779	0.000	61,346.561	65,818.340
2019	2	0.000	56,256.810	62,767.373	63,364.670	6,510.563	0.000	56,854.107	63,364.670
2019	3	0.000	55,458.467	60,860.785	62,442.959	5,402.318	0.000	57,040.641	62,442.959
2019	4	0.000	55,427.481	58,449.701	58,178.611	3,022.220	0.000	55,156.391	58,178.611
2019	5	78.161	56,733.722	57,903.387	57,788.061	1,091.504	78.161	56,618.396	57,788.061
2019	6	1,741.816	60,968.847	62,935.016	61,857.632	224.354	1,741.816	59,891.462	61,857.632
2019	7	9,801.867	65,706.321	75,508.188	75,363.296	0.000	9,801.867	65,561.429	75,363.296
2019	8	10,750.540	65,809.546	76,560.086	75,551.756	0.000	10,750.540	64,801.216	75,551.756
2019	9	6,241.928	66,904.311	73,146.239	74,213.307	0.000	6,241.928	67,971.379	74,213.307
2019	10	4,527.713	60,417.155	65,094.104	62,836.533	149.235	4,527.713	58,159.585	62,836.533

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	Cooling	Other	Total	Actual	Heating	Cooling	Other	Total
2019	11	212.383	55,043.822	57,199.934	57,704.478	1,943.729	212.383	55,548.366	57,704.478
2019	12	0.000	59,656.532	63,408.391	64,896.119	3,751.858	0.000	61,144.261	64,896.119
2020	1	0.000	60,434.910	64,056.855	63,800.391	3,621.946	0.000	60,178.445	63,800.391
2020	2	0.000	54,492.671	58,904.919	60,705.442	4,412.249	0.000	56,293.193	60,705.442
2020	3	0.000	53,419.103	57,451.893	59,556.779	4,032.791	0.000	55,523.988	59,556.779
2020	4	26.064	49,927.926	52,175.395	52,175.395	2,221.405	26.064	49,927.926	52,175.395
2020	5	185.314	47,242.806	48,882.657	48,833.652	1,454.537	185.314	47,193.801	48,833.652
2020	6	5,219.903	51,968.410	57,425.856	57,474.861	237.543	5,219.903	52,017.415	57,474.861
2020	7	12,048.849	62,414.877	74,463.726	73,089.383	0.000	12,048.849	61,040.534	73,089.383
2020	8	11,701.057	65,073.018	76,774.075	78,128.896	0.000	11,701.057	66,427.839	78,128.896
2020	9	8,723.242	63,007.099	71,736.690	70,488.928	6.348	8,723.242	61,759.337	70,488.928
2020	10	1,160.346	59,224.834	60,645.965	60,615.348	260.785	1,160.346	59,194.217	60,615.348
2020	11	84.322	53,525.729	54,937.921	54,418.744	1,327.869	84.322	53,006.552	54,418.744
2020	12	44.936	58,063.043	60,920.576	59,385.695	2,812.597	44.936	56,528.162	59,385.695
2021	1	0.000	58,452.928	62,785.086	64,032.158	4,332.157	0.000	59,700.001	64,032.158
2021	2	0.000	53,783.814	59,174.887	0.000	5,391.073	0.000	53,783.814	59,174.887
2021	3	19.216	52,816.032	57,201.322		4,366.074	19.216	52,816.032	57,201.322
2021	4	149.379	53,058.261	55,744.345		2,536.705	149.379	53,058.261	55,744.345
2021	5	743.412	52,806.367	54,465.400		915.621	743.412	52,806.367	54,465.400
2021	6	3,904.088	58,444.023	62,515.895		167.784	3,904.088	58,444.023	62,515.895
2021	7	9,338.797	62,851.939	72,195.200		4.464	9,338.797	62,851.939	72,195.200
2021	8	10,298.829	64,189.436	74,488.265		0.000	10,298.829	64,189.436	74,488.265
2021	9	7,458.847	64,181.427	71,646.086		5.813	7,458.847	64,181.427	71,646.086
2021	10	2,291.597	58,863.007	61,440.007		285.403	2,291.597	58,863.007	61,440.007
2021	11	197.508	53,875.780	55,559.284		1,485.996	197.508	53,875.780	55,559.284
2021	12	2.211	58,391.851	61,798.119		3,404.057	2.211	58,391.851	61,798.119
2022	1	0.000	59,217.977	64,106.560		4,888.583	0.000	59,217.977	64,106.560
2022	2	0.000	54,239.117	59,699.537		5,460.419	0.000	54,239.117	59,699.537
2022	3	19.563	53,276.084	57,718.908		4,423.261	19.563	53,276.084	57,718.908
2022	4	152.089	53,536.231	56,258.529		2,570.209	152.089	53,536.231	56,258.529
2022	5	756.935	53,282.448	54,967.143		927.760	756.935	53,282.448	54,967.143
2022	6	3,975.603	58,940.856	63,086.489		170.030	3,975.603	58,940.856	63,086.489
2022	7	9,512.681	63,360.623	72,877.830		4.525	9,512.681	63,360.623	72,877.830
2022	8	10,496.095	64,700.546	75,196.641		0.000	10,496.095	64,700.546	75,196.641

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	Cooling	Other	Total	Actual	Heating	Cooling	Other	Total
2022	9	7,602.450	64,717.487	72,325.832		5.896	7,602.450	64,717.487	72,325.832
2022	10	2,334.930	59,366.707	61,991.028		289.391	2,334.930	59,366.707	61,991.028
2022	11	201.463	54,421.406	56,131.276		1,508.407	201.463	54,421.406	56,131.276
2022	12	2.260	59,086.151	62,551.164		3,462.754	2.260	59,086.151	62,551.164
2023	1	0.000	59,959.032	64,890.593		4,931.561	0.000	59,959.032	64,890.593
2023	2	0.000	54,901.200	60,409.172		5,507.973	0.000	54,901.200	60,409.172
2023	3	19.932	53,929.291	58,410.765		4,461.541	19.932	53,929.291	58,410.765
2023	4	154.955	54,205.841	56,953.085		2,592.290	154.955	54,205.841	56,953.085
2023	5	771.119	53,942.381	55,649.137		935.636	771.119	53,942.381	55,649.137
2023	6	4,049.455	59,615.253	63,836.154		171.446	4,049.455	59,615.253	63,836.154
2023	7	9,687.013	64,023.427	73,715.002		4.562	9,687.013	64,023.427	73,715.002
2023	8	10,684.824	65,324.475	76,009.299		0.000	10,684.824	65,324.475	76,009.299
2023	9	7,736.106	65,349.756	73,091.801		5.939	7,736.106	65,349.756	73,091.801
2023	10	2,374.934	59,958.542	62,624.864		291.388	2,374.934	59,958.542	62,624.864
2023	11	204.817	54,990.500	56,713.414		1,518.097	204.817	54,990.500	56,713.414
2023	12	2.296	59,688.756	63,174.339		3,483.286	2.296	59,688.756	63,174.339
2024	1	0.000	60,539.051	65,486.966		4,947.915	0.000	60,539.051	65,486.966
2024	2	0.000	55,365.858	60,884.750		5,518.893	0.000	55,365.858	60,884.750
2024	3	20.177	54,333.193	58,817.760		4,464.390	20.177	54,333.193	58,817.760
2024	4	156.646	54,563.156	57,310.222		2,590.421	156.646	54,563.156	57,310.222
2024	5	778.537	54,242.291	55,954.593		933.765	778.537	54,242.291	55,954.593
2024	6	4,083.580	59,873.036	64,127.517		170.901	4,083.580	59,873.036	64,127.517
2024	7	9,758.354	64,234.722	73,997.619		4.542	9,758.354	64,234.722	73,997.619
2024	8	10,753.299	65,487.927	76,241.226		0.000	10,753.299	65,487.927	76,241.226
2024	9	7,778.809	65,481.223	73,265.936		5.903	7,778.809	65,481.223	73,265.936
2024	10	2,386.081	60,050.765	62,726.232		289.386	2,386.081	60,050.765	62,726.232
2024	11	205.621	55,050.213	56,762.350		1,506.515	205.621	55,050.213	56,762.350
2024	12	2.303	59,721.274	63,177.804		3,454.227	2.303	59,721.274	63,177.804
2025	1	0.000	60,576.901	65,474.698		4,897.796	0.000	60,576.901	65,474.698
2025	2	0.000	55,407.978	60,872.026		5,464.048	0.000	55,407.978	60,872.026
2025	3	20.205	54,383.247	58,824.366		4,420.914	20.205	54,383.247	58,824.366
2025	4	156.895	54,623.439	57,346.056		2,565.722	156.895	54,623.439	57,346.056
2025	5	779.915	54,309.613	56,014.555		925.028	779.915	54,309.613	56,014.555
2025	6	4,091.359	59,948.415	64,209.099		169.325	4,091.359	59,948.415	64,209.099

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	Cooling	Other	Total	Actual	Heating	Cooling	Other	Total
2025	7	9,777.699	64,313.273	74,095.472		4.501	9,777.699	64,313.273	74,095.472
2025	8	10,774.792	65,564.141	76,338.933		0.000	10,774.792	65,564.141	76,338.933
2025	9	7,794.105	65,559.032	73,358.986		5.849	7,794.105	65,559.032	73,358.986
2025	10	2,390.603	60,122.780	62,800.097		286.714	2,390.603	60,122.780	62,800.097
2025	11	205.991	55,117.652	56,816.102		1,492.459	205.991	55,117.652	56,816.102
2025	12	2.307	59,790.002	63,213.916		3,421.606	2.307	59,790.002	63,213.916
2026	1	0.000	60,521.844	65,372.376		4,850.532	0.000	60,521.844	65,372.376
2026	2	0.000	55,344.764	60,754.309		5,409.546	0.000	55,344.764	60,754.309
2026	3	20.283	54,307.152	58,702.826		4,375.391	20.283	54,307.152	58,702.826
2026	4	157.448	54,531.614	57,227.560		2,538.497	157.448	54,531.614	57,227.560
2026	5	782.447	54,206.752	55,904.154		914.956	782.447	54,206.752	55,904.154
2026	6	4,103.689	59,832.183	64,103.315		167.442	4,103.689	59,832.183	64,103.315
2026	7	9,805.487	64,189.870	73,999.807		4.450	9,805.487	64,189.870	73,999.807
2026	8	10,804.181	65,440.701	76,244.883		0.000	10,804.181	65,440.701	76,244.883
2026	9	7,814.773	65,427.422	73,247.977		5.782	7,814.773	65,427.422	73,247.977
2026	10	2,396.845	59,994.193	62,674.450		283.413	2,396.845	59,994.193	62,674.450
2026	11	206.526	54,989.408	56,671.192		1,475.257	206.526	54,989.408	56,671.192
2026	12	2.313	59,649.805	63,034.323		3,382.205	2.313	59,649.805	63,034.323
2027	1	0.000	60,430.732	65,229.392		4,798.660	0.000	60,430.732	65,229.392
2027	2	0.000	55,269.936	60,622.504		5,352.569	0.000	55,269.936	60,622.504
2027	3	20.338	54,239.743	58,590.069		4,329.988	20.338	54,239.743	58,590.069
2027	4	157.900	54,468.828	57,139.264		2,512.536	157.900	54,468.828	57,139.264
2027	5	784.794	54,150.220	55,840.733		905.719	784.794	54,150.220	55,840.733
2027	6	4,116.442	59,778.573	64,060.785		165.770	4,116.442	59,778.573	64,060.785
2027	7	9,836.676	64,139.581	73,980.663		4.406	9,836.676	64,139.581	73,980.663
2027	8	10,838.942	65,393.879	76,232.821		0.000	10,838.942	65,393.879	76,232.821
2027	9	7,839.912	65,378.734	73,224.371		5.725	7,839.912	65,378.734	73,224.371
2027	10	2,404.481	59,945.967	62,631.051		280.603	2,404.481	59,945.967	62,631.051
2027	11	207.173	54,939.147	56,606.873		1,460.553	207.173	54,939.147	56,606.873
2027	12	2.320	59,591.103	62,941.656		3,348.232	2.320	59,591.103	62,941.656
2028	1	0.000	60,420.220	65,174.701		4,754.481	0.000	60,420.220	65,174.701
2028	2	0.000	55,257.695	60,560.631		5,302.936	0.000	55,257.695	60,560.631
2028	3	20.445	54,224.456	58,534.411		4,289.510	20.445	54,224.456	58,534.411
2028	4	158.718	54,449.124	57,096.658		2,488.816	158.718	54,449.124	57,096.658

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	Cooling	Other	Total	Actual	Heating	Cooling	Other	Total
2028	5	788.788	54,126.720	55,812.592		897.084	788.788	54,126.720	55,812.592
2028	6	4,137.016	59,750.413	64,051.603		164.175	4,137.016	59,750.413	64,051.603
2028	7	9,885.029	64,107.932	73,997.325		4.363	9,885.029	64,107.932	73,997.325
2028	8	10,891.421	65,360.368	76,251.789		0.000	10,891.421	65,360.368	76,251.789
2028	9	7,877.352	65,341.039	73,224.060		5.669	7,877.352	65,341.039	73,224.060
2028	10	2,415.818	59,907.105	62,600.748		277.825	2,415.818	59,907.105	62,600.748
2028	11	208.138	54,898.234	56,552.383		1,446.011	208.138	54,898.234	56,552.383
2028	12	2.331	59,543.903	62,860.962		3,314.728	2.331	59,543.903	62,860.962
2029	1	0.000	60,395.885	65,099.248		4,703.363	0.000	60,395.885	65,099.248
2029	2	0.000	55,231.554	60,476.937		5,245.383	0.000	55,231.554	60,476.937
2029	3	20.573	54,194.197	58,457.273		4,242.504	20.573	54,194.197	58,457.273
2029	4	159.690	54,413.642	57,034.622		2,461.290	159.690	54,413.642	57,034.622
2029	5	793.534	54,087.188	55,767.792		887.070	793.534	54,087.188	55,767.792
2029	6	4,161.464	59,705.005	64,028.794		162.325	4,161.464	59,705.005	64,028.794
2029	7	9,942.354	64,057.871	74,004.538		4.314	9,942.354	64,057.871	74,004.538
2029	8	10,953.313	65,307.394	76,260.707		0.000	10,953.313	65,307.394	76,260.707
2029	9	7,921.156	65,280.715	73,207.473		5.603	7,921.156	65,280.715	73,207.473
2029	10	2,428.950	59,843.743	62,547.258		274.565	2,428.950	59,843.743	62,547.258
2029	11	209.243	54,830.053	56,468.160		1,428.864	209.243	54,830.053	56,468.160
2029	12	2.343	59,463.366	62,740.720		3,275.010	2.343	59,463.366	62,740.720
2030	1	0.000	60,199.853	64,845.364		4,645.511	0.000	60,199.853	64,845.364
2030	2	0.000	55,054.735	60,235.471		5,180.735	0.000	55,054.735	60,235.471
2030	3	20.698	54,018.631	58,229.465		4,190.137	20.698	54,018.631	58,229.465
2030	4	160.657	54,232.650	56,824.182		2,430.876	160.657	54,232.650	56,824.182
2030	5	798.334	53,907.656	55,582.092		876.103	798.334	53,907.656	55,582.092
2030	6	4,186.643	59,519.983	63,866.944		160.318	4,186.643	59,519.983	63,866.944
2030	7	10,002.615	63,873.833	73,880.708		4.260	10,002.615	63,873.833	73,880.708
2030	8	11,019.924	65,131.321	76,151.245		0.000	11,019.924	65,131.321	76,151.245
2030	9	7,969.565	65,099.038	73,074.137		5.534	7,969.565	65,099.038	73,074.137
2030	10	2,443.885	59,670.194	62,385.276		271.197	2,443.885	59,670.194	62,385.276
2030	11	210.539	54,659.404	56,281.340		1,411.397	210.539	54,659.404	56,281.340
2030	12	2.358	59,278.312	62,515.795		3,235.125	2.358	59,278.312	62,515.795
2031	1	0.000	60,077.193	64,672.408		4,595.215	0.000	60,077.193	64,672.408
2031	2	0.000	54,946.530	60,071.392		5,124.862	0.000	54,946.530	60,071.392

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	Cooling	Other	Total	Actual	Heating	Cooling	Other	Total
2031	3	20.769	53,913.457	58,079.351		4,145.126	20.769	53,913.457	58,079.351
2031	4	161.217	54,126.348	56,692.428		2,404.863	161.217	54,126.348	56,692.428
2031	5	801.145	53,803.921	55,471.826		866.759	801.145	53,803.921	55,471.826
2031	6	4,201.512	59,414.329	63,774.454		158.613	4,201.512	59,414.329	63,774.454
2031	7	10,038.351	63,769.391	73,811.956		4.215	10,038.351	63,769.391	73,811.956
2031	8	11,059.434	65,031.448	76,090.882		0.000	11,059.434	65,031.448	76,090.882
2031	9	7,998.193	64,995.542	72,999.210		5.475	7,998.193	64,995.542	72,999.210
2031	10	2,452.667	59,570.509	62,291.500		268.324	2,452.667	59,570.509	62,291.500
2031	11	211.295	54,560.247	56,167.983		1,396.441	211.295	54,560.247	56,167.983
2031	12	2.366	59,169.270	62,372.460		3,200.823	2.366	59,169.270	62,372.460
2032	1	0.000	60,003.497	64,547.327		4,543.830	0.000	60,003.497	64,547.327
2032	2	0.000	54,878.796	59,946.149		5,067.354	0.000	54,878.796	59,946.149
2032	3	20.874	53,844.885	57,964.210		4,098.450	20.874	53,844.885	57,964.210
2032	4	162.029	54,053.963	56,593.668		2,377.676	162.029	54,053.963	56,593.668
2032	5	805.149	53,730.530	55,392.605		856.926	805.149	53,730.530	55,392.605
2032	6	4,222.364	59,337.189	63,716.360		156.808	4,222.364	59,337.189	63,716.360
2032	7	10,087.904	63,691.334	73,783.405		4.167	10,087.904	63,691.334	73,783.405
2032	8	11,113.824	64,955.651	76,069.476		0.000	11,113.824	64,955.651	76,069.476
2032	9	8,037.430	64,916.246	72,959.088		5.413	8,037.430	64,916.246	72,959.088
2032	10	2,464.684	59,493.825	62,223.764		265.254	2,464.684	59,493.825	62,223.764
2032	11	212.330	54,484.049	56,076.842		1,380.463	212.330	54,484.049	56,076.842
2032	12	2.378	59,085.902	62,252.495		3,164.214	2.378	59,085.902	62,252.495
2033	1	0.000	59,936.938	64,426.634		4,489.696	0.000	59,936.938	64,426.634
2033	2	0.000	54,821.559	59,828.835		5,007.276	0.000	54,821.559	59,828.835
2033	3	20.960	53,790.840	57,861.908		4,050.108	20.960	53,790.840	57,861.908
2033	4	162.709	54,001.473	56,513.981		2,349.800	162.709	54,001.473	56,513.981
2033	5	808.585	53,681.526	55,337.050		846.939	808.585	53,681.526	55,337.050
2033	6	4,240.675	59,289.647	63,685.314		154.991	4,240.675	59,289.647	63,685.314
2033	7	10,132.316	63,646.746	73,783.181		4.119	10,132.316	63,646.746	73,783.181
2033	8	11,163.453	64,915.386	76,078.838		0.000	11,163.453	64,915.386	76,078.838
2033	9	8,073.811	64,877.016	72,956.178		5.351	8,073.811	64,877.016	72,956.178
2033	10	2,475.985	59,458.438	62,196.669		262.246	2,475.985	59,458.438	62,196.669
2033	11	213.315	54,451.178	56,029.375		1,364.882	213.315	54,451.178	56,029.375
2033	12	2.389	59,052.220	62,183.273		3,128.664	2.389	59,052.220	62,183.273

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	Cooling	Other	Total	Actual	Heating	Cooling	Other	Total
2034	1	0.000	59,926.433	64,362.373		4,435.940	0.000	59,926.433	64,362.373
2034	2	0.000	54,812.978	59,760.400		4,947.422	0.000	54,812.978	59,760.400
2034	3	21.088	53,783.159	57,806.021		4,001.774	21.088	53,783.159	57,806.021
2034	4	163.702	53,994.380	56,479.882		2,321.801	163.702	53,994.380	56,479.882
2034	5	813.533	53,675.221	55,325.616		836.862	813.533	53,675.221	55,325.616
2034	6	4,266.693	59,283.827	63,703.669		153.150	4,266.693	59,283.827	63,703.669
2034	7	10,194.626	63,641.558	73,840.254		4.070	10,194.626	63,641.558	73,840.254
2034	8	11,232.256	64,910.959	76,143.215		0.000	11,232.256	64,910.959	76,143.215
2034	9	8,123.682	64,872.999	73,001.968		5.288	8,123.682	64,872.999	73,001.968
2034	10	2,491.312	59,455.119	62,205.575		259.144	2,491.312	59,455.119	62,205.575
2034	11	214.638	54,448.404	56,011.797		1,348.754	214.638	54,448.404	56,011.797
2034	12	2.404	59,049.714	62,143.850		3,091.732	2.404	59,049.714	62,143.850
2035	1	0.000	59,959.017	64,344.817		4,385.800	0.000	59,959.017	64,344.817
2035	2	0.000	54,842.516	59,734.054		4,891.538	0.000	54,842.516	59,734.054
2035	3	21.229	53,812.665	57,790.494		3,956.601	21.229	53,812.665	57,790.494
2035	4	164.794	54,024.977	56,485.378		2,295.607	164.794	54,024.977	56,485.378
2035	5	818.967	53,705.724	55,352.116		827.425	818.967	53,705.724	55,352.116
2035	6	4,295.204	59,315.391	63,762.018		151.423	4,295.204	59,315.391	63,762.018
2035	7	10,262.750	63,673.037	73,939.811		4.024	10,262.750	63,673.037	73,939.811
2035	8	11,307.286	64,941.121	76,248.407		0.000	11,307.286	64,941.121	76,248.407
2035	9	8,177.918	64,904.193	73,087.339		5.228	8,177.918	64,904.193	73,087.339
2035	10	2,507.931	59,484.964	62,249.114		256.219	2,507.931	59,484.964	62,249.114
2035	11	216.069	54,477.746	56,027.338		1,333.523	216.069	54,477.746	56,027.338
2035	12	2.420	59,081.457	62,140.664		3,056.787	2.420	59,081.457	62,140.664
2036	1	0.000	60,014.340	64,347.232		4,332.892	0.000	60,014.340	64,347.232
2036	2	0.000	54,891.680	59,724.157		4,832.478	0.000	54,891.680	59,724.157
2036	3	21.382	53,860.777	57,790.941		3,908.783	21.382	53,860.777	57,790.941
2036	4	165.983	54,073.499	56,507.296		2,267.814	165.983	54,073.499	56,507.296
2036	5	824.856	53,752.751	55,394.994		817.387	824.856	53,752.751	55,394.994
2036	6	4,325.973	59,362.700	63,838.255		149.582	4,325.973	59,362.700	63,838.255
2036	7	10,335.959	63,718.924	74,058.858		3.975	10,335.959	63,718.924	74,058.858
2036	8	11,387.575	64,983.884	76,371.459		0.000	11,387.575	64,983.884	76,371.459
2036	9	8,235.719	64,947.234	73,188.117		5.164	8,235.719	64,947.234	73,188.117
2036	10	2,525.575	59,525.093	62,303.740		253.072	2,525.575	59,525.093	62,303.740

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	Cooling	Other	Total	Actual	Heating	Cooling	Other	Total
2036	11	217.582	54,516.274	56,050.955		1,317.099	217.582	54,516.274	56,050.955
2036	12	2.437	59,122.290	62,143.771		3,019.044	2.437	59,122.290	62,143.771
2037	1	0.000	60,071.545	64,348.628		4,277.083	0.000	60,071.545	64,348.628
2037	2	0.000	54,942.131	59,712.269		4,770.138	0.000	54,942.131	59,712.269
2037	3	21.544	53,909.969	57,789.808		3,858.295	21.544	53,909.969	57,789.808
2037	4	167.236	54,123.812	56,529.557		2,238.509	167.236	54,123.812	56,529.557
2037	5	831.081	53,802.501	55,440.405		806.823	831.081	53,802.501	55,440.405
2037	6	4,358.628	59,414.091	63,920.368		147.649	4,358.628	59,414.091	63,920.368
2037	7	10,414.052	63,770.463	74,188.439		3.924	10,414.052	63,770.463	74,188.439
2037	8	11,473.749	65,033.918	76,507.667		0.000	11,473.749	65,033.918	76,507.667
2037	9	8,298.188	64,999.995	73,303.280		5.097	8,298.188	64,999.995	73,303.280
2037	10	2,544.788	59,576.861	62,371.465		249.816	2,544.788	59,576.861	62,371.465
2037	11	219.242	54,568.743	56,088.173		1,300.188	219.242	54,568.743	56,088.173
2037	12	2.455	59,181.074	62,163.892		2,980.363	2.455	59,181.074	62,163.892
2038	1	0.000	60,143.263	64,364.717		4,221.454	0.000	60,143.263	64,364.717
2038	2	0.000	55,005.441	59,713.424		4,707.984	0.000	55,005.441	59,713.424
2038	3	21.691	53,971.523	57,801.142		3,807.928	21.691	53,971.523	57,801.142
2038	4	168.377	54,185.946	56,563.552		2,209.229	168.377	54,185.946	56,563.552
2038	5	836.728	53,862.910	55,495.886		796.248	836.728	53,862.910	55,495.886
2038	6	4,388.124	59,475.164	64,008.997		145.710	4,388.124	59,475.164	64,008.997
2038	7	10,484.221	63,830.106	74,318.199		3.872	10,484.221	63,830.106	74,318.199
2038	8	11,550.695	65,089.948	76,640.642		0.000	11,550.695	65,089.948	76,640.642
2038	9	8,353.552	65,056.742	73,415.323		5.030	8,353.552	65,056.742	73,415.323
2038	10	2,561.673	59,630.047	62,438.222		246.503	2,561.673	59,630.047	62,438.222
2038	11	220.689	54,620.054	56,123.639		1,282.896	220.689	54,620.054	56,123.639
2038	12	2.472	59,235.680	62,178.767		2,940.616	2.472	59,235.680	62,178.767
2039	1	0.000	60,215.313	64,381.706		4,166.393	0.000	60,215.313	64,381.706
2039	2	0.000	55,069.796	59,716.345		4,646.550	0.000	55,069.796	59,716.345
2039	3	21.861	54,034.939	57,815.020		3,758.221	21.861	54,034.939	57,815.020
2039	4	169.693	54,250.978	56,601.055		2,180.383	169.693	54,250.978	56,601.055
2039	5	843.267	53,927.283	55,556.402		785.851	843.267	53,927.283	55,556.402
2039	6	4,422.426	59,541.618	64,107.851		143.807	4,422.426	59,541.618	64,107.851
2039	7	10,566.235	63,896.613	74,466.669		3.822	10,566.235	63,896.613	74,466.669
2039	8	11,641.156	65,154.257	76,795.413		0.000	11,641.156	65,154.257	76,795.413

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	Cooling	Other	Total	Actual	Heating	Cooling	Other	Total
2039	9	8,419.068	65,124.059	73,548.091		4.964	8,419.068	65,124.059	73,548.091
2039	10	2,581.797	59,695.463	62,520.554		243.294	2,581.797	59,695.463	62,520.554
2039	11	222.426	54,685.602	56,174.241		1,266.213	222.426	54,685.602	56,174.241
2039	12	2.491	59,308.180	62,213.086		2,902.415	2.491	59,308.180	62,213.086
2040	1	0.000	60,188.393	64,300.885		4,112.492	0.000	60,188.393	64,300.885
2040	2	0.000	55,046.752	59,633.308		4,586.556	0.000	55,046.752	59,633.308
2040	3	22.016	54,013.163	57,744.966		3,709.786	22.016	54,013.163	57,744.966
2040	4	170.901	54,229.221	56,552.438		2,152.315	170.901	54,229.221	56,552.438
2040	5	849.280	53,906.151	55,531.173		775.743	849.280	53,906.151	55,531.173
2040	6	4,453.980	59,520.030	64,115.968		141.958	4,453.980	59,520.030	64,115.968
2040	7	10,641.609	63,875.016	74,520.397		3.772	10,641.609	63,875.016	74,520.397
2040	8	11,724.107	65,133.172	76,857.279		0.000	11,724.107	65,133.172	76,857.279
2040	9	8,478.954	65,101.608	73,585.463		4.900	8,478.954	65,101.608	73,585.463
2040	10	2,600.118	59,673.129	62,513.404		240.156	2,600.118	59,673.129	62,513.404
2040	11	223.999	54,662.583	56,136.440		1,249.858	223.999	54,662.583	56,136.440
2040	12	2.509	59,281.916	62,149.286		2,864.861	2.509	59,281.916	62,149.286
2041	1	0.000	60,195.022	64,254.946		4,059.924	0.000	60,195.022	64,254.946
2041	2	0.000	55,050.460	59,578.147		4,527.687	0.000	55,050.460	59,578.147
2041	3	22.200	54,014.572	57,698.743		3,661.971	22.200	54,014.572	57,698.743
2041	4	172.318	54,228.609	56,525.398		2,124.471	172.318	54,228.609	56,525.398
2041	5	856.279	53,903.610	55,525.560		765.672	856.279	53,903.610	55,525.560
2041	6	4,490.493	59,515.548	64,146.150		140.109	4,490.493	59,515.548	64,146.150
2041	7	10,728.431	63,868.874	74,601.028		3.723	10,728.431	63,868.874	74,601.028
2041	8	11,819.349	65,125.816	76,945.165		0.000	11,819.349	65,125.816	76,945.165
2041	9	8,547.565	65,092.603	73,645.004		4.836	8,547.565	65,092.603	73,645.004
2041	10	2,621.084	59,663.269	62,521.350		236.997	2,621.084	59,663.269	62,521.350
2041	11	225.800	54,651.733	56,110.917		1,233.384	225.800	54,651.733	56,110.917
2041	12	2.529	59,268.953	62,098.515		2,827.034	2.529	59,268.953	62,098.515
2042	1	0.000	60,208.613	64,213.263		4,004.650	0.000	60,208.613	64,213.263
2042	2	0.000	55,061.890	59,527.853		4,465.963	0.000	55,061.890	59,527.853
2042	3	22.380	54,025.128	57,659.492		3,611.985	22.380	54,025.128	57,659.492
2042	4	173.712	54,238.679	56,507.824		2,095.433	173.712	54,238.679	56,507.824
2042	5	863.192	53,912.823	55,531.208		755.193	863.192	53,912.823	55,531.208
2042	6	4,526.666	59,524.262	64,189.117		138.189	4,526.666	59,524.262	64,189.117

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	Cooling	Other	Total	Actual	Heating	Cooling	Other	Total
2042	7	10,814.654	63,876.761	74,695.088		3.672	10,814.654	63,876.761	74,695.088
2042	8	11,914.106	65,132.581	77,046.687		0.000	11,914.106	65,132.581	77,046.687
2042	9	8,615.912	65,098.728	73,719.409		4.769	8,615.912	65,098.728	73,719.409
2042	10	2,641.985	59,668.272	62,543.988		233.730	2,641.985	59,668.272	62,543.988
2042	11	227.596	54,655.811	56,099.764		1,216.357	227.596	54,655.811	56,099.764
2042	12	2.549	59,272.487	62,062.986		2,787.950	2.549	59,272.487	62,062.986
2043	1	0.000	60,259.516	64,210.157		3,950.641	0.000	60,259.516	64,210.157
2043	2	0.000	55,108.441	59,514.270		4,405.829	0.000	55,108.441	59,514.270
2043	3	22.549	54,072.189	57,658.178		3,563.439	22.549	54,072.189	57,658.178
2043	4	175.033	54,288.285	56,530.650		2,067.331	175.033	54,288.285	56,530.650
2043	5	869.786	53,963.291	55,578.165		745.089	869.786	53,963.291	55,578.165
2043	6	4,561.402	59,577.804	64,275.551		136.345	4,561.402	59,577.804	64,275.551
2043	7	10,898.055	63,931.792	74,833.470		3.623	10,898.055	63,931.792	74,833.470
2043	8	12,006.488	65,187.225	77,193.713		0.000	12,006.488	65,187.225	77,193.713
2043	9	8,683.116	65,157.494	73,845.316		4.706	8,683.116	65,157.494	73,845.316
2043	10	2,662.722	59,726.930	62,620.303		230.651	2,662.722	59,726.930	62,620.303
2043	11	229.393	54,716.159	56,145.946		1,200.393	229.393	54,716.159	56,145.946
2043	12	2.569	59,340.985	62,095.053		2,751.499	2.569	59,340.985	62,095.053
2044	1	0.000	60,356.074	64,255.052		3,898.978	0.000	60,356.074	64,255.052
2044	2	0.000	55,195.929	59,544.237		4,348.308	0.000	55,195.929	59,544.237
2044	3	22.770	54,159.477	57,699.232		3,516.985	22.770	54,159.477	57,699.232
2044	4	176.745	54,378.414	56,595.561		2,040.401	176.745	54,378.414	56,595.561
2044	5	878.298	54,052.815	55,666.500		735.387	878.298	54,052.815	55,666.500
2044	6	4,606.051	59,670.175	64,410.795		134.570	4,606.051	59,670.175	64,410.795
2044	7	11,004.697	64,023.772	75,032.045		3.576	11,004.697	64,023.772	75,032.045
2044	8	12,123.880	65,275.313	77,399.193		0.000	12,123.880	65,275.313	77,399.193
2044	9	8,767.905	65,248.495	74,021.046		4.645	8,767.905	65,248.495	74,021.046
2044	10	2,688.679	59,813.963	62,730.282		227.639	2,688.679	59,813.963	62,730.282
2044	11	231.625	54,801.819	56,218.140		1,184.697	231.625	54,801.819	56,218.140
2044	12	2.594	59,433.936	62,151.990		2,715.460	2.594	59,433.936	62,151.990
2045	1	0.000	60,477.241	64,324.928		3,847.687	0.000	60,477.241	64,324.928
2045	2	0.000	55,301.469	59,592.258		4,290.789	0.000	55,301.469	59,592.258
2045	3	22.969	54,260.592	57,753.757		3,470.196	22.969	54,260.592	57,753.757
2045	4	178.283	54,479.222	56,670.616		2,013.111	178.283	54,479.222	56,670.616

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	Cooling	Other	Total	Actual	Heating	Cooling	Other	Total
2045	5	885.880	54,149.699	55,761.080		725.501	885.880	54,149.699	55,761.080
2045	6	4,645.506	59,767.159	64,545.417		132.752	4,645.506	59,767.159	64,545.417
2045	7	11,098.276	64,117.784	75,219.587		3.528	11,098.276	64,117.784	75,219.587
2045	8	12,226.251	65,363.207	77,589.458		0.000	12,226.251	65,363.207	77,589.458
2045	9	8,841.421	65,337.280	74,183.283		4.581	8,841.421	65,337.280	74,183.283
2045	10	2,711.067	59,897.119	62,832.696		224.511	2,711.067	59,897.119	62,832.696
2045	11	233.541	54,882.106	56,283.997		1,168.350	233.541	54,882.106	56,283.997
2045	12	2.615	59,519.538	62,200.001		2,677.848	2.615	59,519.538	62,200.001
2046	1	0.000	60,592.946	64,387.824		3,794.878	0.000	60,592.946	64,387.824
2046	2	0.000	55,404.018	59,635.798		4,231.780	0.000	55,404.018	59,635.798
2046	3	23.200	54,360.719	57,806.291		3,422.371	23.200	54,360.719	57,806.291
2046	4	180.071	54,580.771	56,746.146		1,985.305	180.071	54,580.771	56,746.146
2046	5	894.733	54,248.949	55,859.140		715.458	894.733	54,248.949	55,859.140
2046	6	4,691.785	59,868.126	64,690.822		130.911	4,691.785	59,868.126	64,690.822
2046	7	11,208.501	64,217.138	75,429.117		3.479	11,208.501	64,217.138	75,429.117
2046	8	12,347.298	65,457.413	77,804.711		0.000	12,347.298	65,457.413	77,804.711
2046	9	8,928.660	65,433.726	74,366.904		4.517	8,928.660	65,433.726	74,366.904
2046	10	2,737.722	59,988.604	62,947.694		221.368	2,737.722	59,988.604	62,947.694
2046	11	235.829	54,971.487	56,359.267		1,151.952	235.829	54,971.487	56,359.267
2046	12	2.641	59,615.876	62,258.683		2,640.165	2.641	59,615.876	62,258.683
2047	1	0.000	60,723.024	64,464.869		3,741.845	0.000	60,723.024	64,464.869
2047	2	0.000	55,520.961	59,693.633		4,172.672	0.000	55,520.961	59,693.633
2047	3	23.414	54,476.603	57,874.610		3,374.594	23.414	54,476.603	57,874.610
2047	4	181.725	54,700.121	56,839.448		1,957.603	181.725	54,700.121	56,839.448
2047	5	902.959	54,367.350	55,975.788		705.478	902.959	54,367.350	55,975.788
2047	6	4,734.938	59,990.329	64,854.352		129.085	4,734.938	59,990.329	64,854.352
2047	7	11,311.613	64,339.059	75,654.102		3.430	11,311.613	64,339.059	75,654.102
2047	8	12,460.892	65,574.627	78,035.519		0.000	12,460.892	65,574.627	78,035.519
2047	9	9,010.807	65,555.543	74,570.804		4.454	9,010.807	65,555.543	74,570.804
2047	10	2,762.910	60,106.006	63,087.198		218.281	2,762.910	60,106.006	63,087.198
2047	11	237.998	55,088.101	56,461.990		1,135.890	237.998	55,088.101	56,461.990
2047	12	2.665	59,743.744	62,349.762		2,603.353	2.665	59,743.744	62,349.762
2048	1	0.000	60,881.333	64,571.314		3,689.981	0.000	60,881.333	64,571.314
2048	2	0.000	55,662.485	59,777.282		4,114.797	0.000	55,662.485	59,777.282

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	Cooling	Other	Total	Actual	Heating	Cooling	Other	Total
2048	3	23.611	54,616.094	57,967.463		3,327.758	23.611	54,616.094	57,967.463
2048	4	183.259	54,842.815	56,956.479		1,930.405	183.259	54,842.815	56,956.479
2048	5	910.566	54,508.078	56,114.312		695.668	910.566	54,508.078	56,114.312
2048	6	4,774.774	60,134.874	65,036.936		127.288	4,774.774	60,134.874	65,036.936
2048	7	11,406.664	64,482.741	75,892.787		3.382	11,406.664	64,482.741	75,892.787
2048	8	12,565.497	65,712.386	78,277.883		0.000	12,565.497	65,712.386	78,277.883
2048	9	9,086.389	65,698.395	74,789.176		4.392	9,086.389	65,698.395	74,789.176
2048	10	2,786.070	60,243.449	63,244.756		215.237	2,786.070	60,243.449	63,244.756
2048	11	239.992	55,224.456	56,584.491		1,120.042	239.992	55,224.456	56,584.491
2048	12	2.687	59,893.160	62,462.871		2,567.024	2.687	59,893.160	62,462.871
2049	1	0.000	61,070.228	64,700.285		3,630.057	0.000	61,070.228	64,700.285
2049	2	0.000	55,833.134	59,881.230		4,048.096	0.000	55,833.134	59,881.230
2049	3	23.842	54,786.127	58,083.890		3,273.921	23.842	54,786.127	58,083.890
2049	4	185.057	55,019.291	57,103.600		1,899.252	185.057	55,019.291	57,103.600
2049	5	919.539	54,684.560	56,288.567		684.469	919.539	54,684.560	56,288.567
2049	6	4,822.013	60,318.533	65,265.790		125.244	4,822.013	60,318.533	65,265.790
2049	7	11,519.950	64,667.518	76,190.797		3.328	11,519.950	64,667.518	76,190.797
2049	8	12,690.763	65,891.567	78,582.330		0.000	12,690.763	65,891.567	78,582.330
2049	9	9,177.321	65,886.266	75,067.910		4.322	9,177.321	65,886.266	75,067.910
2049	10	2,814.061	60,426.135	63,452.008		211.812	2,814.061	60,426.135	63,452.008
2049	11	242.413	55,407.541	56,752.218		1,102.264	242.413	55,407.541	56,752.218
2049	12	2.715	60,095.694	62,624.782		2,526.373	2.715	60,095.694	62,624.782
2050	1	0.000	61,307.762	64,879.555		3,571.793	0.000	61,307.762	64,879.555
2050	2	0.000	56,045.660	60,028.740		3,983.081	0.000	56,045.660	60,028.740
2050	3	24.098	54,995.711	58,241.113		3,221.304	24.098	54,995.711	58,241.113
2050	4	187.043	55,234.114	57,289.863		1,868.706	187.043	55,234.114	57,289.863
2050	5	929.397	54,896.756	56,499.605		673.452	929.397	54,896.756	56,499.605
2050	6	4,873.651	60,536.718	65,533.595		123.227	4,873.651	60,536.718	65,533.595
2050	7	11,643.170	64,884.520	76,530.965		3.274	11,643.170	64,884.520	76,530.965
2050	8	12,826.345	66,099.623	78,925.968		0.000	12,826.345	66,099.623	78,925.968
2050	9	9,275.246	66,101.884	75,381.383		4.253	9,275.246	66,101.884	75,381.383
2050	10	2,844.049	60,633.361	63,685.800		208.390	2,844.049	60,633.361	63,685.800
2050	11	244.993	55,612.814	56,942.244		1,084.438	244.993	55,612.814	56,942.244
2050	12	2.743	60,320.182	62,808.408		2,485.482	2.743	60,320.182	62,808.408

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	Cooling	Other	Total	Actual	Heating	Cooling	Other	Total
2051	1	0.000	61,520.917	65,040.380		3,519.462	0.000	61,520.917	65,040.380
2051	2	0.000	56,236.695	60,161.413		3,924.718	0.000	56,236.695	60,161.413
2051	3	24.334	55,184.438	58,382.869		3,174.097	24.334	55,184.438	58,382.869
2051	4	188.869	55,427.931	57,458.116		1,841.316	188.869	55,427.931	57,458.116
2051	5	938.468	55,088.571	56,690.619		663.579	938.468	55,088.571	56,690.619
2051	6	4,921.202	60,734.319	65,776.940		121.420	4,921.202	60,734.319	65,776.940
2051	7	11,756.734	65,081.407	76,841.367		3.226	11,756.734	65,081.407	76,841.367
2051	8	12,951.406	66,288.732	79,240.138		0.000	12,951.406	66,288.732	79,240.138
2051	9	9,365.649	66,298.232	75,668.072		4.190	9,365.649	66,298.232	75,668.072
2051	10	2,871.759	60,822.427	63,899.517		205.331	2,871.759	60,822.427	63,899.517
2051	11	247.378	55,800.454	57,116.352		1,068.519	247.378	55,800.454	57,116.352
2051	12	2.770	60,525.779	62,977.535		2,448.985	2.770	60,525.779	62,977.535
2052	1	0.000	61,741.066	65,208.978		3,467.912	0.000	61,741.066	65,208.978
2052	2	0.000	56,434.002	60,301.227		3,867.225	0.000	56,434.002	60,301.227
2052	3	24.571	55,379.366	58,531.531		3,127.594	24.571	55,379.366	58,531.531
2052	4	190.714	55,628.119	57,633.168		1,814.335	190.714	55,628.119	57,633.168
2052	5	947.631	55,286.697	56,888.182		653.854	947.631	55,286.697	56,888.182
2052	6	4,969.236	60,938.426	66,027.302		119.640	4,969.236	60,938.426	66,027.302
2052	7	11,871.454	65,284.782	77,159.415		3.179	11,871.454	65,284.782	77,159.415
2052	8	13,077.740	66,484.079	79,561.819		0.000	13,077.740	66,484.079	79,561.819
2052	9	9,456.973	66,501.064	75,962.166		4.129	9,456.973	66,501.064	75,962.166
2052	10	2,899.750	61,017.743	64,119.811		202.319	2,899.750	61,017.743	64,119.811
2052	11	249.789	55,994.304	57,296.931		1,052.838	249.789	55,994.304	57,296.931
2052	12	2.797	60,738.187	63,154.019		2,413.035	2.797	60,738.187	63,154.019
2053	1	0.000	61,968.258	65,385.387		3,417.129	0.000	61,968.258	65,385.387
2053	2	0.000	56,637.626	60,448.214		3,810.588	0.000	56,637.626	60,448.214
2053	3	24.811	55,580.537	58,687.132		3,081.783	24.811	55,580.537	58,687.132
2053	4	192.577	55,834.725	57,815.059		1,787.756	192.577	55,834.725	57,815.059
2053	5	956.887	55,491.179	57,092.340		644.274	956.887	55,491.179	57,092.340
2053	6	5,017.760	61,149.085	66,284.733		117.887	5,017.760	61,149.085	66,284.733
2053	7	11,987.342	65,494.691	77,485.166		3.132	11,987.342	65,494.691	77,485.166
2053	8	13,205.360	66,685.708	79,891.068		0.000	13,205.360	66,685.708	79,891.068
2053	9	9,549.226	66,710.425	76,263.720		4.068	9,549.226	66,710.425	76,263.720
2053	10	2,928.027	61,219.351	64,346.729		199.351	2,928.027	61,219.351	64,346.729

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	Cooling	Other	Total	Actual	Heating	Cooling	Other	Total
2053	11	252.224	56,194.406	57,484.021		1,037.392	252.224	56,194.406	57,484.021
2053	12	2.824	60,957.453	63,337.900		2,377.623	2.824	60,957.453	63,337.900
2054	1	0.000	62,202.544	65,569.647		3,367.103	0.000	62,202.544	65,569.647
2054	2	0.000	56,847.611	60,602.406		3,754.796	0.000	56,847.611	60,602.406
2054	3	25.054	55,787.998	58,849.708		3,036.656	25.054	55,787.998	58,849.708
2054	4	194.459	56,047.794	58,003.827		1,761.574	194.459	56,047.794	58,003.827
2054	5	966.237	55,702.062	57,303.136		634.837	966.237	55,702.062	57,303.136
2054	6	5,066.778	61,366.345	66,549.283		116.160	5,066.778	61,366.345	66,549.283
2054	7	12,104.410	65,711.182	77,818.679		3.087	12,104.410	65,711.182	77,818.679
2054	8	13,334.281	66,893.665	80,227.946		0.000	13,334.281	66,893.665	80,227.946
2054	9	9,642.420	66,926.362	76,572.791		4.009	9,642.420	66,926.362	76,572.791
2054	10	2,956.592	61,427.298	64,580.318		196.428	2,956.592	61,427.298	64,580.318
2054	11	254.683	56,400.806	57,677.665		1,022.176	254.683	56,400.806	57,677.665
2054	12	2.852	61,183.626	63,529.219		2,342.741	2.852	61,183.626	63,529.219
2055	1	0.000	62,443.978	65,761.799		3,317.821	0.000	62,443.978	65,761.799
2055	2	0.000	57,064.005	60,763.839		3,699.834	0.000	57,064.005	60,763.839
2055	3	25.299	56,001.794	59,019.294		2,992.201	25.299	56,001.794	59,019.294
2055	4	196.361	56,267.374	58,199.517		1,735.782	196.361	56,267.374	58,199.517
2055	5	975.682	55,919.394	57,520.617		625.540	975.682	55,919.394	57,520.617
2055	6	5,116.295	61,590.253	66,821.007		114.459	5,116.295	61,590.253	66,821.007
2055	7	12,222.671	65,934.304	78,160.016		3.041	12,222.671	65,934.304	78,160.016
2055	8	13,464.516	67,107.996	80,572.512		0.000	13,464.516	67,107.996	80,572.512
2055	9	9,736.564	67,148.924	76,889.438		3.950	9,736.564	67,148.924	76,889.438
2055	10	2,985.448	61,641.630	64,820.627		193.549	2,985.448	61,641.630	64,820.627
2055	11	257.168	56,613.550	57,877.905		1,007.188	257.168	56,613.550	57,877.905
2055	12	2.880	61,416.758	63,728.018		2,308.381	2.880	61,416.758	63,728.018
2056	1	0.000	62,692.612	65,961.886		3,269.273	0.000	62,692.612	65,961.886
2056	2	0.000	57,286.858	60,932.548		3,645.690	0.000	57,286.858	60,932.548
2056	3	25.547	56,221.975	59,195.929		2,948.408	25.547	56,221.975	59,195.929
2056	4	198.282	56,493.516	58,402.171		1,710.374	198.282	56,493.516	58,402.171
2056	5	985.224	56,143.224	57,744.831		616.383	985.224	56,143.224	57,744.831
2056	6	5,166.317	61,820.861	67,099.961		112.783	5,166.317	61,820.861	67,099.961
2056	7	12,342.137	66,164.107	78,509.240		2.997	12,342.137	66,164.107	78,509.240
2056	8	13,596.078	67,328.750	80,924.828		0.000	13,596.078	67,328.750	80,924.828

Indiana Michigan Power Company-Michigan
Long-Term Commercial Energy Model Output

Year	Month	Cooling	Other	Total	Actual	Heating	Cooling	Other	Total
2056	9	9,831.668	67,378.161	77,213.720		3.892	9,831.668	67,378.161	77,213.720
2056	10	3,014.598	61,862.397	65,067.707		190.712	3,014.598	61,862.397	65,067.707
2056	11	259.678	56,832.685	58,084.787		992.424	259.678	56,832.685	58,084.787
2056	12	2.908	61,656.901	63,934.343		2,274.534	2.908	61,656.901	63,934.343
2057	1	0.000	62,948.505	66,169.953		3,221.448	0.000	62,948.505	66,169.953
2057	2	0.000	57,516.219	61,108.572		3,592.353	0.000	57,516.219	61,108.572
2057	3	25.797	56,448.589	59,379.653		2,905.267	25.797	56,448.589	59,379.653
2057	4	200.222	56,726.269	58,611.835		1,685.344	200.222	56,726.269	58,611.835
2057	5	994.863	56,373.603	57,975.827		607.361	994.863	56,373.603	57,975.827
2057	6	5,216.848	62,058.221	67,386.201		111.132	5,216.848	62,058.221	67,386.201
2057	7	12,462.821	66,400.642	78,866.416		2.953	12,462.821	66,400.642	78,866.416
2057	8	13,728.982	67,555.977	81,284.959		0.000	13,728.982	67,555.977	81,284.959
2057	9	9,927.742	67,614.125	77,545.701		3.835	9,927.742	67,614.125	77,545.701
2057	10	3,044.046	62,089.647	65,321.611		187.918	3,044.046	62,089.647	65,321.611
2057	11	262.214	57,058.262	58,298.356		977.881	262.214	57,058.262	58,298.356
2057	12	2.936	61,904.109	64,148.239		2,241.193	2.936	61,904.109	64,148.239

INDUSTRIAL ENERGY

INDIANA MICHIGAN POWER COMPANY
INDIANA SERVICE AREA
MANUFACTURING ENERGY SALES
ENDOGENOUS VARIABLE

The MEANS Procedure

Variable	Label	Mean
year	year	2026.00
month	month	6.5000000
ei_imi	BILLED KWH	562.8658715

INDIANA MICHIGAN POWER COMPANY
INDIANA SERVICE AREA
MANUFACTURING ENERGY SALES
ENDOGENOUS VARIABLE

Obs	year	month	ei_imi
1	1995	1	445.063
2	1995	2	434.885
3	1995	3	485.973
4	1995	4	462.101
5	1995	5	477.43
6	1995	6	484.029
7	1995	7	446.893
8	1995	8	483.124
9	1995	9	451.58
10	1995	10	495.133
11	1995	11	473.149
12	1995	12	454.79
13	1996	1	506.5363
14	1996	2	510.7182
15	1996	3	509.1997
16	1996	4	523.2746
17	1996	5	549.2134
18	1996	6	523.7555
19	1996	7	532.4252
20	1996	8	562.1799
21	1996	9	533.4938
22	1996	10	557.9409
23	1996	11	489.2345
24	1996	12	516.5402
25	1997	1	537.9642
26	1997	2	514.5719
27	1997	3	513.6808
28	1997	4	555.2667
29	1997	5	531.4818
30	1997	6	553.8671
31	1997	7	557.1743
32	1997	8	555.3932
33	1997	9	559.4926
34	1997	10	570.845
35	1997	11	521.8339
36	1997	12	548.9433
37	1998	1	522.1611
38	1998	2	523.2191
39	1998	3	555.7506
40	1998	4	554.6195
41	1998	5	558.8179
42	1998	6	576.8707
43	1998	7	532.5246
44	1998	8	617.8052
45	1998	9	580.4243
46	1998	10	603.798
47	1998	11	558.0011
48	1998	12	579.6036
49	1999	1	519.1415

INDIANA MICHIGAN POWER COMPANY
INDIANA SERVICE AREA
MANUFACTURING ENERGY SALES
ENDOGENOUS VARIABLE

Obs	year	month	ei_imi
50	1999	2	571.4783
51	1999	3	600.4029
52	1999	4	609.3566
53	1999	5	588.3993
54	1999	6	604.8096
55	1999	7	595.7039
56	1999	8	627.5208
57	1999	9	619.0776
58	1999	10	598.5051
59	1999	11	601.8821
60	1999	12	586.8782
61	2000	1	593.8731
62	2000	2	601.5177
63	2000	3	610.609
64	2000	4	581.0451
65	2000	5	624.1091
66	2000	6	620.2041
67	2000	7	595.2475
68	2000	8	602.1409
69	2000	9	609.4992
70	2000	10	578.3946
71	2000	11	534.1597
72	2000	12	587.5377
73	2001	1	562.522
74	2001	2	549.0661
75	2001	3	586.6955
76	2001	4	570.2732
77	2001	5	597.5152
78	2001	6	594.6218
79	2001	7	730.9623
80	2001	8	631.9577
81	2001	9	589.4201
82	2001	10	572.8912
83	2001	11	537.5029
84	2001	12	544.2759
85	2002	1	565.8917
86	2002	2	554.4982
87	2002	3	578.8751
88	2002	4	582.4315
89	2002	5	602.319
90	2002	6	594.2844
91	2002	7	602.8749
92	2002	8	614.3839
93	2002	9	617.7006
94	2002	10	591.8831
95	2002	11	580.0996
96	2002	12	580.2616
97	2003	1	573.4895
98	2003	2	558.3607

INDIANA MICHIGAN POWER COMPANY
INDIANA SERVICE AREA
MANUFACTURING ENERGY SALES
ENDOGENOUS VARIABLE

Obs	year	month	ei_imi
99	2003	3	564.4867
100	2003	4	555.21
101	2003	5	576.1037
102	2003	6	575.6623
103	2003	7	556.9208
104	2003	8	582.2612
105	2003	9	597.5811
106	2003	10	590.5284
107	2003	11	563.8974
108	2003	12	558.1062
109	2004	1	591.1904
110	2004	2	571.6933
111	2004	3	584.2021
112	2004	4	582.1246
113	2004	5	595.1821
114	2004	6	600.7901
115	2004	7	581.1516
116	2004	8	597.2478
117	2004	9	616.325
118	2004	10	577.2869
119	2004	11	564.9906
120	2004	12	583.0957
121	2005	1	558.5265
122	2005	2	572.8868
123	2005	3	589.6879
124	2005	4	551.5711
125	2005	5	592.4665
126	2005	6	584.8243
127	2005	7	581.8307
128	2005	8	611.8744
129	2005	9	620.5461
130	2005	10	612.1391
131	2005	11	558.0226
132	2005	12	588.3965
133	2006	1	585.8103
134	2006	2	568.0625
135	2006	3	593.1102
136	2006	4	564.774
137	2006	5	601.6685
138	2006	6	589.9968
139	2006	7	591.6418
140	2006	8	614.3286
141	2006	9	604.5194
142	2006	10	569.5298
143	2006	11	561.0125
144	2006	12	571.7102
145	2007	1	554.0955
146	2007	2	552.4443
147	2007	3	580.4356

INDIANA MICHIGAN POWER COMPANY
INDIANA SERVICE AREA
MANUFACTURING ENERGY SALES
ENDOGENOUS VARIABLE

Obs	year	month	ei_imi
148	2007	4	555.1105
149	2007	5	579.5736
150	2007	6	592.4012
151	2007	7	592.7365
152	2007	8	607.259
153	2007	9	614.2926
154	2007	10	584.8136
155	2007	11	542.5132
156	2007	12	571.0556
157	2008	1	572.9256
158	2008	2	559.9062
159	2008	3	581.6669
160	2008	4	564.7042
161	2008	5	583.4742
162	2008	6	591.2739
163	2008	7	572.7185
164	2008	8	592.4687
165	2008	9	559.4872
166	2008	10	479.4442
167	2008	11	449.3421
168	2008	12	480.4226
169	2009	1	480.3961
170	2009	2	450.4962
171	2009	3	450.8111
172	2009	4	452.2333
173	2009	5	463.4872
174	2009	6	499.5121
175	2009	7	522.7519
176	2009	8	546.6993
177	2009	9	552.8066
178	2009	10	532.8112
179	2009	11	504.974
180	2009	12	547.4043
181	2010	1	552.3489
182	2010	2	520.3179
183	2010	3	555.2909
184	2010	4	531.5204
185	2010	5	558.832
186	2010	6	541.3213
187	2010	7	547.2915
188	2010	8	577.0647
189	2010	9	545.7517
190	2010	10	528.1695
191	2010	11	538.4091
192	2010	12	584.1981
193	2011	1	556.5215
194	2011	2	509.029
195	2011	3	570.8447
196	2011	4	537.3576

INDIANA MICHIGAN POWER COMPANY
INDIANA SERVICE AREA
MANUFACTURING ENERGY SALES
ENDOGENOUS VARIABLE

Obs	year	month	ei_imi
197	2011	5	563.3275
198	2011	6	577.2622
199	2011	7	542.0551
200	2011	8	601.6735
201	2011	9	597.7811
202	2011	10	550.3301
203	2011	11	545.8797
204	2011	12	573.0644
205	2012	1	570.4171
206	2012	2	534.0153
207	2012	3	558.0769
208	2012	4	573.1815
209	2012	5	571.3803
210	2012	6	565.2665
211	2012	7	577.1958
212	2012	8	588.7895
213	2012	9	551.9438
214	2012	10	544.6008
215	2012	11	563.5895
216	2012	12	555.4219
217	2013	1	552.1268
218	2013	2	545.1737
219	2013	3	547.9073
220	2013	4	536.9473
221	2013	5	569.2039
222	2013	6	558.789
223	2013	7	577.4297
224	2013	8	562.7971
225	2013	9	589.0043
226	2013	10	559.0491
227	2013	11	561.0187
228	2013	12	562.3288
229	2014	1	535.0116
230	2014	2	533.1196
231	2014	3	573.4851
232	2014	4	567.1311
233	2014	5	585.8228
234	2014	6	581.0288
235	2014	7	591.038
236	2014	8	593.9361
237	2014	9	576.1844
238	2014	10	570.1743
239	2014	11	575.9166
240	2014	12	575.2029
241	2015	1	561.2531
242	2015	2	527.6418
243	2015	3	536.7722
244	2015	4	547.2244
245	2015	5	573.7563

INDIANA MICHIGAN POWER COMPANY
INDIANA SERVICE AREA
MANUFACTURING ENERGY SALES
ENDOGENOUS VARIABLE

Obs	year	month	ei_imi
246	2015	6	594.801
247	2015	7	572.7484
248	2015	8	601.2221
249	2015	9	578.7481
250	2015	10	537.597
251	2015	11	527.4492
252	2015	12	589.8728
253	2016	1	544.5754
254	2016	2	559.7568
255	2016	3	587.4488
256	2016	4	573.3268
257	2016	5	583.1317
258	2016	6	595.2635
259	2016	7	598.789
260	2016	8	607.8734
261	2016	9	585.9521
262	2016	10	534.0034
263	2016	11	570.5345
264	2016	12	583.7737
265	2017	1	585.7369
266	2017	2	559.3046
267	2017	3	586.1146
268	2017	4	563.3794
269	2017	5	557.466
270	2017	6	576.0374
271	2017	7	591.6151
272	2017	8	606.0111
273	2017	9	587.2093
274	2017	10	567.7227
275	2017	11	578.0346
276	2017	12	598.5434
277	2018	1	592.6421
278	2018	2	555.9168
279	2018	3	591.6134
280	2018	4	586.0074
281	2018	5	585.6396
282	2018	6	591.7216
283	2018	7	609.3525
284	2018	8	605.4945
285	2018	9	601.7443
286	2018	10	574.0402
287	2018	11	565.5359
288	2018	12	582.9078
289	2019	1	574.7303
290	2019	2	550.0202
291	2019	3	581.6774
292	2019	4	575.1775
293	2019	5	573.8886
294	2019	6	568.8296

INDIANA MICHIGAN POWER COMPANY
INDIANA SERVICE AREA
MANUFACTURING ENERGY SALES
ENDOGENOUS VARIABLE

Obs	year	month	ei_imi
295	2019	7	583.1765
296	2019	8	580.5804
297	2019	9	579.7264
298	2019	10	547.4396
299	2019	11	547.8022
300	2019	12	559.5783
301	2020	1	552.4036
302	2020	2	543.3627
303	2020	3	557.091
304	2020	4	461.629
305	2020	5	473.4904
306	2020	6	508.8628
307	2020	7	553.3962
308	2020	8	567.0317
309	2020	9	570.0996
310	2020	10	544.1887
311	2020	11	552.8134
312	2020	12	565.6854
313	2021	1	548.4334
314	2021	2	.
315	2021	3	.
316	2021	4	.
317	2021	5	.
318	2021	6	.
319	2021	7	.
320	2021	8	.
321	2021	9	.
322	2021	10	.
323	2021	11	.
324	2021	12	.
325	2022	1	.
326	2022	2	.
327	2022	3	.
328	2022	4	.
329	2022	5	.
330	2022	6	.
331	2022	7	.
332	2022	8	.
333	2022	9	.
334	2022	10	.
335	2022	11	.
336	2022	12	.
337	2023	1	.
338	2023	2	.
339	2023	3	.
340	2023	4	.
341	2023	5	.
342	2023	6	.
343	2023	7	.

INDIANA MICHIGAN POWER COMPANY
INDIANA SERVICE AREA
MANUFACTURING ENERGY SALES
ENDOGENOUS VARIABLE

Obs	year	month	ei_imi
344	2023	8	.
345	2023	9	.
346	2023	10	.
347	2023	11	.
348	2023	12	.
349	2024	1	.
350	2024	2	.
351	2024	3	.
352	2024	4	.
353	2024	5	.
354	2024	6	.
355	2024	7	.
356	2024	8	.
357	2024	9	.
358	2024	10	.
359	2024	11	.
360	2024	12	.
361	2025	1	.
362	2025	2	.
363	2025	3	.
364	2025	4	.
365	2025	5	.
366	2025	6	.
367	2025	7	.
368	2025	8	.
369	2025	9	.
370	2025	10	.
371	2025	11	.
372	2025	12	.
373	2026	1	.
374	2026	2	.
375	2026	3	.
376	2026	4	.
377	2026	5	.
378	2026	6	.
379	2026	7	.
380	2026	8	.
381	2026	9	.
382	2026	10	.
383	2026	11	.
384	2026	12	.
385	2027	1	.
386	2027	2	.
387	2027	3	.
388	2027	4	.
389	2027	5	.
390	2027	6	.
391	2027	7	.
392	2027	8	.

INDIANA MICHIGAN POWER COMPANY
INDIANA SERVICE AREA
MANUFACTURING ENERGY SALES
ENDOGENOUS VARIABLE

Obs	year	month	ei_imi
393	2027	9	.
394	2027	10	.
395	2027	11	.
396	2027	12	.
397	2028	1	.
398	2028	2	.
399	2028	3	.
400	2028	4	.
401	2028	5	.
402	2028	6	.
403	2028	7	.
404	2028	8	.
405	2028	9	.
406	2028	10	.
407	2028	11	.
408	2028	12	.
409	2029	1	.
410	2029	2	.
411	2029	3	.
412	2029	4	.
413	2029	5	.
414	2029	6	.
415	2029	7	.
416	2029	8	.
417	2029	9	.
418	2029	10	.
419	2029	11	.
420	2029	12	.
421	2030	1	.
422	2030	2	.
423	2030	3	.
424	2030	4	.
425	2030	5	.
426	2030	6	.
427	2030	7	.
428	2030	8	.
429	2030	9	.
430	2030	10	.
431	2030	11	.
432	2030	12	.
433	2031	1	.
434	2031	2	.
435	2031	3	.
436	2031	4	.
437	2031	5	.
438	2031	6	.
439	2031	7	.
440	2031	8	.
441	2031	9	.

INDIANA MICHIGAN POWER COMPANY
INDIANA SERVICE AREA
MANUFACTURING ENERGY SALES
ENDOGENOUS VARIABLE

Obs	year	month	ei_imi
442	2031	10	.
443	2031	11	.
444	2031	12	.
445	2032	1	.
446	2032	2	.
447	2032	3	.
448	2032	4	.
449	2032	5	.
450	2032	6	.
451	2032	7	.
452	2032	8	.
453	2032	9	.
454	2032	10	.
455	2032	11	.
456	2032	12	.
457	2033	1	.
458	2033	2	.
459	2033	3	.
460	2033	4	.
461	2033	5	.
462	2033	6	.
463	2033	7	.
464	2033	8	.
465	2033	9	.
466	2033	10	.
467	2033	11	.
468	2033	12	.
469	2034	1	.
470	2034	2	.
471	2034	3	.
472	2034	4	.
473	2034	5	.
474	2034	6	.
475	2034	7	.
476	2034	8	.
477	2034	9	.
478	2034	10	.
479	2034	11	.
480	2034	12	.
481	2035	1	.
482	2035	2	.
483	2035	3	.
484	2035	4	.
485	2035	5	.
486	2035	6	.
487	2035	7	.
488	2035	8	.
489	2035	9	.
490	2035	10	.

INDIANA MICHIGAN POWER COMPANY
INDIANA SERVICE AREA
MANUFACTURING ENERGY SALES
ENDOGENOUS VARIABLE

Obs	year	month	ei_imi
491	2035	11	.
492	2035	12	.
493	2036	1	.
494	2036	2	.
495	2036	3	.
496	2036	4	.
497	2036	5	.
498	2036	6	.
499	2036	7	.
500	2036	8	.
501	2036	9	.
502	2036	10	.
503	2036	11	.
504	2036	12	.
505	2037	1	.
506	2037	2	.
507	2037	3	.
508	2037	4	.
509	2037	5	.
510	2037	6	.
511	2037	7	.
512	2037	8	.
513	2037	9	.
514	2037	10	.
515	2037	11	.
516	2037	12	.
517	2038	1	.
518	2038	2	.
519	2038	3	.
520	2038	4	.
521	2038	5	.
522	2038	6	.
523	2038	7	.
524	2038	8	.
525	2038	9	.
526	2038	10	.
527	2038	11	.
528	2038	12	.
529	2039	1	.
530	2039	2	.
531	2039	3	.
532	2039	4	.
533	2039	5	.
534	2039	6	.
535	2039	7	.
536	2039	8	.
537	2039	9	.
538	2039	10	.
539	2039	11	.

INDIANA MICHIGAN POWER COMPANY
INDIANA SERVICE AREA
MANUFACTURING ENERGY SALES
ENDOGENOUS VARIABLE

Obs	year	month	ei_imi
540	2039	12	.
541	2040	1	.
542	2040	2	.
543	2040	3	.
544	2040	4	.
545	2040	5	.
546	2040	6	.
547	2040	7	.
548	2040	8	.
549	2040	9	.
550	2040	10	.
551	2040	11	.
552	2040	12	.
553	2041	1	.
554	2041	2	.
555	2041	3	.
556	2041	4	.
557	2041	5	.
558	2041	6	.
559	2041	7	.
560	2041	8	.
561	2041	9	.
562	2041	10	.
563	2041	11	.
564	2041	12	.
565	2042	1	.
566	2042	2	.
567	2042	3	.
568	2042	4	.
569	2042	5	.
570	2042	6	.
571	2042	7	.
572	2042	8	.
573	2042	9	.
574	2042	10	.
575	2042	11	.
576	2042	12	.
577	2043	1	.
578	2043	2	.
579	2043	3	.
580	2043	4	.
581	2043	5	.
582	2043	6	.
583	2043	7	.
584	2043	8	.
585	2043	9	.
586	2043	10	.
587	2043	11	.
588	2043	12	.

INDIANA MICHIGAN POWER COMPANY
INDIANA SERVICE AREA
MANUFACTURING ENERGY SALES
ENDOGENOUS VARIABLE

Obs	year	month	ei_imi
589	2044	1	.
590	2044	2	.
591	2044	3	.
592	2044	4	.
593	2044	5	.
594	2044	6	.
595	2044	7	.
596	2044	8	.
597	2044	9	.
598	2044	10	.
599	2044	11	.
600	2044	12	.
601	2045	1	.
602	2045	2	.
603	2045	3	.
604	2045	4	.
605	2045	5	.
606	2045	6	.
607	2045	7	.
608	2045	8	.
609	2045	9	.
610	2045	10	.
611	2045	11	.
612	2045	12	.
613	2046	1	.
614	2046	2	.
615	2046	3	.
616	2046	4	.
617	2046	5	.
618	2046	6	.
619	2046	7	.
620	2046	8	.
621	2046	9	.
622	2046	10	.
623	2046	11	.
624	2046	12	.
625	2047	1	.
626	2047	2	.
627	2047	3	.
628	2047	4	.
629	2047	5	.
630	2047	6	.
631	2047	7	.
632	2047	8	.
633	2047	9	.
634	2047	10	.
635	2047	11	.
636	2047	12	.
637	2048	1	.

INDIANA MICHIGAN POWER COMPANY
INDIANA SERVICE AREA
MANUFACTURING ENERGY SALES
ENDOGENOUS VARIABLE

Obs	year	month	ei_imi
638	2048	2	.
639	2048	3	.
640	2048	4	.
641	2048	5	.
642	2048	6	.
643	2048	7	.
644	2048	8	.
645	2048	9	.
646	2048	10	.
647	2048	11	.
648	2048	12	.
649	2049	1	.
650	2049	2	.
651	2049	3	.
652	2049	4	.
653	2049	5	.
654	2049	6	.
655	2049	7	.
656	2049	8	.
657	2049	9	.
658	2049	10	.
659	2049	11	.
660	2049	12	.
661	2050	1	.
662	2050	2	.
663	2050	3	.
664	2050	4	.
665	2050	5	.
666	2050	6	.
667	2050	7	.
668	2050	8	.
669	2050	9	.
670	2050	10	.
671	2050	11	.
672	2050	12	.
673	2051	1	.
674	2051	2	.
675	2051	3	.
676	2051	4	.
677	2051	5	.
678	2051	6	.
679	2051	7	.
680	2051	8	.
681	2051	9	.
682	2051	10	.
683	2051	11	.
684	2051	12	.
685	2052	1	.
686	2052	2	.

INDIANA MICHIGAN POWER COMPANY
INDIANA SERVICE AREA
MANUFACTURING ENERGY SALES
ENDOGENOUS VARIABLE

Obs	year	month	ei_imi
687	2052	3	.
688	2052	4	.
689	2052	5	.
690	2052	6	.
691	2052	7	.
692	2052	8	.
693	2052	9	.
694	2052	10	.
695	2052	11	.
696	2052	12	.
697	2053	1	.
698	2053	2	.
699	2053	3	.
700	2053	4	.
701	2053	5	.
702	2053	6	.
703	2053	7	.
704	2053	8	.
705	2053	9	.
706	2053	10	.
707	2053	11	.
708	2053	12	.
709	2054	1	.
710	2054	2	.
711	2054	3	.
712	2054	4	.
713	2054	5	.
714	2054	6	.
715	2054	7	.
716	2054	8	.
717	2054	9	.
718	2054	10	.
719	2054	11	.
720	2054	12	.
721	2055	1	.
722	2055	2	.
723	2055	3	.
724	2055	4	.
725	2055	5	.
726	2055	6	.
727	2055	7	.
728	2055	8	.
729	2055	9	.
730	2055	10	.
731	2055	11	.
732	2055	12	.
733	2056	1	.
734	2056	2	.
735	2056	3	.

INDIANA MICHIGAN POWER COMPANY
INDIANA SERVICE AREA
MANUFACTURING ENERGY SALES
ENDOGENOUS VARIABLE

Obs	year	month	ei_imi
736	2056	4	.
737	2056	5	.
738	2056	6	.
739	2056	7	.
740	2056	8	.
741	2056	9	.
742	2056	10	.
743	2056	11	.
744	2056	12	.
745	2057	1	.
746	2057	2	.
747	2057	3	.
748	2057	4	.
749	2057	5	.
750	2057	6	.
751	2057	7	.
752	2057	8	.
753	2057	9	.
754	2057	10	.
755	2057	11	.
756	2057	12	.

INDIANA MICHIGAN POWER COMPANY
INDIANA SERVICE AREA
MANUFACTURING ENERGY SALES
EXOGENOUS VARIABLES

The MEANS Procedure

Variable	Label	Mean
year	year	2026.00
month	month	6.5000000
grpmf_imi	SERVICE AREA GROSS REGIONAL PRODUCT-MANUF.	31504.87
frbmvp	FRB IND. PROD. INDEX, MOTOR VEHICLES	141.6644733
D03ON	BINARY VARIABLE-2003 ON	0.8730159
d1	JANUARY	0.0833333
d2	FEBRUARY	0.0833333
d3	MARCH	0.0833333
d4	APRIL	0.0833333
d5	MAY	0.0833333
d6	JUNE	0.0833333
d7	JULY	0.0833333
d8	AUGUST	0.0833333
d9	SEPTEMBER	0.0833333
d10	OCTOBER	0.0833333
d11	NOVEMBER	0.0833333
d95	BINARY VARIABLE-1995	0.0158730
dsep12on	BINARY VARIABLE-SEPTEMBER 2012 ON	0.7195767
mar01oct01	BINARY VARIABLE-MARCH 2001 THROUGH OCTOBER 2001	0.0105820
jan20on	BINARY VARIABLE-JANUARY 2020 ON	0.6031746

INDIANA MICHIGAN POWER COMPANY
INDIANA SERVICE AREA
MANUFACTURING ENERGY SALES
EXOGENOUS VARIABLES

Obs	year	month	grpmf_imi	frbmvp	D030N	d1	d2	d3	d4	d5	d6	d7	d8	d9	d10	d11	d95	dsep12on	mar01oct01	jan20on	PRICE
1	1995	1	17432.58	83.808	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	CONFID.
2	1995	2	17411.40	84.122	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	CONFID.
3	1995	3	17386.49	83.691	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	CONFID.
4	1995	4	17359.37	82.737	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	CONFID.
5	1995	5	17333.37	81.694	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	CONFID.
6	1995	6	17311.04	80.935	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	CONFID.
7	1995	7	17294.84	80.619	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	CONDID.
8	1995	8	17285.51	80.829	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	CONFID.
9	1995	9	17282.47	81.463	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	CONFID.
10	1995	10	17284.53	81.903	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	CONFID.
11	1995	11	17290.63	81.381	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	CONFID.
12	1995	12	17299.75	79.578	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	CONFID.
13	1996	1	17311.06	77.587	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
14	1996	2	17322.94	77.032	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
15	1996	3	17334.76	78.775	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
16	1996	4	17345.71	81.902	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	CONFID.
17	1996	5	17354.55	84.813	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	CONFID.
18	1996	6	17360.27	86.298	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	CONFID.
19	1996	7	17361.93	86.325	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	CONDID.
20	1996	8	17360.01	85.262	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	CONFID.
21	1996	9	17356.58	83.653	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	CONFID.
22	1996	10	17353.76	82.361	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	CONFID.
23	1996	11	17353.68	82.355	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	CONFID.
24	1996	12	17358.51	84.116	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
25	1997	1	17370.59	86.574	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
26	1997	2	17390.78	88.041	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
27	1997	3	17421.66	87.686	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
28	1997	4	17466.57	86.268	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	CONFID.
29	1997	5	17526.99	85.199	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	CONFID.
30	1997	6	17604.89	85.518	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	CONFID.
31	1997	7	17702.38	87.050	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	CONDID.
32	1997	8	17820.51	89.229	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	CONFID.
33	1997	9	17951.60	91.427	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	CONFID.
34	1997	10	18093.39	93.255	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	CONFID.
35	1997	11	18241.65	94.349	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	CONFID.
36	1997	12	18392.30	94.498	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
37	1998	1	18543.58	94.016	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
38	1998	2	18681.98	93.419	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
39	1998	3	18810.92	92.962	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
40	1998	4	18930.60	92.348	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	CONFID.

Obs	year	month	gr pmf_imi	fr bmvp	D03ON	d1	d2	d3	d4	d5	d6	d7	d8	d9	d10	d11	d95	dsep12on	mar01oct01	jan20on	PRICE
41	1998	5	19032.11	91.108	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	CONFID.
42	1998	6	19111.54	89.190	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	CONFID.
43	1998	7	19164.84	87.836	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	CONDID.
44	1998	8	19192.76	88.737	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	CONFID.
45	1998	9	19199.21	92.674	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	CONFID.
46	1998	10	19189.92	97.908	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	CONFID.
47	1998	11	19170.24	101.898	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	CONFID.
48	1998	12	19145.33	102.945	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
49	1999	1	19120.04	102.013	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
50	1999	2	19100.90	100.978	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
51	1999	3	19091.60	101.039	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
52	1999	4	19097.04	101.957	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	CONFID.
53	1999	5	19123.20	102.968	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	CONFID.
54	1999	6	19175.04	103.519	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	CONFID.
55	1999	7	19257.63	103.798	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	CONDID.
56	1999	8	19371.88	104.258	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	CONFID.
57	1999	9	19507.02	105.149	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	CONFID.
58	1999	10	19657.11	106.203	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	CONFID.
59	1999	11	19814.35	106.979	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	CONFID.
60	1999	12	19971.11	107.204	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
61	2000	1	20122.06	107.143	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
62	2000	2	20252.65	107.223	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
63	2000	3	20360.26	107.658	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
64	2000	4	20439.06	108.028	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	CONFID.
65	2000	5	20478.93	107.673	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	CONFID.
66	2000	6	20472.67	106.219	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	CONFID.
67	2000	7	20412.71	104.087	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	CONDID.
68	2000	8	20298.00	101.949	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	CONFID.
69	2000	9	20141.16	100.309	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	CONFID.
70	2000	10	19950.18	98.772	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	CONFID.
71	2000	11	19735.04	96.731	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	CONFID.
72	2000	12	19505.22	93.968	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
73	2001	1	19266.69	91.438	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
74	2001	2	19044.15	90.574	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
75	2001	3	18835.19	91.966	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	CONFID.
76	2001	4	18642.31	94.602	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	CONFID.
77	2001	5	18482.92	96.718	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	CONFID.
78	2001	6	18366.31	97.095	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	CONFID.
79	2001	7	18302.10	96.176	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	CONDID.
80	2001	8	18292.14	94.970	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	CONFID.

Obs	year	month	gr pmf_imi	fr bmvp	D03ON	d1	d2	d3	d4	d5	d6	d7	d8	d9	d10	d11	d95	dsep12on	mar01oct01	jan20on	PRICE
81	2001	9	18330.99	94.310	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	CONFID.
82	2001	10	18411.93	94.299	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	CONFID.
83	2001	11	18528.03	94.834	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	CONFID.
84	2001	12	18673.14	95.818	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
85	2002	1	18843.44	97.164	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
86	2002	2	19020.65	98.665	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
87	2002	3	19206.89	100.291	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
88	2002	4	19402.45	102.025	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	CONFID.
89	2002	5	19594.71	103.740	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	CONFID.
90	2002	6	19777.24	105.321	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	CONFID.
91	2002	7	19943.72	106.505	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	CONDID.
92	2002	8	20094.38	106.993	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	CONFID.
93	2002	9	20226.47	106.680	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	CONFID.
94	2002	10	20345.03	106.116	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	CONFID.
95	2002	11	20452.74	106.038	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	CONFID.
96	2002	12	20552.05	106.834	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
97	2003	1	20647.08	107.823	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
98	2003	2	20734.42	107.962	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
99	2003	3	20821.05	106.766	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
100	2003	4	20912.36	105.032	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	CONFID.
101	2003	5	21007.99	104.148	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	CONFID.
102	2003	6	21110.43	104.976	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	CONFID.
103	2003	7	21222.14	106.856	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	CONDID.
104	2003	8	21344.98	108.621	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	CONFID.
105	2003	9	21472.23	109.403	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	CONFID.
106	2003	10	21602.79	109.554	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	CONFID.
107	2003	11	21733.63	109.758	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	CONFID.
108	2003	12	21861.70	110.436	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
109	2004	1	21985.93	111.216	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
110	2004	2	22097.55	111.437	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
111	2004	3	22197.59	110.718	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
112	2004	4	22284.70	109.321	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	CONFID.
113	2004	5	22353.89	107.753	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	CONFID.
114	2004	6	22402.32	106.457	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	CONFID.
115	2004	7	22426.97	105.645	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	CONDID.
116	2004	8	22427.65	105.452	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	CONFID.
117	2004	9	22406.94	105.930	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	CONFID.
118	2004	10	22367.71	106.857	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	CONFID.
119	2004	11	22312.99	107.933	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	CONFID.
120	2004	12	22245.46	108.877	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.

Obs	year	month	gr pmf_imi	fr bmvp	D030N	d1	d2	d3	d4	d5	d6	d7	d8	d9	d10	d11	d95	dsep12on	mar01oct01	jan20on	PRICE
121	2005	1	22166.72	109.462	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
122	2005	2	22085.04	109.470	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
123	2005	3	21999.28	108.860	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
124	2005	4	21909.15	107.939	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	CONFID.
125	2005	5	21820.33	107.212	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	CONFID.
126	2005	6	21735.61	107.045	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	CONFID.
127	2005	7	21657.83	107.435	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	CONDID.
128	2005	8	21588.16	108.253	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	CONFID.
129	2005	9	21530.49	109.275	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	CONFID.
130	2005	10	21485.30	110.139	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	CONFID.
131	2005	11	21454.03	110.425	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	CONFID.
132	2005	12	21438.42	109.936	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
133	2006	1	21440.11	109.182	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
134	2006	2	21459.55	108.920	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
135	2006	3	21498.29	109.474	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
136	2006	4	21559.61	110.181	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	CONFID.
137	2006	5	21644.48	109.952	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	CONFID.
138	2006	6	21754.21	108.195	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	CONFID.
139	2006	7	21890.45	105.785	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	CONDID.
140	2006	8	22054.26	104.083	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	CONFID.
141	2006	9	22235.68	104.010	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	CONFID.
142	2006	10	22432.32	104.869	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	CONFID.
143	2006	11	22639.06	105.512	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	CONFID.
144	2006	12	22851.01	105.241	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
145	2007	1	23066.61	104.760	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
146	2007	2	23267.28	105.190	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
147	2007	3	23458.77	107.097	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
148	2007	4	23642.59	109.594	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	CONFID.
149	2007	5	23806.88	111.093	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	CONFID.
150	2007	6	23946.88	110.581	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	CONFID.
151	2007	7	24057.35	108.644	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	CONDID.
152	2007	8	24134.69	106.398	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	CONFID.
153	2007	9	24171.82	104.752	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	CONFID.
154	2007	10	24165.34	103.582	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	CONFID.
155	2007	11	24111.22	102.499	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	CONFID.
156	2007	12	24004.33	101.169	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
157	2008	1	23837.37	99.405	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
158	2008	2	23615.55	97.205	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
159	2008	3	23329.02	94.494	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
160	2008	4	22968.21	91.456	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	CONFID.

Obs	year	month	grpmf_imi	frbmvp	D030N	d1	d2	d3	d4	d5	d6	d7	d8	d9	d10	d11	d95	dsep12on	mar01oct01	jan20on	PRICE
161	2008	5	22531.81	88.447	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	CONFID.
162	2008	6	22016.09	85.736	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	CONFID.
163	2008	7	21416.70	83.454	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	CONDID.
164	2008	8	20731.81	81.648	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	CONFID.
165	2008	9	20005.92	80.172	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	CONFID.
166	2008	10	19251.86	77.959	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	CONFID.
167	2008	11	18493.34	73.744	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	CONFID.
168	2008	12	17753.99	66.931	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
169	2009	1	17046.26	59.003	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
170	2009	2	16435.53	52.668	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
171	2009	3	15909.77	49.238	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
172	2009	4	15475.57	48.905	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	CONFID.
173	2009	5	15177.75	51.639	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	CONFID.
174	2009	6	15038.23	56.853	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	CONFID.
175	2009	7	15080.62	63.123	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	CONDID.
176	2009	8	15308.18	68.785	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	CONFID.
177	2009	9	15689.06	72.413	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	CONFID.
178	2009	10	16199.75	74.339	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	CONFID.
179	2009	11	16812.21	75.287	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	CONFID.
180	2009	12	17500.60	75.861	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
181	2010	1	18249.83	76.357	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
182	2010	2	18983.87	76.914	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
183	2010	3	19713.69	77.737	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
184	2010	4	20438.29	79.090	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	CONFID.
185	2010	5	21105.42	81.211	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	CONFID.
186	2010	6	21689.05	84.048	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	CONFID.
187	2010	7	22162.72	86.656	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	CONDID.
188	2010	8	22524.01	87.804	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	CONFID.
189	2010	9	22771.86	86.855	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	CONFID.
190	2010	10	22924.70	85.147	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	CONFID.
191	2010	11	22995.90	84.584	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	CONFID.
192	2010	12	22997.07	86.287	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
193	2011	1	22939.88	88.931	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
194	2011	2	22842.73	90.290	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
195	2011	3	22714.57	89.252	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
196	2011	4	22562.26	86.962	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	CONFID.
197	2011	5	22401.76	85.517	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	CONFID.
198	2011	6	22245.51	86.331	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	CONFID.
199	2011	7	22105.56	88.701	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	CONDID.
200	2011	8	21985.97	91.225	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	CONFID.

Obs	year	month	grpmf_imi	frbmvp	D030N	d1	d2	d3	d4	d5	d6	d7	d8	d9	d10	d11	d95	dsep12on	mar01oct01	jan20on	PRICE
201	2011	9	21889.99	92.817	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	CONFID.
202	2011	10	21814.38	93.811	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	CONFID.
203	2011	11	21757.68	94.910	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	CONFID.
204	2011	12	21718.80	96.571	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
205	2012	1	21696.10	98.505	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
206	2012	2	21688.99	100.062	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
207	2012	3	21695.49	100.880	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
208	2012	4	21714.55	100.955	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	CONFID.
209	2012	5	21745.08	100.381	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	CONFID.
210	2012	6	21785.67	99.382	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	CONFID.
211	2012	7	21835.19	98.453	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	CONDID.
212	2012	8	21893.63	98.185	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	CONFID.
213	2012	9	21958.44	98.927	1	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	CONFID.
214	2012	10	22029.98	100.273	1	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	CONFID.
215	2012	11	22107.55	101.586	1	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	CONFID.
216	2012	12	22190.62	102.440	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	CONFID.
217	2013	1	22280.01	103.052	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	CONFID.
218	2013	2	22369.13	103.783	1	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	CONFID.
219	2013	3	22461.73	104.876	1	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	CONFID.
220	2013	4	22560.44	106.039	1	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	CONFID.
221	2013	5	22661.63	106.703	1	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	CONFID.
222	2013	6	22764.68	106.614	1	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	CONFID.
223	2013	7	22868.98	106.358	1	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	CONDID.
224	2013	8	22975.60	106.822	1	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	CONFID.
225	2013	9	23080.43	108.454	1	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	CONFID.
226	2013	10	23184.50	110.515	1	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	CONFID.
227	2013	11	23287.13	111.886	1	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	CONFID.
228	2013	12	23387.64	111.889	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	CONFID.
229	2014	1	23486.93	111.248	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	CONFID.
230	2014	2	23578.10	111.140	1	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	CONFID.
231	2014	3	23665.34	112.288	1	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	CONFID.
232	2014	4	23750.84	114.402	1	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	CONFID.
233	2014	5	23830.82	116.724	1	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	CONFID.
234	2014	6	23904.67	118.635	1	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	CONFID.
235	2014	7	23971.68	119.938	1	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	CONDID.
236	2014	8	24032.75	120.594	1	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	CONFID.
237	2014	9	24086.42	120.603	1	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	CONFID.
238	2014	10	24134.25	120.199	1	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	CONFID.
239	2014	11	24176.88	119.671	1	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	CONFID.
240	2014	12	24214.81	119.269	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	CONFID.

Obs	year	month	grpmf_imi	frbmvp	D030N	d1	d2	d3	d4	d5	d6	d7	d8	d9	d10	d11	d95	dsep12on	mar01oct01	jan20on	PRICE
241	2015	1	24249.19	119.131	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	CONFID.
242	2015	2	24278.54	119.347	1	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	CONFID.
243	2015	3	24305.07	120.004	1	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	CONFID.
244	2015	4	24330.16	121.214	1	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	CONFID.
245	2015	5	24353.40	123.048	1	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	CONFID.
246	2015	6	24375.37	125.353	1	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	CONFID.
247	2015	7	24396.62	127.298	1	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	CONDID.
248	2015	8	24418.13	127.830	1	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	CONFID.
249	2015	9	24439.84	126.405	1	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	CONFID.
250	2015	10	24462.74	124.083	1	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	CONFID.
251	2015	11	24487.45	122.398	1	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	CONFID.
252	2015	12	24514.64	122.347	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	CONFID.
253	2016	1	24545.45	123.241	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	CONFID.
254	2016	2	24578.93	123.808	1	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	CONFID.
255	2016	3	24616.69	123.321	1	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	CONFID.
256	2016	4	24660.03	122.432	1	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	CONFID.
257	2016	5	24709.03	122.291	1	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	CONFID.
258	2016	6	24764.30	123.585	1	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	CONFID.
259	2016	7	24826.48	125.625	1	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	CONDID.
260	2016	8	24896.74	127.264	1	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	CONFID.
261	2016	9	24972.27	127.637	1	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	CONFID.
262	2016	10	25053.56	127.013	1	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	CONFID.
263	2016	11	25139.94	125.981	1	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	CONFID.
264	2016	12	25230.86	125.052	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	CONFID.
265	2017	1	25327.25	124.527	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	CONFID.
266	2017	2	25422.11	124.634	1	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	CONFID.
267	2017	3	25519.52	125.371	1	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	CONFID.
268	2017	4	25622.26	126.186	1	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	CONFID.
269	2017	5	25726.48	126.244	1	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	CONFID.
270	2017	6	25831.56	125.100	1	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	CONFID.
271	2017	7	25936.90	123.411	1	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	CONDID.
272	2017	8	26043.69	122.199	1	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	CONFID.
273	2017	9	26148.02	122.259	1	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	CONFID.
274	2017	10	26251.20	123.484	1	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	CONFID.
275	2017	11	26352.80	125.505	1	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	CONFID.
276	2017	12	26452.35	127.869	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	CONFID.
277	2018	1	26551.02	129.847	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	CONFID.
278	2018	2	26642.16	130.544	1	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	CONFID.
279	2018	3	26730.14	129.657	1	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	CONFID.
280	2018	4	26817.46	127.950	1	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	CONFID.

Obs	year	month	grpmf_imi	frbmvp	D030N	d1	d2	d3	d4	d5	d6	d7	d8	d9	d10	d11	d95	dsep12on	mar01oct01	jan20on	PRICE
281	2018	5	26900.56	126.702	1	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	CONFID.
282	2018	6	26979.08	126.821	1	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	CONFID.
283	2018	7	27052.47	128.112	1	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	CONDID.
284	2018	8	27120.81	130.013	1	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	CONFID.
285	2018	9	27180.26	131.864	1	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	CONFID.
286	2018	10	27230.23	133.072	1	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	CONFID.
287	2018	11	27269.15	133.029	1	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	CONFID.
288	2018	12	27295.22	131.439	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	CONFID.
289	2019	1	27306.93	129.009	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	CONFID.
290	2019	2	27302.75	126.940	1	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	CONFID.
291	2019	3	27281.65	125.922	1	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	CONFID.
292	2019	4	27240.95	126.120	1	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	CONFID.
293	2019	5	27179.06	127.572	1	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	CONFID.
294	2019	6	27094.56	129.830	1	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	CONFID.
295	2019	7	26985.76	131.267	1	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	CONDID.
296	2019	8	26852.34	129.834	1	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	CONFID.
297	2019	9	26703.94	125.005	1	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	CONFID.
298	2019	10	26544.11	120.479	1	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	CONFID.
299	2019	11	26378.58	121.227	1	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	CONFID.
300	2019	12	26212.97	128.770	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	CONFID.
301	2020	1	26050.37	133.760	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
302	2020	2	25903.96	123.656	1	0	1	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
303	2020	3	25774.02	93.308	1	0	0	1	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
304	2020	4	25663.96	58.814	1	0	0	0	1	0	0	0	0	0	0	0	0	1	0	1	CONFID.
305	2020	5	25582.08	44.949	1	0	0	0	0	1	0	0	0	0	0	0	0	1	0	1	CONFID.
306	2020	6	25533.68	65.855	1	0	0	0	0	0	1	0	0	0	0	0	0	1	0	1	CONFID.
307	2020	7	25524.39	105.636	1	0	0	0	0	0	0	1	0	0	0	0	0	1	0	1	CONDID.
308	2020	8	25555.33	138.336	1	0	0	0	0	0	0	0	1	0	0	0	0	1	0	1	CONFID.
309	2020	9	25621.27	145.194	1	0	0	0	0	0	0	0	0	1	0	0	0	1	0	1	CONFID.
310	2020	10	25717.94	134.769	1	0	0	0	0	0	0	0	0	0	1	0	0	1	0	1	CONFID.
311	2020	11	25840.35	123.313	1	0	0	0	0	0	0	0	0	0	0	1	0	1	0	1	CONFID.
312	2020	12	25984.05	122.416	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
313	2021	1	26146.93	129.460	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
314	2021	2	26313.20	136.690	1	0	1	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
315	2021	3	26486.29	139.382	1	0	0	1	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
316	2021	4	26667.77	138.416	1	0	0	0	1	0	0	0	0	0	0	0	0	1	0	1	CONFID.
317	2021	5	26847.19	136.522	1	0	0	0	0	1	0	0	0	0	0	0	0	1	0	1	CONFID.
318	2021	6	27019.92	135.902	1	0	0	0	0	0	1	0	0	0	0	0	0	1	0	1	CONFID.
319	2021	7	27181.37	136.356	1	0	0	0	0	0	0	1	0	0	0	0	0	1	0	1	CONDID.
320	2021	8	27331.95	136.874	1	0	0	0	0	0	0	0	1	0	0	0	0	1	0	1	CONFID.

Obs	year	month	gr pmf_imi	fr bmvp	D030N	d1	d2	d3	d4	d5	d6	d7	d8	d9	d10	d11	d95	dsep12on	mar01oct01	jan20on	PRICE
321	2021	9	27467.54	136.750	1	0	0	0	0	0	0	0	0	1	0	0	0	1	0	1	CONFID.
322	2021	10	27591.54	136.289	1	0	0	0	0	0	0	0	0	0	1	0	0	1	0	1	CONFID.
323	2021	11	27705.09	136.094	1	0	0	0	0	0	0	0	0	0	0	1	0	1	0	1	CONFID.
324	2021	12	27809.05	136.575	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
325	2022	1	27906.00	137.533	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
326	2022	2	27991.06	138.493	1	0	1	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
327	2022	3	28069.87	139.206	1	0	0	1	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
328	2022	4	28145.90	139.683	1	0	0	0	1	0	0	0	0	0	0	0	0	1	0	1	CONFID.
329	2022	5	28217.27	139.989	1	0	0	0	0	1	0	0	0	0	0	0	0	1	0	1	CONFID.
330	2022	6	28285.02	140.204	1	0	0	0	0	0	1	0	0	0	0	0	0	1	0	1	CONFID.
331	2022	7	28350.07	140.358	1	0	0	0	0	0	0	1	0	0	0	0	0	1	0	1	CONDID.
332	2022	8	28414.00	140.466	1	0	0	0	0	0	0	0	1	0	0	0	0	1	0	1	CONFID.
333	2022	9	28474.83	140.528	1	0	0	0	0	0	0	0	0	1	0	0	0	1	0	1	CONFID.
334	2022	10	28533.63	140.517	1	0	0	0	0	0	0	0	0	0	1	0	0	1	0	1	CONFID.
335	2022	11	28590.47	140.400	1	0	0	0	0	0	0	0	0	0	0	1	0	1	0	1	CONFID.
336	2022	12	28645.37	140.160	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
337	2023	1	28699.24	139.848	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
338	2023	2	28748.74	139.556	1	0	1	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
339	2023	3	28796.52	139.319	1	0	0	1	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
340	2023	4	28844.21	139.114	1	0	0	0	1	0	0	0	0	0	0	0	0	1	0	1	CONFID.
341	2023	5	28890.15	138.909	1	0	0	0	0	1	0	0	0	0	0	0	0	1	0	1	CONFID.
342	2023	6	28934.42	138.672	1	0	0	0	0	0	1	0	0	0	0	0	0	1	0	1	CONFID.
343	2023	7	28977.03	138.399	1	0	0	0	0	0	0	1	0	0	0	0	0	1	0	1	CONDID.
344	2023	8	29018.74	138.091	1	0	0	0	0	0	0	0	1	0	0	0	0	1	0	1	CONFID.
345	2023	9	29058.28	137.767	1	0	0	0	0	0	0	0	0	1	0	0	0	1	0	1	CONFID.
346	2023	10	29096.43	137.447	1	0	0	0	0	0	0	0	0	0	1	0	0	1	0	1	CONFID.
347	2023	11	29133.29	137.157	1	0	0	0	0	0	0	0	0	0	0	1	0	1	0	1	CONFID.
348	2023	12	29168.96	136.909	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
349	2024	1	29204.09	136.665	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
350	2024	2	29237.11	136.386	1	0	1	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
351	2024	3	29269.23	136.030	1	0	0	1	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
352	2024	4	29301.11	135.591	1	0	0	0	1	0	0	0	0	0	0	0	0	1	0	1	CONFID.
353	2024	5	29332.25	135.092	1	0	0	0	0	1	0	0	0	0	0	0	0	1	0	1	CONFID.
354	2024	6	29362.78	134.556	1	0	0	0	0	0	1	0	0	0	0	0	0	1	0	1	CONFID.
355	2024	7	29392.78	134.024	1	0	0	0	0	0	0	1	0	0	0	0	0	1	0	1	CONDID.
356	2024	8	29422.75	133.539	1	0	0	0	0	0	0	0	1	0	0	0	0	1	0	1	CONFID.
357	2024	9	29451.65	133.158	1	0	0	0	0	0	0	0	0	1	0	0	0	1	0	1	CONFID.
358	2024	10	29479.92	132.892	1	0	0	0	0	0	0	0	0	0	1	0	0	1	0	1	CONFID.
359	2024	11	29507.48	132.752	1	0	0	0	0	0	0	0	0	0	0	1	0	1	0	1	CONFID.
360	2024	12	29534.27	132.739	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.

Obs	year	month	grpmf_imi	frbmvp	D030N	d1	d2	d3	d4	d5	d6	d7	d8	d9	d10	d11	d95	dsep12on	mar01oct01	jan20on	PRICE
361	2025	1	29560.63	132.830	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
362	2025	2	29584.86	132.978	1	0	1	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
363	2025	3	29608.17	133.160	1	0	0	1	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
364	2025	4	29631.26	133.376	1	0	0	0	1	0	0	0	0	0	0	0	0	1	0	1	CONFID.
365	2025	5	29653.25	133.621	1	0	0	0	0	1	0	0	0	0	0	0	0	1	0	1	CONFID.
366	2025	6	29674.07	133.888	1	0	0	0	0	0	1	0	0	0	0	0	0	1	0	1	CONFID.
367	2025	7	29693.66	134.147	1	0	0	0	0	0	0	1	0	0	0	0	0	1	0	1	CONDID.
368	2025	8	29712.45	134.369	1	0	0	0	0	0	0	0	1	0	0	0	0	1	0	1	CONFID.
369	2025	9	29730.11	134.513	1	0	0	0	0	0	0	0	0	1	0	0	0	1	0	1	CONFID.
370	2025	10	29747.27	134.561	1	0	0	0	0	0	0	0	0	0	1	0	0	1	0	1	CONFID.
371	2025	11	29764.24	134.496	1	0	0	0	0	0	0	0	0	0	0	1	0	1	0	1	CONFID.
372	2025	12	29781.33	134.309	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
373	2026	1	29799.14	134.029	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
374	2026	2	29816.80	133.719	1	0	1	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
375	2026	3	29835.46	133.406	1	0	0	1	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
376	2026	4	29856.06	133.114	1	0	0	0	1	0	0	0	0	0	0	0	0	1	0	1	CONFID.
377	2026	5	29878.33	132.888	1	0	0	0	0	1	0	0	0	0	0	0	0	1	0	1	CONFID.
378	2026	6	29902.55	132.749	1	0	0	0	0	0	1	0	0	0	0	0	0	1	0	1	CONFID.
379	2026	7	29929.06	132.685	1	0	0	0	0	0	0	1	0	0	0	0	0	1	0	1	CONDID.
380	2026	8	29958.43	132.668	1	0	0	0	0	0	0	0	1	0	0	0	0	1	0	1	CONFID.
381	2026	9	29989.64	132.678	1	0	0	0	0	0	0	0	0	1	0	0	0	1	0	1	CONFID.
382	2026	10	30023.04	132.710	1	0	0	0	0	0	0	0	0	0	1	0	0	1	0	1	CONFID.
383	2026	11	30058.51	132.763	1	0	0	0	0	0	0	0	0	0	0	1	0	1	0	1	CONFID.
384	2026	12	30095.97	132.838	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
385	2027	1	30135.95	132.944	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
386	2027	2	30175.68	133.080	1	0	1	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
387	2027	3	30216.98	133.258	1	0	0	1	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
388	2027	4	30261.20	133.483	1	0	0	0	1	0	0	0	0	0	0	0	0	1	0	1	CONFID.
389	2027	5	30306.88	133.747	1	0	0	0	0	1	0	0	0	0	0	0	0	1	0	1	CONFID.
390	2027	6	30353.90	134.043	1	0	0	0	0	0	1	0	0	0	0	0	0	1	0	1	CONFID.
391	2027	7	30402.16	134.356	1	0	0	0	0	0	0	1	0	0	0	0	0	1	0	1	CONDID.
392	2027	8	30452.35	134.672	1	0	0	0	0	0	0	0	1	0	0	0	0	1	0	1	CONFID.
393	2027	9	30502.70	134.967	1	0	0	0	0	0	0	0	0	1	0	0	0	1	0	1	CONFID.
394	2027	10	30553.87	135.242	1	0	0	0	0	0	0	0	0	0	1	0	0	1	0	1	CONFID.
395	2027	11	30605.71	135.499	1	0	0	0	0	0	0	0	0	0	0	1	0	1	0	1	CONFID.
396	2027	12	30658.07	135.742	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
397	2028	1	30711.68	135.991	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
398	2028	2	30763.78	136.250	1	0	1	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
399	2028	3	30815.95	136.542	1	0	0	1	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
400	2028	4	30868.93	136.869	1	0	0	0	1	0	0	0	0	0	0	0	0	1	0	1	CONFID.

Obs	year	month	grpmf_imi	frbmvp	D030N	d1	d2	d3	d4	d5	d6	d7	d8	d9	d10	d11	d95	dsep12on	mar01oct01	jan20on	PRICE
401	2028	5	30921.70	137.215	1	0	0	0	0	1	0	0	0	0	0	0	0	1	0	1	CONFID.
402	2028	6	30974.10	137.571	1	0	0	0	0	0	1	0	0	0	0	0	0	1	0	1	CONFID.
403	2028	7	31026.01	137.921	1	0	0	0	0	0	0	1	0	0	0	0	0	1	0	1	CONDID.
404	2028	8	31078.20	138.251	1	0	0	0	0	0	0	0	1	0	0	0	0	1	0	1	CONFID.
405	2028	9	31129.06	138.538	1	0	0	0	0	0	0	0	0	1	0	0	0	1	0	1	CONFID.
406	2028	10	31179.51	138.784	1	0	0	0	0	0	0	0	0	0	1	0	0	1	0	1	CONFID.
407	2028	11	31229.60	138.995	1	0	0	0	0	0	0	0	0	0	0	1	0	1	0	1	CONFID.
408	2028	12	31279.40	139.172	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
409	2029	1	31329.80	139.325	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
410	2029	2	31377.61	139.453	1	0	1	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
411	2029	3	31425.34	139.570	1	0	0	1	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
412	2029	4	31474.66	139.697	1	0	0	0	1	0	0	0	0	0	0	0	0	1	0	1	CONFID.
413	2029	5	31524.03	139.850	1	0	0	0	0	1	0	0	0	0	0	0	0	1	0	1	CONFID.
414	2029	6	31573.51	140.039	1	0	0	0	0	0	1	0	0	0	0	0	0	1	0	1	CONFID.
415	2029	7	31623.17	140.243	1	0	0	0	0	0	0	1	0	0	0	0	0	1	0	1	CONDID.
416	2029	8	31673.86	140.439	1	0	0	0	0	0	0	0	1	0	0	0	0	1	0	1	CONFID.
417	2029	9	31723.97	140.600	1	0	0	0	0	0	0	0	0	1	0	0	0	1	0	1	CONFID.
418	2029	10	31774.32	140.740	1	0	0	0	0	0	0	0	0	0	1	0	0	1	0	1	CONFID.
419	2029	11	31824.94	140.876	1	0	0	0	0	0	0	0	0	0	0	1	0	1	0	1	CONFID.
420	2029	12	31875.82	141.024	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
421	2030	1	31927.84	141.191	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
422	2030	2	31977.62	141.365	1	0	1	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
423	2030	3	32027.70	141.556	1	0	0	1	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
424	2030	4	32079.79	141.772	1	0	0	0	1	0	0	0	0	0	0	0	0	1	0	1	CONFID.
425	2030	5	32132.22	142.007	1	0	0	0	0	1	0	0	0	0	0	0	0	1	0	1	CONFID.
426	2030	6	32185.00	142.264	1	0	0	0	0	0	1	0	0	0	0	0	0	1	0	1	CONFID.
427	2030	7	32238.15	142.542	1	0	0	0	0	0	0	1	0	0	0	0	0	1	0	1	CONDID.
428	2030	8	32292.51	142.847	1	0	0	0	0	0	0	0	1	0	0	0	0	1	0	1	CONFID.
429	2030	9	32346.27	143.164	1	0	0	0	0	0	0	0	0	1	0	0	0	1	0	1	CONFID.
430	2030	10	32400.26	143.480	1	0	0	0	0	0	0	0	0	0	1	0	0	1	0	1	CONFID.
431	2030	11	32454.40	143.774	1	0	0	0	0	0	0	0	0	0	0	1	0	1	0	1	CONFID.
432	2030	12	32508.63	144.030	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
433	2031	1	32563.78	144.252	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
434	2031	2	32616.23	144.438	1	0	1	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
435	2031	3	32668.60	144.608	1	0	0	1	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
436	2031	4	32722.59	144.795	1	0	0	0	1	0	0	0	0	0	0	0	0	1	0	1	CONFID.
437	2031	5	32776.36	145.023	1	0	0	0	0	1	0	0	0	0	0	0	0	1	0	1	CONFID.
438	2031	6	32829.85	145.308	1	0	0	0	0	0	1	0	0	0	0	0	0	1	0	1	CONFID.
439	2031	7	32883.01	145.637	1	0	0	0	0	0	0	1	0	0	0	0	0	1	0	1	CONDID.
440	2031	8	32936.69	145.985	1	0	0	0	0	0	0	0	1	0	0	0	0	1	0	1	CONFID.

Obs	year	month	gr pmf_imi	fr bmvp	D030N	d1	d2	d3	d4	d5	d6	d7	d8	d9	d10	d11	d95	dsep12on	mar01oct01	jan20on	PRICE
441	2031	9	32989.21	146.318	1	0	0	0	0	0	0	0	0	1	0	0	0	1	0	1	CONFID.
442	2031	10	33041.51	146.631	1	0	0	0	0	0	0	0	0	0	1	0	0	1	0	1	CONFID.
443	2031	11	33093.64	146.915	1	0	0	0	0	0	0	0	0	0	0	1	0	1	0	1	CONFID.
444	2031	12	33145.66	147.167	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
445	2032	1	33198.48	147.389	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
446	2032	2	33249.60	147.571	1	0	1	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
447	2032	3	33300.80	147.729	1	0	0	1	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
448	2032	4	33352.96	147.894	1	0	0	0	1	0	0	0	0	0	0	0	0	1	0	1	CONFID.
449	2032	5	33405.33	148.101	1	0	0	0	0	1	0	0	0	0	0	0	0	1	0	1	CONFID.
450	2032	6	33457.93	148.377	1	0	0	0	0	0	1	0	0	0	0	0	0	1	0	1	CONFID.
451	2032	7	33510.83	148.717	1	0	0	0	0	0	0	1	0	0	0	0	0	1	0	1	CONDID.
452	2032	8	33564.94	149.113	1	0	0	0	0	0	0	0	1	0	0	0	0	1	0	1	CONFID.
453	2032	9	33618.53	149.532	1	0	0	0	0	0	0	0	0	1	0	0	0	1	0	1	CONFID.
454	2032	10	33672.46	149.951	1	0	0	0	0	0	0	0	0	0	1	0	0	1	0	1	CONFID.
455	2032	11	33726.74	150.339	1	0	0	0	0	0	0	0	0	0	0	1	0	1	0	1	CONFID.
456	2032	12	33781.38	150.674	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
457	2033	1	33837.29	150.974	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
458	2033	2	33890.84	151.245	1	0	1	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
459	2033	3	33944.74	151.523	1	0	0	1	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
460	2033	4	34000.83	151.831	1	0	0	0	1	0	0	0	0	0	0	0	0	1	0	1	CONFID.
461	2033	5	34057.30	152.172	1	0	0	0	0	1	0	0	0	0	0	0	0	1	0	1	CONFID.
462	2033	6	34114.15	152.551	1	0	0	0	0	0	1	0	0	0	0	0	0	1	0	1	CONFID.
463	2033	7	34171.40	152.954	1	0	0	0	0	0	0	1	0	0	0	0	0	1	0	1	CONDID.
464	2033	8	34229.96	153.366	1	0	0	0	0	0	0	0	1	0	0	0	0	1	0	1	CONFID.
465	2033	9	34287.91	153.754	1	0	0	0	0	0	0	0	0	1	0	0	0	1	0	1	CONFID.
466	2033	10	34346.15	154.118	1	0	0	0	0	0	0	0	0	0	1	0	0	1	0	1	CONFID.
467	2033	11	34404.63	154.455	1	0	0	0	0	0	0	0	0	0	0	1	0	1	0	1	CONFID.
468	2033	12	34463.33	154.763	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
469	2034	1	34523.16	155.050	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
470	2034	2	34580.21	155.305	1	0	1	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
471	2034	3	34637.35	155.552	1	0	0	1	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
472	2034	4	34696.47	155.820	1	0	0	0	1	0	0	0	0	0	0	0	0	1	0	1	CONFID.
473	2034	5	34755.59	156.129	1	0	0	0	0	1	0	0	0	0	0	0	0	1	0	1	CONFID.
474	2034	6	34814.68	156.492	1	0	0	0	0	0	1	0	0	0	0	0	0	1	0	1	CONFID.
475	2034	7	34873.69	156.884	1	0	0	0	0	0	0	1	0	0	0	0	0	1	0	1	CONDID.
476	2034	8	34933.57	157.273	1	0	0	0	0	0	0	0	1	0	0	0	0	1	0	1	CONFID.
477	2034	9	34992.41	157.613	1	0	0	0	0	0	0	0	0	1	0	0	0	1	0	1	CONFID.
478	2034	10	35051.16	157.896	1	0	0	0	0	0	0	0	0	0	1	0	0	1	0	1	CONFID.
479	2034	11	35109.85	158.115	1	0	0	0	0	0	0	0	0	0	0	1	0	1	0	1	CONFID.
480	2034	12	35168.47	158.268	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.

Obs	year	month	gr pmf_imi	fr bmvp	D03ON	d1	d2	d3	d4	d5	d6	d7	d8	d9	d10	d11	d95	dsep12on	mar01oct01	jan20on	PRICE
481	2035	1	35228.01	158.382	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
482	2035	2	35284.61	158.481	1	0	1	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
483	2035	3	35341.19	158.597	1	0	0	1	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
484	2035	4	35399.65	158.743	1	0	0	0	1	0	0	0	0	0	0	0	0	1	0	1	CONFID.
485	2035	5	35458.10	158.925	1	0	0	0	0	1	0	0	0	0	0	0	0	1	0	1	CONFID.
486	2035	6	35516.53	159.142	1	0	0	0	0	0	1	0	0	0	0	0	0	1	0	1	CONFID.
487	2035	7	35574.96	159.377	1	0	0	0	0	0	0	1	0	0	0	0	0	1	0	1	CONDID.
488	2035	8	35634.32	159.609	1	0	0	0	0	0	0	0	1	0	0	0	0	1	0	1	CONFID.
489	2035	9	35692.65	159.813	1	0	0	0	0	0	0	0	0	1	0	0	0	1	0	1	CONFID.
490	2035	10	35750.87	159.983	1	0	0	0	0	0	0	0	0	0	1	0	0	1	0	1	CONFID.
491	2035	11	35808.93	160.118	1	0	0	0	0	0	0	0	0	0	0	1	0	1	0	1	CONFID.
492	2035	12	35866.79	160.217	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
493	2036	1	35925.33	160.300	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
494	2036	2	35981.69	160.387	1	0	1	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
495	2036	3	36037.71	160.497	1	0	0	1	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
496	2036	4	36094.27	160.636	1	0	0	0	1	0	0	0	0	0	0	0	0	1	0	1	CONFID.
497	2036	5	36150.40	160.803	1	0	0	0	0	1	0	0	0	0	0	0	0	1	0	1	CONFID.
498	2036	6	36206.04	160.993	1	0	0	0	0	0	1	0	0	0	0	0	0	1	0	1	CONFID.
499	2036	7	36261.15	161.198	1	0	0	0	0	0	0	1	0	0	0	0	0	1	0	1	CONDID.
500	2036	8	36316.63	161.410	1	0	0	0	0	0	0	0	1	0	0	0	0	1	0	1	CONFID.
501	2036	9	36370.75	161.614	1	0	0	0	0	0	0	0	0	1	0	0	0	1	0	1	CONFID.
502	2036	10	36424.47	161.808	1	0	0	0	0	0	0	0	0	0	1	0	0	1	0	1	CONFID.
503	2036	11	36477.84	161.986	1	0	0	0	0	0	0	0	0	0	0	1	0	1	0	1	CONFID.
504	2036	12	36530.93	162.145	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
505	2037	1	36584.67	162.279	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
506	2037	2	36635.65	162.371	1	0	1	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
507	2037	3	36686.55	162.431	1	0	0	1	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
508	2037	4	36739.14	162.487	1	0	0	0	1	0	0	0	0	0	0	0	0	1	0	1	CONFID.
509	2037	5	36791.75	162.579	1	0	0	0	0	1	0	0	0	0	0	0	0	1	0	1	CONFID.
510	2037	6	36844.44	162.731	1	0	0	0	0	0	1	0	0	0	0	0	0	1	0	1	CONFID.
511	2037	7	36897.28	162.931	1	0	0	0	0	0	0	1	0	0	0	0	0	1	0	1	CONDID.
512	2037	8	36951.16	163.153	1	0	0	0	0	0	0	0	1	0	0	0	0	1	0	1	CONFID.
513	2037	9	37004.34	163.368	1	0	0	0	0	0	0	0	0	1	0	0	0	1	0	1	CONFID.
514	2037	10	37057.66	163.573	1	0	0	0	0	0	0	0	0	0	1	0	0	1	0	1	CONFID.
515	2037	11	37111.12	163.769	1	0	0	0	0	0	0	0	0	0	0	1	0	1	0	1	CONFID.
516	2037	12	37164.71	163.956	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
517	2038	1	37219.29	164.142	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
518	2038	2	37271.31	164.319	1	0	1	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
519	2038	3	37323.43	164.502	1	0	0	1	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
520	2038	4	37377.37	164.703	1	0	0	0	1	0	0	0	0	0	0	0	0	1	0	1	CONFID.

Obs	year	month	gr pmf_imi	fr bmvp	D03ON	d1	d2	d3	d4	d5	d6	d7	d8	d9	d10	d11	d95	dsep12on	mar01oct01	jan20on	PRICE
521	2038	5	37431.37	164.923	1	0	0	0	0	1	0	0	0	0	0	0	0	1	0	1	CONFID.
522	2038	6	37485.43	165.164	1	0	0	0	0	0	1	0	0	0	0	0	0	1	0	1	CONFID.
523	2038	7	37539.52	165.415	1	0	0	0	0	0	0	1	0	0	0	0	0	1	0	1	CONDID.
524	2038	8	37594.55	165.665	1	0	0	0	0	0	0	0	1	0	0	0	0	1	0	1	CONFID.
525	2038	9	37648.76	165.893	1	0	0	0	0	0	0	0	0	1	0	0	0	1	0	1	CONFID.
526	2038	10	37703.09	166.104	1	0	0	0	0	0	0	0	0	0	1	0	0	1	0	1	CONFID.
527	2038	11	37757.55	166.300	1	0	0	0	0	0	0	0	0	0	0	1	0	1	0	1	CONFID.
528	2038	12	37812.20	166.488	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
529	2039	1	37867.96	166.682	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
530	2039	2	37921.25	166.886	1	0	1	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
531	2039	3	37974.80	167.117	1	0	0	1	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
532	2039	4	38030.48	167.383	1	0	0	0	1	0	0	0	0	0	0	0	0	1	0	1	CONFID.
533	2039	5	38086.50	167.669	1	0	0	0	0	1	0	0	0	0	0	0	0	1	0	1	CONFID.
534	2039	6	38142.89	167.966	1	0	0	0	0	0	1	0	0	0	0	0	0	1	0	1	CONFID.
535	2039	7	38199.69	168.262	1	0	0	0	0	0	0	1	0	0	0	0	0	1	0	1	CONDID.
536	2039	8	38257.81	168.548	1	0	0	0	0	0	0	0	1	0	0	0	0	1	0	1	CONFID.
537	2039	9	38315.30	168.803	1	0	0	0	0	0	0	0	0	1	0	0	0	1	0	1	CONFID.
538	2039	10	38373.01	169.029	1	0	0	0	0	0	0	0	0	0	1	0	0	1	0	1	CONFID.
539	2039	11	38430.84	169.224	1	0	0	0	0	0	0	0	0	0	0	1	0	1	0	1	CONFID.
540	2039	12	38488.70	169.387	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
541	2040	1	38547.48	169.533	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
542	2040	2	38604.22	169.664	1	0	1	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
543	2040	3	38660.75	169.800	1	0	0	1	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
544	2040	4	38717.92	169.953	1	0	0	0	1	0	0	0	0	0	0	0	0	1	0	1	CONFID.
545	2040	5	38774.69	170.133	1	0	0	0	0	1	0	0	0	0	0	0	0	1	0	1	CONFID.
546	2040	6	38830.99	170.344	1	0	0	0	0	0	1	0	0	0	0	0	0	1	0	1	CONFID.
547	2040	7	38886.72	170.568	1	0	0	0	0	0	0	1	0	0	0	0	0	1	0	1	CONDID.
548	2040	8	38942.78	170.782	1	0	0	0	0	0	0	0	1	0	0	0	0	1	0	1	CONFID.
549	2040	9	38997.41	170.960	1	0	0	0	0	0	0	0	0	1	0	0	0	1	0	1	CONFID.
550	2040	10	39051.56	171.107	1	0	0	0	0	0	0	0	0	0	1	0	0	1	0	1	CONFID.
551	2040	11	39105.31	171.233	1	0	0	0	0	0	0	0	0	0	0	1	0	1	0	1	CONFID.
552	2040	12	39158.70	171.343	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
553	2041	1	39212.66	171.445	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
554	2041	2	39263.78	171.535	1	0	1	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
555	2041	3	39314.73	171.623	1	0	0	1	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
556	2041	4	39367.28	171.721	1	0	0	0	1	0	0	0	0	0	0	0	0	1	0	1	CONFID.
557	2041	5	39419.76	171.840	1	0	0	0	0	1	0	0	0	0	0	0	0	1	0	1	CONFID.
558	2041	6	39472.22	171.985	1	0	0	0	0	0	1	0	0	0	0	0	0	1	0	1	CONFID.
559	2041	7	39524.73	172.151	1	0	0	0	0	0	0	1	0	0	0	0	0	1	0	1	CONDID.
560	2041	8	39578.15	172.327	1	0	0	0	0	0	0	0	1	0	0	0	0	1	0	1	CONFID.

Obs	year	month	gr pmf_imi	fr bmvp	D03ON	d1	d2	d3	d4	d5	d6	d7	d8	d9	d10	d11	d95	dsep12on	mar01oct01	jan20on	PRICE
561	2041	9	39630.76	172.501	1	0	0	0	0	0	0	0	0	1	0	0	0	1	0	1	CONFID.
562	2041	10	39683.39	172.691	1	0	0	0	0	0	0	0	0	0	1	0	0	1	0	1	CONFID.
563	2041	11	39736.03	172.920	1	0	0	0	0	0	0	0	0	0	0	1	0	1	0	1	CONFID.
564	2041	12	39788.64	173.196	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
565	2042	1	39842.07	173.492	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
566	2042	2	39892.86	173.746	1	0	1	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
567	2042	3	39943.57	173.943	1	0	0	1	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
568	2042	4	39995.90	174.092	1	0	0	0	1	0	0	0	0	0	0	0	0	1	0	1	CONFID.
569	2042	5	40048.11	174.204	1	0	0	0	0	1	0	0	0	0	0	0	0	1	0	1	CONFID.
570	2042	6	40100.17	174.298	1	0	0	0	0	0	1	0	0	0	0	0	0	1	0	1	CONFID.
571	2042	7	40152.07	174.404	1	0	0	0	0	0	0	1	0	0	0	0	0	1	0	1	CONDID.
572	2042	8	40204.68	174.554	1	0	0	0	0	0	0	0	1	0	0	0	0	1	0	1	CONFID.
573	2042	9	40256.37	174.761	1	0	0	0	0	0	0	0	0	1	0	0	0	1	0	1	CONFID.
574	2042	10	40308.07	174.999	1	0	0	0	0	0	0	0	0	0	1	0	0	1	0	1	CONFID.
575	2042	11	40359.84	175.230	1	0	0	0	0	0	0	0	0	0	0	1	0	1	0	1	CONFID.
576	2042	12	40411.77	175.424	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
577	2043	1	40464.78	175.594	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
578	2043	2	40515.51	175.750	1	0	1	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
579	2043	3	40566.59	175.916	1	0	0	1	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
580	2043	4	40619.83	176.108	1	0	0	0	1	0	0	0	0	0	0	0	0	1	0	1	CONFID.
581	2043	5	40673.59	176.328	1	0	0	0	0	1	0	0	0	0	0	0	0	1	0	1	CONFID.
582	2043	6	40727.93	176.574	1	0	0	0	0	0	1	0	0	0	0	0	0	1	0	1	CONFID.
583	2043	7	40782.94	176.822	1	0	0	0	0	0	0	1	0	0	0	0	0	1	0	1	CONDID.
584	2043	8	40839.53	177.044	1	0	0	0	0	0	0	0	1	0	0	0	0	1	0	1	CONFID.
585	2043	9	40895.83	177.212	1	0	0	0	0	0	0	0	0	1	0	0	0	1	0	1	CONFID.
586	2043	10	40952.71	177.350	1	0	0	0	0	0	0	0	0	0	1	0	0	1	0	1	CONFID.
587	2043	11	41010.08	177.489	1	0	0	0	0	0	0	0	0	0	0	1	0	1	0	1	CONFID.
588	2043	12	41067.92	177.651	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
589	2044	1	41127.12	177.835	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
590	2044	2	41184.74	178.019	1	0	1	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
591	2044	3	41242.65	178.199	1	0	0	1	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
592	2044	4	41301.76	178.370	1	0	0	0	1	0	0	0	0	0	0	0	0	1	0	1	CONFID.
593	2044	5	41361.04	178.528	1	0	0	0	0	1	0	0	0	0	0	0	0	1	0	1	CONFID.
594	2044	6	41420.46	178.672	1	0	0	0	0	0	1	0	0	0	0	0	0	1	0	1	CONFID.
595	2044	7	41479.95	178.822	1	0	0	0	0	0	0	1	0	0	0	0	0	1	0	1	CONDID.
596	2044	8	41540.47	179.002	1	0	0	0	0	0	0	0	1	0	0	0	0	1	0	1	CONFID.
597	2044	9	41600.07	179.220	1	0	0	0	0	0	0	0	0	1	0	0	0	1	0	1	CONFID.
598	2044	10	41659.76	179.466	1	0	0	0	0	0	0	0	0	0	1	0	0	1	0	1	CONFID.
599	2044	11	41719.53	179.719	1	0	0	0	0	0	0	0	0	0	0	1	0	1	0	1	CONFID.
600	2044	12	41779.40	179.962	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.

Obs	year	month	gr pmf_imi	fr bmvp	D030N	d1	d2	d3	d4	d5	d6	d7	d8	d9	d10	d11	d95	dsep12on	mar01oct01	jan20on	PRICE
601	2045	1	41840.37	180.199	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
602	2045	2	41898.53	180.421	1	0	1	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
603	2045	3	41956.80	180.645	1	0	0	1	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
604	2045	4	42017.21	180.885	1	0	0	0	1	0	0	0	0	0	0	0	0	1	0	1	CONFID.
605	2045	5	42077.79	181.138	1	0	0	0	0	1	0	0	0	0	0	0	0	1	0	1	CONFID.
606	2045	6	42138.55	181.407	1	0	0	0	0	0	1	0	0	0	0	0	0	1	0	1	CONFID.
607	2045	7	42199.50	181.689	1	0	0	0	0	0	0	1	0	0	0	0	0	1	0	1	CONDID.
608	2045	8	42261.63	181.983	1	0	0	0	0	0	0	0	1	0	0	0	0	1	0	1	CONFID.
609	2045	9	42322.89	182.274	1	0	0	0	0	0	0	0	0	1	0	0	0	1	0	1	CONFID.
610	2045	10	42384.23	182.573	1	0	0	0	0	0	0	0	0	0	1	0	0	1	0	1	CONFID.
611	2045	11	42445.60	182.888	1	0	0	0	0	0	0	0	0	0	0	1	0	1	0	1	CONFID.
612	2045	12	42506.97	183.222	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
613	2046	1	42569.27	183.560	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
614	2046	2	42628.45	183.858	1	0	1	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
615	2046	3	42687.49	184.118	1	0	0	1	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
616	2046	4	42748.32	184.362	1	0	0	0	1	0	0	0	0	0	0	0	0	1	0	1	CONFID.
617	2046	5	42808.91	184.607	1	0	0	0	0	1	0	0	0	0	0	0	0	1	0	1	CONFID.
618	2046	6	42869.19	184.869	1	0	0	0	0	0	1	0	0	0	0	0	0	1	0	1	CONFID.
619	2046	7	42929.13	185.145	1	0	0	0	0	0	0	1	0	0	0	0	0	1	0	1	CONDID.
620	2046	8	42989.67	185.426	1	0	0	0	0	0	0	0	1	0	0	0	0	1	0	1	CONFID.
621	2046	9	43048.85	185.695	1	0	0	0	0	0	0	0	0	1	0	0	0	1	0	1	CONFID.
622	2046	10	43107.64	185.956	1	0	0	0	0	0	0	0	0	0	1	0	0	1	0	1	CONFID.
623	2046	11	43166.05	186.216	1	0	0	0	0	0	0	0	0	0	0	1	0	1	0	1	CONFID.
624	2046	12	43224.07	186.478	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
625	2047	1	43282.63	186.745	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
626	2047	2	43337.98	187.000	1	0	1	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
627	2047	3	43392.95	187.252	1	0	0	1	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
628	2047	4	43449.39	187.511	1	0	0	0	1	0	0	0	0	0	0	0	0	1	0	1	CONFID.
629	2047	5	43505.42	187.767	1	0	0	0	0	1	0	0	0	0	0	0	0	1	0	1	CONFID.
630	2047	6	43561.04	188.020	1	0	0	0	0	0	1	0	0	0	0	0	0	1	0	1	CONFID.
631	2047	7	43616.24	188.270	1	0	0	0	0	0	0	1	0	0	0	0	0	1	0	1	CONDID.
632	2047	8	43671.94	188.524	1	0	0	0	0	0	0	0	1	0	0	0	0	1	0	1	CONFID.
633	2047	9	43726.38	188.774	1	0	0	0	0	0	0	0	0	1	0	0	0	1	0	1	CONFID.
634	2047	10	43780.50	189.025	1	0	0	0	0	0	0	0	0	0	1	0	0	1	0	1	CONFID.
635	2047	11	43834.32	189.277	1	0	0	0	0	0	0	0	0	0	0	1	0	1	0	1	CONFID.
636	2047	12	43887.90	189.529	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
637	2048	1	43942.14	189.787	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
638	2048	2	43994.45	190.037	1	0	1	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
639	2048	3	44046.63	190.288	1	0	0	1	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
640	2048	4	44099.58	190.543	1	0	0	0	1	0	0	0	0	0	0	0	0	1	0	1	CONFID.

Obs	year	month	grpmf_imi	frbmvp	D030N	d1	d2	d3	d4	d5	d6	d7	d8	d9	d10	d11	d95	dsep12on	mar01oct01	jan20on	PRICE
641	2048	5	44152.47	190.798	1	0	0	0	0	1	0	0	0	0	0	0	0	1	0	1	CONFID.
642	2048	6	44205.34	191.052	1	0	0	0	0	0	1	0	0	0	0	0	0	1	0	1	CONFID.
643	2048	7	44258.21	191.304	1	0	0	0	0	0	0	1	0	0	0	0	0	1	0	1	CONDID.
644	2048	8	44311.99	191.559	1	0	0	0	0	0	0	0	1	0	0	0	0	1	0	1	CONFID.
645	2048	9	44364.94	191.807	1	0	0	0	0	0	0	0	0	1	0	0	0	1	0	1	CONFID.
646	2048	10	44417.95	192.055	1	0	0	0	0	0	0	0	0	0	1	0	0	1	0	1	CONFID.
647	2048	11	44471.02	192.303	1	0	0	0	0	0	0	0	0	0	0	1	0	1	0	1	CONFID.
648	2048	12	44524.17	192.553	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
649	2049	1	44578.27	192.808	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
650	2049	2	44629.84	193.050	1	0	1	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
651	2049	3	44681.50	193.291	1	0	0	1	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
652	2049	4	44735.02	193.540	1	0	0	0	1	0	0	0	0	0	0	0	0	1	0	1	CONFID.
653	2049	5	44788.65	193.791	1	0	0	0	0	1	0	0	0	0	0	0	0	1	0	1	CONFID.
654	2049	6	44842.41	194.044	1	0	0	0	0	0	1	0	0	0	0	0	0	1	0	1	CONFID.
655	2049	7	44896.32	194.295	1	0	0	0	0	0	0	1	0	0	0	0	0	1	0	1	CONDID.
656	2049	8	44951.25	194.541	1	0	0	0	0	0	0	0	1	0	0	0	0	1	0	1	CONFID.
657	2049	9	45005.45	194.771	1	0	0	0	0	0	0	0	0	1	0	0	0	1	0	1	CONFID.
658	2049	10	45059.81	194.987	1	0	0	0	0	0	0	0	0	0	1	0	0	1	0	1	CONFID.
659	2049	11	45114.35	195.188	1	0	0	0	0	0	0	0	0	0	0	1	0	1	0	1	CONFID.
660	2049	12	45169.07	195.376	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
661	2050	1	45224.88	195.561	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
662	2050	2	45278.18	195.743	1	0	1	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
663	2050	3	45331.68	195.935	1	0	0	1	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
664	2050	4	45387.21	196.144	1	0	0	0	1	0	0	0	0	0	0	0	0	1	0	1	CONFID.
665	2050	5	45442.96	196.357	1	0	0	0	0	1	0	0	0	0	0	0	0	1	0	1	CONFID.
666	2050	6	45498.95	196.572	1	0	0	0	0	0	1	0	0	0	0	0	0	1	0	1	CONFID.
667	2050	7	45555.18	196.788	1	0	0	0	0	0	0	1	0	0	0	0	0	1	0	1	CONDID.
668	2050	8	45612.60	197.014	1	0	0	0	0	0	0	0	1	0	0	0	0	1	0	1	CONFID.
669	2050	9	45669.36	197.243	1	0	0	0	0	0	0	0	0	1	0	0	0	1	0	1	CONFID.
670	2050	10	45726.39	197.482	1	0	0	0	0	0	0	0	0	0	1	0	0	1	0	1	CONFID.
671	2050	11	45783.70	197.733	1	0	0	0	0	0	0	0	0	0	0	1	0	1	0	1	CONFID.
672	2050	12	45841.30	198.000	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
673	2051	1	45881.71	198.355	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
674	2051	2	45936.79	198.473	1	0	1	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
675	2051	3	45992.17	198.616	1	0	0	1	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
676	2051	4	46049.75	198.783	1	0	0	0	1	0	0	0	0	0	0	0	0	1	0	1	CONFID.
677	2051	5	46107.68	198.957	1	0	0	0	0	1	0	0	0	0	0	0	0	1	0	1	CONFID.
678	2051	6	46165.95	199.132	1	0	0	0	0	0	1	0	0	0	0	0	0	1	0	1	CONFID.
679	2051	7	46224.57	199.314	1	0	0	0	0	0	0	1	0	0	0	0	0	1	0	1	CONDID.
680	2051	8	46284.54	199.518	1	0	0	0	0	0	0	0	1	0	0	0	0	1	0	1	CONFID.

Obs	year	month	grpmf_imi	frbmvp	D030N	d1	d2	d3	d4	d5	d6	d7	d8	d9	d10	d11	d95	dsep12on	mar01oct01	jan20on	PRICE
681	2051	9	46343.92	199.746	1	0	0	0	0	0	0	0	0	1	0	0	0	1	0	1	CONFID.
682	2051	10	46403.68	200.009	1	0	0	0	0	0	0	0	0	0	1	0	0	1	0	1	CONFID.
683	2051	11	46463.83	200.312	1	0	0	0	0	0	0	0	0	0	0	1	0	1	0	1	CONFID.
684	2051	12	46524.40	200.660	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
685	2052	1	46548.93	201.188	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
686	2052	2	46605.83	201.242	1	0	1	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
687	2052	3	46663.13	201.333	1	0	0	1	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
688	2052	4	46722.82	201.457	1	0	0	0	1	0	0	0	0	0	0	0	0	1	0	1	CONFID.
689	2052	5	46782.97	201.592	1	0	0	0	0	1	0	0	0	0	0	0	0	1	0	1	CONFID.
690	2052	6	46843.58	201.726	1	0	0	0	0	0	1	0	0	0	0	0	0	1	0	1	CONFID.
691	2052	7	46904.65	201.873	1	0	0	0	0	0	0	1	0	0	0	0	0	1	0	1	CONDID.
692	2052	8	46967.23	202.054	1	0	0	0	0	0	0	0	1	0	0	0	0	1	0	1	CONFID.
693	2052	9	47029.31	202.280	1	0	0	0	0	0	0	0	0	1	0	0	0	1	0	1	CONFID.
694	2052	10	47091.86	202.568	1	0	0	0	0	0	0	0	0	0	1	0	0	1	0	1	CONFID.
695	2052	11	47154.93	202.924	1	0	0	0	0	0	0	0	0	0	0	1	0	1	0	1	CONFID.
696	2052	12	47218.53	203.355	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
697	2053	1	47226.70	204.061	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
698	2053	2	47285.46	204.050	1	0	1	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
699	2053	3	47344.74	204.088	1	0	0	1	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
700	2053	4	47406.58	204.167	1	0	0	0	1	0	0	0	0	0	0	0	0	1	0	1	CONFID.
701	2053	5	47469.01	204.261	1	0	0	0	0	1	0	0	0	0	0	0	0	1	0	1	CONFID.
702	2053	6	47532.02	204.354	1	0	0	0	0	0	1	0	0	0	0	0	0	1	0	1	CONFID.
703	2053	7	47595.61	204.464	1	0	0	0	0	0	0	1	0	0	0	0	0	1	0	1	CONDID.
704	2053	8	47660.87	204.622	1	0	0	0	0	0	0	0	1	0	0	0	0	1	0	1	CONFID.
705	2053	9	47725.70	204.847	1	0	0	0	0	0	0	0	0	1	0	0	0	1	0	1	CONFID.
706	2053	10	47791.12	205.160	1	0	0	0	0	0	0	0	0	0	1	0	0	1	0	1	CONFID.
707	2053	11	47857.18	205.570	1	0	0	0	0	0	0	0	0	0	0	1	0	1	0	1	CONFID.
708	2053	12	47923.90	206.087	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
709	2054	1	47915.20	206.976	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
710	2054	2	47975.87	206.896	1	0	1	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
711	2054	3	48037.17	206.880	1	0	0	1	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
712	2054	4	48101.22	206.914	1	0	0	0	1	0	0	0	0	0	0	0	0	1	0	1	CONFID.
713	2054	5	48165.99	206.965	1	0	0	0	0	1	0	0	0	0	0	0	0	1	0	1	CONFID.
714	2054	6	48231.46	207.016	1	0	0	0	0	0	1	0	0	0	0	0	0	1	0	1	CONFID.
715	2054	7	48297.61	207.088	1	0	0	0	0	0	0	1	0	0	0	0	0	1	0	1	CONDID.
716	2054	8	48365.62	207.223	1	0	0	0	0	0	0	0	1	0	0	0	0	1	0	1	CONFID.
717	2054	9	48433.28	207.447	1	0	0	0	0	0	0	0	0	1	0	0	0	1	0	1	CONFID.
718	2054	10	48501.64	207.785	1	0	0	0	0	0	0	0	0	0	1	0	0	1	0	1	CONFID.
719	2054	11	48570.77	208.251	1	0	0	0	0	0	0	0	0	0	0	1	0	1	0	1	CONFID.
720	2054	12	48640.69	208.855	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.

Obs	year	month	gr pmf_imi	fr bmvp	D03ON	d1	d2	d3	d4	d5	d6	d7	d8	d9	d10	d11	d95	dsep12on	mar01oct01	jan20on	PRICE
721	2055	1	48614.60	209.932	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
722	2055	2	48677.23	209.783	1	0	1	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
723	2055	3	48740.60	209.711	1	0	0	1	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
724	2055	4	48806.92	209.697	1	0	0	0	1	0	0	0	0	0	0	0	0	1	0	1	CONFID.
725	2055	5	48874.08	209.706	1	0	0	0	0	1	0	0	0	0	0	0	0	1	0	1	CONFID.
726	2055	6	48942.06	209.713	1	0	0	0	0	0	1	0	0	0	0	0	0	1	0	1	CONFID.
727	2055	7	49010.85	209.747	1	0	0	0	0	0	0	1	0	0	0	0	0	1	0	1	CONDID.
728	2055	8	49081.67	209.856	1	0	0	0	0	0	0	0	1	0	0	0	0	1	0	1	CONFID.
729	2055	9	49152.23	210.080	1	0	0	0	0	0	0	0	0	1	0	0	0	1	0	1	CONFID.
730	2055	10	49223.62	210.444	1	0	0	0	0	0	0	0	0	0	1	0	0	1	0	1	CONFID.
731	2055	11	49295.89	210.967	1	0	0	0	0	0	0	0	0	0	0	1	0	1	0	1	CONFID.
732	2055	12	49369.09	211.661	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
733	2056	1	49325.09	212.930	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
734	2056	2	49389.72	212.709	1	0	1	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
735	2056	3	49455.21	212.580	1	0	0	1	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
736	2056	4	49523.85	212.518	1	0	0	0	1	0	0	0	0	0	0	0	0	1	0	1	CONFID.
737	2056	5	49593.46	212.483	1	0	0	0	0	1	0	0	0	0	0	0	0	1	0	1	CONFID.
738	2056	6	49664.02	212.444	1	0	0	0	0	0	1	0	0	0	0	0	0	1	0	1	CONFID.
739	2056	7	49735.52	212.439	1	0	0	0	0	0	0	1	0	0	0	0	0	1	0	1	CONDID.
740	2056	8	49809.22	212.524	1	0	0	0	0	0	0	0	1	0	0	0	0	1	0	1	CONFID.
741	2056	9	49882.75	212.746	1	0	0	0	0	0	0	0	0	1	0	0	0	1	0	1	CONFID.
742	2056	10	49957.23	213.136	1	0	0	0	0	0	0	0	0	0	1	0	0	1	0	1	CONFID.
743	2056	11	50032.73	213.718	1	0	0	0	0	0	0	0	0	0	0	1	0	1	0	1	CONFID.
744	2056	12	50109.29	214.504	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
745	2057	1	50046.85	215.972	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
746	2057	2	50113.53	215.677	1	0	1	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
747	2057	3	50181.19	215.488	1	0	0	1	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
748	2057	4	50252.20	215.377	1	0	0	0	1	0	0	0	0	0	0	0	0	1	0	1	CONFID.
749	2057	5	50324.32	215.296	1	0	0	0	0	1	0	0	0	0	0	0	0	1	0	1	CONFID.
750	2057	6	50397.53	215.212	1	0	0	0	0	0	1	0	0	0	0	0	0	1	0	1	CONFID.
751	2057	7	50471.79	215.166	1	0	0	0	0	0	0	1	0	0	0	0	0	1	0	1	CONDID.
752	2057	8	50548.46	215.225	1	0	0	0	0	0	0	0	1	0	0	0	0	1	0	1	CONFID.
753	2057	9	50625.03	215.445	1	0	0	0	0	0	0	0	0	1	0	0	0	1	0	1	CONFID.
754	2057	10	50702.68	215.864	1	0	0	0	0	0	0	0	0	0	1	0	0	1	0	1	CONFID.
755	2057	11	50781.49	216.505	1	0	0	0	0	0	0	0	0	0	0	1	0	1	0	1	CONFID.
756	2057	12	50861.50	217.385	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.

INDIANA MICHIGAN POWER COMPANY
INDIANA SERVICE AREA
MANUFACTURING ENERGY SALES
MODEL ESTIMATION

The SYSLIN Procedure
Ordinary Least Squares Estimation

Model	ei_imi
Dependent Variable	ei_imi
Label	BILLED KWH

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	19	357105.6	18795.03	54.10	<.0001
Error	293	101790.3	347.4073		
Corrected Total	312	458895.9			

Root MSE	18.63886	R-Square	0.77818
Dependent Mean	562.86587	Adj R-Sq	0.76380
Coeff Var	3.31142		

Parameter Estimates

Variable	DF	Parameter Estimate	Standard Error	t Value	Pr > |t|	Variable Label
Intercept	1	-357.108	176.6441	-2.02	0.0441	Intercept
lpi36	1	-86.6097	25.18514	-3.44	0.0007	REAL MANUF. ELEC PRICE, 36-MONTH AVE., LOG
lgrpmf	1	77.19525	19.01302	4.06	<.0001	SERVICE AREA GROSS REGIONAL PRODUCT-MANUF., LOG
Lfrbmvp	1	112.9713	10.32342	10.94	<.0001	FRB IND. PROD. INDX, MOTOR VEHICLES, LOG
d1	1	-8.74124	5.131237	-1.70	0.0895	JANUARY
d2	1	-20.0848	5.173341	-3.88	0.0001	FEBRUARY
d3	1	3.007066	5.183982	0.58	0.5623	MARCH
d4	1	-7.30151	5.193382	-1.41	0.1608	APRIL
d5	1	8.861348	5.200361	1.70	0.0894	MAY
d6	1	11.44459	5.187183	2.21	0.0281	JUNE
d7	1	12.22829	5.180760	2.36	0.0189	JULY
d8	1	25.96431	5.182118	5.01	<.0001	AUGUST
d9	1	16.43202	5.177711	3.17	0.0017	SEPTEMBER
d10	1	-3.30786	5.177657	-0.64	0.5234	OCTOBER
d11	1	-17.6005	5.169597	-3.40	0.0008	NOVEMBER
mar01oct01	1	32.60870	7.095049	4.60	<.0001	BINARY VARIABLE-MARCH 2001 THROUGH OCTOBER 2001

INDIANA MICHIGAN POWER COMPANY
INDIANA SERVICE AREA
MANUFACTURING ENERGY SALES
MODEL ESTIMATION

The SYSLIN Procedure
Ordinary Least Squares Estimation

Parameter Estimates

Variable	DF	Parameter Estimate	Standard Error	t Value	Pr > |t|	Variable Label
D03ON	1	-24.3196	5.161607	-4.71	<.0001	BINARY VARIABLE-2003 ON
d95	1	-71.3448	6.210376	-11.49	<.0001	BINARY VARIABLE-1995
dsep12on	1	-19.9965	4.752936	-4.21	<.0001	BINARY VARIABLE-SEPTEMBER 2012 ON
jan20on	1	-9.61749	6.240965	-1.54	0.1244	BINARY VARIABLE-JANUARY 2020 ON

Durbin-Watson	1.50652
Number of Observations	313
First-Order Autocorrelation	0.245842

INDIANA MICHIGAN POWER COMPANY
INDIANA SERVICE AREA
MANUFACTURING ENERGY SALES
MODEL RESIDUALS

time			Residual Values Sum
1995.0000000	**|		-12.2399
1995.0833333	**|		-11.4634
1995.1666667	|	***	16.9123
1995.2500000	|	*	4.5537
1995.3333333	|	*	4.8697
1995.4166667	|	**	9.7058
1995.5000000	******|		-28.0644
1995.5833333	*|		-6.1910
1995.6666667	******|		-29.3936
1995.7500000	|	*******	33.2158
1995.8333333	|	*****	26.0067
1995.9166667	**|		-7.9117
1996.0000000	***|		-15.5607
1996.0833333	|		0.0966
1996.1666667	*****|		-26.6843
1996.2500000	*|		-6.7399
1996.3333333	|		-0.9326
1996.4166667	******|		-31.2913
1996.5000000	*****|		-23.6570
1996.5833333	*|		-5.9957
1996.6666667	*****|		-23.4618
1996.7500000	|	*****	22.7634
1996.8333333	******|		-32.0177
1996.9166667	*****|		-25.0679
1997.0000000	|		1.8867
1997.0833333	***|		-12.9325
1997.1666667	*******|		-36.4604
1997.2500000	|	***	16.2754
1997.3333333	*****|		-22.8762
1997.4166667	*|		-3.7674
1997.5000000	*|		-4.2201
1997.5833333	*****|		-23.2114
1997.6666667	***|		-13.0031
1997.7500000	|	***	15.2550
1997.8333333	****|		-21.4664
1997.9166667	***|		-12.5211
1998.0000000	******|		-30.5682
1998.0833333	****|		-18.3233
1998.1666667	**|		-8.4758
1998.2500000	|		0.5544
1998.3333333	**|		-9.8053
1998.4166667	|	**	7.7167
1998.5000000	*******|		-35.8926
1998.5833333	|	*******	34.3116
1998.6666667	|		1.7283
1998.7500000	|	********	38.4274
1998.8333333	|		2.4762
1998.9166667	|	*	5.1079

```
1999.0000000   |   *********|                              -45.2049
1999.0833333   |            |****                           19.5480
1999.1666667   |            |*****                          25.0909
1999.2500000   |            |*********                      43.1727
1999.3333333   |            |*                               4.9284
1999.4166667   |            |****                           17.7857
1999.5000000   |            |*                               7.4534
1999.5833333   |            |*****                          24.4854
1999.6666667   |            |*****                          24.1259
1999.7500000   |            |****                           21.5123
1999.8333333   |            |********                       37.5675
1999.9166667   |            |*                               3.9964
2000.0000000   |            |****                           19.4612
2000.0833333   |            |*******                        37.3814
2000.1666667   |            |****                           22.4849
2000.2500000   |            |                                2.2154
2000.3333333   |            |******                         29.3951
2000.4166667   |            |*****                          23.9986
2000.5000000   |            |                                0.8762
2000.5833333   |          *|                               -3.0796
2000.6666667   |            |***                            15.5092
2000.7500000   |            |*                               6.4035
2000.8333333   |        ****|                              -20.6603
2000.9166667   |            |****                           18.8444
2001.0000000   |            |*                               6.6000
2001.0833333   |            |*                               6.1424
2001.1666667   |         ***|                              -13.4202
2001.2500000   |        ****|                              -22.2334
2001.3333333   |         ***|                              -13.4219
2001.4166667   |        ****|                              -19.3538
2001.5000000   |            |************************     116.6668
2001.5833333   |            |*                               4.7597
2001.6666667   |      ******|                              -27.6963
2001.7500000   |       *****|                              -25.3010
2001.8333333   |         ***|                              -15.3563
2001.9166667   |      ******|                              -28.2828
2002.0000000   |            |                               -0.5691
2002.0833333   |          *|                               -3.3942
2002.1666667   |          *|                               -4.7914
2002.2500000   |            |*                               6.1598
2002.3333333   |            |*                               7.0393
2002.4166667   |          *|                               -6.2233
2002.5000000   |            |                               -0.8186
2002.5833333   |          *|                               -4.3660
2002.6666667   |            |**                              8.0372
2002.7500000   |            |                                1.9126
2002.8333333   |            |*                               3.8353
2002.9166667   |         ***|                              -14.8835
2003.0000000   |            |**                              9.6474
2003.0833333   |            |*                               5.4769
2003.1666667   |          **|                              -10.8905
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2003.2500000   |          **|                                -8.4747
2003.3333333   |           *|                                -3.1229
2003.4166667   |           *|                                -7.4738
2003.5000000   |      ******|                               -29.6107
2003.5833333   |        ****|                               -20.2200
2003.6666667   |            |*                               3.1669
2003.7500000   |            |***                            15.0847
2003.8333333   |            |                                1.7966
2003.9166667   |       *****|                               -22.9290
2004.0000000   |            |****                           17.7257
2004.0833333   |            |**                              8.7001
2004.1666667   |            |                               -1.6748
2004.2500000   |            |**                              7.5690
2004.3333333   |            |*                               5.7032
2004.4166667   |            |**                              9.7564
2004.5000000   |          **|                               -9.8160
2004.5833333   |           *|                               -7.3097
2004.6666667   |            |****                           20.5461
2004.7500000   |            |                                0.5124
2004.8333333   |            |                                1.2594
2004.9166667   |            |                                0.7993
2005.0000000   |         ***|                               -15.3723
2005.0833333   |            |**                             10.4762
2005.1666667   |            |*                               4.8768
2005.2500000   |        ****|                               -21.7984
2005.3333333   |            |*                               3.9437
2005.4166667   |           *|                               -6.0173
2005.5000000   |          **|                               -9.9147
2005.5833333   |            |*                               5.6678
2005.6666667   |            |*****                          22.8490
2005.7500000   |            |*******                        33.2912
2005.8333333   |           *|                               -6.8016
2005.9166667   |            |*                               6.2969
2006.0000000   |            |***                            13.2316
2006.0833333   |            |*                               6.8643
2006.1666667   |            |**                              7.7604
2006.2500000   |          **|                               -11.1482
2006.3333333   |            |**                              9.3038
2006.4166667   |           *|                               -3.7384
2006.5000000   |            |                               -0.9162
2006.5833333   |            |**                              9.2642
2006.6666667   |            |**                              8.0331
2006.7500000   |          **|                               -8.7974
2006.8333333   |           *|                               -4.7677
2006.9166667   |          **|                               -12.0996
2007.0000000   |        ****|                               -21.3187
2007.0833333   |         ***|                               -12.6856
2007.1666667   |          **|                               -10.6673
2007.2500000   |      ******|                               -29.0016
2007.3333333   |       *****|                               -22.8906
2007.4166667   |         ***|                               -12.8121
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2007.5000000   |          **|                          -11.7542
2007.5833333   |          **|                           -8.6581
2007.6666667   |            |**                          9.5724
2007.7500000   |            |                            1.1099
2007.8333333   |       *****|                          -25.5310
2007.9166667   |         ***|                          -12.9314
2008.0000000   |            |                            0.3045
2008.0833333   |            |                            1.9781
2008.1666667   |            |*                           4.8755
2008.2500000   |            |*                           3.5140
2008.3333333   |            |**                         11.3609
2008.4166667   |            |****                       22.0642
2008.5000000   |            |**                          7.9600
2008.5833333   |            |****                       19.3705
2008.6666667   |            |                            0.8853
2008.7500000   | **********|                           -52.7299
2008.8333333   |**********|                            -58.5337
2008.9166667   |      ******|                          -30.8005
2009.0000000   |           *|                           -4.3698
2009.0833333   |           *|                           -6.7440
2009.1666667   |        ****|                          -18.9648
2009.2500000   |           *|                           -4.0641
2009.3333333   |         ***|                          -13.0775
2009.4166667   |            |**                         10.4624
2009.5000000   |            |****                       21.0591
2009.5833333   |            |****                       20.5981
2009.6666667   |            |******                     28.6598
2009.7500000   |            |*****                      23.5552
2009.8333333   |            |*                           5.7364
2009.9166667   |            |*****                      26.9503
2010.0000000   |            |*******                    37.0091
2010.0833333   |            |***                        12.7363
2010.1666667   |            |****                       20.6743
2010.2500000   |            |*                           2.9481
2010.3333333   |            |**                          9.1297
2010.4166667   |         ***|                          -16.3785
2010.5000000   |         ***|                          -16.1255
2010.5833333   |           *|                           -2.5590
2010.6666667   |       *****|                          -23.9706
2010.7500000   |        ****|                          -19.2096
2010.8333333   |            |*                           6.1105
2010.9166667   |            |******                     32.4741
2011.0000000   |            |**                         10.6556
2011.0833333   |       *****|                          -26.7600
2011.1666667   |            |***                        13.9524
2011.2500000   |           *|                           -5.9924
2011.3333333   |            |*                           6.3895
2011.4166667   |            |***                        17.2396
2011.5000000   |        ****|                          -21.1397
2011.5833333   |            |****                       21.8946
2011.6666667   |            |*****                      25.9958
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2011.7500000   |          *|                          -2.6446
2011.8333333   |           |*                          5.9633
2011.9166667   |           |***                       13.5524
2012.0000000   |           |****                      17.5758
2012.0833333   |         **|                          -9.2876
2012.1666667   |         **|                          -9.0370
2012.2500000   |           |***                       15.9554
2012.3333333   |           |                          -1.1982
2012.4166667   |         **|                          -9.1320
2012.5000000   |           |*                          2.9808
2012.5833333   |           |                           1.0064
2012.6666667   |          *|                          -7.2637
2012.7500000   |           |*                          3.2934
2012.8333333   |           |*******                   34.9259
2012.9166667   |           |**                         7.8714
2013.0000000   |           |**                        12.4455
2013.0833333   |           |***                       15.7309
2013.1666667   |          *|                          -6.2142
2013.2500000   |         **|                          -7.9713
2013.3333333   |           |*                          7.2343
2013.4166667   |          *|                          -5.9825
2013.5000000   |           |**                        11.8353
2013.5833333   |        ***|                         -17.3904
2013.6666667   |           |***                       16.2388
2013.7500000   |           |*                          3.8789
2013.8333333   |           |****                      18.0943
2013.9166667   |           |                           1.4775
2014.0000000   |        ***|                         -16.3735
2014.0833333   |          *|                          -6.9454
2014.1666667   |           |**                         8.7505
2014.2500000   |           |**                        10.5066
2014.3333333   |           |**                        10.4953
2014.4166667   |           |                           1.0923
2014.5000000   |           |**                         8.9970
2014.5833333   |          *|                          -2.5542
2014.6666667   |         **|                         -10.9527
2014.7500000   |           |*                          3.2557
2014.8333333   |           |*****                     23.8717
2014.9166667   |           |*                          5.7068
2015.0000000   |           |                           0.7677
2015.0833333   |       ****|                         -21.3671
2015.1666667   |    *******|                         -36.2723
2015.2500000   |        ***|                         -16.0890
2015.3333333   |          *|                          -7.2427
2015.4166667   |           |**                         9.3565
2015.5000000   |        ***|                         -14.8614
2015.5833333   |           |                          -0.2995
2015.6666667   |         **|                         -12.1377
2015.7500000   |      ******|                        -31.3623
2015.8333333   |       *****|                        -25.4655
2015.9166667   |           |****                      19.4553
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2016.0000000  |        ****|                    -17.9110
2016.0833333  |            |**                    8.4062
2016.1666667  |            |***                  12.9266
2016.2500000  |            |**                   10.2219
2016.3333333  |            |*                     3.9799
2016.4166667  |            |**                   11.7503
2016.5000000  |            |***                  12.8056
2016.5833333  |            |*                     6.7197
2016.6666667  |          *|                     -6.2927
2016.7500000  |    ********|                    -37.6217
2016.8333333  |            |***                  13.6283
2016.9166667  |            |**                   10.3224
2017.0000000  |            |****                 21.3764
2017.0833333  |            |*                     5.8111
2017.1666667  |            |**                    8.3536
2017.2500000  |          *|                     -4.7663
2017.3333333  |       *****|                    -26.9796
2017.4166667  |         **|                     -10.3503
2017.5000000  |            |*                     5.9530
2017.5833333  |            |**                    7.5192
2017.6666667  |            |                     -2.0618
2017.7500000  |          *|                     -2.6864
2017.8333333  |            |****                 19.7195
2017.9166667  |            |****                 20.3469
2018.0000000  |            |****                 21.3882
2018.0833333  |          *|                     -4.8792
2018.1666667  |            |**                    8.2360
2018.2500000  |            |***                  14.5325
2018.3333333  |            |                     -1.0524
2018.4166667  |            |                      2.1643
2018.5000000  |            |***                  17.3759
2018.5833333  |            |                     -1.6683
2018.6666667  |            |                      2.3394
2018.7500000  |          *|                     -6.6758
2018.8333333  |            |                     -0.8277
2018.9166667  |            |                      0.4065
2019.0000000  |            |*                     3.1469
2019.0833333  |         **|                     -8.3560
2019.1666667  |            |                      1.8393
2019.2500000  |            |*                     5.6356
2019.3333333  |         **|                     -12.3833
2019.4166667  |        ****|                    -21.9037
2019.5000000  |         **|                     -9.0567
2019.5833333  |       *****|                    -23.7493
2019.6666667  |         **|                     -10.1158
2019.7500000  |        ****|                    -17.5065
2019.8333333  |          *|                     -3.1342
2019.9166667  |         ***|                    -15.4631
2020.0000000  |         **|                     -7.9933
2020.0833333  |            |*                     3.7900
2020.1666667  |            |*****                26.8193
```
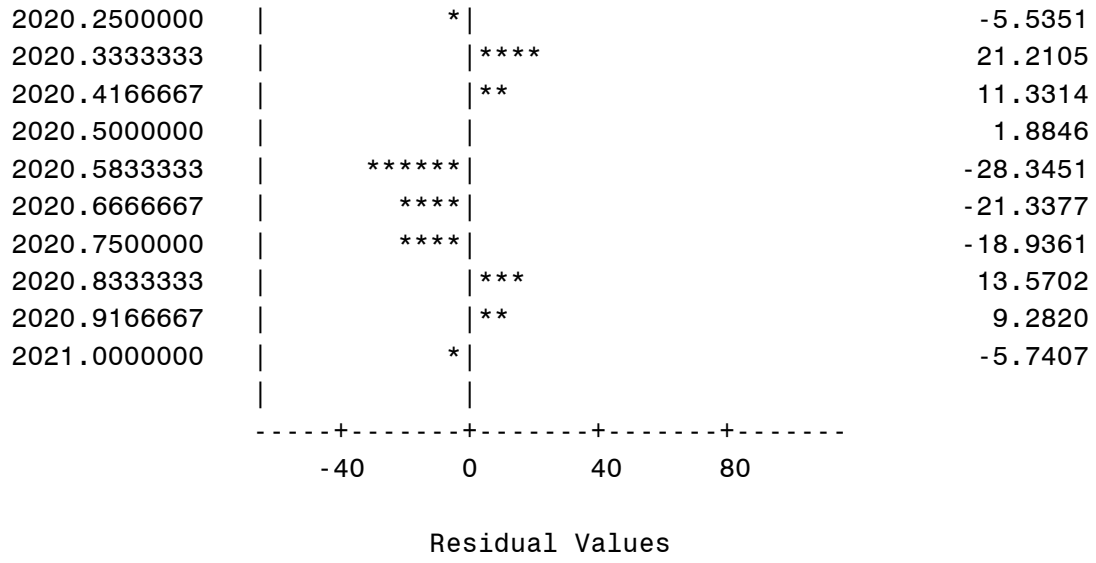

INDIANA MICHIGAN POWER COMPANY
INDIANA SERVICE AREA
MANUFACTURING ENERGY SALES
MODEL RESIDUALS



INDIANA MICHIGAN POWER COMPANY
INDIANA SERVICE AREA
MANUFACTURING ENERGY SALES
ACTUAL AND FORECAST

year	ENERGY SALES	GROWTH SALES	BASE ENERGY	ADDITIONS
1995	5594.15	.	5594.15	0.000
1996	6314.512	12.9	6314.51	0.000
1997	6520.515	3.3	6520.51	0.000
1998	6763.596	3.7	6763.60	0.000
1999	7123.156	5.3	7123.16	0.000
2000	7138.338	0.2	7138.34	0.000
2001	7067.704	-1.0	7067.70	0.000
2002	7065.504	0.0	7065.50	0.000
2003	6852.608	-3.0	6852.61	0.000
2004	7045.28	2.8	7045.28	0.000
2005	7022.773	-0.3	7022.77	0.000
2006	7016.164	-0.1	7016.16	0.000
2007	6926.731	-1.3	6926.73	0.000
2008	6587.834	-4.9	6587.83	0.000
2009	6004.383	-8.9	6004.38	0.000
2010	6580.516	9.6	6580.52	0.000
2011	6725.126	2.2	6725.13	0.000
2012	6753.879	0.4	6753.88	0.000
2013	6721.776	-0.5	6721.78	0.000
2014	6858.051	2.0	6858.05	0.000
2015	6749.086	-1.6	6749.09	0.000
2016	6924.429	2.6	6924.43	0.000
2017	6957.175	0.5	6957.17	0.000
2018	7042.616	1.2	7042.62	0.000
2019	6822.627	-3.1	6822.63	0.000
2020	6450.055	-5.5	6450.05	0.000
2021	6835.052	6.0	6851.68	-16.632
2022	6898.328	0.9	6892.47	5.856
2023	6869.238	-0.4	6863.38	5.856
2024	6829.926	-0.6	6824.07	5.856
2025	6845.547	0.2	6839.69	5.856
2026	6865.759	0.3	6859.90	5.856
2027	6909.759	0.6	6903.90	5.856
2028	6971.168	0.9	6965.31	5.856
2029	7015.546	0.6	7009.69	5.856
2030	7055.695	0.6	7049.84	5.856
2031	7101.233	0.6	7095.38	5.856
2032	7146.583	0.6	7140.73	5.856
2033	7200.426	0.8	7194.57	5.856
2034	7254.072	0.7	7248.22	5.856
2035	7296.256	0.6	7290.40	5.856
2036	7332.094	0.5	7326.24	5.856
2037	7367.508	0.5	7361.65	5.856
2038	7408.209	0.6	7402.35	5.856
2039	7452.708	0.6	7446.85	5.856
2040	7493.477	0.5	7487.62	5.856
2041	7527.354	0.5	7521.50	5.856

INDIANA MICHIGAN POWER COMPANY
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year	ENERGY SALES	GROWTH SALES	BASE ENERGY	ADDITIONS
2042	7564.355	0.5	7558.50	5.856
2043	7600.061	0.5	7594.21	5.856
2044	7635.775	0.5	7629.92	5.856
2045	7675.72	0.5	7669.86	5.856
2046	7718.207	0.6	7712.35	5.856
2047	7754.957	0.5	7749.10	5.856
2048	7788.042	0.4	7782.19	5.856
2049	7819.686	0.4	7813.83	5.856
2050	7848.77	0.4	7842.91	5.856
2051	7878.184	0.4	7872.33	5.856
2052	7907.689	0.4	7901.83	5.856
2053	7937.083	0.4	7931.23	5.856
2054	7966.495	0.4	7960.64	5.856
2055	7995.922	0.4	7990.07	5.856
2056	8025.367	0.4	8019.51	5.856
2057	8054.828	0.4	8048.97	5.856

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Obs	year	month	ei_imi	SDI
1	1995	1	445.063	CONFID.
2	1995	2	434.885	CONFID.
3	1995	3	485.973	CONFID.
4	1995	4	462.101	CONFID.
5	1995	5	477.43	CONFID.
6	1995	6	484.029	CONFID.
7	1995	7	446.893	CONDID.
8	1995	8	483.124	CONFID.
9	1995	9	451.58	CONFID.
10	1995	10	495.133	CONFID.
11	1995	11	473.149	CONFID.
12	1995	12	454.79	CONFID.
13	1996	1	506.5363	CONFID.
14	1996	2	510.7182	CONFID.
15	1996	3	509.1997	CONFID.
16	1996	4	523.2746	CONFID.
17	1996	5	549.2134	CONFID.
18	1996	6	523.7555	CONFID.
19	1996	7	532.4252	CONDID.
20	1996	8	562.1799	CONFID.
21	1996	9	533.4938	CONFID.
22	1996	10	557.9409	CONFID.
23	1996	11	489.2345	CONFID.
24	1996	12	516.5402	CONFID.
25	1997	1	537.9642	CONFID.
26	1997	2	514.5719	CONFID.
27	1997	3	513.6808	CONFID.
28	1997	4	555.2667	CONFID.
29	1997	5	531.4818	CONFID.
30	1997	6	553.8671	CONFID.
31	1997	7	557.1743	CONDID.
32	1997	8	555.3932	CONFID.
33	1997	9	559.4926	CONFID.
34	1997	10	570.845	CONFID.
35	1997	11	521.8339	CONFID.
36	1997	12	548.9433	CONFID.
37	1998	1	522.1611	CONFID.
38	1998	2	523.2191	CONFID.
39	1998	3	555.7506	CONFID.
40	1998	4	554.6195	CONFID.
41	1998	5	558.8179	CONFID.
42	1998	6	576.8707	CONFID.
43	1998	7	532.5246	CONDID.
44	1998	8	617.8052	CONFID.
45	1998	9	580.4243	CONFID.
46	1998	10	603.798	CONFID.
47	1998	11	558.0011	CONFID.
48	1998	12	579.6036	CONFID.
49	1999	1	519.1415	CONFID.

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Obs	year	month	ei_imi	SDI
50	1999	2	571.4783	CONFID.
51	1999	3	600.4029	CONFID.
52	1999	4	609.3566	CONFID.
53	1999	5	588.3993	CONFID.
54	1999	6	604.8096	CONFID.
55	1999	7	595.7039	CONDID.
56	1999	8	627.5208	CONFID.
57	1999	9	619.0776	CONFID.
58	1999	10	598.5051	CONFID.
59	1999	11	601.8821	CONFID.
60	1999	12	586.8782	CONFID.
61	2000	1	593.8731	CONFID.
62	2000	2	601.5177	CONFID.
63	2000	3	610.609	CONFID.
64	2000	4	581.0451	CONFID.
65	2000	5	624.1091	CONFID.
66	2000	6	620.2041	CONFID.
67	2000	7	595.2475	CONDID.
68	2000	8	602.1409	CONFID.
69	2000	9	609.4992	CONFID.
70	2000	10	578.3946	CONFID.
71	2000	11	534.1597	CONFID.
72	2000	12	587.5377	CONFID.
73	2001	1	562.522	CONFID.
74	2001	2	549.0661	CONFID.
75	2001	3	586.6955	CONFID.
76	2001	4	570.2732	CONFID.
77	2001	5	597.5152	CONFID.
78	2001	6	594.6218	CONFID.
79	2001	7	730.9623	CONDID.
80	2001	8	631.9577	CONFID.
81	2001	9	589.4201	CONFID.
82	2001	10	572.8912	CONFID.
83	2001	11	537.5029	CONFID.
84	2001	12	544.2759	CONFID.
85	2002	1	565.8917	CONFID.
86	2002	2	554.4982	CONFID.
87	2002	3	578.8751	CONFID.
88	2002	4	582.4315	CONFID.
89	2002	5	602.319	CONFID.
90	2002	6	594.2844	CONFID.
91	2002	7	602.8749	CONDID.
92	2002	8	614.3839	CONFID.
93	2002	9	617.7006	CONFID.
94	2002	10	591.8831	CONFID.
95	2002	11	580.0996	CONFID.
96	2002	12	580.2616	CONFID.
97	2003	1	573.4895	CONFID.
98	2003	2	558.3607	CONFID.

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Obs	year	month	ei_imi	SDI
99	2003	3	564.4867	CONFID.
100	2003	4	555.21	CONFID.
101	2003	5	576.1037	CONFID.
102	2003	6	575.6623	CONFID.
103	2003	7	556.9208	CONDID.
104	2003	8	582.2612	CONFID.
105	2003	9	597.5811	CONFID.
106	2003	10	590.5284	CONFID.
107	2003	11	563.8974	CONFID.
108	2003	12	558.1062	CONFID.
109	2004	1	591.1904	CONFID.
110	2004	2	571.6933	CONFID.
111	2004	3	584.2021	CONFID.
112	2004	4	582.1246	CONFID.
113	2004	5	595.1821	CONFID.
114	2004	6	600.7901	CONFID.
115	2004	7	581.1516	CONDID.
116	2004	8	597.2478	CONFID.
117	2004	9	616.325	CONFID.
118	2004	10	577.2869	CONFID.
119	2004	11	564.9906	CONFID.
120	2004	12	583.0957	CONFID.
121	2005	1	558.5265	CONFID.
122	2005	2	572.8868	CONFID.
123	2005	3	589.6879	CONFID.
124	2005	4	551.5711	CONFID.
125	2005	5	592.4665	CONFID.
126	2005	6	584.8243	CONFID.
127	2005	7	581.8307	CONDID.
128	2005	8	611.8744	CONFID.
129	2005	9	620.5461	CONFID.
130	2005	10	612.1391	CONFID.
131	2005	11	558.0226	CONFID.
132	2005	12	588.3965	CONFID.
133	2006	1	585.8103	CONFID.
134	2006	2	568.0625	CONFID.
135	2006	3	593.1102	CONFID.
136	2006	4	564.774	CONFID.
137	2006	5	601.6685	CONFID.
138	2006	6	589.9968	CONFID.
139	2006	7	591.6418	CONDID.
140	2006	8	614.3286	CONFID.
141	2006	9	604.5194	CONFID.
142	2006	10	569.5298	CONFID.
143	2006	11	561.0125	CONFID.
144	2006	12	571.7102	CONFID.
145	2007	1	554.0955	CONFID.
146	2007	2	552.4443	CONFID.
147	2007	3	580.4356	CONFID.

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Obs	year	month	ei_imi	SDI
148	2007	4	555.1105	CONFID.
149	2007	5	579.5736	CONFID.
150	2007	6	592.4012	CONFID.
151	2007	7	592.7365	CONDID.
152	2007	8	607.259	CONFID.
153	2007	9	614.2926	CONFID.
154	2007	10	584.8136	CONFID.
155	2007	11	542.5132	CONFID.
156	2007	12	571.0556	CONFID.
157	2008	1	572.9256	CONFID.
158	2008	2	559.9062	CONFID.
159	2008	3	581.6669	CONFID.
160	2008	4	564.7042	CONFID.
161	2008	5	583.4742	CONFID.
162	2008	6	591.2739	CONFID.
163	2008	7	572.7185	CONDID.
164	2008	8	592.4687	CONFID.
165	2008	9	559.4872	CONFID.
166	2008	10	479.4442	CONFID.
167	2008	11	449.3421	CONFID.
168	2008	12	480.4226	CONFID.
169	2009	1	480.3961	CONFID.
170	2009	2	450.4962	CONFID.
171	2009	3	450.8111	CONFID.
172	2009	4	452.2333	CONFID.
173	2009	5	463.4872	CONFID.
174	2009	6	499.5121	CONFID.
175	2009	7	522.7519	CONDID.
176	2009	8	546.6993	CONFID.
177	2009	9	552.8066	CONFID.
178	2009	10	532.8112	CONFID.
179	2009	11	504.974	CONFID.
180	2009	12	547.4043	CONFID.
181	2010	1	552.3489	CONFID.
182	2010	2	520.3179	CONFID.
183	2010	3	555.2909	CONFID.
184	2010	4	531.5204	CONFID.
185	2010	5	558.832	CONFID.
186	2010	6	541.3213	CONFID.
187	2010	7	547.2915	CONDID.
188	2010	8	577.0647	CONFID.
189	2010	9	545.7517	CONFID.
190	2010	10	528.1695	CONFID.
191	2010	11	538.4091	CONFID.
192	2010	12	584.1981	CONFID.
193	2011	1	556.5215	CONFID.
194	2011	2	509.029	CONFID.
195	2011	3	570.8447	CONFID.
196	2011	4	537.3576	CONFID.

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Obs	year	month	ei_imi	SDI
197	2011	5	563.3275	CONFID.
198	2011	6	577.2622	CONFID.
199	2011	7	542.0551	CONDID.
200	2011	8	601.6735	CONFID.
201	2011	9	597.7811	CONFID.
202	2011	10	550.3301	CONFID.
203	2011	11	545.8797	CONFID.
204	2011	12	573.0644	CONFID.
205	2012	1	570.4171	CONFID.
206	2012	2	534.0153	CONFID.
207	2012	3	558.0769	CONFID.
208	2012	4	573.1815	CONFID.
209	2012	5	571.3803	CONFID.
210	2012	6	565.2665	CONFID.
211	2012	7	577.1958	CONDID.
212	2012	8	588.7895	CONFID.
213	2012	9	551.9438	CONFID.
214	2012	10	544.6008	CONFID.
215	2012	11	563.5895	CONFID.
216	2012	12	555.4219	CONFID.
217	2013	1	552.1268	CONFID.
218	2013	2	545.1737	CONFID.
219	2013	3	547.9073	CONFID.
220	2013	4	536.9473	CONFID.
221	2013	5	569.2039	CONFID.
222	2013	6	558.789	CONFID.
223	2013	7	577.4297	CONDID.
224	2013	8	562.7971	CONFID.
225	2013	9	589.0043	CONFID.
226	2013	10	559.0491	CONFID.
227	2013	11	561.0187	CONFID.
228	2013	12	562.3288	CONFID.
229	2014	1	535.0116	CONFID.
230	2014	2	533.1196	CONFID.
231	2014	3	573.4851	CONFID.
232	2014	4	567.1311	CONFID.
233	2014	5	585.8228	CONFID.
234	2014	6	581.0288	CONFID.
235	2014	7	591.038	CONDID.
236	2014	8	593.9361	CONFID.
237	2014	9	576.1844	CONFID.
238	2014	10	570.1743	CONFID.
239	2014	11	575.9166	CONFID.
240	2014	12	575.2029	CONFID.
241	2015	1	561.2531	CONFID.
242	2015	2	527.6418	CONFID.
243	2015	3	536.7722	CONFID.
244	2015	4	547.2244	CONFID.
245	2015	5	573.7563	CONFID.

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Obs	year	month	ei_imi	SDI
246	2015	6	594.801	CONFID.
247	2015	7	572.7484	CONDID.
248	2015	8	601.2221	CONFID.
249	2015	9	578.7481	CONFID.
250	2015	10	537.597	CONFID.
251	2015	11	527.4492	CONFID.
252	2015	12	589.8728	CONFID.
253	2016	1	544.5754	CONFID.
254	2016	2	559.7568	CONFID.
255	2016	3	587.4488	CONFID.
256	2016	4	573.3268	CONFID.
257	2016	5	583.1317	CONFID.
258	2016	6	595.2635	CONFID.
259	2016	7	598.789	CONDID.
260	2016	8	607.8734	CONFID.
261	2016	9	585.9521	CONFID.
262	2016	10	534.0034	CONFID.
263	2016	11	570.5345	CONFID.
264	2016	12	583.7737	CONFID.
265	2017	1	585.7369	CONFID.
266	2017	2	559.3046	CONFID.
267	2017	3	586.1146	CONFID.
268	2017	4	563.3794	CONFID.
269	2017	5	557.466	CONFID.
270	2017	6	576.0374	CONFID.
271	2017	7	591.6151	CONDID.
272	2017	8	606.0111	CONFID.
273	2017	9	587.2093	CONFID.
274	2017	10	567.7227	CONFID.
275	2017	11	578.0346	CONFID.
276	2017	12	598.5434	CONFID.
277	2018	1	592.6421	CONFID.
278	2018	2	555.9168	CONFID.
279	2018	3	591.6134	CONFID.
280	2018	4	586.0074	CONFID.
281	2018	5	585.6396	CONFID.
282	2018	6	591.7216	CONFID.
283	2018	7	609.3525	CONDID.
284	2018	8	605.4945	CONFID.
285	2018	9	601.7443	CONFID.
286	2018	10	574.0402	CONFID.
287	2018	11	565.5359	CONFID.
288	2018	12	582.9078	CONFID.
289	2019	1	574.7303	CONFID.
290	2019	2	550.0202	CONFID.
291	2019	3	581.6774	CONFID.
292	2019	4	575.1775	CONFID.
293	2019	5	573.8886	CONFID.
294	2019	6	568.8296	CONFID.

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Obs	year	month	ei_imi	SDI
295	2019	7	583.1765	CONDID.
296	2019	8	580.5804	CONFID.
297	2019	9	579.7264	CONFID.
298	2019	10	547.4396	CONFID.
299	2019	11	547.8022	CONFID.
300	2019	12	559.5783	CONFID.
301	2020	1	552.4036	CONFID.
302	2020	2	543.3627	CONFID.
303	2020	3	557.091	CONFID.
304	2020	4	461.629	CONFID.
305	2020	5	473.4904	CONFID.
306	2020	6	508.8628	CONFID.
307	2020	7	553.3962	CONDID.
308	2020	8	567.0317	CONFID.
309	2020	9	570.0996	CONFID.
310	2020	10	544.1887	CONFID.
311	2020	11	552.8134	CONFID.
312	2020	12	565.6854	CONFID.
313	2021	1	548.4334	CONFID.
314	2021	2	547.7146	CONFID.
315	2021	3	573.6337	CONFID.
316	2021	4	562.516	CONFID.
317	2021	5	577.059	CONFID.
318	2021	6	579.4051	CONFID.
319	2021	7	580.7374	CONDID.
320	2021	8	594.9957	CONFID.
321	2021	9	585.8176	CONFID.
322	2021	10	565.0961	CONFID.
323	2021	11	550.8429	CONFID.
324	2021	12	568.8003	CONFID.
325	2022	1	562.8364	CONFID.
326	2022	2	552.4464	CONFID.
327	2022	3	576.0393	CONFID.
328	2022	4	566.0404	CONFID.
329	2022	5	582.3133	CONFID.
330	2022	6	584.9895	CONFID.
331	2022	7	585.9144	CONDID.
332	2022	8	599.4326	CONFID.
333	2022	9	589.8184	CONFID.
334	2022	10	569.9381	CONFID.
335	2022	11	555.6956	CONFID.
336	2022	12	572.8636	CONFID.
337	2023	1	563.7164	CONFID.
338	2023	2	552.0553	CONFID.
339	2023	3	574.5745	CONFID.
340	2023	4	564.0343	CONFID.
341	2023	5	579.9837	CONFID.
342	2023	6	582.4271	CONFID.
343	2023	7	582.9176	CONDID.

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Obs	year	month	ei_imi	SDI
344	2023	8	596.2476	CONFID.
345	2023	9	586.4599	CONFID.
346	2023	10	566.2097	CONFID.
347	2023	11	551.7038	CONFID.
348	2023	12	568.9085	CONFID.
349	2024	1	559.9699	CONFID.
350	2024	2	548.6268	CONFID.
351	2024	3	571.4136	CONFID.
352	2024	4	560.7759	CONFID.
353	2024	5	576.6322	CONFID.
354	2024	6	578.9078	CONFID.
355	2024	7	579.4191	CONDID.
356	2024	8	592.7651	CONFID.
357	2024	9	583.0986	CONFID.
358	2024	10	563.0621	CONFID.
359	2024	11	548.838	CONFID.
360	2024	12	566.4167	CONFID.
361	2025	1	557.9632	CONFID.
362	2025	2	547.085	CONFID.
363	2025	3	570.4305	CONFID.
364	2025	4	560.4527	CONFID.
365	2025	5	577.0401	CONFID.
366	2025	6	580.0653	CONFID.
367	2025	7	581.3811	CONDID.
368	2025	8	595.4263	CONFID.
369	2025	9	586.3121	CONFID.
370	2025	10	566.6525	CONFID.
371	2025	11	552.5997	CONFID.
372	2025	12	570.1384	CONFID.
373	2026	1	561.3506	CONFID.
374	2026	2	550.0682	CONFID.
375	2026	3	572.9825	CONFID.
376	2026	4	562.5668	CONFID.
377	2026	5	578.7542	CONFID.
378	2026	6	581.421	CONFID.
379	2026	7	582.4982	CONDID.
380	2026	8	596.3664	CONFID.
381	2026	9	587.1683	CONFID.
382	2026	10	567.5333	CONFID.
383	2026	11	553.6211	CONFID.
384	2026	12	571.4281	CONFID.
385	2027	1	562.9844	CONFID.
386	2027	2	552.0938	CONFID.
387	2027	3	575.4418	CONFID.
388	2027	4	565.4824	CONFID.
389	2027	5	582.1021	CONFID.
390	2027	6	585.2057	CONFID.
391	2027	7	586.5579	CONDID.
392	2027	8	600.7144	CONFID.

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Obs	year	month	ei_imi	SDI
393	2027	9	591.7581	CONFID.
394	2027	10	572.3237	CONFID.
395	2027	11	558.5784	CONFID.
396	2027	12	576.5166	CONFID.
397	2028	1	568.1485	CONFID.
398	2028	2	557.3129	CONFID.
399	2028	3	580.7021	CONFID.
400	2028	4	570.7639	CONFID.
401	2028	5	587.3868	CONFID.
402	2028	6	590.4672	CONFID.
403	2028	7	591.7775	CONDID.
404	2028	8	605.8688	CONFID.
405	2028	9	596.8238	CONFID.
406	2028	10	577.2822	CONFID.
407	2028	11	563.4158	CONFID.
408	2028	12	581.2183	CONFID.
409	2029	1	572.7351	CONFID.
410	2029	2	561.751	CONFID.
411	2029	3	584.958	CONFID.
412	2029	4	574.8198	CONFID.
413	2029	5	591.2484	CONFID.
414	2029	6	594.1658	CONFID.
415	2029	7	595.3165	CONDID.
416	2029	8	609.2689	CONFID.
417	2029	9	600.0952	CONFID.
418	2029	10	580.4419	CONFID.
419	2029	11	566.4934	CONFID.
420	2029	12	584.2521	CONFID.
421	2030	1	575.7656	CONFID.
422	2030	2	564.8057	CONFID.
423	2030	3	588.0589	CONFID.
424	2030	4	577.9784	CONFID.
425	2030	5	594.461	CONFID.
426	2030	6	597.4323	CONFID.
427	2030	7	598.6189	CONDID.
428	2030	8	612.6469	CONFID.
429	2030	9	603.5855	CONFID.
430	2030	10	584.0601	CONFID.
431	2030	11	570.2251	CONFID.
432	2030	12	588.0567	CONFID.
433	2031	1	579.6075	CONFID.
434	2031	2	568.6489	CONFID.
435	2031	3	591.8776	CONFID.
436	2031	4	581.7644	CONFID.
437	2031	5	598.229	CONFID.
438	2031	6	601.2035	CONFID.
439	2031	7	602.4197	CONDID.
440	2031	8	616.4638	CONFID.
441	2031	9	607.3952	CONFID.

INDIANA MICHIGAN POWER COMPANY
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Obs	year	month	ei_imi	SDI
442	2031	10	587.8465	CONFID.
443	2031	11	573.9838	CONFID.
444	2031	12	591.7926	CONFID.
445	2032	1	583.3403	CONFID.
446	2032	2	572.3798	CONFID.
447	2032	3	595.5997	CONFID.
448	2032	4	585.4695	CONFID.
449	2032	5	601.9182	CONFID.
450	2032	6	604.8882	CONFID.
451	2032	7	606.1099	CONDID.
452	2032	8	620.1908	CONFID.
453	2032	9	611.1901	CONFID.
454	2032	10	591.7264	CONFID.
455	2032	11	577.9466	CONFID.
456	2032	12	595.824	CONFID.
457	2033	1	587.4407	CONFID.
458	2033	2	576.5566	CONFID.
459	2033	3	599.8764	CONFID.
460	2033	4	589.8656	CONFID.
461	2033	5	606.4263	CONFID.
462	2033	6	609.4781	CONFID.
463	2033	7	610.7626	CONDID.
464	2033	8	624.8638	CONFID.
465	2033	9	615.8488	CONFID.
466	2033	10	596.3525	CONFID.
467	2033	11	582.5438	CONFID.
468	2033	12	600.4102	CONFID.
469	2034	1	592.0247	CONFID.
470	2034	2	581.1362	CONFID.
471	2034	3	604.4399	CONFID.
472	2034	4	594.4061	CONFID.
473	2034	5	610.9475	CONFID.
474	2034	6	613.9816	CONFID.
475	2034	7	615.2674	CONDID.
476	2034	8	629.3523	CONFID.
477	2034	9	620.3023	CONFID.
478	2034	10	600.7482	CONFID.
479	2034	11	586.8545	CONFID.
480	2034	12	604.6107	CONFID.
481	2035	1	596.0959	CONFID.
482	2035	2	585.0911	CONFID.
483	2035	3	608.2968	CONFID.
484	2035	4	598.1721	CONFID.
485	2035	5	614.6182	CONFID.
486	2035	6	617.5491	CONFID.
487	2035	7	618.7132	CONDID.
488	2035	8	632.6835	CONFID.
489	2035	9	623.5342	CONFID.
490	2035	10	603.8983	CONFID.

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Obs	year	month	ei_imi	SDI
491	2035	11	589.9434	CONFID.
492	2035	12	607.6601	CONFID.
493	2036	1	599.125	CONFID.
494	2036	2	588.1149	CONFID.
495	2036	3	611.3196	CONFID.
496	2036	4	601.1895	CONFID.
497	2036	5	617.6234	CONFID.
498	2036	6	620.5323	CONFID.
499	2036	7	621.6724	CONDID.
500	2036	8	635.6234	CONFID.
501	2036	9	626.4693	CONFID.
502	2036	10	606.8436	CONFID.
503	2036	11	592.9142	CONFID.
504	2036	12	610.6668	CONFID.
505	2037	1	602.1668	CONFID.
506	2037	2	591.1608	CONFID.
507	2037	3	614.3298	CONFID.
508	2037	4	604.1446	CONFID.
509	2037	5	620.5295	CONFID.
510	2037	6	623.406	CONFID.
511	2037	7	624.5587	CONDID.
512	2037	8	638.5233	CONFID.
513	2037	9	629.3854	CONFID.
514	2037	10	609.7783	CONFID.
515	2037	11	595.871	CONFID.
516	2037	12	613.654	CONFID.
517	2038	1	605.1966	CONFID.
518	2038	2	594.256	CONFID.
519	2038	3	617.5183	CONFID.
520	2038	4	607.441	CONFID.
521	2038	5	623.9223	CONFID.
522	2038	6	626.8663	CONFID.
523	2038	7	628.061	CONDID.
524	2038	8	642.05	CONFID.
525	2038	9	632.9267	CONFID.
526	2038	10	613.3287	CONFID.
527	2038	11	599.4268	CONFID.
528	2038	12	617.2154	CONFID.
529	2039	1	608.7602	CONFID.
530	2039	2	597.8335	CONFID.
531	2039	3	621.1251	CONFID.
532	2039	4	611.0879	CONFID.
533	2039	5	627.6101	CONFID.
534	2039	6	630.593	CONFID.
535	2039	7	631.8113	CONDID.
536	2039	8	645.8229	CONFID.
537	2039	9	636.7168	CONFID.
538	2039	10	617.1278	CONFID.
539	2039	11	603.2239	CONFID.

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Obs	year	month	ei_imi	SDI
540	2039	12	620.9957	CONFID.
541	2040	1	612.5071	CONFID.
542	2040	2	601.5334	CONFID.
543	2040	3	624.7603	CONFID.
544	2040	4	614.6438	CONFID.
545	2040	5	631.0901	CONFID.
546	2040	6	634.007	CONFID.
547	2040	7	635.17	CONDID.
548	2040	8	649.1228	CONFID.
549	2040	9	639.9528	CONFID.
550	2040	10	620.2983	CONFID.
551	2040	11	606.3346	CONFID.
552	2040	12	624.0567	CONFID.
553	2041	1	615.5269	CONFID.
554	2041	2	604.5115	CONFID.
555	2041	3	627.6927	CONFID.
556	2041	4	617.5279	CONFID.
557	2041	5	633.9217	CONFID.
558	2041	6	636.7826	CONFID.
559	2041	7	637.8987	CONDID.
560	2041	8	651.8174	CONFID.
561	2041	9	642.6373	CONFID.
562	2041	10	623.005	CONFID.
563	2041	11	609.1036	CONFID.
564	2041	12	626.929	CONFID.
565	2042	1	618.5169	CONFID.
566	2042	2	607.5998	CONFID.
567	2042	3	630.8435	CONFID.
568	2042	4	620.7031	CONFID.
569	2042	5	637.0835	CONFID.
570	2042	6	639.9037	CONFID.
571	2042	7	640.9693	CONDID.
572	2042	8	654.8617	CONFID.
573	2042	9	645.6921	CONFID.
574	2042	10	626.0802	CONFID.
575	2042	11	612.1693	CONFID.
576	2042	12	629.9317	CONFID.
577	2043	1	621.4299	CONFID.
578	2043	2	610.4417	CONFID.
579	2043	3	633.6601	CONFID.
580	2043	4	623.5425	CONFID.
581	2043	5	639.9894	CONFID.
582	2043	6	642.908	CONFID.
583	2043	7	644.0615	CONDID.
584	2043	8	658.0002	CONFID.
585	2043	9	648.8082	CONFID.
586	2043	10	629.1348	CONFID.
587	2043	11	615.1693	CONFID.
588	2043	12	632.9159	CONFID.

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MANUFACTURING ENERGY SALES
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Obs	year	month	ei_imi	SDI
589	2044	1	624.4293	CONFID.
590	2044	2	613.4674	CONFID.
591	2044	3	636.7014	CONFID.
592	2044	4	626.5763	CONFID.
593	2044	5	642.9883	CONFID.
594	2044	6	645.8433	CONFID.
595	2044	7	646.9402	CONDID.
596	2044	8	660.8547	CONFID.
597	2044	9	651.6952	CONFID.
598	2044	10	632.0904	CONFID.
599	2044	11	618.1962	CONFID.
600	2044	12	635.9924	CONFID.
601	2045	1	627.5331	CONFID.
602	2045	2	616.5863	CONFID.
603	2045	3	639.8397	CONFID.
604	2045	4	629.7495	CONFID.
605	2045	5	646.2139	CONFID.
606	2045	6	649.1409	CONFID.
607	2045	7	650.3123	CONDID.
608	2045	8	664.2904	CONFID.
609	2045	9	655.1686	CONFID.
610	2045	10	635.589	CONFID.
611	2045	11	621.7256	CONFID.
612	2045	12	639.57	CONFID.
613	2046	1	631.1559	CONFID.
614	2046	2	620.2377	CONFID.
615	2046	3	643.4947	CONFID.
616	2046	4	633.3878	CONFID.
617	2046	5	649.8266	CONFID.
618	2046	6	652.7347	CONFID.
619	2046	7	653.8724	CONDID.
620	2046	8	667.8194	CONFID.
621	2046	9	658.6588	CONFID.
622	2046	10	639.0304	CONFID.
623	2046	11	625.1072	CONFID.
624	2046	12	642.8815	CONFID.
625	2047	1	634.3997	CONFID.
626	2047	2	623.4303	CONFID.
627	2047	3	646.6582	CONFID.
628	2047	4	636.5342	CONFID.
629	2047	5	652.9542	CONFID.
630	2047	6	655.8357	CONFID.
631	2047	7	656.9264	CONDID.
632	2047	8	670.8308	CONFID.
633	2047	9	661.6331	CONFID.
634	2047	10	641.9722	CONFID.
635	2047	11	628.0189	CONFID.
636	2047	12	645.7629	CONFID.
637	2048	1	637.2553	CONFID.

INDIANA MICHIGAN POWER COMPANY
INDIANA SERVICE AREA
MANUFACTURING ENERGY SALES
ACTUAL AND FORECAST

Obs	year	month	ei_imi	SDI
638	2048	2	626.2659	CONFID.
639	2048	3	649.4755	CONFID.
640	2048	4	639.3306	CONFID.
641	2048	5	655.7319	CONFID.
642	2048	6	658.5957	CONFID.
643	2048	7	659.6721	CONDID.
644	2048	8	673.5614	CONFID.
645	2048	9	664.3479	CONFID.
646	2048	10	644.671	CONFID.
647	2048	11	630.7025	CONFID.
648	2048	12	648.4324	CONFID.
649	2049	1	639.9219	CONFID.
650	2049	2	628.9257	CONFID.
651	2049	3	652.1283	CONFID.
652	2049	4	641.9806	CONFID.
653	2049	5	658.3807	CONFID.
654	2049	6	661.2479	CONFID.
655	2049	7	662.3218	CONDID.
656	2049	8	676.2079	CONFID.
657	2049	9	666.9856	CONFID.
658	2049	10	647.2921	CONFID.
659	2049	11	633.2986	CONFID.
660	2049	12	650.995	CONFID.
661	2050	1	642.4446	CONFID.
662	2050	2	631.4137	CONFID.
663	2050	3	654.5884	CONFID.
664	2050	4	644.4176	CONFID.
665	2050	5	660.7968	CONFID.
666	2050	6	663.6379	CONFID.
667	2050	7	664.6989	CONDID.
668	2050	8	678.5743	CONFID.
669	2050	9	669.3531	CONFID.
670	2050	10	649.6752	CONFID.
671	2050	11	635.7127	CONFID.
672	2050	12	653.4569	CONFID.
673	2051	1	644.9774	CONFID.
674	2051	2	633.9146	CONFID.
675	2051	3	657.0648	CONFID.
676	2051	4	646.8743	CONFID.
677	2051	5	663.2357	CONFID.
678	2051	6	666.0604	CONFID.
679	2051	7	667.1046	CONDID.
680	2051	8	680.9723	CONFID.
681	2051	9	671.7554	CONFID.
682	2051	10	652.0957	CONFID.
683	2051	11	638.1672	CONFID.
684	2051	12	655.9617	CONFID.
685	2052	1	647.5478	CONFID.
686	2052	2	636.4478	CONFID.

INDIANA MICHIGAN POWER COMPANY
INDIANA SERVICE AREA
MANUFACTURING ENERGY SALES
ACTUAL AND FORECAST

Obs	year	month	ei_imi	SDI
687	2052	3	659.568	CONFID.
688	2052	4	649.3522	CONFID.
689	2052	5	665.6903	CONFID.
690	2052	6	668.4913	CONFID.
691	2052	7	669.5152	CONDID.
692	2052	8	683.3697	CONFID.
693	2052	9	674.1516	CONFID.
694	2052	10	654.5048	CONFID.
695	2052	11	640.6051	CONFID.
696	2052	12	658.445	CONFID.
697	2053	1	650.0985	CONFID.
698	2053	2	638.9631	CONFID.
699	2053	3	662.0552	CONFID.
700	2053	4	651.816	CONFID.
701	2053	5	668.1327	CONFID.
702	2053	6	670.912	CONFID.
703	2053	7	671.9175	CONDID.
704	2053	8	685.7609	CONFID.
705	2053	9	676.5435	CONFID.
706	2053	10	656.9116	CONFID.
707	2053	11	643.0426	CONFID.
708	2053	12	660.9296	CONFID.
709	2054	1	652.6505	CONFID.
710	2054	2	641.4798	CONFID.
711	2054	3	664.5438	CONFID.
712	2054	4	654.2812	CONFID.
713	2054	5	670.5765	CONFID.
714	2054	6	673.3341	CONFID.
715	2054	7	674.3212	CONDID.
716	2054	8	688.1535	CONFID.
717	2054	9	678.9368	CONFID.
718	2054	10	659.3199	CONFID.
719	2054	11	645.4815	CONFID.
720	2054	12	663.4157	CONFID.
721	2055	1	655.2039	CONFID.
722	2055	2	643.9979	CONFID.
723	2055	3	667.0338	CONFID.
724	2055	4	656.7478	CONFID.
725	2055	5	673.0218	CONFID.
726	2055	6	675.7576	CONFID.
727	2055	7	676.7264	CONDID.
728	2055	8	690.5474	CONFID.
729	2055	9	681.3315	CONFID.
730	2055	10	661.7295	CONFID.
731	2055	11	647.9218	CONFID.
732	2055	12	665.9031	CONFID.
733	2056	1	657.7587	CONFID.
734	2056	2	646.5173	CONFID.
735	2056	3	669.5252	CONFID.

INDIANA MICHIGAN POWER COMPANY
INDIANA SERVICE AREA
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Obs	year	month	ei_imi	SDI
736	2056	4	659.2157	CONFID.
737	2056	5	675.4684	CONFID.
738	2056	6	678.1825	CONFID.
739	2056	7	679.1329	CONDID.
740	2056	8	692.9428	CONFID.
741	2056	9	683.7276	CONFID.
742	2056	10	664.1404	CONFID.
743	2056	11	650.3634	CONFID.
744	2056	12	668.3919	CONFID.
745	2057	1	660.3148	CONFID.
746	2057	2	649.0381	CONFID.
747	2057	3	672.0179	CONFID.
748	2057	4	661.6851	CONFID.
749	2057	5	677.9163	CONFID.
750	2057	6	680.6088	CONFID.
751	2057	7	681.5407	CONDID.
752	2057	8	695.3395	CONFID.
753	2057	9	686.1251	CONFID.
754	2057	10	666.5528	CONFID.
755	2057	11	652.8064	CONFID.
756	2057	12	670.8821	CONFID.

INDIANA MICHIGAN POWER COMPANY
MICHIGAN SERVICE AREA
MANUFACTURING ENERGY SALES
ENDOGENOUS VARIABLES

The MEANS Procedure

Variable	Label	Mean
year	year	2028.50
month	month	6.5000000
ei_imm	BILLED KWH	75.8768655

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MICHIGAN SERVICE AREA
MANUFACTURING ENERGY SALES
ENDOGENOUS VARIABLES

Obs	year	month	ei_imm
1	2000	1	88.87714
2	2000	2	90.04697
3	2000	3	88.25445
4	2000	4	89.10588
5	2000	5	91.64089
6	2000	6	94.67361
7	2000	7	88.3079
8	2000	8	93.66353
9	2000	9	95.11026
10	2000	10	92.66871
11	2000	11	89.58849
12	2000	12	92.66635
13	2001	1	85.10768
14	2001	2	87.8613
15	2001	3	84.94215
16	2001	4	86.70396
17	2001	5	87.03094
18	2001	6	89.19636
19	2001	7	87.95158
20	2001	8	91.81009
21	2001	9	90.78078
22	2001	10	80.13073
23	2001	11	88.96903
24	2001	12	84.32138
25	2002	1	80.2269
26	2002	2	88.41459
27	2002	3	86.95629
28	2002	4	89.45461
29	2002	5	85.26433
30	2002	6	91.46696
31	2002	7	91.33153
32	2002	8	92.9287
33	2002	9	97.00443
34	2002	10	91.36568
35	2002	11	88.28714
36	2002	12	90.33748
37	2003	1	86.13823
38	2003	2	90.05955
39	2003	3	86.79425
40	2003	4	87.16948
41	2003	5	87.2804
42	2003	6	89.07687
43	2003	7	85.73786
44	2003	8	90.46078
45	2003	9	88.98538
46	2003	10	88.51511
47	2003	11	87.53365
48	2003	12	92.44282
49	2004	1	84.29869

INDIANA MICHIGAN POWER COMPANY
MICHIGAN SERVICE AREA
MANUFACTURING ENERGY SALES
ENDOGENOUS VARIABLES

Obs	year	month	ei_imm
50	2004	2	88.98091
51	2004	3	88.96414
52	2004	4	89.16239
53	2004	5	89.63378
54	2004	6	90.57528
55	2004	7	90.88948
56	2004	8	90.56901
57	2004	9	95.38099
58	2004	10	91.65698
59	2004	11	86.68668
60	2004	12	89.9547
61	2005	1	87.876
62	2005	2	87.48109
63	2005	3	88.90566
64	2005	4	86.1268
65	2005	5	85.87394
66	2005	6	91.57503
67	2005	7	88.04321
68	2005	8	93.32781
69	2005	9	96.13776
70	2005	10	91.42104
71	2005	11	85.39933
72	2005	12	89.11953
73	2006	1	83.53996
74	2006	2	84.11444
75	2006	3	82.62335
76	2006	4	81.37117
77	2006	5	86.64612
78	2006	6	90.31928
79	2006	7	87.84785
80	2006	8	89.96782
81	2006	9	89.4815
82	2006	10	83.8125
83	2006	11	81.08361
84	2006	12	84.8054
85	2007	1	78.90856
86	2007	2	82.09827
87	2007	3	81.41121
88	2007	4	81.02161
89	2007	5	85.92455
90	2007	6	89.07955
91	2007	7	84.7709
92	2007	8	88.93509
93	2007	9	88.94326
94	2007	10	82.52176
95	2007	11	80.6891
96	2007	12	79.15715
97	2008	1	77.86415
98	2008	2	78.44114

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MICHIGAN SERVICE AREA
MANUFACTURING ENERGY SALES
ENDOGENOUS VARIABLES

Obs	year	month	ei_imm
99	2008	3	78.12017
100	2008	4	76.36517
101	2008	5	75.04132
102	2008	6	79.38275
103	2008	7	77.41948
104	2008	8	80.47174
105	2008	9	77.79922
106	2008	10	75.91533
107	2008	11	72.57419
108	2008	12	69.88974
109	2009	1	62.34651
110	2009	2	63.96457
111	2009	3	60.23692
112	2009	4	65.99003
113	2009	5	61.24332
114	2009	6	63.32957
115	2009	7	64.29485
116	2009	8	70.30309
117	2009	9	71.66389
118	2009	10	69.25036
119	2009	11	64.47775
120	2009	12	72.75968
121	2010	1	66.93099
122	2010	2	69.84961
123	2010	3	69.57689
124	2010	4	69.85888
125	2010	5	68.1835
126	2010	6	77.1825
127	2010	7	75.07615
128	2010	8	78.89755
129	2010	9	73.22284
130	2010	10	71.69062
131	2010	11	57.11209
132	2010	12	75.61175
133	2011	1	64.11417
134	2011	2	58.70715
135	2011	3	76.34497
136	2011	4	63.16203
137	2011	5	68.44654
138	2011	6	68.64219
139	2011	7	67.52532
140	2011	8	71.23936
141	2011	9	65.09892
142	2011	10	66.50469
143	2011	11	63.90349
144	2011	12	63.12388
145	2012	1	64.01405
146	2012	2	66.90474
147	2012	3	65.04706

INDIANA MICHIGAN POWER COMPANY
MICHIGAN SERVICE AREA
MANUFACTURING ENERGY SALES
ENDOGENOUS VARIABLES

Obs	year	month	ei_imm
148	2012	4	66.87423
149	2012	5	63.82379
150	2012	6	71.49132
151	2012	7	67.99858
152	2012	8	73.05121
153	2012	9	69.79121
154	2012	10	61.2088
155	2012	11	65.14232
156	2012	12	64.65394
157	2013	1	60.20176
158	2013	2	65.23434
159	2013	3	64.76778
160	2013	4	67.13524
161	2013	5	67.3887
162	2013	6	70.09847
163	2013	7	70.73678
164	2013	8	70.36373
165	2013	9	72.90328
166	2013	10	71.45631
167	2013	11	68.26159
168	2013	12	66.7212
169	2014	1	68.19889
170	2014	2	66.26581
171	2014	3	67.97414
172	2014	4	68.23752
173	2014	5	68.90786
174	2014	6	71.26
175	2014	7	73.51391
176	2014	8	71.37353
177	2014	9	74.8654
178	2014	10	68.94551
179	2014	11	69.04186
180	2014	12	69.15424
181	2015	1	66.71624
182	2015	2	74.68405
183	2015	3	59.49982
184	2015	4	68.35323
185	2015	5	68.09056
186	2015	6	72.42877
187	2015	7	72.87303
188	2015	8	74.891
189	2015	9	72.61107
190	2015	10	73.54323
191	2015	11	68.36024
192	2015	12	71.39989
193	2016	1	68.51607
194	2016	2	64.91358
195	2016	3	70.90616
196	2016	4	67.99165

INDIANA MICHIGAN POWER COMPANY
MICHIGAN SERVICE AREA
MANUFACTURING ENERGY SALES
ENDOGENOUS VARIABLES

Obs	year	month	ei_imm
197	2016	5	65.99767
198	2016	6	71.26169
199	2016	7	69.45866
200	2016	8	74.64087
201	2016	9	73.2149
202	2016	10	69.14363
203	2016	11	65.08376
204	2016	12	67.6136
205	2017	1	65.41578
206	2017	2	65.78189
207	2017	3	64.0161
208	2017	4	63.42641
209	2017	5	65.78789
210	2017	6	71.46175
211	2017	7	71.24485
212	2017	8	70.60624
213	2017	9	69.91613
214	2017	10	69.95025
215	2017	11	66.72654
216	2017	12	70.4012
217	2018	1	65.8307
218	2018	2	66.80449
219	2018	3	65.56902
220	2018	4	67.35331
221	2018	5	66.53466
222	2018	6	70.86269
223	2018	7	70.75258
224	2018	8	72.08228
225	2018	9	72.9995
226	2018	10	69.25981
227	2018	11	66.30586
228	2018	12	66.75303
229	2019	1	65.13275
230	2019	2	62.35779
231	2019	3	64.95147
232	2019	4	66.24059
233	2019	5	62.05237
234	2019	6	67.84341
235	2019	7	67.26525
236	2019	8	71.82155
237	2019	9	71.55828
238	2019	10	67.47853
239	2019	11	62.7131
240	2019	12	68.93623
241	2020	1	70.57151
242	2020	2	65.08994
243	2020	3	65.12841
244	2020	4	48.56348
245	2020	5	47.67815

INDIANA MICHIGAN POWER COMPANY
MICHIGAN SERVICE AREA
MANUFACTURING ENERGY SALES
ENDOGENOUS VARIABLES

Obs	year	month	ei_imm
246	2020	6	61.50255
247	2020	7	67.26356
248	2020	8	65.61963
249	2020	9	70.32073
250	2020	10	71.03216
251	2020	11	63.05923
252	2020	12	66.48964
253	2021	1	66.2229
254	2021	2	.
255	2021	3	.
256	2021	4	.
257	2021	5	.
258	2021	6	.
259	2021	7	.
260	2021	8	.
261	2021	9	.
262	2021	10	.
263	2021	11	.
264	2021	12	.
265	2022	1	.
266	2022	2	.
267	2022	3	.
268	2022	4	.
269	2022	5	.
270	2022	6	.
271	2022	7	.
272	2022	8	.
273	2022	9	.
274	2022	10	.
275	2022	11	.
276	2022	12	.
277	2023	1	.
278	2023	2	.
279	2023	3	.
280	2023	4	.
281	2023	5	.
282	2023	6	.
283	2023	7	.
284	2023	8	.
285	2023	9	.
286	2023	10	.
287	2023	11	.
288	2023	12	.
289	2024	1	.
290	2024	2	.
291	2024	3	.
292	2024	4	.
293	2024	5	.
294	2024	6	.

INDIANA MICHIGAN POWER COMPANY
MICHIGAN SERVICE AREA
MANUFACTURING ENERGY SALES
ENDOGENOUS VARIABLES

Obs	year	month	ei_imm
295	2024	7	.
296	2024	8	.
297	2024	9	.
298	2024	10	.
299	2024	11	.
300	2024	12	.
301	2025	1	.
302	2025	2	.
303	2025	3	.
304	2025	4	.
305	2025	5	.
306	2025	6	.
307	2025	7	.
308	2025	8	.
309	2025	9	.
310	2025	10	.
311	2025	11	.
312	2025	12	.
313	2026	1	.
314	2026	2	.
315	2026	3	.
316	2026	4	.
317	2026	5	.
318	2026	6	.
319	2026	7	.
320	2026	8	.
321	2026	9	.
322	2026	10	.
323	2026	11	.
324	2026	12	.
325	2027	1	.
326	2027	2	.
327	2027	3	.
328	2027	4	.
329	2027	5	.
330	2027	6	.
331	2027	7	.
332	2027	8	.
333	2027	9	.
334	2027	10	.
335	2027	11	.
336	2027	12	.
337	2028	1	.
338	2028	2	.
339	2028	3	.
340	2028	4	.
341	2028	5	.
342	2028	6	.
343	2028	7	.

INDIANA MICHIGAN POWER COMPANY
MICHIGAN SERVICE AREA
MANUFACTURING ENERGY SALES
ENDOGENOUS VARIABLES

Obs	year	month	ei_imm
344	2028	8	.
345	2028	9	.
346	2028	10	.
347	2028	11	.
348	2028	12	.
349	2029	1	.
350	2029	2	.
351	2029	3	.
352	2029	4	.
353	2029	5	.
354	2029	6	.
355	2029	7	.
356	2029	8	.
357	2029	9	.
358	2029	10	.
359	2029	11	.
360	2029	12	.
361	2030	1	.
362	2030	2	.
363	2030	3	.
364	2030	4	.
365	2030	5	.
366	2030	6	.
367	2030	7	.
368	2030	8	.
369	2030	9	.
370	2030	10	.
371	2030	11	.
372	2030	12	.
373	2031	1	.
374	2031	2	.
375	2031	3	.
376	2031	4	.
377	2031	5	.
378	2031	6	.
379	2031	7	.
380	2031	8	.
381	2031	9	.
382	2031	10	.
383	2031	11	.
384	2031	12	.
385	2032	1	.
386	2032	2	.
387	2032	3	.
388	2032	4	.
389	2032	5	.
390	2032	6	.
391	2032	7	.
392	2032	8	.

INDIANA MICHIGAN POWER COMPANY
MICHIGAN SERVICE AREA
MANUFACTURING ENERGY SALES
ENDOGENOUS VARIABLES

Obs	year	month	ei_imm
393	2032	9	.
394	2032	10	.
395	2032	11	.
396	2032	12	.
397	2033	1	.
398	2033	2	.
399	2033	3	.
400	2033	4	.
401	2033	5	.
402	2033	6	.
403	2033	7	.
404	2033	8	.
405	2033	9	.
406	2033	10	.
407	2033	11	.
408	2033	12	.
409	2034	1	.
410	2034	2	.
411	2034	3	.
412	2034	4	.
413	2034	5	.
414	2034	6	.
415	2034	7	.
416	2034	8	.
417	2034	9	.
418	2034	10	.
419	2034	11	.
420	2034	12	.
421	2035	1	.
422	2035	2	.
423	2035	3	.
424	2035	4	.
425	2035	5	.
426	2035	6	.
427	2035	7	.
428	2035	8	.
429	2035	9	.
430	2035	10	.
431	2035	11	.
432	2035	12	.
433	2036	1	.
434	2036	2	.
435	2036	3	.
436	2036	4	.
437	2036	5	.
438	2036	6	.
439	2036	7	.
440	2036	8	.
441	2036	9	.

INDIANA MICHIGAN POWER COMPANY
MICHIGAN SERVICE AREA
MANUFACTURING ENERGY SALES
ENDOGENOUS VARIABLES

Obs	year	month	ei_imm
442	2036	10	.
443	2036	11	.
444	2036	12	.
445	2037	1	.
446	2037	2	.
447	2037	3	.
448	2037	4	.
449	2037	5	.
450	2037	6	.
451	2037	7	.
452	2037	8	.
453	2037	9	.
454	2037	10	.
455	2037	11	.
456	2037	12	.
457	2038	1	.
458	2038	2	.
459	2038	3	.
460	2038	4	.
461	2038	5	.
462	2038	6	.
463	2038	7	.
464	2038	8	.
465	2038	9	.
466	2038	10	.
467	2038	11	.
468	2038	12	.
469	2039	1	.
470	2039	2	.
471	2039	3	.
472	2039	4	.
473	2039	5	.
474	2039	6	.
475	2039	7	.
476	2039	8	.
477	2039	9	.
478	2039	10	.
479	2039	11	.
480	2039	12	.
481	2040	1	.
482	2040	2	.
483	2040	3	.
484	2040	4	.
485	2040	5	.
486	2040	6	.
487	2040	7	.
488	2040	8	.
489	2040	9	.
490	2040	10	.

INDIANA MICHIGAN POWER COMPANY
MICHIGAN SERVICE AREA
MANUFACTURING ENERGY SALES
ENDOGENOUS VARIABLES

Obs	year	month	ei_imm
491	2040	11	.
492	2040	12	.
493	2041	1	.
494	2041	2	.
495	2041	3	.
496	2041	4	.
497	2041	5	.
498	2041	6	.
499	2041	7	.
500	2041	8	.
501	2041	9	.
502	2041	10	.
503	2041	11	.
504	2041	12	.
505	2042	1	.
506	2042	2	.
507	2042	3	.
508	2042	4	.
509	2042	5	.
510	2042	6	.
511	2042	7	.
512	2042	8	.
513	2042	9	.
514	2042	10	.
515	2042	11	.
516	2042	12	.
517	2043	1	.
518	2043	2	.
519	2043	3	.
520	2043	4	.
521	2043	5	.
522	2043	6	.
523	2043	7	.
524	2043	8	.
525	2043	9	.
526	2043	10	.
527	2043	11	.
528	2043	12	.
529	2044	1	.
530	2044	2	.
531	2044	3	.
532	2044	4	.
533	2044	5	.
534	2044	6	.
535	2044	7	.
536	2044	8	.
537	2044	9	.
538	2044	10	.
539	2044	11	.

INDIANA MICHIGAN POWER COMPANY
MICHIGAN SERVICE AREA
MANUFACTURING ENERGY SALES
ENDOGENOUS VARIABLES

Obs	year	month	ei_imm
540	2044	12	.
541	2045	1	.
542	2045	2	.
543	2045	3	.
544	2045	4	.
545	2045	5	.
546	2045	6	.
547	2045	7	.
548	2045	8	.
549	2045	9	.
550	2045	10	.
551	2045	11	.
552	2045	12	.
553	2046	1	.
554	2046	2	.
555	2046	3	.
556	2046	4	.
557	2046	5	.
558	2046	6	.
559	2046	7	.
560	2046	8	.
561	2046	9	.
562	2046	10	.
563	2046	11	.
564	2046	12	.
565	2047	1	.
566	2047	2	.
567	2047	3	.
568	2047	4	.
569	2047	5	.
570	2047	6	.
571	2047	7	.
572	2047	8	.
573	2047	9	.
574	2047	10	.
575	2047	11	.
576	2047	12	.
577	2048	1	.
578	2048	2	.
579	2048	3	.
580	2048	4	.
581	2048	5	.
582	2048	6	.
583	2048	7	.
584	2048	8	.
585	2048	9	.
586	2048	10	.
587	2048	11	.
588	2048	12	.

INDIANA MICHIGAN POWER COMPANY
MICHIGAN SERVICE AREA
MANUFACTURING ENERGY SALES
ENDOGENOUS VARIABLES

Obs	year	month	ei_imm
589	2049	1	.
590	2049	2	.
591	2049	3	.
592	2049	4	.
593	2049	5	.
594	2049	6	.
595	2049	7	.
596	2049	8	.
597	2049	9	.
598	2049	10	.
599	2049	11	.
600	2049	12	.
601	2050	1	.
602	2050	2	.
603	2050	3	.
604	2050	4	.
605	2050	5	.
606	2050	6	.
607	2050	7	.
608	2050	8	.
609	2050	9	.
610	2050	10	.
611	2050	11	.
612	2050	12	.
613	2051	1	.
614	2051	2	.
615	2051	3	.
616	2051	4	.
617	2051	5	.
618	2051	6	.
619	2051	7	.
620	2051	8	.
621	2051	9	.
622	2051	10	.
623	2051	11	.
624	2051	12	.
625	2052	1	.
626	2052	2	.
627	2052	3	.
628	2052	4	.
629	2052	5	.
630	2052	6	.
631	2052	7	.
632	2052	8	.
633	2052	9	.
634	2052	10	.
635	2052	11	.
636	2052	12	.
637	2053	1	.

INDIANA MICHIGAN POWER COMPANY
MICHIGAN SERVICE AREA
MANUFACTURING ENERGY SALES
ENDOGENOUS VARIABLES

Obs	year	month	ei_imm
638	2053	2	.
639	2053	3	.
640	2053	4	.
641	2053	5	.
642	2053	6	.
643	2053	7	.
644	2053	8	.
645	2053	9	.
646	2053	10	.
647	2053	11	.
648	2053	12	.
649	2054	1	.
650	2054	2	.
651	2054	3	.
652	2054	4	.
653	2054	5	.
654	2054	6	.
655	2054	7	.
656	2054	8	.
657	2054	9	.
658	2054	10	.
659	2054	11	.
660	2054	12	.
661	2055	1	.
662	2055	2	.
663	2055	3	.
664	2055	4	.
665	2055	5	.
666	2055	6	.
667	2055	7	.
668	2055	8	.
669	2055	9	.
670	2055	10	.
671	2055	11	.
672	2055	12	.
673	2056	1	.
674	2056	2	.
675	2056	3	.
676	2056	4	.
677	2056	5	.
678	2056	6	.
679	2056	7	.
680	2056	8	.
681	2056	9	.
682	2056	10	.
683	2056	11	.
684	2056	12	.
685	2057	1	.
686	2057	2	.

INDIANA MICHIGAN POWER COMPANY
MICHIGAN SERVICE AREA
MANUFACTURING ENERGY SALES
ENDOGENOUS VARIABLES

Obs	year	month	ei_imm
687	2057	3	.
688	2057	4	.
689	2057	5	.
690	2057	6	.
691	2057	7	.
692	2057	8	.
693	2057	9	.
694	2057	10	.
695	2057	11	.
696	2057	12	.

INDIANA MICHIGAN POWER COMPANY
MICHIGAN SERVICE AREA
MANUFACTURING ENERGY SALES
EXOGENOUS VARIABLES

The MEANS Procedure

Variable	Label	Mean
year	year	2028.50
month	month	6.5000000
gpi_mi	MICHIGAN REAL NATURAL GAS PRICE INDUSTRIAL	11.2400535
LM_IMM	SERVICE AREA MANUFACTURING EMPLOYMENT	24.7047240
grpmf_imm	SERVICE AREA GROSS REGIONAL PRODUCT-MANUF.	4102.31
d14on	BINARY VARIABLE-2014 ON	0.7586207
d1	JANUARY	0.0833333
d2	FEBRUARY	0.0833333
d3	MARCH	0.0833333
d4	APRIL	0.0833333
d5	MAY	0.0833333
d6	JUNE	0.0833333
d7	JULY	0.0833333
d8	AUGUST	0.0833333
d9	SEPTEMBER	0.0833333
d10	OCTOBER	0.0833333
d11	NOVEMBER	0.0833333
d033qon	BINARY VARIABLE-JULY 2003 ON	0.9396552
d052qon	BINARY VARIABLE-APRIL 2005 ON	0.9094828
d074on	BINARY VARIABLE-APRIL 2007 ON	0.8663793
d10on	BINARY VARIABLE-2010 ON	0.8275862
feb16on	BINARY VARIABLE-FEBRUARY 2016 ON	0.7227011

INDIANA MICHIGAN POWER COMPANY
MICHIGAN SERVICE AREA
MANUFACTURING ENERGY SALES
EXOGENOUS VARIABLES

Obs	year	month	gpi_mi	LM_IMM	grpmf_imm	d14on	d01	d02	d03	d04	d05	d06	d07	d08	d09	d10	d11	d03qon	d02qon	d074on	d10on	feb16on	PRICE
1	2000	1	5.05034	39.122	3468.19	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
2	2000	2	5.03898	39.128	3458.02	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
3	2000	3	5.02911	39.105	3442.37	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
4	2000	4	5.01994	39.048	3421.19	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
5	2000	5	5.01053	38.956	3394.86	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	CONFID.
6	2000	6	5.00020	38.823	3363.70	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	CONFID.
7	2000	7	4.98953	38.645	3327.91	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	CONDID.
8	2000	8	4.97934	38.422	3287.58	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	CONFID.
9	2000	9	4.97053	38.166	3245.17	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	CONFID.
10	2000	10	4.96239	37.881	3201.24	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	CONFID.
11	2000	11	4.95404	37.574	3157.01	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	CONFID.
12	2000	12	4.94472	37.252	3113.68	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
13	2001	1	5.50333	36.915	3071.78	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
14	2001	2	5.55369	36.593	3035.05	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
15	2001	3	5.61530	36.276	3002.57	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
16	2001	4	5.52603	35.959	2974.50	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
17	2001	5	7.21990	35.659	2953.30	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	CONFID.
18	2001	6	7.22364	35.384	2940.10	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	CONFID.
19	2001	7	6.65517	35.140	2936.11	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	CONDID.
20	2001	8	6.54982	34.926	2941.42	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	CONFID.
21	2001	9	6.46750	34.745	2954.67	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	CONFID.
22	2001	10	6.42163	34.586	2974.63	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	CONFID.
23	2001	11	6.43895	34.445	2999.94	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	CONFID.
24	2001	12	6.39606	34.318	3029.35	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
25	2002	1	6.15502	34.198	3062.08	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
26	2002	2	6.23656	34.088	3094.63	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
27	2002	3	6.19162	33.975	3127.38	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
28	2002	4	5.98405	33.855	3160.19	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
29	2002	5	6.12349	33.725	3190.63	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	CONFID.
30	2002	6	6.33763	33.578	3217.44	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	CONFID.
31	2002	7	7.72359	33.413	3239.34	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	CONDID.
32	2002	8	6.70190	33.224	3256.27	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	CONFID.
33	2002	9	6.46874	33.023	3268.29	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	CONFID.
34	2002	10	6.36999	32.816	3276.42	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	CONFID.
35	2002	11	6.18534	32.603	3281.42	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	CONFID.
36	2002	12	4.53498	32.396	3283.97	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
37	2003	1	5.80808	32.193	3284.82	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
38	2003	2	5.97123	32.011	3284.68	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
39	2003	3	6.46557	31.849	3284.27	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
40	2003	4	6.64353	31.707	3284.26	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
41	2003	5	7.13504	31.595	3285.39	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	CONFID.

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Obs	year	month	gpi_mi	LM_IMM	grpmf_imm	d14on	d01	d02	d03	d04	d05	d06	d07	d08	d09	d10	d11	d03qon	d05qon	d07on	d10on	feb16on	PRICE
42	2003	6	7.8999	31.520	3288.36	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	CONFID.
43	2003	7	7.7020	31.487	3293.87	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	CONDID.
44	2003	8	8.1331	31.494	3302.22	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	CONFID.
45	2003	9	7.9498	31.537	3312.69	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	CONFID.
46	2003	10	7.2260	31.608	3324.92	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	CONFID.
47	2003	11	6.5036	31.700	3338.42	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	CONFID.
48	2003	12	7.7007	31.805	3352.69	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	CONFID.
49	2004	1	7.7524	31.918	3367.50	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	CONFID.
50	2004	2	7.9098	32.026	3381.63	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	CONFID.
51	2004	3	7.5180	32.127	3395.09	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	CONFID.
52	2004	4	7.4489	32.214	3407.62	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	CONFID.
53	2004	5	7.5479	32.280	3418.49	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	CONFID.
54	2004	6	8.7474	32.316	3427.23	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	CONFID.
55	2004	7	9.3194	32.317	3433.35	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	CONDID.
56	2004	8	9.1942	32.278	3436.82	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	CONFID.
57	2004	9	8.9496	32.209	3437.82	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	CONFID.
58	2004	10	8.6687	32.112	3436.73	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	CONFID.
59	2004	11	9.1700	31.992	3433.91	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	CONFID.
60	2004	12	9.0054	31.853	3429.67	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	CONFID.
61	2005	1	8.8076	31.699	3424.24	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	CONFID.
62	2005	2	8.3937	31.544	3418.35	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	CONFID.
63	2005	3	8.4802	31.388	3412.04	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	CONFID.
64	2005	4	9.4071	31.225	3405.40	0	0	0	0	1	0	0	0	0	0	0	0	1	1	0	0	0	CONFID.
65	2005	5	9.4410	31.071	3398.96	0	0	0	0	0	1	0	0	0	0	0	0	1	1	0	0	0	CONFID.
66	2005	6	10.2606	30.927	3393.05	0	0	0	0	0	0	1	0	0	0	0	0	1	1	0	0	0	CONFID.
67	2005	7	10.4549	30.798	3388.00	0	0	0	0	0	0	0	1	0	0	0	0	1	1	0	0	0	CONDID.
68	2005	8	11.0353	30.686	3384.03	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0	0	CONFID.
69	2005	9	11.2534	30.592	3381.50	0	0	0	0	0	0	0	0	0	1	0	0	1	1	0	0	0	CONFID.
70	2005	10	12.8219	30.513	3380.59	0	0	0	0	0	0	0	0	0	0	1	0	1	1	0	0	0	CONFID.
71	2005	11	12.2836	30.447	3381.49	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	CONFID.
72	2005	12	12.1098	30.393	3384.46	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	CONFID.
73	2006	1	11.5536	30.348	3389.82	0	1	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	CONFID.
74	2006	2	10.9098	30.313	3397.31	0	0	1	0	0	0	0	0	0	0	0	0	1	1	0	0	0	CONFID.
75	2006	3	10.9608	30.284	3407.42	0	0	0	1	0	0	0	0	0	0	0	0	1	1	0	0	0	CONFID.
76	2006	4	11.3431	30.260	3420.75	0	0	0	0	1	0	0	0	0	0	0	0	1	1	0	0	0	CONFID.
77	2006	5	11.5425	30.239	3437.28	0	0	0	0	0	1	0	0	0	0	0	0	1	1	0	0	0	CONFID.
78	2006	6	10.8519	30.221	3457.23	0	0	0	0	0	0	1	0	0	0	0	0	1	1	0	0	0	CONFID.
79	2006	7	11.5303	30.202	3480.80	0	0	0	0	0	0	0	1	0	0	0	0	1	1	0	0	0	CONDID.
80	2006	8	11.2436	30.184	3508.21	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0	0	CONFID.
81	2006	9	11.2684	30.166	3537.86	0	0	0	0	0	0	0	0	0	1	0	0	1	1	0	0	0	CONFID.
82	2006	10	11.0639	30.148	3569.44	0	0	0	0	0	0	0	0	0	0	1	0	1	1	0	0	0	CONFID.

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Obs	year	month	gpi_mi	LM_IMM	grpmf_imm	d14on	d01	d02	d03	d04	d05	d06	d07	d08	d09	d10	d11	d03qon	d05qon	d07on	d10on	feb16on	PRICE
83	2006	11	10.4854	30.131	3602.17	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	CONFID.
84	2006	12	10.2431	30.118	3635.30	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	CONFID.
85	2007	1	10.1673	30.105	3668.62	0	1	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	CONFID.
86	2007	2	10.0859	30.095	3699.29	0	0	1	0	0	0	0	0	0	0	0	0	1	1	0	0	0	CONFID.
87	2007	3	10.2876	30.089	3728.22	0	0	0	1	0	0	0	0	0	0	0	0	1	1	0	0	0	CONFID.
88	2007	4	10.3019	30.085	3755.61	0	0	0	0	1	0	0	0	0	0	0	0	1	1	0	0	0	CONFID.
89	2007	5	10.5806	30.087	3779.68	0	0	0	0	0	1	0	0	0	0	0	0	1	1	0	0	0	CONFID.
90	2007	6	10.6530	30.090	3799.69	0	0	0	0	0	0	1	0	0	0	0	0	1	1	0	0	0	CONFID.
91	2007	7	10.8000	30.100	3814.87	0	0	0	0	0	0	0	1	0	0	0	0	1	1	0	0	0	CONDID.
92	2007	8	10.7412	30.110	3824.72	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0	0	CONFID.
93	2007	9	10.4674	30.116	3828.37	0	0	0	0	0	0	0	0	0	1	0	0	1	1	0	0	0	CONFID.
94	2007	10	10.1078	30.110	3825.46	0	0	0	0	0	0	0	0	0	0	1	0	1	1	1	0	0	CONFID.
95	2007	11	10.1024	30.084	3815.54	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	0	0	CONFID.
96	2007	12	10.0850	30.032	3798.00	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	CONFID.
97	2008	1	10.2072	29.945	3771.89	0	1	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	CONFID.
98	2008	2	10.2477	29.822	3738.18	0	0	1	0	0	0	0	0	0	0	0	0	1	1	1	0	0	CONFID.
99	2008	3	10.3777	29.653	3695.51	0	0	0	1	0	0	0	0	0	0	0	0	1	1	1	0	0	CONFID.
100	2008	4	11.3388	29.429	3642.62	0	0	0	0	1	0	0	0	0	0	0	0	1	1	1	0	0	CONFID.
101	2008	5	11.8740	29.142	3579.49	0	0	0	0	0	1	0	0	0	0	0	0	1	1	1	0	0	CONFID.
102	2008	6	12.2351	28.788	3505.69	0	0	0	0	0	0	1	0	0	0	0	0	1	1	1	0	0	CONFID.
103	2008	7	12.8430	28.359	3420.72	0	0	0	0	0	0	0	1	0	0	0	0	1	1	1	0	0	CONDID.
104	2008	8	13.1053	27.853	3324.29	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	0	0	CONFID.
105	2008	9	12.1170	27.299	3222.46	0	0	0	0	0	0	0	0	0	1	0	0	1	1	1	0	0	CONFID.
106	2008	10	11.0886	26.706	3116.83	0	0	0	0	0	0	0	0	0	0	1	0	1	1	1	0	0	CONFID.
107	2008	11	11.0336	26.089	3010.52	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	0	0	CONFID.
108	2008	12	10.6401	25.464	2906.66	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	CONFID.
109	2009	1	10.5414	24.837	2806.77	0	1	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	CONFID.
110	2009	2	10.6137	24.263	2719.90	0	0	1	0	0	0	0	0	0	0	0	0	1	1	1	0	0	CONFID.
111	2009	3	10.6374	23.726	2644.15	0	0	0	1	0	0	0	0	0	0	0	0	1	1	1	0	0	CONFID.
112	2009	4	9.5153	23.224	2580.18	0	0	0	0	1	0	0	0	0	0	0	0	1	1	1	0	0	CONFID.
113	2009	5	9.4255	22.793	2534.10	0	0	0	0	0	1	0	0	0	0	0	0	1	1	1	0	0	CONFID.
114	2009	6	9.8187	22.447	2508.81	0	0	0	0	0	0	1	0	0	0	0	0	1	1	1	0	0	CONFID.
115	2009	7	10.0076	22.201	2507.41	0	0	0	0	0	0	0	1	0	0	0	0	1	1	1	0	0	CONDID.
116	2009	8	9.9691	22.058	2530.21	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	0	0	CONFID.
117	2009	9	9.4192	22.007	2573.18	0	0	0	0	0	0	0	0	0	1	0	0	1	1	1	0	0	CONFID.
118	2009	10	9.3941	22.036	2633.07	0	0	0	0	0	0	0	0	0	0	1	0	1	1	1	0	0	CONFID.
119	2009	11	9.8858	22.128	2706.14	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	0	0	CONFID.
120	2009	12	9.7007	22.272	2788.93	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	CONFID.
121	2010	1	9.9583	22.457	2879.27	0	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	0	CONFID.
122	2010	2	10.1184	22.658	2967.66	0	0	1	0	0	0	0	0	0	0	0	0	1	1	1	1	0	CONFID.
123	2010	3	9.9265	22.873	3055.09	0	0	0	1	0	0	0	0	0	0	0	0	1	1	1	1	0	CONFID.

Obs	year	month	gpi_mi	LM_IMM	grpmf_imm	d14on	d01	d02	d03	d04	d05	d06	d07	d08	d09	d10	d11	d03qon	d05qon	d07on	d10on	feb16on	PRICE
124	2010	4	9.43896	23.092	3141.09	0	0	0	0	1	0	0	0	0	0	0	0	1	1	1	1	0	CONFID.
125	2010	5	9.39250	23.299	3218.98	0	0	0	0	0	1	0	0	0	0	0	0	1	1	1	1	0	CONFID.
126	2010	6	9.53823	23.480	3285.32	0	0	0	0	0	0	1	0	0	0	0	0	1	1	1	1	0	CONFID.
127	2010	7	9.93541	23.622	3336.56	0	0	0	0	0	0	0	1	0	0	0	0	1	1	1	1	0	CONDID.
128	2010	8	9.91324	23.723	3372.27	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	0	CONFID.
129	2010	9	9.66783	23.782	3392.87	0	0	0	0	0	0	0	0	0	1	0	0	1	1	1	1	0	CONFID.
130	2010	10	9.10962	23.811	3400.79	0	0	0	0	0	0	0	0	0	0	1	0	1	1	1	1	0	CONFID.
131	2010	11	9.02966	23.811	3398.00	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	0	CONFID.
132	2010	12	8.94275	23.791	3386.22	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	0	CONFID.
133	2011	1	8.85701	23.755	3367.00	0	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	0	CONFID.
134	2011	2	8.79081	23.711	3343.68	0	0	1	0	0	0	0	0	0	0	0	0	1	1	1	1	0	CONFID.
135	2011	3	8.55669	23.662	3317.06	0	0	0	1	0	0	0	0	0	0	0	0	1	1	1	1	0	CONFID.
136	2011	4	8.34046	23.612	3287.90	0	0	0	0	1	0	0	0	0	0	0	0	1	1	1	1	0	CONFID.
137	2011	5	8.48141	23.570	3258.88	0	0	0	0	0	1	0	0	0	0	0	0	1	1	1	1	0	CONFID.
138	2011	6	8.75500	23.539	3231.82	0	0	0	0	0	0	1	0	0	0	0	0	1	1	1	1	0	CONFID.
139	2011	7	8.69629	23.525	3208.50	0	0	0	0	0	0	0	1	0	0	0	0	1	1	1	1	0	CONDID.
140	2011	8	8.52339	23.533	3189.49	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	0	CONFID.
141	2011	9	8.34909	23.555	3175.30	0	0	0	0	0	0	0	0	0	1	0	0	1	1	1	1	0	CONFID.
142	2011	10	7.90310	23.593	3165.40	0	0	0	0	0	0	0	0	0	0	1	0	1	1	1	1	0	CONFID.
143	2011	11	7.96892	23.643	3159.56	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	0	CONFID.
144	2011	12	7.63981	23.702	3157.59	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	0	CONFID.
145	2012	1	7.84156	23.771	3159.33	0	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	0	CONFID.
146	2012	2	7.68268	23.839	3164.38	0	0	1	0	0	0	0	0	0	0	0	0	1	1	1	1	0	CONFID.
147	2012	3	7.33015	23.909	3172.61	0	0	0	1	0	0	0	0	0	0	0	0	1	1	1	1	0	CONFID.
148	2012	4	7.00190	23.981	3183.96	0	0	0	0	1	0	0	0	0	0	0	0	1	1	1	1	0	CONFID.
149	2012	5	7.08381	24.049	3198.15	0	0	0	0	0	1	0	0	0	0	0	0	1	1	1	1	0	CONFID.
150	2012	6	7.42043	24.110	3214.95	0	0	0	0	0	0	1	0	0	0	0	0	1	1	1	1	0	CONFID.
151	2012	7	7.32281	24.163	3234.17	0	0	0	0	0	0	0	1	0	0	0	0	1	1	1	1	0	CONDID.
152	2012	8	7.53573	24.209	3255.89	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	0	CONFID.
153	2012	9	7.13556	24.249	3279.05	0	0	0	0	0	0	0	0	0	1	0	0	1	1	1	1	0	CONFID.
154	2012	10	7.65387	24.284	3303.67	0	0	0	0	0	0	0	0	0	0	1	0	1	1	1	1	0	CONFID.
155	2012	11	7.03929	24.320	3329.36	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	0	CONFID.
156	2012	12	7.04933	24.360	3355.80	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	0	CONFID.
157	2013	1	7.04875	24.406	3383.06	0	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	0	CONFID.
158	2013	2	6.98080	24.458	3409.05	0	0	1	0	0	0	0	0	0	0	0	0	1	1	1	1	0	CONFID.
159	2013	3	6.67820	24.521	3434.75	0	0	0	1	0	0	0	0	0	0	0	0	1	1	1	1	0	CONFID.
160	2013	4	6.83072	24.600	3460.70	0	0	0	0	1	0	0	0	0	0	0	0	1	1	1	1	0	CONFID.
161	2013	5	7.37567	24.697	3485.65	0	0	0	0	0	1	0	0	0	0	0	0	1	1	1	1	0	CONFID.
162	2013	6	7.40362	24.812	3509.27	0	0	0	0	0	0	1	0	0	0	0	0	1	1	1	1	0	CONFID.
163	2013	7	7.60540	24.951	3531.21	0	0	0	0	0	0	0	1	0	0	0	0	1	1	1	1	0	CONDID.
164	2013	8	6.96151	25.115	3551.67	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	0	CONFID.

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EXOGENOUS VARIABLES

Obs	year	month	gpi_mi	LM_IMM	grpmf_imm	d14on	d01	d02	d03	d04	d05	d06	d07	d08	d09	d10	d11	d03qon	d05qon	d07on	d10on	feb16on	PRICE
165	2013	9	7.07416	25.293	3570.08	0	0	0	0	0	0	0	0	0	1	0	0	1	1	1	1	0	CONFID.
166	2013	10	6.60166	25.485	3586.87	0	0	0	0	0	0	0	0	0	0	1	0	1	1	1	1	0	CONFID.
167	2013	11	6.56182	25.686	3602.18	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	0	CONFID.
168	2013	12	6.55359	25.888	3616.10	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	0	CONFID.
169	2014	1	6.88640	26.096	3628.95	1	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	0	CONFID.
170	2014	2	7.95564	26.287	3640.07	1	0	1	0	0	0	0	0	0	0	0	0	1	1	1	1	0	CONFID.
171	2014	3	8.60151	26.470	3650.19	1	0	0	1	0	0	0	0	0	0	0	0	1	1	1	1	0	CONFID.
172	2014	4	7.20012	26.643	3659.73	1	0	0	0	1	0	0	0	0	0	0	0	1	1	1	1	0	CONFID.
173	2014	5	7.74540	26.800	3668.42	1	0	0	0	0	1	0	0	0	0	0	0	1	1	1	1	0	CONFID.
174	2014	6	7.84654	26.934	3676.40	1	0	0	0	0	0	1	0	0	0	0	0	1	1	1	1	0	CONFID.
175	2014	7	8.28657	27.038	3683.75	1	0	0	0	0	0	0	1	0	0	0	0	1	1	1	1	0	CONDID.
176	2014	8	7.79600	27.117	3690.60	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	0	CONFID.
177	2014	9	7.66554	27.168	3696.68	1	0	0	0	0	0	0	0	0	1	0	0	1	1	1	1	0	CONFID.
178	2014	10	7.29896	27.197	3702.03	1	0	0	0	0	0	0	0	0	0	1	0	1	1	1	1	0	CONFID.
179	2014	11	6.98420	27.207	3706.58	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	0	CONFID.
180	2014	12	7.12377	27.202	3710.26	1	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	0	CONFID.
181	2015	1	6.79077	27.184	3713.04	1	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	0	CONFID.
182	2015	2	6.71104	27.160	3714.72	1	0	1	0	0	0	0	0	0	0	0	0	1	1	1	1	0	CONFID.
183	2015	3	6.43086	27.130	3715.38	1	0	0	1	0	0	0	0	0	0	0	0	1	1	1	1	0	CONFID.
184	2015	4	5.94582	27.097	3714.94	1	0	0	0	1	0	0	0	0	0	0	0	1	1	1	1	0	CONFID.
185	2015	5	6.29549	27.067	3713.28	1	0	0	0	0	1	0	0	0	0	0	0	1	1	1	1	0	CONFID.
186	2015	6	6.46831	27.039	3710.35	1	0	0	0	0	0	1	0	0	0	0	0	1	1	1	1	0	CONFID.
187	2015	7	6.14018	27.021	3706.06	1	0	0	0	0	0	0	1	0	0	0	0	1	1	1	1	0	CONDID.
188	2015	8	6.69084	27.010	3700.42	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	0	CONFID.
189	2015	9	6.43109	27.011	3693.84	1	0	0	0	0	0	0	0	0	1	0	0	1	1	1	1	0	CONFID.
190	2015	10	6.02959	27.016	3686.50	1	0	0	0	0	0	0	0	0	0	1	0	1	1	1	1	0	CONFID.
191	2015	11	5.48807	27.031	3678.65	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	0	CONFID.
192	2015	12	5.51167	27.048	3670.55	1	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	0	CONFID.
193	2016	1	5.45814	27.072	3662.31	1	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	0	CONFID.
194	2016	2	5.60832	27.098	3654.58	1	0	1	0	0	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
195	2016	3	5.30171	27.129	3647.35	1	0	0	1	0	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
196	2016	4	5.25774	27.160	3640.75	1	0	0	0	1	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
197	2016	5	5.44319	27.193	3635.17	1	0	0	0	0	1	0	0	0	0	0	0	1	1	1	1	1	CONFID.
198	2016	6	5.65331	27.225	3630.84	1	0	0	0	0	0	1	0	0	0	0	0	1	1	1	1	1	CONFID.
199	2016	7	6.02791	27.256	3628.02	1	0	0	0	0	0	0	1	0	0	0	0	1	1	1	1	1	CONDID.
200	2016	8	5.66481	27.287	3626.66	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	CONFID.
201	2016	9	5.70384	27.313	3626.55	1	0	0	0	0	0	0	0	0	1	0	0	1	1	1	1	1	CONFID.
202	2016	10	5.74889	27.338	3627.36	1	0	0	0	0	0	0	0	0	0	1	0	1	1	1	1	1	CONFID.
203	2016	11	5.21068	27.359	3628.78	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	CONFID.
204	2016	12	5.27525	27.376	3630.52	1	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
205	2017	1	5.38781	27.387	3632.31	1	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.

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EXOGENOUS VARIABLES

Obs	year	month	gpi_mi	LM_IMM	grpmf_imm	d14on	d01	d02	d03	d04	d05	d06	d07	d08	d09	d10	d11	d03qon	d02qon	d074on	d10on	feb16on	PRICE
206	2017	2	5.59584	27.392	3633.75	1	0	1	0	0	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
207	2017	3	5.48802	27.394	3634.66	1	0	0	1	0	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
208	2017	4	5.68852	27.388	3634.76	1	0	0	0	1	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
209	2017	5	5.96176	27.374	3633.70	1	0	0	0	0	1	0	0	0	0	0	0	1	1	1	1	1	CONFID.
210	2017	6	5.98958	27.354	3631.20	1	0	0	0	0	0	1	0	0	0	0	0	1	1	1	1	1	CONFID.
211	2017	7	6.00562	27.324	3626.98	1	0	0	0	0	0	0	1	0	0	0	0	1	1	1	1	1	CONDID.
212	2017	8	6.27948	27.288	3620.96	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	CONFID.
213	2017	9	6.40430	27.244	3613.73	1	0	0	0	0	0	0	0	0	1	0	0	1	1	1	1	1	CONFID.
214	2017	10	5.55163	27.199	3605.59	1	0	0	0	0	0	0	0	0	0	1	0	1	1	1	1	1	CONFID.
215	2017	11	5.48580	27.154	3596.97	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	CONFID.
216	2017	12	5.17318	27.111	3588.25	1	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
217	2018	1	5.23706	27.071	3579.73	1	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
218	2018	2	5.39951	27.040	3572.31	1	0	1	0	0	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
219	2018	3	5.38449	27.018	3565.96	1	0	0	1	0	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
220	2018	4	5.30436	27.005	3560.87	1	0	0	0	1	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
221	2018	5	5.63542	27.008	3557.73	1	0	0	0	0	1	0	0	0	0	0	0	1	1	1	1	1	CONFID.
222	2018	6	6.06041	27.025	3556.91	1	0	0	0	0	0	1	0	0	0	0	0	1	1	1	1	1	CONFID.
223	2018	7	5.55547	27.061	3558.80	1	0	0	0	0	0	0	1	0	0	0	0	1	1	1	1	1	CONDID.
224	2018	8	6.28052	27.115	3563.39	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	CONFID.
225	2018	9	5.89154	27.180	3569.91	1	0	0	0	0	0	0	0	0	1	0	0	1	1	1	1	1	CONFID.
226	2018	10	5.57522	27.252	3577.78	1	0	0	0	0	0	0	0	0	0	1	0	1	1	1	1	1	CONFID.
227	2018	11	5.30670	27.323	3586.33	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	CONFID.
228	2018	12	5.50011	27.388	3594.91	1	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
229	2019	1	5.28087	27.443	3602.98	1	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
230	2019	2	5.37383	27.481	3609.46	1	0	1	0	0	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
231	2019	3	5.21148	27.497	3614.10	1	0	0	1	0	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
232	2019	4	5.47583	27.486	3616.41	1	0	0	0	1	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
233	2019	5	5.71289	27.441	3615.48	1	0	0	0	0	1	0	0	0	0	0	0	1	1	1	1	1	CONFID.
234	2019	6	5.68538	27.359	3610.71	1	0	0	0	0	0	1	0	0	0	0	0	1	1	1	1	1	CONFID.
235	2019	7	6.12327	27.232	3601.45	1	0	0	0	0	0	0	1	0	0	0	0	1	1	1	1	1	CONDID.
236	2019	8	6.18070	27.058	3587.50	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	CONFID.
237	2019	9	6.02601	26.854	3570.05	1	0	0	0	0	0	0	0	0	1	0	0	1	1	1	1	1	CONFID.
238	2019	10	5.33790	26.621	3549.65	1	0	0	0	0	0	0	0	0	0	1	0	1	1	1	1	1	CONFID.
239	2019	11	5.14345	26.373	3527.14	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	CONFID.
240	2019	12	5.21954	26.113	3503.27	1	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
241	2020	1	4.97093	25.850	3478.46	1	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
242	2020	2	4.97901	25.605	3454.68	1	0	1	0	0	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
243	2020	3	5.07021	25.374	3431.91	1	0	0	1	0	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
244	2020	4	5.46699	25.166	3410.53	1	0	0	0	1	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
245	2020	5	5.39353	24.993	3391.76	1	0	0	0	0	1	0	0	0	0	0	0	1	1	1	1	1	CONFID.
246	2020	6	6.00898	24.861	3376.36	1	0	0	0	0	0	1	0	0	0	0	0	1	1	1	1	1	CONFID.

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Obs	year	month	gpi_mi	LM_IMM	grpmf_imm	d14on	d01	d02	d03	d04	d05	d06	d07	d08	d09	d10	d11	d03qon	d05qon	d07on	d10on	feb16on	PRICE
247	2020	7	5.51562	24.781	3365.10	1	0	0	0	0	0	0	1	0	0	0	0	1	1	1	1	1	CONDID.
248	2020	8	6.03865	24.752	3358.11	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	CONFID.
249	2020	9	5.20625	24.771	3355.27	1	0	0	0	0	0	0	0	0	1	0	0	1	1	1	1	1	CONFID.
250	2020	10	5.19046	24.829	3356.10	1	0	0	0	0	0	0	0	0	0	1	0	1	1	1	1	1	CONFID.
251	2020	11	5.01106	24.920	3360.17	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	CONFID.
252	2020	12	5.09390	25.037	3367.14	1	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
253	2021	1	6.37693	25.174	3376.79	1	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
254	2021	2	6.37720	25.317	3387.99	1	0	1	0	0	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
255	2021	3	6.46841	25.466	3400.87	1	0	0	1	0	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
256	2021	4	6.94209	25.619	3415.52	1	0	0	0	1	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
257	2021	5	6.82944	25.766	3431.19	1	0	0	0	0	1	0	0	0	0	0	0	1	1	1	1	1	CONFID.
258	2021	6	7.61241	25.899	3447.49	1	0	0	0	0	0	1	0	0	0	0	0	1	1	1	1	1	CONFID.
259	2021	7	7.00315	26.010	3464.06	1	0	0	0	0	0	0	1	0	0	0	0	1	1	1	1	1	CONDID.
260	2021	8	7.67849	26.100	3480.90	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	CONFID.
261	2021	9	6.61316	26.170	3497.39	1	0	0	0	0	0	0	0	0	1	0	0	1	1	1	1	1	CONFID.
262	2021	10	6.57557	26.220	3513.67	1	0	0	0	0	0	0	0	0	0	1	0	1	1	1	1	1	CONFID.
263	2021	11	6.33167	26.256	3529.66	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	CONFID.
264	2021	12	6.42742	26.278	3545.26	1	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
265	2022	1	6.56960	26.291	3560.61	1	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
266	2022	2	6.56924	26.296	3574.65	1	0	1	0	0	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
267	2022	3	6.66128	26.296	3588.04	1	0	0	1	0	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
268	2022	4	7.14635	26.295	3601.13	1	0	0	0	1	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
269	2022	5	7.02929	26.292	3613.33	1	0	0	0	0	1	0	0	0	0	0	0	1	1	1	1	1	CONFID.
270	2022	6	7.83739	26.293	3624.55	1	0	0	0	0	0	1	0	0	0	0	0	1	1	1	1	1	CONFID.
271	2022	7	7.21465	26.297	3634.70	1	0	0	0	0	0	0	1	0	0	0	0	1	1	1	1	1	CONDID.
272	2022	8	7.91663	26.310	3643.91	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	CONFID.
273	2022	9	6.82336	26.326	3651.95	1	0	0	0	0	0	0	0	0	1	0	0	1	1	1	1	1	CONFID.
274	2022	10	6.78871	26.348	3659.06	1	0	0	0	0	0	0	0	0	0	1	0	1	1	1	1	1	CONFID.
275	2022	11	6.53942	26.369	3665.34	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	CONFID.
276	2022	12	6.63908	26.393	3670.85	1	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
277	2023	1	6.78550	26.418	3675.76	1	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
278	2023	2	6.78434	26.440	3679.87	1	0	1	0	0	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
279	2023	3	6.87881	26.461	3683.48	1	0	0	1	0	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
280	2023	4	7.37908	26.479	3686.81	1	0	0	0	1	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
281	2023	5	7.25708	26.493	3689.78	1	0	0	0	0	1	0	0	0	0	0	0	1	1	1	1	1	CONFID.
282	2023	6	8.08925	26.500	3692.48	1	0	0	0	0	0	1	0	0	0	0	0	1	1	1	1	1	CONFID.
283	2023	7	7.44421	26.502	3695.00	1	0	0	0	0	0	0	1	0	0	0	0	1	1	1	1	1	CONDID.
284	2023	8	8.16636	26.497	3697.42	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	CONFID.
285	2023	9	7.03751	26.484	3699.68	1	0	0	0	0	0	0	0	0	1	0	0	1	1	1	1	1	CONFID.
286	2023	10	7.00122	26.467	3701.83	1	0	0	0	0	0	0	0	0	0	1	0	1	1	1	1	1	CONFID.
287	2023	11	6.74374	26.444	3703.90	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	CONFID.

INDIANA MICHIGAN POWER COMPANY
MICHIGAN SERVICE AREA
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EXOGENOUS VARIABLES

Obs	year	month	gpi_mi	LM_IMM	grpmf_imm	d14on	d01	d02	d03	d04	d05	d06	d07	d08	d09	d10	d11	d03qon	d05qon	d074on	d10on	feb16on	PRICE
288	2023	12	6.84599	26.418	3705.89	1	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
289	2024	1	6.99638	26.388	3707.85	1	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
290	2024	2	6.99455	26.358	3709.70	1	0	1	0	0	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
291	2024	3	7.09155	26.326	3711.52	1	0	0	1	0	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
292	2024	4	7.60708	26.292	3713.35	1	0	0	0	1	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
293	2024	5	7.48063	26.257	3715.17	1	0	0	0	0	1	0	0	0	0	0	0	1	1	1	1	1	CONFID.
294	2024	6	8.33687	26.224	3717.00	1	0	0	0	0	0	1	0	0	0	0	0	1	1	1	1	1	CONFID.
295	2024	7	7.67021	26.193	3718.86	1	0	0	0	0	0	0	1	0	0	0	0	1	1	1	1	1	CONDID.
296	2024	8	8.41223	26.162	3720.77	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	CONFID.
297	2024	9	7.24809	26.134	3722.66	1	0	0	0	0	0	0	0	0	1	0	0	1	1	1	1	1	CONFID.
298	2024	10	7.21001	26.106	3724.54	1	0	0	0	0	0	0	0	0	0	1	0	1	1	1	1	1	CONFID.
299	2024	11	6.94484	26.080	3726.40	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	CONFID.
300	2024	12	7.05082	26.055	3728.23	1	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
301	2025	1	7.20689	26.031	3730.03	1	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
302	2025	2	7.20652	26.008	3731.69	1	0	1	0	0	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
303	2025	3	7.30794	25.987	3733.27	1	0	0	1	0	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
304	2025	4	7.84061	25.965	3734.81	1	0	0	0	1	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
305	2025	5	7.71192	25.943	3736.24	1	0	0	0	0	1	0	0	0	0	0	0	1	1	1	1	1	CONFID.
306	2025	6	8.59691	25.921	3737.56	1	0	0	0	0	0	1	0	0	0	0	0	1	1	1	1	1	CONFID.
307	2025	7	7.91182	25.899	3738.73	1	0	0	0	0	0	0	1	0	0	0	0	1	1	1	1	1	CONDID.
308	2025	8	8.67998	25.875	3739.81	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	CONFID.
309	2025	9	7.48105	25.852	3740.80	1	0	0	0	0	0	0	0	0	1	0	0	1	1	1	1	1	CONFID.
310	2025	10	7.44382	25.830	3741.79	1	0	0	0	0	0	0	0	0	0	1	0	1	1	1	1	1	CONFID.
311	2025	11	7.17177	25.808	3742.82	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	CONFID.
312	2025	12	7.28264	25.785	3743.95	1	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
313	2026	1	7.44511	25.761	3745.27	1	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
314	2026	2	7.44591	25.738	3746.73	1	0	1	0	0	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
315	2026	3	7.55199	25.717	3748.44	1	0	0	1	0	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
316	2026	4	8.10388	25.694	3750.52	1	0	0	0	1	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
317	2026	5	7.97214	25.671	3752.98	1	0	0	0	0	1	0	0	0	0	0	0	1	1	1	1	1	CONFID.
318	2026	6	8.88813	25.648	3755.87	1	0	0	0	0	0	1	0	0	0	0	0	1	1	1	1	1	CONFID.
319	2026	7	8.18070	25.627	3759.25	1	0	0	0	0	0	0	1	0	0	0	0	1	1	1	1	1	CONDID.
320	2026	8	8.97582	25.604	3763.18	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	CONFID.
321	2026	9	7.73675	25.583	3767.50	1	0	0	0	0	0	0	0	0	1	0	0	1	1	1	1	1	CONFID.
322	2026	10	7.69890	25.560	3772.21	1	0	0	0	0	0	0	0	0	0	1	0	1	1	1	1	1	CONFID.
323	2026	11	7.41799	25.539	3777.27	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	CONFID.
324	2026	12	7.53291	25.517	3782.62	1	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
325	2027	1	7.70105	25.496	3788.31	1	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
326	2027	2	7.70188	25.475	3793.91	1	0	1	0	0	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
327	2027	3	7.81158	25.454	3799.65	1	0	0	1	0	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
328	2027	4	8.38243	25.433	3805.68	1	0	0	0	1	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.

INDIANA MICHIGAN POWER COMPANY
MICHIGAN SERVICE AREA
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EXOGENOUS VARIABLES

Obs	year	month	gpi_mi	LM_IMM	grpmf_imm	d14on	d01	d02	d03	d04	d05	d06	d07	d08	d09	d10	d11	d03qon	d05qon	d07on	d10on	feb16on	PRICE
329	2027	5	8.2461	25.411	3811.75	1	0	0	0	0	1	0	0	0	0	0	0	1	1	1	1	1	CONFID.
330	2027	6	9.1936	25.389	3817.83	1	0	0	0	0	0	1	0	0	0	0	0	1	1	1	1	1	CONFID.
331	2027	7	8.4617	25.367	3823.85	1	0	0	0	0	0	0	1	0	0	0	0	1	1	1	1	1	CONDID.
332	2027	8	9.2839	25.345	3829.89	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	CONFID.
333	2027	9	8.0021	25.322	3835.76	1	0	0	0	0	0	0	0	0	1	0	0	1	1	1	1	1	CONFID.
334	2027	10	7.9627	25.300	3841.54	1	0	0	0	0	0	0	0	0	0	1	0	1	1	1	1	1	CONFID.
335	2027	11	7.6721	25.277	3847.25	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	CONFID.
336	2027	12	7.7912	25.254	3852.88	1	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
337	2028	1	7.9655	25.231	3858.52	1	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
338	2028	2	7.9666	25.209	3863.91	1	0	1	0	0	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
339	2028	3	8.0803	25.188	3869.22	1	0	0	1	0	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
340	2028	4	8.6713	25.163	3874.54	1	0	0	0	1	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
341	2028	5	8.5307	25.142	3879.79	1	0	0	0	0	1	0	0	0	0	0	0	1	1	1	1	1	CONFID.
342	2028	6	9.5111	25.120	3884.95	1	0	0	0	0	0	1	0	0	0	0	0	1	1	1	1	1	CONFID.
343	2028	7	8.7542	25.097	3890.05	1	0	0	0	0	0	0	1	0	0	0	0	1	1	1	1	1	CONDID.
344	2028	8	9.6051	25.075	3895.15	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	CONFID.
345	2028	9	8.2793	25.054	3900.09	1	0	0	0	0	0	0	0	0	1	0	0	1	1	1	1	1	CONFID.
346	2028	10	8.2389	25.032	3904.96	1	0	0	0	0	0	0	0	0	0	1	0	1	1	1	1	1	CONFID.
347	2028	11	7.9383	25.011	3909.76	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	CONFID.
348	2028	12	8.0614	24.989	3914.50	1	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
349	2029	1	8.2413	24.968	3919.24	1	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
350	2029	2	8.2423	24.947	3923.69	1	0	1	0	0	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
351	2029	3	8.3598	24.927	3928.08	1	0	0	1	0	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
352	2029	4	8.9708	24.906	3932.55	1	0	0	0	1	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
353	2029	5	8.8250	24.886	3936.97	1	0	0	0	0	1	0	0	0	0	0	0	1	1	1	1	1	CONFID.
354	2029	6	9.8390	24.865	3941.33	1	0	0	0	0	0	1	0	0	0	0	0	1	1	1	1	1	CONFID.
355	2029	7	9.0557	24.844	3945.63	1	0	0	0	0	0	0	1	0	0	0	0	1	1	1	1	1	CONDID.
356	2029	8	9.9356	24.824	3949.95	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	CONFID.
357	2029	9	8.5637	24.803	3954.16	1	0	0	0	0	0	0	0	0	1	0	0	1	1	1	1	1	CONFID.
358	2029	10	8.5215	24.782	3958.36	1	0	0	0	0	0	0	0	0	0	1	0	1	1	1	1	1	CONFID.
359	2029	11	8.2104	24.762	3962.55	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	CONFID.
360	2029	12	8.3376	24.739	3966.76	1	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
361	2030	1	8.5240	24.719	3971.06	1	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
362	2030	2	8.5251	24.700	3975.19	1	0	1	0	0	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
363	2030	3	8.6465	24.680	3979.37	1	0	0	1	0	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
364	2030	4	9.2783	24.660	3983.77	1	0	0	0	1	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
365	2030	5	9.1272	24.638	3988.25	1	0	0	0	0	1	0	0	0	0	0	0	1	1	1	1	1	CONFID.
366	2030	6	10.1757	24.617	3992.84	1	0	0	0	0	0	1	0	0	0	0	0	1	1	1	1	1	CONFID.
367	2030	7	9.3656	24.597	3997.54	1	0	0	0	0	0	0	1	0	0	0	0	1	1	1	1	1	CONDID.
368	2030	8	10.2755	24.577	4002.43	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	CONFID.
369	2030	9	8.8566	24.556	4007.34	1	0	0	0	0	0	0	0	0	1	0	0	1	1	1	1	1	CONFID.

Obs	year	month	gpi_mi	LM_IMM	grpmf_imm	d14on	dd1	dd2	dd3	dd4	dd5	dd6	dd7	dd8	dd9	dd10	dd11	d03qon	d052qon	d074on	d10on	feb16on	PRICE
370	2030	10	8.8128	24.535	4012.33	1	0	0	0	0	0	0	0	0	0	1	0	1	1	1	1	1	CONFID.
371	2030	11	8.4909	24.515	4017.37	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	CONFID.
372	2030	12	8.6223	24.495	4022.44	1	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
373	2031	1	8.8148	24.474	4027.61	1	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
374	2031	2	8.8158	24.455	4032.52	1	0	1	0	0	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
375	2031	3	8.9413	24.433	4037.40	1	0	0	1	0	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
376	2031	4	9.5947	24.413	4042.41	1	0	0	0	1	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
377	2031	5	9.4386	24.392	4047.34	1	0	0	0	0	1	0	0	0	0	0	0	1	1	1	1	1	CONFID.
378	2031	6	10.5230	24.372	4052.20	1	0	0	0	0	0	1	0	0	0	0	0	1	1	1	1	1	CONFID.
379	2031	7	9.6854	24.349	4056.94	1	0	0	0	0	0	0	1	0	0	0	0	1	1	1	1	1	CONDID.
380	2031	8	10.6266	24.328	4061.65	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	CONFID.
381	2031	9	9.1597	24.306	4066.19	1	0	0	0	0	0	0	0	0	1	0	0	1	1	1	1	1	CONFID.
382	2031	10	9.1149	24.284	4070.66	1	0	0	0	0	0	0	0	0	0	1	0	1	1	1	1	1	CONFID.
383	2031	11	8.7827	24.262	4075.07	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	CONFID.
384	2031	12	8.9194	24.240	4079.45	1	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
385	2032	1	9.1193	24.218	4083.88	1	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
386	2032	2	9.1208	24.196	4088.17	1	0	1	0	0	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
387	2032	3	9.2511	24.175	4092.47	1	0	0	1	0	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
388	2032	4	9.9277	24.154	4096.89	1	0	0	0	1	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
389	2032	5	9.7669	24.133	4101.36	1	0	0	0	0	1	0	0	0	0	0	0	1	1	1	1	1	CONFID.
390	2032	6	10.8898	24.111	4105.91	1	0	0	0	0	0	1	0	0	0	0	0	1	1	1	1	1	CONFID.
391	2032	7	10.0237	24.090	4110.55	1	0	0	0	0	0	0	1	0	0	0	0	1	1	1	1	1	CONDID.
392	2032	8	10.9985	24.068	4115.37	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	CONFID.
393	2032	9	9.4806	24.048	4120.20	1	0	0	0	0	0	0	0	0	1	0	0	1	1	1	1	1	CONFID.
394	2032	10	9.4345	24.029	4125.11	1	0	0	0	0	0	0	0	0	0	1	0	1	1	1	1	1	CONFID.
395	2032	11	9.0907	24.009	4130.11	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	CONFID.
396	2032	12	9.2322	23.989	4135.17	1	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
397	2033	1	9.4391	23.967	4140.37	1	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
398	2033	2	9.4409	23.948	4145.37	1	0	1	0	0	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
399	2033	3	9.5761	23.928	4150.42	1	0	0	1	0	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
400	2033	4	10.2766	23.909	4155.67	1	0	0	0	1	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
401	2033	5	10.1102	23.889	4160.95	1	0	0	0	0	1	0	0	0	0	0	0	1	1	1	1	1	CONFID.
402	2033	6	11.2725	23.869	4166.25	1	0	0	0	0	0	1	0	0	0	0	0	1	1	1	1	1	CONFID.
403	2033	7	10.3758	23.849	4171.57	1	0	0	0	0	0	0	1	0	0	0	0	1	1	1	1	1	CONDID.
404	2033	8	11.3849	23.829	4176.99	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	CONFID.
405	2033	9	9.8138	23.808	4182.33	1	0	0	0	0	0	0	0	0	1	0	0	1	1	1	1	1	CONFID.
406	2033	10	9.7663	23.787	4187.68	1	0	0	0	0	0	0	0	0	0	1	0	1	1	1	1	1	CONFID.
407	2033	11	9.4106	23.766	4193.04	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	CONFID.
408	2033	12	9.5572	23.746	4198.40	1	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
409	2034	1	9.7715	23.726	4203.87	1	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
410	2034	2	9.7735	23.705	4209.08	1	0	1	0	0	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.

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EXOGENOUS VARIABLES

Obs	year	month	gpi_mi	LM_IMM	grpmf_imm	d14on	d01	d02	d03	d04	d05	d06	d07	d08	d09	d10	d11	d03qon	d05qon	d07on	d10on	feb16on	PRICE
411	2034	3	9.9135	23.685	4214.31	1	0	0	1	0	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
412	2034	4	10.6387	23.663	4219.71	1	0	0	0	1	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
413	2034	5	10.4664	23.643	4225.13	1	0	0	0	0	1	0	0	0	0	0	0	1	1	1	1	1	CONFID.
414	2034	6	11.6697	23.621	4230.56	1	0	0	0	0	0	1	0	0	0	0	0	1	1	1	1	1	CONFID.
415	2034	7	10.7415	23.601	4236.00	1	0	0	0	0	0	0	1	0	0	0	0	1	1	1	1	1	CONDID.
416	2034	8	11.7861	23.580	4241.54	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	CONFID.
417	2034	9	10.1594	23.559	4246.99	1	0	0	0	0	0	0	0	0	1	0	0	1	1	1	1	1	CONFID.
418	2034	10	10.1100	23.537	4252.45	1	0	0	0	0	0	0	0	0	0	1	0	1	1	1	1	1	CONFID.
419	2034	11	9.7415	23.515	4257.90	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	CONFID.
420	2034	12	9.8931	23.495	4263.36	1	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
421	2035	1	10.1146	23.474	4268.89	1	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
422	2035	2	10.1164	23.454	4274.15	1	0	1	0	0	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
423	2035	3	10.2609	23.433	4279.40	1	0	0	1	0	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
424	2035	4	11.0111	23.413	4284.82	1	0	0	0	1	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
425	2035	5	10.8324	23.391	4290.21	1	0	0	0	0	1	0	0	0	0	0	0	1	1	1	1	1	CONFID.
426	2035	6	12.0773	23.372	4295.59	1	0	0	0	0	0	1	0	0	0	0	0	1	1	1	1	1	CONFID.
427	2035	7	11.1163	23.351	4300.94	1	0	0	0	0	0	0	1	0	0	0	0	1	1	1	1	1	CONDID.
428	2035	8	12.1968	23.330	4306.36	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	CONFID.
429	2035	9	10.5131	23.310	4311.65	1	0	0	0	0	0	0	0	0	1	0	0	1	1	1	1	1	CONFID.
430	2035	10	10.4617	23.289	4316.91	1	0	0	0	0	0	0	0	0	0	1	0	1	1	1	1	1	CONFID.
431	2035	11	10.0801	23.270	4322.12	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	CONFID.
432	2035	12	10.2367	23.249	4327.29	1	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
433	2036	1	10.4657	23.227	4332.49	1	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
434	2036	2	10.4671	23.208	4337.46	1	0	1	0	0	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
435	2036	3	10.6163	23.188	4342.38	1	0	0	1	0	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
436	2036	4	11.3924	23.169	4347.31	1	0	0	0	1	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
437	2036	5	11.2075	23.149	4352.16	1	0	0	0	0	1	0	0	0	0	0	0	1	1	1	1	1	CONFID.
438	2036	6	12.4955	23.130	4356.94	1	0	0	0	0	0	1	0	0	0	0	0	1	1	1	1	1	CONFID.
439	2036	7	11.5012	23.111	4361.64	1	0	0	0	0	0	0	1	0	0	0	0	1	1	1	1	1	CONDID.
440	2036	8	12.6192	23.090	4366.34	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	CONFID.
441	2036	9	10.8771	23.071	4370.88	1	0	0	0	0	0	0	0	0	1	0	0	1	1	1	1	1	CONFID.
442	2036	10	10.8238	23.051	4375.37	1	0	0	0	0	0	0	0	0	0	1	0	1	1	1	1	1	CONFID.
443	2036	11	10.4289	23.032	4379.80	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	CONFID.
444	2036	12	10.5908	23.013	4384.20	1	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
445	2037	1	10.8277	22.993	4388.64	1	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
446	2037	2	10.8293	22.974	4392.84	1	0	1	0	0	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
447	2037	3	10.9839	22.955	4397.03	1	0	0	1	0	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
448	2037	4	11.7869	22.936	4401.36	1	0	0	0	1	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
449	2037	5	11.5956	22.917	4405.71	1	0	0	0	0	1	0	0	0	0	0	0	1	1	1	1	1	CONFID.
450	2037	6	12.9283	22.897	4410.07	1	0	0	0	0	0	1	0	0	0	0	0	1	1	1	1	1	CONFID.
451	2037	7	11.8997	22.878	4414.45	1	0	0	0	0	0	0	1	0	0	0	0	1	1	1	1	1	CONDID.

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Obs	year	month	gpi_mi	LM_IMM	grpmf_imm	d14on	d01	d02	d03	d04	d05	d06	d07	d08	d09	d10	d11	d03qon	d02qon	d074on	d10on	feb16on	PRICE
452	2037	8	13.0566	22.858	4418.95	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	CONFID.
453	2037	9	11.2543	22.839	4423.40	1	0	0	0	0	0	0	0	0	1	0	0	1	1	1	1	1	CONFID.
454	2037	10	11.1993	22.820	4427.88	1	0	0	0	0	0	0	0	0	0	1	0	1	1	1	1	1	CONFID.
455	2037	11	10.7909	22.800	4432.38	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	CONFID.
456	2037	12	10.9586	22.781	4436.89	1	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
457	2038	1	11.2040	22.761	4441.50	1	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
458	2038	2	11.2058	22.743	4445.89	1	0	1	0	0	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
459	2038	3	11.3659	22.724	4450.30	1	0	0	1	0	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
460	2038	4	12.1968	22.705	4454.85	1	0	0	0	1	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
461	2038	5	11.9989	22.687	4459.41	1	0	0	0	0	1	0	0	0	0	0	0	1	1	1	1	1	CONFID.
462	2038	6	13.3781	22.667	4463.97	1	0	0	0	0	0	1	0	0	0	0	0	1	1	1	1	1	CONFID.
463	2038	7	12.3138	22.647	4468.52	1	0	0	0	0	0	0	1	0	0	0	0	1	1	1	1	1	CONDID.
464	2038	8	13.5111	22.628	4473.14	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	CONFID.
465	2038	9	11.6462	22.610	4477.69	1	0	0	0	0	0	0	0	0	1	0	0	1	1	1	1	1	CONFID.
466	2038	10	11.5895	22.591	4482.24	1	0	0	0	0	0	0	0	0	0	1	0	1	1	1	1	1	CONFID.
467	2038	11	11.1670	22.572	4486.80	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	CONFID.
468	2038	12	11.3407	22.553	4491.38	1	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
469	2039	1	11.5948	22.534	4496.05	1	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
470	2039	2	11.5968	22.515	4500.52	1	0	1	0	0	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
471	2039	3	11.7627	22.497	4505.01	1	0	0	1	0	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
472	2039	4	12.6228	22.478	4509.70	1	0	0	0	1	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
473	2039	5	12.4182	22.459	4514.42	1	0	0	0	0	1	0	0	0	0	0	0	1	1	1	1	1	CONFID.
474	2039	6	13.8458	22.440	4519.19	1	0	0	0	0	0	1	0	0	0	0	0	1	1	1	1	1	CONFID.
475	2039	7	12.7446	22.422	4524.00	1	0	0	0	0	0	0	1	0	0	0	0	1	1	1	1	1	CONDID.
476	2039	8	13.9841	22.403	4528.94	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	CONFID.
477	2039	9	12.0542	22.383	4533.84	1	0	0	0	0	0	0	0	0	1	0	0	1	1	1	1	1	CONFID.
478	2039	10	11.9957	22.364	4538.75	1	0	0	0	0	0	0	0	0	0	1	0	1	1	1	1	1	CONFID.
479	2039	11	11.5587	22.346	4543.68	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	CONFID.
480	2039	12	11.7388	22.328	4548.61	1	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
481	2040	1	12.0021	22.309	4553.61	1	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
482	2040	2	12.0043	22.290	4558.42	1	0	1	0	0	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
483	2040	3	12.1761	22.272	4563.19	1	0	0	1	0	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
484	2040	4	13.0671	22.254	4568.00	1	0	0	0	1	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
485	2040	5	12.8557	22.235	4572.74	1	0	0	0	0	1	0	0	0	0	0	0	1	1	1	1	1	CONFID.
486	2040	6	14.3341	22.217	4577.42	1	0	0	0	0	0	1	0	0	0	0	0	1	1	1	1	1	CONFID.
487	2040	7	13.1943	22.199	4582.01	1	0	0	0	0	0	0	1	0	0	0	0	1	1	1	1	1	CONDID.
488	2040	8	14.4779	22.180	4586.59	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	CONFID.
489	2040	9	12.4803	22.162	4591.03	1	0	0	0	0	0	0	0	0	1	0	0	1	1	1	1	1	CONFID.
490	2040	10	12.4203	22.144	4595.40	1	0	0	0	0	0	0	0	0	0	1	0	1	1	1	1	1	CONFID.
491	2040	11	11.9683	22.127	4599.72	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	CONFID.
492	2040	12	12.1550	22.109	4604.00	1	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.

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Obs	year	month	gpi_mi	LM_IMM	grpmf_imm	d14on	d01	d02	d03	d04	d05	d06	d07	d08	d09	d10	d11	d03qon	d02qon	d074on	d10on	feb16on	PRICE
493	2041	1	12.4279	22.091	4608.32	1	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
494	2041	2	12.4307	22.074	4612.41	1	0	1	0	0	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
495	2041	3	12.6093	22.057	4616.49	1	0	0	1	0	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
496	2041	4	13.5323	22.040	4620.72	1	0	0	0	1	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
497	2041	5	13.3139	22.023	4624.96	1	0	0	0	0	1	0	0	0	0	0	0	1	1	1	1	1	CONFID.
498	2041	6	14.8455	22.005	4629.22	1	0	0	0	0	0	1	0	0	0	0	0	1	1	1	1	1	CONFID.
499	2041	7	13.6655	21.988	4633.51	1	0	0	0	0	0	0	1	0	0	0	0	1	1	1	1	1	CONDID.
500	2041	8	14.9954	21.969	4637.92	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	CONFID.
501	2041	9	12.9266	21.952	4642.28	1	0	0	0	0	0	0	0	0	1	0	0	1	1	1	1	1	CONFID.
502	2041	10	12.8645	21.935	4646.68	1	0	0	0	0	0	0	0	0	0	1	0	1	1	1	1	1	CONFID.
503	2041	11	12.3965	21.917	4651.09	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	CONFID.
504	2041	12	12.5902	21.901	4655.51	1	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
505	2042	1	12.8732	21.884	4660.02	1	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
506	2042	2	12.8764	21.867	4664.30	1	0	1	0	0	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
507	2042	3	13.0615	21.850	4668.59	1	0	0	1	0	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
508	2042	4	14.0178	21.832	4673.01	1	0	0	0	1	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
509	2042	5	13.7916	21.815	4677.41	1	0	0	0	0	1	0	0	0	0	0	0	1	1	1	1	1	CONFID.
510	2042	6	15.3782	21.798	4681.79	1	0	0	0	0	0	1	0	0	0	0	0	1	1	1	1	1	CONFID.
511	2042	7	14.1560	21.780	4686.15	1	0	0	0	0	0	0	1	0	0	0	0	1	1	1	1	1	CONDID.
512	2042	8	15.5338	21.762	4690.55	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	CONFID.
513	2042	9	13.3909	21.745	4694.86	1	0	0	0	0	0	0	0	0	1	0	0	1	1	1	1	1	CONFID.
514	2042	10	13.3269	21.727	4699.16	1	0	0	0	0	0	0	0	0	0	1	0	1	1	1	1	1	CONFID.
515	2042	11	12.8422	21.709	4703.46	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	CONFID.
516	2042	12	13.0430	21.691	4707.77	1	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
517	2043	1	13.3362	21.674	4712.17	1	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
518	2043	2	13.3396	21.657	4716.39	1	0	1	0	0	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
519	2043	3	13.5313	21.639	4720.64	1	0	0	1	0	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
520	2043	4	14.5220	21.622	4725.08	1	0	0	0	1	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
521	2043	5	14.2877	21.604	4729.57	1	0	0	0	0	1	0	0	0	0	0	0	1	1	1	1	1	CONFID.
522	2043	6	15.9314	21.587	4734.14	1	0	0	0	0	0	1	0	0	0	0	0	1	1	1	1	1	CONFID.
523	2043	7	14.6654	21.570	4738.77	1	0	0	0	0	0	0	1	0	0	0	0	1	1	1	1	1	CONDID.
524	2043	8	16.0929	21.553	4743.56	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	CONFID.
525	2043	9	13.8731	21.535	4748.34	1	0	0	0	0	0	0	0	0	1	0	0	1	1	1	1	1	CONFID.
526	2043	10	13.8069	21.520	4753.18	1	0	0	0	0	0	0	0	0	0	1	0	1	1	1	1	1	CONFID.
527	2043	11	13.3048	21.502	4758.06	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	CONFID.
528	2043	12	13.5127	21.486	4762.98	1	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
529	2044	1	13.8163	21.469	4768.02	1	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
530	2044	2	13.8196	21.453	4772.91	1	0	1	0	0	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
531	2044	3	14.0183	21.436	4777.81	1	0	0	1	0	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
532	2044	4	15.0453	21.420	4782.80	1	0	0	0	1	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
533	2044	5	14.8031	21.405	4787.78	1	0	0	0	0	1	0	0	0	0	0	0	1	1	1	1	1	CONFID.

INDIANA MICHIGAN POWER COMPANY
MICHIGAN SERVICE AREA
MANUFACTURING ENERGY SALES
EXOGENOUS VARIABLES

Obs	year	month	gpi_mi	LM_IMM	grpmf_imm	d14on	d01	d02	d03	d04	d05	d06	d07	d08	d09	d10	d11	d03qon	d02qon	d074on	d10on	feb16on	PRICE
534	2044	6	16.5064	21.387	4792.75	1	0	0	0	0	0	1	0	0	0	0	0	1	1	1	1	1	CONFID.
535	2044	7	15.1947	21.371	4797.70	1	0	0	0	0	0	0	1	0	0	0	0	1	1	1	1	1	CONDID.
536	2044	8	16.6737	21.356	4802.70	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	CONFID.
537	2044	9	14.3737	21.338	4807.59	1	0	0	0	0	0	0	0	0	1	0	0	1	1	1	1	1	CONFID.
538	2044	10	14.3052	21.322	4812.47	1	0	0	0	0	0	0	0	0	0	1	0	1	1	1	1	1	CONFID.
539	2044	11	13.7851	21.307	4817.32	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	CONFID.
540	2044	12	14.0009	21.290	4822.17	1	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
541	2045	1	14.3158	21.275	4827.08	1	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
542	2045	2	14.3196	21.259	4831.75	1	0	1	0	0	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
543	2045	3	14.5258	21.243	4836.41	1	0	0	1	0	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
544	2045	4	15.5896	21.226	4841.23	1	0	0	0	1	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
545	2045	5	15.3385	21.211	4846.06	1	0	0	0	0	1	0	0	0	0	0	0	1	1	1	1	1	CONFID.
546	2045	6	17.1034	21.195	4850.89	1	0	0	0	0	0	1	0	0	0	0	0	1	1	1	1	1	CONFID.
547	2045	7	15.7444	21.178	4855.73	1	0	0	0	0	0	0	1	0	0	0	0	1	1	1	1	1	CONDID.
548	2045	8	17.2771	21.162	4860.66	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	CONFID.
549	2045	9	14.8941	21.146	4865.51	1	0	0	0	0	0	0	0	0	1	0	0	1	1	1	1	1	CONFID.
550	2045	10	14.8232	21.130	4870.36	1	0	0	0	0	0	0	0	0	0	1	0	1	1	1	1	1	CONFID.
551	2045	11	14.2844	21.114	4875.21	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	CONFID.
552	2045	12	14.5080	21.097	4880.04	1	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
553	2046	1	14.8344	21.081	4884.94	1	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
554	2046	2	14.8385	21.066	4889.58	1	0	1	0	0	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
555	2046	3	15.0523	21.050	4894.20	1	0	0	1	0	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
556	2046	4	16.1549	21.032	4898.95	1	0	0	0	1	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
557	2046	5	15.8948	21.018	4903.66	1	0	0	0	0	1	0	0	0	0	0	0	1	1	1	1	1	CONFID.
558	2046	6	17.7239	21.001	4908.34	1	0	0	0	0	0	1	0	0	0	0	0	1	1	1	1	1	CONFID.
559	2046	7	16.3158	20.984	4912.97	1	0	0	0	0	0	0	1	0	0	0	0	1	1	1	1	1	CONDID.
560	2046	8	17.9043	20.968	4917.63	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	CONFID.
561	2046	9	15.4350	20.951	4922.16	1	0	0	0	0	0	0	0	0	1	0	0	1	1	1	1	1	CONFID.
562	2046	10	15.3617	20.935	4926.66	1	0	0	0	0	0	0	0	0	0	1	0	1	1	1	1	1	CONFID.
563	2046	11	14.8035	20.919	4931.10	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	CONFID.
564	2046	12	15.0354	20.901	4935.51	1	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
565	2047	1	15.3737	20.885	4939.94	1	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
566	2047	2	15.3781	20.869	4944.11	1	0	1	0	0	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
567	2047	3	15.5998	20.853	4948.25	1	0	0	1	0	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
568	2047	4	16.7428	20.836	4952.48	1	0	0	0	1	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
569	2047	5	16.4735	20.820	4956.67	1	0	0	0	0	1	0	0	0	0	0	0	1	1	1	1	1	CONFID.
570	2047	6	18.3695	20.803	4960.82	1	0	0	0	0	0	1	0	0	0	0	0	1	1	1	1	1	CONFID.
571	2047	7	16.9102	20.787	4964.93	1	0	0	0	0	0	0	1	0	0	0	0	1	1	1	1	1	CONDID.
572	2047	8	18.5568	20.770	4969.07	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	CONFID.
573	2047	9	15.9975	20.753	4973.10	1	0	0	0	0	0	0	0	0	1	0	0	1	1	1	1	1	CONFID.
574	2047	10	15.9217	20.737	4977.09	1	0	0	0	0	0	0	0	0	0	1	0	1	1	1	1	1	CONFID.

Obs	year	month	gpi_mi	LM_IMM	grpmf_imm	d14on	dd1	dd2	dd3	dd4	dd5	dd6	dd7	dd8	dd9	dd10	dd11	dd03qon	dd052qon	dd074on	dd10on	feb16on	PRICE
575	2047	11	15.3433	20.7190	4981.06	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	CONFID.
576	2047	12	15.5840	20.7040	4985.00	1	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
577	2048	1	15.9351	20.6860	4988.98	1	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
578	2048	2	15.9396	20.6700	4992.80	1	0	1	0	0	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
579	2048	3	16.1693	20.6530	4996.61	1	0	0	1	0	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
580	2048	4	17.3542	20.6370	5000.46	1	0	0	0	1	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
581	2048	5	17.0751	20.6200	5004.30	1	0	0	0	0	1	0	0	0	0	0	0	1	1	1	1	1	CONFID.
582	2048	6	19.0402	20.6030	5008.13	1	0	0	0	0	0	1	0	0	0	0	0	1	1	1	1	1	CONFID.
583	2048	7	17.5275	20.5860	5011.94	1	0	0	0	0	0	0	1	0	0	0	0	1	1	1	1	1	CONDID.
584	2048	8	19.2340	20.5680	5015.82	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	CONFID.
585	2048	9	16.5812	20.5520	5019.62	1	0	0	0	0	0	0	0	0	1	0	0	1	1	1	1	1	CONFID.
586	2048	10	16.5026	20.5350	5023.42	1	0	0	0	0	0	0	0	0	0	1	0	1	1	1	1	1	CONFID.
587	2048	11	15.9030	20.5170	5027.22	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	CONFID.
588	2048	12	16.1523	20.5010	5031.00	1	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
589	2049	1	16.5161	20.4830	5034.85	1	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
590	2049	2	16.5209	20.4660	5038.51	1	0	1	0	0	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
591	2049	3	16.7593	20.4500	5042.16	1	0	0	1	0	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
592	2049	4	17.9873	20.4320	5045.94	1	0	0	0	1	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
593	2049	5	17.6979	20.4150	5049.71	1	0	0	0	0	1	0	0	0	0	0	0	1	1	1	1	1	CONFID.
594	2049	6	19.7348	20.3990	5053.48	1	0	0	0	0	0	1	0	0	0	0	0	1	1	1	1	1	CONFID.
595	2049	7	18.1672	20.3810	5057.25	1	0	0	0	0	0	0	1	0	0	0	0	1	1	1	1	1	CONDID.
596	2049	8	19.9362	20.3630	5061.08	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	CONFID.
597	2049	9	17.1867	20.3470	5064.85	1	0	0	0	0	0	0	0	0	1	0	0	1	1	1	1	1	CONFID.
598	2049	10	17.1053	20.3290	5068.62	1	0	0	0	0	0	0	0	0	0	1	0	1	1	1	1	1	CONFID.
599	2049	11	16.4840	20.3110	5072.39	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	CONFID.
600	2049	12	16.7425	20.2950	5076.17	1	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
601	2050	1	17.1197	20.2770	5080.00	1	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
602	2050	2	17.1250	20.2600	5083.66	1	0	1	0	0	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
603	2050	3	17.3722	20.2440	5087.31	1	0	0	1	0	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
604	2050	4	18.6453	20.2270	5091.10	1	0	0	0	1	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
605	2050	5	18.3455	20.2100	5094.89	1	0	0	0	0	1	0	0	0	0	0	0	1	1	1	1	1	CONFID.
606	2050	6	20.4571	20.1930	5098.68	1	0	0	0	0	0	1	0	0	0	0	0	1	1	1	1	1	CONFID.
607	2050	7	18.8322	20.1770	5102.48	1	0	0	0	0	0	0	1	0	0	0	0	1	1	1	1	1	CONDID.
608	2050	8	20.6662	20.1590	5106.35	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	CONFID.
609	2050	9	17.8161	20.1430	5110.16	1	0	0	0	0	0	0	0	0	1	0	0	1	1	1	1	1	CONFID.
610	2050	10	17.7318	20.1260	5113.98	1	0	0	0	0	0	0	0	0	0	1	0	1	1	1	1	1	CONFID.
611	2050	11	17.0878	20.1100	5117.81	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	CONFID.
612	2050	12	17.3560	20.0920	5121.64	1	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
613	2051	1	17.7455	20.0734	5125.66	1	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
614	2051	2	17.7511	20.0564	5129.32	1	0	1	0	0	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
615	2051	3	18.0075	20.0404	5132.98	1	0	0	1	0	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.

Obs	year	month	gpi_mi	LM_IMM	grpmf_imm	d14on	dd1	dd2	dd3	dd4	dd5	dd6	dd7	dd8	dd9	dd10	dd11	dd03qon	dd052qon	dd074on	dd10on	feb16on	PRICE
616	2051	4	19.3274	20.0244	5136.77	1	0	0	0	1	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
617	2051	5	19.0168	20.0074	5140.58	1	0	0	0	0	1	0	0	0	0	0	0	1	1	1	1	1	CONFID.
618	2051	6	21.2059	19.9894	5144.40	1	0	0	0	0	0	1	0	0	0	0	0	1	1	1	1	1	CONFID.
619	2051	7	19.5216	19.9753	5148.23	1	0	0	0	0	0	0	1	0	0	0	0	1	1	1	1	1	CONDID.
620	2051	8	21.4229	19.9574	5152.13	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	CONFID.
621	2051	9	18.4686	19.9414	5155.99	1	0	0	0	0	0	0	0	0	1	0	0	1	1	1	1	1	CONFID.
622	2051	10	18.3813	19.9253	5159.85	1	0	0	0	0	0	0	0	0	0	1	0	1	1	1	1	1	CONFID.
623	2051	11	17.7138	19.9113	5163.74	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	CONFID.
624	2051	12	17.9919	19.8913	5167.63	1	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
625	2052	1	18.3941	19.8721	5171.84	1	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
626	2052	2	18.4001	19.8551	5175.49	1	0	1	0	0	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
627	2052	3	18.6661	19.8391	5179.16	1	0	0	1	0	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
628	2052	4	20.0344	19.8240	5182.96	1	0	0	0	1	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
629	2052	5	19.7127	19.8071	5186.79	1	0	0	0	0	1	0	0	0	0	0	0	1	1	1	1	1	CONFID.
630	2052	6	21.9820	19.7881	5190.63	1	0	0	0	0	0	1	0	0	0	0	0	1	1	1	1	1	CONFID.
631	2052	7	20.2363	19.7760	5194.49	1	0	0	0	0	0	0	1	0	0	0	0	1	1	1	1	1	CONDID.
632	2052	8	22.2073	19.7580	5198.43	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	CONFID.
633	2052	9	19.1449	19.7420	5202.33	1	0	0	0	0	0	0	0	0	1	0	0	1	1	1	1	1	CONFID.
634	2052	10	19.0545	19.7270	5206.25	1	0	0	0	0	0	0	0	0	0	1	0	1	1	1	1	1	CONFID.
635	2052	11	18.3627	19.7149	5210.19	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	CONFID.
636	2052	12	18.6511	19.6930	5214.15	1	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
637	2053	1	19.0664	19.6731	5218.54	1	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
638	2053	2	19.0728	19.6561	5222.19	1	0	1	0	0	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
639	2053	3	19.3488	19.6402	5225.86	1	0	0	1	0	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
640	2053	4	20.7673	19.6260	5229.68	1	0	0	0	1	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
641	2053	5	20.4340	19.6091	5233.52	1	0	0	0	0	1	0	0	0	0	0	0	1	1	1	1	1	CONFID.
642	2053	6	22.7866	19.5892	5237.39	1	0	0	0	0	0	1	0	0	0	0	0	1	1	1	1	1	CONFID.
643	2053	7	20.9771	19.5790	5241.28	1	0	0	0	0	0	0	1	0	0	0	0	1	1	1	1	1	CONDID.
644	2053	8	23.0204	19.5610	5245.26	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	CONFID.
645	2053	9	19.8460	19.5450	5249.21	1	0	0	0	0	0	0	0	0	1	0	0	1	1	1	1	1	CONFID.
646	2053	10	19.7525	19.5309	5253.17	1	0	0	0	0	0	0	0	0	0	1	0	1	1	1	1	1	CONFID.
647	2053	11	19.0354	19.5207	5257.17	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	CONFID.
648	2053	12	19.3345	19.4970	5261.20	1	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
649	2054	1	19.7633	19.4765	5265.77	1	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
650	2054	2	19.7702	19.4594	5269.42	1	0	1	0	0	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
651	2054	3	20.0564	19.4435	5273.09	1	0	0	1	0	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
652	2054	4	21.5270	19.4302	5276.92	1	0	0	0	1	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
653	2054	5	21.1817	19.4134	5280.79	1	0	0	0	0	1	0	0	0	0	0	0	1	1	1	1	1	CONFID.
654	2054	6	23.6206	19.3926	5284.68	1	0	0	0	0	0	1	0	0	0	0	0	1	1	1	1	1	CONFID.
655	2054	7	21.7451	19.3842	5288.60	1	0	0	0	0	0	0	1	0	0	0	0	1	1	1	1	1	CONDID.
656	2054	8	23.8633	19.3662	5292.62	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	CONFID.

INDIANA MICHIGAN POWER COMPANY
MICHIGAN SERVICE AREA
MANUFACTURING ENERGY SALES
EXOGENOUS VARIABLES

Obs	year	month	gpi_mi	LM_IMM	grpmf_imm	d14on	d1	d2	d3	d4	d5	d6	d7	d8	d9	d10	d11	d03qon	d052qon	d074on	d10on	feb16on	PRICE
657	2054	9	20.5728	19.3502	5296.62	1	0	0	0	0	0	0	0	0	1	0	0	1	1	1	1	1	CONFID.
658	2054	10	20.4759	19.3371	5300.63	1	0	0	0	0	0	0	0	0	0	1	0	1	1	1	1	1	CONFID.
659	2054	11	19.7328	19.3287	5304.69	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	CONFID.
660	2054	12	20.0430	19.3032	5308.79	1	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
661	2055	1	20.4857	19.2821	5313.53	1	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
662	2055	2	20.4930	19.2649	5317.18	1	0	1	0	0	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
663	2055	3	20.7899	19.2491	5320.86	1	0	0	1	0	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
664	2055	4	22.3145	19.2367	5324.71	1	0	0	0	1	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
665	2055	5	21.9568	19.2200	5328.59	1	0	0	0	0	1	0	0	0	0	0	0	1	1	1	1	1	CONFID.
666	2055	6	24.4851	19.1983	5332.51	1	0	0	0	0	0	1	0	0	0	0	0	1	1	1	1	1	CONFID.
667	2055	7	22.5411	19.1916	5336.46	1	0	0	0	0	0	0	1	0	0	0	0	1	1	1	1	1	CONDID.
668	2055	8	24.7371	19.1736	5340.52	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	CONFID.
669	2055	9	21.3262	19.1577	5344.56	1	0	0	0	0	0	0	0	0	1	0	0	1	1	1	1	1	CONFID.
670	2055	10	21.2259	19.1454	5348.63	1	0	0	0	0	0	0	0	0	0	1	0	1	1	1	1	1	CONFID.
671	2055	11	20.4557	19.1389	5352.75	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	CONFID.
672	2055	12	20.7774	19.1116	5356.91	1	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
673	2056	1	21.2345	19.0899	5361.83	1	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
674	2056	2	21.2422	19.0727	5365.48	1	0	1	0	0	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
675	2056	3	21.5502	19.0570	5369.17	1	0	0	1	0	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
676	2056	4	23.1308	19.0454	5373.03	1	0	0	0	1	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
677	2056	5	22.7603	19.0288	5376.93	1	0	0	0	0	1	0	0	0	0	0	0	1	1	1	1	1	CONFID.
678	2056	6	25.3813	19.0061	5380.88	1	0	0	0	0	0	1	0	0	0	0	0	1	1	1	1	1	CONFID.
679	2056	7	23.3663	19.0012	5384.87	1	0	0	0	0	0	0	1	0	0	0	0	1	1	1	1	1	CONDID.
680	2056	8	25.6428	18.9833	5388.96	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	CONFID.
681	2056	9	22.1072	18.9673	5393.06	1	0	0	0	0	0	0	0	0	1	0	0	1	1	1	1	1	CONFID.
682	2056	10	22.0034	18.9560	5397.18	1	0	0	0	0	0	0	0	0	0	1	0	1	1	1	1	1	CONFID.
683	2056	11	21.2050	18.9512	5401.36	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	CONFID.
684	2056	12	21.5387	18.9222	5405.59	1	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
685	2057	1	22.0107	18.8999	5410.68	1	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
686	2057	2	22.0189	18.8827	5414.34	1	0	1	0	0	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
687	2057	3	22.3383	18.8670	5418.03	1	0	0	1	0	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
688	2057	4	23.9770	18.8562	5421.90	1	0	0	0	1	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.
689	2057	5	23.5931	18.8398	5425.83	1	0	0	0	0	1	0	0	0	0	0	0	1	1	1	1	1	CONFID.
690	2057	6	26.3103	18.8162	5429.80	1	0	0	0	0	0	1	0	0	0	0	0	1	1	1	1	1	CONFID.
691	2057	7	24.2217	18.8130	5433.83	1	0	0	0	0	0	0	1	0	0	0	0	1	1	1	1	1	CONDID.
692	2057	8	26.5817	18.7951	5437.96	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	CONFID.
693	2057	9	22.9168	18.7792	5442.11	1	0	0	0	0	0	0	0	0	1	0	0	1	1	1	1	1	CONFID.
694	2057	10	22.8093	18.7687	5446.28	1	0	0	0	0	0	0	0	0	0	1	0	1	1	1	1	1	CONFID.
695	2057	11	21.9818	18.7657	5450.53	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	CONFID.
696	2057	12	22.3278	18.7350	5454.83	1	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	CONFID.

INDIANA MICHIGAN POWER COMPANY
MICHIGAN SERVICE AREA
MANUFACTURING ENERGY SALES
MODEL ESTIMATION

The SYSLIN Procedure
Ordinary Least Squares Estimation

Model	ei_imm
Dependent Variable	ei_imm
Label	BILLED KWH

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	20	25771.85	1288.592	124.90	<.0001
Error	232	2393.476	10.31671		
Corrected Total	252	28165.32			

Root MSE	3.21196	R-Square	0.91502
Dependent Mean	75.87687	Adj R-Sq	0.90769
Coeff Var	4.23313		

Parameter Estimates

Variable	DF	Parameter Estimate	Standard Error	t Value	Pr > |t|	Variable Label
Intercept	1	-57.7109	35.11941	-1.64	0.1017	Intercept
LPIGPI36	1	-6.57825	1.878725	-3.50	0.0006	MANUF. ELEC./MANUF. GAS PRICE RATIO, LOG
lgrpmf	1	16.87045	4.717135	3.58	0.0004	SERVICE AREA GROSS REGIONAL PRODUCT-MANUF., LOG
LM_IMM	1	0.797376	0.198197	4.02	<.0001	SERVICE AREA MANUFACTURING EMPLOYMENT
d1	1	-3.66874	0.983744	-3.73	0.0002	JANUARY
d2	1	-2.55080	0.997320	-2.56	0.0112	FEBRUARY
d3	1	-2.83831	0.996748	-2.85	0.0048	MARCH
d4	1	-3.08773	0.995519	-3.10	0.0022	APRIL
d5	1	-3.07571	0.994765	-3.09	0.0022	MAY
d6	1	1.453956	0.994563	1.46	0.1451	JUNE
d7	1	0.471148	0.993637	0.47	0.6358	JULY
d8	1	3.215620	0.993210	3.24	0.0014	AUGUST
d9	1	3.297341	0.992852	3.32	0.0010	SEPTEMBER
d10	1	0.445887	0.991487	0.45	0.6533	OCTOBER
d11	1	-2.67432	0.991293	-2.70	0.0075	NOVEMBER
feb16on	1	-0.54660	0.895870	-0.61	0.5424	BINARY VARIABLE-FEBRUARY 2016 ON

INDIANA MICHIGAN POWER COMPANY
MICHIGAN SERVICE AREA
MANUFACTURING ENERGY SALES
MODEL ESTIMATION

The SYSLIN Procedure
Ordinary Least Squares Estimation

Parameter Estimates

Variable	DF	Parameter Estimate	Standard Error	t Value	Pr > |t|	Variable Label
d033qon	1	-0.72392	1.206214	-0.60	0.5490	BINARY VARIABLE-JULY 2003 ON
d052qon	1	-4.77639	1.118278	-4.27	<.0001	BINARY VARIABLE-APRIL 2005 ON
d074on	1	-9.16362	1.043820	-8.78	<.0001	BINARY VARIABLE-APRIL 2007 ON
d10on	1	-1.69858	1.355997	-1.25	0.2116	BINARY VARIABLE-2010 ON
d14on	1	0.330143	1.093964	0.30	0.7631	BINARY VARIABLE-2014 ON

Durbin-Watson	1.493949
Number of Observations	253
First-Order Autocorrelation	0.246971

INDIANA MICHIGAN POWER COMPANY
MICHIGAN SERVICE AREA
MANUFACTURING ENERGY SALES
MODEL RESIDUALS

time		Residual Values Sum
2000.0000000	**	-1.18624
2000.0833333	**	-1.10084
2000.1666667	*****	-2.51555
2000.2500000	***	-1.26141
2000.3333333	***	1.47409
2000.4166667		0.23282
2000.5000000	**********	-4.80707
2000.5833333	****	-1.81371
2000.6666667		-0.02243
2000.7500000	**	0.83449
2000.8333333	***	1.32913
2000.9166667	****	2.22133
2001.0000000	**	-1.17637
2001.0833333	**	0.81073
2001.1666667	***	-1.42718
2001.2500000	**	0.94377
2001.3333333	***	1.62280
2001.4166667	**	-0.75777
2001.5000000	**	-0.79233
2001.5833333	*	0.39031
2001.6666667	*	-0.72752
2001.7500000	**********	-8.57378
2001.8333333	*******	3.27072
2001.9166667	********	-4.19873
2002.0000000	**********	-4.76518
2002.0833333	****	2.11873
2002.1666667	**	0.77465
2002.2500000	*******	3.37093
2002.3333333	**	-0.97314
2002.4166667	*	0.60466
2002.5000000	***	1.31651
2002.5833333		0.13471
2002.6666667	********	4.12668
2002.7500000	***	1.42976
2002.8333333	***	1.47979
2002.9166667	**	1.07916
2003.0000000	*	0.69656
2003.0833333	*******	3.60293
2003.1666667	*	0.68114
2003.2500000	***	1.40132
2003.3333333	***	1.47004
2003.4166667	***	-1.31854
2003.5000000	******	-3.02893
2003.5833333	**	-1.20864
2003.6666667	******	-2.95347
2003.7500000	**	-0.75958
2003.8333333	**	1.18109
2003.9166667	******	3.20759

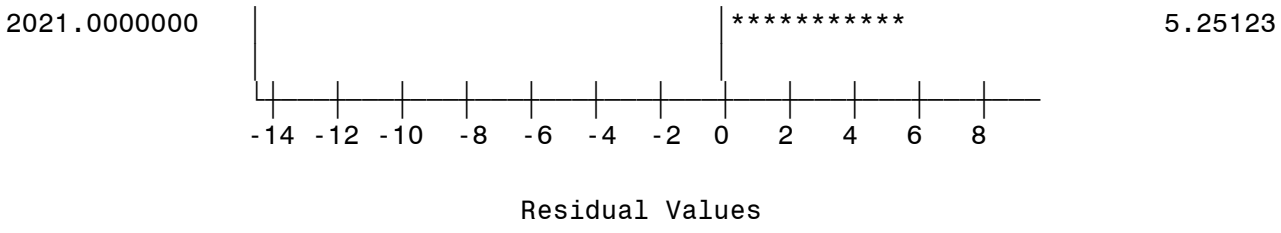
2004.0000000	***		-1.58612
2004.0833333		****	1.76595
2004.1666667		****	1.81210
2004.2500000		****	2.05621
2004.3333333		*****	2.34470
2004.4166667	***		-1.30356
2004.5000000			-0.16791
2004.5833333	*******		-3.28763
2004.6666667		***	1.39451
2004.7500000		*	0.53092
2004.8333333	***		-1.26341
2004.9166667	*		-0.66170
2005.0000000		**	1.01598
2005.0833333	*		-0.43281
2005.1666667		***	1.34470
2005.2500000		*******	3.66786
2005.3333333		*******	3.49883
2005.4166667		*********	4.67552
2005.5000000		****	2.19626
2005.5833333		*********	4.70837
2005.6666667		***************	7.40873
2005.7500000		**********	5.43830
2005.8333333		*****	2.46404
2005.9166667		*******	3.34133
2006.0000000		***	1.28779
2006.0833333		*	0.61696
2006.1666667	**		-0.75132
2006.2500000	****		-1.86585
2006.3333333		******	3.24499
2006.4166667		****	2.18654
2006.5000000		*	0.50998
2006.5833333	*		-0.29644
2006.6666667	**		-1.05977
2006.7500000	********		-4.06716
2006.8333333	********		-3.89982
2006.9166667	******		-3.08150
2007.0000000	**********		-5.44972
2007.0833333	*******		-3.57384
2007.1666667	********		-4.12464
2007.2500000	*********		-4.49494
2007.3333333			0.24927
2007.4166667	***		-1.28380
2007.5000000	*********		-4.72061
2007.5833333	*******		-3.34544
2007.6666667	*******		-3.47992
2007.7500000		****	2.10697
2007.8333333		*******	3.42972
2007.9166667	*		-0.67274
2008.0000000		****	1.83071
2008.0833333		***	1.51899
2008.1666667		****	1.78507

2008.2500000		*	0.67595
2008.3333333			-0.15626
2008.4166667			0.23781
2008.5000000			-0.01916
2008.5833333		**	1.14529
2008.6666667	*		-0.63376
2008.7500000		***	1.43510
2008.8333333		*****	2.36070
2008.9166667	****		-1.87587
2009.0000000	*********		-4.59871
2009.0833333	******		-3.09693
2009.1666667	**********		-5.58977
2009.2500000		***	1.27083
2009.3333333	******		-2.75487
2009.4166667	*********		-4.73110
2009.5000000	*****		-2.52807
2009.5833333		*	0.73959
2009.6666667		****	1.81290
2009.7500000		****	1.88388
2009.8333333	*		-0.29789
2009.9166667		*********	4.72164
2010.0000000		*******	3.57018
2010.0833333		*********	4.68197
2010.1666667		********	4.06263
2010.2500000		********	4.00444
2010.3333333		****	1.79696
2010.4166667		**********	5.82096
2010.5000000		*********	4.34794
2010.5833333		**********	5.22428
2010.6666667	*		-0.66675
2010.7500000		*	0.71472
2010.8333333	**********		-10.64637
2010.9166667		**********	5.33581
2011.0000000	*****		-2.28716
2011.0833333	**********		-8.60655
2011.1666667		**********	9.57073
2011.2500000	******		-3.05611
2011.3333333		*****	2.48682
2011.4166667	***		-1.55133
2011.5000000	***		-1.46764
2011.5833333	*		-0.27015
2011.6666667	**********		-6.30594
2011.7500000	****		-1.93976
2011.8333333	***		-1.31860
2011.9166667	*********		-4.73867
2012.0000000			-0.19839
2012.0833333		***	1.60810
2012.1666667			0.06067
2012.2500000		****	2.12139
2012.3333333	**		-0.94938
2012.4166667		****	2.15857

2012.5000000	*		-0.43240
2012.5833333		****	1.82225
2012.6666667	***		-1.57908
2012.7500000	**********		-7.33315
2012.8333333	*		-0.35295
2012.9166667	*******		-3.56486
2013.0000000	*********		-4.48367
2013.0833333	*		-0.55392
2013.1666667	**		-0.81226
2013.2500000		***	1.72775
2013.3333333		****	1.84653
2013.4166667			-0.05552
2013.5000000		***	1.41125
2013.5833333	****		-1.85332
2013.6666667		*	0.43439
2013.7500000		***	1.70462
2013.8333333		***	1.47333
2013.9166667	******		-2.96232
2014.0000000		***	1.71455
2014.0833333	***		-1.53718
2014.1666667		*	0.25776
2014.2500000		*	0.62443
2014.3333333		**	1.16610
2014.4166667	**		-1.15803
2014.5000000		****	2.01032
2014.5833333	******		-2.97927
2014.6666667		*	0.38677
2014.7500000	*****		-2.67376
2014.8333333		*	0.54496
2014.9166667	****		-2.01858
2015.0000000	**		-0.76690
2015.0833333		**********	6.14146
2015.1666667	**********		-8.76002
2015.2500000		*	0.42826
2015.3333333			0.18846
2015.4166667			0.09060
2015.5000000		***	1.59172
2015.5833333		**	0.89369
2015.6666667	***		-1.46278
2015.7500000		*****	2.39939
2015.8333333		*	0.42878
2015.9166667		**	0.83379
2016.0000000		***	1.65546
2016.0833333	*****		-2.45879
2016.1666667		********	3.83159
2016.2500000		**	1.23153
2016.3333333	*		-0.71190
2016.4166667			0.03041
2016.5000000	*		-0.74505
2016.5833333		***	1.73054
2016.6666667			0.23409

2016.7500000		**	-0.91870
2016.8333333		****	-1.84958
2016.9166667		****	-1.96452
2017.0000000		*	-0.40942
2017.0833333		**	-1.12644
2017.1666667		*****	-2.51143
2017.2500000		******	-2.78378
2017.3333333		*	-0.34484
2017.4166667			** 0.91923
2017.5000000			**** 1.79233
2017.5833333		***	-1.48270
2017.6666667		****	-2.14179
2017.7500000			** 0.91860
2017.8333333			** 0.94210
2017.9166667			**** 2.05777
2018.0000000			*** 1.29000
2018.0833333			*** 1.25259
2018.1666667			* 0.38805
2018.2500000			***** 2.46038
2018.3333333			*** 1.69145
2018.4166667			*** 1.54637
2018.5000000			***** 2.37948
2018.5833333			** 0.92257
2018.6666667			*** 1.71244
2018.7500000			** 0.77503
2018.8333333			** 0.85132
2018.9166667		***	-1.45301
2019.0000000			* 0.52443
2019.0833333		*******	-3.42128
2019.1666667		*	-0.52422
2019.2500000			** 1.00875
2019.3333333		******	-3.09618
2019.4166667		****	-1.75326
2019.5000000		**	-1.16665
2019.5833333			** 0.81936
2019.6666667			** 0.75772
2019.7500000			-0.14723
2019.8333333		***	-1.50390
2019.9166667			***** 2.37866
2020.0000000			********** 8.07097
2020.0833333			**** 1.79015
2020.1666667			***** 2.44731
2020.2500000	**********		-13.53170
2020.3333333	**********		-14.09447
2020.4166667	********		-4.59059
2020.5000000			***** 2.32004
2020.5833333	****		-1.99365
2020.6666667			****** 2.76499
2020.7500000			********** 6.24134
2020.8333333			*** 1.37684
2020.9166667			**** 2.01541

INDIANA MICHIGAN POWER COMPANY
MICHIGAN SERVICE AREA
MANUFACTURING ENERGY SALES
MODEL RESIDUALS



INDIANA MICHIGAN POWER COMPANY
MICHIGAN SERVICE AREA
MANUFACTURING ENERGY SALES
MODEL RESIDUALS

year	ENERGY SALES	GROWTH RATE	BASE ENERGY	ADDITIONS
2000	1094.604	.	1094.60	0.0
2001	1044.806	-4.5	1044.81	0.0
2002	1073.039	2.7	1073.04	0.0
2003	1060.194	-1.2	1060.19	0.0
2004	1076.753	1.6	1076.75	0.0
2005	1071.287	-0.5	1071.29	0.0
2006	1025.613	-4.3	1025.61	0.0
2007	1003.461	-2.2	1003.46	0.0
2008	919.2844	-8.4	919.28	0.0
2009	789.8605	-14.1	789.86	0.0
2010	853.1934	8.0	853.19	0.0
2011	796.8127	-6.6	796.81	0.0
2012	800.0013	0.4	800.00	0.0
2013	815.2692	1.9	815.27	0.0
2014	837.7386	2.8	837.74	0.0
2015	843.4511	0.7	843.45	0.0
2016	828.7422	-1.7	828.74	0.0
2017	814.735	-1.7	814.74	0.0
2018	821.1079	0.8	821.11	0.0
2019	798.3513	-2.8	798.35	0.0
2020	762.319	-4.5	762.32	0.0
2021	754.7478	-1.0	784.45	-29.7
2022	762.5291	1.0	794.93	-32.4
2023	772.8657	1.4	805.27	-32.4
2024	776.2421	0.4	808.64	-32.4
2025	778.4548	0.3	810.85	-32.4
2026	781.8445	0.4	814.24	-32.4
2027	786.4384	0.6	818.84	-32.4
2028	790.667	0.5	823.07	-32.4
2029	793.9806	0.4	826.38	-32.4
2030	796.9578	0.4	829.36	-32.4
2031	800.041	0.4	832.44	-32.4
2032	802.8272	0.3	835.23	-32.4
2033	806.0985	0.4	838.50	-32.4
2034	809.603	0.4	842.00	-32.4
2035	813.1308	0.4	845.53	-32.4
2036	816.5561	0.4	848.96	-32.4
2037	819.802	0.4	852.20	-32.4
2038	823.1642	0.4	855.56	-32.4
2039	826.6331	0.4	859.03	-32.4
2040	830.1752	0.4	862.58	-32.4
2041	833.562	0.4	865.96	-32.4
2042	836.9572	0.4	869.36	-32.4
2043	840.311	0.4	872.71	-32.4
2044	843.9374	0.4	876.34	-32.4
2045	847.5568	0.4	879.96	-32.4
2046	850.9744	0.4	883.37	-32.4

INDIANA MICHIGAN POWER COMPANY
MICHIGAN SERVICE AREA
MANUFACTURING ENERGY SALES
MODEL RESIDUALS

year	ENERGY SALES	GROWTH RATE	BASE ENERGY	ADDITIONS
2047	853.9877	0.4	886.388	-32.4
2048	856.6408	0.3	889.041	-32.4
2049	859.1427	0.3	891.543	-32.4
2050	861.649	0.3	894.049	-32.4
2051	864.209	0.3	896.609	-32.4
2052	866.804	0.3	899.204	-32.4
2053	869.4167	0.3	901.817	-32.4
2054	872.0553	0.3	904.455	-32.4
2055	874.7195	0.3	907.119	-32.4
2056	877.4089	0.3	909.809	-32.4
2057	880.1234	0.3	912.523	-32.4

OTHER RETAIL ENERGY

Indiana Michigan Power Company - Indiana
Other Ultimate Energy Sales
Endogenous Variables

The MEANS Procedure

Variable	Label	Mean
YEAR	YEAR	2020.50
MONTH	MONTH	6.5000000
eu_imi	ENERGY SALES, OTHER ULTIMATE	5.6360685

Indiana Michigan Power Company - Indiana
Other Ultimate Energy Sales
Endogenous Variables

Obs	YEAR	MONTH	eu_imi
1	1984	1	7.214
2	1984	2	6.142
3	1984	3	6.259
4	1984	4	5.134
5	1984	5	4.815
6	1984	6	4.702
7	1984	7	4.779
8	1984	8	5.305
9	1984	9	5.498
10	1984	10	6.505
11	1984	11	6.779
12	1984	12	7.510
13	1985	1	7.320
14	1985	2	5.965
15	1985	3	5.998
16	1985	4	5.236
17	1985	5	4.825
18	1985	6	4.480
19	1985	7	4.974
20	1985	8	5.191
21	1985	9	5.648
22	1985	10	6.497
23	1985	11	6.964
24	1985	12	7.577
25	1986	1	7.299
26	1986	2	6.217
27	1986	3	6.149
28	1986	4	5.354
29	1986	5	4.927
30	1986	6	4.703
31	1986	7	5.094
32	1986	8	5.175
33	1986	9	5.789
34	1986	10	6.544
35	1986	11	6.842
36	1986	12	7.379
37	1987	1	7.382
38	1987	2	6.125
39	1987	3	6.221
40	1987	4	5.314
41	1987	5	5.169
42	1987	6	4.716
43	1987	7	5.140
44	1987	8	5.266
45	1987	9	5.841
46	1987	10	6.636
47	1987	11	6.778
48	1987	12	7.484
49	1988	1	7.350
50	1988	2	6.175

Indiana Michigan Power Company - Indiana
Other Ultimate Energy Sales
Endogenous Variables

Obs	YEAR	MONTH	eu_imi
51	1988	3	6.152
52	1988	4	5.307
53	1988	5	4.875
54	1988	6	4.748
55	1988	7	5.115
56	1988	8	5.533
57	1988	9	5.788
58	1988	10	6.739
59	1988	11	6.819
60	1988	12	7.583
61	1989	1	7.167
62	1989	2	6.391
63	1989	3	6.133
64	1989	4	5.446
65	1989	5	5.148
66	1989	6	4.848
67	1989	7	5.239
68	1989	8	5.412
69	1989	9	5.765
70	1989	10	6.657
71	1989	11	6.959
72	1989	12	7.512
73	1990	1	6.931
74	1990	2	6.085
75	1990	3	5.932
76	1990	4	5.270
77	1990	5	4.885
78	1990	6	4.840
79	1990	7	4.997
80	1990	8	5.215
81	1990	9	5.406
82	1990	10	6.493
83	1990	11	6.628
84	1990	12	7.228
85	1991	1	7.173
86	1991	2	5.905
87	1991	3	5.916
88	1991	4	5.250
89	1991	5	5.205
90	1991	6	4.412
91	1991	7	5.014
92	1991	8	5.335
93	1991	9	5.533
94	1991	10	6.461
95	1991	11	6.689
96	1991	12	7.168
97	1992	1	7.212
98	1992	2	6.064
99	1992	3	6.056
100	1992	4	5.203

Indiana Michigan Power Company - Indiana
Other Ultimate Energy Sales
Endogenous Variables

Obs	YEAR	MONTH	eu_imi
101	1992	5	4.98800
102	1992	6	4.67700
103	1992	7	4.97900
104	1992	8	5.27200
105	1992	9	5.56200
106	1992	10	6.41000
107	1992	11	6.67600
108	1992	12	7.38300
109	1993	1	7.22900
110	1993	2	6.19600
111	1993	3	5.96400
112	1993	4	5.26200
113	1993	5	4.96800
114	1993	6	4.92000
115	1993	7	5.06900
116	1993	8	5.34300
117	1993	9	5.53800
118	1993	10	6.54400
119	1993	11	6.74900
120	1993	12	7.39600
121	1994	1	7.28900
122	1994	2	5.63900
123	1994	3	5.95800
124	1994	4	5.34300
125	1994	5	5.00300
126	1994	6	4.99600
127	1994	7	4.83400
128	1994	8	5.37000
129	1994	9	5.64700
130	1994	10	6.32900
131	1994	11	6.70500
132	1994	12	7.21000
133	1995	1	7.26200
134	1995	2	6.06900
135	1995	3	6.06100
136	1995	4	5.37800
137	1995	5	4.99400
138	1995	6	5.12300
139	1995	7	5.31700
140	1995	8	4.38600
141	1995	9	5.57200
142	1995	10	6.62100
143	1995	11	6.85700
144	1995	12	7.14700
145	1996	1	7.34704
146	1996	2	6.25522
147	1996	3	6.00128
148	1996	4	5.40568
149	1996	5	4.95679
150	1996	6	4.76238

Indiana Michigan Power Company - Indiana
Other Ultimate Energy Sales
Endogenous Variables

Obs	YEAR	MONTH	eu_imi
151	1996	7	5.05251
152	1996	8	5.31069
153	1996	9	5.63576
154	1996	10	6.35725
155	1996	11	6.64791
156	1996	12	7.30531
157	1997	1	7.36676
158	1997	2	6.26851
159	1997	3	6.23928
160	1997	4	5.50390
161	1997	5	5.00220
162	1997	6	4.78249
163	1997	7	5.15507
164	1997	8	5.36428
165	1997	9	5.62244
166	1997	10	6.32648
167	1997	11	6.77327
168	1997	12	7.39943
169	1998	1	7.59205
170	1998	2	7.00212
171	1998	3	6.48029
172	1998	4	4.71664
173	1998	5	5.31360
174	1998	6	5.02076
175	1998	7	4.97456
176	1998	8	5.34663
177	1998	9	5.83605
178	1998	10	6.48823
179	1998	11	6.82281
180	1998	12	7.56013
181	1999	1	7.47794
182	1999	2	6.30730
183	1999	3	6.18800
184	1999	4	5.54175
185	1999	5	4.99347
186	1999	6	4.75244
187	1999	7	4.98519
188	1999	8	5.36647
189	1999	9	5.77266
190	1999	10	6.48068
191	1999	11	6.73442
192	1999	12	7.42668
193	2000	1	7.53127
194	2000	2	6.29559
195	2000	3	6.22689
196	2000	4	5.39518
197	2000	5	5.03303
198	2000	6	4.72834
199	2000	7	4.85959
200	2000	8	5.28090

Indiana Michigan Power Company - Indiana
Other Ultimate Energy Sales
Endogenous Variables

Obs	YEAR	MONTH	eu_imi
201	2000	9	5.77466
202	2000	10	6.46666
203	2000	11	6.70160
204	2000	12	7.47538
205	2001	1	7.43633
206	2001	2	6.28535
207	2001	3	6.25123
208	2001	4	5.37829
209	2001	5	5.09162
210	2001	6	4.78761
211	2001	7	5.01011
212	2001	8	5.36509
213	2001	9	5.83132
214	2001	10	6.49943
215	2001	11	6.74895
216	2001	12	7.41472
217	2002	1	7.48962
218	2002	2	6.33649
219	2002	3	6.25963
220	2002	4	5.57336
221	2002	5	5.15404
222	2002	6	4.79931
223	2002	7	4.98710
224	2002	8	5.36729
225	2002	9	5.85476
226	2002	10	6.48510
227	2002	11	6.81571
228	2002	12	7.56402
229	2003	1	7.47969
230	2003	2	6.35803
231	2003	3	6.23659
232	2003	4	5.49933
233	2003	5	5.08656
234	2003	6	4.71863
235	2003	7	4.93025
236	2003	8	5.31170
237	2003	9	5.87781
238	2003	10	6.43092
239	2003	11	6.76855
240	2003	12	7.54633
241	2004	1	7.58558
242	2004	2	6.38438
243	2004	3	6.20264
244	2004	4	5.53067
245	2004	5	5.10162
246	2004	6	4.83566
247	2004	7	4.91626
248	2004	8	5.31175
249	2004	9	5.86469
250	2004	10	6.44770

Indiana Michigan Power Company - Indiana
Other Ultimate Energy Sales
Endogenous Variables

Obs	YEAR	MONTH	eu_imi
251	2004	11	6.76639
252	2004	12	7.52947
253	2005	1	7.48968
254	2005	2	6.29867
255	2005	3	6.21864
256	2005	4	5.47646
257	2005	5	4.97646
258	2005	6	4.69812
259	2005	7	4.91648
260	2005	8	5.24891
261	2005	9	5.73007
262	2005	10	6.34166
263	2005	11	6.62729
264	2005	12	7.29901
265	2006	1	7.38432
266	2006	2	6.15589
267	2006	3	6.09855
268	2006	4	5.33073
269	2006	5	4.86163
270	2006	6	4.53880
271	2006	7	4.75137
272	2006	8	5.18328
273	2006	9	5.67586
274	2006	10	5.82394
275	2006	11	6.66566
276	2006	12	7.37693
277	2007	1	7.31195
278	2007	2	6.24025
279	2007	3	4.76384
280	2007	4	5.28198
281	2007	5	4.34340
282	2007	6	6.04794
283	2007	7	4.55352
284	2007	8	4.97355
285	2007	9	5.36737
286	2007	10	5.94960
287	2007	11	6.23954
288	2007	12	6.88397
289	2008	1	6.88442
290	2008	2	5.72350
291	2008	3	5.65156
292	2008	4	4.87965
293	2008	5	4.41166
294	2008	6	4.10441
295	2008	7	4.23243
296	2008	8	4.65133
297	2008	9	5.11402
298	2008	10	5.74543
299	2008	11	3.64506
300	2008	12	9.28904

Indiana Michigan Power Company - Indiana
Other Ultimate Energy Sales
Endogenous Variables

Obs	YEAR	MONTH	eu_imi
301	2009	1	6.80893
302	2009	2	5.63369
303	2009	3	5.54991
304	2009	4	4.80795
305	2009	5	4.33302
306	2009	6	4.01344
307	2009	7	3.85598
308	2009	8	5.03807
309	2009	9	5.13322
310	2009	10	3.44222
311	2009	11	8.57216
312	2009	12	6.74136
313	2010	1	3.97631
314	2010	2	5.95516
315	2010	3	5.53663
316	2010	4	7.01381
317	2010	5	4.26412
318	2010	6	3.96282
319	2010	7	4.18531
320	2010	8	4.59725
321	2010	9	5.01677
322	2010	10	3.27973
323	2010	11	8.41990
324	2010	12	3.86508
325	2011	1	6.62465
326	2011	2	8.17790
327	2011	3	5.42938
328	2011	4	4.65316
329	2011	5	4.23742
330	2011	6	3.92799
331	2011	7	4.11466
332	2011	8	4.54683
333	2011	9	2.96236
334	2011	10	7.62891
335	2011	11	5.89339
336	2011	12	3.78052
337	2012	1	9.24639
338	2012	2	5.45182
339	2012	3	5.05418
340	2012	4	4.98246
341	2012	5	4.19265
342	2012	6	3.85823
343	2012	7	4.07694
344	2012	8	4.49928
345	2012	9	4.90830
346	2012	10	5.57596
347	2012	11	5.92591
348	2012	12	6.48206
349	2013	1	6.43783
350	2013	2	5.43551

Indiana Michigan Power Company - Indiana
Other Ultimate Energy Sales
Endogenous Variables

Obs	YEAR	MONTH	eu_imi
351	2013	3	5.31009
352	2013	4	4.61608
353	2013	5	4.14042
354	2013	6	3.81221
355	2013	7	4.03780
356	2013	8	4.45668
357	2013	9	4.91675
358	2013	10	5.60582
359	2013	11	5.90553
360	2013	12	6.46215
361	2014	1	6.45451
362	2014	2	5.38522
363	2014	3	5.34517
364	2014	4	4.59135
365	2014	5	4.15344
366	2014	6	3.81238
367	2014	7	3.99950
368	2014	8	4.41689
369	2014	9	4.88027
370	2014	10	5.63450
371	2014	11	5.89465
372	2014	12	6.35281
373	2015	1	6.39506
374	2015	2	5.36820
375	2015	3	5.29550
376	2015	4	4.58447
377	2015	5	4.09286
378	2015	6	3.78621
379	2015	7	3.97503
380	2015	8	4.39142
381	2015	9	4.84361
382	2015	10	5.49109
383	2015	11	5.82333
384	2015	12	6.42043
385	2016	1	3.66515
386	2016	2	8.02291
387	2016	3	5.25741
388	2016	4	4.53009
389	2016	5	4.07440
390	2016	6	3.74277
391	2016	7	3.94803
392	2016	8	4.39985
393	2016	9	4.83556
394	2016	10	5.50445
395	2016	11	5.81644
396	2016	12	6.42962
397	2017	1	6.33105
398	2017	2	5.32488
399	2017	3	5.25288
400	2017	4	4.61182

Indiana Michigan Power Company - Indiana
Other Ultimate Energy Sales
Endogenous Variables

Obs	YEAR	MONTH	eu_imi
401	2017	5	3.94838
402	2017	6	3.71130
403	2017	7	3.93881
404	2017	8	4.38332
405	2017	9	4.83007
406	2017	10	5.46695
407	2017	11	7.79034
408	2017	12	3.49609
409	2018	1	7.20174
410	2018	2	5.32741
411	2018	3	4.69830
412	2018	4	5.02161
413	2018	5	4.02207
414	2018	6	3.76957
415	2018	7	3.83162
416	2018	8	4.30755
417	2018	9	4.74568
418	2018	10	5.38058
419	2018	11	5.68860
420	2018	12	6.23658
421	2019	1	6.17877
422	2019	2	5.21970
423	2019	3	4.52024
424	2019	4	4.97694
425	2019	5	3.95938
426	2019	6	3.24588
427	2019	7	4.24637
428	2019	8	3.79954
429	2019	9	5.14791
430	2019	10	5.32865
431	2019	11	4.86669
432	2019	12	6.91278
433	2020	1	5.97336
434	2020	2	4.43943
435	2020	3	4.93120
436	2020	4	4.81972
437	2020	5	3.77250
438	2020	6	3.44129
439	2020	7	3.65883
440	2020	8	4.07647
441	2020	9	4.49874
442	2020	10	5.14567
443	2020	11	5.45328
444	2020	12	5.98720
445	2021	1	5.92682
446	2021	2	.
447	2021	3	.
448	2021	4	.
449	2021	5	.
450	2021	6	.

Indiana Michigan Power Company - Indiana
Other Ultimate Energy Sales
Endogenous Variables

Obs	YEAR	MONTH	eu_imi
451	2021	7	.
452	2021	8	.
453	2021	9	.
454	2021	10	.
455	2021	11	.
456	2021	12	.
457	2022	1	.
458	2022	2	.
459	2022	3	.
460	2022	4	.
461	2022	5	.
462	2022	6	.
463	2022	7	.
464	2022	8	.
465	2022	9	.
466	2022	10	.
467	2022	11	.
468	2022	12	.
469	2023	1	.
470	2023	2	.
471	2023	3	.
472	2023	4	.
473	2023	5	.
474	2023	6	.
475	2023	7	.
476	2023	8	.
477	2023	9	.
478	2023	10	.
479	2023	11	.
480	2023	12	.
481	2024	1	.
482	2024	2	.
483	2024	3	.
484	2024	4	.
485	2024	5	.
486	2024	6	.
487	2024	7	.
488	2024	8	.
489	2024	9	.
490	2024	10	.
491	2024	11	.
492	2024	12	.
493	2025	1	.
494	2025	2	.
495	2025	3	.
496	2025	4	.
497	2025	5	.
498	2025	6	.
499	2025	7	.
500	2025	8	.

Indiana Michigan Power Company - Indiana
Other Ultimate Energy Sales
Endogenous Variables

Obs	YEAR	MONTH	eu_imi
501	2025	9	.
502	2025	10	.
503	2025	11	.
504	2025	12	.
505	2026	1	.
506	2026	2	.
507	2026	3	.
508	2026	4	.
509	2026	5	.
510	2026	6	.
511	2026	7	.
512	2026	8	.
513	2026	9	.
514	2026	10	.
515	2026	11	.
516	2026	12	.
517	2027	1	.
518	2027	2	.
519	2027	3	.
520	2027	4	.
521	2027	5	.
522	2027	6	.
523	2027	7	.
524	2027	8	.
525	2027	9	.
526	2027	10	.
527	2027	11	.
528	2027	12	.
529	2028	1	.
530	2028	2	.
531	2028	3	.
532	2028	4	.
533	2028	5	.
534	2028	6	.
535	2028	7	.
536	2028	8	.
537	2028	9	.
538	2028	10	.
539	2028	11	.
540	2028	12	.
541	2029	1	.
542	2029	2	.
543	2029	3	.
544	2029	4	.
545	2029	5	.
546	2029	6	.
547	2029	7	.
548	2029	8	.
549	2029	9	.
550	2029	10	.

Indiana Michigan Power Company - Indiana
Other Ultimate Energy Sales
Endogenous Variables

Obs	YEAR	MONTH	eu_imi
551	2029	11	.
552	2029	12	.
553	2030	1	.
554	2030	2	.
555	2030	3	.
556	2030	4	.
557	2030	5	.
558	2030	6	.
559	2030	7	.
560	2030	8	.
561	2030	9	.
562	2030	10	.
563	2030	11	.
564	2030	12	.
565	2031	1	.
566	2031	2	.
567	2031	3	.
568	2031	4	.
569	2031	5	.
570	2031	6	.
571	2031	7	.
572	2031	8	.
573	2031	9	.
574	2031	10	.
575	2031	11	.
576	2031	12	.
577	2032	1	.
578	2032	2	.
579	2032	3	.
580	2032	4	.
581	2032	5	.
582	2032	6	.
583	2032	7	.
584	2032	8	.
585	2032	9	.
586	2032	10	.
587	2032	11	.
588	2032	12	.
589	2033	1	.
590	2033	2	.
591	2033	3	.
592	2033	4	.
593	2033	5	.
594	2033	6	.
595	2033	7	.
596	2033	8	.
597	2033	9	.
598	2033	10	.
599	2033	11	.
600	2033	12	.

Indiana Michigan Power Company - Indiana
Other Ultimate Energy Sales
Endogenous Variables

Obs	YEAR	MONTH	eu_imi
601	2034	1	.
602	2034	2	.
603	2034	3	.
604	2034	4	.
605	2034	5	.
606	2034	6	.
607	2034	7	.
608	2034	8	.
609	2034	9	.
610	2034	10	.
611	2034	11	.
612	2034	12	.
613	2035	1	.
614	2035	2	.
615	2035	3	.
616	2035	4	.
617	2035	5	.
618	2035	6	.
619	2035	7	.
620	2035	8	.
621	2035	9	.
622	2035	10	.
623	2035	11	.
624	2035	12	.
625	2036	1	.
626	2036	2	.
627	2036	3	.
628	2036	4	.
629	2036	5	.
630	2036	6	.
631	2036	7	.
632	2036	8	.
633	2036	9	.
634	2036	10	.
635	2036	11	.
636	2036	12	.
637	2037	1	.
638	2037	2	.
639	2037	3	.
640	2037	4	.
641	2037	5	.
642	2037	6	.
643	2037	7	.
644	2037	8	.
645	2037	9	.
646	2037	10	.
647	2037	11	.
648	2037	12	.
649	2038	1	.
650	2038	2	.

Indiana Michigan Power Company - Indiana
Other Ultimate Energy Sales
Endogenous Variables

Obs	YEAR	MONTH	eu_imi
651	2038	3	.
652	2038	4	.
653	2038	5	.
654	2038	6	.
655	2038	7	.
656	2038	8	.
657	2038	9	.
658	2038	10	.
659	2038	11	.
660	2038	12	.
661	2039	1	.
662	2039	2	.
663	2039	3	.
664	2039	4	.
665	2039	5	.
666	2039	6	.
667	2039	7	.
668	2039	8	.
669	2039	9	.
670	2039	10	.
671	2039	11	.
672	2039	12	.
673	2040	1	.
674	2040	2	.
675	2040	3	.
676	2040	4	.
677	2040	5	.
678	2040	6	.
679	2040	7	.
680	2040	8	.
681	2040	9	.
682	2040	10	.
683	2040	11	.
684	2040	12	.
685	2041	1	.
686	2041	2	.
687	2041	3	.
688	2041	4	.
689	2041	5	.
690	2041	6	.
691	2041	7	.
692	2041	8	.
693	2041	9	.
694	2041	10	.
695	2041	11	.
696	2041	12	.
697	2042	1	.
698	2042	2	.
699	2042	3	.
700	2042	4	.

Indiana Michigan Power Company - Indiana
Other Ultimate Energy Sales
Endogenous Variables

Obs	YEAR	MONTH	eu_imi
701	2042	5	.
702	2042	6	.
703	2042	7	.
704	2042	8	.
705	2042	9	.
706	2042	10	.
707	2042	11	.
708	2042	12	.
709	2043	1	.
710	2043	2	.
711	2043	3	.
712	2043	4	.
713	2043	5	.
714	2043	6	.
715	2043	7	.
716	2043	8	.
717	2043	9	.
718	2043	10	.
719	2043	11	.
720	2043	12	.
721	2044	1	.
722	2044	2	.
723	2044	3	.
724	2044	4	.
725	2044	5	.
726	2044	6	.
727	2044	7	.
728	2044	8	.
729	2044	9	.
730	2044	10	.
731	2044	11	.
732	2044	12	.
733	2045	1	.
734	2045	2	.
735	2045	3	.
736	2045	4	.
737	2045	5	.
738	2045	6	.
739	2045	7	.
740	2045	8	.
741	2045	9	.
742	2045	10	.
743	2045	11	.
744	2045	12	.
745	2046	1	.
746	2046	2	.
747	2046	3	.
748	2046	4	.
749	2046	5	.
750	2046	6	.

Indiana Michigan Power Company - Indiana
Other Ultimate Energy Sales
Endogenous Variables

Obs	YEAR	MONTH	eu_imi
751	2046	7	.
752	2046	8	.
753	2046	9	.
754	2046	10	.
755	2046	11	.
756	2046	12	.
757	2047	1	.
758	2047	2	.
759	2047	3	.
760	2047	4	.
761	2047	5	.
762	2047	6	.
763	2047	7	.
764	2047	8	.
765	2047	9	.
766	2047	10	.
767	2047	11	.
768	2047	12	.
769	2048	1	.
770	2048	2	.
771	2048	3	.
772	2048	4	.
773	2048	5	.
774	2048	6	.
775	2048	7	.
776	2048	8	.
777	2048	9	.
778	2048	10	.
779	2048	11	.
780	2048	12	.
781	2049	1	.
782	2049	2	.
783	2049	3	.
784	2049	4	.
785	2049	5	.
786	2049	6	.
787	2049	7	.
788	2049	8	.
789	2049	9	.
790	2049	10	.
791	2049	11	.
792	2049	12	.
793	2050	1	.
794	2050	2	.
795	2050	3	.
796	2050	4	.
797	2050	5	.
798	2050	6	.
799	2050	7	.
800	2050	8	.

Indiana Michigan Power Company - Indiana
Other Ultimate Energy Sales
Endogenous Variables

Obs	YEAR	MONTH	eu_imi
801	2050	9	.
802	2050	10	.
803	2050	11	.
804	2050	12	.
805	2051	1	.
806	2051	2	.
807	2051	3	.
808	2051	4	.
809	2051	5	.
810	2051	6	.
811	2051	7	.
812	2051	8	.
813	2051	9	.
814	2051	10	.
815	2051	11	.
816	2051	12	.
817	2052	1	.
818	2052	2	.
819	2052	3	.
820	2052	4	.
821	2052	5	.
822	2052	6	.
823	2052	7	.
824	2052	8	.
825	2052	9	.
826	2052	10	.
827	2052	11	.
828	2052	12	.
829	2053	1	.
830	2053	2	.
831	2053	3	.
832	2053	4	.
833	2053	5	.
834	2053	6	.
835	2053	7	.
836	2053	8	.
837	2053	9	.
838	2053	10	.
839	2053	11	.
840	2053	12	.
841	2054	1	.
842	2054	2	.
843	2054	3	.
844	2054	4	.
845	2054	5	.
846	2054	6	.
847	2054	7	.
848	2054	8	.
849	2054	9	.
850	2054	10	.

Indiana Michigan Power Company - Indiana
Other Ultimate Energy Sales
Endogenous Variables

Obs	YEAR	MONTH	eu_imi
851	2054	11	.
852	2054	12	.
853	2055	1	.
854	2055	2	.
855	2055	3	.
856	2055	4	.
857	2055	5	.
858	2055	6	.
859	2055	7	.
860	2055	8	.
861	2055	9	.
862	2055	10	.
863	2055	11	.
864	2055	12	.
865	2056	1	.
866	2056	2	.
867	2056	3	.
868	2056	4	.
869	2056	5	.
870	2056	6	.
871	2056	7	.
872	2056	8	.
873	2056	9	.
874	2056	10	.
875	2056	11	.
876	2056	12	.
877	2057	1	.
878	2057	2	.
879	2057	3	.
880	2057	4	.
881	2057	5	.
882	2057	6	.
883	2057	7	.
884	2057	8	.
885	2057	9	.
886	2057	10	.
887	2057	11	.
888	2057	12	.

Indiana Michigan Power Company - Indiana
Other Ultimate Energy Sales
Exogenous Variables

The MEANS Procedure

Variable	Label	Mean
YEAR	YEAR	2020.50
MONTH	MONTH	6.5000000
D07ON	BINARY VARIABLE-2007 ON	0.6891892
d052qon	BINARY VARIABLE-APRIL 2005 ON	0.7128378
d082qon	BINARY VARIABLE-APRIL 2008 ON	0.6722973
d092qon	BINARY VARIABLE-APRIL 2009 ON	0.6587838
d072	BINARY VARIABLE-APRIL THROUGH JUNE 2007	0.0011261
d101	BINARY VARIABLE-JANUARY THROUGH MARCH 2010	0.0011261
d102	BINARY VARIABLE-APRIL THROUGH JUNE 2010	0.0011261
LCOM	SERVICE AREA COMMERCIAL EMPLOYMENT	510.1617226
nov08	BINARY VARIABLE-NOVEMBER 2008	0.0011261
dec08	BINARY VARIABLE-DECEMBER 2008	0.0011261
oct10	BINARY VARIABLE-OCTOBER 2010	0.0011261
nov10	BINARY VARIABLE-NOVEMBER 2010	0.0011261
dec10	BINARY VARIABLE-DECEMBER 2010	0.0011261
feb11	BINARY VARIABLE-FEBRUARY 2011	0.0011261
d1	BINARY VARIABLE-JANUARY	0.0833333
d2	BINARY VARIABLE-FEBRUARY	0.0833333
d3	BINARY VARIABLE-MARCH	0.0833333
d4	BINARY VARIABLE-APRIL	0.0833333
d5	BINARY VARIABLE-MAY	0.0833333
d6	BINARY VARIABLE-JUNE	0.0833333
d7	BINARY VARIABLE-JULY	0.0833333
d8	BINARY VARIABLE-AUGUST	0.0833333
d9	BINARY VARIABLE-SEPTEMBER	0.0833333
d10	BINARY VARIABLE-OCTOBER	0.0833333
d11	BINARY VARIABLE-NOVEMBER	0.0833333
jan16	BINARY VARIABLE-JANUARY 2016	0.0011261
mayd13on	BINARY VARIABLE-2013 ON MAY ONLY	0.0506757
jund13on	BINARY VARIABLE-2013 ON JUNE ONLY	0.0506757
juld13on	BINARY VARIABLE-2013 ON JULY ONLY	0.0506757
feb16	BINARY VARIABLE-FEBRUARY 2016	0.0011261
nov17	BINARY VARIABLE-NOVEMBER 2017	0.0011261
dec17	BINARY VARIABLE-DECEMBER 2017	0.0011261
jan20on	BINARTY VARIABLE-JANUARY 2020 ON	0.5135135

Obs	YEAR	MONTH	DON	d0 5 2 q n	d0 8 2 q n	d0 9 2 q n	d d d 0 1 2 7 0 0	LCOM	n o v 0 8	d e c 0 8	o c t 0 0	n v 1 0	d e c 1 0	f e b 1 0	m a y j a n 1 o	j u n d d 1 3 o	j u l d d 1 3 o	f e b 1 6	n o v 1 7	d e c 1 7	j a n 2 0 n	PRICE
1	1984	1	0	0	0	0	0	315.800	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
2	1984	2	0	0	0	0	0	317.301	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
3	1984	3	0	0	0	0	0	318.789	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
4	1984	4	0	0	0	0	0	320.276	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
5	1984	5	0	0	0	0	0	321.739	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
6	1984	6	0	0	0	0	0	323.129	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
7	1984	7	0	0	0	0	0	324.473	0	0	0	0	0	0	0	0	0	0	0	0	0	CONDID.
8	1984	8	0	0	0	0	0	325.759	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
9	1984	9	0	0	0	0	0	326.963	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
10	1984	10	0	0	0	0	0	328.117	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
11	1984	11	0	0	0	0	0	329.233	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
12	1984	12	0	0	0	0	0	330.316	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
13	1985	1	0	0	0	0	0	331.386	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
14	1985	2	0	0	0	0	0	332.404	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
15	1985	3	0	0	0	0	0	333.409	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
16	1985	4	0	0	0	0	0	334.465	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
17	1985	5	0	0	0	0	0	335.526	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
18	1985	6	0	0	0	0	0	336.626	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
19	1985	7	0	0	0	0	0	337.751	0	0	0	0	0	0	0	0	0	0	0	0	0	CONDID.
20	1985	8	0	0	0	0	0	338.929	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
21	1985	9	0	0	0	0	0	340.132	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
22	1985	10	0	0	0	0	0	341.371	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
23	1985	11	0	0	0	0	0	342.636	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
24	1985	12	0	0	0	0	0	343.936	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
25	1986	1	0	0	0	0	0	345.273	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
26	1986	2	0	0	0	0	0	346.558	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
27	1986	3	0	0	0	0	0	347.878	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
28	1986	4	0	0	0	0	0	349.255	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
29	1986	5	0	0	0	0	0	350.636	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
30	1986	6	0	0	0	0	0	352.033	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
31	1986	7	0	0	0	0	0	353.432	0	0	0	0	0	0	0	0	0	0	0	0	0	CONDID.
32	1986	8	0	0	0	0	0	354.853	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
33	1986	9	0	0	0	0	0	356.258	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
34	1986	10	0	0	0	0	0	357.677	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
35	1986	11	0	0	0	0	0	359.071	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
36	1986	12	0	0	0	0	0	360.474	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
37	1987	1	0	0	0	0	0	361.887	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
38	1987	2	0	0	0	0	0	363.220	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
39	1987	3	0	0	0	0	0	364.554	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
40	1987	4	0	0	0	0	0	365.916	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
41	1987	5	0	0	0	0	0	367.260	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
42	1987	6	0	0	0	0	0	368.591	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
43	1987	7	0	0	0	0	0	369.897	0	0	0	0	0	0	0	0	0	0	0	0	0	CONDID.

Obs	YEAR	MONTH	DO7NO	d05qoNn	d08qonn	d09qon2	d01d07	d01d12	d01d12	LCOM	nov08	dec08	oct01	nov01	dec01	feb01	dd02	dd03	dd04	dd05	dd06	dd07	dd08	dd09	dd10	jan16	may1no	jun3no	jul3no	feb1no	jun1no	dec1no	jan2no	PRICE
44	1987	8	0	0	0	0	0	0	0	371.206	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	CONFID.
45	1987	9	0	0	0	0	0	0	0	372.476	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	CONFID.
46	1987	10	0	0	0	0	0	0	0	373.729	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	CONFID.
47	1987	11	0	0	0	0	0	0	0	374.966	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	CONFID.
48	1987	12	0	0	0	0	0	0	0	376.205	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
49	1988	1	0	0	0	0	0	0	0	377.443	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
50	1988	2	0	0	0	0	0	0	0	378.635	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
51	1988	3	0	0	0	0	0	0	0	379.819	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
52	1988	4	0	0	0	0	0	0	0	381.023	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
53	1988	5	0	0	0	0	0	0	0	382.213	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
54	1988	6	0	0	0	0	0	0	0	383.419	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	CONFID.
55	1988	7	0	0	0	0	0	0	0	384.619	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	CONDID.
56	1988	8	0	0	0	0	0	0	0	385.836	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	CONFID.
57	1988	9	0	0	0	0	0	0	0	387.029	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	CONFID.
58	1988	10	0	0	0	0	0	0	0	388.217	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	CONFID.
59	1988	11	0	0	0	0	0	0	0	389.385	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	CONFID.
60	1988	12	0	0	0	0	0	0	0	390.537	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
61	1989	1	0	0	0	0	0	0	0	391.677	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
62	1989	2	0	0	0	0	0	0	0	392.730	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
63	1989	3	0	0	0	0	0	0	0	393.753	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
64	1989	4	0	0	0	0	0	0	0	394.774	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
65	1989	5	0	0	0	0	0	0	0	395.736	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
66	1989	6	0	0	0	0	0	0	0	396.654	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	CONFID.
67	1989	7	0	0	0	0	0	0	0	397.518	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	CONDID.
68	1989	8	0	0	0	0	0	0	0	398.336	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	CONFID.
69	1989	9	0	0	0	0	0	0	0	399.060	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	CONFID.
70	1989	10	0	0	0	0	0	0	0	399.734	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	CONFID.
71	1989	11	0	0	0	0	0	0	0	400.319	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	CONFID.
72	1989	12	0	0	0	0	0	0	0	400.840	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
73	1990	1	0	0	0	0	0	0	0	401.275	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
74	1990	2	0	0	0	0	0	0	0	401.607	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
75	1990	3	0	0	0	0	0	0	0	401.855	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
76	1990	4	0	0	0	0	0	0	0	402.030	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
77	1990	5	0	0	0	0	0	0	0	402.100	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
78	1990	6	0	0	0	0	0	0	0	402.075	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	CONFID.
79	1990	7	0	0	0	0	0	0	0	401.936	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	CONDID.
80	1990	8	0	0	0	0	0	0	0	401.709	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	CONFID.
81	1990	9	0	0	0	0	0	0	0	401.403	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	CONFID.
82	1990	10	0	0	0	0	0	0	0	401.042	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	CONFID.
83	1990	11	0	0	0	0	0	0	0	400.642	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	CONFID.
84	1990	12	0	0	0	0	0	0	0	400.228	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
85	1991	1	0	0	0	0	0	0	0	399.802	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
86	1991	2	0	0	0	0	0	0	0	399.441	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.

Obs	YEAR	MONTH	DON	d005q	d022q	d029q	0702	0801	0900	LCOM	nov08	dec08	oct00	nov00	dec00	feb01	dec01	feb02	dec02	feb03	dec03	feb04	dec04	feb05	dec05	feb06	dec06	jan07	dec07	jan08	dec08	jan09	dec09	jan10	PRICE
87	1991	3	0	0	0	0	0	0	0	399.094	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
88	1991	4	0	0	0	0	0	0	0	398.817	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
89	1991	5	0	0	0	0	0	0	0	398.623	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
90	1991	6	0	0	0	0	0	0	0	398.524	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
91	1991	7	0	0	0	0	0	0	0	398.560	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	CONDID.
92	1991	8	0	0	0	0	0	0	0	398.715	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	CONFID.
93	1991	9	0	0	0	0	0	0	0	398.998	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	CONFID.
94	1991	10	0	0	0	0	0	0	0	399.392	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	CONFID.
95	1991	11	0	0	0	0	0	0	0	399.867	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	CONFID.
96	1991	12	0	0	0	0	0	0	0	400.437	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	CONFID.
97	1992	1	0	0	0	0	0	0	0	401.098	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
98	1992	2	0	0	0	0	0	0	0	401.799	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
99	1992	3	0	0	0	0	0	0	0	402.553	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
100	1992	4	0	0	0	0	0	0	0	403.365	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
101	1992	5	0	0	0	0	0	0	0	404.215	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
102	1992	6	0	0	0	0	0	0	0	405.079	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
103	1992	7	0	0	0	0	0	0	0	405.953	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	CONDID.
104	1992	8	0	0	0	0	0	0	0	406.858	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	CONFID.
105	1992	9	0	0	0	0	0	0	0	407.753	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	CONFID.
106	1992	10	0	0	0	0	0	0	0	408.677	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	CONFID.
107	1992	11	0	0	0	0	0	0	0	409.627	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	CONFID.
108	1992	12	0	0	0	0	0	0	0	410.610	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
109	1993	1	0	0	0	0	0	0	0	411.643	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
110	1993	2	0	0	0	0	0	0	0	412.674	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
111	1993	3	0	0	0	0	0	0	0	413.753	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
112	1993	4	0	0	0	0	0	0	0	414.925	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
113	1993	5	0	0	0	0	0	0	0	416.148	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
114	1993	6	0	0	0	0	0	0	0	417.452	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
115	1993	7	0	0	0	0	0	0	0	418.823	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	CONDID.
116	1993	8	0	0	0	0	0	0	0	420.285	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	CONFID.
117	1993	9	0	0	0	0	0	0	0	421.805	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	CONFID.
118	1993	10	0	0	0	0	0	0	0	423.367	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	CONFID.
119	1993	11	0	0	0	0	0	0	0	424.962	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	CONFID.
120	1993	12	0	0	0	0	0	0	0	426.590	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
121	1994	1	0	0	0	0	0	0	0	428.267	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
122	1994	2	0	0	0	0	0	0	0	429.863	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
123	1994	3	0	0	0	0	0	0	0	431.461	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
124	1994	4	0	0	0	0	0	0	0	433.099	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
125	1994	5	0	0	0	0	0	0	0	434.705	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
126	1994	6	0	0	0	0	0	0	0	436.283	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
127	1994	7	0	0	0	0	0	0	0	437.818	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	CONDID.
128	1994	8	0	0	0	0	0	0	0	439.322	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	CONFID.
129	1994	9	0	0	0	0	0	0	0	440.733	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	CONFID.

Obs	YEAR	MONTH	DD0N	DD52qnn	DD82qnn	DD92qnn	d07d21	d07d22	d11d20	LCOM	nov08	dec08	oct00	nov01	dec01	feb01	d01d02	d02d03	d03d04	d04d05	d05d06	d06d07	d07d08	d08d09	d09d10	jan11d16	mar11d16	may11d16	jun11d16	jul11d16	feb12b16	nov12c16	dec12c17	jan13d17	PRICE
130	1994	10	0	0	0	0	0	0	0	442.086	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	CONFID.
131	1994	11	0	0	0	0	0	0	0	443.386	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	CONFID.
132	1994	12	0	0	0	0	0	0	0	444.597	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
133	1995	1	0	0	0	0	0	0	0	445.770	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
134	1995	2	0	0	0	0	0	0	0	446.811	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
135	1995	3	0	0	0	0	0	0	0	447.764	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
136	1995	4	0	0	0	0	0	0	0	448.672	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
137	1995	5	0	0	0	0	0	0	0	449.497	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
138	1995	6	0	0	0	0	0	0	0	450.225	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	CONFID.
139	1995	7	0	0	0	0	0	0	0	450.862	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	CONDID.
140	1995	8	0	0	0	0	0	0	0	451.415	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	CONFID.
141	1995	9	0	0	0	0	0	0	0	451.883	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	CONFID.
142	1995	10	0	0	0	0	0	0	0	452.276	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	CONFID.
143	1995	11	0	0	0	0	0	0	0	452.627	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	CONFID.
144	1995	12	0	0	0	0	0	0	0	452.922	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
145	1996	1	0	0	0	0	0	0	0	453.197	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
146	1996	2	0	0	0	0	0	0	0	453.443	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
147	1996	3	0	0	0	0	0	0	0	453.693	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
148	1996	4	0	0	0	0	0	0	0	453.941	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
149	1996	5	0	0	0	0	0	0	0	454.210	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
150	1996	6	0	0	0	0	0	0	0	454.518	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	CONFID.
151	1996	7	0	0	0	0	0	0	0	454.863	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	CONDID.
152	1996	8	0	0	0	0	0	0	0	455.263	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	CONFID.
153	1996	9	0	0	0	0	0	0	0	455.709	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	CONFID.
154	1996	10	0	0	0	0	0	0	0	456.183	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	CONFID.
155	1996	11	0	0	0	0	0	0	0	456.709	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	CONFID.
156	1996	12	0	0	0	0	0	0	0	457.262	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
157	1997	1	0	0	0	0	0	0	0	457.859	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
158	1997	2	0	0	0	0	0	0	0	458.451	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
159	1997	3	0	0	0	0	0	0	0	459.071	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
160	1997	4	0	0	0	0	0	0	0	459.710	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
161	1997	5	0	0	0	0	0	0	0	460.380	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
162	1997	6	0	0	0	0	0	0	0	461.066	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	CONFID.
163	1997	7	0	0	0	0	0	0	0	461.755	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	CONDID.
164	1997	8	0	0	0	0	0	0	0	462.452	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	CONFID.
165	1997	9	0	0	0	0	0	0	0	463.158	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	CONFID.
166	1997	10	0	0	0	0	0	0	0	463.859	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	CONFID.
167	1997	11	0	0	0	0	0	0	0	464.538	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	CONFID.
168	1997	12	0	0	0	0	0	0	0	465.226	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
169	1998	1	0	0	0	0	0	0	0	465.900	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
170	1998	2	0	0	0	0	0	0	0	466.538	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
171	1998	3	0	0	0	0	0	0	0	467.143	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
172	1998	4	0	0	0	0	0	0	0	467.754	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.

Obs	YEAR	MONTH	DON	d005qnn	d022qnn	d089qnn	d07d02	d11d00	LCOM	nov08	dec08	oct00	nov00	dec00	feb11	dec11	oct12	nov12	dec12	jan13	feb13	mar13	apr13	may13	jun13	jul13	aug13	sep13	oct13	nov13	dec13	jan14	feb16	mar16	apr16	may16	jun16	jul16	aug16	sep16	oct16	nov16	dec16	jan17	PRICE
173	1998	5	0	0	0	0	0	0	0	468.344	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
174	1998	6	0	0	0	0	0	0	0	468.904	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
175	1998	7	0	0	0	0	0	0	0	469.427	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONDID.
176	1998	8	0	0	0	0	0	0	0	469.919	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
177	1998	9	0	0	0	0	0	0	0	470.390	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
178	1998	10	0	0	0	0	0	0	0	470.847	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
179	1998	11	0	0	0	0	0	0	0	471.301	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
180	1998	12	0	0	0	0	0	0	0	471.763	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
181	1999	1	0	0	0	0	0	0	0	472.250	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
182	1999	2	0	0	0	0	0	0	0	472.752	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
183	1999	3	0	0	0	0	0	0	0	473.273	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
184	1999	4	0	0	0	0	0	0	0	473.865	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	CONFID.
185	1999	5	0	0	0	0	0	0	0	474.508	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	CONFID.
186	1999	6	0	0	0	0	0	0	0	475.216	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	CONFID.
187	1999	7	0	0	0	0	0	0	0	476.004	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	CONDID.
188	1999	8	0	0	0	0	0	0	0	476.872	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	CONFID.
189	1999	9	0	0	0	0	0	0	0	477.760	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	CONFID.
190	1999	10	0	0	0	0	0	0	0	478.668	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	CONFID.
191	1999	11	0	0	0	0	0	0	0	479.557	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	CONFID.
192	1999	12	0	0	0	0	0	0	0	480.421	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	CONFID.
193	2000	1	0	0	0	0	0	0	0	481.232	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	CONFID.
194	2000	2	0	0	0	0	0	0	0	481.921	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	CONFID.
195	2000	3	0	0	0	0	0	0	0	482.493	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
196	2000	4	0	0	0	0	0	0	0	482.939	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	CONFID.
197	2000	5	0	0	0	0	0	0	0	483.205	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	CONFID.
198	2000	6	0	0	0	0	0	0	0	483.282	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	CONFID.
199	2000	7	0	0	0	0	0	0	0	483.136	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	CONDID.
200	2000	8	0	0	0	0	0	0	0	482.769	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	CONFID.
201	2000	9	0	0	0	0	0	0	0	482.211	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	CONFID.
202	2000	10	0	0	0	0	0	0	0	481.490	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	CONFID.
203	2000	11	0	0	0	0	0	0	0	480.632	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	CONFID.
204	2000	12	0	0	0	0	0	0	0	479.666	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	CONFID.
205	2001	1	0	0	0	0	0	0	0	478.608	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	CONFID.
206	2001	2	0	0	0	0	0	0	0	477.558	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	CONFID.
207	2001	3	0	0	0	0	0	0	0	476.488	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
208	2001	4	0	0	0	0	0	0	0	475.399	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	CONFID.
209	2001	5	0	0	0	0	0	0	0	474.350	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	CONFID.
210	2001	6	0	0	0	0	0	0	0	473.375	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	CONFID.
211	2001	7	0	0	0	0	0	0	0	472.493	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	CONDID.
212	2001	8	0	0	0	0	0	0	0	471.703	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	CONFID.
213	2001	9	0	0	0	0	0	0	0	471.040	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	CONFID.
214	2001	10	0	0	0	0	0	0	0	470.458	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	CONFID.
215	2001	11	0	0	0	0	0	0	0	469.958	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	CONFID.

Obs	YEAR	MONTH	DD02	DD58	DD92	DD070	DD10	DD12	LCOM	nov08	dec08	oct00	nov00	dec01	feb11	dec11	dec12	dec13	dec14	dec15	dec16	dec17	dec18	dec19	jan01	jan11	jan13	may01	may11	may13	jun01	jun11	jun13	feb01	feb11	feb13	nov01	nov11	nov13	dec02	PRICE
216	2001	12	0	0	0	0	0	0	469.531	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
217	2002	1	0	0	0	0	0	0	469.168	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
218	2002	2	0	0	0	0	0	0	468.850	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
219	2002	3	0	0	0	0	0	0	468.588	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
220	2002	4	0	0	0	0	0	0	468.343	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
221	2002	5	0	0	0	0	0	0	468.117	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
222	2002	6	0	0	0	0	0	0	467.904	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
223	2002	7	0	0	0	0	0	0	467.681	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONDID.
224	2002	8	0	0	0	0	0	0	467.481	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
225	2002	9	0	0	0	0	0	0	467.279	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
226	2002	10	0	0	0	0	0	0	467.095	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
227	2002	11	0	0	0	0	0	0	466.935	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
228	2002	12	0	0	0	0	0	0	466.818	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
229	2003	1	0	0	0	0	0	0	466.738	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
230	2003	2	0	0	0	0	0	0	466.710	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
231	2003	3	0	0	0	0	0	0	466.747	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
232	2003	4	0	0	0	0	0	0	466.852	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
233	2003	5	0	0	0	0	0	0	467.037	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
234	2003	6	0	0	0	0	0	0	467.303	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
235	2003	7	0	0	0	0	0	0	467.671	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONDID.
236	2003	8	0	0	0	0	0	0	468.131	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
237	2003	9	0	0	0	0	0	0	468.676	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
238	2003	10	0	0	0	0	0	0	469.268	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
239	2003	11	0	0	0	0	0	0	469.919	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
240	2003	12	0	0	0	0	0	0	470.616	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
241	2004	1	0	0	0	0	0	0	471.336	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
242	2004	2	0	0	0	0	0	0	472.049	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
243	2004	3	0	0	0	0	0	0	472.759	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
244	2004	4	0	0	0	0	0	0	473.463	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
245	2004	5	0	0	0	0	0	0	474.117	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
246	2004	6	0	0	0	0	0	0	474.743	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
247	2004	7	0	0	0	0	0	0	475.296	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONDID.
248	2004	8	0	0	0	0	0	0	475.796	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
249	2004	9	0	0	0	0	0	0	476.239	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
250	2004	10	0	0	0	0	0	0	476.631	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
251	2004	11	0	0	0	0	0	0	476.991	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
252	2004	12	0	0	0	0	0	0	477.341	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
253	2005	1	0	0	0	0	0	0	477.673	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
254	2005	2	0	0	0	0	0	0	477.987	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
255	2005	3	0	0	0	0	0	0	478.318	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
256	2005	4	0	1	0	0	0	0	478.666	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
257	2005	5	0	1	0	0	0	0	479.049	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
258	2005	6	0	1	0	0	0	0	479.475	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.

Obs	YEAR	MONTH	DON	d005qnn	d022qnn	d029qnn	d07dn2	d01dn1	d012dn0	LCOM	nov08	dec08	oct00	nov01	dec01	feb01	dec02	dec03	dec04	dec05	dec06	dec07	dec08	dec09	jan10	jan11	jan12	jan13	may14	jun15	jul16	feb17	nov17	dec17	jan20	PRICE
259	2005	7	0	1	0	0	0	0	0	479.939	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	CONDID.
260	2005	8	0	1	0	0	0	0	0	480.462	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	CONFID.
261	2005	9	0	1	0	0	0	0	0	481.015	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	CONFID.
262	2005	10	0	1	0	0	0	0	0	481.595	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	CONFID.
263	2005	11	0	1	0	0	0	0	0	482.196	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	CONFID.
264	2005	12	0	1	0	0	0	0	0	482.781	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
265	2006	1	0	1	0	0	0	0	0	483.362	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
266	2006	2	0	1	0	0	0	0	0	483.891	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
267	2006	3	0	1	0	0	0	0	0	484.382	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
268	2006	4	0	1	0	0	0	0	0	484.837	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
269	2006	5	0	1	0	0	0	0	0	485.222	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
270	2006	6	0	1	0	0	0	0	0	485.545	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
271	2006	7	0	1	0	0	0	0	0	485.765	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	CONDID.
272	2006	8	0	1	0	0	0	0	0	485.909	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	CONFID.
273	2006	9	0	1	0	0	0	0	0	485.962	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	CONFID.
274	2006	10	0	1	0	0	0	0	0	485.969	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	CONFID.
275	2006	11	0	1	0	0	0	0	0	485.933	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	CONFID.
276	2006	12	0	1	0	0	0	0	0	485.868	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
277	2007	1	1	1	0	0	0	0	0	485.795	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
278	2007	2	1	1	0	0	0	0	0	485.721	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
279	2007	3	1	1	0	0	0	0	0	485.690	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
280	2007	4	1	1	0	0	1	0	0	485.681	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
281	2007	5	1	1	0	0	0	0	0	485.726	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
282	2007	6	1	1	0	0	0	0	0	485.849	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
283	2007	7	1	1	0	0	0	0	0	486.053	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	CONDID.
284	2007	8	1	1	0	0	0	0	0	486.332	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	CONFID.
285	2007	9	1	1	0	0	0	0	0	486.634	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	CONFID.
286	2007	10	1	1	0	0	0	0	0	486.931	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	CONFID.
287	2007	11	1	1	0	0	0	0	0	487.182	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	CONFID.
288	2007	12	1	1	0	0	0	0	0	487.329	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
289	2008	1	1	1	0	0	0	0	0	487.336	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
290	2008	2	1	1	0	0	0	0	0	487.176	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
291	2008	3	1	1	0	0	0	0	0	486.800	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
292	2008	4	1	1	1	0	0	0	0	486.137	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
293	2008	5	1	1	1	0	0	0	0	485.179	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
294	2008	6	1	1	1	0	0	0	0	483.867	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
295	2008	7	1	1	1	0	0	0	0	482.170	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	CONDID.
296	2008	8	1	1	1	0	0	0	0	480.064	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	CONFID.
297	2008	9	1	1	1	0	0	0	0	477.679	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	CONFID.
298	2008	10	1	1	1	0	0	0	0	475.064	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	CONFID.
299	2008	11	1	1	1	0	0	0	0	472.269	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	CONFID.
300	2008	12	1	1	1	0	0	0	0	469.389	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
301	2009	1	1	1	1	0	0	0	0	466.447	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.

Obs	YEAR	MONTH	DON	d005qnn	d082qnn	d092qnn	d07d02	d01d12	d00d12	LCOM	nov08	dec08	oct00	nov01	dec01	feb01	d01d01	d02d01	d03d01	d04d01	d05d01	d06d01	d07d01	d08d01	d09d01	jan10d16	may1d16no	jun3d16no	jul3d16no	feb1d16	nov1d16	dec1d16	jan2d16no	PRICE
302	2009	2	1	1	1	0	0	0	0	463.693	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
303	2009	3	1	1	1	0	0	0	0	461.052	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
304	2009	4	1	1	1	1	0	0	0	458.516	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
305	2009	5	1	1	1	1	0	0	0	456.245	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
306	2009	6	1	1	1	1	0	0	0	454.303	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
307	2009	7	1	1	1	1	0	0	0	452.762	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	CONDID.
308	2009	8	1	1	1	1	0	0	0	451.626	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	CONFID.
309	2009	9	1	1	1	1	0	0	0	450.904	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	CONFID.
310	2009	10	1	1	1	1	0	0	0	450.520	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	CONFID.
311	2009	11	1	1	1	1	0	0	0	450.430	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	CONFID.
312	2009	12	1	1	1	1	0	0	0	450.580	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
313	2010	1	1	1	1	1	0	1	0	450.948	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
314	2010	2	1	1	1	1	0	0	0	451.465	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
315	2010	3	1	1	1	1	0	0	0	452.086	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
316	2010	4	1	1	1	1	0	0	1	452.803	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
317	2010	5	1	1	1	1	0	0	0	453.563	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
318	2010	6	1	1	1	1	0	0	0	454.309	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
319	2010	7	1	1	1	1	0	0	0	455.007	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	CONDID.
320	2010	8	1	1	1	1	0	0	0	455.633	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	CONFID.
321	2010	9	1	1	1	1	0	0	0	456.193	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	CONFID.
322	2010	10	1	1	1	1	0	0	0	456.694	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	CONFID.
323	2010	11	1	1	1	1	0	0	0	457.151	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	CONFID.
324	2010	12	1	1	1	1	0	0	0	457.575	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
325	2011	1	1	1	1	1	0	0	0	457.962	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
326	2011	2	1	1	1	1	0	0	0	458.319	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
327	2011	3	1	1	1	1	0	0	0	458.662	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
328	2011	4	1	1	1	1	0	0	0	459.011	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
329	2011	5	1	1	1	1	0	0	0	459.376	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
330	2011	6	1	1	1	1	0	0	0	459.742	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
331	2011	7	1	1	1	1	0	0	0	460.131	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	CONDID.
332	2011	8	1	1	1	1	0	0	0	460.545	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	CONFID.
333	2011	9	1	1	1	1	0	0	0	460.978	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	CONFID.
334	2011	10	1	1	1	1	0	0	0	461.422	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	CONFID.
335	2011	11	1	1	1	1	0	0	0	461.883	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	CONFID.
336	2011	12	1	1	1	1	0	0	0	462.334	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
337	2012	1	1	1	1	1	0	0	0	462.794	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
338	2012	2	1	1	1	1	0	0	0	463.236	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
339	2012	3	1	1	1	1	0	0	0	463.659	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
340	2012	4	1	1	1	1	0	0	0	464.078	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
341	2012	5	1	1	1	1	0	0	0	464.470	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
342	2012	6	1	1	1	1	0	0	0	464.834	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
343	2012	7	1	1	1	1	0	0	0	465.167	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	CONDID.
344	2012	8	1	1	1	1	0	0	0	465.470	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	CONFID.

Obs	YEAR	MONTH	D07NM	d05oct07	d08qtr2	d09qtr2	d0702	d0712	d1202	LCOM	nov08	dec08	oct00	nov00	dec00	feb01	dec01	dec02	dec03	dec04	dec05	dec06	dec07	dec08	dec09	jan10	jan11	jan16	may03	jun03	jul03	feb16	nov16	dec16	jan17	apr20	PRICE
345	2012	9	1	1	1	1	0	0	0	465.745	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	CONFID.
346	2012	10	1	1	1	1	0	0	0	465.987	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	CONFID.
347	2012	11	1	1	1	1	0	0	0	466.234	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	CONFID.
348	2012	12	1	1	1	1	0	0	0	466.455	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
349	2013	1	1	1	1	1	0	0	0	466.683	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
350	2013	2	1	1	1	1	0	0	0	466.889	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
351	2013	3	1	1	1	1	0	0	0	467.109	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
352	2013	4	1	1	1	1	0	0	0	467.344	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
353	2013	5	1	1	1	1	0	0	0	467.603	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	CONFID.
354	2013	6	1	1	1	1	0	0	0	467.882	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	CONFID.
355	2013	7	1	1	1	1	0	0	0	468.191	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	CONDID.
356	2013	8	1	1	1	1	0	0	0	468.536	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	CONFID.
357	2013	9	1	1	1	1	0	0	0	468.918	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	CONFID.
358	2013	10	1	1	1	1	0	0	0	469.331	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	CONFID.
359	2013	11	1	1	1	1	0	0	0	469.773	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	CONFID.
360	2013	12	1	1	1	1	0	0	0	470.260	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
361	2014	1	1	1	1	1	0	0	0	470.789	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
362	2014	2	1	1	1	1	0	0	0	471.337	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
363	2014	3	1	1	1	1	0	0	0	471.917	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
364	2014	4	1	1	1	1	0	0	0	472.576	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
365	2014	5	1	1	1	1	0	0	0	473.263	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	CONFID.
366	2014	6	1	1	1	1	0	0	0	473.994	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	CONFID.
367	2014	7	1	1	1	1	0	0	0	474.777	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	CONDID.
368	2014	8	1	1	1	1	0	0	0	475.614	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	CONFID.
369	2014	9	1	1	1	1	0	0	0	476.466	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	CONFID.
370	2014	10	1	1	1	1	0	0	0	477.352	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	CONFID.
371	2014	11	1	1	1	1	0	0	0	478.247	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	CONFID.
372	2014	12	1	1	1	1	0	0	0	479.151	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
373	2015	1	1	1	1	1	0	0	0	480.063	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
374	2015	2	1	1	1	1	0	0	0	480.931	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
375	2015	3	1	1	1	1	0	0	0	481.774	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
376	2015	4	1	1	1	1	0	0	0	482.621	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
377	2015	5	1	1	1	1	0	0	0	483.433	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	CONFID.
378	2015	6	1	1	1	1	0	0	0	484.203	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	CONFID.
379	2015	7	1	1	1	1	0	0	0	484.908	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	CONDID.
380	2015	8	1	1	1	1	0	0	0	485.567	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	CONFID.
381	2015	9	1	1	1	1	0	0	0	486.166	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	CONFID.
382	2015	10	1	1	1	1	0	0	0	486.735	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	CONFID.
383	2015	11	1	1	1	1	0	0	0	487.256	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	CONFID.
384	2015	12	1	1	1	1	0	0	0	487.744	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
385	2016	1	1	1	1	1	0	0	0	488.217	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	CONFID.
386	2016	2	1	1	1	1	0	0	0	488.672	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	CONFID.
387	2016	3	1	1	1	1	0	0	0	489.088	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.

Obs	YEAR	MONTH	DON7	d005qnn2	d022qnn2	d089qnn2	d07d12	d01d00	d01d12	LCOM	nov08	dec08	oct00	nov01	dec01	feb01	dec02	dec03	dec04	dec05	dec06	dec07	dec08	dec09	jan01	dec11	jan13n16	may13non	jun13non	jul13non	feb16	nov16	dec16	jan12n17	PRICE
388	2016	4	1	1	1	1	0	0	0	489.520	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
389	2016	5	1	1	1	1	0	0	0	489.950	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	CONFID.
390	2016	6	1	1	1	1	0	0	0	490.374	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	CONFID.
391	2016	7	1	1	1	1	0	0	0	490.836	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	CONDID.
392	2016	8	1	1	1	1	0	0	0	491.309	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
393	2016	9	1	1	1	1	0	0	0	491.766	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
394	2016	10	1	1	1	1	0	0	0	492.227	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
395	2016	11	1	1	1	1	0	0	0	492.685	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
396	2016	12	1	1	1	1	0	0	0	493.109	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
397	2017	1	1	1	1	1	0	0	0	493.529	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
398	2017	2	1	1	1	1	0	0	0	493.904	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
399	2017	3	1	1	1	1	0	0	0	494.229	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
400	2017	4	1	1	1	1	0	0	0	494.520	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
401	2017	5	1	1	1	1	0	0	0	494.762	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	CONFID.
402	2017	6	1	1	1	1	0	0	0	494.942	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	CONFID.
403	2017	7	1	1	1	1	0	0	0	495.051	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	CONDID.
404	2017	8	1	1	1	1	0	0	0	495.103	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
405	2017	9	1	1	1	1	0	0	0	495.126	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
406	2017	10	1	1	1	1	0	0	0	495.133	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
407	2017	11	1	1	1	1	0	0	0	495.154	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	1	0	CONFID.
408	2017	12	1	1	1	1	0	0	0	495.229	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	CONFID.
409	2018	1	1	1	1	1	0	0	0	495.370	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
410	2018	2	1	1	1	1	0	0	0	495.589	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
411	2018	3	1	1	1	1	0	0	0	495.940	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
412	2018	4	1	1	1	1	0	0	0	496.424	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
413	2018	5	1	1	1	1	0	0	0	497.103	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	CONFID.
414	2018	6	1	1	1	1	0	0	0	497.968	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	CONFID.
415	2018	7	1	1	1	1	0	0	0	499.049	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	CONDID.
416	2018	8	1	1	1	1	0	0	0	500.358	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
417	2018	9	1	1	1	1	0	0	0	501.780	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
418	2018	10	1	1	1	1	0	0	0	503.244	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	CONFID.
419	2018	11	1	1	1	1	0	0	0	504.695	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	CONFID.
420	2018	12	1	1	1	1	0	0	0	506.058	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
421	2019	1	1	1	1	1	0	0	0	507.262	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
422	2019	2	1	1	1	1	0	0	0	508.180	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
423	2019	3	1	1	1	1	0	0	0	508.807	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
424	2019	4	1	1	1	1	0	0	0	509.074	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
425	2019	5	1	1	1	1	0	0	0	508.868	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	CONFID.
426	2019	6	1	1	1	1	0	0	0	508.145	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	CONFID.
427	2019	7	1	1	1	1	0	0	0	506.807	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	CONDID.
428	2019	8	1	1	1	1	0	0	0	504.845	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
429	2019	9	1	1	1	1	0	0	0	502.423	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
430	2019	10	1	1	1	1	0	0	0	499.626	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.

Obs	YEAR	MONTH	D07NM	D02qtr	D05qtr	D08qtr	D09qtr	d070	d071	d072	LCOM	nov08	dec08	oct08	nov08	dec08	feb09	mar09	apr09	may09	jun09	jul09	aug09	sep09	oct09	nov09	dec09	jan10	feb10	mar10	apr10	may10	jun10	jul10	aug10	sep10	oct10	nov10	dec10	jan11	PRICE
431	2019	11	1	1	1	1	0	0	0	496.564	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	CONFID.
432	2019	12	1	1	1	1	0	0	0	493.354	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
433	2020	1	1	1	1	1	0	0	0	490.049	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
434	2020	2	1	1	1	1	0	0	0	486.920	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
435	2020	3	1	1	1	1	0	0	0	483.960	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
436	2020	4	1	1	1	1	0	0	0	481.241	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
437	2020	5	1	1	1	1	0	0	0	478.917	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	1	CONFID.
438	2020	6	1	1	1	1	0	0	0	477.101	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	1	CONFID.
439	2020	7	1	1	1	1	0	0	0	475.901	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	CONDID.
440	2020	8	1	1	1	1	0	0	0	475.349	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	CONFID.
441	2020	9	1	1	1	1	0	0	0	475.365	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	CONFID.
442	2020	10	1	1	1	1	0	0	0	475.881	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	CONFID.
443	2020	11	1	1	1	1	0	0	0	476.810	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	CONFID.
444	2020	12	1	1	1	1	0	0	0	478.116	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	CONFID.
445	2021	1	1	1	1	1	0	0	0	479.705	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
446	2021	2	1	1	1	1	0	0	0	481.421	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
447	2021	3	1	1	1	1	0	0	0	483.258	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
448	2021	4	1	1	1	1	0	0	0	485.218	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
449	2021	5	1	1	1	1	0	0	0	487.165	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	1	CONFID.
450	2021	6	1	1	1	1	0	0	0	489.012	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	1	CONFID.
451	2021	7	1	1	1	1	0	0	0	490.712	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	CONDID.
452	2021	8	1	1	1	1	0	0	0	492.265	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	CONFID.
453	2021	9	1	1	1	1	0	0	0	493.618	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	CONFID.
454	2021	10	1	1	1	1	0	0	0	494.821	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	CONFID.
455	2021	11	1	1	1	1	0	0	0	495.917	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	CONFID.
456	2021	12	1	1	1	1	0	0	0	496.925	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
457	2022	1	1	1	1	1	0	0	0	497.876	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
458	2022	2	1	1	1	1	0	0	0	498.741	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
459	2022	3	1	1	1	1	0	0	0	499.591	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
460	2022	4	1	1	1	1	0	0	0	500.467	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
461	2022	5	1	1	1	1	0	0	0	501.383	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	1	CONFID.
462	2022	6	1	1	1	1	0	0	0	502.335	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	1	CONFID.
463	2022	7	1	1	1	1	0	0	0	503.373	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	CONDID.
464	2022	8	1	1	1	1	0	0	0	504.505	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	CONFID.
465	2022	9	1	1	1	1	0	0	0	505.685	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	CONFID.
466	2022	10	1	1	1	1	0	0	0	506.930	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	CONFID.
467	2022	11	1	1	1	1	0	0	0	508.202	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	CONFID.
468	2022	12	1	1	1	1	0	0	0	509.486	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
469	2023	1	1	1	1	1	0	0	0	510.797	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
470	2023	2	1	1	1	1	0	0	0	512.034	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
471	2023	3	1	1	1	1	0	0	0	513.246	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
472	2023	4	1	1	1	1	0	0	0	514.452	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
473	2023	5	1	1	1	1	0	0	0	515.613	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	1	CONFID.

Obs	YEAR	MONTH	D07NM	d005q2o1n	d008q2o1n	d009q2o1n	d07201	d07202	d07203	LCOM	dnov08	ddec08	doct00	dnov00	ddec00	dfeb01	dmay01	djun01	djul01	daug01	dsep01	doct01	dnov01	ddec01	djan16	dfeb16	dmar16	dapr16	dmay16	djun16	djul16	daug16	dsep16	doct16	dnov16	ddec16	djan17	dfeb17	dmar17	dapr17	PRICE
474	2023	6	1	1	1	1	0	0	0	516.689	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	1	CONFID.
475	2023	7	1	1	1	1	0	0	0	517.675	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	CONDID.
476	2023	8	1	1	1	1	0	0	0	518.588	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	CONFID.
477	2023	9	1	1	1	1	0	0	0	519.393	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	CONFID.
478	2023	10	1	1	1	1	0	0	0	520.119	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	CONFID.
479	2023	11	1	1	1	1	0	0	0	520.769	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	CONFID.
480	2023	12	1	1	1	1	0	0	0	521.358	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
481	2024	1	1	1	1	1	0	0	0	521.898	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
482	2024	2	1	1	1	1	0	0	0	522.371	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
483	2024	3	1	1	1	1	0	0	0	522.799	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
484	2024	4	1	1	1	1	0	0	0	523.203	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
485	2024	5	1	1	1	1	0	0	0	523.585	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	1	CONFID.
486	2024	6	1	1	1	1	0	0	0	523.940	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	1	CONFID.
487	2024	7	1	1	1	1	0	0	0	524.277	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	1	CONDID.
488	2024	8	1	1	1	1	0	0	0	524.633	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	CONFID.
489	2024	9	1	1	1	1	0	0	0	524.946	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	CONFID.
490	2024	10	1	1	1	1	0	0	0	525.269	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	CONFID.
491	2024	11	1	1	1	1	0	0	0	525.581	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	CONFID.
492	2024	12	1	1	1	1	0	0	0	525.884	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
493	2025	1	1	1	1	1	0	0	0	526.199	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
494	2025	2	1	1	1	1	0	0	0	526.488	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
495	2025	3	1	1	1	1	0	0	0	526.778	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
496	2025	4	1	1	1	1	0	0	0	527.065	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
497	2025	5	1	1	1	1	0	0	0	527.357	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	1	CONFID.
498	2025	6	1	1	1	1	0	0	0	527.644	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	1	CONFID.
499	2025	7	1	1	1	1	0	0	0	527.933	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	CONDID.
500	2025	8	1	1	1	1	0	0	0	528.222	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	CONFID.
501	2025	9	1	1	1	1	0	0	0	528.506	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	CONFID.
502	2025	10	1	1	1	1	0	0	0	528.798	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	CONFID.
503	2025	11	1	1	1	1	0	0	0	529.072	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	CONFID.
504	2025	12	1	1	1	1	0	0	0	529.350	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
505	2026	1	1	1	1	1	0	0	0	529.634	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
506	2026	2	1	1	1	1	0	0	0	529.898	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
507	2026	3	1	1	1	1	0	0	0	530.166	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
508	2026	4	1	1	1	1	0	0	0	530.425	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
509	2026	5	1	1	1	1	0	0	0	530.690	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	1	CONFID.
510	2026	6	1	1	1	1	0	0	0	530.953	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	1	CONFID.
511	2026	7	1	1	1	1	0	0	0	531.209	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	CONDID.
512	2026	8	1	1	1	1	0	0	0	531.466	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	CONFID.
513	2026	9	1	1	1	1	0	0	0	531.708	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	CONFID.
514	2026	10	1	1	1	1	0	0	0	531.957	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	CONFID.
515	2026	11	1	1	1	1	0	0	0	532.198	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	CONFID.
516	2026	12	1	1	1	1	0	0	0	532.439	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.

Obs	YEAR	MONTH	D07	d05qnn	d08qnn	d09qnn	0702	0712	0712	LCOM	novv08	decct08	octt01	novv01	decc01	febb01	d01d	d02d	d03d	d04d	d05d	d06d	d07d	d08d	d09d	jan1d16	may1dno	jun1dno	jul1dno	jul3dno	aug3dfb	sep3dno	oct1dec	nov1dec	jan2no	PRICE
517	2027	1	1	1	1	1	0	0	0	532.683	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
518	2027	2	1	1	1	1	0	0	0	532.911	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
519	2027	3	1	1	1	1	0	0	0	533.133	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
520	2027	4	1	1	1	1	0	0	0	533.367	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
521	2027	5	1	1	1	1	0	0	0	533.610	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	1	CONFID.
522	2027	6	1	1	1	1	0	0	0	533.838	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	1	CONFID.
523	2027	7	1	1	1	1	0	0	0	534.081	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	CONDID.
524	2027	8	1	1	1	1	0	0	0	534.323	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	CONFID.
525	2027	9	1	1	1	1	0	0	0	534.564	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	CONFID.
526	2027	10	1	1	1	1	0	0	0	534.809	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	CONFID.
527	2027	11	1	1	1	1	0	0	0	535.052	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	CONFID.
528	2027	12	1	1	1	1	0	0	0	535.301	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
529	2028	1	1	1	1	1	0	0	0	535.551	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
530	2028	2	1	1	1	1	0	0	0	535.807	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
531	2028	3	1	1	1	1	0	0	0	536.052	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
532	2028	4	1	1	1	1	0	0	0	536.312	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
533	2028	5	1	1	1	1	0	0	0	536.561	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	1	CONFID.
534	2028	6	1	1	1	1	0	0	0	536.825	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	1	CONFID.
535	2028	7	1	1	1	1	0	0	0	537.088	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	CONDID.
536	2028	8	1	1	1	1	0	0	0	537.356	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	CONFID.
537	2028	9	1	1	1	1	0	0	0	537.621	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	CONFID.
538	2028	10	1	1	1	1	0	0	0	537.892	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	CONFID.
539	2028	11	1	1	1	1	0	0	0	538.159	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	CONFID.
540	2028	12	1	1	1	1	0	0	0	538.431	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
541	2029	1	1	1	1	1	0	0	0	538.709	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
542	2029	2	1	1	1	1	0	0	0	538.982	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
543	2029	3	1	1	1	1	0	0	0	539.236	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
544	2029	4	1	1	1	1	0	0	0	539.512	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
545	2029	5	1	1	1	1	0	0	0	539.785	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	1	CONFID.
546	2029	6	1	1	1	1	0	0	0	540.054	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	1	CONFID.
547	2029	7	1	1	1	1	0	0	0	540.328	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	CONDID.
548	2029	8	1	1	1	1	0	0	0	540.610	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	CONFID.
549	2029	9	1	1	1	1	0	0	0	540.878	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	CONFID.
550	2029	10	1	1	1	1	0	0	0	541.149	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	CONFID.
551	2029	11	1	1	1	1	0	0	0	541.424	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	CONFID.
552	2029	12	1	1	1	1	0	0	0	541.692	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
553	2030	1	1	1	1	1	0	0	0	541.963	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
554	2030	2	1	1	1	1	0	0	0	542.212	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
555	2030	3	1	1	1	1	0	0	0	542.474	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
556	2030	4	1	1	1	1	0	0	0	542.733	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
557	2030	5	1	1	1	1	0	0	0	542.993	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	1	CONFID.
558	2030	6	1	1	1	1	0	0	0	543.255	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	1	CONFID.
559	2030	7	1	1	1	1	0	0	0	543.506	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	CONDID.

Obs	YEAR	MONTH	D07	D02	D05	D08	D09	d01	d02	d03	LCOM	nov08	dec08	oct08	nov08	dec08	feb08	d01	d02	d03	d04	d05	d06	d07	d08	d09	d10	jan16	mar01	may01	jun01	jul01	feb01	nov01	dec01	jan02	PRICE
560	2030	8	1	1	1	1	0	0	0	543.760	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	CONFID.
561	2030	9	1	1	1	1	0	0	0	544.009	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	CONFID.
562	2030	10	1	1	1	1	0	0	0	544.259	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	CONFID.
563	2030	11	1	1	1	1	0	0	0	544.506	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	CONFID.
564	2030	12	1	1	1	1	0	0	0	544.755	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
565	2031	1	1	1	1	1	0	0	0	545.003	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
566	2031	2	1	1	1	1	0	0	0	545.239	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
567	2031	3	1	1	1	1	0	0	0	545.478	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
568	2031	4	1	1	1	1	0	0	0	545.727	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
569	2031	5	1	1	1	1	0	0	0	545.969	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	1	CONFID.
570	2031	6	1	1	1	1	0	0	0	546.216	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	1	CONFID.
571	2031	7	1	1	1	1	0	0	0	546.475	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	CONDID.
572	2031	8	1	1	1	1	0	0	0	546.731	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	CONFID.
573	2031	9	1	1	1	1	0	0	0	546.985	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	CONFID.
574	2031	10	1	1	1	1	0	0	0	547.240	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	CONFID.
575	2031	11	1	1	1	1	0	0	0	547.505	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	CONFID.
576	2031	12	1	1	1	1	0	0	0	547.762	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
577	2032	1	1	1	1	1	0	0	0	548.030	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
578	2032	2	1	1	1	1	0	0	0	548.288	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
579	2032	3	1	1	1	1	0	0	0	548.545	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
580	2032	4	1	1	1	1	0	0	0	548.807	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
581	2032	5	1	1	1	1	0	0	0	549.071	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	1	CONFID.
582	2032	6	1	1	1	1	0	0	0	549.338	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	1	CONFID.
583	2032	7	1	1	1	1	0	0	0	549.607	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	CONDID.
584	2032	8	1	1	1	1	0	0	0	549.873	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	CONFID.
585	2032	9	1	1	1	1	0	0	0	550.136	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	CONFID.
586	2032	10	1	1	1	1	0	0	0	550.402	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	CONFID.
587	2032	11	1	1	1	1	0	0	0	550.659	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	CONFID.
588	2032	12	1	1	1	1	0	0	0	550.930	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
589	2033	1	1	1	1	1	0	0	0	551.198	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
590	2033	2	1	1	1	1	0	0	0	551.461	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
591	2033	3	1	1	1	1	0	0	0	551.713	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
592	2033	4	1	1	1	1	0	0	0	551.967	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
593	2033	5	1	1	1	1	0	0	0	552.229	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	1	CONFID.
594	2033	6	1	1	1	1	0	0	0	552.491	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	1	CONFID.
595	2033	7	1	1	1	1	0	0	0	552.760	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	CONDID.
596	2033	8	1	1	1	1	0	0	0	553.025	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	CONFID.
597	2033	9	1	1	1	1	0	0	0	553.290	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	CONFID.
598	2033	10	1	1	1	1	0	0	0	553.546	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	CONFID.
599	2033	11	1	1	1	1	0	0	0	553.812	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	CONFID.
600	2033	12	1	1	1	1	0	0	0	554.080	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
601	2034	1	1	1	1	1	0	0	0	554.351	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
602	2034	2	1	1	1	1	0	0	0	554.606	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.

Obs	YEAR	MONTH	DON	d005qnn	d822qnn	d922qnn	d07021	d10021	d11021	LCOM	nov08	dec08	oct00	nov00	dec01	feb01	d01d	d02d	d03d	d04d	d05d	d06d	d07d	d08d	d09d	jan10	jan11	may16	jun03	jul03	jul03	feb16	nov06	dec07	apr17	jan20	PRICE
603	2034	3	1	1	1	1	0	0	0	554.869	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
604	2034	4	1	1	1	1	0	0	0	555.134	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
605	2034	5	1	1	1	1	0	0	0	555.403	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	CONFID.
606	2034	6	1	1	1	1	0	0	0	555.672	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	1	CONFID.
607	2034	7	1	1	1	1	0	0	0	555.958	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	1	CONDID.
608	2034	8	1	1	1	1	0	0	0	556.228	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
609	2034	9	1	1	1	1	0	0	0	556.509	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	CONFID.
610	2034	10	1	1	1	1	0	0	0	556.789	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	CONFID.
611	2034	11	1	1	1	1	0	0	0	557.070	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	CONFID.
612	2034	12	1	1	1	1	0	0	0	557.350	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
613	2035	1	1	1	1	1	0	0	0	557.631	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
614	2035	2	1	1	1	1	0	0	0	557.910	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
615	2035	3	1	1	1	1	0	0	0	558.187	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
616	2035	4	1	1	1	1	0	0	0	558.463	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
617	2035	5	1	1	1	1	0	0	0	558.745	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	CONFID.
618	2035	6	1	1	1	1	0	0	0	559.015	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	1	CONFID.
619	2035	7	1	1	1	1	0	0	0	559.298	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	1	CONDID.
620	2035	8	1	1	1	1	0	0	0	559.568	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
621	2035	9	1	1	1	1	0	0	0	559.844	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	CONFID.
622	2035	10	1	1	1	1	0	0	0	560.111	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	CONFID.
623	2035	11	1	1	1	1	0	0	0	560.382	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	CONFID.
624	2035	12	1	1	1	1	0	0	0	560.655	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
625	2036	1	1	1	1	1	0	0	0	560.922	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
626	2036	2	1	1	1	1	0	0	0	561.179	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
627	2036	3	1	1	1	1	0	0	0	561.448	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
628	2036	4	1	1	1	1	0	0	0	561.713	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
629	2036	5	1	1	1	1	0	0	0	561.978	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	CONFID.
630	2036	6	1	1	1	1	0	0	0	562.240	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	1	CONFID.
631	2036	7	1	1	1	1	0	0	0	562.510	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	1	CONDID.
632	2036	8	1	1	1	1	0	0	0	562.769	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
633	2036	9	1	1	1	1	0	0	0	563.034	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	CONFID.
634	2036	10	1	1	1	1	0	0	0	563.293	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	CONFID.
635	2036	11	1	1	1	1	0	0	0	563.556	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	CONFID.
636	2036	12	1	1	1	1	0	0	0	563.826	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
637	2037	1	1	1	1	1	0	0	0	564.100	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
638	2037	2	1	1	1	1	0	0	0	564.330	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
639	2037	3	1	1	1	1	0	0	0	564.597	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
640	2037	4	1	1	1	1	0	0	0	564.856	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
641	2037	5	1	1	1	1	0	0	0	565.119	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	CONFID.
642	2037	6	1	1	1	1	0	0	0	565.377	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	1	CONFID.
643	2037	7	1	1	1	1	0	0	0	565.639	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	1	CONDID.
644	2037	8	1	1	1	1	0	0	0	565.911	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
645	2037	9	1	1	1	1	0	0	0	566.164	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	CONFID.

Obs	YEAR	MONTH	DON	d005qnn	d822qnn	d922qnn	d07021	d10021	d11021	LCOM	nov08	dec08	oct00	nov00	dec01	feb11	d01	d02	d03	d04	d05	d06	d07	d08	d09	jan10	may11	jun13	jul13	jan16	mar13	aug13	jun16	feb16	nov16	dec16	jan17	PRICE
646	2037	10	1	1	1	1	0	0	0	566.427	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	CONFID.
647	2037	11	1	1	1	1	0	0	0	566.690	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	CONFID.
648	2037	12	1	1	1	1	0	0	0	566.950	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
649	2038	1	1	1	1	1	0	0	0	567.223	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
650	2038	2	1	1	1	1	0	0	0	567.477	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
651	2038	3	1	1	1	1	0	0	0	567.738	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
652	2038	4	1	1	1	1	0	0	0	568.003	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
653	2038	5	1	1	1	1	0	0	0	568.271	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	1	CONFID.
654	2038	6	1	1	1	1	0	0	0	568.537	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	1	CONFID.
655	2038	7	1	1	1	1	0	0	0	568.811	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	1	CONDID.
656	2038	8	1	1	1	1	0	0	0	569.079	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	CONFID.
657	2038	9	1	1	1	1	0	0	0	569.358	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	CONFID.
658	2038	10	1	1	1	1	0	0	0	569.623	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	CONFID.
659	2038	11	1	1	1	1	0	0	0	569.901	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	CONFID.
660	2038	12	1	1	1	1	0	0	0	570.173	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
661	2039	1	1	1	1	1	0	0	0	570.452	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
662	2039	2	1	1	1	1	0	0	0	570.717	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
663	2039	3	1	1	1	1	0	0	0	570.984	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
664	2039	4	1	1	1	1	0	0	0	571.266	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
665	2039	5	1	1	1	1	0	0	0	571.544	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	1	CONFID.
666	2039	6	1	1	1	1	0	0	0	571.825	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	1	CONFID.
667	2039	7	1	1	1	1	0	0	0	572.102	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	1	CONDID.
668	2039	8	1	1	1	1	0	0	0	572.389	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	CONFID.
669	2039	9	1	1	1	1	0	0	0	572.677	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	CONFID.
670	2039	10	1	1	1	1	0	0	0	572.948	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	CONFID.
671	2039	11	1	1	1	1	0	0	0	573.239	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	CONFID.
672	2039	12	1	1	1	1	0	0	0	573.522	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
673	2040	1	1	1	1	1	0	0	0	573.814	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
674	2040	2	1	1	1	1	0	0	0	574.094	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
675	2040	3	1	1	1	1	0	0	0	574.371	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
676	2040	4	1	1	1	1	0	0	0	574.666	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
677	2040	5	1	1	1	1	0	0	0	574.940	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	1	CONFID.
678	2040	6	1	1	1	1	0	0	0	575.235	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	1	CONFID.
679	2040	7	1	1	1	1	0	0	0	575.525	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	1	CONDID.
680	2040	8	1	1	1	1	0	0	0	575.809	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	CONFID.
681	2040	9	1	1	1	1	0	0	0	576.094	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	CONFID.
682	2040	10	1	1	1	1	0	0	0	576.382	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	CONFID.
683	2040	11	1	1	1	1	0	0	0	576.669	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	CONFID.
684	2040	12	1	1	1	1	0	0	0	576.957	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
685	2041	1	1	1	1	1	0	0	0	577.253	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
686	2041	2	1	1	1	1	0	0	0	577.518	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
687	2041	3	1	1	1	1	0	0	0	577.795	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
688	2041	4	1	1	1	1	0	0	0	578.084	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.

Obs	YEAR	MONTH	D07	d05	d08	d09	d07	d10	d12	LCOM	nov08	dec08	oct08	nov08	dec08	feb08	dd01	dd02	dd03	dd04	dd05	dd06	dd07	dd08	dd09	dd10	jan16	may1n	jun1d	jul1d	feb1d	jun1e	jan2e	PRICE
689	2041	5	1	1	1	1	0	0	0	578.376	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	1	CONFID.
690	2041	6	1	1	1	1	0	0	0	578.656	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	1	CONFID.
691	2041	7	1	1	1	1	0	0	0	578.956	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	CONDID.
692	2041	8	1	1	1	1	0	0	0	579.237	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	CONFID.
693	2041	9	1	1	1	1	0	0	0	579.532	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	CONFID.
694	2041	10	1	1	1	1	0	0	0	579.823	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	CONFID.
695	2041	11	1	1	1	1	0	0	0	580.124	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	CONFID.
696	2041	12	1	1	1	1	0	0	0	580.406	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
697	2042	1	1	1	1	1	0	0	0	580.696	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
698	2042	2	1	1	1	1	0	0	0	580.980	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
699	2042	3	1	1	1	1	0	0	0	581.261	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
700	2042	4	1	1	1	1	0	0	0	581.544	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
701	2042	5	1	1	1	1	0	0	0	581.839	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	1	CONFID.
702	2042	6	1	1	1	1	0	0	0	582.127	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	1	CONFID.
703	2042	7	1	1	1	1	0	0	0	582.407	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	CONDID.
704	2042	8	1	1	1	1	0	0	0	582.704	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	CONFID.
705	2042	9	1	1	1	1	0	0	0	582.993	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	CONFID.
706	2042	10	1	1	1	1	0	0	0	583.279	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	CONFID.
707	2042	11	1	1	1	1	0	0	0	583.565	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	CONFID.
708	2042	12	1	1	1	1	0	0	0	583.858	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
709	2043	1	1	1	1	1	0	0	0	584.145	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
710	2043	2	1	1	1	1	0	0	0	584.422	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
711	2043	3	1	1	1	1	0	0	0	584.706	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
712	2043	4	1	1	1	1	0	0	0	584.991	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
713	2043	5	1	1	1	1	0	0	0	585.276	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	1	CONFID.
714	2043	6	1	1	1	1	0	0	0	585.568	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	1	CONFID.
715	2043	7	1	1	1	1	0	0	0	585.846	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	CONDID.
716	2043	8	1	1	1	1	0	0	0	586.153	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	CONFID.
717	2043	9	1	1	1	1	0	0	0	586.451	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	CONFID.
718	2043	10	1	1	1	1	0	0	0	586.732	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	CONFID.
719	2043	11	1	1	1	1	0	0	0	587.027	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	CONFID.
720	2043	12	1	1	1	1	0	0	0	587.320	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
721	2044	1	1	1	1	1	0	0	0	587.618	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
722	2044	2	1	1	1	1	0	0	0	587.902	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
723	2044	3	1	1	1	1	0	0	0	588.194	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
724	2044	4	1	1	1	1	0	0	0	588.483	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
725	2044	5	1	1	1	1	0	0	0	588.794	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	1	CONFID.
726	2044	6	1	1	1	1	0	0	0	589.086	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	1	CONFID.
727	2044	7	1	1	1	1	0	0	0	589.387	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	CONDID.
728	2044	8	1	1	1	1	0	0	0	589.690	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	CONFID.
729	2044	9	1	1	1	1	0	0	0	589.991	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	CONFID.
730	2044	10	1	1	1	1	0	0	0	590.289	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	CONFID.
731	2044	11	1	1	1	1	0	0	0	590.597	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	CONFID.

Obs	YEAR	MONTH	DONq	d00q	d25q	d82q	d92q	d07	d01	d02	LCOM	novo8	decc8	octt0	novc0	dece1	fceb1	d01d	d02d	d03d	d04d	d05d	d06d	d07d	d08d	d09d	dja10	dja11	dja12	dja13	dja14	dja15	dja16	mayn1o	jund2o	jund3o	jund4o	febn1o	novb1o	dec1o	jan2on	PRICE
732	2044	12	1	1	1	1	1	0	0	0	590.904	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
733	2045	1	1	1	1	1	1	0	0	0	591.215	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
734	2045	2	1	1	1	1	1	0	0	0	591.509	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
735	2045	3	1	1	1	1	1	0	0	0	591.810	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
736	2045	4	1	1	1	1	1	0	0	0	592.127	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
737	2045	5	1	1	1	1	1	0	0	0	592.435	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	CONFID.
738	2045	6	1	1	1	1	1	0	0	0	592.754	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	CONFID.
739	2045	7	1	1	1	1	1	0	0	0	593.065	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	1	CONDID.
740	2045	8	1	1	1	1	1	0	0	0	593.396	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
741	2045	9	1	1	1	1	1	0	0	0	593.713	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
742	2045	10	1	1	1	1	1	0	0	0	594.036	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
743	2045	11	1	1	1	1	1	0	0	0	594.350	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
744	2045	12	1	1	1	1	1	0	0	0	594.680	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
745	2046	1	1	1	1	1	1	0	0	0	595.008	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
746	2046	2	1	1	1	1	1	0	0	0	595.326	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
747	2046	3	1	1	1	1	1	0	0	0	595.630	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
748	2046	4	1	1	1	1	1	0	0	0	595.952	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
749	2046	5	1	1	1	1	1	0	0	0	596.266	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	CONFID.
750	2046	6	1	1	1	1	1	0	0	0	596.586	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	1	CONFID.
751	2046	7	1	1	1	1	1	0	0	0	596.895	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	1	CONDID.
752	2046	8	1	1	1	1	1	0	0	0	597.216	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
753	2046	9	1	1	1	1	1	0	0	0	597.519	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
754	2046	10	1	1	1	1	1	0	0	0	597.825	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
755	2046	11	1	1	1	1	1	0	0	0	598.137	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
756	2046	12	1	1	1	1	1	0	0	0	598.439	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
757	2047	1	1	1	1	1	1	0	0	0	598.737	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
758	2047	2	1	1	1	1	1	0	0	0	599.029	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
759	2047	3	1	1	1	1	1	0	0	0	599.316	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
760	2047	4	1	1	1	1	1	0	0	0	599.614	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
761	2047	5	1	1	1	1	1	0	0	0	599.907	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	CONFID.
762	2047	6	1	1	1	1	1	0	0	0	600.205	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	1	CONFID.
763	2047	7	1	1	1	1	1	0	0	0	600.501	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	1	CONDID.
764	2047	8	1	1	1	1	1	0	0	0	600.795	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
765	2047	9	1	1	1	1	1	0	0	0	601.092	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
766	2047	10	1	1	1	1	1	0	0	0	601.390	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
767	2047	11	1	1	1	1	1	0	0	0	601.674	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
768	2047	12	1	1	1	1	1	0	0	0	601.972	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
769	2048	1	1	1	1	1	1	0	0	0	602.272	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
770	2048	2	1	1	1	1	1	0	0	0	602.554	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
771	2048	3	1	1	1	1	1	0	0	0	602.848	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
772	2048	4	1	1	1	1	1	0	0	0	603.144	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
773	2048	5	1	1	1	1	1	0	0	0	603.442	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	CONFID.
774	2048	6	1	1	1	1	1	0	0	0	603.735	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	1	CONFID.

Obs	YEAR	MONTH	DON	d005q1n	d022q1n	d029q1n	70d1n	01d1n	00d1n	LCOM	nov08	dec08	oct00	nov00	dec01	feb01	d01d1	d02d1	d03d1	d04d1	d05d1	d06d1	d07d1	d08d1	d09d1	jan10d1	feb11d1	mar12d1	apr13d1	may14d1	jun15d1	jul16d1	jan17d1	feb18d1	mar19d1	apr20d1	PRICE
775	2048	7	1	1	1	1	0	0	0	604.041	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	CONDID.
776	2048	8	1	1	1	1	0	0	0	604.348	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	CONFID.
777	2048	9	1	1	1	1	0	0	0	604.643	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	CONFID.
778	2048	10	1	1	1	1	0	0	0	604.943	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	CONFID.
779	2048	11	1	1	1	1	0	0	0	605.247	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	CONFID.
780	2048	12	1	1	1	1	0	0	0	605.557	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
781	2049	1	1	1	1	1	0	0	0	605.872	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
782	2049	2	1	1	1	1	0	0	0	606.163	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
783	2049	3	1	1	1	1	0	0	0	606.465	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
784	2049	4	1	1	1	1	0	0	0	606.767	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
785	2049	5	1	1	1	1	0	0	0	607.070	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	1	CONFID.
786	2049	6	1	1	1	1	0	0	0	607.383	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	1	CONFID.
787	2049	7	1	1	1	1	0	0	0	607.689	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	CONDID.
788	2049	8	1	1	1	1	0	0	0	608.007	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	CONFID.
789	2049	9	1	1	1	1	0	0	0	608.310	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	CONFID.
790	2049	10	1	1	1	1	0	0	0	608.621	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	CONFID.
791	2049	11	1	1	1	1	0	0	0	608.920	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	CONFID.
792	2049	12	1	1	1	1	0	0	0	609.221	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
793	2050	1	1	1	1	1	0	0	0	609.532	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
794	2050	2	1	1	1	1	0	0	0	609.825	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
795	2050	3	1	1	1	1	0	0	0	610.116	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
796	2050	4	1	1	1	1	0	0	0	610.417	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
797	2050	5	1	1	1	1	0	0	0	610.716	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	1	CONFID.
798	2050	6	1	1	1	1	0	0	0	611.020	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	1	CONFID.
799	2050	7	1	1	1	1	0	0	0	611.314	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	CONDID.
800	2050	8	1	1	1	1	0	0	0	611.607	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	CONFID.
801	2050	9	1	1	1	1	0	0	0	611.898	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	CONFID.
802	2050	10	1	1	1	1	0	0	0	612.187	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	CONFID.
803	2050	11	1	1	1	1	0	0	0	612.471	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	CONFID.
804	2050	12	1	1	1	1	0	0	0	612.755	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
805	2051	1	1	1	1	1	0	0	0	613.240	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
806	2051	2	1	1	1	1	0	0	0	613.535	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
807	2051	3	1	1	1	1	0	0	0	613.815	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
808	2051	4	1	1	1	1	0	0	0	614.115	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
809	2051	5	1	1	1	1	0	0	0	614.409	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	1	CONFID.
810	2051	6	1	1	1	1	0	0	0	614.704	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	1	CONFID.
811	2051	7	1	1	1	1	0	0	0	614.986	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	CONDID.
812	2051	8	1	1	1	1	0	0	0	615.254	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	CONFID.
813	2051	9	1	1	1	1	0	0	0	615.532	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	CONFID.
814	2051	10	1	1	1	1	0	0	0	615.799	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	CONFID.
815	2051	11	1	1	1	1	0	0	0	616.067	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	CONFID.
816	2051	12	1	1	1	1	0	0	0	616.334	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
817	2052	1	1	1	1	1	0	0	0	616.997	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.

Obs	YEAR	MONTH	DOW	d005qnn	d022qnn	d029qnn	d07nn2	d08n12	d09n12	LCOM	nov08	dec08	oct01	nov01	dec01	feb01	dd01	dd02	dd03	dd04	dd05	dd06	dd07	dd08	dd09	jan10	jan11	jan12	jan13	may13	jun13	jul13	feb16	jun16	jul16	jan17	PRICE
818	2052	2	1	1	1	1	0	0	0	617.294	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
819	2052	3	1	1	1	1	0	0	0	617.562	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
820	2052	4	1	1	1	1	0	0	0	617.861	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
821	2052	5	1	1	1	1	0	0	0	618.151	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	CONFID.
822	2052	6	1	1	1	1	0	0	0	618.436	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	1	CONFID.
823	2052	7	1	1	1	1	0	0	0	618.705	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	1	CONDID.
824	2052	8	1	1	1	1	0	0	0	618.947	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
825	2052	9	1	1	1	1	0	0	0	619.213	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	CONFID.
826	2052	10	1	1	1	1	0	0	0	619.457	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	CONFID.
827	2052	11	1	1	1	1	0	0	0	619.710	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	CONFID.
828	2052	12	1	1	1	1	0	0	0	619.958	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
829	2053	1	1	1	1	1	0	0	0	620.803	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
830	2053	2	1	1	1	1	0	0	0	621.102	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
831	2053	3	1	1	1	1	0	0	0	621.358	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
832	2053	4	1	1	1	1	0	0	0	621.655	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
833	2053	5	1	1	1	1	0	0	0	621.941	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	CONFID.
834	2053	6	1	1	1	1	0	0	0	622.216	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	1	CONFID.
835	2053	7	1	1	1	1	0	0	0	622.473	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	1	CONDID.
836	2053	8	1	1	1	1	0	0	0	622.688	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
837	2053	9	1	1	1	1	0	0	0	622.941	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	CONFID.
838	2053	10	1	1	1	1	0	0	0	623.163	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	CONFID.
839	2053	11	1	1	1	1	0	0	0	623.398	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	CONFID.
840	2053	12	1	1	1	1	0	0	0	623.629	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
841	2054	1	1	1	1	1	0	0	0	624.659	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
842	2054	2	1	1	1	1	0	0	0	624.959	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
843	2054	3	1	1	1	1	0	0	0	625.203	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
844	2054	4	1	1	1	1	0	0	0	625.499	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
845	2054	5	1	1	1	1	0	0	0	625.780	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	CONFID.
846	2054	6	1	1	1	1	0	0	0	626.046	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	1	CONFID.
847	2054	7	1	1	1	1	0	0	0	626.289	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	1	CONDID.
848	2054	8	1	1	1	1	0	0	0	626.478	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
849	2054	9	1	1	1	1	0	0	0	626.717	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	CONFID.
850	2054	10	1	1	1	1	0	0	0	626.916	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	CONFID.
851	2054	11	1	1	1	1	0	0	0	627.134	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	CONFID.
852	2054	12	1	1	1	1	0	0	0	627.346	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
853	2055	1	1	1	1	1	0	0	0	628.565	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
854	2055	2	1	1	1	1	0	0	0	628.867	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
855	2055	3	1	1	1	1	0	0	0	629.099	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
856	2055	4	1	1	1	1	0	0	0	629.394	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
857	2055	5	1	1	1	1	0	0	0	629.670	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	CONFID.
858	2055	6	1	1	1	1	0	0	0	629.924	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	1	CONFID.
859	2055	7	1	1	1	1	0	0	0	630.155	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	1	CONDID.
860	2055	8	1	1	1	1	0	0	0	630.316	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.

Obs	YEAR	MONTH	DON	d05on	d08qo	d09qo	d0d7n	d0d0n	d1d2n	LCOM	nov08	dec08	oct01	nov01	dec01	feb01	feb02	feb03	feb04	feb05	feb06	feb07	feb08	feb09	feb10	feb11	feb12	feb13	feb14	feb15	feb16	may16	jun16	jul16	jan17	nov17	dec17	jan20	PRICE
861	2055	9	1	1	1	1	0	0	0	630.542	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	CONFID.
862	2055	10	1	1	1	1	0	0	0	630.717	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	CONFID.
863	2055	11	1	1	1	1	0	0	0	630.918	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	CONFID.
864	2055	12	1	1	1	1	0	0	0	631.110	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
865	2056	1	1	1	1	1	0	0	0	632.522	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
866	2056	2	1	1	1	1	0	0	0	632.827	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
867	2056	3	1	1	1	1	0	0	0	633.046	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
868	2056	4	1	1	1	1	0	0	0	633.338	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
869	2056	5	1	1	1	1	0	0	0	633.609	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	CONFID.
870	2056	6	1	1	1	1	0	0	0	633.853	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	1	CONFID.
871	2056	7	1	1	1	1	0	0	0	634.070	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	CONDID.
872	2056	8	1	1	1	1	0	0	0	634.203	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	CONFID.
873	2056	9	1	1	1	1	0	0	0	634.415	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	CONFID.
874	2056	10	1	1	1	1	0	0	0	634.568	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	CONFID.
875	2056	11	1	1	1	1	0	0	0	634.749	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	CONFID.
876	2056	12	1	1	1	1	0	0	0	634.922	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
877	2057	1	1	1	1	1	0	0	0	636.532	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
878	2057	2	1	1	1	1	0	0	0	636.838	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
879	2057	3	1	1	1	1	0	0	0	637.044	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
880	2057	4	1	1	1	1	0	0	0	637.334	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.
881	2057	5	1	1	1	1	0	0	0	637.600	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	1	CONFID.
882	2057	6	1	1	1	1	0	0	0	637.833	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	1	CONFID.
883	2057	7	1	1	1	1	0	0	0	638.036	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	CONDID.
884	2057	8	1	1	1	1	0	0	0	638.141	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	CONFID.
885	2057	9	1	1	1	1	0	0	0	638.338	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	CONFID.
886	2057	10	1	1	1	1	0	0	0	638.467	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	CONFID.
887	2057	11	1	1	1	1	0	0	0	638.629	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	CONFID.
888	2057	12	1	1	1	1	0	0	0	638.783	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	CONFID.

Indiana Michigan Power Company - Indiana
Other Ultimate Energy Sales
Exogenous Variables
Model Estimation

The SYSLIN Procedure
Ordinary Least Squares Estimation

Model	LEU
Dependent Variable	LEU
Label	ENERGY SALES, Other Ultimate, LOG

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	34	14.49738	0.426394	93.10	<.0001
Error	375	1.717464	0.004580		
Corrected Total	409	16.21484			

Root MSE	0.06767	R-Square	0.89408
Dependent Mean	1.70615	Adj R-Sq	0.88448
Coeff Var	3.96653		

Parameter Estimates

Variable	DF	Parameter Estimate	Standard Error	t Value	Pr > |t|	Variable Label
Intercept	1	2.114261	0.125625	16.83	<.0001	Intercept
LCOM	1	0.000064	0.000119	0.54	0.5925	SERVICE AREA COMMERCIAL EMPLOYMENT
d1	1	0.025987	0.016834	1.54	0.1235	BINARY VARIABLE-JANUARY
d2	1	-0.16052	0.016952	-9.47	<.0001	BINARY VARIABLE-FEBRUARY
d3	1	-0.18833	0.016698	-11.28	<.0001	BINARY VARIABLE-MARCH
d4	1	-0.29869	0.016950	-17.62	<.0001	BINARY VARIABLE-APRIL
d5	1	-0.38193	0.017955	-21.27	<.0001	BINARY VARIABLE-MAY
d6	1	-0.42439	0.017971	-23.62	<.0001	BINARY VARIABLE-JUNE
d7	1	-0.39426	0.017992	-21.91	<.0001	BINARY VARIABLE-JULY
d8	1	-0.33626	0.016687	-20.15	<.0001	BINARY VARIABLE-AUGUST
d9	1	-0.26344	0.016696	-15.78	<.0001	BINARY VARIABLE-SEPTEMBER
d10	1	-0.13418	0.016808	-7.98	<.0001	BINARY VARIABLE-OCTOBER
d11	1	-0.07324	0.017060	-4.29	<.0001	BINARY VARIABLE-NOVEMBER

Indiana Michigan Power Company - Indiana
Other Ultimate Energy Sales
Exogenous Variables
Model Estimation

The SYSLIN Procedure
Ordinary Least Squares Estimation

Parameter Estimates

Variable	DF	Parameter Estimate	Standard Error	t Value	Pr > |t|	Variable Label
nov08	1	-0.50706	0.072141	-7.03	<.0001	BINARY VARIABLE-NOVEMBER 2008
dec08	1	0.352670	0.072097	4.89	<.0001	BINARY VARIABLE-DECEMBER 2008
oct10	1	-0.51862	0.069186	-7.50	<.0001	BINARY VARIABLE-OCTOBER 2010
nov10	1	0.364619	0.069174	5.27	<.0001	BINARY VARIABLE-NOVEMBER 2010
dec10	1	-0.48467	0.069047	-7.02	<.0001	BINARY VARIABLE-DECEMBER 2010
feb11	1	0.425270	0.069078	6.16	<.0001	BINARY VARIABLE-FEBRUARY 2011
d052qon	1	-0.02508	0.016704	-1.50	0.1341	BINARY VARIABLE-APRIL 2005 ON
D07ON	1	-0.05054	0.024097	-2.10	0.0366	BINARY VARIABLE-2007 ON
d072	1	0.032653	0.071181	0.46	0.6467	BINARY VARIABLE-APRIL THROUGH JUNE 2007
d082qon	1	-0.05885	0.028210	-2.09	0.0377	BINARY VARIABLE-APRIL 2008 ON
d092qon	1	-0.02567	0.025758	-1.00	0.3196	BINARY VARIABLE-APRIL 2009 ON
d101	1	-0.48894	0.069560	-7.03	<.0001	BINARY VARIABLE-JANUARY THROUGH MARCH 2010
d102	1	0.400856	0.069803	5.74	<.0001	BINARY VARIABLE-APRIL THROUGH JUNE 2010
jan16	1	-0.55395	0.069237	-8.00	<.0001	BINARY VARIABLE-JANUARY 2016

Indiana Michigan Power Company - Indiana
Other Ultimate Energy Sales
Exogenous Variables
Model Estimation

The SYSLIN Procedure
Ordinary Least Squares Estimation

Parameter Estimates

Variable	DF	Parameter Estimate	Standard Error	t Value	Pr > |t|	Variable Label
PU36	1	-0.01703	0.013699	-1.24	0.2145	REAL OTHER RETAIL ELECTRIC PRICE, 36 MONTH MOVING AVERAGE
mayd13on	1	-0.04946	0.028483	-1.74	0.0833	BINARY VARIABLE-2013 ON MAY ONLY
jund13on	1	-0.10066	0.028511	-3.53	0.0005	BINARY VARIABLE-2013 ON JUNE ONLY
juld13on	1	-0.05414	0.028552	-1.90	0.0587	BINARY VARIABLE-2013 ON JULY ONLY
feb16	1	0.415992	0.069277	6.00	<.0001	BINARY VARIABLE-FEBRUARY 2016
nov17	1	0.297660	0.069258	4.30	<.0001	BINARY VARIABLE-NOVEMBER 2017
dec17	1	-0.57510	0.069337	-8.29	<.0001	BINARY VARIABLE-DECEMBER 2017
jan20on	1	-0.06357	0.020490	-3.10	0.0021	BINARTY VARIABLE-JANUARY 2020 ON

Durbin-Watson	2.684983
Number of Observations	410
First-Order Autocorrelation	-0.34259

time		Residual Values Sum
1986.9166667	*	0.014135
1987.0000000	*	-0.011580
1987.0833333	*	-0.011747
1987.1666667	**	0.032143
1987.2500000	*	-0.015348
1987.3333333	**	0.039986
1987.4166667		-0.009451
1987.5000000	**	0.045888
1987.5833333	*	0.012704
1987.6666667	**	0.042935
1987.7500000	**	0.041510
1987.8333333		0.001891
1987.9166667	*	0.028178
1988.0000000	*	-0.016197
1988.0833333		-0.004138
1988.1666667	*	0.019830
1988.2500000	*	-0.018521
1988.3333333	*	-0.020499
1988.4166667		-0.005387
1988.5000000	**	0.038057
1988.5833333	***	0.058679
1988.6666667	**	0.030186
1988.7500000	***	0.053399
1988.8333333		0.003994
1988.9166667	**	0.037235
1989.0000000	**	-0.045627
1989.0833333	*	0.026064
1989.1666667	*	0.012478
1989.2500000		0.003332
1989.3333333	*	0.029659
1989.4166667	*	0.011108
1989.5000000	***	0.057395
1989.5833333	**	0.031843
1989.6666667	*	0.021418
1989.7500000	**	0.035480
1989.8333333	*	0.018909
1989.9166667	*	0.022528
1990.0000000	****	-0.084322
1990.0833333	*	-0.028585
1990.1666667	*	-0.025759
1990.2500000	**	-0.034236
1990.3333333	*	-0.027181
1990.4166667		0.005340
1990.5000000		0.006749
1990.5833333		-0.008558
1990.6666667	**	-0.045762
1990.7500000		0.008724
1990.8333333	**	-0.031438
1990.9166667	*	-0.016973

1991.0000000	***		-0.050667
1991.0833333	***		-0.058418
1991.1666667	*		-0.028487
1991.2500000	**		-0.037542
1991.3333333		**	0.036964
1991.4166667	****		-0.086252
1991.5000000		*	0.011440
1991.5833333		*	0.016124
1991.6666667	*		-0.021020
1991.7500000			0.004936
1991.8333333	*		-0.021093
1991.9166667	*		-0.024452
1992.0000000	**		-0.044660
1992.0833333	**		-0.031315
1992.1666667			-0.004568
1992.2500000	**		-0.046264
1992.3333333			-0.005203
1992.4166667	*		-0.027555
1992.5000000			0.004538
1992.5833333			0.004298
1992.6666667	*		-0.015344
1992.7500000			-0.002223
1992.8333333	*		-0.022713
1992.9166667			0.005830
1993.0000000	**		-0.041553
1993.0833333			-0.009351
1993.1666667	*		-0.019558
1993.2500000	**		-0.034832
1993.3333333			-0.009225
1993.4166667		*	0.023066
1993.5000000		*	0.022188
1993.5833333		*	0.017051
1993.6666667	*		-0.020735
1993.7500000		*	0.016991
1993.8333333	*		-0.013156
1993.9166667			0.005504
1994.0000000	**		-0.034996
1994.0833333	*****		-0.104853
1994.1666667	*		-0.021695
1994.2500000	*		-0.020601
1994.3333333			-0.002770
1994.4166667		**	0.037751
1994.5000000	*		-0.025651
1994.5833333		*	0.021808
1994.6666667			-0.001008
1994.7500000	*		-0.015864
1994.8333333	*		-0.019125
1994.9166667	*		-0.019490
1995.0000000	**		-0.038233
1995.0833333	**		-0.030675
1995.1666667			-0.004006
1995.2500000	*		-0.013438

1995.3333333			-0.003820
1995.4166667		***	0.063999
1995.5000000		****	0.070172
1995.5833333	*********		-0.178580
1995.6666667	*		-0.012615
1995.7500000		**	0.030982
1995.8333333			0.005375
1995.9166667	*		-0.025973
1996.0000000	*		-0.023920
1996.0833333			0.001607
1996.1666667	*		-0.011647
1996.2500000			-0.005618
1996.3333333			-0.009011
1996.4166667			-0.006921
1996.5000000		*	0.021845
1996.5833333		*	0.014834
1996.6666667			0.001025
1996.7500000			-0.007333
1996.8333333	*		-0.023430
1996.9166667			-0.001898
1997.0000000	*		-0.020561
1997.0833333			0.005576
1997.1666667		*	0.027829
1997.2500000		*	0.012349
1997.3333333			-0.000110
1997.4166667			-0.003087
1997.5000000		**	0.041033
1997.5833333		*	0.023124
1997.6666667			-0.003215
1997.7500000	*		-0.014713
1997.8333333			-0.007292
1997.9166667			0.008621
1998.0000000			0.008006
1998.0833333		******	0.113425
1998.1666667		***	0.062687
1998.2500000	*******		-0.144006
1998.3333333		***	0.057273
1998.4166667		**	0.042669
1998.5000000			0.003046
1998.5833333		*	0.016860
1998.6666667		**	0.030794
1998.7500000			0.007525
1998.8333333			-0.003239
1998.9166667		*	0.026588
1999.0000000	*		-0.010582
1999.0833333			0.005548
1999.1666667		*	0.014196
1999.2500000		*	0.013816
1999.3333333			-0.007377
1999.4166667	*		-0.014452
1999.5000000			0.002311
1999.5833333		*	0.019612

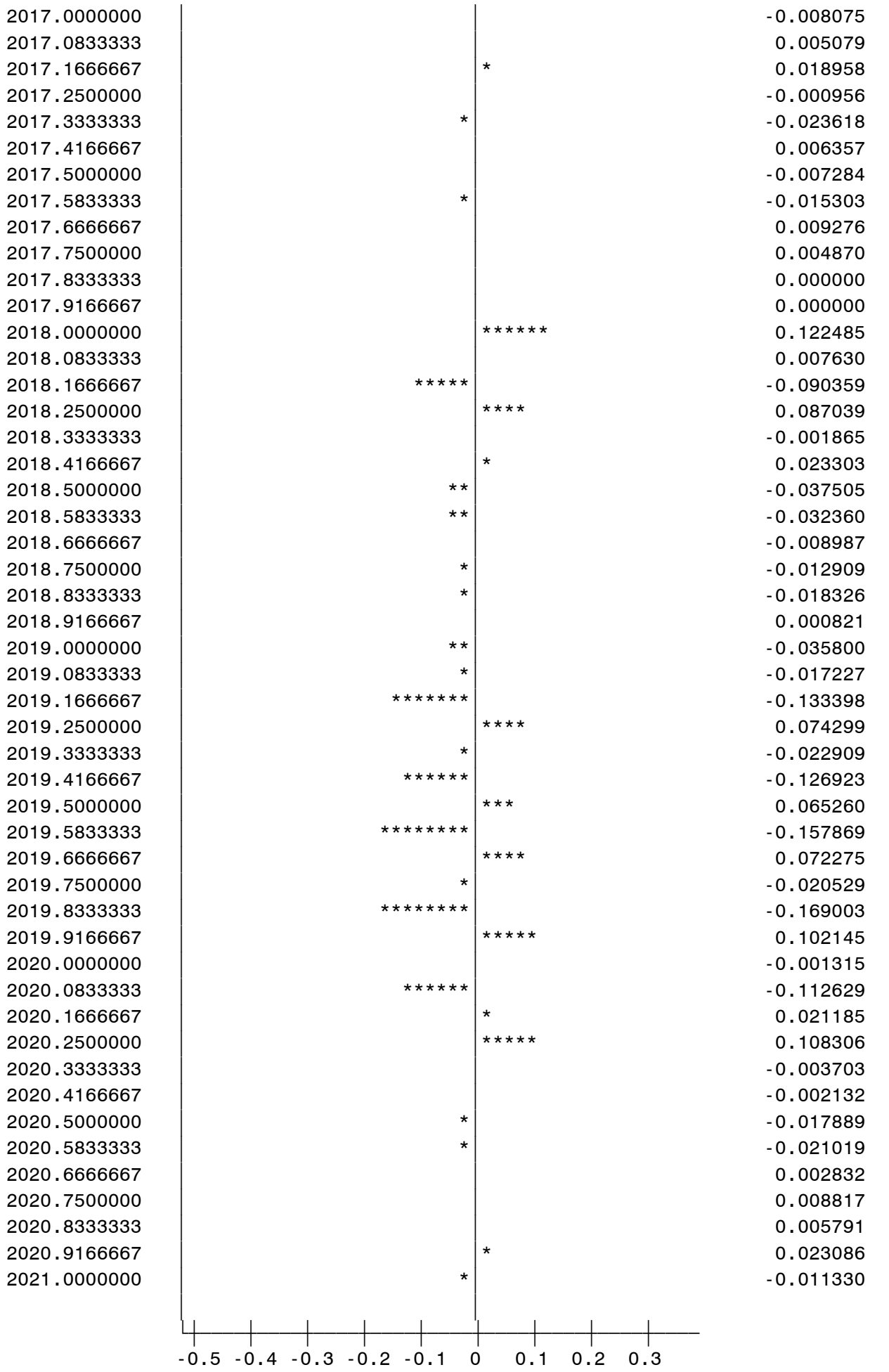
1999.6666667		*	0.016417
1999.7500000			0.004753
1999.8333333	*		-0.018480
1999.9166667			0.006177
2000.0000000			-0.005520
2000.0833333			0.001461
2000.1666667		*	0.018204
2000.2500000	*		-0.015182
2000.3333333			-0.001549
2000.4166667	*		-0.021957
2000.5000000	*		-0.025096
2000.5833333			0.000337
2000.6666667		*	0.016310
2000.7500000			0.000149
2000.8333333	*		-0.025337
2000.9166667		*	0.011569
2001.0000000	*		-0.019738
2001.0833333			-0.001809
2001.1666667		*	0.021079
2001.2500000	*		-0.019913
2001.3333333			0.008633
2001.4166667	*		-0.010715
2001.5000000			0.003794
2001.5833333		*	0.014174
2001.6666667		*	0.024260
2001.7500000			0.003493
2001.8333333	*		-0.019928
2001.9166667			0.001185
2002.0000000	*		-0.014177
2002.0833333			0.005312
2002.1666667		*	0.021277
2002.2500000		*	0.015436
2002.3333333		*	0.020688
2002.4166667			-0.008464
2002.5000000			-0.000464
2002.5833333		*	0.015736
2002.6666667		*	0.029721
2002.7500000			0.003202
2002.8333333			-0.007801
2002.9166667		*	0.023856
2003.0000000	*		-0.012604
2003.0833333		*	0.010633
2003.1666667		*	0.020388
2003.2500000			0.004532
2003.3333333			0.009939
2003.4166667	*		-0.023260
2003.5000000			-0.009331
2003.5833333			0.007830
2003.6666667		**	0.035984
2003.7500000			-0.002968
2003.8333333	*		-0.012596
2003.9166667		*	0.023617

2004.0000000			0.003170
2004.0833333		*	0.017395
2004.1666667		*	0.016556
2004.2500000		*	0.012150
2004.3333333		*	0.014820
2004.4166667			0.003568
2004.5000000	*		-0.010322
2004.5833333		*	0.010005
2004.6666667		**	0.035673
2004.7500000			0.001546
2004.8333333	*		-0.010977
2004.9166667		*	0.023318
2005.0000000			-0.008163
2005.0833333			0.004781
2005.1666667		*	0.019528
2005.2500000		*	0.027172
2005.3333333		*	0.014414
2005.4166667			-0.001373
2005.5000000		*	0.013083
2005.5833333		*	0.020560
2005.6666667		**	0.034562
2005.7500000			0.006486
2005.8333333	*		-0.010746
2005.9166667		*	0.012561
2006.0000000			-0.001911
2006.0833333			0.002210
2006.1666667		*	0.020239
2006.2500000			-0.004492
2006.3333333	*		-0.013851
2006.4166667	**		-0.040744
2006.5000000	*		-0.025999
2006.5833333			0.002978
2006.6666667		*	0.020203
2006.7500000	****		-0.083747
2006.8333333			-0.009933
2006.9166667		*	0.018326
2007.0000000		**	0.033829
2007.0833333		***	0.061413
2007.1666667	*********		-0.180314
2007.2500000			0.000000
2007.3333333	****		-0.079725
2007.4166667		**********	0.292262
2007.5000000	*		-0.022536
2007.5833333			0.007801
2007.6666667		*	0.010552
2007.7500000	*		-0.016005
2007.8333333	*		-0.029575
2007.9166667			-0.004396
2008.0000000	**		-0.030452
2008.0833333	*		-0.028933
2008.1666667	*		-0.013921
2008.2500000			0.008062

2008.3333333			-0.009631
2008.4166667	**		-0.039707
2008.5000000	**		-0.039552
2008.5833333			-0.003528
2008.6666667		*	0.019381
2008.7500000			0.005632
2008.8333333			0.000000
2008.9166667			0.000000
2009.0000000		*	0.017319
2009.0833333		*	0.014323
2009.1666667		*	0.027701
2009.2500000		*	0.019723
2009.3333333			-0.000032
2009.4166667	**		-0.034050
2009.5000000	*****		-0.104809
2009.5833333		*****	0.105901
2009.6666667		***	0.051665
2009.7500000	**********		-0.475313
2009.8333333		**********	0.375782
2009.9166667		***	0.063108
2010.0000000			0.000000
2010.0833333		*****	0.101676
2010.1666667		***	0.056283
2010.2500000			0.000000
2010.3333333			-0.009669
2010.4166667	**		-0.041896
2010.5000000	*		-0.016810
2010.5833333		*	0.019535
2010.6666667		**	0.034874
2010.7500000			-0.000000
2010.8333333			0.000000
2010.9166667			0.000000
2011.0000000		*	0.026998
2011.0833333			0.000000
2011.1666667		**	0.041858
2011.2500000			0.001520
2011.3333333	*		-0.011313
2011.4166667	**		-0.045315
2011.5000000	*		-0.026237
2011.5833333		*	0.014514
2011.6666667	**********		-0.487590
2011.7500000		**********	0.328556
2011.8333333			0.009356
2011.9166667	**********		-0.504921
2012.0000000		**********	0.363311
2012.0833333		*	0.021700
2012.1666667	*		-0.027796
2012.2500000		****	0.072558
2012.3333333	*		-0.021410
2012.4166667	***		-0.059175
2012.5000000	**		-0.034733
2012.5833333			0.004035

2012.6666667		*	0.018540
2012.7500000		*	0.015181
2012.8333333		*	0.015680
2012.9166667		**	0.032462
2013.0000000			-0.001614
2013.0833333		*	0.017123
2013.1666667		*	0.017480
2013.2500000			-0.007338
2013.3333333		*	0.014683
2013.4166667		*	0.029753
2013.5000000			0.007602
2013.5833333			-0.004580
2013.6666667		*	0.020309
2013.7500000		*	0.021314
2013.8333333		*	0.012794
2013.9166667		*	0.028910
2014.0000000			0.002130
2014.0833333			0.008569
2014.1666667		*	0.028944
2014.2500000	*		-0.012680
2014.3333333		*	0.020092
2014.4166667		*	0.028093
2014.5000000			-0.000223
2014.5833333	*		-0.014092
2014.6666667		*	0.015910
2014.7500000		*	0.029425
2014.8333333		*	0.013987
2014.9166667		*	0.014459
2015.0000000			-0.003651
2015.0833333			0.008152
2015.1666667		*	0.022359
2015.2500000	*		-0.010978
2015.3333333			0.008887
2015.4166667		*	0.025139
2015.5000000			-0.002736
2015.5833333	*		-0.014072
2015.6666667		*	0.010713
2015.7500000			0.007418
2015.8333333			0.005581
2015.9166667		**	0.030853
2016.0000000			0.000000
2016.0833333			0.000000
2016.1666667		*	0.020305
2016.2500000	*		-0.018352
2016.3333333			0.008433
2016.4166667		*	0.016409
2016.5000000			-0.007225
2016.5833333	*		-0.010385
2016.6666667		*	0.010461
2016.7500000		*	0.011213
2016.8333333			0.005046
2016.9166667		**	0.033032

Indiana Michigan Power Company - Indiana
Other Ultimate Energy Sales
Model Residuals



Indiana Michigan Power Company - Indiana
Other Ultimate Energy Sales
Actual and Forecast

YEAR	ENERGY SALES	GROWTH RATE
1984	70.6420	.
1985	70.6750	0.0
1986	71.4720	1.1
1987	72.0720	0.8
1988	72.1840	0.2
1989	72.6770	0.7
1990	69.9100	-3.8
1991	70.0610	0.2
1992	70.4820	0.6
1993	71.1780	1.0
1994	70.3230	-1.2
1995	70.7870	0.7
1996	71.0378	0.4
1997	71.8041	1.1
1998	73.1539	1.9
1999	72.0270	-1.5
2000	71.7691	-0.4
2001	72.1001	0.5
2002	72.6864	0.8
2003	72.2444	-0.6
2004	72.4768	0.3
2005	71.3214	-1.6
2006	69.8470	-2.1
2007	67.9569	-2.7
2008	64.3325	-5.3
2009	63.9299	-0.6
2010	60.0729	-6.0
2011	61.9772	3.2
2012	64.2542	3.7
2013	61.1369	-4.9
2014	60.9207	-0.4
2015	60.4672	-0.7
2016	60.2267	-0.4
2017	59.0859	-1.9
2018	60.2313	1.9
2019	58.4028	-3.0
2020	56.1977	-3.8
2021	56.1563	-0.1
2022	56.2571	0.2
2023	56.1631	-0.2
2024	55.8702	-0.5
2025	55.7147	-0.3
2026	55.7541	0.1
2027	55.8806	0.2
2028	55.9469	0.1
2029	55.9668	0.0
2030	55.9657	0.0
2031	55.9565	0.0

Indiana Michigan Power Company - Indiana
Other Ultimate Energy Sales
Actual and Forecast

YEAR	ENERGY SALES	GROWTH RATE
2032	55.9509	0.0
2033	55.9537	0.0
2034	55.9643	0.0
2035	55.9877	0.0
2036	56.0251	0.1
2037	56.0758	0.1
2038	56.1350	0.1
2039	56.1958	0.1
2040	56.2537	0.1
2041	56.3078	0.1
2042	56.3575	0.1
2043	56.4037	0.1
2044	56.4504	0.1
2045	56.4945	0.1
2046	56.5239	0.1
2047	56.5335	0.0
2048	56.5323	0.0
2049	56.5356	0.0
2050	56.5477	0.0
2051	56.5669	0.0
2052	56.5881	0.0
2053	56.6084	0.0
2054	56.6290	0.0
2055	56.6497	0.0
2056	56.6706	0.0
2057	56.6917	0.0

Indiana Michigan Power Company - Michigan
Other Ultimate Energy Sales
Endogenous Variables

The MEANS Procedure

Variable	Label	Mean
YEAR	YEAR	2028.50
MONTH	MONTH	6.5000000
eu_imm	ENERGY SALES, OTHER ULTIMATE	0.9535925

Indiana Michigan Power Company - Michigan
Other Ultimate Energy Sales
Endogenous Variables

Obs	YEAR	MONTH	eu_imm
1	2000	1	1.20332
2	2000	2	1.04222
3	2000	3	1.02241
4	2000	4	0.92302
5	2000	5	0.85851
6	2000	6	0.80618
7	2000	7	0.83553
8	2000	8	0.89345
9	2000	9	0.96111
10	2000	10	1.05867
11	2000	11	1.10086
12	2000	12	1.19863
13	2001	1	1.20809
14	2001	2	1.04205
15	2001	3	1.02761
16	2001	4	0.92368
17	2001	5	0.86271
18	2001	6	0.81106
19	2001	7	0.83465
20	2001	8	0.90365
21	2001	9	0.94554
22	2001	10	1.08911
23	2001	11	1.11705
24	2001	12	1.20449
25	2002	1	1.21956
26	2002	2	1.04833
27	2002	3	1.05268
28	2002	4	0.93469
29	2002	5	0.85806
30	2002	6	0.81424
31	2002	7	0.84097
32	2002	8	0.91052
33	2002	9	0.97322
34	2002	10	1.07748
35	2002	11	1.10120
36	2002	12	1.20984
37	2003	1	1.20774
38	2003	2	1.05241
39	2003	3	1.02668
40	2003	4	0.92808
41	2003	5	0.86052
42	2003	6	0.78074
43	2003	7	0.83075
44	2003	8	0.91246
45	2003	9	0.97307
46	2003	10	1.06966
47	2003	11	1.20193
48	2003	12	1.21445
49	2004	1	1.20673
50	2004	2	1.05277

Indiana Michigan Power Company - Michigan
Other Ultimate Energy Sales
Endogenous Variables

Obs	YEAR	MONTH	eu_imm
51	2004	3	1.03612
52	2004	4	0.93098
53	2004	5	0.87157
54	2004	6	0.82520
55	2004	7	0.84032
56	2004	8	0.91006
57	2004	9	0.97570
58	2004	10	1.06942
59	2004	11	1.11450
60	2004	12	1.21465
61	2005	1	1.22998
62	2005	2	1.06332
63	2005	3	1.05796
64	2005	4	0.94229
65	2005	5	0.87088
66	2005	6	0.80611
67	2005	7	0.84458
68	2005	8	0.91711
69	2005	9	0.98668
70	2005	10	1.07967
71	2005	11	1.12256
72	2005	12	1.22783
73	2006	1	1.21549
74	2006	2	1.06044
75	2006	3	1.04265
76	2006	4	0.94457
77	2006	5	0.87516
78	2006	6	0.82297
79	2006	7	0.85020
80	2006	8	0.90934
81	2006	9	0.97336
82	2006	10	1.07282
83	2006	11	1.12051
84	2006	12	1.22232
85	2007	1	1.20110
86	2007	2	1.05616
87	2007	3	1.04117
88	2007	4	0.94031
89	2007	5	0.86264
90	2007	6	0.81391
91	2007	7	0.86811
92	2007	8	0.90871
93	2007	9	0.97578
94	2007	10	1.06553
95	2007	11	1.12510
96	2007	12	1.22992
97	2008	1	1.23032
98	2008	2	1.06336
99	2008	3	1.04502
100	2008	4	0.93633

Indiana Michigan Power Company - Michigan
Other Ultimate Energy Sales
Endogenous Variables

Obs	YEAR	MONTH	eu_imm
101	2008	5	0.86101
102	2008	6	0.81431
103	2008	7	0.84197
104	2008	8	0.91163
105	2008	9	0.96660
106	2008	10	1.06838
107	2008	11	1.12077
108	2008	12	1.19474
109	2009	1	1.22852
110	2009	2	1.05162
111	2009	3	1.02760
112	2009	4	0.92623
113	2009	5	0.82592
114	2009	6	0.79233
115	2009	7	0.80808
116	2009	8	0.87817
117	2009	9	0.93668
118	2009	10	1.03685
119	2009	11	1.08063
120	2009	12	1.18007
121	2010	1	1.16854
122	2010	2	1.01135
123	2010	3	0.99798
124	2010	4	0.90021
125	2010	5	0.82302
126	2010	6	0.77191
127	2010	7	0.79744
128	2010	8	0.80399
129	2010	9	0.85518
130	2010	10	1.12372
131	2010	11	1.05364
132	2010	12	1.21564
133	2011	1	1.19449
134	2011	2	0.99796
135	2011	3	0.99544
136	2011	4	0.85831
137	2011	5	0.77085
138	2011	6	0.70132
139	2011	7	0.73607
140	2011	8	0.81749
141	2011	9	0.89141
142	2011	10	1.01915
143	2011	11	1.09635
144	2011	12	1.19762
145	2012	1	1.18416
146	2012	2	0.98885
147	2012	3	0.94942
148	2012	4	0.84329
149	2012	5	0.79131
150	2012	6	0.68794

Indiana Michigan Power Company - Michigan
Other Ultimate Energy Sales
Endogenous Variables

Obs	YEAR	MONTH	eu_imm
151	2012	7	0.72877
152	2012	8	0.81117
153	2012	9	0.89166
154	2012	10	1.02960
155	2012	11	1.09349
156	2012	12	1.18745
157	2013	1	1.17553
158	2013	2	0.98671
159	2013	3	0.98573
160	2013	4	0.85066
161	2013	5	0.75616
162	2013	6	0.68452
163	2013	7	0.72017
164	2013	8	0.80762
165	2013	9	0.88318
166	2013	10	1.01832
167	2013	11	1.08322
168	2013	12	1.17608
169	2014	1	1.17302
170	2014	2	0.97857
171	2014	3	0.97241
172	2014	4	0.83278
173	2014	5	0.74808
174	2014	6	0.67523
175	2014	7	0.71152
176	2014	8	0.78985
177	2014	9	0.87196
178	2014	10	1.00852
179	2014	11	1.07126
180	2014	12	1.17362
181	2015	1	1.16149
182	2015	2	0.97733
183	2015	3	0.96043
184	2015	4	0.82858
185	2015	5	0.73550
186	2015	6	0.66836
187	2015	7	0.70438
188	2015	8	0.79181
189	2015	9	0.86521
190	2015	10	0.99879
191	2015	11	1.05554
192	2015	12	1.15752
193	2016	1	1.14603
194	2016	2	0.95760
195	2016	3	0.94966
196	2016	4	0.81230
197	2016	5	0.73140
198	2016	6	0.65972
199	2016	7	0.69319
200	2016	8	0.78395

Indiana Michigan Power Company - Michigan
Other Ultimate Energy Sales
Endogenous Variables

Obs	YEAR	MONTH	eu_imm
201	2016	9	0.85727
202	2016	10	0.99115
203	2016	11	1.04820
204	2016	12	1.13933
205	2017	1	1.13189
206	2017	2	0.94597
207	2017	3	0.93599
208	2017	4	0.80515
209	2017	5	0.71912
210	2017	6	0.65094
211	2017	7	0.68723
212	2017	8	0.77493
213	2017	9	0.84994
214	2017	10	0.98158
215	2017	11	1.03997
216	2017	12	1.12824
217	2018	1	1.12301
218	2018	2	0.93748
219	2018	3	0.93182
220	2018	4	0.79863
221	2018	5	0.71158
222	2018	6	0.64534
223	2018	7	0.68168
224	2018	8	0.76816
225	2018	9	0.84234
226	2018	10	0.97313
227	2018	11	1.03305
228	2018	12	1.12598
229	2019	1	1.11391
230	2019	2	0.93628
231	2019	3	0.92885
232	2019	4	0.79138
233	2019	5	0.71081
234	2019	6	0.64116
235	2019	7	0.67839
236	2019	8	0.76619
237	2019	9	0.83600
238	2019	10	0.97308
239	2019	11	1.05264
240	2019	12	1.12248
241	2020	1	1.11047
242	2020	2	0.92784
243	2020	3	0.92157
244	2020	4	0.78582
245	2020	5	0.70163
246	2020	6	0.63483
247	2020	7	0.67025
248	2020	8	0.75350
249	2020	9	0.82336
250	2020	10	0.95545

Indiana Michigan Power Company - Michigan
Other Ultimate Energy Sales
Endogenous Variables

Obs	YEAR	MONTH	eu_imm
251	2020	11	1.01235
252	2020	12	1.10297
253	2021	1	1.09371
254	2021	2	.
255	2021	3	.
256	2021	4	.
257	2021	5	.
258	2021	6	.
259	2021	7	.
260	2021	8	.
261	2021	9	.
262	2021	10	.
263	2021	11	.
264	2021	12	.
265	2022	1	.
266	2022	2	.
267	2022	3	.
268	2022	4	.
269	2022	5	.
270	2022	6	.
271	2022	7	.
272	2022	8	.
273	2022	9	.
274	2022	10	.
275	2022	11	.
276	2022	12	.
277	2023	1	.
278	2023	2	.
279	2023	3	.
280	2023	4	.
281	2023	5	.
282	2023	6	.
283	2023	7	.
284	2023	8	.
285	2023	9	.
286	2023	10	.
287	2023	11	.
288	2023	12	.
289	2024	1	.
290	2024	2	.
291	2024	3	.
292	2024	4	.
293	2024	5	.
294	2024	6	.
295	2024	7	.
296	2024	8	.
297	2024	9	.
298	2024	10	.
299	2024	11	.
300	2024	12	.

Indiana Michigan Power Company - Michigan
Other Ultimate Energy Sales
Endogenous Variables

Obs	YEAR	MONTH	eu_imm
301	2025	1	.
302	2025	2	.
303	2025	3	.
304	2025	4	.
305	2025	5	.
306	2025	6	.
307	2025	7	.
308	2025	8	.
309	2025	9	.
310	2025	10	.
311	2025	11	.
312	2025	12	.
313	2026	1	.
314	2026	2	.
315	2026	3	.
316	2026	4	.
317	2026	5	.
318	2026	6	.
319	2026	7	.
320	2026	8	.
321	2026	9	.
322	2026	10	.
323	2026	11	.
324	2026	12	.
325	2027	1	.
326	2027	2	.
327	2027	3	.
328	2027	4	.
329	2027	5	.
330	2027	6	.
331	2027	7	.
332	2027	8	.
333	2027	9	.
334	2027	10	.
335	2027	11	.
336	2027	12	.
337	2028	1	.
338	2028	2	.
339	2028	3	.
340	2028	4	.
341	2028	5	.
342	2028	6	.
343	2028	7	.
344	2028	8	.
345	2028	9	.
346	2028	10	.
347	2028	11	.
348	2028	12	.
349	2029	1	.
350	2029	2	.

Indiana Michigan Power Company - Michigan
Other Ultimate Energy Sales
Endogenous Variables

Obs	YEAR	MONTH	eu_imm
351	2029	3	.
352	2029	4	.
353	2029	5	.
354	2029	6	.
355	2029	7	.
356	2029	8	.
357	2029	9	.
358	2029	10	.
359	2029	11	.
360	2029	12	.
361	2030	1	.
362	2030	2	.
363	2030	3	.
364	2030	4	.
365	2030	5	.
366	2030	6	.
367	2030	7	.
368	2030	8	.
369	2030	9	.
370	2030	10	.
371	2030	11	.
372	2030	12	.
373	2031	1	.
374	2031	2	.
375	2031	3	.
376	2031	4	.
377	2031	5	.
378	2031	6	.
379	2031	7	.
380	2031	8	.
381	2031	9	.
382	2031	10	.
383	2031	11	.
384	2031	12	.
385	2032	1	.
386	2032	2	.
387	2032	3	.
388	2032	4	.
389	2032	5	.
390	2032	6	.
391	2032	7	.
392	2032	8	.
393	2032	9	.
394	2032	10	.
395	2032	11	.
396	2032	12	.
397	2033	1	.
398	2033	2	.
399	2033	3	.
400	2033	4	.

Indiana Michigan Power Company - Michigan
Other Ultimate Energy Sales
Endogenous Variables

Obs	YEAR	MONTH	eu_imm
401	2033	5	.
402	2033	6	.
403	2033	7	.
404	2033	8	.
405	2033	9	.
406	2033	10	.
407	2033	11	.
408	2033	12	.
409	2034	1	.
410	2034	2	.
411	2034	3	.
412	2034	4	.
413	2034	5	.
414	2034	6	.
415	2034	7	.
416	2034	8	.
417	2034	9	.
418	2034	10	.
419	2034	11	.
420	2034	12	.
421	2035	1	.
422	2035	2	.
423	2035	3	.
424	2035	4	.
425	2035	5	.
426	2035	6	.
427	2035	7	.
428	2035	8	.
429	2035	9	.
430	2035	10	.
431	2035	11	.
432	2035	12	.
433	2036	1	.
434	2036	2	.
435	2036	3	.
436	2036	4	.
437	2036	5	.
438	2036	6	.
439	2036	7	.
440	2036	8	.
441	2036	9	.
442	2036	10	.
443	2036	11	.
444	2036	12	.
445	2037	1	.
446	2037	2	.
447	2037	3	.
448	2037	4	.
449	2037	5	.
450	2037	6	.

Indiana Michigan Power Company - Michigan
Other Ultimate Energy Sales
Endogenous Variables

Obs	YEAR	MONTH	eu_imm
451	2037	7	.
452	2037	8	.
453	2037	9	.
454	2037	10	.
455	2037	11	.
456	2037	12	.
457	2038	1	.
458	2038	2	.
459	2038	3	.
460	2038	4	.
461	2038	5	.
462	2038	6	.
463	2038	7	.
464	2038	8	.
465	2038	9	.
466	2038	10	.
467	2038	11	.
468	2038	12	.
469	2039	1	.
470	2039	2	.
471	2039	3	.
472	2039	4	.
473	2039	5	.
474	2039	6	.
475	2039	7	.
476	2039	8	.
477	2039	9	.
478	2039	10	.
479	2039	11	.
480	2039	12	.
481	2040	1	.
482	2040	2	.
483	2040	3	.
484	2040	4	.
485	2040	5	.
486	2040	6	.
487	2040	7	.
488	2040	8	.
489	2040	9	.
490	2040	10	.
491	2040	11	.
492	2040	12	.
493	2041	1	.
494	2041	2	.
495	2041	3	.
496	2041	4	.
497	2041	5	.
498	2041	6	.
499	2041	7	.
500	2041	8	.

Indiana Michigan Power Company - Michigan
Other Ultimate Energy Sales
Endogenous Variables

Obs	YEAR	MONTH	eu_imm
501	2041	9	.
502	2041	10	.
503	2041	11	.
504	2041	12	.
505	2042	1	.
506	2042	2	.
507	2042	3	.
508	2042	4	.
509	2042	5	.
510	2042	6	.
511	2042	7	.
512	2042	8	.
513	2042	9	.
514	2042	10	.
515	2042	11	.
516	2042	12	.
517	2043	1	.
518	2043	2	.
519	2043	3	.
520	2043	4	.
521	2043	5	.
522	2043	6	.
523	2043	7	.
524	2043	8	.
525	2043	9	.
526	2043	10	.
527	2043	11	.
528	2043	12	.
529	2044	1	.
530	2044	2	.
531	2044	3	.
532	2044	4	.
533	2044	5	.
534	2044	6	.
535	2044	7	.
536	2044	8	.
537	2044	9	.
538	2044	10	.
539	2044	11	.
540	2044	12	.
541	2045	1	.
542	2045	2	.
543	2045	3	.
544	2045	4	.
545	2045	5	.
546	2045	6	.
547	2045	7	.
548	2045	8	.
549	2045	9	.
550	2045	10	.

Indiana Michigan Power Company - Michigan
Other Ultimate Energy Sales
Endogenous Variables

Obs	YEAR	MONTH	eu_imm
551	2045	11	.
552	2045	12	.
553	2046	1	.
554	2046	2	.
555	2046	3	.
556	2046	4	.
557	2046	5	.
558	2046	6	.
559	2046	7	.
560	2046	8	.
561	2046	9	.
562	2046	10	.
563	2046	11	.
564	2046	12	.
565	2047	1	.
566	2047	2	.
567	2047	3	.
568	2047	4	.
569	2047	5	.
570	2047	6	.
571	2047	7	.
572	2047	8	.
573	2047	9	.
574	2047	10	.
575	2047	11	.
576	2047	12	.
577	2048	1	.
578	2048	2	.
579	2048	3	.
580	2048	4	.
581	2048	5	.
582	2048	6	.
583	2048	7	.
584	2048	8	.
585	2048	9	.
586	2048	10	.
587	2048	11	.
588	2048	12	.
589	2049	1	.
590	2049	2	.
591	2049	3	.
592	2049	4	.
593	2049	5	.
594	2049	6	.
595	2049	7	.
596	2049	8	.
597	2049	9	.
598	2049	10	.
599	2049	11	.
600	2049	12	.

Indiana Michigan Power Company - Michigan
Other Ultimate Energy Sales
Endogenous Variables

Obs	YEAR	MONTH	eu_imm
601	2050	1	.
602	2050	2	.
603	2050	3	.
604	2050	4	.
605	2050	5	.
606	2050	6	.
607	2050	7	.
608	2050	8	.
609	2050	9	.
610	2050	10	.
611	2050	11	.
612	2050	12	.
613	2051	1	.
614	2051	2	.
615	2051	3	.
616	2051	4	.
617	2051	5	.
618	2051	6	.
619	2051	7	.
620	2051	8	.
621	2051	9	.
622	2051	10	.
623	2051	11	.
624	2051	12	.
625	2052	1	.
626	2052	2	.
627	2052	3	.
628	2052	4	.
629	2052	5	.
630	2052	6	.
631	2052	7	.
632	2052	8	.
633	2052	9	.
634	2052	10	.
635	2052	11	.
636	2052	12	.
637	2053	1	.
638	2053	2	.
639	2053	3	.
640	2053	4	.
641	2053	5	.
642	2053	6	.
643	2053	7	.
644	2053	8	.
645	2053	9	.
646	2053	10	.
647	2053	11	.
648	2053	12	.
649	2054	1	.
650	2054	2	.

Indiana Michigan Power Company - Michigan
Other Ultimate Energy Sales
Endogenous Variables

Obs	YEAR	MONTH	eu_imm
651	2054	3	.
652	2054	4	.
653	2054	5	.
654	2054	6	.
655	2054	7	.
656	2054	8	.
657	2054	9	.
658	2054	10	.
659	2054	11	.
660	2054	12	.
661	2055	1	.
662	2055	2	.
663	2055	3	.
664	2055	4	.
665	2055	5	.
666	2055	6	.
667	2055	7	.
668	2055	8	.
669	2055	9	.
670	2055	10	.
671	2055	11	.
672	2055	12	.
673	2056	1	.
674	2056	2	.
675	2056	3	.
676	2056	4	.
677	2056	5	.
678	2056	6	.
679	2056	7	.
680	2056	8	.
681	2056	9	.
682	2056	10	.
683	2056	11	.
684	2056	12	.
685	2057	1	.
686	2057	2	.
687	2057	3	.
688	2057	4	.
689	2057	5	.
690	2057	6	.
691	2057	7	.
692	2057	8	.
693	2057	9	.
694	2057	10	.
695	2057	11	.
696	2057	12	.

Indiana Michigan Power Company - Michigan
Other Ultimate Energy Sales
Exogenous Variables

The MEANS Procedure

Variable	Label	Mean
YEAR	YEAR	2028.50
MONTH	MONTH	6.5000000
N_IMM	SERVICE AREA POPULATION	328.1451451
d19on	BINARY VARIABLE-2019 ON	0.6724138
d1	BINARY VARIABLE-JANUARY	0.0833333
d2	BINARY VARIABLE-FEBRUARY	0.0833333
d3	BINARY VARIABLE-MARCH	0.0833333
d4	BINARY VARIABLE-APRIL	0.0833333
d5	BINARY VARIABLE-MAY	0.0833333
d6	BINARY VARIABLE-JUNE	0.0833333
d7	BINARY VARIABLE-JULY	0.0833333
d8	BINARY VARIABLE-AUGUST	0.0833333
d9	BINARY VARIABLE-SEPTEMBER	0.0833333
d10	BINARY VARIABLE-OCTOBER	0.0833333
d12	BINARY VARIABLE-DECEMBER	0.0833333
feb14on	BINARY VARIABLE-FEBRUARY 2014 ON	0.7571839
aprsept11on	BINARY VARIABLE-APRIL THROUGH SEPTEMBER 2011 ON	0.4051724
oct16on	BINARY VARIABLE-OCTOBER 2016 ON	0.7112069
feb20on	BINARY VARIABLE-FEBRUARY 2020 ON	0.6537356

Obs	YEAR	MONTH	N_IMM	d19on	d1	d2	d3	d4	d5	d6	d7	d8	d9	d10	d12	feb14on	sept11on	oct16on	feb20on	PRICE
1	2000	1	352.018	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
2	2000	2	352.161	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
3	2000	3	352.286	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
4	2000	4	352.390	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	CONFID.
5	2000	5	352.470	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	CONFID.
6	2000	6	352.517	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	CONFID.
7	2000	7	352.527	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	CONDID.
8	2000	8	352.501	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	CONFID.
9	2000	9	352.444	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	CONFID.
10	2000	10	352.360	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	CONFID.
11	2000	11	352.255	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
12	2000	12	352.135	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	CONFID.
13	2001	1	351.999	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
14	2001	2	351.865	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
15	2001	3	351.728	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
16	2001	4	351.590	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	CONFID.
17	2001	5	351.461	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	CONFID.
18	2001	6	351.345	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	CONFID.
19	2001	7	351.248	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	CONDID.
20	2001	8	351.169	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	CONFID.
21	2001	9	351.108	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	CONFID.
22	2001	10	351.066	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	CONFID.
23	2001	11	351.038	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
24	2001	12	351.022	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	CONFID.
25	2002	1	351.018	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
26	2002	2	351.023	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
27	2002	3	351.035	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
28	2002	4	351.053	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	CONFID.
29	2002	5	351.076	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	CONFID.
30	2002	6	351.100	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	CONFID.
31	2002	7	351.126	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	CONDID.
32	2002	8	351.152	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	CONFID.
33	2002	9	351.176	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	CONFID.
34	2002	10	351.201	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	CONFID.
35	2002	11	351.227	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
36	2002	12	351.255	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	CONFID.
37	2003	1	351.283	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
38	2003	2	351.312	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
39	2003	3	351.342	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
40	2003	4	351.375	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	CONFID.

Obs	YEAR	MONTH	N_IMM	d19on	d1	d2	d3	d4	d5	d6	d7	d8	d9	d10	d12	feb14on	apsept11on	oct16on	feb20on	PRICE
41	2003	5	351.411	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	CONFID.
42	2003	6	351.451	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	CONFID.
43	2003	7	351.492	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	CONDID.
44	2003	8	351.538	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	CONFID.
45	2003	9	351.581	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	CONFID.
46	2003	10	351.626	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	CONFID.
47	2003	11	351.664	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
48	2003	12	351.698	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	CONFID.
49	2004	1	351.724	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
50	2004	2	351.740	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
51	2004	3	351.745	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
52	2004	4	351.737	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	CONFID.
53	2004	5	351.712	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	CONFID.
54	2004	6	351.671	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	CONFID.
55	2004	7	351.610	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	CONDID.
56	2004	8	351.528	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	CONFID.
57	2004	9	351.430	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	CONFID.
58	2004	10	351.318	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	CONFID.
59	2004	11	351.195	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
60	2004	12	351.060	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	CONFID.
61	2005	1	350.917	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
62	2005	2	350.774	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
63	2005	3	350.630	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
64	2005	4	350.481	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	CONFID.
65	2005	5	350.332	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	CONFID.
66	2005	6	350.189	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	CONFID.
67	2005	7	350.052	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	CONDID.
68	2005	8	349.920	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	CONFID.
69	2005	9	349.799	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	CONFID.
70	2005	10	349.686	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	CONFID.
71	2005	11	349.581	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
72	2005	12	349.482	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	CONFID.
73	2006	1	349.391	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
74	2006	2	349.310	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
75	2006	3	349.238	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
76	2006	4	349.170	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	CONFID.
77	2006	5	349.110	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	CONFID.
78	2006	6	349.057	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	CONFID.
79	2006	7	349.012	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	CONDID.
80	2006	8	348.973	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	CONFID.

Obs	YEAR	MONTH	N_IMM	d19on	d1	d2	d3	d4	d5	d6	d7	d8	d9	d10	d12	feb14on	apsept11on	oct16on	feb20on	PRICE
81	2006	9	348.943	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	CONFID.
82	2006	10	348.917	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	CONFID.
83	2006	11	348.897	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
84	2006	12	348.884	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	CONFID.
85	2007	1	348.874	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
86	2007	2	348.868	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
87	2007	3	348.866	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
88	2007	4	348.866	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	CONFID.
89	2007	5	348.870	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	CONFID.
90	2007	6	348.876	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	CONFID.
91	2007	7	348.882	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	CONDID.
92	2007	8	348.890	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	CONFID.
93	2007	9	348.896	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	CONFID.
94	2007	10	348.901	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	CONFID.
95	2007	11	348.905	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
96	2007	12	348.903	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	CONFID.
97	2008	1	348.896	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
98	2008	2	348.884	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
99	2008	3	348.863	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
100	2008	4	348.833	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	CONFID.
101	2008	5	348.794	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	CONFID.
102	2008	6	348.745	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	CONFID.
103	2008	7	348.682	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	CONDID.
104	2008	8	348.607	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	CONFID.
105	2008	9	348.521	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	CONFID.
106	2008	10	348.427	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	CONFID.
107	2008	11	348.322	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
108	2008	12	348.211	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	CONFID.
109	2009	1	348.093	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
110	2009	2	347.976	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
111	2009	3	347.854	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
112	2009	4	347.728	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	CONFID.
113	2009	5	347.600	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	CONFID.
114	2009	6	347.474	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	CONFID.
115	2009	7	347.349	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	CONDID.
116	2009	8	347.225	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	CONFID.
117	2009	9	347.107	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	CONFID.
118	2009	10	346.993	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	CONFID.
119	2009	11	346.885	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
120	2009	12	346.784	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	CONFID.

Obs	YEAR	MONTH	N_IMM	d19on	d1	d2	d3	d4	d5	d6	d7	d8	d9	d10	d12	feb14on	sept11on	oct16on	feb20on	PRICE
121	2010	1	346.689	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
122	2010	2	346.608	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
123	2010	3	346.534	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
124	2010	4	346.469	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	CONFID.
125	2010	5	346.415	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	CONFID.
126	2010	6	346.372	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	CONFID.
127	2010	7	346.344	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	CONDID.
128	2010	8	346.329	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	CONFID.
129	2010	9	346.323	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	CONFID.
130	2010	10	346.323	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	CONFID.
131	2010	11	346.327	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
132	2010	12	346.332	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	CONFID.
133	2011	1	346.336	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
134	2011	2	346.335	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
135	2011	3	346.325	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
136	2011	4	346.307	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	CONFID.
137	2011	5	346.273	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	CONFID.
138	2011	6	346.225	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	CONFID.
139	2011	7	346.157	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	CONDID.
140	2011	8	346.068	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	CONFID.
141	2011	9	345.965	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	CONFID.
142	2011	10	345.847	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	CONFID.
143	2011	11	345.717	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
144	2011	12	345.580	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	CONFID.
145	2012	1	345.434	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
146	2012	2	345.288	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
147	2012	3	345.143	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
148	2012	4	344.999	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	CONFID.
149	2012	5	344.858	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	CONFID.
150	2012	6	344.725	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	CONFID.
151	2012	7	344.601	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	CONDID.
152	2012	8	344.489	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	CONFID.
153	2012	9	344.389	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	CONFID.
154	2012	10	344.299	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	CONFID.
155	2012	11	344.221	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
156	2012	12	344.154	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	CONFID.
157	2013	1	344.098	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
158	2013	2	344.054	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
159	2013	3	344.019	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
160	2013	4	343.994	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	CONFID.

Obs	YEAR	MONTH	N_IMM	d19on	d1	d2	d3	d4	d5	d6	d7	d8	d9	d10	d12	feb14on	aprsept11on	oct16on	feb20on	PRICE
161	2013	5	343.978	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	CONFID.
162	2013	6	343.973	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	CONFID.
163	2013	7	343.979	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	CONDID.
164	2013	8	343.992	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	CONFID.
165	2013	9	344.011	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	CONFID.
166	2013	10	344.033	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	CONFID.
167	2013	11	344.053	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
168	2013	12	344.070	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	CONFID.
169	2014	1	344.082	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
170	2014	2	344.084	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	CONFID.
171	2014	3	344.075	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	CONFID.
172	2014	4	344.049	0	0	0	0	1	0	0	0	0	0	0	0	1	1	0	0	CONFID.
173	2014	5	344.007	0	0	0	0	0	1	0	0	0	0	0	0	1	1	0	0	CONFID.
174	2014	6	343.944	0	0	0	0	0	0	1	0	0	0	0	0	1	1	0	0	CONFID.
175	2014	7	343.858	0	0	0	0	0	0	0	1	0	0	0	0	1	1	0	0	CONDID.
176	2014	8	343.745	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0	CONFID.
177	2014	9	343.615	0	0	0	0	0	0	0	0	0	1	0	0	1	1	0	0	CONFID.
178	2014	10	343.469	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	CONFID.
179	2014	11	343.311	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	CONFID.
180	2014	12	343.145	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	CONFID.
181	2015	1	342.970	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	CONFID.
182	2015	2	342.805	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	CONFID.
183	2015	3	342.643	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	CONFID.
184	2015	4	342.483	0	0	0	0	1	0	0	0	0	0	0	0	1	1	0	0	CONFID.
185	2015	5	342.332	0	0	0	0	0	1	0	0	0	0	0	0	1	1	0	0	CONFID.
186	2015	6	342.196	0	0	0	0	0	0	1	0	0	0	0	0	1	1	0	0	CONFID.
187	2015	7	342.080	0	0	0	0	0	0	0	1	0	0	0	0	1	1	0	0	CONDID.
188	2015	8	341.981	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0	CONFID.
189	2015	9	341.902	0	0	0	0	0	0	0	0	0	1	0	0	1	1	0	0	CONFID.
190	2015	10	341.839	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	CONFID.
191	2015	11	341.790	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	CONFID.
192	2015	12	341.752	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	CONFID.
193	2016	1	341.724	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	CONFID.
194	2016	2	341.706	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	CONFID.
195	2016	3	341.692	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	CONFID.
196	2016	4	341.683	0	0	0	0	1	0	0	0	0	0	0	0	1	1	0	0	CONFID.
197	2016	5	341.677	0	0	0	0	0	1	0	0	0	0	0	0	1	1	0	0	CONFID.
198	2016	6	341.671	0	0	0	0	0	0	1	0	0	0	0	0	1	1	0	0	CONFID.
199	2016	7	341.664	0	0	0	0	0	0	0	1	0	0	0	0	1	1	0	0	CONDID.
200	2016	8	341.654	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0	CONFID.

Obs	YEAR	MONTH	N_IMM	d19on	d1	d2	d3	d4	d5	d6	d7	d8	d9	d10	d12	feb14on	apsept11on	oct16on	feb20on	PRICE
201	2016	9	341.642	0	0	0	0	0	0	0	0	0	1	0	0	1	1	0	0	CONFID.
202	2016	10	341.631	0	0	0	0	0	0	0	0	0	0	1	0	1	0	1	0	CONFID.
203	2016	11	341.617	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	CONFID.
204	2016	12	341.606	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	CONFID.
205	2017	1	341.597	0	1	0	0	0	0	0	0	0	0	0	0	1	0	1	0	CONFID.
206	2017	2	341.588	0	0	1	0	0	0	0	0	0	0	0	0	1	0	1	0	CONFID.
207	2017	3	341.583	0	0	0	1	0	0	0	0	0	0	0	0	1	0	1	0	CONFID.
208	2017	4	341.580	0	0	0	0	1	0	0	0	0	0	0	0	1	1	1	0	CONFID.
209	2017	5	341.583	0	0	0	0	0	1	0	0	0	0	0	0	1	1	1	0	CONFID.
210	2017	6	341.589	0	0	0	0	0	0	1	0	0	0	0	0	1	1	1	0	CONFID.
211	2017	7	341.600	0	0	0	0	0	0	0	1	0	0	0	0	1	1	1	0	CONDID.
212	2017	8	341.617	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	0	CONFID.
213	2017	9	341.640	0	0	0	0	0	0	0	0	0	1	0	0	1	1	1	0	CONFID.
214	2017	10	341.665	0	0	0	0	0	0	0	0	0	0	1	0	1	0	1	0	CONFID.
215	2017	11	341.695	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	CONFID.
216	2017	12	341.725	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	CONFID.
217	2018	1	341.760	0	1	0	0	0	0	0	0	0	0	0	0	1	0	1	0	CONFID.
218	2018	2	341.791	0	0	1	0	0	0	0	0	0	0	0	0	1	0	1	0	CONFID.
219	2018	3	341.823	0	0	0	1	0	0	0	0	0	0	0	0	1	0	1	0	CONFID.
220	2018	4	341.856	0	0	0	0	1	0	0	0	0	0	0	0	1	1	1	0	CONFID.
221	2018	5	341.886	0	0	0	0	0	1	0	0	0	0	0	0	1	1	1	0	CONFID.
222	2018	6	341.914	0	0	0	0	0	0	1	0	0	0	0	0	1	1	1	0	CONFID.
223	2018	7	341.938	0	0	0	0	0	0	0	1	0	0	0	0	1	1	1	0	CONDID.
224	2018	8	341.960	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	0	CONFID.
225	2018	9	341.976	0	0	0	0	0	0	0	0	0	1	0	0	1	1	1	0	CONFID.
226	2018	10	341.988	0	0	0	0	0	0	0	0	0	0	1	0	1	0	1	0	CONFID.
227	2018	11	341.994	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	CONFID.
228	2018	12	341.997	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	CONFID.
229	2019	1	341.993	1	1	0	0	0	0	0	0	0	0	0	0	1	0	1	0	CONFID.
230	2019	2	341.985	1	0	1	0	0	0	0	0	0	0	0	0	1	0	1	0	CONFID.
231	2019	3	341.970	1	0	0	1	0	0	0	0	0	0	0	0	1	0	1	0	CONFID.
232	2019	4	341.949	1	0	0	0	1	0	0	0	0	0	0	0	1	1	1	0	CONFID.
233	2019	5	341.922	1	0	0	0	0	1	0	0	0	0	0	0	1	1	1	0	CONFID.
234	2019	6	341.886	1	0	0	0	0	0	1	0	0	0	0	0	1	1	1	0	CONFID.
235	2019	7	341.845	1	0	0	0	0	0	0	1	0	0	0	0	1	1	1	0	CONDID.
236	2019	8	341.796	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	0	CONFID.
237	2019	9	341.742	1	0	0	0	0	0	0	0	0	1	0	0	1	1	1	0	CONFID.
238	2019	10	341.684	1	0	0	0	0	0	0	0	0	0	1	0	1	0	1	0	CONFID.
239	2019	11	341.623	1	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	CONFID.
240	2019	12	341.560	1	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	CONFID.

Obs	YEAR	MONTH	N_IMM	d19on	d1	d2	d3	d4	d5	d6	d7	d8	d9	d10	d12	feb14on	sept11on	oct16on	feb20on	PRICE
241	2020	1	341.495	1	1	0	0	0	0	0	0	0	0	0	0	1	0	1	0	CONFID.
242	2020	2	341.435	1	0	1	0	0	0	0	0	0	0	0	0	1	0	1	1	CONFID.
243	2020	3	341.374	1	0	0	1	0	0	0	0	0	0	0	0	1	0	1	1	CONFID.
244	2020	4	341.318	1	0	0	0	1	0	0	0	0	0	0	0	1	1	1	1	CONFID.
245	2020	5	341.267	1	0	0	0	0	1	0	0	0	0	0	0	1	1	1	1	CONFID.
246	2020	6	341.219	1	0	0	0	0	0	1	0	0	0	0	0	1	1	1	1	CONFID.
247	2020	7	341.179	1	0	0	0	0	0	0	1	0	0	0	0	1	1	1	1	CONDID.
248	2020	8	341.146	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	CONFID.
249	2020	9	341.120	1	0	0	0	0	0	0	0	0	1	0	0	1	1	1	1	CONFID.
250	2020	10	341.098	1	0	0	0	0	0	0	0	0	0	1	0	1	0	1	1	CONFID.
251	2020	11	341.078	1	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	CONFID.
252	2020	12	341.061	1	0	0	0	0	0	0	0	0	0	0	1	1	0	1	1	CONFID.
253	2021	1	341.043	1	1	0	0	0	0	0	0	0	0	0	0	1	0	1	1	CONFID.
254	2021	2	341.027	1	0	1	0	0	0	0	0	0	0	0	0	1	0	1	1	CONFID.
255	2021	3	341.008	1	0	0	1	0	0	0	0	0	0	0	0	1	0	1	1	CONFID.
256	2021	4	340.983	1	0	0	0	1	0	0	0	0	0	0	0	1	1	1	1	CONFID.
257	2021	5	340.957	1	0	0	0	0	1	0	0	0	0	0	0	1	1	1	1	CONFID.
258	2021	6	340.922	1	0	0	0	0	0	1	0	0	0	0	0	1	1	1	1	CONFID.
259	2021	7	340.881	1	0	0	0	0	0	0	1	0	0	0	0	1	1	1	1	CONDID.
260	2021	8	340.831	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	CONFID.
261	2021	9	340.775	1	0	0	0	0	0	0	0	0	1	0	0	1	1	1	1	CONFID.
262	2021	10	340.712	1	0	0	0	0	0	0	0	0	0	1	0	1	0	1	1	CONFID.
263	2021	11	340.646	1	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	CONFID.
264	2021	12	340.574	1	0	0	0	0	0	0	0	0	0	0	1	1	0	1	1	CONFID.
265	2022	1	340.500	1	1	0	0	0	0	0	0	0	0	0	0	1	0	1	1	CONFID.
266	2022	2	340.426	1	0	1	0	0	0	0	0	0	0	0	0	1	0	1	1	CONFID.
267	2022	3	340.350	1	0	0	1	0	0	0	0	0	0	0	0	1	0	1	1	CONFID.
268	2022	4	340.270	1	0	0	0	1	0	0	0	0	0	0	0	1	1	1	1	CONFID.
269	2022	5	340.192	1	0	0	0	0	1	0	0	0	0	0	0	1	1	1	1	CONFID.
270	2022	6	340.114	1	0	0	0	0	0	1	0	0	0	0	0	1	1	1	1	CONFID.
271	2022	7	340.037	1	0	0	0	0	0	0	1	0	0	0	0	1	1	1	1	CONDID.
272	2022	8	339.962	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	CONFID.
273	2022	9	339.889	1	0	0	0	0	0	0	0	0	1	0	0	1	1	1	1	CONFID.
274	2022	10	339.820	1	0	0	0	0	0	0	0	0	0	1	0	1	0	1	1	CONFID.
275	2022	11	339.751	1	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	CONFID.
276	2022	12	339.682	1	0	0	0	0	0	0	0	0	0	0	1	1	0	1	1	CONFID.
277	2023	1	339.614	1	1	0	0	0	0	0	0	0	0	0	0	1	0	1	1	CONFID.
278	2023	2	339.549	1	0	1	0	0	0	0	0	0	0	0	0	1	0	1	1	CONFID.
279	2023	3	339.482	1	0	0	1	0	0	0	0	0	0	0	0	1	0	1	1	CONFID.
280	2023	4	339.414	1	0	0	0	1	0	0	0	0	0	0	0	1	1	1	1	CONFID.

Obs	YEAR	MONTH	N_IMM	d19on	d1	d2	d3	d4	d5	d6	d7	d8	d9	d10	d12	feb14on	apsept11on	oct16on	feb20on	PRICE
281	2023	5	339.345	1	0	0	0	0	1	0	0	0	0	0	0	1	1	1	1	CONFID.
282	2023	6	339.274	1	0	0	0	0	0	1	0	0	0	0	0	1	1	1	1	CONFID.
283	2023	7	339.202	1	0	0	0	0	0	0	1	0	0	0	0	1	1	1	1	CONDID.
284	2023	8	339.127	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	CONFID.
285	2023	9	339.053	1	0	0	0	0	0	0	0	0	1	0	0	1	1	1	1	CONFID.
286	2023	10	338.976	1	0	0	0	0	0	0	0	0	0	1	0	1	0	1	1	CONFID.
287	2023	11	338.899	1	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	CONFID.
288	2023	12	338.820	1	0	0	0	0	0	0	0	0	0	0	1	1	0	1	1	CONFID.
289	2024	1	338.740	1	1	0	0	0	0	0	0	0	0	0	0	1	0	1	1	CONFID.
290	2024	2	338.663	1	0	1	0	0	0	0	0	0	0	0	0	1	0	1	1	CONFID.
291	2024	3	338.584	1	0	0	1	0	0	0	0	0	0	0	0	1	0	1	1	CONFID.
292	2024	4	338.506	1	0	0	0	1	0	0	0	0	0	0	0	1	1	1	1	CONFID.
293	2024	5	338.426	1	0	0	0	0	1	0	0	0	0	0	0	1	1	1	1	CONFID.
294	2024	6	338.348	1	0	0	0	0	0	1	0	0	0	0	0	1	1	1	1	CONFID.
295	2024	7	338.269	1	0	0	0	0	0	0	1	0	0	0	0	1	1	1	1	CONDID.
296	2024	8	338.191	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	CONFID.
297	2024	9	338.113	1	0	0	0	0	0	0	0	0	1	0	0	1	1	1	1	CONFID.
298	2024	10	338.035	1	0	0	0	0	0	0	0	0	0	1	0	1	0	1	1	CONFID.
299	2024	11	337.960	1	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	CONFID.
300	2024	12	337.884	1	0	0	0	0	0	0	0	0	0	0	1	1	0	1	1	CONFID.
301	2025	1	337.807	1	1	0	0	0	0	0	0	0	0	0	0	1	0	1	1	CONFID.
302	2025	2	337.733	1	0	1	0	0	0	0	0	0	0	0	0	1	0	1	1	CONFID.
303	2025	3	337.661	1	0	0	1	0	0	0	0	0	0	0	0	1	0	1	1	CONFID.
304	2025	4	337.585	1	0	0	0	1	0	0	0	0	0	0	0	1	1	1	1	CONFID.
305	2025	5	337.511	1	0	0	0	0	1	0	0	0	0	0	0	1	1	1	1	CONFID.
306	2025	6	337.436	1	0	0	0	0	0	1	0	0	0	0	0	1	1	1	1	CONFID.
307	2025	7	337.361	1	0	0	0	0	0	0	1	0	0	0	0	1	1	1	1	CONDID.
308	2025	8	337.285	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	CONFID.
309	2025	9	337.210	1	0	0	0	0	0	0	0	0	1	0	0	1	1	1	1	CONFID.
310	2025	10	337.134	1	0	0	0	0	0	0	0	0	0	1	0	1	0	1	1	CONFID.
311	2025	11	337.058	1	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	CONFID.
312	2025	12	336.982	1	0	0	0	0	0	0	0	0	0	0	1	1	0	1	1	CONFID.
313	2026	1	336.904	1	1	0	0	0	0	0	0	0	0	0	0	1	0	1	1	CONFID.
314	2026	2	336.829	1	0	1	0	0	0	0	0	0	0	0	0	1	0	1	1	CONFID.
315	2026	3	336.755	1	0	0	1	0	0	0	0	0	0	0	0	1	0	1	1	CONFID.
316	2026	4	336.677	1	0	0	0	1	0	0	0	0	0	0	0	1	1	1	1	CONFID.
317	2026	5	336.596	1	0	0	0	0	1	0	0	0	0	0	0	1	1	1	1	CONFID.
318	2026	6	336.517	1	0	0	0	0	0	1	0	0	0	0	0	1	1	1	1	CONFID.
319	2026	7	336.435	1	0	0	0	0	0	0	1	0	0	0	0	1	1	1	1	CONDID.
320	2026	8	336.352	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	CONFID.

Obs	YEAR	MONTH	N_IMM	d19on	d1	d2	d3	d4	d5	d6	d7	d8	d9	d10	d12	feb14on	sept11on	oct16on	feb20on	PRICE
321	2026	9	336.270	1	0	0	0	0	0	0	0	0	1	0	0	1	1	1	1	CONFID.
322	2026	10	336.187	1	0	0	0	0	0	0	0	0	0	1	0	1	0	1	1	CONFID.
323	2026	11	336.103	1	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	CONFID.
324	2026	12	336.017	1	0	0	0	0	0	0	0	0	0	0	1	1	0	1	1	CONFID.
325	2027	1	335.931	1	1	0	0	0	0	0	0	0	0	0	0	1	0	1	1	CONFID.
326	2027	2	335.850	1	0	1	0	0	0	0	0	0	0	0	0	1	0	1	1	CONFID.
327	2027	3	335.765	1	0	0	1	0	0	0	0	0	0	0	0	1	0	1	1	CONFID.
328	2027	4	335.680	1	0	0	0	1	0	0	0	0	0	0	0	1	1	1	1	CONFID.
329	2027	5	335.593	1	0	0	0	0	1	0	0	0	0	0	0	1	1	1	1	CONFID.
330	2027	6	335.506	1	0	0	0	0	0	1	0	0	0	0	0	1	1	1	1	CONFID.
331	2027	7	335.420	1	0	0	0	0	0	0	1	0	0	0	0	1	1	1	1	CONDID.
332	2027	8	335.332	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	CONFID.
333	2027	9	335.246	1	0	0	0	0	0	0	0	0	1	0	0	1	1	1	1	CONFID.
334	2027	10	335.160	1	0	0	0	0	0	0	0	0	0	1	0	1	0	1	1	CONFID.
335	2027	11	335.073	1	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	CONFID.
336	2027	12	334.987	1	0	0	0	0	0	0	0	0	0	0	1	1	0	1	1	CONFID.
337	2028	1	334.898	1	1	0	0	0	0	0	0	0	0	0	0	1	0	1	1	CONFID.
338	2028	2	334.814	1	0	1	0	0	0	0	0	0	0	0	0	1	0	1	1	CONFID.
339	2028	3	334.728	1	0	0	1	0	0	0	0	0	0	0	0	1	0	1	1	CONFID.
340	2028	4	334.641	1	0	0	0	1	0	0	0	0	0	0	0	1	1	1	1	CONFID.
341	2028	5	334.553	1	0	0	0	0	1	0	0	0	0	0	0	1	1	1	1	CONFID.
342	2028	6	334.466	1	0	0	0	0	0	1	0	0	0	0	0	1	1	1	1	CONFID.
343	2028	7	334.378	1	0	0	0	0	0	0	1	0	0	0	0	1	1	1	1	CONDID.
344	2028	8	334.289	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	CONFID.
345	2028	9	334.201	1	0	0	0	0	0	0	0	0	1	0	0	1	1	1	1	CONFID.
346	2028	10	334.111	1	0	0	0	0	0	0	0	0	0	1	0	1	0	1	1	CONFID.
347	2028	11	334.024	1	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	CONFID.
348	2028	12	333.935	1	0	0	0	0	0	0	0	0	0	0	1	1	0	1	1	CONFID.
349	2029	1	333.844	1	1	0	0	0	0	0	0	0	0	0	0	1	0	1	1	CONFID.
350	2029	2	333.758	1	0	1	0	0	0	0	0	0	0	0	0	1	0	1	1	CONFID.
351	2029	3	333.672	1	0	0	1	0	0	0	0	0	0	0	0	1	0	1	1	CONFID.
352	2029	4	333.583	1	0	0	0	1	0	0	0	0	0	0	0	1	1	1	1	CONFID.
353	2029	5	333.494	1	0	0	0	0	1	0	0	0	0	0	0	1	1	1	1	CONFID.
354	2029	6	333.405	1	0	0	0	0	0	1	0	0	0	0	0	1	1	1	1	CONFID.
355	2029	7	333.315	1	0	0	0	0	0	0	1	0	0	0	0	1	1	1	1	CONDID.
356	2029	8	333.225	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	CONFID.
357	2029	9	333.137	1	0	0	0	0	0	0	0	0	1	0	0	1	1	1	1	CONFID.
358	2029	10	333.048	1	0	0	0	0	0	0	0	0	0	1	0	1	0	1	1	CONFID.
359	2029	11	332.959	1	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	CONFID.
360	2029	12	332.870	1	0	0	0	0	0	0	0	0	0	0	1	1	0	1	1	CONFID.

Obs	YEAR	MONTH	N_IMM	d19on	d1	d2	d3	d4	d5	d6	d7	d8	d9	d10	d12	feb14on	sept11on	oct16on	feb20on	PRICE
361	2030	1	332.780	1	1	0	0	0	0	0	0	0	0	0	0	1	0	1	1	CONFID.
362	2030	2	332.696	1	0	1	0	0	0	0	0	0	0	0	0	1	0	1	1	CONFID.
363	2030	3	332.610	1	0	0	1	0	0	0	0	0	0	0	0	1	0	1	1	CONFID.
364	2030	4	332.522	1	0	0	0	1	0	0	0	0	0	0	0	1	1	1	1	CONFID.
365	2030	5	332.435	1	0	0	0	0	1	0	0	0	0	0	0	1	1	1	1	CONFID.
366	2030	6	332.348	1	0	0	0	0	0	1	0	0	0	0	0	1	1	1	1	CONFID.
367	2030	7	332.260	1	0	0	0	0	0	0	1	0	0	0	0	1	1	1	1	CONDID.
368	2030	8	332.173	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	CONFID.
369	2030	9	332.087	1	0	0	0	0	0	0	0	0	1	0	0	1	1	1	1	CONFID.
370	2030	10	332.002	1	0	0	0	0	0	0	0	0	0	1	0	1	0	1	1	CONFID.
371	2030	11	331.914	1	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	CONFID.
372	2030	12	331.828	1	0	0	0	0	0	0	0	0	0	0	1	1	0	1	1	CONFID.
373	2031	1	331.740	1	1	0	0	0	0	0	0	0	0	0	0	1	0	1	1	CONFID.
374	2031	2	331.656	1	0	1	0	0	0	0	0	0	0	0	0	1	0	1	1	CONFID.
375	2031	3	331.570	1	0	0	1	0	0	0	0	0	0	0	0	1	0	1	1	CONFID.
376	2031	4	331.482	1	0	0	0	1	0	0	0	0	0	0	0	1	1	1	1	CONFID.
377	2031	5	331.393	1	0	0	0	0	1	0	0	0	0	0	0	1	1	1	1	CONFID.
378	2031	6	331.303	1	0	0	0	0	0	1	0	0	0	0	0	1	1	1	1	CONFID.
379	2031	7	331.212	1	0	0	0	0	0	0	1	0	0	0	0	1	1	1	1	CONDID.
380	2031	8	331.119	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	CONFID.
381	2031	9	331.027	1	0	0	0	0	0	0	0	0	1	0	0	1	1	1	1	CONFID.
382	2031	10	330.932	1	0	0	0	0	0	0	0	0	0	1	0	1	0	1	1	CONFID.
383	2031	11	330.836	1	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	CONFID.
384	2031	12	330.741	1	0	0	0	0	0	0	0	0	0	0	1	1	0	1	1	CONFID.
385	2032	1	330.643	1	1	0	0	0	0	0	0	0	0	0	0	1	0	1	1	CONFID.
386	2032	2	330.548	1	0	1	0	0	0	0	0	0	0	0	0	1	0	1	1	CONFID.
387	2032	3	330.453	1	0	0	1	0	0	0	0	0	0	0	0	1	0	1	1	CONFID.
388	2032	4	330.355	1	0	0	0	1	0	0	0	0	0	0	0	1	1	1	1	CONFID.
389	2032	5	330.255	1	0	0	0	0	1	0	0	0	0	0	0	1	1	1	1	CONFID.
390	2032	6	330.158	1	0	0	0	0	0	1	0	0	0	0	0	1	1	1	1	CONFID.
391	2032	7	330.059	1	0	0	0	0	0	0	1	0	0	0	0	1	1	1	1	CONDID.
392	2032	8	329.958	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	CONFID.
393	2032	9	329.859	1	0	0	0	0	0	0	0	0	1	0	0	1	1	1	1	CONFID.
394	2032	10	329.759	1	0	0	0	0	0	0	0	0	0	1	0	1	0	1	1	CONFID.
395	2032	11	329.660	1	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	CONFID.
396	2032	12	329.559	1	0	0	0	0	0	0	0	0	0	0	1	1	0	1	1	CONFID.
397	2033	1	329.457	1	1	0	0	0	0	0	0	0	0	0	0	1	0	1	1	CONFID.
398	2033	2	329.359	1	0	1	0	0	0	0	0	0	0	0	0	1	0	1	1	CONFID.
399	2033	3	329.260	1	0	0	1	0	0	0	0	0	0	0	0	1	0	1	1	CONFID.
400	2033	4	329.157	1	0	0	0	1	0	0	0	0	0	0	0	1	1	1	1	CONFID.

Obs	YEAR	MONTH	N_IMM	d19on	d1	d2	d3	d4	d5	d6	d7	d8	d9	d10	d12	feb14on	apsept11on	oct16on	feb20on	PRICE
401	2033	5	329.054	1	0	0	0	0	1	0	0	0	0	0	0	1	1	1	1	CONFID.
402	2033	6	328.950	1	0	0	0	0	0	1	0	0	0	0	0	1	1	1	1	CONFID.
403	2033	7	328.845	1	0	0	0	0	0	0	1	0	0	0	0	1	1	1	1	CONDID.
404	2033	8	328.737	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	CONFID.
405	2033	9	328.630	1	0	0	0	0	0	0	0	0	1	0	0	1	1	1	1	CONFID.
406	2033	10	328.524	1	0	0	0	0	0	0	0	0	0	1	0	1	0	1	1	CONFID.
407	2033	11	328.415	1	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	CONFID.
408	2033	12	328.307	1	0	0	0	0	0	0	0	0	0	0	1	1	0	1	1	CONFID.
409	2034	1	328.197	1	1	0	0	0	0	0	0	0	0	0	0	1	0	1	1	CONFID.
410	2034	2	328.089	1	0	1	0	0	0	0	0	0	0	0	0	1	0	1	1	CONFID.
411	2034	3	327.983	1	0	0	1	0	0	0	0	0	0	0	0	1	0	1	1	CONFID.
412	2034	4	327.872	1	0	0	0	1	0	0	0	0	0	0	0	1	1	1	1	CONFID.
413	2034	5	327.762	1	0	0	0	0	1	0	0	0	0	0	0	1	1	1	1	CONFID.
414	2034	6	327.650	1	0	0	0	0	0	1	0	0	0	0	0	1	1	1	1	CONFID.
415	2034	7	327.538	1	0	0	0	0	0	0	1	0	0	0	0	1	1	1	1	CONDID.
416	2034	8	327.424	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	CONFID.
417	2034	9	327.311	1	0	0	0	0	0	0	0	0	1	0	0	1	1	1	1	CONFID.
418	2034	10	327.198	1	0	0	0	0	0	0	0	0	0	1	0	1	0	1	1	CONFID.
419	2034	11	327.085	1	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	CONFID.
420	2034	12	326.970	1	0	0	0	0	0	0	0	0	0	0	1	1	0	1	1	CONFID.
421	2035	1	326.855	1	1	0	0	0	0	0	0	0	0	0	0	1	0	1	1	CONFID.
422	2035	2	326.744	1	0	1	0	0	0	0	0	0	0	0	0	1	0	1	1	CONFID.
423	2035	3	326.632	1	0	0	1	0	0	0	0	0	0	0	0	1	0	1	1	CONFID.
424	2035	4	326.517	1	0	0	0	1	0	0	0	0	0	0	0	1	1	1	1	CONFID.
425	2035	5	326.400	1	0	0	0	0	1	0	0	0	0	0	0	1	1	1	1	CONFID.
426	2035	6	326.285	1	0	0	0	0	0	1	0	0	0	0	0	1	1	1	1	CONFID.
427	2035	7	326.169	1	0	0	0	0	0	0	1	0	0	0	0	1	1	1	1	CONDID.
428	2035	8	326.050	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	CONFID.
429	2035	9	325.931	1	0	0	0	0	0	0	0	0	1	0	0	1	1	1	1	CONFID.
430	2035	10	325.813	1	0	0	0	0	0	0	0	0	0	1	0	1	0	1	1	CONFID.
431	2035	11	325.694	1	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	CONFID.
432	2035	12	325.576	1	0	0	0	0	0	0	0	0	0	0	1	1	0	1	1	CONFID.
433	2036	1	325.454	1	1	0	0	0	0	0	0	0	0	0	0	1	0	1	1	CONFID.
434	2036	2	325.338	1	0	1	0	0	0	0	0	0	0	0	0	1	0	1	1	CONFID.
435	2036	3	325.219	1	0	0	1	0	0	0	0	0	0	0	0	1	0	1	1	CONFID.
436	2036	4	325.100	1	0	0	0	1	0	0	0	0	0	0	0	1	1	1	1	CONFID.
437	2036	5	324.980	1	0	0	0	0	1	0	0	0	0	0	0	1	1	1	1	CONFID.
438	2036	6	324.859	1	0	0	0	0	0	1	0	0	0	0	0	1	1	1	1	CONFID.
439	2036	7	324.739	1	0	0	0	0	0	0	1	0	0	0	0	1	1	1	1	CONDID.
440	2036	8	324.617	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	CONFID.

Obs	YEAR	MONTH	N_IMM	d19on	d1	d2	d3	d4	d5	d6	d7	d8	d9	d10	d12	feb14on	apsept11on	oct16on	feb20on	PRICE
441	2036	9	324.495	1	0	0	0	0	0	0	0	0	1	0	0	1	1	1	1	CONFID.
442	2036	10	324.374	1	0	0	0	0	0	0	0	0	0	1	0	1	0	1	1	CONFID.
443	2036	11	324.253	1	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	CONFID.
444	2036	12	324.131	1	0	0	0	0	0	0	0	0	0	0	1	1	0	1	1	CONFID.
445	2037	1	324.008	1	1	0	0	0	0	0	0	0	0	0	0	1	0	1	1	CONFID.
446	2037	2	323.889	1	0	1	0	0	0	0	0	0	0	0	0	1	0	1	1	CONFID.
447	2037	3	323.769	1	0	0	1	0	0	0	0	0	0	0	0	1	0	1	1	CONFID.
448	2037	4	323.646	1	0	0	0	1	0	0	0	0	0	0	0	1	1	1	1	CONFID.
449	2037	5	323.523	1	0	0	0	0	1	0	0	0	0	0	0	1	1	1	1	CONFID.
450	2037	6	323.398	1	0	0	0	0	0	1	0	0	0	0	0	1	1	1	1	CONFID.
451	2037	7	323.272	1	0	0	0	0	0	0	1	0	0	0	0	1	1	1	1	CONDID.
452	2037	8	323.145	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	CONFID.
453	2037	9	323.019	1	0	0	0	0	0	0	0	0	1	0	0	1	1	1	1	CONFID.
454	2037	10	322.893	1	0	0	0	0	0	0	0	0	0	1	0	1	0	1	1	CONFID.
455	2037	11	322.763	1	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	CONFID.
456	2037	12	322.636	1	0	0	0	0	0	0	0	0	0	0	1	1	0	1	1	CONFID.
457	2038	1	322.506	1	1	0	0	0	0	0	0	0	0	0	0	1	0	1	1	CONFID.
458	2038	2	322.379	1	0	1	0	0	0	0	0	0	0	0	0	1	0	1	1	CONFID.
459	2038	3	322.254	1	0	0	1	0	0	0	0	0	0	0	0	1	0	1	1	CONFID.
460	2038	4	322.124	1	0	0	0	1	0	0	0	0	0	0	0	1	1	1	1	CONFID.
461	2038	5	321.994	1	0	0	0	0	1	0	0	0	0	0	0	1	1	1	1	CONFID.
462	2038	6	321.863	1	0	0	0	0	0	1	0	0	0	0	0	1	1	1	1	CONFID.
463	2038	7	321.730	1	0	0	0	0	0	0	1	0	0	0	0	1	1	1	1	CONDID.
464	2038	8	321.598	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	CONFID.
465	2038	9	321.463	1	0	0	0	0	0	0	0	0	1	0	0	1	1	1	1	CONFID.
466	2038	10	321.331	1	0	0	0	0	0	0	0	0	0	1	0	1	0	1	1	CONFID.
467	2038	11	321.198	1	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	CONFID.
468	2038	12	321.063	1	0	0	0	0	0	0	0	0	0	0	1	1	0	1	1	CONFID.
469	2039	1	320.928	1	1	0	0	0	0	0	0	0	0	0	0	1	0	1	1	CONFID.
470	2039	2	320.799	1	0	1	0	0	0	0	0	0	0	0	0	1	0	1	1	CONFID.
471	2039	3	320.667	1	0	0	1	0	0	0	0	0	0	0	0	1	0	1	1	CONFID.
472	2039	4	320.533	1	0	0	0	1	0	0	0	0	0	0	0	1	1	1	1	CONFID.
473	2039	5	320.397	1	0	0	0	0	1	0	0	0	0	0	0	1	1	1	1	CONFID.
474	2039	6	320.261	1	0	0	0	0	0	1	0	0	0	0	0	1	1	1	1	CONFID.
475	2039	7	320.123	1	0	0	0	0	0	0	1	0	0	0	0	1	1	1	1	CONDID.
476	2039	8	319.984	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	CONFID.
477	2039	9	319.847	1	0	0	0	0	0	0	0	0	1	0	0	1	1	1	1	CONFID.
478	2039	10	319.709	1	0	0	0	0	0	0	0	0	0	1	0	1	0	1	1	CONFID.
479	2039	11	319.571	1	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	CONFID.
480	2039	12	319.432	1	0	0	0	0	0	0	0	0	0	0	1	1	0	1	1	CONFID.

Obs	YEAR	MONTH	N_IMM	d19on	d1	d2	d3	d4	d5	d6	d7	d8	d9	d10	d12	feb14on	apsept11on	oct16on	feb20on	PRICE
481	2040	1	319.290	1	1	0	0	0	0	0	0	0	0	0	0	1	0	1	1	CONFID.
482	2040	2	319.152	1	0	1	0	0	0	0	0	0	0	0	0	1	0	1	1	CONFID.
483	2040	3	319.016	1	0	0	1	0	0	0	0	0	0	0	0	1	0	1	1	CONFID.
484	2040	4	318.877	1	0	0	0	1	0	0	0	0	0	0	0	1	1	1	1	CONFID.
485	2040	5	318.736	1	0	0	0	0	1	0	0	0	0	0	0	1	1	1	1	CONFID.
486	2040	6	318.596	1	0	0	0	0	0	1	0	0	0	0	0	1	1	1	1	CONFID.
487	2040	7	318.456	1	0	0	0	0	0	0	1	0	0	0	0	1	1	1	1	CONDID.
488	2040	8	318.312	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	CONFID.
489	2040	9	318.171	1	0	0	0	0	0	0	0	0	1	0	0	1	1	1	1	CONFID.
490	2040	10	318.030	1	0	0	0	0	0	0	0	0	0	1	0	1	0	1	1	CONFID.
491	2040	11	317.888	1	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	CONFID.
492	2040	12	317.746	1	0	0	0	0	0	0	0	0	0	0	1	1	0	1	1	CONFID.
493	2041	1	317.602	1	1	0	0	0	0	0	0	0	0	0	0	1	0	1	1	CONFID.
494	2041	2	317.464	1	0	1	0	0	0	0	0	0	0	0	0	1	0	1	1	CONFID.
495	2041	3	317.326	1	0	0	1	0	0	0	0	0	0	0	0	1	0	1	1	CONFID.
496	2041	4	317.184	1	0	0	0	1	0	0	0	0	0	0	0	1	1	1	1	CONFID.
497	2041	5	317.039	1	0	0	0	0	1	0	0	0	0	0	0	1	1	1	1	CONFID.
498	2041	6	316.895	1	0	0	0	0	0	1	0	0	0	0	0	1	1	1	1	CONFID.
499	2041	7	316.751	1	0	0	0	0	0	0	1	0	0	0	0	1	1	1	1	CONDID.
500	2041	8	316.604	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	CONFID.
501	2041	9	316.459	1	0	0	0	0	0	0	0	0	1	0	0	1	1	1	1	CONFID.
502	2041	10	316.314	1	0	0	0	0	0	0	0	0	0	1	0	1	0	1	1	CONFID.
503	2041	11	316.168	1	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	CONFID.
504	2041	12	316.022	1	0	0	0	0	0	0	0	0	0	0	1	1	0	1	1	CONFID.
505	2042	1	315.872	1	1	0	0	0	0	0	0	0	0	0	0	1	0	1	1	CONFID.
506	2042	2	315.731	1	0	1	0	0	0	0	0	0	0	0	0	1	0	1	1	CONFID.
507	2042	3	315.588	1	0	0	1	0	0	0	0	0	0	0	0	1	0	1	1	CONFID.
508	2042	4	315.439	1	0	0	0	1	0	0	0	0	0	0	0	1	1	1	1	CONFID.
509	2042	5	315.291	1	0	0	0	0	1	0	0	0	0	0	0	1	1	1	1	CONFID.
510	2042	6	315.140	1	0	0	0	0	0	1	0	0	0	0	0	1	1	1	1	CONFID.
511	2042	7	314.992	1	0	0	0	0	0	0	1	0	0	0	0	1	1	1	1	CONDID.
512	2042	8	314.839	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	CONFID.
513	2042	9	314.688	1	0	0	0	0	0	0	0	0	1	0	0	1	1	1	1	CONFID.
514	2042	10	314.538	1	0	0	0	0	0	0	0	0	0	1	0	1	0	1	1	CONFID.
515	2042	11	314.386	1	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	CONFID.
516	2042	12	314.234	1	0	0	0	0	0	0	0	0	0	0	1	1	0	1	1	CONFID.
517	2043	1	314.080	1	1	0	0	0	0	0	0	0	0	0	0	1	0	1	1	CONFID.
518	2043	2	313.933	1	0	1	0	0	0	0	0	0	0	0	0	1	0	1	1	CONFID.
519	2043	3	313.786	1	0	0	1	0	0	0	0	0	0	0	0	1	0	1	1	CONFID.
520	2043	4	313.633	1	0	0	0	1	0	0	0	0	0	0	0	1	1	1	1	CONFID.

Obs	YEAR	MONTH	N_IMM	d19on	d1	d2	d3	d4	d5	d6	d7	d8	d9	d10	d12	feb14on	apsept11on	oct16on	feb20on	PRICE
521	2043	5	313.483	1	0	0	0	0	1	0	0	0	0	0	0	1	1	1	1	CONFID.
522	2043	6	313.330	1	0	0	0	0	0	1	0	0	0	0	0	1	1	1	1	CONFID.
523	2043	7	313.179	1	0	0	0	0	0	0	1	0	0	0	0	1	1	1	1	CONDID.
524	2043	8	313.025	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	CONFID.
525	2043	9	312.874	1	0	0	0	0	0	0	0	0	1	0	0	1	1	1	1	CONFID.
526	2043	10	312.723	1	0	0	0	0	0	0	0	0	0	1	0	1	0	1	1	CONFID.
527	2043	11	312.571	1	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	CONFID.
528	2043	12	312.419	1	0	0	0	0	0	0	0	0	0	0	1	1	0	1	1	CONFID.
529	2044	1	312.266	1	1	0	0	0	0	0	0	0	0	0	0	1	0	1	1	CONFID.
530	2044	2	312.117	1	0	1	0	0	0	0	0	0	0	0	0	1	0	1	1	CONFID.
531	2044	3	311.967	1	0	0	1	0	0	0	0	0	0	0	0	1	0	1	1	CONFID.
532	2044	4	311.815	1	0	0	0	1	0	0	0	0	0	0	0	1	1	1	1	CONFID.
533	2044	5	311.663	1	0	0	0	0	1	0	0	0	0	0	0	1	1	1	1	CONFID.
534	2044	6	311.510	1	0	0	0	0	0	1	0	0	0	0	0	1	1	1	1	CONFID.
535	2044	7	311.358	1	0	0	0	0	0	0	1	0	0	0	0	1	1	1	1	CONDID.
536	2044	8	311.201	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	CONFID.
537	2044	9	311.047	1	0	0	0	0	0	0	0	0	1	0	0	1	1	1	1	CONFID.
538	2044	10	310.892	1	0	0	0	0	0	0	0	0	0	1	0	1	0	1	1	CONFID.
539	2044	11	310.738	1	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	CONFID.
540	2044	12	310.583	1	0	0	0	0	0	0	0	0	0	0	1	1	0	1	1	CONFID.
541	2045	1	310.425	1	1	0	0	0	0	0	0	0	0	0	0	1	0	1	1	CONFID.
542	2045	2	310.276	1	0	1	0	0	0	0	0	0	0	0	0	1	0	1	1	CONFID.
543	2045	3	310.126	1	0	0	1	0	0	0	0	0	0	0	0	1	0	1	1	CONFID.
544	2045	4	309.970	1	0	0	0	1	0	0	0	0	0	0	0	1	1	1	1	CONFID.
545	2045	5	309.817	1	0	0	0	0	1	0	0	0	0	0	0	1	1	1	1	CONFID.
546	2045	6	309.663	1	0	0	0	0	0	1	0	0	0	0	0	1	1	1	1	CONFID.
547	2045	7	309.509	1	0	0	0	0	0	0	1	0	0	0	0	1	1	1	1	CONDID.
548	2045	8	309.352	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	CONFID.
549	2045	9	309.198	1	0	0	0	0	0	0	0	0	1	0	0	1	1	1	1	CONFID.
550	2045	10	309.045	1	0	0	0	0	0	0	0	0	0	1	0	1	0	1	1	CONFID.
551	2045	11	308.892	1	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	CONFID.
552	2045	12	308.737	1	0	0	0	0	0	0	0	0	0	0	1	1	0	1	1	CONFID.
553	2046	1	308.581	1	1	0	0	0	0	0	0	0	0	0	0	1	0	1	1	CONFID.
554	2046	2	308.431	1	0	1	0	0	0	0	0	0	0	0	0	1	0	1	1	CONFID.
555	2046	3	308.281	1	0	0	1	0	0	0	0	0	0	0	0	1	0	1	1	CONFID.
556	2046	4	308.125	1	0	0	0	1	0	0	0	0	0	0	0	1	1	1	1	CONFID.
557	2046	5	307.968	1	0	0	0	0	1	0	0	0	0	0	0	1	1	1	1	CONFID.
558	2046	6	307.810	1	0	0	0	0	0	1	0	0	0	0	0	1	1	1	1	CONFID.
559	2046	7	307.651	1	0	0	0	0	0	0	1	0	0	0	0	1	1	1	1	CONDID.
560	2046	8	307.487	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	CONFID.

Obs	YEAR	MONTH	N_IMM	d19on	d1	d2	d3	d4	d5	d6	d7	d8	d9	d10	d12	feb14on	apsept11on	oct16on	feb20on	PRICE
561	2046	9	307.325	1	0	0	0	0	0	0	0	0	1	0	0	1	1	1	1	CONFID.
562	2046	10	307.163	1	0	0	0	0	0	0	0	0	0	1	0	1	0	1	1	CONFID.
563	2046	11	306.999	1	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	CONFID.
564	2046	12	306.834	1	0	0	0	0	0	0	0	0	0	0	1	1	0	1	1	CONFID.
565	2047	1	306.668	1	1	0	0	0	0	0	0	0	0	0	0	1	0	1	1	CONFID.
566	2047	2	306.508	1	0	1	0	0	0	0	0	0	0	0	0	1	0	1	1	CONFID.
567	2047	3	306.349	1	0	0	1	0	0	0	0	0	0	0	0	1	0	1	1	CONFID.
568	2047	4	306.185	1	0	0	0	1	0	0	0	0	0	0	0	1	1	1	1	CONFID.
569	2047	5	306.022	1	0	0	0	0	1	0	0	0	0	0	0	1	1	1	1	CONFID.
570	2047	6	305.857	1	0	0	0	0	0	1	0	0	0	0	0	1	1	1	1	CONFID.
571	2047	7	305.695	1	0	0	0	0	0	0	1	0	0	0	0	1	1	1	1	CONDID.
572	2047	8	305.530	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	CONFID.
573	2047	9	305.369	1	0	0	0	0	0	0	0	0	1	0	0	1	1	1	1	CONFID.
574	2047	10	305.208	1	0	0	0	0	0	0	0	0	0	1	0	1	0	1	1	CONFID.
575	2047	11	305.048	1	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	CONFID.
576	2047	12	304.888	1	0	0	0	0	0	0	0	0	0	0	1	1	0	1	1	CONFID.
577	2048	1	304.726	1	1	0	0	0	0	0	0	0	0	0	0	1	0	1	1	CONFID.
578	2048	2	304.568	1	0	1	0	0	0	0	0	0	0	0	0	1	0	1	1	CONFID.
579	2048	3	304.412	1	0	0	1	0	0	0	0	0	0	0	0	1	0	1	1	CONFID.
580	2048	4	304.253	1	0	0	0	1	0	0	0	0	0	0	0	1	1	1	1	CONFID.
581	2048	5	304.095	1	0	0	0	0	1	0	0	0	0	0	0	1	1	1	1	CONFID.
582	2048	6	303.935	1	0	0	0	0	0	1	0	0	0	0	0	1	1	1	1	CONFID.
583	2048	7	303.777	1	0	0	0	0	0	0	1	0	0	0	0	1	1	1	1	CONDID.
584	2048	8	303.614	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	CONFID.
585	2048	9	303.455	1	0	0	0	0	0	0	0	0	1	0	0	1	1	1	1	CONFID.
586	2048	10	303.295	1	0	0	0	0	0	0	0	0	0	1	0	1	0	1	1	CONFID.
587	2048	11	303.135	1	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	CONFID.
588	2048	12	302.976	1	0	0	0	0	0	0	0	0	0	0	1	1	0	1	1	CONFID.
589	2049	1	302.815	1	1	0	0	0	0	0	0	0	0	0	0	1	0	1	1	CONFID.
590	2049	2	302.660	1	0	1	0	0	0	0	0	0	0	0	0	1	0	1	1	CONFID.
591	2049	3	302.506	1	0	0	1	0	0	0	0	0	0	0	0	1	0	1	1	CONFID.
592	2049	4	302.346	1	0	0	0	1	0	0	0	0	0	0	0	1	1	1	1	CONFID.
593	2049	5	302.188	1	0	0	0	0	1	0	0	0	0	0	0	1	1	1	1	CONFID.
594	2049	6	302.027	1	0	0	0	0	0	1	0	0	0	0	0	1	1	1	1	CONFID.
595	2049	7	301.869	1	0	0	0	0	0	0	1	0	0	0	0	1	1	1	1	CONDID.
596	2049	8	301.708	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	CONFID.
597	2049	9	301.549	1	0	0	0	0	0	0	0	0	1	0	0	1	1	1	1	CONFID.
598	2049	10	301.390	1	0	0	0	0	0	0	0	0	0	1	0	1	0	1	1	CONFID.
599	2049	11	301.232	1	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	CONFID.
600	2049	12	301.074	1	0	0	0	0	0	0	0	0	0	0	1	1	0	1	1	CONFID.

Obs	YEAR	MONTH	N_IMM	d19on	d1	d2	d3	d4	d5	d6	d7	d8	d9	d10	d12	feb14on	apsept11on	oct16on	feb20on	PRICE
601	2050	1	300.914	1	1	0	0	0	0	0	0	0	0	0	0	1	0	1	1	CONFID.
602	2050	2	300.761	1	0	1	0	0	0	0	0	0	0	0	0	1	0	1	1	CONFID.
603	2050	3	300.608	1	0	0	1	0	0	0	0	0	0	0	0	1	0	1	1	CONFID.
604	2050	4	300.451	1	0	0	0	1	0	0	0	0	0	0	0	1	1	1	1	CONFID.
605	2050	5	300.295	1	0	0	0	0	1	0	0	0	0	0	0	1	1	1	1	CONFID.
606	2050	6	300.140	1	0	0	0	0	0	1	0	0	0	0	0	1	1	1	1	CONFID.
607	2050	7	299.984	1	0	0	0	0	0	0	1	0	0	0	0	1	1	1	1	CONDID.
608	2050	8	299.827	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	CONFID.
609	2050	9	299.671	1	0	0	0	0	0	0	0	0	1	0	0	1	1	1	1	CONFID.
610	2050	10	299.518	1	0	0	0	0	0	0	0	0	0	1	0	1	0	1	1	CONFID.
611	2050	11	299.364	1	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	CONFID.
612	2050	12	299.211	1	0	0	0	0	0	0	0	0	0	0	1	1	0	1	1	CONFID.
613	2051	1	299.026	1	1	0	0	0	0	0	0	0	0	0	0	1	0	1	1	CONFID.
614	2051	2	298.875	1	0	1	0	0	0	0	0	0	0	0	0	1	0	1	1	CONFID.
615	2051	3	298.723	1	0	0	1	0	0	0	0	0	0	0	0	1	0	1	1	CONFID.
616	2051	4	298.569	1	0	0	0	1	0	0	0	0	0	0	0	1	1	1	1	CONFID.
617	2051	5	298.415	1	0	0	0	0	1	0	0	0	0	0	0	1	1	1	1	CONFID.
618	2051	6	298.266	1	0	0	0	0	0	1	0	0	0	0	0	1	1	1	1	CONFID.
619	2051	7	298.112	1	0	0	0	0	0	0	1	0	0	0	0	1	1	1	1	CONDID.
620	2051	8	297.959	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	CONFID.
621	2051	9	297.806	1	0	0	0	0	0	0	0	0	1	0	0	1	1	1	1	CONFID.
622	2051	10	297.659	1	0	0	0	0	0	0	0	0	0	1	0	1	0	1	1	CONFID.
623	2051	11	297.509	1	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	CONFID.
624	2051	12	297.361	1	0	0	0	0	0	0	0	0	0	0	1	1	0	1	1	CONFID.
625	2052	1	297.152	1	1	0	0	0	0	0	0	0	0	0	0	1	0	1	1	CONFID.
626	2052	2	297.003	1	0	1	0	0	0	0	0	0	0	0	0	1	0	1	1	CONFID.
627	2052	3	296.852	1	0	0	1	0	0	0	0	0	0	0	0	1	0	1	1	CONFID.
628	2052	4	296.701	1	0	0	0	1	0	0	0	0	0	0	0	1	1	1	1	CONFID.
629	2052	5	296.549	1	0	0	0	0	1	0	0	0	0	0	0	1	1	1	1	CONFID.
630	2052	6	296.406	1	0	0	0	0	0	1	0	0	0	0	0	1	1	1	1	CONFID.
631	2052	7	296.254	1	0	0	0	0	0	0	1	0	0	0	0	1	1	1	1	CONDID.
632	2052	8	296.104	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	CONFID.
633	2052	9	295.954	1	0	0	0	0	0	0	0	0	1	0	0	1	1	1	1	CONFID.
634	2052	10	295.813	1	0	0	0	0	0	0	0	0	0	1	0	1	0	1	1	CONFID.
635	2052	11	295.667	1	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	CONFID.
636	2052	12	295.524	1	0	0	0	0	0	0	0	0	0	0	1	1	0	1	1	CONFID.
637	2053	1	295.291	1	1	0	0	0	0	0	0	0	0	0	0	1	0	1	1	CONFID.
638	2053	2	295.144	1	0	1	0	0	0	0	0	0	0	0	0	1	0	1	1	CONFID.
639	2053	3	294.994	1	0	0	1	0	0	0	0	0	0	0	0	1	0	1	1	CONFID.
640	2053	4	294.846	1	0	0	0	1	0	0	0	0	0	0	0	1	1	1	1	CONFID.

Obs	YEAR	MONTH	N_IMM	d19on	d1	d2	d3	d4	d5	d6	d7	d8	d9	d10	d12	feb14on	apsept11on	oct16on	feb20on	PRICE
641	2053	5	294.695	1	0	0	0	0	1	0	0	0	0	0	0	1	1	1	1	CONFID.
642	2053	6	294.558	1	0	0	0	0	0	1	0	0	0	0	0	1	1	1	1	CONFID.
643	2053	7	294.408	1	0	0	0	0	0	0	1	0	0	0	0	1	1	1	1	CONDID.
644	2053	8	294.263	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	CONFID.
645	2053	9	294.116	1	0	0	0	0	0	0	0	0	1	0	0	1	1	1	1	CONFID.
646	2053	10	293.980	1	0	0	0	0	0	0	0	0	0	1	0	1	0	1	1	CONFID.
647	2053	11	293.838	1	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	CONFID.
648	2053	12	293.700	1	0	0	0	0	0	0	0	0	0	0	1	1	0	1	1	CONFID.
649	2054	1	293.443	1	1	0	0	0	0	0	0	0	0	0	0	1	0	1	1	CONFID.
650	2054	2	293.298	1	0	1	0	0	0	0	0	0	0	0	0	1	0	1	1	CONFID.
651	2054	3	293.149	1	0	0	1	0	0	0	0	0	0	0	0	1	0	1	1	CONFID.
652	2054	4	293.003	1	0	0	0	1	0	0	0	0	0	0	0	1	1	1	1	CONFID.
653	2054	5	292.855	1	0	0	0	0	1	0	0	0	0	0	0	1	1	1	1	CONFID.
654	2054	6	292.723	1	0	0	0	0	0	1	0	0	0	0	0	1	1	1	1	CONFID.
655	2054	7	292.575	1	0	0	0	0	0	0	1	0	0	0	0	1	1	1	1	CONDID.
656	2054	8	292.434	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	CONFID.
657	2054	9	292.290	1	0	0	0	0	0	0	0	0	1	0	0	1	1	1	1	CONFID.
658	2054	10	292.160	1	0	0	0	0	0	0	0	0	0	1	0	1	0	1	1	CONFID.
659	2054	11	292.022	1	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	CONFID.
660	2054	12	291.888	1	0	0	0	0	0	0	0	0	0	0	1	1	0	1	1	CONFID.
661	2055	1	291.608	1	1	0	0	0	0	0	0	0	0	0	0	1	0	1	1	CONFID.
662	2055	2	291.465	1	0	1	0	0	0	0	0	0	0	0	0	1	0	1	1	CONFID.
663	2055	3	291.316	1	0	0	1	0	0	0	0	0	0	0	0	1	0	1	1	CONFID.
664	2055	4	291.174	1	0	0	0	1	0	0	0	0	0	0	0	1	1	1	1	CONFID.
665	2055	5	291.028	1	0	0	0	0	1	0	0	0	0	0	0	1	1	1	1	CONFID.
666	2055	6	290.902	1	0	0	0	0	0	1	0	0	0	0	0	1	1	1	1	CONFID.
667	2055	7	290.756	1	0	0	0	0	0	0	1	0	0	0	0	1	1	1	1	CONDID.
668	2055	8	290.618	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	CONFID.
669	2055	9	290.476	1	0	0	0	0	0	0	0	0	1	0	0	1	1	1	1	CONFID.
670	2055	10	290.353	1	0	0	0	0	0	0	0	0	0	1	0	1	0	1	1	CONFID.
671	2055	11	290.218	1	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	CONFID.
672	2055	12	290.089	1	0	0	0	0	0	0	0	0	0	0	1	1	0	1	1	CONFID.
673	2056	1	289.786	1	1	0	0	0	0	0	0	0	0	0	0	1	0	1	1	CONFID.
674	2056	2	289.644	1	0	1	0	0	0	0	0	0	0	0	0	1	0	1	1	CONFID.
675	2056	3	289.497	1	0	0	1	0	0	0	0	0	0	0	0	1	0	1	1	CONFID.
676	2056	4	289.357	1	0	0	0	1	0	0	0	0	0	0	0	1	1	1	1	CONFID.
677	2056	5	289.213	1	0	0	0	0	1	0	0	0	0	0	0	1	1	1	1	CONFID.
678	2056	6	289.093	1	0	0	0	0	0	1	0	0	0	0	0	1	1	1	1	CONFID.
679	2056	7	288.948	1	0	0	0	0	0	0	1	0	0	0	0	1	1	1	1	CONDID.
680	2056	8	288.814	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	CONFID.

Obs	YEAR	MONTH	N_IMM	d19on	d1	d2	d3	d4	d5	d6	d7	d8	d9	d10	d12	feb14on	apr sept11on	oct16on	feb20on	PRICE
681	2056	9	288.676	1	0	0	0	0	0	0	0	0	1	0	0	1	1	1	1	CONFID.
682	2056	10	288.558	1	0	0	0	0	0	0	0	0	0	1	0	1	0	1	1	CONFID.
683	2056	11	288.427	1	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	CONFID.
684	2056	12	288.303	1	0	0	0	0	0	0	0	0	0	0	1	1	0	1	1	CONFID.
685	2057	1	287.976	1	1	0	0	0	0	0	0	0	0	0	0	1	0	1	1	CONFID.
686	2057	2	287.837	1	0	1	0	0	0	0	0	0	0	0	0	1	0	1	1	CONFID.
687	2057	3	287.691	1	0	0	1	0	0	0	0	0	0	0	0	1	0	1	1	CONFID.
688	2057	4	287.554	1	0	0	0	1	0	0	0	0	0	0	0	1	1	1	1	CONFID.
689	2057	5	287.411	1	0	0	0	0	1	0	0	0	0	0	0	1	1	1	1	CONFID.
690	2057	6	287.296	1	0	0	0	0	0	1	0	0	0	0	0	1	1	1	1	CONFID.
691	2057	7	287.154	1	0	0	0	0	0	0	1	0	0	0	0	1	1	1	1	CONDID.
692	2057	8	287.024	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	CONFID.
693	2057	9	286.888	1	0	0	0	0	0	0	0	0	1	0	0	1	1	1	1	CONFID.
694	2057	10	286.775	1	0	0	0	0	0	0	0	0	0	1	0	1	0	1	1	CONFID.
695	2057	11	286.648	1	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	CONFID.
696	2057	12	286.529	1	0	0	0	0	0	0	0	0	0	0	1	1	0	1	1	CONFID.

Indiana Michigan Power Company - Michigan
Other Ultimate Energy Sales
Exogenous Variables
Model Estimation

The SYSLIN Procedure
Ordinary Least Squares Estimation

Model	LEU
Dependent Variable	LEU
Label	ENERGY SALES, OTHER ULTIMATE, LOG

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	18	7.016285	0.389794	964.88	<.0001
Error	234	0.094532	0.000404		
Corrected Total	252	7.110817			

Root MSE	0.02010	R-Square	0.98671
Dependent Mean	-0.06131	Adj R-Sq	0.98568
Coeff Var	-32.78207		

Parameter Estimates

Variable	DF	Parameter Estimate	Standard Error	t Value	Pr > |t|	Variable Label
Intercept	1	-2.29590	0.238897	-9.61	<.0001	Intercept
N_IMM	1	0.007410	0.000743	9.98	<.0001	SERVICE AREA POPULATION
d1	1	0.080158	0.006147	13.04	<.0001	BINARY VARIABLE-JANUARY
d2	1	-0.07733	0.006233	-12.41	<.0001	BINARY VARIABLE-FEBRUARY
d3	1	-0.08983	0.006233	-14.41	<.0001	BINARY VARIABLE-MARCH
d4	1	-0.18055	0.006626	-27.25	<.0001	BINARY VARIABLE-APRIL
d5	1	-0.27406	0.006624	-41.38	<.0001	BINARY VARIABLE-MAY
d6	1	-0.35632	0.006628	-53.76	<.0001	BINARY VARIABLE-JUNE
d7	1	-0.31230	0.006645	-47.00	<.0001	BINARY VARIABLE-JULY
d8	1	-0.22053	0.006632	-33.25	<.0001	BINARY VARIABLE-AUGUST
d9	1	-0.14358	0.006647	-21.60	<.0001	BINARY VARIABLE-SEPTEMBER
d10	1	-0.04901	0.006203	-7.90	<.0001	BINARY VARIABLE-OCTOBER
d12	1	0.084049	0.006204	13.55	<.0001	BINARY VARIABLE-DECEMBER

Indiana Michigan Power Company - Michigan
Other Ultimate Energy Sales
Exogenous Variables
Model Estimation

The SYSLIN Procedure
Ordinary Least Squares Estimation

Parameter Estimates

Variable	DF	Parameter Estimate	Standard Error	t Value	Pr > |t|	Variable Label
feb14on	1	-0.02922	0.006248	-4.68	<.0001	BINARY VARIABLE-FEBRUARY 2014 ON
aprsept11on	1	-0.07664	0.004947	-15.49	<.0001	BINARY VARIABLE-APRIL THROUGH SEPTEMBER 2011 ON
oct16on	1	-0.02656	0.005570	-4.77	<.0001	BINARY VARIABLE-OCTOBER 2016 ON
d19on	1	-0.01559	0.007063	-2.21	0.0282	BINARY VARIABLE-2019 ON
PU36	1	-0.01297	0.003279	-3.96	0.0001	REAL OTHER RETAIL ELECTRIC PRICE, 36 MONTH MOVING AVERAGE
feb20on	1	-0.02140	0.008412	-2.54	0.0116	BINARY VARIABLE-FEBRUARY 2020 ON

Durbin-Watson	1.427679
Number of Observations	253
First-Order Autocorrelation	0.284728

Indiana Michigan Power Company - Michigan
Other Ultimate Energy Sales
Model Residuals

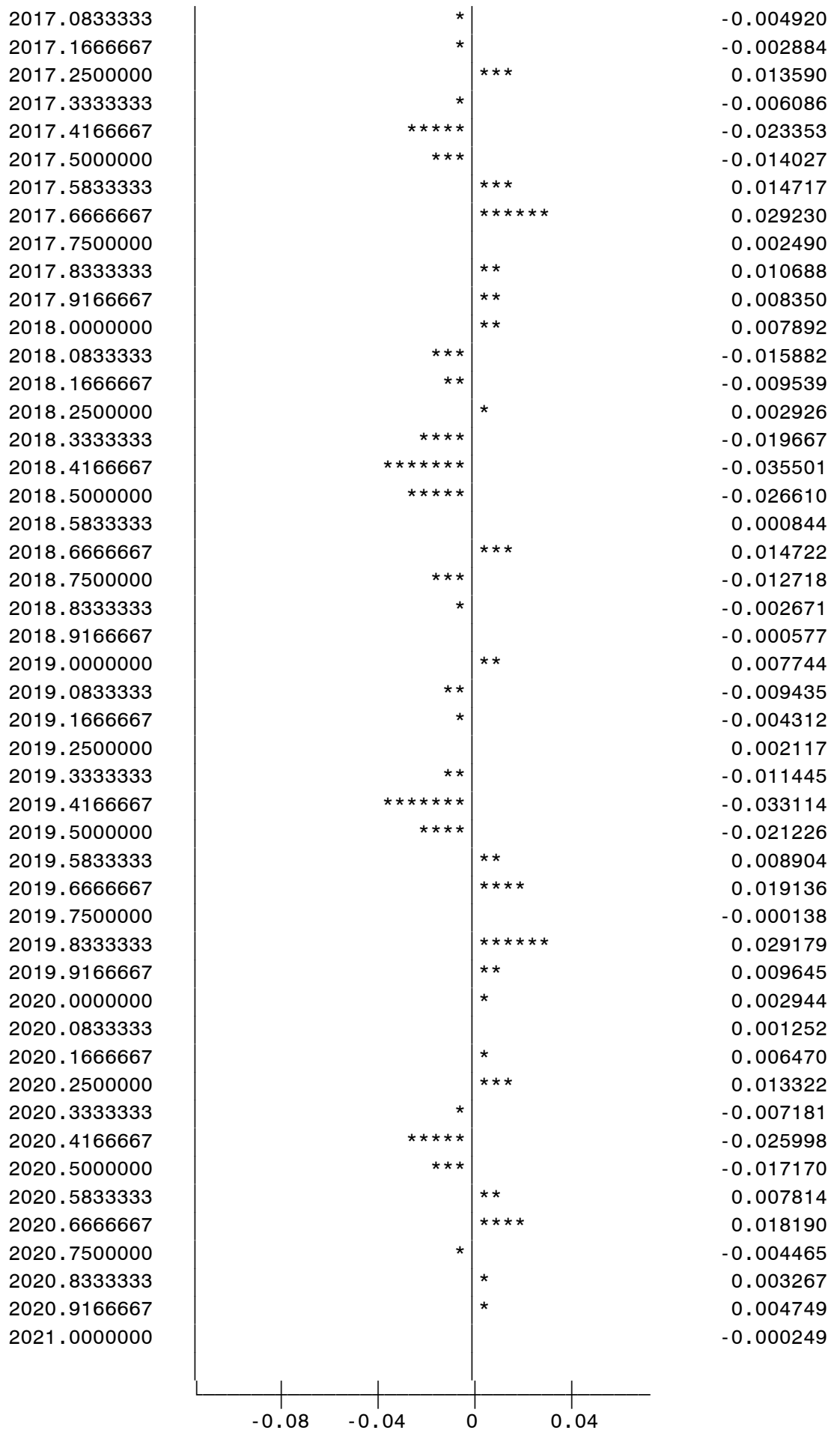
time	Residual Values Sum
2000.0000000	-0.016457
2000.0833333	-0.004045
2000.1666667	-0.011539
2000.2500000	-0.024788
2000.3333333	-0.004787
2000.4166667	0.013035
2000.5000000	0.003697
2000.5833333	-0.020694
2000.6666667	-0.025172
2000.7500000	-0.022450
2000.8333333	-0.029392
2000.9166667	-0.026406
2001.0000000	-0.013718
2001.0833333	-0.003478
2001.1666667	-0.003984
2001.2500000	-0.019560
2001.3333333	0.006347
2001.4166667	0.027084
2001.5000000	0.011518
2001.5833333	-0.000476
2001.6666667	-0.032169
2001.7500000	0.014862
2001.8333333	-0.008930
2001.9166667	-0.017107
2002.0000000	-0.000596
2002.0833333	0.005382
2002.1666667	0.021933
2002.2500000	-0.006834
2002.3333333	0.000860
2002.4166667	0.029989
2002.5000000	0.017318
2002.5833333	0.005170
2002.6666667	-0.006006
2002.7500000	0.001172
2002.8333333	-0.026420
2002.9166667	-0.015995
2003.0000000	-0.013307
2003.0833333	0.004769
2003.1666667	-0.006477
2003.2500000	-0.017451
2003.3333333	0.000024
2003.4166667	-0.015605
2003.5000000	0.001752
2003.5833333	0.003970
2003.6666667	-0.009616
2003.7500000	-0.009763
2003.8333333	0.057272
2003.9166667	-0.016096
2004.0000000	-0.018563

2004.0833333			0.002156
2004.1666667			-0.001267
2004.2500000	****		-0.017981
2004.3333333		**	0.009790
2004.4166667		*******	0.037114
2004.5000000		**	0.011067
2004.5833333			0.000067
2004.6666667	*		-0.007051
2004.7500000	**		-0.009016
2004.8333333	***		-0.015875
2004.9166667	**		-0.011860
2005.0000000		*	0.005310
2005.0833333		****	0.017634
2005.1666667		*****	0.025878
2005.2500000			0.001619
2005.3333333		***	0.016275
2005.4166667		****	0.021890
2005.5000000		*****	0.024621
2005.5833333		***	0.016278
2005.6666667		**	0.012448
2005.7500000		**	0.008429
2005.8333333			-0.001192
2005.9166667		*	0.005237
2006.0000000			-0.000485
2006.0833333		****	0.020811
2006.1666667		***	0.016112
2006.2500000		**	0.008055
2006.3333333		*****	0.025543
2006.4166667		*********	0.045259
2006.5000000		*******	0.033029
2006.5833333		**	0.008876
2006.6666667			-0.000708
2006.7500000		*	0.002587
2006.8333333	*		-0.003041
2006.9166667			0.000106
2007.0000000	***		-0.012983
2007.0833333		***	0.015382
2007.1666667		***	0.013568
2007.2500000			0.001513
2007.3333333		**	0.008742
2007.4166667		******	0.032106
2007.5000000		**********	0.051499
2007.5833333		*	0.005987
2007.6666667			-0.000765
2007.7500000	**		-0.007655
2007.8333333			-0.002281
2007.9166667		*	0.002892
2008.0000000		*	0.006914
2008.0833333		****	0.018490
2008.1666667		***	0.013950
2008.2500000	*		-0.005283
2008.3333333		*	0.004802

2008.4166667		******	0.031173
2008.5000000		****	0.020191
2008.5833333		**	0.008812
2008.6666667	**		-0.009279
2008.7500000	*		-0.002917
2008.8333333	*		-0.002559
2008.9166667	****		-0.021354
2009.0000000		**	0.011584
2009.0833333		***	0.014516
2009.1666667		*	0.005197
2009.2500000	*		-0.007286
2009.3333333	*****		-0.026715
2009.4166667		***	0.014410
2009.5000000	**		-0.009245
2009.5833333	***		-0.016245
2009.6666667	******		-0.028322
2009.7500000	****		-0.020063
2009.8333333	*****		-0.027082
2009.9166667	****		-0.020983
2010.0000000	*****		-0.026470
2010.0833333	***		-0.012857
2010.1666667	***		-0.012564
2010.2500000	*****		-0.024284
2010.3333333	****		-0.019478
2010.4166667			-0.000556
2010.5000000	**		-0.012088
2010.5833333	**********		-0.094041
2010.6666667	**********		-0.109443
2010.7500000		**********	0.070591
2010.8333333	********		-0.042372
2010.9166667		****	0.017584
2011.0000000		*	0.004923
2011.0833333	***		-0.016949
2011.1666667	*		-0.006253
2011.2500000		***	0.013337
2011.3333333			0.000399
2011.4166667	**		-0.010314
2011.5000000	*		-0.005587
2011.5833333		**	0.009434
2011.6666667		****	0.020343
2011.7500000	***		-0.015680
2011.8333333		**	0.009557
2011.9166667		***	0.015692
2012.0000000		**	0.009211
2012.0833333	**		-0.011093
2012.1666667	*******		-0.037129
2012.2500000		**	0.012103
2012.3333333		*********	0.042981
2012.4166667	***		-0.013994
2012.5000000			-0.000619
2012.5833333		***	0.015594
2012.6666667		*******	0.033049

2012.7500000		*	0.005961
2012.8333333		***	0.017090
2012.9166667		***	0.016239
2013.0000000		**	0.009469
2013.0833333	*		-0.007471
2013.1666667		*	0.003530
2013.2500000		*****	0.023117
2013.3333333			-0.001464
2013.4166667	****		-0.018819
2013.5000000	***		-0.014054
2013.5833333		**	0.008331
2013.6666667		****	0.020215
2013.7500000	**		-0.010482
2013.8333333			0.000842
2013.9166667			-0.001318
2014.0000000			-0.000912
2014.0833333		*	0.003512
2014.1666667		**	0.008755
2014.2500000		****	0.019861
2014.3333333		*	0.005410
2014.4166667	***		-0.015730
2014.5000000	**		-0.008419
2014.5833333		*	0.004425
2014.6666667		*****	0.025595
2014.7500000			0.000255
2014.8333333		**	0.012092
2014.9166667		****	0.019879
2015.0000000		***	0.014377
2015.0833333			-0.001073
2015.1666667	*		-0.006484
2015.2500000		***	0.014241
2015.3333333	**		-0.010374
2015.4166667	*****		-0.023123
2015.5000000	***		-0.014285
2015.5833333		**	0.011775
2015.6666667		*****	0.023607
2015.7500000	*		-0.003793
2015.8333333		*	0.002599
2015.9166667		**	0.011775
2016.0000000		*	0.005954
2016.0833333	***		-0.016702
2016.1666667	***		-0.012963
2016.2500000			-0.002335
2016.3333333	***		-0.013975
2016.4166667	*******		-0.035951
2016.5000000	******		-0.031362
2016.5833333			0.000459
2016.6666667		**	0.011995
2016.7500000		***	0.012792
2016.8333333		****	0.019228
2016.9166667		****	0.019549
2017.0000000		***	0.017416

Indiana Michigan Power Company - Michigan
Other Ultimate Energy Sales
Model Residuals



Indiana Michigan Power Company - Michigan
Other Ultimate Energy Sales
Actual and Forecast

YEAR	ENERGY SALES	GROWTH RATE
2000	11.9039	.
2001	11.9697	0.6
2002	12.0408	0.6
2003	12.0585	0.1
2004	12.0480	-0.1
2005	12.1490	0.8
2006	12.1098	-0.3
2007	12.0884	-0.2
2008	12.0544	-0.3
2009	11.7727	-2.3
2010	11.5226	-2.1
2011	11.2765	-2.1
2012	11.1871	-0.8
2013	11.1279	-0.5
2014	11.0068	-1.1
2015	10.9049	-0.9
2016	10.7698	-1.2
2017	10.6509	-1.1
2018	10.5722	-0.7
2019	10.5512	-0.2
2020	10.4000	-1.4
2021	10.4167	0.2
2022	10.3588	-0.6
2023	10.2866	-0.7
2024	10.2397	-0.5
2025	10.2244	-0.1
2026	10.1873	-0.4
2027	10.1263	-0.6
2028	10.0554	-0.7
2029	9.9778	-0.8
2030	9.8986	-0.8
2031	9.8191	-0.8
2032	9.7341	-0.9
2033	9.6458	-0.9
2034	9.5531	-1.0
2035	9.4581	-1.0
2036	9.3618	-1.0
2037	9.2651	-1.0
2038	9.1656	-1.1
2039	9.0628	-1.1
2040	8.9567	-1.2
2041	8.8489	-1.2
2042	8.7385	-1.2
2043	8.6258	-1.3
2044	8.5136	-1.3
2045	8.4012	-1.3
2046	8.2876	-1.4
2047	8.1688	-1.4

Indiana Michigan Power Company - Michigan
Other Ultimate Energy Sales
Actual and Forecast

YEAR	ENERGY SALES	GROWTH RATE
2048	8.05178	-1.4
2049	7.93787	-1.4
2050	7.82769	-1.4
2051	7.72046	-1.4
2052	7.61562	-1.4
2053	7.51284	-1.3
2054	7.41215	-1.3
2055	7.31351	-1.3
2056	7.21686	-1.3
2057	7.12215	-1.3

WHOLESALE ENERGY

Indiana Michigan Power Company
City of Auburn
Endogenous Variables

The MEANS Procedure

Variable	Label	Mean
YEAR	Year	2029.50
MONTH	Month	6.5000000

Indiana Michigan Power Company
City of Auburn
Endogenous Variables

YEAR	MONTH	Energy
2002	1	CONFID.
2002	2	CONFID.
2002	3	CONFID.
2002	4	CONFID.
2002	5	CONFID.
2002	6	CONFID.
2002	7	CONDID.
2002	8	CONFID.
2002	9	CONFID.
2002	10	CONFID.
2002	11	CONFID.
2002	12	CONFID.
2003	1	CONFID.
2003	2	CONFID.
2003	3	CONFID.
2003	4	CONFID.
2003	5	CONFID.
2003	6	CONFID.
2003	7	CONDID.
2003	8	CONFID.
2003	9	CONFID.
2003	10	CONFID.
2003	11	CONFID.
2003	12	CONFID.
2004	1	CONFID.
2004	2	CONFID.
2004	3	CONFID.
2004	4	CONFID.
2004	5	CONFID.
2004	6	CONFID.
2004	7	CONDID.
2004	8	CONFID.
2004	9	CONFID.
2004	10	CONFID.
2004	11	CONFID.
2004	12	CONFID.
2005	1	CONFID.
2005	2	CONFID.
2005	3	CONFID.
2005	4	CONFID.
2005	5	CONFID.
2005	6	CONFID.
2005	7	CONDID.
2005	8	CONFID.
2005	9	CONFID.
2005	10	CONFID.
2005	11	CONFID.
2005	12	CONFID.
2006	1	CONFID.
2006	2	CONFID.

Indiana Michigan Power Company
City of Auburn
Endogenous Variables

YEAR	MONTH	Energy
2006	3	CONFID.
2006	4	CONFID.
2006	5	CONFID.
2006	6	CONFID.
2006	7	CONDID.
2006	8	CONFID.
2006	9	CONFID.
2006	10	CONFID.
2006	11	CONFID.
2006	12	CONFID.
2007	1	CONFID.
2007	2	CONFID.
2007	3	CONFID.
2007	4	CONFID.
2007	5	CONFID.
2007	6	CONFID.
2007	7	CONDID.
2007	8	CONFID.
2007	9	CONFID.
2007	10	CONFID.
2007	11	CONFID.
2007	12	CONFID.
2008	1	CONFID.
2008	2	CONFID.
2008	3	CONFID.
2008	4	CONFID.
2008	5	CONFID.
2008	6	CONFID.
2008	7	CONDID.
2008	8	CONFID.
2008	9	CONFID.
2008	10	CONFID.
2008	11	CONFID.
2008	12	CONFID.
2009	1	CONFID.
2009	2	CONFID.
2009	3	CONFID.
2009	4	CONFID.
2009	5	CONFID.
2009	6	CONFID.
2009	7	CONDID.
2009	8	CONFID.
2009	9	CONFID.
2009	10	CONFID.
2009	11	CONFID.
2009	12	CONFID.
2010	1	CONFID.
2010	2	CONFID.
2010	3	CONFID.
2010	4	CONFID.

Indiana Michigan Power Company
City of Auburn
Endogenous Variables

YEAR	MONTH	Energy
2010	5	CONFID.
2010	6	CONFID.
2010	7	CONDID.
2010	8	CONFID.
2010	9	CONFID.
2010	10	CONFID.
2010	11	CONFID.
2010	12	CONFID.
2011	1	CONFID.
2011	2	CONFID.
2011	3	CONFID.
2011	4	CONFID.
2011	5	CONFID.
2011	6	CONFID.
2011	7	CONDID.
2011	8	CONFID.
2011	9	CONFID.
2011	10	CONFID.
2011	11	CONFID.
2011	12	CONFID.
2012	1	CONFID.
2012	2	CONFID.
2012	3	CONFID.
2012	4	CONFID.
2012	5	CONFID.
2012	6	CONFID.
2012	7	CONDID.
2012	8	CONFID.
2012	9	CONFID.
2012	10	CONFID.
2012	11	CONFID.
2012	12	CONFID.
2013	1	CONFID.
2013	2	CONFID.
2013	3	CONFID.
2013	4	CONFID.
2013	5	CONFID.
2013	6	CONFID.
2013	7	CONDID.
2013	8	CONFID.
2013	9	CONFID.
2013	10	CONFID.
2013	11	CONFID.
2013	12	CONFID.
2014	1	CONFID.
2014	2	CONFID.
2014	3	CONFID.
2014	4	CONFID.
2014	5	CONFID.
2014	6	CONFID.

Indiana Michigan Power Company
City of Auburn
Endogenous Variables

YEAR	MONTH	Energy
2014	7	CONDID.
2014	8	CONFID.
2014	9	CONFID.
2014	10	CONFID.
2014	11	CONFID.
2014	12	CONFID.
2015	1	CONFID.
2015	2	CONFID.
2015	3	CONFID.
2015	4	CONFID.
2015	5	CONFID.
2015	6	CONFID.
2015	7	CONDID.
2015	8	CONFID.
2015	9	CONFID.
2015	10	CONFID.
2015	11	CONFID.
2015	12	CONFID.
2016	1	CONFID.
2016	2	CONFID.
2016	3	CONFID.
2016	4	CONFID.
2016	5	CONFID.
2016	6	CONFID.
2016	7	CONDID.
2016	8	CONFID.
2016	9	CONFID.
2016	10	CONFID.
2016	11	CONFID.
2016	12	CONFID.
2017	1	CONFID.
2017	2	CONFID.
2017	3	CONFID.
2017	4	CONFID.
2017	5	CONFID.
2017	6	CONFID.
2017	7	CONDID.
2017	8	CONFID.
2017	9	CONFID.
2017	10	CONFID.
2017	11	CONFID.
2017	12	CONFID.
2018	1	CONFID.
2018	2	CONFID.
2018	3	CONFID.
2018	4	CONFID.
2018	5	CONFID.
2018	6	CONFID.
2018	7	CONDID.
2018	8	CONFID.

Indiana Michigan Power Company
City of Auburn
Endogenous Variables

YEAR	MONTH	Energy
2018	9	CONFID.
2018	10	CONFID.
2018	11	CONFID.
2018	12	CONFID.
2019	1	CONFID.
2019	2	CONFID.
2019	3	CONFID.
2019	4	CONFID.
2019	5	CONFID.
2019	6	CONFID.
2019	7	CONDID.
2019	8	CONFID.
2019	9	CONFID.
2019	10	CONFID.
2019	11	CONFID.
2019	12	CONFID.
2020	1	CONFID.
2020	2	CONFID.
2020	3	CONFID.
2020	4	CONFID.
2020	5	CONFID.
2020	6	CONFID.
2020	7	CONDID.
2020	8	CONFID.
2020	9	CONFID.
2020	10	CONFID.
2020	11	CONFID.
2020	12	CONFID.
2021	1	CONFID.
2021	2	CONFID.
2021	3	CONFID.
2021	4	CONFID.
2021	5	CONFID.
2021	6	CONFID.
2021	7	CONDID.
2021	8	CONFID.
2021	9	CONFID.
2021	10	CONFID.
2021	11	CONFID.
2021	12	CONFID.
2022	1	CONFID.
2022	2	CONFID.
2022	3	CONFID.
2022	4	CONFID.
2022	5	CONFID.
2022	6	CONFID.
2022	7	CONDID.
2022	8	CONFID.
2022	9	CONFID.
2022	10	CONFID.

Indiana Michigan Power Company
City of Auburn
Endogenous Variables

YEAR	MONTH	Energy
2022	11	CONFID.
2022	12	CONFID.
2023	1	CONFID.
2023	2	CONFID.
2023	3	CONFID.
2023	4	CONFID.
2023	5	CONFID.
2023	6	CONFID.
2023	7	CONDID.
2023	8	CONFID.
2023	9	CONFID.
2023	10	CONFID.
2023	11	CONFID.
2023	12	CONFID.
2024	1	CONFID.
2024	2	CONFID.
2024	3	CONFID.
2024	4	CONFID.
2024	5	CONFID.
2024	6	CONFID.
2024	7	CONDID.
2024	8	CONFID.
2024	9	CONFID.
2024	10	CONFID.
2024	11	CONFID.
2024	12	CONFID.
2025	1	CONFID.
2025	2	CONFID.
2025	3	CONFID.
2025	4	CONFID.
2025	5	CONFID.
2025	6	CONFID.
2025	7	CONDID.
2025	8	CONFID.
2025	9	CONFID.
2025	10	CONFID.
2025	11	CONFID.
2025	12	CONFID.
2026	1	CONFID.
2026	2	CONFID.
2026	3	CONFID.
2026	4	CONFID.
2026	5	CONFID.
2026	6	CONFID.
2026	7	CONDID.
2026	8	CONFID.
2026	9	CONFID.
2026	10	CONFID.
2026	11	CONFID.
2026	12	CONFID.

Indiana Michigan Power Company
City of Auburn
Endogenous Variables

YEAR	MONTH	Energy
2027	1	CONFID.
2027	2	CONFID.
2027	3	CONFID.
2027	4	CONFID.
2027	5	CONFID.
2027	6	CONFID.
2027	7	CONDID.
2027	8	CONFID.
2027	9	CONFID.
2027	10	CONFID.
2027	11	CONFID.
2027	12	CONFID.
2028	1	CONFID.
2028	2	CONFID.
2028	3	CONFID.
2028	4	CONFID.
2028	5	CONFID.
2028	6	CONFID.
2028	7	CONDID.
2028	8	CONFID.
2028	9	CONFID.
2028	10	CONFID.
2028	11	CONFID.
2028	12	CONFID.
2029	1	CONFID.
2029	2	CONFID.
2029	3	CONFID.
2029	4	CONFID.
2029	5	CONFID.
2029	6	CONFID.
2029	7	CONDID.
2029	8	CONFID.
2029	9	CONFID.
2029	10	CONFID.
2029	11	CONFID.
2029	12	CONFID.
2030	1	CONFID.
2030	2	CONFID.
2030	3	CONFID.
2030	4	CONFID.
2030	5	CONFID.
2030	6	CONFID.
2030	7	CONDID.
2030	8	CONFID.
2030	9	CONFID.
2030	10	CONFID.
2030	11	CONFID.
2030	12	CONFID.
2031	1	CONFID.
2031	2	CONFID.

Indiana Michigan Power Company
City of Auburn
Endogenous Variables

YEAR	MONTH	Energy
2031	3	CONFID.
2031	4	CONFID.
2031	5	CONFID.
2031	6	CONFID.
2031	7	CONDID.
2031	8	CONFID.
2031	9	CONFID.
2031	10	CONFID.
2031	11	CONFID.
2031	12	CONFID.
2032	1	CONFID.
2032	2	CONFID.
2032	3	CONFID.
2032	4	CONFID.
2032	5	CONFID.
2032	6	CONFID.
2032	7	CONDID.
2032	8	CONFID.
2032	9	CONFID.
2032	10	CONFID.
2032	11	CONFID.
2032	12	CONFID.
2033	1	CONFID.
2033	2	CONFID.
2033	3	CONFID.
2033	4	CONFID.
2033	5	CONFID.
2033	6	CONFID.
2033	7	CONDID.
2033	8	CONFID.
2033	9	CONFID.
2033	10	CONFID.
2033	11	CONFID.
2033	12	CONFID.
2034	1	CONFID.
2034	2	CONFID.
2034	3	CONFID.
2034	4	CONFID.
2034	5	CONFID.
2034	6	CONFID.
2034	7	CONDID.
2034	8	CONFID.
2034	9	CONFID.
2034	10	CONFID.
2034	11	CONFID.
2034	12	CONFID.
2035	1	CONFID.
2035	2	CONFID.
2035	3	CONFID.
2035	4	CONFID.

Indiana Michigan Power Company
City of Auburn
Endogenous Variables

YEAR	MONTH	Energy
2035	5	CONFID.
2035	6	CONFID.
2035	7	CONDID.
2035	8	CONFID.
2035	9	CONFID.
2035	10	CONFID.
2035	11	CONFID.
2035	12	CONFID.
2036	1	CONFID.
2036	2	CONFID.
2036	3	CONFID.
2036	4	CONFID.
2036	5	CONFID.
2036	6	CONFID.
2036	7	CONDID.
2036	8	CONFID.
2036	9	CONFID.
2036	10	CONFID.
2036	11	CONFID.
2036	12	CONFID.
2037	1	CONFID.
2037	2	CONFID.
2037	3	CONFID.
2037	4	CONFID.
2037	5	CONFID.
2037	6	CONFID.
2037	7	CONDID.
2037	8	CONFID.
2037	9	CONFID.
2037	10	CONFID.
2037	11	CONFID.
2037	12	CONFID.
2038	1	CONFID.
2038	2	CONFID.
2038	3	CONFID.
2038	4	CONFID.
2038	5	CONFID.
2038	6	CONFID.
2038	7	CONDID.
2038	8	CONFID.
2038	9	CONFID.
2038	10	CONFID.
2038	11	CONFID.
2038	12	CONFID.
2039	1	CONFID.
2039	2	CONFID.
2039	3	CONFID.
2039	4	CONFID.
2039	5	CONFID.
2039	6	CONFID.

Indiana Michigan Power Company
City of Auburn
Endogenous Variables

YEAR	MONTH	Energy
2039	7	CONDID.
2039	8	CONFID.
2039	9	CONFID.
2039	10	CONFID.
2039	11	CONFID.
2039	12	CONFID.
2040	1	CONFID.
2040	2	CONFID.
2040	3	CONFID.
2040	4	CONFID.
2040	5	CONFID.
2040	6	CONFID.
2040	7	CONDID.
2040	8	CONFID.
2040	9	CONFID.
2040	10	CONFID.
2040	11	CONFID.
2040	12	CONFID.
2041	1	CONFID.
2041	2	CONFID.
2041	3	CONFID.
2041	4	CONFID.
2041	5	CONFID.
2041	6	CONFID.
2041	7	CONDID.
2041	8	CONFID.
2041	9	CONFID.
2041	10	CONFID.
2041	11	CONFID.
2041	12	CONFID.
2042	1	CONFID.
2042	2	CONFID.
2042	3	CONFID.
2042	4	CONFID.
2042	5	CONFID.
2042	6	CONFID.
2042	7	CONDID.
2042	8	CONFID.
2042	9	CONFID.
2042	10	CONFID.
2042	11	CONFID.
2042	12	CONFID.
2043	1	CONFID.
2043	2	CONFID.
2043	3	CONFID.
2043	4	CONFID.
2043	5	CONFID.
2043	6	CONFID.
2043	7	CONDID.
2043	8	CONFID.

Indiana Michigan Power Company
City of Auburn
Endogenous Variables

YEAR	MONTH	Energy
2043	9	CONFID.
2043	10	CONFID.
2043	11	CONFID.
2043	12	CONFID.
2044	1	CONFID.
2044	2	CONFID.
2044	3	CONFID.
2044	4	CONFID.
2044	5	CONFID.
2044	6	CONFID.
2044	7	CONDID.
2044	8	CONFID.
2044	9	CONFID.
2044	10	CONFID.
2044	11	CONFID.
2044	12	CONFID.
2045	1	CONFID.
2045	2	CONFID.
2045	3	CONFID.
2045	4	CONFID.
2045	5	CONFID.
2045	6	CONFID.
2045	7	CONDID.
2045	8	CONFID.
2045	9	CONFID.
2045	10	CONFID.
2045	11	CONFID.
2045	12	CONFID.
2046	1	CONFID.
2046	2	CONFID.
2046	3	CONFID.
2046	4	CONFID.
2046	5	CONFID.
2046	6	CONFID.
2046	7	CONDID.
2046	8	CONFID.
2046	9	CONFID.
2046	10	CONFID.
2046	11	CONFID.
2046	12	CONFID.
2047	1	CONFID.
2047	2	CONFID.
2047	3	CONFID.
2047	4	CONFID.
2047	5	CONFID.
2047	6	CONFID.
2047	7	CONDID.
2047	8	CONFID.
2047	9	CONFID.
2047	10	CONFID.

Indiana Michigan Power Company
City of Auburn
Endogenous Variables

YEAR	MONTH	Energy
2047	11	CONFID.
2047	12	CONFID.
2048	1	CONFID.
2048	2	CONFID.
2048	3	CONFID.
2048	4	CONFID.
2048	5	CONFID.
2048	6	CONFID.
2048	7	CONDID.
2048	8	CONFID.
2048	9	CONFID.
2048	10	CONFID.
2048	11	CONFID.
2048	12	CONFID.
2049	1	CONFID.
2049	2	CONFID.
2049	3	CONFID.
2049	4	CONFID.
2049	5	CONFID.
2049	6	CONFID.
2049	7	CONDID.
2049	8	CONFID.
2049	9	CONFID.
2049	10	CONFID.
2049	11	CONFID.
2049	12	CONFID.
2050	1	CONFID.
2050	2	CONFID.
2050	3	CONFID.
2050	4	CONFID.
2050	5	CONFID.
2050	6	CONFID.
2050	7	CONDID.
2050	8	CONFID.
2050	9	CONFID.
2050	10	CONFID.
2050	11	CONFID.
2050	12	CONFID.
2051	1	CONFID.
2051	2	CONFID.
2051	3	CONFID.
2051	4	CONFID.
2051	5	CONFID.
2051	6	CONFID.
2051	7	CONDID.
2051	8	CONFID.
2051	9	CONFID.
2051	10	CONFID.
2051	11	CONFID.
2051	12	CONFID.

Indiana Michigan Power Company
City of Auburn
Endogenous Variables

YEAR	MONTH	Energy
2052	1	CONFID.
2052	2	CONFID.
2052	3	CONFID.
2052	4	CONFID.
2052	5	CONFID.
2052	6	CONFID.
2052	7	CONDID.
2052	8	CONFID.
2052	9	CONFID.
2052	10	CONFID.
2052	11	CONFID.
2052	12	CONFID.
2053	1	CONFID.
2053	2	CONFID.
2053	3	CONFID.
2053	4	CONFID.
2053	5	CONFID.
2053	6	CONFID.
2053	7	CONDID.
2053	8	CONFID.
2053	9	CONFID.
2053	10	CONFID.
2053	11	CONFID.
2053	12	CONFID.
2054	1	CONFID.
2054	2	CONFID.
2054	3	CONFID.
2054	4	CONFID.
2054	5	CONFID.
2054	6	CONFID.
2054	7	CONDID.
2054	8	CONFID.
2054	9	CONFID.
2054	10	CONFID.
2054	11	CONFID.
2054	12	CONFID.
2055	1	CONFID.
2055	2	CONFID.
2055	3	CONFID.
2055	4	CONFID.
2055	5	CONFID.
2055	6	CONFID.
2055	7	CONDID.
2055	8	CONFID.
2055	9	CONFID.
2055	10	CONFID.
2055	11	CONFID.
2055	12	CONFID.
2056	1	CONFID.
2056	2	CONFID.

Indiana Michigan Power Company
City of Auburn
Endogenous Variables

YEAR	MONTH	Energy
2056	3	CONFID.
2056	4	CONFID.
2056	5	CONFID.
2056	6	CONFID.
2056	7	CONDID.
2056	8	CONFID.
2056	9	CONFID.
2056	10	CONFID.
2056	11	CONFID.
2056	12	CONFID.
2057	1	CONFID.
2057	2	CONFID.
2057	3	CONFID.
2057	4	CONFID.
2057	5	CONFID.
2057	6	CONFID.
2057	7	CONDID.
2057	8	CONFID.
2057	9	CONFID.
2057	10	CONFID.
2057	11	CONFID.
2057	12	CONFID.

Indiana Michigan Power Company
City of Auburn
Exogenous Variables

The MEANS Procedure

Variable	Label	Mean
YEAR	Year	2029.50
MONTH	Month	6.5000000
bcdd65	Cooling Degree Days	72.5384066
bhdd55	Heating Degree Days	311.3482457
LM_IMI	Service Area Manufacturing Employment	172.0398399
frbmvp	FRB Index-Motor Vehichles and Parts	147.7862292
d1	Binary Variable - January	0.0833333
d2	Binary Variable - February	0.0833333
d3	Binary Variable - March	0.0833333
d4	Binary Variable - April	0.0833333
d5	Binary Variable - May	0.0833333
d6	Binary Variable - June	0.0833333
d7	Binary Variable - July	0.0833333
d8	Binary Varaible - August	0.0833333
d9	Binary Variable - September	0.0833333
d10	Binary Variable - October	0.0833333
d11	Binary Variable - November	0.0833333
jan04	Binary Variable - January 2004	0.0014881
sep04	Binary Variable - September 2004	0.0014881
d05on	Binary Variable 2005 On	0.9464286
d11on	Binary Variable 2011 on	0.8392857
nov15on	Binary Variable - November 2015 On	0.7529762
apr20	Binary Variable - April 2020	0.0014881
may20	Binary Variable - May 2020	0.0014881

YEAR	MONTH	bcdd65	bhdd55	LM_IMI	frbmvp	d01	d02	d03	d04	d05	d06	d07	d08	d09	d10	d11	jan04	sep04	dd05on	dd11on	nov15on	apr20	may20
2002	1	0.000	712.60	202.485	97.164	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2002	2	0.000	607.72	202.283	98.665	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2002	3	0.000	599.08	202.126	100.291	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2002	4	13.189	455.02	201.970	102.025	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2002	5	30.991	144.03	201.782	103.740	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
2002	6	75.498	53.77	201.528	105.321	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
2002	7	295.645	0.00	201.176	106.505	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
2002	8	327.454	0.00	200.710	106.993	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
2002	9	210.296	0.23	200.157	106.680	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
2002	10	81.749	48.66	199.538	106.116	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
2002	11	5.302	329.06	198.877	106.038	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
2002	12	0.000	660.73	198.194	106.834	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2003	1	0.000	832.87	197.504	107.823	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2003	2	0.000	1075.66	196.869	107.962	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2003	3	0.000	910.73	196.277	106.766	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2003	4	0.360	370.95	195.732	105.032	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2003	5	3.731	134.04	195.275	104.148	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
2003	6	20.781	15.81	194.930	104.976	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
2003	7	169.749	0.16	194.723	106.856	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
2003	8	196.748	0.00	194.650	108.621	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
2003	9	173.610	0.03	194.698	109.403	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
2003	10	18.686	81.09	194.849	109.554	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
2003	11	0.851	223.98	195.079	109.758	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
2003	12	0.131	512.16	195.368	110.436	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2004	1	0.000	760.38	195.709	111.216	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
2004	2	0.000	1073.21	196.060	111.437	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2004	3	0.000	684.92	196.415	110.718	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2004	4	3.567	344.28	196.766	109.321	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2004	5	39.762	103.41	197.081	107.753	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
2004	6	98.177	9.03	197.340	106.457	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
2004	7	153.779	0.00	197.529	105.645	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
2004	8	138.234	0.00	197.645	105.452	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
2004	9	123.147	0.00	197.690	105.930	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0
2004	10	43.100	47.55	197.675	106.857	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
2004	11	2.749	161.21	197.607	107.933	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
2004	12	0.196	469.29	197.499	108.877	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	1	0.000	831.69	197.356	109.462	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
2005	2	0.000	940.34	197.196	109.470	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
2005	3	0.000	749.98	197.021	108.860	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
2005	4	0.949	401.40	196.835	107.939	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0
2005	5	11.110	165.99	196.650	107.212	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0
2005	6	86.396	27.64	196.472	107.045	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0
2005	7	278.235	0.00	196.321	107.435	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0
2005	8	313.415	0.00	196.185	108.253	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0

YEAR	MONTH	bcdd65	bhdd55	LM_IMI	frbmvp	d01	d02	d03	d04	d05	d06	d07	d08	d09	d10	d11	jan04	sep04	d05oon	d11oon	nov15oon	apr20	may20
2005	9	191.839	0.00	196.063	109.275	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0
2005	10	89.145	22.68	195.944	110.139	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0
2005	11	7.216	199.84	195.823	110.425	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0
2005	12	0.000	704.59	195.686	109.936	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
2006	1	0.000	744.12	195.528	109.182	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
2006	2	0.000	611.25	195.347	108.920	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
2006	3	0.000	682.58	195.132	109.474	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
2006	4	0.982	384.33	194.861	110.181	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0
2006	5	1.898	81.99	194.538	109.952	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0
2006	6	85.218	31.61	194.151	108.195	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0
2006	7	197.075	0.00	193.694	105.785	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0
2006	8	294.680	0.00	193.154	104.083	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0
2006	9	122.362	1.80	192.563	104.010	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0
2006	10	11.290	62.18	191.924	104.869	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0
2006	11	1.031	324.30	191.247	105.512	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0
2006	12	0.000	475.62	190.547	105.241	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
2007	1	0.000	544.00	189.816	104.760	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
2007	2	0.000	987.17	189.117	105.190	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
2007	3	0.065	906.10	188.423	107.097	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
2007	4	4.123	340.81	187.723	109.594	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0
2007	5	20.781	129.43	187.053	111.093	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0
2007	6	146.203	8.82	186.422	110.581	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0
2007	7	215.090	0.00	185.842	108.644	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0
2007	8	255.523	0.00	185.285	106.398	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0
2007	9	213.732	1.57	184.739	104.752	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0
2007	10	105.017	15.82	184.144	103.582	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0
2007	11	22.286	192.89	183.468	102.499	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0
2007	12	0.000	608.47	182.663	101.169	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
2008	1	0.000	753.95	181.675	99.405	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
2008	2	0.000	903.12	180.514	97.205	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
2008	3	0.000	857.69	179.112	94.494	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
2008	4	0.245	453.22	177.402	91.456	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0
2008	5	9.654	109.89	175.358	88.447	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0
2008	6	95.641	25.40	172.949	85.736	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0
2008	7	185.375	0.03	170.130	83.454	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0
2008	8	234.333	0.00	166.874	81.648	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0
2008	9	174.134	0.00	163.381	80.172	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0
2008	10	47.354	29.14	159.690	77.959	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0
2008	11	3.076	234.86	155.898	73.744	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0
2008	12	0.000	702.59	152.103	66.931	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
2009	1	0.000	910.79	148.335	59.003	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
2009	2	0.000	1077.43	144.929	52.668	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
2009	3	0.000	650.77	141.785	49.238	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
2009	4	0.540	336.81	138.896	48.905	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0

YEAR	MONTH	bcdd65	bhdd55	LM_IMI	frbmvp	d01	d02	d03	d04	d05	d06	d07	d08	d09	d10	d11	jan04	sep04	d05onn	d11onn	nov15onn	apr20	may20
2009	5	27.032	129.99	136.481	51.639	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0
2009	6	68.135	14.02	134.620	56.853	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0
2009	7	192.559	0.00	133.413	63.123	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0
2009	8	154.679	0.00	132.863	68.785	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0
2009	9	111.039	0.00	132.910	72.413	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0
2009	10	33.609	74.96	133.470	74.339	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0
2009	11	0.000	203.93	134.445	75.287	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0
2009	12	0.000	475.47	135.767	75.861	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
2010	1	0.000	901.58	137.378	76.357	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
2010	2	0.000	924.24	139.076	76.914	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
2010	3	0.000	702.20	140.873	77.737	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
2010	4	8.492	235.85	142.737	79.090	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0
2010	5	19.652	55.26	144.547	81.211	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0
2010	6	180.237	11.26	146.209	84.048	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0
2010	7	323.478	0.00	147.644	86.656	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0
2010	8	363.780	0.00	148.848	87.804	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0
2010	9	222.143	0.00	149.806	86.855	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0
2010	10	64.813	25.89	150.565	85.147	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0
2010	11	5.809	200.35	151.159	84.584	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0
2010	12	0.000	650.98	151.623	86.287	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
2011	1	0.000	958.16	151.985	88.931	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0
2011	2	0.000	1033.91	152.264	90.290	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0
2011	3	0.000	705.44	152.502	89.252	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0
2011	4	2.094	408.52	152.734	86.962	0	0	0	1	0	0	0	0	0	0	0	0	0	1	1	0	0	0
2011	5	17.099	126.11	152.989	85.517	0	0	0	0	1	0	0	0	0	0	0	0	0	1	1	0	0	0
2011	6	154.744	17.62	153.288	86.331	0	0	0	0	0	1	0	0	0	0	0	0	0	1	1	0	0	0
2011	7	286.318	0.00	153.669	88.701	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1	0	0	0
2011	8	410.578	0.00	154.147	91.225	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1	0	0	0
2011	9	193.115	2.70	154.692	92.817	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	0	0	0
2011	10	25.984	32.45	155.299	93.811	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0	0
2011	11	0.802	182.58	155.957	94.910	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	0	0	0
2011	12	0.000	432.00	156.649	96.571	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0
2012	1	0.000	648.72	157.373	98.505	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0
2012	2	0.000	741.32	158.080	100.062	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0
2012	3	6.578	523.17	158.783	100.880	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0
2012	4	21.239	138.41	159.476	100.955	0	0	0	1	0	0	0	0	0	0	0	0	0	1	1	0	0	0
2012	5	27.097	104.26	160.134	100.381	0	0	0	0	1	0	0	0	0	0	0	0	0	1	1	0	0	0
2012	6	153.615	3.47	160.746	99.382	0	0	0	0	0	1	0	0	0	0	0	0	0	1	1	0	0	0
2012	7	370.603	0.33	161.295	98.453	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1	0	0	0
2012	8	322.644	0.00	161.789	98.185	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1	0	0	0
2012	9	158.442	2.24	162.220	98.927	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	0	0	0
2012	10	23.415	74.66	162.602	100.273	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0	0
2012	11	2.291	276.53	162.952	101.586	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	0	0	0
2012	12	0.000	467.80	163.267	102.440	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0

YEAR	MONTH	bcdd65	bhdd55	LM_IMI	frbmvp	d1	d2	d3	d4	d5	d6	d7	d8	d9	d10	d11	jan04	sep04	d05on	d11on	nov15on	apr20	may20
2013	1	0.000	736.04	163.572	103.052	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0
2013	2	0.000	846.44	163.854	103.783	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0
2013	3	0.000	763.23	164.133	104.876	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0
2013	4	0.000	522.37	164.430	106.039	0	0	0	1	0	0	0	0	0	0	0	0	0	1	1	0	0	0
2013	5	22.057	134.27	164.742	106.703	0	0	0	0	1	0	0	0	0	0	0	0	0	1	1	0	0	0
2013	6	117.142	13.76	165.084	106.614	0	0	0	0	0	1	0	0	0	0	0	0	0	1	1	0	0	0
2013	7	237.671	0.00	165.459	106.358	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1	0	0	0
2013	8	187.421	0.00	165.878	106.822	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1	0	0	0
2013	9	183.968	0.64	166.329	108.454	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	0	0	0
2013	10	67.350	21.66	166.808	110.515	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0	0
2013	11	6.005	267.71	167.318	111.886	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	0	0	0
2013	12	0.000	668.46	167.853	111.889	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0
2014	1	0.000	955.41	168.422	111.248	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0
2014	2	0.000	1173.96	168.976	111.140	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0
2014	3	0.000	1016.01	169.551	112.288	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0
2014	4	0.000	524.45	170.155	114.402	0	0	0	1	0	0	0	0	0	0	0	0	0	1	1	0	0	0
2014	5	15.561	128.47	170.765	116.724	0	0	0	0	1	0	0	0	0	0	0	0	0	1	1	0	0	0
2014	6	119.646	26.03	171.384	118.635	0	0	0	0	0	1	0	0	0	0	0	0	0	1	1	0	0	0
2014	7	223.779	0.00	172.006	119.938	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1	0	0	0
2014	8	143.601	0.00	172.634	120.594	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1	0	0	0
2014	9	179.452	1.67	173.241	120.603	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	0	0	0
2014	10	18.752	46.68	173.843	120.199	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0	0
2014	11	0.360	283.93	174.426	119.671	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	0	0	0
2014	12	0.000	669.60	174.979	119.269	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0
2015	1	0.000	832.76	175.519	119.131	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0
2015	2	0.000	1002.44	175.997	119.347	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0
2015	3	0.000	1039.32	176.441	120.004	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0
2015	4	0.000	429.08	176.854	121.214	0	0	0	1	0	0	0	0	0	0	0	0	0	1	1	0	0	0
2015	5	30.664	113.38	177.219	123.048	0	0	0	0	1	0	0	0	0	0	0	0	0	1	1	0	0	0
2015	6	127.042	11.49	177.531	125.353	0	0	0	0	0	1	0	0	0	0	0	0	0	1	1	0	0	0
2015	7	166.165	0.08	177.780	127.298	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1	0	0	0
2015	8	232.173	0.00	177.976	127.830	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1	0	0	0
2015	9	181.628	0.00	178.123	126.405	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	0	0	0
2015	10	60.166	21.81	178.232	124.083	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0	0
2015	11	1.587	140.82	178.316	122.398	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	1	0	0
2015	12	0.000	394.07	178.387	122.347	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2016	1	0.000	597.23	178.455	123.241	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2016	2	0.000	829.99	178.528	123.808	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2016	3	0.000	567.38	178.623	123.321	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2016	4	0.000	306.12	178.746	122.432	0	0	0	1	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2016	5	1.849	123.43	178.911	122.291	0	0	0	0	1	0	0	0	0	0	0	0	0	1	1	1	0	0
2016	6	134.029	21.81	179.126	123.585	0	0	0	0	0	1	0	0	0	0	0	0	0	1	1	1	0	0
2016	7	224.924	0.00	179.407	125.625	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1	1	0	0
2016	8	332.380	0.00	179.756	127.264	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1	1	0	0

YEAR	MONTH	bcdd65	bhdd55	LM_IMI	frbmvp	dd1	dd2	dd3	dd4	dd5	dd6	dd7	dd8	dd9	dd10	dd11	jan04	sep04	d05on	d11on	nov15on	apr20	may20
2016	9	249.976	0.00	180.155	127.637	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	1	0	0
2016	10	97.539	7.45	180.604	127.013	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	0	0
2016	11	16.412	122.21	181.095	125.981	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	1	0	0
2016	12	0.655	543.87	181.621	125.052	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2017	1	0.000	805.30	182.183	124.527	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2017	2	0.000	615.97	182.733	124.634	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2017	3	0.000	470.74	183.295	125.371	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2017	4	4.173	332.02	183.880	126.186	0	0	0	1	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2017	5	27.571	86.59	184.457	126.244	0	0	0	0	1	0	0	0	0	0	0	0	0	1	1	1	0	0
2017	6	105.426	16.97	185.026	125.100	0	0	0	0	0	1	0	0	0	0	0	0	0	1	1	1	0	0
2017	7	230.946	0.00	185.573	123.411	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1	1	0	0
2017	8	215.761	0.00	186.109	122.199	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1	1	0	0
2017	9	104.052	0.00	186.613	122.259	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	1	0	0
2017	10	109.402	3.99	187.094	123.484	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	0	0
2017	11	11.798	238.29	187.558	125.505	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	1	0	0
2017	12	0.000	506.33	188.001	127.869	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2018	1	0.000	1011.93	188.429	129.847	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2018	2	0.000	845.60	188.819	130.544	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2018	3	0.000	583.35	189.194	129.657	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2018	4	0.425	514.84	189.564	127.950	0	0	0	1	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2018	5	23.612	176.70	189.922	126.702	0	0	0	0	1	0	0	0	0	0	0	0	0	1	1	1	0	0
2018	6	187.339	1.87	190.263	126.821	0	0	0	0	0	1	0	0	0	0	0	0	0	1	1	1	0	0
2018	7	299.899	0.00	190.590	128.112	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1	1	0	0
2018	8	251.580	0.00	190.898	130.013	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1	1	0	0
2018	9	259.663	0.00	191.157	131.864	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	1	0	0
2018	10	129.398	38.89	191.353	133.072	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	0	0
2018	11	18.277	302.93	191.466	133.029	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	1	0	0
2018	12	0.000	601.89	191.473	131.439	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2019	1	0.000	614.13	191.357	129.009	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2019	2	0.000	901.60	191.109	126.940	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2019	3	0.000	750.78	190.706	125.922	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2019	4	0.000	390.24	190.110	126.120	0	0	0	1	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2019	5	6.251	114.51	189.311	127.572	0	0	0	0	1	0	0	0	0	0	0	0	0	1	1	1	0	0
2019	6	99.748	19.24	188.289	129.830	0	0	0	0	0	1	0	0	0	0	0	0	0	1	1	1	0	0
2019	7	305.266	0.00	187.024	131.267	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1	1	0	0
2019	8	289.885	0.00	185.508	129.834	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1	1	0	0
2019	9	160.946	0.00	183.834	125.005	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	1	0	0
2019	10	102.170	22.53	182.032	120.479	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	0	0
2019	11	5.956	297.95	180.153	121.227	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	1	0	0
2019	12	0.000	607.70	178.245	128.770	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2020	1	0.000	605.26	176.328	133.760	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2020	2	0.000	701.28	174.549	123.656	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2020	3	0.000	655.79	172.890	93.308	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2020	4	0.000	354.86	171.376	58.814	0	0	0	1	0	0	0	0	0	0	0	0	0	1	1	1	1	0

YEAR	MONTH	bcdd65	bhdd55	LM_IMI	frbmvp	d01	d02	d03	d04	d05	d06	d07	d08	d09	d10	d11	jan04	sep04	d05on	d11on	nov15on	apr20	may20
2020	5	3.845	204.782	170.086	44.949	0	0	0	0	1	0	0	0	0	0	0	0	0	1	1	1	0	1
2020	6	127.696	34.788	169.072	65.855	0	0	0	0	0	1	0	0	0	0	0	0	0	1	1	1	0	0
2020	7	297.919	0.000	168.382	105.636	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1	1	0	0
2020	8	278.218	0.000	168.016	138.336	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1	1	0	0
2020	9	179.763	0.802	167.950	145.194	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	1	0	0
2020	10	22.810	48.009	168.141	134.769	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	0	0
2020	11	2.324	212.980	168.542	123.313	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	1	0	0
2020	12	0.916	461.598	169.116	122.416	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2021	1	0.000	689.156	169.836	129.460	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2021	2	0.000	885.309	170.608	136.690	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2021	3	0.221	703.560	171.429	139.382	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2021	4	2.548	389.426	172.289	138.416	0	0	0	1	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2021	5	18.512	124.656	173.126	136.522	0	0	0	0	1	0	0	0	0	0	0	0	0	1	1	1	0	0
2021	6	106.676	17.782	173.898	135.902	0	0	0	0	0	1	0	0	0	0	0	0	0	1	1	1	0	0
2021	7	243.038	0.189	174.562	136.356	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1	1	0	0
2021	8	254.533	0.000	175.115	136.874	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1	1	0	0
2021	9	176.959	0.696	175.550	136.750	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	1	0	0
2021	10	54.558	41.135	175.892	136.289	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	0	0
2021	11	4.977	232.738	176.152	136.094	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	1	0	0
2021	12	0.063	545.497	176.346	136.575	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2022	1	0.000	792.471	176.487	137.533	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2022	2	0.000	885.309	176.581	138.493	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2022	3	0.221	703.560	176.654	139.206	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2022	4	2.548	389.426	176.713	139.683	0	0	0	1	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2022	5	18.512	124.656	176.774	139.989	0	0	0	0	1	0	0	0	0	0	0	0	0	1	1	1	0	0
2022	6	106.676	17.782	176.849	140.204	0	0	0	0	0	1	0	0	0	0	0	0	0	1	1	1	0	0
2022	7	243.038	0.189	176.950	140.358	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1	1	0	0
2022	8	254.533	0.000	177.084	140.466	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1	1	0	0
2022	9	176.959	0.696	177.241	140.528	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	1	0	0
2022	10	54.558	41.135	177.419	140.517	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	0	0
2022	11	4.977	232.738	177.610	140.400	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	1	0	0
2022	12	0.063	545.497	177.812	140.160	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2023	1	0.000	792.471	178.019	139.848	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2023	2	0.000	885.309	178.210	139.556	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2023	3	0.221	703.560	178.395	139.319	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2023	4	2.548	389.426	178.568	139.114	0	0	0	1	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2023	5	18.512	124.656	178.720	138.909	0	0	0	0	1	0	0	0	0	0	0	0	0	1	1	1	0	0
2023	6	106.676	17.782	178.846	138.672	0	0	0	0	0	1	0	0	0	0	0	0	0	1	1	1	0	0
2023	7	243.038	0.189	178.940	138.399	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1	1	0	0
2023	8	254.533	0.000	178.999	138.091	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1	1	0	0
2023	9	176.959	0.696	179.023	137.767	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	1	0	0
2023	10	54.558	41.135	179.022	137.447	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	0	0
2023	11	4.977	232.738	178.995	137.157	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	1	0	0
2023	12	0.063	545.497	178.947	136.909	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0

YEAR	MONTH	bcdd65	bhdd55	LM_IMI	frbmvp	d01	d02	d03	d04	d05	d06	d07	d08	d09	d10	d11	jan04	sep04	d05oon	d11oon	nov15oon	apr20	may20
2024	1	0.000	792.471	178.878	136.665	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2024	2	0.000	885.309	178.801	136.386	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2024	3	0.221	703.560	178.708	136.030	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2024	4	2.548	389.426	178.608	135.591	0	0	0	1	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2024	5	18.512	124.656	178.503	135.092	0	0	0	0	1	0	0	0	0	0	0	0	0	1	1	1	0	0
2024	6	106.676	17.782	178.396	134.556	0	0	0	0	0	1	0	0	0	0	0	0	0	1	1	1	0	0
2024	7	243.038	0.189	178.291	134.024	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1	1	0	0
2024	8	254.533	0.000	178.189	133.539	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1	1	0	0
2024	9	176.959	0.696	178.094	133.158	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	1	0	0
2024	10	54.558	41.135	177.996	132.892	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	0	0
2024	11	4.977	232.738	177.905	132.752	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	1	0	0
2024	12	0.063	545.497	177.814	132.739	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2025	1	0.000	792.471	177.725	132.830	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2025	2	0.000	885.309	177.643	132.978	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2025	3	0.221	703.560	177.558	133.160	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2025	4	2.548	389.426	177.474	133.376	0	0	0	1	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2025	5	18.512	124.656	177.388	133.621	0	0	0	0	1	0	0	0	0	0	0	0	0	1	1	1	0	0
2025	6	106.676	17.782	177.301	133.888	0	0	0	0	0	1	0	0	0	0	0	0	0	1	1	1	0	0
2025	7	243.038	0.189	177.219	134.147	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1	1	0	0
2025	8	254.533	0.000	177.132	134.369	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1	1	0	0
2025	9	176.959	0.696	177.044	134.513	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	1	0	0
2025	10	54.558	41.135	176.957	134.561	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	0	0
2025	11	4.977	232.738	176.869	134.496	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	1	0	0
2025	12	0.063	545.497	176.786	134.309	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2026	1	0.000	792.471	176.697	134.029	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2026	2	0.000	885.309	176.614	133.719	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2026	3	0.221	703.560	176.531	133.406	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2026	4	2.548	389.426	176.451	133.114	0	0	0	1	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2026	5	18.512	124.656	176.369	132.888	0	0	0	0	1	0	0	0	0	0	0	0	0	1	1	1	0	0
2026	6	106.676	17.782	176.289	132.749	0	0	0	0	0	1	0	0	0	0	0	0	0	1	1	1	0	0
2026	7	243.038	0.189	176.209	132.685	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1	1	0	0
2026	8	254.533	0.000	176.131	132.668	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1	1	0	0
2026	9	176.959	0.696	176.055	132.678	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	1	0	0
2026	10	54.558	41.135	175.986	132.710	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	0	0
2026	11	4.977	232.738	175.912	132.763	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	1	0	0
2026	12	0.063	545.497	175.845	132.838	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2027	1	0.000	792.471	175.775	132.944	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2027	2	0.000	885.309	175.713	133.080	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2027	3	0.221	703.560	175.646	133.258	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2027	4	2.548	389.426	175.584	133.483	0	0	0	1	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2027	5	18.512	124.656	175.521	133.747	0	0	0	0	1	0	0	0	0	0	0	0	0	1	1	1	0	0
2027	6	106.676	17.782	175.463	134.043	0	0	0	0	0	1	0	0	0	0	0	0	0	1	1	1	0	0
2027	7	243.038	0.189	175.401	134.356	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1	1	0	0
2027	8	254.533	0.000	175.342	134.672	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1	1	0	0

YEAR	MONTH	bcdd65	bhdd55	LM_IMI	frbmvp	d01	d02	d03	d04	d05	d06	d07	d08	d09	d10	d11	jan04	sep04	d05on	d11on	nov15on	apr20	may20
2027	9	176.959	0.696	175.288	134.967	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	1	0	0
2027	10	54.558	41.135	175.231	135.242	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	0	0
2027	11	4.977	232.738	175.176	135.499	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	1	0	0
2027	12	0.063	545.497	175.126	135.742	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2028	1	0.000	792.471	175.071	135.991	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2028	2	0.000	885.309	175.019	136.250	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2028	3	0.221	703.560	174.972	136.542	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2028	4	2.548	389.426	174.922	136.869	0	0	0	1	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2028	5	18.512	124.656	174.875	137.215	0	0	0	0	1	0	0	0	0	0	0	0	0	1	1	1	0	0
2028	6	106.676	17.782	174.828	137.571	0	0	0	0	0	1	0	0	0	0	0	0	0	1	1	1	0	0
2028	7	243.038	0.189	174.781	137.921	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1	1	0	0
2028	8	254.533	0.000	174.736	138.251	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1	1	0	0
2028	9	176.959	0.696	174.691	138.538	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	1	0	0
2028	10	54.558	41.135	174.649	138.784	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	0	0
2028	11	4.977	232.738	174.603	138.995	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	1	0	0
2028	12	0.063	545.497	174.561	139.172	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2029	1	0.000	792.471	174.517	139.325	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2029	2	0.000	885.309	174.475	139.453	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2029	3	0.221	703.560	174.438	139.570	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2029	4	2.548	389.426	174.396	139.697	0	0	0	1	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2029	5	18.512	124.656	174.356	139.850	0	0	0	0	1	0	0	0	0	0	0	0	0	1	1	1	0	0
2029	6	106.676	17.782	174.311	140.039	0	0	0	0	0	1	0	0	0	0	0	0	0	1	1	1	0	0
2029	7	243.038	0.189	174.270	140.243	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1	1	0	0
2029	8	254.533	0.000	174.228	140.439	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1	1	0	0
2029	9	176.959	0.696	174.187	140.600	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	1	0	0
2029	10	54.558	41.135	174.145	140.740	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	0	0
2029	11	4.977	232.738	174.105	140.876	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	1	0	0
2029	12	0.063	545.497	174.062	141.024	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2030	1	0.000	792.471	174.021	141.191	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2030	2	0.000	885.309	173.984	141.365	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2030	3	0.221	703.560	173.944	141.556	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2030	4	2.548	389.426	173.906	141.772	0	0	0	1	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2030	5	18.512	124.656	173.867	142.007	0	0	0	0	1	0	0	0	0	0	0	0	0	1	1	1	0	0
2030	6	106.676	17.782	173.831	142.264	0	0	0	0	0	1	0	0	0	0	0	0	0	1	1	1	0	0
2030	7	243.038	0.189	173.794	142.542	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1	1	0	0
2030	8	254.533	0.000	173.759	142.847	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1	1	0	0
2030	9	176.959	0.696	173.724	143.164	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	1	0	0
2030	10	54.558	41.135	173.688	143.480	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	0	0
2030	11	4.977	232.738	173.659	143.774	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	1	0	0
2030	12	0.063	545.497	173.625	144.030	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2031	1	0.000	792.471	173.591	144.252	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2031	2	0.000	885.309	173.559	144.438	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2031	3	0.221	703.560	173.529	144.608	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2031	4	2.548	389.426	173.496	144.795	0	0	0	1	0	0	0	0	0	0	0	0	0	1	1	1	0	0

YEAR	MONTH	bcdd65	bhdd55	LM_IMI	frbmvp	d1	d2	d3	d4	d5	d6	d7	d8	d9	d10	d11	jan04	sep04	d05on	d11on	nov15on	apr20	may20
2031	5	18.512	124.656	173.464	145.023	0	0	0	0	1	0	0	0	0	0	0	0	0	1	1	1	0	0
2031	6	106.676	17.782	173.430	145.308	0	0	0	0	0	1	0	0	0	0	0	0	0	1	1	1	0	0
2031	7	243.038	0.189	173.398	145.637	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1	1	0	0
2031	8	254.533	0.000	173.362	145.985	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1	1	0	0
2031	9	176.959	0.696	173.329	146.318	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	1	0	0
2031	10	54.558	41.135	173.294	146.631	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	0	0
2031	11	4.977	232.738	173.260	146.915	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	1	0	0
2031	12	0.063	545.497	173.226	147.167	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2032	1	0.000	792.471	173.191	147.389	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2032	2	0.000	885.309	173.159	147.571	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2032	3	0.221	703.560	173.129	147.729	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2032	4	2.548	389.426	173.096	147.894	0	0	0	1	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2032	5	18.512	124.656	173.063	148.101	0	0	0	0	1	0	0	0	0	0	0	0	0	1	1	1	0	0
2032	6	106.676	17.782	173.036	148.377	0	0	0	0	0	1	0	0	0	0	0	0	0	1	1	1	0	0
2032	7	243.038	0.189	173.009	148.717	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1	1	0	0
2032	8	254.533	0.000	172.980	149.113	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1	1	0	0
2032	9	176.959	0.696	172.954	149.532	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	1	0	0
2032	10	54.558	41.135	172.927	149.951	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	0	0
2032	11	4.977	232.738	172.902	150.339	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	1	0	0
2032	12	0.063	545.497	172.877	150.674	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2033	1	0.000	792.471	172.855	150.974	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2033	2	0.000	885.309	172.834	151.245	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2033	3	0.221	703.560	172.814	151.523	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2033	4	2.548	389.426	172.789	151.831	0	0	0	1	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2033	5	18.512	124.656	172.769	152.172	0	0	0	0	1	0	0	0	0	0	0	0	0	1	1	1	0	0
2033	6	106.676	17.782	172.746	152.551	0	0	0	0	0	1	0	0	0	0	0	0	0	1	1	1	0	0
2033	7	243.038	0.189	172.723	152.954	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1	1	0	0
2033	8	254.533	0.000	172.701	153.366	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1	1	0	0
2033	9	176.959	0.696	172.679	153.754	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	1	0	0
2033	10	54.558	41.135	172.655	154.118	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	0	0
2033	11	4.977	232.738	172.635	154.455	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	1	0	0
2033	12	0.063	545.497	172.609	154.763	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2034	1	0.000	792.471	172.585	155.050	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2034	2	0.000	885.309	172.564	155.305	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2034	3	0.221	703.560	172.536	155.552	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2034	4	2.548	389.426	172.511	155.820	0	0	0	1	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2034	5	18.512	124.656	172.487	156.129	0	0	0	0	1	0	0	0	0	0	0	0	0	1	1	1	0	0
2034	6	106.676	17.782	172.462	156.492	0	0	0	0	0	1	0	0	0	0	0	0	0	1	1	1	0	0
2034	7	243.038	0.189	172.434	156.884	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1	1	0	0
2034	8	254.533	0.000	172.406	157.273	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1	1	0	0
2034	9	176.959	0.696	172.382	157.613	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	1	0	0
2034	10	54.558	41.135	172.349	157.896	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	0	0
2034	11	4.977	232.738	172.323	158.115	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	1	0	0
2034	12	0.063	545.497	172.297	158.268	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0

YEAR	MONTH	bcdd65	bhdd55	LM_IMI	frbmvp	d01	d02	d03	d04	d05	d06	d07	d08	d09	d10	d11	jan04	sep04	dd05on	dd11on	nov15on	apr20	may20
2035	1	0.000	792.471	172.270	158.382	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2035	2	0.000	885.309	172.242	158.481	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2035	3	0.221	703.560	172.215	158.597	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2035	4	2.548	389.426	172.191	158.743	0	0	0	1	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2035	5	18.512	124.656	172.160	158.925	0	0	0	0	1	0	0	0	0	0	0	0	0	1	1	1	0	0
2035	6	106.676	17.782	172.139	159.142	0	0	0	0	0	1	0	0	0	0	0	0	0	1	1	1	0	0
2035	7	243.038	0.189	172.113	159.377	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1	1	0	0
2035	8	254.533	0.000	172.088	159.609	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1	1	0	0
2035	9	176.959	0.696	172.063	159.813	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	1	0	0
2035	10	54.558	41.135	172.043	159.983	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	0	0
2035	11	4.977	232.738	172.020	160.118	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	1	0	0
2035	12	0.063	545.497	171.996	160.217	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2036	1	0.000	792.471	171.974	160.300	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2036	2	0.000	885.309	171.954	160.387	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2036	3	0.221	703.560	171.931	160.497	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2036	4	2.548	389.426	171.910	160.636	0	0	0	1	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2036	5	18.512	124.656	171.885	160.803	0	0	0	0	1	0	0	0	0	0	0	0	0	1	1	1	0	0
2036	6	106.676	17.782	171.861	160.993	0	0	0	0	0	1	0	0	0	0	0	0	0	1	1	1	0	0
2036	7	243.038	0.189	171.839	161.198	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1	1	0	0
2036	8	254.533	0.000	171.814	161.410	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1	1	0	0
2036	9	176.959	0.696	171.790	161.614	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	1	0	0
2036	10	54.558	41.135	171.764	161.808	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	0	0
2036	11	4.977	232.738	171.736	161.986	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	1	0	0
2036	12	0.063	545.497	171.713	162.145	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2037	1	0.000	792.471	171.687	162.279	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2037	2	0.000	885.309	171.662	162.371	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2037	3	0.221	703.560	171.635	162.431	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2037	4	2.548	389.426	171.610	162.487	0	0	0	1	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2037	5	18.512	124.656	171.583	162.579	0	0	0	0	1	0	0	0	0	0	0	0	0	1	1	1	0	0
2037	6	106.676	17.782	171.559	162.731	0	0	0	0	0	1	0	0	0	0	0	0	0	1	1	1	0	0
2037	7	243.038	0.189	171.536	162.931	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1	1	0	0
2037	8	254.533	0.000	171.511	163.153	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1	1	0	0
2037	9	176.959	0.696	171.488	163.368	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	1	0	0
2037	10	54.558	41.135	171.464	163.573	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	0	0
2037	11	4.977	232.738	171.440	163.769	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	1	0	0
2037	12	0.063	545.497	171.416	163.956	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2038	1	0.000	792.471	171.393	164.142	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2038	2	0.000	885.309	171.371	164.319	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2038	3	0.221	703.560	171.348	164.502	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2038	4	2.548	389.426	171.326	164.703	0	0	0	1	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2038	5	18.512	124.656	171.302	164.923	0	0	0	0	1	0	0	0	0	0	0	0	0	1	1	1	0	0
2038	6	106.676	17.782	171.279	165.164	0	0	0	0	0	1	0	0	0	0	0	0	0	1	1	1	0	0
2038	7	243.038	0.189	171.253	165.415	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1	1	0	0
2038	8	254.533	0.000	171.232	165.665	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1	1	0	0

YEAR	MONTH	bcdd65	bhdd55	LM_IMI	frbmvp	dd1	dd2	dd3	dd4	dd5	dd6	dd7	dd8	dd9	dd10	dd11	jan04	sep04	d05on	d11on	nov15on	apr20	may20
2038	9	176.959	0.696	171.205	165.893	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	1	0	0
2038	10	54.558	41.135	171.181	166.104	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	0	0
2038	11	4.977	232.738	171.155	166.300	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	1	0	0
2038	12	0.063	545.497	171.128	166.488	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2039	1	0.000	792.471	171.100	166.682	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2039	2	0.000	885.309	171.074	166.886	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2039	3	0.221	703.560	171.048	167.117	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2039	4	2.548	389.426	171.020	167.383	0	0	0	1	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2039	5	18.512	124.656	170.995	167.669	0	0	0	0	1	0	0	0	0	0	0	0	0	1	1	1	0	0
2039	6	106.676	17.782	170.967	167.966	0	0	0	0	0	1	0	0	0	0	0	0	0	1	1	1	0	0
2039	7	243.038	0.189	170.937	168.262	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1	1	0	0
2039	8	254.533	0.000	170.909	168.548	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1	1	0	0
2039	9	176.959	0.696	170.881	168.803	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	1	0	0
2039	10	54.558	41.135	170.852	169.029	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	0	0
2039	11	4.977	232.738	170.820	169.224	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	1	0	0
2039	12	0.063	545.497	170.790	169.387	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2040	1	0.000	792.471	170.761	169.533	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2040	2	0.000	885.309	170.729	169.664	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2040	3	0.221	703.560	170.698	169.800	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2040	4	2.548	389.426	170.664	169.953	0	0	0	1	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2040	5	18.512	124.656	170.633	170.133	0	0	0	0	1	0	0	0	0	0	0	0	0	1	1	1	0	0
2040	6	106.676	17.782	170.599	170.344	0	0	0	0	0	1	0	0	0	0	0	0	0	1	1	1	0	0
2040	7	243.038	0.189	170.563	170.568	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1	1	0	0
2040	8	254.533	0.000	170.529	170.782	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1	1	0	0
2040	9	176.959	0.696	170.493	170.960	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	1	0	0
2040	10	54.558	41.135	170.457	171.107	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	0	0
2040	11	4.977	232.738	170.418	171.233	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	1	0	0
2040	12	0.063	545.497	170.381	171.343	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2041	1	0.000	792.471	170.341	171.445	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2041	2	0.000	885.309	170.303	171.535	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2041	3	0.221	703.560	170.263	171.623	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2041	4	2.548	389.426	170.222	171.721	0	0	0	1	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2041	5	18.512	124.656	170.178	171.840	0	0	0	0	1	0	0	0	0	0	0	0	0	1	1	1	0	0
2041	6	106.676	17.782	170.138	171.985	0	0	0	0	0	1	0	0	0	0	0	0	0	1	1	1	0	0
2041	7	243.038	0.189	170.094	172.151	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1	1	0	0
2041	8	254.533	0.000	170.051	172.327	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1	1	0	0
2041	9	176.959	0.696	170.003	172.501	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	1	0	0
2041	10	54.558	41.135	169.960	172.691	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	0	0
2041	11	4.977	232.738	169.912	172.920	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	1	0	0
2041	12	0.063	545.497	169.866	173.196	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2042	1	0.000	792.471	169.818	173.492	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2042	2	0.000	885.309	169.770	173.746	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2042	3	0.221	703.560	169.722	173.943	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2042	4	2.548	389.426	169.670	174.092	0	0	0	1	0	0	0	0	0	0	0	0	0	1	1	1	0	0

YEAR	MONTH	bcdd65	bhdd55	LM_IMI	frbmvp	d01	d02	d03	d04	d05	d06	d07	d08	d09	d10	d11	jan04	sep04	d05oon	d11oon	nov15oon	apr20	may20
2042	5	18.512	124.656	169.618	174.204	0	0	0	0	1	0	0	0	0	0	0	0	0	1	1	1	0	0
2042	6	106.676	17.782	169.567	174.298	0	0	0	0	0	1	0	0	0	0	0	0	0	1	1	1	0	0
2042	7	243.038	0.189	169.513	174.404	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1	1	0	0
2042	8	254.533	0.000	169.457	174.554	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1	1	0	0
2042	9	176.959	0.696	169.403	174.761	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	1	0	0
2042	10	54.558	41.135	169.347	174.999	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	0	0
2042	11	4.977	232.738	169.290	175.230	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	1	0	0
2042	12	0.063	545.497	169.229	175.424	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2043	1	0.000	792.471	169.170	175.594	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2043	2	0.000	885.309	169.110	175.750	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2043	3	0.221	703.560	169.054	175.916	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2043	4	2.548	389.426	168.994	176.108	0	0	0	1	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2043	5	18.512	124.656	168.930	176.328	0	0	0	0	1	0	0	0	0	0	0	0	0	1	1	1	0	0
2043	6	106.676	17.782	168.868	176.574	0	0	0	0	0	1	0	0	0	0	0	0	0	1	1	1	0	0
2043	7	243.038	0.189	168.803	176.822	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1	1	0	0
2043	8	254.533	0.000	168.738	177.044	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1	1	0	0
2043	9	176.959	0.696	168.673	177.212	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	1	0	0
2043	10	54.558	41.135	168.608	177.350	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	0	0
2043	11	4.977	232.738	168.543	177.489	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	1	0	0
2043	12	0.063	545.497	168.476	177.651	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2044	1	0.000	792.471	168.411	177.835	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2044	2	0.000	885.309	168.344	178.019	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2044	3	0.221	703.560	168.281	178.199	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2044	4	2.548	389.426	168.217	178.370	0	0	0	1	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2044	5	18.512	124.656	168.147	178.528	0	0	0	0	1	0	0	0	0	0	0	0	0	1	1	1	0	0
2044	6	106.676	17.782	168.085	178.672	0	0	0	0	0	1	0	0	0	0	0	0	0	1	1	1	0	0
2044	7	243.038	0.189	168.023	178.822	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1	1	0	0
2044	8	254.533	0.000	167.959	179.002	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1	1	0	0
2044	9	176.959	0.696	167.897	179.220	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	1	0	0
2044	10	54.558	41.135	167.834	179.466	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	0	0
2044	11	4.977	232.738	167.777	179.719	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	1	0	0
2044	12	0.063	545.497	167.718	179.962	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2045	1	0.000	792.471	167.655	180.199	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2045	2	0.000	885.309	167.599	180.421	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2045	3	0.221	703.560	167.546	180.645	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2045	4	2.548	389.426	167.488	180.885	0	0	0	1	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2045	5	18.512	124.656	167.430	181.138	0	0	0	0	1	0	0	0	0	0	0	0	0	1	1	1	0	0
2045	6	106.676	17.782	167.369	181.407	0	0	0	0	0	1	0	0	0	0	0	0	0	1	1	1	0	0
2045	7	243.038	0.189	167.316	181.689	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1	1	0	0
2045	8	254.533	0.000	167.258	181.983	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1	1	0	0
2045	9	176.959	0.696	167.198	182.274	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	1	0	0
2045	10	54.558	41.135	167.145	182.573	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	0	0
2045	11	4.977	232.738	167.087	182.888	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	1	0	0
2045	12	0.063	545.497	167.029	183.222	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0

YEAR	MONTH	bcdd65	bhdd55	LM_IMI	frbmvp	dd1	dd2	dd3	dd4	dd5	dd6	dd7	dd8	dd9	dd10	dd11	jan04	sep04	d05on	d11on	nov15on	apr20	may20
2046	1	0.000	792.471	166.973	183.560	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2046	2	0.000	885.309	166.914	183.858	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2046	3	0.221	703.560	166.858	184.118	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2046	4	2.548	389.426	166.799	184.362	0	0	0	1	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2046	5	18.512	124.656	166.740	184.607	0	0	0	0	1	0	0	0	0	0	0	0	0	1	1	1	0	0
2046	6	106.676	17.782	166.681	184.869	0	0	0	0	0	1	0	0	0	0	0	0	0	1	1	1	0	0
2046	7	243.038	0.189	166.618	185.145	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1	1	0	0
2046	8	254.533	0.000	166.557	185.426	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1	1	0	0
2046	9	176.959	0.696	166.492	185.695	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	1	0	0
2046	10	54.558	41.135	166.426	185.956	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	0	0
2046	11	4.977	232.738	166.364	186.216	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	1	0	0
2046	12	0.063	545.497	166.300	186.478	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2047	1	0.000	792.471	166.233	186.745	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2047	2	0.000	885.309	166.168	187.000	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2047	3	0.221	703.560	166.105	187.252	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2047	4	2.548	389.426	166.038	187.511	0	0	0	1	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2047	5	18.512	124.656	165.969	187.767	0	0	0	0	1	0	0	0	0	0	0	0	0	1	1	1	0	0
2047	6	106.676	17.782	165.902	188.020	0	0	0	0	0	1	0	0	0	0	0	0	0	1	1	1	0	0
2047	7	243.038	0.189	165.832	188.270	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1	1	0	0
2047	8	254.533	0.000	165.763	188.524	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1	1	0	0
2047	9	176.959	0.696	165.694	188.774	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	1	0	0
2047	10	54.558	41.135	165.623	189.025	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	0	0
2047	11	4.977	232.738	165.554	189.277	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	1	0	0
2047	12	0.063	545.497	165.483	189.529	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2048	1	0.000	792.471	165.414	189.787	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2048	2	0.000	885.309	165.344	190.037	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2048	3	0.221	703.560	165.278	190.288	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2048	4	2.548	389.426	165.207	190.543	0	0	0	1	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2048	5	18.512	124.656	165.135	190.798	0	0	0	0	1	0	0	0	0	0	0	0	0	1	1	1	0	0
2048	6	106.676	17.782	165.066	191.052	0	0	0	0	0	1	0	0	0	0	0	0	0	1	1	1	0	0
2048	7	243.038	0.189	164.998	191.304	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1	1	0	0
2048	8	254.533	0.000	164.927	191.559	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1	1	0	0
2048	9	176.959	0.696	164.858	191.807	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	1	0	0
2048	10	54.558	41.135	164.788	192.055	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	0	0
2048	11	4.977	232.738	164.722	192.303	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	1	0	0
2048	12	0.063	545.497	164.653	192.553	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2049	1	0.000	792.471	164.589	192.808	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2049	2	0.000	885.309	164.520	193.050	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2049	3	0.221	703.560	164.455	193.291	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2049	4	2.548	389.426	164.387	193.540	0	0	0	1	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2049	5	18.512	124.656	164.320	193.791	0	0	0	0	1	0	0	0	0	0	0	0	0	1	1	1	0	0
2049	6	106.676	17.782	164.256	194.044	0	0	0	0	0	1	0	0	0	0	0	0	0	1	1	1	0	0
2049	7	243.038	0.189	164.187	194.295	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1	1	0	0
2049	8	254.533	0.000	164.120	194.541	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1	1	0	0

YEAR	MONTH	bcdd65	bhdd55	LM_IMI	frbmvp	dd1	dd2	dd3	dd4	dd5	dd6	dd7	dd8	dd9	dd10	dd11	jan04	sep04	d05on	d11on	nov15on	apr20	may20
2049	9	176.959	0.696	164.054	194.771	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	1	0	0
2049	10	54.558	41.135	163.985	194.987	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	0	0
2049	11	4.977	232.738	163.921	195.188	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	1	0	0
2049	12	0.063	545.497	163.852	195.376	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2050	1	0.000	792.471	163.786	195.561	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2050	2	0.000	885.309	163.721	195.743	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2050	3	0.221	703.560	163.655	195.935	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2050	4	2.548	389.426	163.592	196.144	0	0	0	1	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2050	5	18.512	124.656	163.524	196.357	0	0	0	0	1	0	0	0	0	0	0	0	0	1	1	1	0	0
2050	6	106.676	17.782	163.455	196.572	0	0	0	0	0	1	0	0	0	0	0	0	0	1	1	1	0	0
2050	7	243.038	0.189	163.391	196.788	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1	1	0	0
2050	8	254.533	0.000	163.322	197.014	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1	1	0	0
2050	9	176.959	0.696	163.253	197.243	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	1	0	0
2050	10	54.558	41.135	163.184	197.482	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	0	0
2050	11	4.977	232.738	163.116	197.733	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	1	0	0
2050	12	0.063	545.497	163.049	198.000	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2051	1	0.000	792.471	162.989	198.355	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2051	2	0.000	885.309	162.928	198.473	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2051	3	0.221	703.560	162.861	198.616	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2051	4	2.548	389.426	162.803	198.783	0	0	0	1	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2051	5	18.512	124.656	162.734	198.957	0	0	0	0	1	0	0	0	0	0	0	0	0	1	1	1	0	0
2051	6	106.676	17.782	162.660	199.132	0	0	0	0	0	1	0	0	0	0	0	0	0	1	1	1	0	0
2051	7	243.038	0.189	162.601	199.314	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1	1	0	0
2051	8	254.533	0.000	162.530	199.518	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1	1	0	0
2051	9	176.959	0.696	162.458	199.746	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	1	0	0
2051	10	54.558	41.135	162.389	200.009	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	0	0
2051	11	4.977	232.738	162.317	200.312	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	1	0	0
2051	12	0.063	545.497	162.252	200.660	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2052	1	0.000	792.471	162.198	201.188	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2052	2	0.000	885.309	162.141	201.242	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2052	3	0.221	703.560	162.073	201.333	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2052	4	2.548	389.426	162.020	201.457	0	0	0	1	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2052	5	18.512	124.656	161.950	201.592	0	0	0	0	1	0	0	0	0	0	0	0	0	1	1	1	0	0
2052	6	106.676	17.782	161.871	201.726	0	0	0	0	0	1	0	0	0	0	0	0	0	1	1	1	0	0
2052	7	243.038	0.189	161.817	201.873	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1	1	0	0
2052	8	254.533	0.000	161.744	202.054	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1	1	0	0
2052	9	176.959	0.696	161.669	202.280	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	1	0	0
2052	10	54.558	41.135	161.600	202.568	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	0	0
2052	11	4.977	232.738	161.524	202.924	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	1	0	0
2052	12	0.063	545.497	161.461	203.355	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2053	1	0.000	792.471	161.413	204.061	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2053	2	0.000	885.309	161.359	204.050	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2053	3	0.221	703.560	161.290	204.088	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2053	4	2.548	389.426	161.242	204.167	0	0	0	1	0	0	0	0	0	0	0	0	0	1	1	1	0	0

YEAR	MONTH	bcdd65	bhdd55	LM_IMI	frbmvp	dd1	dd2	dd3	dd4	dd5	dd6	dd7	dd8	dd9	dd10	dd11	jan04	sep04	d05on	d11on	nov15on	apr20	may20
2053	5	18.512	124.656	161.171	204.261	0	0	0	0	1	0	0	0	0	0	0	0	0	1	1	1	0	0
2053	6	106.676	17.782	161.088	204.354	0	0	0	0	0	1	0	0	0	0	0	0	0	1	1	1	0	0
2053	7	243.038	0.189	161.038	204.464	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1	1	0	0
2053	8	254.533	0.000	160.963	204.622	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1	1	0	0
2053	9	176.959	0.696	160.886	204.847	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	1	0	0
2053	10	54.558	41.135	160.816	205.160	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	0	0
2053	11	4.977	232.738	160.737	205.570	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	1	0	0
2053	12	0.063	545.497	160.675	206.087	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2054	1	0.000	792.471	160.633	206.976	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2054	2	0.000	885.309	160.584	206.896	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2054	3	0.221	703.560	160.514	206.880	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2054	4	2.548	389.426	160.470	206.914	0	0	0	1	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2054	5	18.512	124.656	160.398	206.965	0	0	0	0	1	0	0	0	0	0	0	0	0	1	1	1	0	0
2054	6	106.676	17.782	160.310	207.016	0	0	0	0	0	1	0	0	0	0	0	0	0	1	1	1	0	0
2054	7	243.038	0.189	160.265	207.088	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1	1	0	0
2054	8	254.533	0.000	160.189	207.223	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1	1	0	0
2054	9	176.959	0.696	160.108	207.447	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	1	0	0
2054	10	54.558	41.135	160.039	207.785	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	0	0
2054	11	4.977	232.738	159.955	208.251	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	1	0	0
2054	12	0.063	545.497	159.896	208.855	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2055	1	0.000	792.471	159.859	209.932	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2055	2	0.000	885.309	159.814	209.783	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2055	3	0.221	703.560	159.743	209.711	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2055	4	2.548	389.426	159.704	209.697	0	0	0	1	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2055	5	18.512	124.656	159.631	209.706	0	0	0	0	1	0	0	0	0	0	0	0	0	1	1	1	0	0
2055	6	106.676	17.782	159.539	209.713	0	0	0	0	0	1	0	0	0	0	0	0	0	1	1	1	0	0
2055	7	243.038	0.189	159.498	209.747	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1	1	0	0
2055	8	254.533	0.000	159.420	209.856	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1	1	0	0
2055	9	176.959	0.696	159.336	210.080	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	1	0	0
2055	10	54.558	41.135	159.267	210.444	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	0	0
2055	11	4.977	232.738	159.180	210.967	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	1	0	0
2055	12	0.063	545.497	159.122	211.661	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2056	1	0.000	792.471	159.091	212.930	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2056	2	0.000	885.309	159.050	212.709	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2056	3	0.221	703.560	158.978	212.580	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2056	4	2.548	389.426	158.943	212.518	0	0	0	1	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2056	5	18.512	124.656	158.869	212.483	0	0	0	0	1	0	0	0	0	0	0	0	0	1	1	1	0	0
2056	6	106.676	17.782	158.773	212.444	0	0	0	0	0	1	0	0	0	0	0	0	0	1	1	1	0	0
2056	7	243.038	0.189	158.737	212.439	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1	1	0	0
2056	8	254.533	0.000	158.656	212.524	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1	1	0	0
2056	9	176.959	0.696	158.570	212.746	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	1	0	0
2056	10	54.558	41.135	158.501	213.136	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	0	0
2056	11	4.977	232.738	158.410	213.718	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	1	0	0
2056	12	0.063	545.497	158.354	214.504	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0

YEAR	MONTH	bcd65	bhd55	LM_IMI	frbmvp	dd1	dd2	dd3	dd4	dd5	dd6	dd7	dd8	dd9	dd10	dd11	jan04	sep04	dd05on	dd11on	nov15on	apr20	may20
2057	1	0.000	792.471	158.329	215.972	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2057	2	0.000	885.309	158.291	215.677	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2057	3	0.221	703.560	158.218	215.488	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2057	4	2.548	389.426	158.188	215.377	0	0	0	1	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2057	5	18.512	124.656	158.113	215.296	0	0	0	0	1	0	0	0	0	0	0	0	0	1	1	1	0	0
2057	6	106.676	17.782	158.012	215.212	0	0	0	0	0	1	0	0	0	0	0	0	0	1	1	1	0	0
2057	7	243.038	0.189	157.981	215.166	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1	1	0	0
2057	8	254.533	0.000	157.899	215.225	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1	1	0	0
2057	9	176.959	0.696	157.810	215.445	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	1	0	0
2057	10	54.558	41.135	157.740	215.864	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	0	0
2057	11	4.977	232.738	157.646	216.505	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	1	0	0
2057	12	0.063	545.497	157.591	217.385	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0

Indiana Michigan Power Company
City of Auburn
Model Estimation

The SYSLIN Procedure
Ordinary Least Squares Estimation

Model	KWH
Dependent Variable	KWH
Label	Energy

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	22	7.767E15	3.531E14	65.67	<.0001
Error	206	1.107E15	5.376E12		
Corrected Total	228	8.875E15			

Root MSE	2318602.68	R-Square	0.87522
Dependent Mean	37723142.8	Adj R-Sq	0.86189
Coeff Var	6.14637		

Parameter Estimates

Variable	DF	Parameter Estimate	Standard Error	t Value	Pr > |t|	Variable Label
Intercept	1	-2.739E7	10723709	-2.55	0.0114	Intercept
lfrbmvp	1	4490916	1888394	2.38	0.0183	FRB Index-Motor Vehichles and Parts, Log
llm	1	9402048	3190773	2.95	0.0036	Service Area Manufacturing Employment, Log
bhdd55	1	-114.451	1798.481	-0.06	0.9493	Heating Degree Days
bcdd65	1	6734.816	4625.506	1.46	0.1469	Cooling Degree Days
d05on	1	-7308191	563554.8	-12.97	<.0001	Binary Variable 2005 On
d11on	1	2238283	569999.1	3.93	0.0001	Binary Variable 2011 on
jan04	1	39183460	2413868	16.23	<.0001	Binary Variable - January 2004
sep04	1	41464450	2423474	17.11	<.0001	Binary Variable - September 2004
apr20	1	-8758368	2692214	-3.25	0.0013	Binary Variable - April 2020
may20	1	-7348032	2955363	-2.49	0.0137	Binary Variable - May 2020
d1	1	2196271	844941.7	2.60	0.0100	Binary Variable - January

Indiana Michigan Power Company
City of Auburn
Model Estimation

The SYSLIN Procedure
Ordinary Least Squares Estimation

Parameter Estimates

Variable	DF	Parameter Estimate	Standard Error	t Value	Pr > |t|	Variable Label
d2	1	-524707	955825.2	-0.55	0.5836	Binary Variable - February
d3	1	900822.0	813321.9	1.11	0.2693	Binary Variable - March
d4	1	-474200	834904.8	-0.57	0.5707	Binary Variable - April
d5	1	734956.9	1111258	0.66	0.5091	Binary Variable - May
d6	1	915798.9	1344301	0.68	0.4965	Binary Variable - June
d7	1	-204820	1688380	-0.12	0.9036	Binary Variable - July
d8	1	2085866	1735069	1.20	0.2307	Binary Varaible - August
d9	1	-220018	1511009	-0.15	0.8844	Binary Variable - September
d10	1	339695.2	1235144	0.28	0.7836	Binary Variable - October
d11	1	-200880	955388.8	-0.21	0.8337	Binary Variable - November
nov15on	1	-2256521	474441.3	-4.76	<.0001	Binary Variable - November 2015 On

Durbin-Watson	1.701453
Number of Observations	229
First-Order Autocorrelation	0.144269

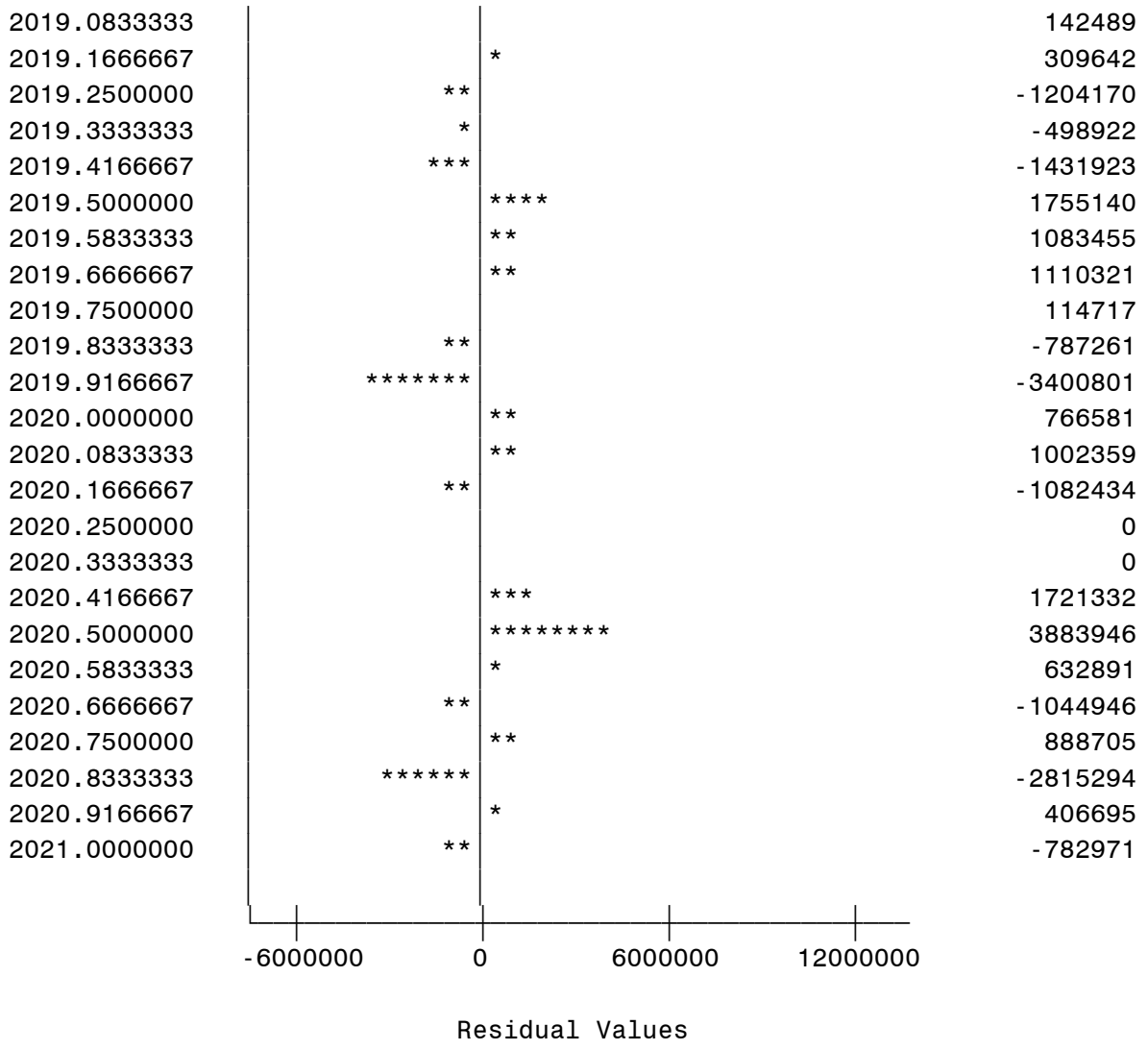
time			Residual Values Sum
2002.0000000		******	3236049
2002.0833333	**********		-6800187
2002.1666667	******		-3159457
2002.2500000	*******		-3425574
2002.3333333		**********	13666374
2002.4166667		*	427395
2002.5000000		***	1620144
2002.5833333		******	3027278
2002.6666667	**		-1030978
2002.7500000		***	1352867
2002.8333333	****		-1981627
2002.9166667	********		-3917701
2003.0000000		****	1801206
2003.0833333	***		-1691386
2003.1666667	*****		-2342415
2003.2500000	*		-594941
2003.3333333	*		-699951
2003.4166667	****		-2037912
2003.5000000	****		-2159455
2003.5833333	*		-664761
2003.6666667	*******		-3369287
2003.7500000		*****	2375692
2003.8333333	****		-1969045
2003.9166667		**	1193467
2004.0000000			0
2004.0833333	*		-566207
2004.1666667		*******	3358701
2004.2500000		*****	2610570
2004.3333333	***		-1606062
2004.4166667		*****	2602583
2004.5000000			-158167
2004.5833333			-148256
2004.6666667			0
2004.7500000	***		-1695542
2004.8333333	*		-323759
2004.9166667		******	3070345
2005.0000000	****		-2052725
2005.0833333		**********	4892140
2005.1666667	*		-305433
2005.2500000	*		-528111
2005.3333333	**********		-6123350
2005.4166667	******		-2984401
2005.5000000	*******		-3504956
2005.5833333	***		-1319493
2005.6666667		*******	3504572
2005.7500000			-51135
2005.8333333		**	1015113
2005.9166667		****	2039881
2006.0000000	***		-1542348

2006.0833333		*	614659
2006.1666667			132036
2006.2500000			-230818
2006.3333333		*	646780
2006.4166667		**********	5162968
2006.5000000	*		-446886
2006.5833333		*	318353
2006.6666667		****	1802866
2006.7500000	*		-365849
2006.8333333		*****	2426075
2006.9166667		***	1620116
2007.0000000	*****		-2697439
2007.0833333		*******	3580227
2007.1666667		**	796554
2007.2500000		***	1546327
2007.3333333		**	1223952
2007.4166667		*	324959
2007.5000000	**		-973414
2007.5833333			159804
2007.6666667		***	1331920
2007.7500000	****		-1816892
2007.8333333		**	939047
2007.9166667		***	1284089
2008.0000000	****		-1865422
2008.0833333		****	2187149
2008.1666667		**	819636
2008.2500000		*	282835
2008.3333333	**		-1106442
2008.4166667		*	621332
2008.5000000		***	1327576
2008.5833333	***		-1351623
2008.6666667		*	506172
2008.7500000	****		-1840611
2008.8333333	*		-586039
2008.9166667		***	1343480
2009.0000000	********		-3771876
2009.0833333			73978
2009.1666667	****		-1857812
2009.2500000		**	1217402
2009.3333333	***		-1577095
2009.4166667	***		-1510955
2009.5000000	***		-1739106
2009.5833333	***		-1519304
2009.6666667		**	1101631
2009.7500000		**	955542
2009.8333333		**********	6899384
2009.9166667		**********	7567628
2010.0000000		**********	5171796
2010.0833333	**		-1112761
2010.1666667	*******		-3725201
2010.2500000	**		-824817
2010.3333333	******		-2859127

2010.4166667	********		-3896210
2010.5000000	********		-3887670
2010.5833333	********		-4076227
2010.6666667		*	353040
2010.7500000			225555
2010.8333333	**		-787754
2010.9166667	**		-1177270
2011.0000000	****		-1881630
2011.0833333	**		-782319
2011.1666667			146779
2011.2500000		***	1506161
2011.3333333		*	398172
2011.4166667	**		-968999
2011.5000000	*		-275500
2011.5833333	****		-2235244
2011.6666667		***	1667628
2011.7500000		**	856282
2011.8333333		**	1019570
2011.9166667		*	656088
2012.0000000			-18786
2012.0833333		**	782222
2012.1666667		****	1937136
2012.2500000		*****	2526102
2012.3333333		******	2803493
2012.4166667		*	256114
2012.5000000		****	1821097
2012.5833333			-35150
2012.6666667			14037
2012.7500000		*****	2657210
2012.8333333		*****	2419492
2012.9166667		***	1433208
2013.0000000			151330
2013.0833333	**		-826991
2013.1666667		*	738897
2013.2500000		******	3101825
2013.3333333		***	1715843
2013.4166667		*	536605
2013.5000000		**	913848
2013.5833333		**	966069
2013.6666667	***		-1332533
2013.7500000			131663
2013.8333333	***		-1438947
2013.9166667	*********		-4392732
2014.0000000	*		-348052
2014.0833333	*		-475031
2014.1666667		****	1832082
2014.2500000	**		-948327
2014.3333333	***		-1611820
2014.4166667	**		-971855
2014.5000000		*	326783
2014.5833333	*		-558097
2014.6666667	********		-3955376

2014.7500000			-104020
2014.8333333	**		-1069413
2014.9166667	**		-1184456
2015.0000000	*		-297058
2015.0833333	**		-1203651
2015.1666667			56273
2015.2500000	***		-1656513
2015.3333333	********		-4148643
2015.4166667	*		-560295
2015.5000000		***	1311100
2015.5833333	*		-684068
2015.6666667			60850
2015.7500000	**		-778456
2015.8333333		*	398917
2015.9166667	***		-1512010
2016.0000000		*	578551
2016.0833333		**	934740
2016.1666667		**	777514
2016.2500000		***	1277125
2016.3333333			-206970
2016.4166667		***	1645251
2016.5000000			-179479
2016.5833333		********	3787547
2016.6666667		**	813772
2016.7500000	*		-657183
2016.8333333	****		-2146705
2016.9166667	**		-956776
2017.0000000		*	603659
2017.0833333	**		-1229754
2017.1666667		****	2074938
2017.2500000	********		-3964048
2017.3333333	**		-783455
2017.4166667		*	363183
2017.5000000	**		-835603
2017.5833333	*		-531292
2017.6666667	**		-894190
2017.7500000			-95430
2017.8333333	***		-1468746
2017.9166667	****		-1811530
2018.0000000		****	1784325
2018.0833333		*	478325
2018.1666667	*		-507436
2018.2500000	*		-691028
2018.3333333		**	767221
2018.4166667		*	700830
2018.5000000		**	1200600
2018.5833333		******	3148118
2018.6666667	*		-639498
2018.7500000	****		-2153115
2018.8333333		*	256991
2018.9166667	*****		-2261720
2019.0000000		**	1164809

Indiana Michigan Power Company
City of Auburn
Model Residuals



Indiana Michigan Power Company
City of Auburn
Actual and Forecast

Year	Energy	Growth Rate
2002	CONFID.	N/A
2003	CONFID.	N/A
2004	CONFID.	N/A
2005	CONFID.	N/A
2006	CONFID.	N/A
2007	CONFID.	N/A
2008	CONFID.	N/A
2009	CONFID.	N/A
2010	CONFID.	N/A
2011	CONFID.	N/A
2012	CONFID.	N/A
2013	CONFID.	N/A
2014	CONFID.	N/A
2015	CONFID.	N/A
2016	CONFID.	N/A
2017	CONFID.	N/A
2018	CONFID.	N/A
2019	CONFID.	N/A
2020	CONFID.	N/A
2021	CONFID.	N/A
2022	CONFID.	N/A
2023	CONFID.	N/A
2024	CONFID.	N/A
2025	CONFID.	N/A
2026	CONFID.	N/A
2027	CONFID.	N/A
2028	CONFID.	N/A
2029	CONFID.	N/A
2030	CONFID.	N/A
2031	CONFID.	N/A
2032	CONFID.	N/A
2033	CONFID.	N/A
2034	CONFID.	N/A
2035	CONFID.	N/A
2036	CONFID.	N/A
2037	CONFID.	N/A
2038	CONFID.	N/A
2039	CONFID.	N/A
2040	CONFID.	N/A
2041	CONFID.	N/A
2042	CONFID.	N/A
2043	CONFID.	N/A
2044	CONFID.	N/A
2045	CONFID.	N/A
2046	CONFID.	N/A
2047	CONFID.	N/A
2048	CONFID.	N/A
2049	CONFID.	N/A
2050	CONFID.	N/A

Indiana Michigan Power Company
City of Auburn
Actual and Forecast

Year	Energy	Growth Rate
2051	CONFID.	N/A
2052	CONFID.	N/A
2053	CONFID.	N/A
2054	CONFID.	N/A
2055	CONFID.	N/A
2056	CONFID.	N/A
2057	CONFID.	N/A

Indiana Michigan Power Company
Cooperative Energy Sales
Endogenous Variable

The MEANS Procedure

Variable	Label	Mean
YEAR	Year	2032.00
MONTH	Month	6.5000000

Indiana Michigan Power Company
Cooperative Energy Sales
Endogenous Variable

YEAR	MONTH	Energy
2007	1	CONFID.
2007	2	CONFID.
2007	3	CONFID.
2007	4	CONFID.
2007	5	CONFID.
2007	6	CONFID.
2007	7	CONDID.
2007	8	CONFID.
2007	9	CONFID.
2007	10	CONFID.
2007	11	CONFID.
2007	12	CONFID.
2008	1	CONFID.
2008	2	CONFID.
2008	3	CONFID.
2008	4	CONFID.
2008	5	CONFID.
2008	6	CONFID.
2008	7	CONDID.
2008	8	CONFID.
2008	9	CONFID.
2008	10	CONFID.
2008	11	CONFID.
2008	12	CONFID.
2009	1	CONFID.
2009	2	CONFID.
2009	3	CONFID.
2009	4	CONFID.
2009	5	CONFID.
2009	6	CONFID.
2009	7	CONDID.
2009	8	CONFID.
2009	9	CONFID.
2009	10	CONFID.
2009	11	CONFID.
2009	12	CONFID.
2010	1	CONFID.
2010	2	CONFID.
2010	3	CONFID.
2010	4	CONFID.
2010	5	CONFID.
2010	6	CONFID.
2010	7	CONDID.
2010	8	CONFID.
2010	9	CONFID.
2010	10	CONFID.
2010	11	CONFID.
2010	12	CONFID.
2011	1	CONFID.
2011	2	CONFID.

Indiana Michigan Power Company
Cooperative Energy Sales
Endogenous Variable

YEAR	MONTH	Energy
2011	3	CONFID.
2011	4	CONFID.
2011	5	CONFID.
2011	6	CONFID.
2011	7	CONDID.
2011	8	CONFID.
2011	9	CONFID.
2011	10	CONFID.
2011	11	CONFID.
2011	12	CONFID.
2012	1	CONFID.
2012	2	CONFID.
2012	3	CONFID.
2012	4	CONFID.
2012	5	CONFID.
2012	6	CONFID.
2012	7	CONDID.
2012	8	CONFID.
2012	9	CONFID.
2012	10	CONFID.
2012	11	CONFID.
2012	12	CONFID.
2013	1	CONFID.
2013	2	CONFID.
2013	3	CONFID.
2013	4	CONFID.
2013	5	CONFID.
2013	6	CONFID.
2013	7	CONDID.
2013	8	CONFID.
2013	9	CONFID.
2013	10	CONFID.
2013	11	CONFID.
2013	12	CONFID.
2014	1	CONFID.
2014	2	CONFID.
2014	3	CONFID.
2014	4	CONFID.
2014	5	CONFID.
2014	6	CONFID.
2014	7	CONDID.
2014	8	CONFID.
2014	9	CONFID.
2014	10	CONFID.
2014	11	CONFID.
2014	12	CONFID.
2015	1	CONFID.
2015	2	CONFID.
2015	3	CONFID.
2015	4	CONFID.

Indiana Michigan Power Company
Cooperative Energy Sales
Endogenous Variable

YEAR	MONTH	Energy
2015	5	CONFID.
2015	6	CONFID.
2015	7	CONDID.
2015	8	CONFID.
2015	9	CONFID.
2015	10	CONFID.
2015	11	CONFID.
2015	12	CONFID.
2016	1	CONFID.
2016	2	CONFID.
2016	3	CONFID.
2016	4	CONFID.
2016	5	CONFID.
2016	6	CONFID.
2016	7	CONDID.
2016	8	CONFID.
2016	9	CONFID.
2016	10	CONFID.
2016	11	CONFID.
2016	12	CONFID.
2017	1	CONFID.
2017	2	CONFID.
2017	3	CONFID.
2017	4	CONFID.
2017	5	CONFID.
2017	6	CONFID.
2017	7	CONDID.
2017	8	CONFID.
2017	9	CONFID.
2017	10	CONFID.
2017	11	CONFID.
2017	12	CONFID.
2018	1	CONFID.
2018	2	CONFID.
2018	3	CONFID.
2018	4	CONFID.
2018	5	CONFID.
2018	6	CONFID.
2018	7	CONDID.
2018	8	CONFID.
2018	9	CONFID.
2018	10	CONFID.
2018	11	CONFID.
2018	12	CONFID.
2019	1	CONFID.
2019	2	CONFID.
2019	3	CONFID.
2019	4	CONFID.
2019	5	CONFID.
2019	6	CONFID.

Indiana Michigan Power Company
Cooperative Energy Sales
Endogenous Variable

YEAR	MONTH	Energy
2019	7	CONDID.
2019	8	CONFID.
2019	9	CONFID.
2019	10	CONFID.
2019	11	CONFID.
2019	12	CONFID.
2020	1	CONFID.
2020	2	CONFID.
2020	3	CONFID.
2020	4	CONFID.
2020	5	CONFID.
2020	6	CONFID.
2020	7	CONDID.
2020	8	CONFID.
2020	9	CONFID.
2020	10	CONFID.
2020	11	CONFID.
2020	12	CONFID.
2021	1	CONFID.
2021	2	CONFID.
2021	3	CONFID.
2021	4	CONFID.
2021	5	CONFID.
2021	6	CONFID.
2021	7	CONDID.
2021	8	CONFID.
2021	9	CONFID.
2021	10	CONFID.
2021	11	CONFID.
2021	12	CONFID.
2022	1	CONFID.
2022	2	CONFID.
2022	3	CONFID.
2022	4	CONFID.
2022	5	CONFID.
2022	6	CONFID.
2022	7	CONDID.
2022	8	CONFID.
2022	9	CONFID.
2022	10	CONFID.
2022	11	CONFID.
2022	12	CONFID.
2023	1	CONFID.
2023	2	CONFID.
2023	3	CONFID.
2023	4	CONFID.
2023	5	CONFID.
2023	6	CONFID.
2023	7	CONDID.
2023	8	CONFID.

Indiana Michigan Power Company
Cooperative Energy Sales
Endogenous Variable

YEAR	MONTH	Energy
2023	9	CONFID.
2023	10	CONFID.
2023	11	CONFID.
2023	12	CONFID.
2024	1	CONFID.
2024	2	CONFID.
2024	3	CONFID.
2024	4	CONFID.
2024	5	CONFID.
2024	6	CONFID.
2024	7	CONDID.
2024	8	CONFID.
2024	9	CONFID.
2024	10	CONFID.
2024	11	CONFID.
2024	12	CONFID.
2025	1	CONFID.
2025	2	CONFID.
2025	3	CONFID.
2025	4	CONFID.
2025	5	CONFID.
2025	6	CONFID.
2025	7	CONDID.
2025	8	CONFID.
2025	9	CONFID.
2025	10	CONFID.
2025	11	CONFID.
2025	12	CONFID.
2026	1	CONFID.
2026	2	CONFID.
2026	3	CONFID.
2026	4	CONFID.
2026	5	CONFID.
2026	6	CONFID.
2026	7	CONDID.
2026	8	CONFID.
2026	9	CONFID.
2026	10	CONFID.
2026	11	CONFID.
2026	12	CONFID.
2027	1	CONFID.
2027	2	CONFID.
2027	3	CONFID.
2027	4	CONFID.
2027	5	CONFID.
2027	6	CONFID.
2027	7	CONDID.
2027	8	CONFID.
2027	9	CONFID.
2027	10	CONFID.

Indiana Michigan Power Company
Cooperative Energy Sales
Endogenous Variable

YEAR	MONTH	Energy
2027	11	CONFID.
2027	12	CONFID.
2028	1	CONFID.
2028	2	CONFID.
2028	3	CONFID.
2028	4	CONFID.
2028	5	CONFID.
2028	6	CONFID.
2028	7	CONDID.
2028	8	CONFID.
2028	9	CONFID.
2028	10	CONFID.
2028	11	CONFID.
2028	12	CONFID.
2029	1	CONFID.
2029	2	CONFID.
2029	3	CONFID.
2029	4	CONFID.
2029	5	CONFID.
2029	6	CONFID.
2029	7	CONDID.
2029	8	CONFID.
2029	9	CONFID.
2029	10	CONFID.
2029	11	CONFID.
2029	12	CONFID.
2030	1	CONFID.
2030	2	CONFID.
2030	3	CONFID.
2030	4	CONFID.
2030	5	CONFID.
2030	6	CONFID.
2030	7	CONDID.
2030	8	CONFID.
2030	9	CONFID.
2030	10	CONFID.
2030	11	CONFID.
2030	12	CONFID.
2031	1	CONFID.
2031	2	CONFID.
2031	3	CONFID.
2031	4	CONFID.
2031	5	CONFID.
2031	6	CONFID.
2031	7	CONDID.
2031	8	CONFID.
2031	9	CONFID.
2031	10	CONFID.
2031	11	CONFID.
2031	12	CONFID.

Indiana Michigan Power Company
Cooperative Energy Sales
Endogenous Variable

YEAR	MONTH	Energy
2032	1	CONFID.
2032	2	CONFID.
2032	3	CONFID.
2032	4	CONFID.
2032	5	CONFID.
2032	6	CONFID.
2032	7	CONDID.
2032	8	CONFID.
2032	9	CONFID.
2032	10	CONFID.
2032	11	CONFID.
2032	12	CONFID.
2033	1	CONFID.
2033	2	CONFID.
2033	3	CONFID.
2033	4	CONFID.
2033	5	CONFID.
2033	6	CONFID.
2033	7	CONDID.
2033	8	CONFID.
2033	9	CONFID.
2033	10	CONFID.
2033	11	CONFID.
2033	12	CONFID.
2034	1	CONFID.
2034	2	CONFID.
2034	3	CONFID.
2034	4	CONFID.
2034	5	CONFID.
2034	6	CONFID.
2034	7	CONDID.
2034	8	CONFID.
2034	9	CONFID.
2034	10	CONFID.
2034	11	CONFID.
2034	12	CONFID.
2035	1	CONFID.
2035	2	CONFID.
2035	3	CONFID.
2035	4	CONFID.
2035	5	CONFID.
2035	6	CONFID.
2035	7	CONDID.
2035	8	CONFID.
2035	9	CONFID.
2035	10	CONFID.
2035	11	CONFID.
2035	12	CONFID.
2036	1	CONFID.
2036	2	CONFID.

Indiana Michigan Power Company
Cooperative Energy Sales
Endogenous Variable

YEAR	MONTH	Energy
2036	3	CONFID.
2036	4	CONFID.
2036	5	CONFID.
2036	6	CONFID.
2036	7	CONDID.
2036	8	CONFID.
2036	9	CONFID.
2036	10	CONFID.
2036	11	CONFID.
2036	12	CONFID.
2037	1	CONFID.
2037	2	CONFID.
2037	3	CONFID.
2037	4	CONFID.
2037	5	CONFID.
2037	6	CONFID.
2037	7	CONDID.
2037	8	CONFID.
2037	9	CONFID.
2037	10	CONFID.
2037	11	CONFID.
2037	12	CONFID.
2038	1	CONFID.
2038	2	CONFID.
2038	3	CONFID.
2038	4	CONFID.
2038	5	CONFID.
2038	6	CONFID.
2038	7	CONDID.
2038	8	CONFID.
2038	9	CONFID.
2038	10	CONFID.
2038	11	CONFID.
2038	12	CONFID.
2039	1	CONFID.
2039	2	CONFID.
2039	3	CONFID.
2039	4	CONFID.
2039	5	CONFID.
2039	6	CONFID.
2039	7	CONDID.
2039	8	CONFID.
2039	9	CONFID.
2039	10	CONFID.
2039	11	CONFID.
2039	12	CONFID.
2040	1	CONFID.
2040	2	CONFID.
2040	3	CONFID.
2040	4	CONFID.

Indiana Michigan Power Company
Cooperative Energy Sales
Endogenous Variable

YEAR	MONTH	Energy
2040	5	CONFID.
2040	6	CONFID.
2040	7	CONDID.
2040	8	CONFID.
2040	9	CONFID.
2040	10	CONFID.
2040	11	CONFID.
2040	12	CONFID.
2041	1	CONFID.
2041	2	CONFID.
2041	3	CONFID.
2041	4	CONFID.
2041	5	CONFID.
2041	6	CONFID.
2041	7	CONDID.
2041	8	CONFID.
2041	9	CONFID.
2041	10	CONFID.
2041	11	CONFID.
2041	12	CONFID.
2042	1	CONFID.
2042	2	CONFID.
2042	3	CONFID.
2042	4	CONFID.
2042	5	CONFID.
2042	6	CONFID.
2042	7	CONDID.
2042	8	CONFID.
2042	9	CONFID.
2042	10	CONFID.
2042	11	CONFID.
2042	12	CONFID.
2043	1	CONFID.
2043	2	CONFID.
2043	3	CONFID.
2043	4	CONFID.
2043	5	CONFID.
2043	6	CONFID.
2043	7	CONDID.
2043	8	CONFID.
2043	9	CONFID.
2043	10	CONFID.
2043	11	CONFID.
2043	12	CONFID.
2044	1	CONFID.
2044	2	CONFID.
2044	3	CONFID.
2044	4	CONFID.
2044	5	CONFID.
2044	6	CONFID.

Indiana Michigan Power Company
Cooperative Energy Sales
Endogenous Variable

YEAR	MONTH	Energy
2044	7	CONDID.
2044	8	CONFID.
2044	9	CONFID.
2044	10	CONFID.
2044	11	CONFID.
2044	12	CONFID.
2045	1	CONFID.
2045	2	CONFID.
2045	3	CONFID.
2045	4	CONFID.
2045	5	CONFID.
2045	6	CONFID.
2045	7	CONDID.
2045	8	CONFID.
2045	9	CONFID.
2045	10	CONFID.
2045	11	CONFID.
2045	12	CONFID.
2046	1	CONFID.
2046	2	CONFID.
2046	3	CONFID.
2046	4	CONFID.
2046	5	CONFID.
2046	6	CONFID.
2046	7	CONDID.
2046	8	CONFID.
2046	9	CONFID.
2046	10	CONFID.
2046	11	CONFID.
2046	12	CONFID.
2047	1	CONFID.
2047	2	CONFID.
2047	3	CONFID.
2047	4	CONFID.
2047	5	CONFID.
2047	6	CONFID.
2047	7	CONDID.
2047	8	CONFID.
2047	9	CONFID.
2047	10	CONFID.
2047	11	CONFID.
2047	12	CONFID.
2048	1	CONFID.
2048	2	CONFID.
2048	3	CONFID.
2048	4	CONFID.
2048	5	CONFID.
2048	6	CONFID.
2048	7	CONDID.
2048	8	CONFID.

Indiana Michigan Power Company
Cooperative Energy Sales
Endogenous Variable

YEAR	MONTH	Energy
2048	9	CONFID.
2048	10	CONFID.
2048	11	CONFID.
2048	12	CONFID.
2049	1	CONFID.
2049	2	CONFID.
2049	3	CONFID.
2049	4	CONFID.
2049	5	CONFID.
2049	6	CONFID.
2049	7	CONDID.
2049	8	CONFID.
2049	9	CONFID.
2049	10	CONFID.
2049	11	CONFID.
2049	12	CONFID.
2050	1	CONFID.
2050	2	CONFID.
2050	3	CONFID.
2050	4	CONFID.
2050	5	CONFID.
2050	6	CONFID.
2050	7	CONDID.
2050	8	CONFID.
2050	9	CONFID.
2050	10	CONFID.
2050	11	CONFID.
2050	12	CONFID.
2051	1	CONFID.
2051	2	CONFID.
2051	3	CONFID.
2051	4	CONFID.
2051	5	CONFID.
2051	6	CONFID.
2051	7	CONDID.
2051	8	CONFID.
2051	9	CONFID.
2051	10	CONFID.
2051	11	CONFID.
2051	12	CONFID.
2052	1	CONFID.
2052	2	CONFID.
2052	3	CONFID.
2052	4	CONFID.
2052	5	CONFID.
2052	6	CONFID.
2052	7	CONDID.
2052	8	CONFID.
2052	9	CONFID.
2052	10	CONFID.

Indiana Michigan Power Company
Cooperative Energy Sales
Endogenous Variable

YEAR	MONTH	Energy
2052	11	CONFID.
2052	12	CONFID.
2053	1	CONFID.
2053	2	CONFID.
2053	3	CONFID.
2053	4	CONFID.
2053	5	CONFID.
2053	6	CONFID.
2053	7	CONDID.
2053	8	CONFID.
2053	9	CONFID.
2053	10	CONFID.
2053	11	CONFID.
2053	12	CONFID.
2054	1	CONFID.
2054	2	CONFID.
2054	3	CONFID.
2054	4	CONFID.
2054	5	CONFID.
2054	6	CONFID.
2054	7	CONDID.
2054	8	CONFID.
2054	9	CONFID.
2054	10	CONFID.
2054	11	CONFID.
2054	12	CONFID.
2055	1	CONFID.
2055	2	CONFID.
2055	3	CONFID.
2055	4	CONFID.
2055	5	CONFID.
2055	6	CONFID.
2055	7	CONDID.
2055	8	CONFID.
2055	9	CONFID.
2055	10	CONFID.
2055	11	CONFID.
2055	12	CONFID.
2056	1	CONFID.
2056	2	CONFID.
2056	3	CONFID.
2056	4	CONFID.
2056	5	CONFID.
2056	6	CONFID.
2056	7	CONDID.
2056	8	CONFID.
2056	9	CONFID.
2056	10	CONFID.
2056	11	CONFID.
2056	12	CONFID.

Indiana Michigan Power Company
Cooperative Energy Sales
Endogenous Variable

YEAR	MONTH	Energy
2057	1	CONFID.
2057	2	CONFID.
2057	3	CONFID.
2057	4	CONFID.
2057	5	CONFID.
2057	6	CONFID.
2057	7	CONDID.
2057	8	CONFID.
2057	9	CONFID.
2057	10	CONFID.
2057	11	CONFID.
2057	12	CONFID.

Indiana Michigan Power Company
Cooperative Energy Sales
Exogenous Variables

The MEANS Procedure

Variable	Label	Mean
YEAR	Year	2032.00
MONTH	Month	6.5000000
gdp_imi	Service Area Gross Regional Product	106423.50
jand07on	Binary Variable - January 2007 On	0.0833333
febd07on	Binary Variable - February 2007 On	0.0833333
mard07on	Binary Variable - March 2007 On	0.0833333
aprd07on	Binary Variable - April 2007 On	0.0833333
mayd07on	Binary Variable - May 2007 On	0.0833333
jund07on	Binary Variable - June 2007 On	0.0833333
juld07on	Binary Variable - July 2007 On	0.0833333
augd07on	Binary Variable - August 2007 On	0.0833333
sepd07on	Binary Variable - September 2007 On	0.0833333
octd07on	Binary Variable - October 2007 On	0.0833333
novd07on	Binary Variable - November 2007 On	0.0833333
d16on	Binary Variable - 2016 On	0.8235294
bhdd55d70	Heating Degree Days 2007 On	311.0464513
bcdd65d70	Cooling Degree Days 2007 On	73.2442593
d18on	Binary Variable - 2018 On	0.7843137
dec17	Binary Variable - December 2017	0.0016340
jan18	Binary Variable - January 2018	0.0016340

YEAR	MONTH	gdp_imi	jand07on	feb07on	mar07on	apr07on	may07on	jun07on	jul07on	aug07on	sep07on	oct07on	nov07on	d16on	bhdd57d70	bcdd65d70	d18on	dec17	jan18
2007	1	72503.88	1	0	0	0	0	0	0	0	0	0	0	0	544.00	0.000	0	0	0
2007	2	72514.07	0	1	0	0	0	0	0	0	0	0	0	0	987.17	0.000	0	0	0
2007	3	72525.82	0	0	1	0	0	0	0	0	0	0	0	0	906.10	0.065	0	0	0
2007	4	72543.89	0	0	0	1	0	0	0	0	0	0	0	0	340.81	4.123	0	0	0
2007	5	72572.58	0	0	0	0	1	0	0	0	0	0	0	0	129.43	20.781	0	0	0
2007	6	72616.27	0	0	0	0	0	1	0	0	0	0	0	0	8.82	146.203	0	0	0
2007	7	72678.99	0	0	0	0	0	0	1	0	0	0	0	0	0.00	215.090	0	0	0
2007	8	72757.34	0	0	0	0	0	0	0	1	0	0	0	0	0.00	255.523	0	0	0
2007	9	72834.91	0	0	0	0	0	0	0	0	1	0	0	0	1.57	213.732	0	0	0
2007	10	72898.08	0	0	0	0	0	0	0	0	0	1	0	0	15.82	105.017	0	0	0
2007	11	72932.36	0	0	0	0	0	0	0	0	0	0	1	0	192.89	22.286	0	0	0
2007	12	72922.65	0	0	0	0	0	0	0	0	0	0	0	0	608.47	0.000	0	0	0
2008	1	72852.92	1	0	0	0	0	0	0	0	0	0	0	0	753.95	0.000	0	0	0
2008	2	72713.87	0	1	0	0	0	0	0	0	0	0	0	0	903.12	0.000	0	0	0
2008	3	72488.87	0	0	1	0	0	0	0	0	0	0	0	0	857.69	0.000	0	0	0
2008	4	72159.34	0	0	0	1	0	0	0	0	0	0	0	0	453.22	0.245	0	0	0
2008	5	71712.13	0	0	0	0	1	0	0	0	0	0	0	0	109.89	9.654	0	0	0
2008	6	71133.89	0	0	0	0	0	1	0	0	0	0	0	0	25.40	95.641	0	0	0
2008	7	70410.32	0	0	0	0	0	0	1	0	0	0	0	0	0.03	185.375	0	0	0
2008	8	69537.04	0	0	0	0	0	0	0	1	0	0	0	0	0.00	234.333	0	0	0
2008	9	68575.44	0	0	0	0	0	0	0	0	1	0	0	0	0.00	174.134	0	0	0
2008	10	67547.15	0	0	0	0	0	0	0	0	0	1	0	0	29.14	47.354	0	0	0
2008	11	66487.98	0	0	0	0	0	0	0	0	0	0	1	0	234.86	3.076	0	0	0
2008	12	65433.02	0	0	0	0	0	0	0	0	0	0	0	0	702.59	0.000	0	0	0
2009	1	64401.38	1	0	0	0	0	0	0	0	0	0	0	0	910.79	0.000	0	0	0
2009	2	63490.46	0	1	0	0	0	0	0	0	0	0	0	0	1077.43	0.000	0	0	0
2009	3	62683.60	0	0	1	0	0	0	0	0	0	0	0	0	650.77	0.000	0	0	0
2009	4	61989.53	0	0	0	1	0	0	0	0	0	0	0	0	336.81	0.540	0	0	0
2009	5	61475.17	0	0	0	0	1	0	0	0	0	0	0	0	129.99	27.032	0	0	0
2009	6	61173.64	0	0	0	0	0	1	0	0	0	0	0	0	14.02	68.135	0	0	0
2009	7	61120.18	0	0	0	0	0	0	1	0	0	0	0	0	0.00	192.559	0	0	0
2009	8	61319.39	0	0	0	0	0	0	0	1	0	0	0	0	0.00	154.679	0	0	0
2009	9	61732.10	0	0	0	0	0	0	0	0	1	0	0	0	0.00	111.039	0	0	0
2009	10	62325.04	0	0	0	0	0	0	0	0	0	1	0	0	74.96	33.609	0	0	0
2009	11	63060.46	0	0	0	0	0	0	0	0	0	0	1	0	203.93	0.000	0	0	0
2009	12	63903.75	0	0	0	0	0	0	0	0	0	0	0	0	475.47	0.000	0	0	0
2010	1	64833.43	1	0	0	0	0	0	0	0	0	0	0	0	901.58	0.000	0	0	0
2010	2	65752.00	0	1	0	0	0	0	0	0	0	0	0	0	924.24	0.000	0	0	0
2010	3	66670.48	0	0	1	0	0	0	0	0	0	0	0	0	702.20	0.000	0	0	0
2010	4	67585.59	0	0	0	1	0	0	0	0	0	0	0	0	235.85	8.492	0	0	0
2010	5	68429.44	0	0	0	0	1	0	0	0	0	0	0	0	55.26	19.652	0	0	0
2010	6	69167.01	0	0	0	0	0	1	0	0	0	0	0	0	11.26	180.237	0	0	0

YEAR	MONTH	gdp_imi	jand07on	feb07on	mar07on	apr07on	may07on	jun07on	jul07on	aug07on	sep07on	oct07on	nov07on	d16on	bhdd57d70	bcdd65d70	d18on	dec17	jan18
2010	7	69762.87	0	0	0	0	0	0	1	0	0	0	0	0	0.00	323.478	0	0	0
2010	8	70213.44	0	0	0	0	0	0	0	1	0	0	0	0	0.00	363.780	0	0	0
2010	9	70518.93	0	0	0	0	0	0	0	0	1	0	0	0	0.00	222.143	0	0	0
2010	10	70704.04	0	0	0	0	0	0	0	0	0	1	0	0	25.89	64.813	0	0	0
2010	11	70787.20	0	0	0	0	0	0	0	0	0	0	1	0	200.35	5.809	0	0	0
2010	12	70784.59	0	0	0	0	0	0	0	0	0	0	0	0	650.98	0.000	0	0	0
2011	1	70712.49	1	0	0	0	0	0	0	0	0	0	0	0	958.16	0.000	0	0	0
2011	2	70595.32	0	1	0	0	0	0	0	0	0	0	0	0	1033.91	0.000	0	0	0
2011	3	70445.84	0	0	1	0	0	0	0	0	0	0	0	0	705.44	0.000	0	0	0
2011	4	70274.71	0	0	0	1	0	0	0	0	0	0	0	0	408.52	2.094	0	0	0
2011	5	70103.46	0	0	0	0	1	0	0	0	0	0	0	0	126.11	17.099	0	0	0
2011	6	69949.21	0	0	0	0	0	1	0	0	0	0	0	0	17.62	154.744	0	0	0
2011	7	69828.66	0	0	0	0	0	0	1	0	0	0	0	0	0.00	286.318	0	0	0
2011	8	69747.50	0	0	0	0	0	0	0	1	0	0	0	0	0.00	410.578	0	0	0
2011	9	69704.90	0	0	0	0	0	0	0	0	1	0	0	0	2.70	193.115	0	0	0
2011	10	69695.02	0	0	0	0	0	0	0	0	0	1	0	0	32.45	25.984	0	0	0
2011	11	69713.07	0	0	0	0	0	0	0	0	0	0	1	0	182.58	0.802	0	0	0
2011	12	69754.86	0	0	0	0	0	0	0	0	0	0	0	0	432.00	0.000	0	0	0
2012	1	69816.86	1	0	0	0	0	0	0	0	0	0	0	0	648.72	0.000	0	0	0
2012	2	69891.23	0	1	0	0	0	0	0	0	0	0	0	0	741.32	0.000	0	0	0
2012	3	69975.59	0	0	1	0	0	0	0	0	0	0	0	0	523.17	6.578	0	0	0
2012	4	70067.04	0	0	0	1	0	0	0	0	0	0	0	0	138.41	21.239	0	0	0
2012	5	70159.85	0	0	0	0	1	0	0	0	0	0	0	0	104.26	27.097	0	0	0
2012	6	70249.58	0	0	0	0	0	1	0	0	0	0	0	0	3.47	153.615	0	0	0
2012	7	70331.95	0	0	0	0	0	0	1	0	0	0	0	0	0.33	370.603	0	0	0
2012	8	70407.15	0	0	0	0	0	0	0	1	0	0	0	0	0.00	322.644	0	0	0
2012	9	70475.04	0	0	0	0	0	0	0	0	1	0	0	0	2.24	158.442	0	0	0
2012	10	70539.48	0	0	0	0	0	0	0	0	0	1	0	0	74.66	23.415	0	0	0
2012	11	70603.10	0	0	0	0	0	0	0	0	0	0	1	0	276.53	2.291	0	0	0
2012	12	70668.51	0	0	0	0	0	0	0	0	0	0	0	0	467.80	0.000	0	0	0
2013	1	70739.49	1	0	0	0	0	0	0	0	0	0	0	0	736.04	0.000	0	0	0
2013	2	70813.66	0	1	0	0	0	0	0	0	0	0	0	0	846.44	0.000	0	0	0
2013	3	70896.91	0	0	1	0	0	0	0	0	0	0	0	0	763.23	0.000	0	0	0
2013	4	70994.76	0	0	0	1	0	0	0	0	0	0	0	0	522.37	0.000	0	0	0
2013	5	71107.36	0	0	0	0	1	0	0	0	0	0	0	0	134.27	22.057	0	0	0
2013	6	71237.14	0	0	0	0	0	1	0	0	0	0	0	0	13.76	117.142	0	0	0
2013	7	71386.70	0	0	0	0	0	0	1	0	0	0	0	0	0.00	237.671	0	0	0
2013	8	71558.48	0	0	0	0	0	0	0	1	0	0	0	0	0.00	187.421	0	0	0
2013	9	71743.72	0	0	0	0	0	0	0	0	1	0	0	0	0.64	183.968	0	0	0
2013	10	71941.64	0	0	0	0	0	0	0	0	0	1	0	0	21.66	67.350	0	0	0
2013	11	72148.61	0	0	0	0	0	0	0	0	0	0	1	0	267.71	6.005	0	0	0
2013	12	72361.20	0	0	0	0	0	0	0	0	0	0	0	0	668.46	0.000	0	0	0

YEAR	MONTH	gdp_imi	jan0700n	feb0700n	mar0700n	apr0700n	may0700n	jun0700n	jul0700n	aug0700n	sep0700n	oct0700n	nov0700n	dd01600	bhdd5570	bcdd6570	dd18on	dec17	jan18
2014	1	72579.39	1	0	0	0	0	0	0	0	0	0	0	0	955.41	0.000	0	0	0
2014	2	72785.70	0	1	0	0	0	0	0	0	0	0	0	0	1173.96	0.000	0	0	0
2014	3	72987.38	0	0	1	0	0	0	0	0	0	0	0	0	1016.01	0.000	0	0	0
2014	4	73187.80	0	0	0	1	0	0	0	0	0	0	0	0	524.45	0.000	0	0	0
2014	5	73376.39	0	0	0	0	1	0	0	0	0	0	0	0	128.47	15.561	0	0	0
2014	6	73549.80	0	0	0	0	0	1	0	0	0	0	0	0	26.03	119.646	0	0	0
2014	7	73704.51	0	0	0	0	0	0	1	0	0	0	0	0	0.00	223.779	0	0	0
2014	8	73841.75	0	0	0	0	0	0	0	1	0	0	0	0	0.00	143.601	0	0	0
2014	9	73958.65	0	0	0	0	0	0	0	0	1	0	0	0	1.67	179.452	0	0	0
2014	10	74059.24	0	0	0	0	0	0	0	0	0	1	0	0	46.68	18.752	0	0	0
2014	11	74145.50	0	0	0	0	0	0	0	0	0	0	1	0	283.93	0.360	0	0	0
2014	12	74219.07	0	0	0	0	0	0	0	0	0	0	0	0	669.60	0.000	0	0	0
2015	1	74282.81	1	0	0	0	0	0	0	0	0	0	0	0	832.76	0.000	0	0	0
2015	2	74334.88	0	1	0	0	0	0	0	0	0	0	0	0	1002.44	0.000	0	0	0
2015	3	74380.06	0	0	1	0	0	0	0	0	0	0	0	0	1039.32	0.000	0	0	0
2015	4	74421.45	0	0	0	1	0	0	0	0	0	0	0	0	429.08	0.000	0	0	0
2015	5	74459.13	0	0	0	0	1	0	0	0	0	0	0	0	113.38	30.664	0	0	0
2015	6	74494.91	0	0	0	0	0	1	0	0	0	0	0	0	11.49	127.042	0	0	0
2015	7	74530.58	0	0	0	0	0	0	1	0	0	0	0	0	0.08	166.165	0	0	0
2015	8	74568.29	0	0	0	0	0	0	0	1	0	0	0	0	0.00	232.173	0	0	0
2015	9	74608.07	0	0	0	0	0	0	0	0	1	0	0	0	0.00	181.628	0	0	0
2015	10	74651.77	0	0	0	0	0	0	0	0	0	1	0	0	21.81	60.166	0	0	0
2015	11	74700.57	0	0	0	0	0	0	0	0	0	0	1	0	140.82	1.587	0	0	0
2015	12	74755.73	0	0	0	0	0	0	0	0	0	0	0	0	394.07	0.000	0	0	0
2016	1	74819.53	1	0	0	0	0	0	0	0	0	0	0	1	597.23	0.000	0	0	0
2016	2	74889.86	0	1	0	0	0	0	0	0	0	0	0	1	829.99	0.000	0	0	0
2016	3	74969.97	0	0	1	0	0	0	0	0	0	0	0	1	567.38	0.000	0	0	0
2016	4	75062.44	0	0	0	1	0	0	0	0	0	0	0	1	306.12	0.000	0	0	0
2016	5	75167.39	0	0	0	0	1	0	0	0	0	0	0	1	123.43	1.849	0	0	0
2016	6	75285.90	0	0	0	0	0	1	0	0	0	0	0	1	21.81	134.029	0	0	0
2016	7	75419.24	0	0	0	0	0	0	1	0	0	0	0	1	0.00	224.924	0	0	0
2016	8	75569.74	0	0	0	0	0	0	0	1	0	0	0	1	0.00	332.380	0	0	0
2016	9	75731.14	0	0	0	0	0	0	0	0	1	0	0	1	0.00	249.976	0	0	0
2016	10	75904.35	0	0	0	0	0	0	0	0	0	1	0	1	7.45	97.539	0	0	0
2016	11	76087.73	0	0	0	0	0	0	0	0	0	0	1	1	122.21	16.412	0	0	0
2016	12	76279.90	0	0	0	0	0	0	0	0	0	0	0	1	543.87	0.655	0	0	0
2017	1	76482.59	1	0	0	0	0	0	0	0	0	0	0	1	805.30	0.000	0	0	0
2017	2	76680.91	0	1	0	0	0	0	0	0	0	0	0	1	615.97	0.000	0	0	0
2017	3	76883.27	0	0	1	0	0	0	0	0	0	0	0	1	470.74	0.000	0	0	0
2017	4	77095.17	0	0	0	1	0	0	0	0	0	0	0	1	332.02	4.173	0	0	0
2017	5	77308.34	0	0	0	0	1	0	0	0	0	0	0	1	86.59	27.571	0	0	0
2017	6	77521.28	0	0	0	0	0	1	0	0	0	0	0	1	16.97	105.426	0	0	0

YEAR	MONTH	gdp_im	jand07on	feb07on	mar07on	apr07on	may07on	jun07on	jul07on	aug07on	sep07on	oct07on	nov07on	d16on	bhdd55d70	bcdd65d70	d18on	dec17	jan18
2017	7	77732.54	0	0	0	0	0	0	1	0	0	0	0	1	0.00	230.946	0	0	0
2017	8	77944.80	0	0	0	0	0	0	0	1	0	0	0	1	0.00	215.761	0	0	0
2017	9	78151.31	0	0	0	0	0	0	0	0	1	0	0	1	0.00	104.052	0	0	0
2017	10	78355.67	0	0	0	0	0	0	0	0	0	1	0	1	3.99	109.402	0	0	0
2017	11	78558.06	0	0	0	0	0	0	0	0	0	0	1	1	238.29	11.798	0	0	0
2017	12	78758.61	0	0	0	0	0	0	0	0	0	0	0	1	506.33	0.000	0	1	0
2018	1	78960.77	1	0	0	0	0	0	0	0	0	0	0	1	1011.93	0.000	1	0	1
2018	2	79151.73	0	1	0	0	0	0	0	0	0	0	0	1	845.60	0.000	1	0	0
2018	3	79341.43	0	0	1	0	0	0	0	0	0	0	0	1	583.35	0.000	1	0	0
2018	4	79536.43	0	0	0	1	0	0	0	0	0	0	0	1	514.84	0.425	1	0	0
2018	5	79730.42	0	0	0	0	1	0	0	0	0	0	0	1	176.70	23.612	1	0	0
2018	6	79923.58	0	0	0	0	0	1	0	0	0	0	0	1	1.87	187.339	1	0	0
2018	7	80115.85	0	0	0	0	0	0	1	0	0	0	0	1	0.00	299.899	1	0	0
2018	8	80307.71	0	0	0	0	0	0	0	1	0	0	0	1	0.00	251.580	1	0	0
2018	9	80487.58	0	0	0	0	0	0	0	0	1	0	0	1	0.00	259.663	1	0	0
2018	10	80652.83	0	0	0	0	0	0	0	0	0	1	0	1	38.89	129.398	1	0	0
2018	11	80798.03	0	0	0	0	0	0	0	0	0	0	1	1	302.93	18.277	1	0	0
2018	12	80917.29	0	0	0	0	0	0	0	0	0	0	0	1	601.89	0.000	1	0	0
2019	1	81006.32	1	0	0	0	0	0	0	0	0	0	0	1	614.13	0.000	1	0	0
2019	2	81055.83	0	1	0	0	0	0	0	0	0	0	0	1	901.60	0.000	1	0	0
2019	3	81064.79	0	0	1	0	0	0	0	0	0	0	0	1	750.78	0.000	1	0	0
2019	4	81027.22	0	0	0	1	0	0	0	0	0	0	0	1	390.24	0.000	1	0	0
2019	5	80935.66	0	0	0	0	1	0	0	0	0	0	0	1	114.51	6.251	1	0	0
2019	6	80785.09	0	0	0	0	0	1	0	0	0	0	0	1	19.24	99.748	1	0	0
2019	7	80569.92	0	0	0	0	0	0	1	0	0	0	0	1	0.00	305.266	1	0	0
2019	8	80289.58	0	0	0	0	0	0	0	1	0	0	0	1	0.00	289.885	1	0	0
2019	9	79966.66	0	0	0	0	0	0	0	0	1	0	0	1	0.00	160.946	1	0	0
2019	10	79611.27	0	0	0	0	0	0	0	0	0	1	0	1	22.53	102.170	1	0	0
2019	11	79238.12	0	0	0	0	0	0	0	0	0	0	1	1	297.95	5.956	1	0	0
2019	12	78861.52	0	0	0	0	0	0	0	0	0	0	0	1	607.70	0.000	1	0	0
2020	1	78490.10	1	0	0	0	0	0	0	0	0	0	0	1	605.26	0.000	1	0	0
2020	2	78155.54	0	1	0	0	0	0	0	0	0	0	0	1	701.28	0.000	1	0	0
2020	3	77859.98	0	0	1	0	0	0	0	0	0	0	0	1	655.79	0.000	1	0	0
2020	4	77612.78	0	0	0	1	0	0	0	0	0	0	0	1	354.86	0.000	1	0	0
2020	5	77434.43	0	0	0	0	1	0	0	0	0	0	0	1	204.78	3.845	1	0	0
2020	6	77338.55	0	0	0	0	0	1	0	0	0	0	0	1	34.79	127.696	1	0	0
2020	7	77339.56	0	0	0	0	0	0	1	0	0	0	0	1	0.00	297.919	1	0	0
2020	8	77440.92	0	0	0	0	0	0	0	1	0	0	0	1	0.00	278.218	1	0	0
2020	9	77628.98	0	0	0	0	0	0	0	0	1	0	0	1	0.80	179.763	1	0	0
2020	10	77893.71	0	0	0	0	0	0	0	0	0	1	0	1	48.01	22.810	1	0	0
2020	11	78222.83	0	0	0	0	0	0	0	0	0	0	1	1	212.98	2.324	1	0	0
2020	12	78605.47	0	0	0	0	0	0	0	0	0	0	0	1	461.60	0.916	1	0	0

YEAR	MONTH	gdp_im	jan70nn	feb70nn	mar70nn	apr70nn	may70nn	jun70nn	jul70nn	aug70nn	sep70nn	oct70nn	nov70nn	d16on	bhdd55d70	bcdd65d70	d18on	dec17	jan18
2021	1	79036.95	1	0	0	0	0	0	0	0	0	0	0	1	689.156	0.000	1	0	0
2021	2	79476.39	0	1	0	0	0	0	0	0	0	0	0	1	885.309	0.000	1	0	0
2021	3	79933.83	0	0	1	0	0	0	0	0	0	0	0	1	703.560	0.221	1	0	0
2021	4	80414.16	0	0	0	1	0	0	0	0	0	0	0	1	389.426	2.548	1	0	0
2021	5	80890.75	0	0	0	0	1	0	0	0	0	0	0	1	124.656	18.512	1	0	0
2021	6	81352.20	0	0	0	0	0	1	0	0	0	0	0	1	17.782	106.676	1	0	0
2021	7	81787.28	0	0	0	0	0	0	1	0	0	0	0	1	0.189	243.038	1	0	0
2021	8	82197.85	0	0	0	0	0	0	0	1	0	0	0	1	0.000	254.533	1	0	0
2021	9	82572.80	0	0	0	0	0	0	0	0	1	0	0	1	0.696	176.959	1	0	0
2021	10	82921.58	0	0	0	0	0	0	0	0	0	1	0	1	41.135	54.558	1	0	0
2021	11	83247.26	0	0	0	0	0	0	0	0	0	0	1	1	232.738	4.977	1	0	0
2021	12	83552.42	0	0	0	0	0	0	0	0	0	0	0	1	545.497	0.063	1	0	0
2022	1	83844.59	1	0	0	0	0	0	0	0	0	0	0	1	792.471	0.000	1	0	0
2022	2	84108.50	0	1	0	0	0	0	0	0	0	0	0	1	885.309	0.000	1	0	0
2022	3	84360.93	0	0	1	0	0	0	0	0	0	0	0	1	703.560	0.221	1	0	0
2022	4	84612.86	0	0	0	1	0	0	0	0	0	0	0	1	389.426	2.548	1	0	0
2022	5	84858.20	0	0	0	0	1	0	0	0	0	0	0	1	124.656	18.512	1	0	0
2022	6	85099.81	0	0	0	0	0	1	0	0	0	0	0	1	17.782	106.676	1	0	0
2022	7	85340.32	0	0	0	0	0	0	1	0	0	0	0	1	0.189	243.038	1	0	0
2022	8	85584.82	0	0	0	0	0	0	0	1	0	0	0	1	0.000	254.533	1	0	0
2022	9	85824.84	0	0	0	0	0	0	0	0	1	0	0	1	0.696	176.959	1	0	0
2022	10	86063.55	0	0	0	0	0	0	0	0	0	1	0	1	41.135	54.558	1	0	0
2022	11	86300.24	0	0	0	0	0	0	0	0	0	0	1	1	232.738	4.977	1	0	0
2022	12	86534.12	0	0	0	0	0	0	0	0	0	0	0	1	545.497	0.063	1	0	0
2023	1	86768.21	1	0	0	0	0	0	0	0	0	0	0	1	792.471	0.000	1	0	0
2023	2	86986.91	0	1	0	0	0	0	0	0	0	0	0	1	885.309	0.000	1	0	0
2023	3	87200.82	0	0	1	0	0	0	0	0	0	0	0	1	703.560	0.221	1	0	0
2023	4	87416.38	0	0	0	1	0	0	0	0	0	0	0	1	389.426	2.548	1	0	0
2023	5	87625.42	0	0	0	0	1	0	0	0	0	0	0	1	124.656	18.512	1	0	0
2023	6	87827.25	0	0	0	0	0	1	0	0	0	0	0	1	17.782	106.676	1	0	0
2023	7	88021.09	0	0	0	0	0	0	1	0	0	0	0	1	0.189	243.038	1	0	0
2023	8	88209.93	0	0	0	0	0	0	0	1	0	0	0	1	0.000	254.533	1	0	0
2023	9	88388.31	0	0	0	0	0	0	0	0	1	0	0	1	0.696	176.959	1	0	0
2023	10	88559.98	0	0	0	0	0	0	0	0	0	1	0	1	41.135	54.558	1	0	0
2023	11	88725.68	0	0	0	0	0	0	0	0	0	0	1	1	232.738	4.977	1	0	0
2023	12	88886.07	0	0	0	0	0	0	0	0	0	0	0	1	545.497	0.063	1	0	0
2024	1	89044.39	1	0	0	0	0	0	0	0	0	0	0	1	792.471	0.000	1	0	0
2024	2	89193.78	0	1	0	0	0	0	0	0	0	0	0	1	885.309	0.000	1	0	0
2024	3	89340.03	0	0	1	0	0	0	0	0	0	0	0	1	703.560	0.221	1	0	0
2024	4	89486.24	0	0	0	1	0	0	0	0	0	0	0	1	389.426	2.548	1	0	0
2024	5	89630.60	0	0	0	0	1	0	0	0	0	0	0	1	124.656	18.512	1	0	0
2024	6	89773.82	0	0	0	0	0	1	0	0	0	0	0	1	17.782	106.676	1	0	0

YEAR	MONTH	gdp_im	jand07on	febd07on	mard07on	apr d07on	may d07on	jund07on	juld07on	aug d07on	sep d07on	oct d07on	nov d07on	d16on	bhdd55d70	bcdd65d70	d18on	dec17	jan18
2024	7	89916.56	0	0	0	0	0	0	1	0	0	0	0	1	0.189	243.038	1	0	0
2024	8	90061.39	0	0	0	0	0	0	0	1	0	0	0	1	0.000	254.533	1	0	0
2024	9	90203.45	0	0	0	0	0	0	0	0	1	0	0	1	0.696	176.959	1	0	0
2024	10	90344.82	0	0	0	0	0	0	0	0	0	1	0	1	41.135	54.558	1	0	0
2024	11	90485.29	0	0	0	0	0	0	0	0	0	0	1	1	232.738	4.977	1	0	0
2024	12	90624.60	0	0	0	0	0	0	0	0	0	0	0	1	545.497	0.063	1	0	0
2025	1	90764.78	1	0	0	0	0	0	0	0	0	0	0	1	792.471	0.000	1	0	0
2025	2	90896.63	0	1	0	0	0	0	0	0	0	0	0	1	885.309	0.000	1	0	0
2025	3	91026.72	0	0	1	0	0	0	0	0	0	0	0	1	703.560	0.221	1	0	0
2025	4	91159.18	0	0	0	1	0	0	0	0	0	0	0	1	389.426	2.548	1	0	0
2025	5	91289.30	0	0	0	0	1	0	0	0	0	0	0	1	124.656	18.512	1	0	0
2025	6	91416.88	0	0	0	0	0	1	0	0	0	0	0	1	17.782	106.676	1	0	0
2025	7	91541.68	0	0	0	0	0	0	1	0	0	0	0	1	0.189	243.038	1	0	0
2025	8	91665.78	0	0	0	0	0	0	0	1	0	0	0	1	0.000	254.533	1	0	0
2025	9	91785.63	0	0	0	0	0	0	0	0	1	0	0	1	0.696	176.959	1	0	0
2025	10	91903.69	0	0	0	0	0	0	0	0	0	1	0	1	41.135	54.558	1	0	0
2025	11	92020.46	0	0	0	0	0	0	0	0	0	0	1	1	232.738	4.977	1	0	0
2025	12	92136.38	0	0	0	0	0	0	0	0	0	0	0	1	545.497	0.063	1	0	0
2026	1	92253.82	1	0	0	0	0	0	0	0	0	0	0	1	792.471	0.000	1	0	0
2026	2	92365.67	0	1	0	0	0	0	0	0	0	0	0	1	885.309	0.000	1	0	0
2026	3	92478.03	0	0	1	0	0	0	0	0	0	0	0	1	703.560	0.221	1	0	0
2026	4	92595.18	0	0	0	1	0	0	0	0	0	0	0	1	389.426	2.548	1	0	0
2026	5	92713.80	0	0	0	0	1	0	0	0	0	0	0	1	124.656	18.512	1	0	0
2026	6	92834.35	0	0	0	0	0	1	0	0	0	0	0	1	17.782	106.676	1	0	0
2026	7	92957.28	0	0	0	0	0	0	1	0	0	0	0	1	0.189	243.038	1	0	0
2026	8	93084.93	0	0	0	0	0	0	0	1	0	0	0	1	0.000	254.533	1	0	0
2026	9	93213.21	0	0	0	0	0	0	0	0	1	0	0	1	0.696	176.959	1	0	0
2026	10	93344.20	0	0	0	0	0	0	0	0	0	1	0	1	41.135	54.558	1	0	0
2026	11	93477.91	0	0	0	0	0	0	0	0	0	0	1	1	232.738	4.977	1	0	0
2026	12	93614.37	0	0	0	0	0	0	0	0	0	0	0	1	545.497	0.063	1	0	0
2027	1	93755.89	1	0	0	0	0	0	0	0	0	0	0	1	792.471	0.000	1	0	0
2027	2	93893.21	0	1	0	0	0	0	0	0	0	0	0	1	885.309	0.000	1	0	0
2027	3	94033.20	0	0	1	0	0	0	0	0	0	0	0	1	703.560	0.221	1	0	0
2027	4	94180.69	0	0	0	1	0	0	0	0	0	0	0	1	389.426	2.548	1	0	0
2027	5	94331.03	0	0	0	0	1	0	0	0	0	0	0	1	124.656	18.512	1	0	0
2027	6	94484.24	0	0	0	0	0	1	0	0	0	0	0	1	17.782	106.676	1	0	0
2027	7	94640.33	0	0	0	0	0	0	1	0	0	0	0	1	0.189	243.038	1	0	0
2027	8	94801.75	0	0	0	0	0	0	0	1	0	0	0	1	0.000	254.533	1	0	0
2027	9	94962.94	0	0	0	0	0	0	0	0	1	0	0	1	0.696	176.959	1	0	0
2027	10	95126.13	0	0	0	0	0	0	0	0	0	1	0	1	41.135	54.558	1	0	0
2027	11	95290.95	0	0	0	0	0	0	0	0	0	0	1	1	232.738	4.977	1	0	0
2027	12	95457.03	0	0	0	0	0	0	0	0	0	0	0	1	545.497	0.063	1	0	0

YEAR	MONTH	gdp_im	jan0n	feb0n	mar0n	apr0n	may0n	jun0n	jul0n	aug0n	sep0n	oct0n	nov0n	d16	bhdd55d70	bcdd65d70	d18on	dec17	jan18
2028	1	95626.74	1	0	0	0	0	0	0	0	0	0	0	1	792.471	0.000	1	0	0
2028	2	95791.49	0	1	0	0	0	0	0	0	0	0	0	1	885.309	0.000	1	0	0
2028	3	95956.40	0	0	1	0	0	0	0	0	0	0	0	1	703.560	0.221	1	0	0
2028	4	96123.86	0	0	0	1	0	0	0	0	0	0	0	1	389.426	2.548	1	0	0
2028	5	96290.74	0	0	0	0	1	0	0	0	0	0	0	1	124.656	18.512	1	0	0
2028	6	96456.70	0	0	0	0	0	1	0	0	0	0	0	1	17.782	106.676	1	0	0
2028	7	96621.37	0	0	0	0	0	0	1	0	0	0	0	1	0.189	243.038	1	0	0
2028	8	96787.29	0	0	0	0	0	0	0	1	0	0	0	1	0.000	254.533	1	0	0
2028	9	96949.23	0	0	0	0	0	0	0	0	1	0	0	1	0.696	176.959	1	0	0
2028	10	97109.97	0	0	0	0	0	0	0	0	0	1	0	1	41.135	54.558	1	0	0
2028	11	97269.65	0	0	0	0	0	0	0	0	0	0	1	1	232.738	4.977	1	0	0
2028	12	97428.39	0	0	0	0	0	0	0	0	0	0	0	1	545.497	0.063	1	0	0
2029	1	97588.90	1	0	0	0	0	0	0	0	0	0	0	1	792.471	0.000	1	0	0
2029	2	97740.99	0	1	0	0	0	0	0	0	0	0	0	1	885.309	0.000	1	0	0
2029	3	97892.53	0	0	1	0	0	0	0	0	0	0	0	1	703.560	0.221	1	0	0
2029	4	98048.77	0	0	0	1	0	0	0	0	0	0	0	1	389.426	2.548	1	0	0
2029	5	98204.68	0	0	0	0	1	0	0	0	0	0	0	1	124.656	18.512	1	0	0
2029	6	98360.39	0	0	0	0	0	1	0	0	0	0	0	1	17.782	106.676	1	0	0
2029	7	98516.01	0	0	0	0	0	0	1	0	0	0	0	1	0.189	243.038	1	0	0
2029	8	98674.15	0	0	0	0	0	0	0	1	0	0	0	1	0.000	254.533	1	0	0
2029	9	98829.70	0	0	0	0	0	0	0	0	1	0	0	1	0.696	176.959	1	0	0
2029	10	98985.21	0	0	0	0	0	0	0	0	0	1	0	1	41.135	54.558	1	0	0
2029	11	99140.64	0	0	0	0	0	0	0	0	0	0	1	1	232.738	4.977	1	0	0
2029	12	99296.00	0	0	0	0	0	0	0	0	0	0	0	1	545.497	0.063	1	0	0
2030	1	99453.80	1	0	0	0	0	0	0	0	0	0	0	1	792.471	0.000	1	0	0
2030	2	99603.86	0	1	0	0	0	0	0	0	0	0	0	1	885.309	0.000	1	0	0
2030	3	99753.81	0	0	1	0	0	0	0	0	0	0	0	1	703.560	0.221	1	0	0
2030	4	99908.69	0	0	0	1	0	0	0	0	0	0	0	1	389.426	2.548	1	0	0
2030	5	100063.43	0	0	0	0	1	0	0	0	0	0	0	1	124.656	18.512	1	0	0
2030	6	100217.99	0	0	0	0	0	1	0	0	0	0	0	1	17.782	106.676	1	0	0
2030	7	100372.37	0	0	0	0	0	0	1	0	0	0	0	1	0.189	243.038	1	0	0
2030	8	100529.10	0	0	0	0	0	0	0	1	0	0	0	1	0.000	254.533	1	0	0
2030	9	100683.16	0	0	0	0	0	0	0	0	1	0	0	1	0.696	176.959	1	0	0
2030	10	100837.09	0	0	0	0	0	0	0	0	0	1	0	1	41.135	54.558	1	0	0
2030	11	100990.93	0	0	0	0	0	0	0	0	0	0	1	1	232.738	4.977	1	0	0
2030	12	101144.70	0	0	0	0	0	0	0	0	0	0	0	1	545.497	0.063	1	0	0
2031	1	101300.97	1	0	0	0	0	0	0	0	0	0	0	1	792.471	0.000	1	0	0
2031	2	101449.66	0	1	0	0	0	0	0	0	0	0	0	1	885.309	0.000	1	0	0
2031	3	101598.38	0	0	1	0	0	0	0	0	0	0	0	1	703.560	0.221	1	0	0
2031	4	101752.19	0	0	0	1	0	0	0	0	0	0	0	1	389.426	2.548	1	0	0
2031	5	101906.09	0	0	0	0	1	0	0	0	0	0	0	1	124.656	18.512	1	0	0
2031	6	102060.09	0	0	0	0	0	1	0	0	0	0	0	1	17.782	106.676	1	0	0

YEAR	MONTH	gdp_im	jandd0	febdd0	mardd0	aprdd0	maydd0	jundd0	juldd0	augdd0	sepdd0	octdd0	novdd0	d16	bhdd55d70	bcdd65d70	d18on	dec17	jan18
2031	7	102214.23	0	0	0	0	0	0	1	0	0	0	0	1	0.189	243.038	1	0	0
2031	8	102371.06	0	0	0	0	0	0	0	1	0	0	0	1	0.000	254.533	1	0	0
2031	9	102525.52	0	0	0	0	0	0	0	0	1	0	0	1	0.696	176.959	1	0	0
2031	10	102680.17	0	0	0	0	0	0	0	0	0	1	0	1	41.135	54.558	1	0	0
2031	11	102835.00	0	0	0	0	0	0	0	0	0	0	1	1	232.738	4.977	1	0	0
2031	12	102990.03	0	0	0	0	0	0	0	0	0	0	0	1	545.497	0.063	1	0	0
2032	1	103147.82	1	0	0	0	0	0	0	0	0	0	0	1	792.471	0.000	1	0	0
2032	2	103300.73	0	1	0	0	0	0	0	0	0	0	0	1	885.309	0.000	1	0	0
2032	3	103453.86	0	0	1	0	0	0	0	0	0	0	0	1	703.560	0.221	1	0	0
2032	4	103609.77	0	0	0	1	0	0	0	0	0	0	0	1	389.426	2.548	1	0	0
2032	5	103765.93	0	0	0	0	1	0	0	0	0	0	0	1	124.656	18.512	1	0	0
2032	6	103922.35	0	0	0	0	0	1	0	0	0	0	0	1	17.782	106.676	1	0	0
2032	7	104079.04	0	0	0	0	0	0	1	0	0	0	0	1	0.189	243.038	1	0	0
2032	8	104238.60	0	0	0	0	0	0	0	1	0	0	0	1	0.000	254.533	1	0	0
2032	9	104395.94	0	0	0	0	0	0	0	0	1	0	0	1	0.696	176.959	1	0	0
2032	10	104553.70	0	0	0	0	0	0	0	0	0	1	0	1	41.135	54.558	1	0	0
2032	11	104711.93	0	0	0	0	0	0	0	0	0	0	1	1	232.738	4.977	1	0	0
2032	12	104870.69	0	0	0	0	0	0	0	0	0	0	0	1	545.497	0.063	1	0	0
2033	1	105032.65	1	0	0	0	0	0	0	0	0	0	0	1	792.471	0.000	1	0	0
2033	2	105187.39	0	1	0	0	0	0	0	0	0	0	0	1	885.309	0.000	1	0	0
2033	3	105342.79	0	0	1	0	0	0	0	0	0	0	0	1	703.560	0.221	1	0	0
2033	4	105504.20	0	0	0	1	0	0	0	0	0	0	0	1	389.426	2.548	1	0	0
2033	5	105666.42	0	0	0	0	1	0	0	0	0	0	0	1	124.656	18.512	1	0	0
2033	6	105829.52	0	0	0	0	0	1	0	0	0	0	0	1	17.782	106.676	1	0	0
2033	7	105993.53	0	0	0	0	0	0	1	0	0	0	0	1	0.189	243.038	1	0	0
2033	8	106161.16	0	0	0	0	0	0	0	1	0	0	0	1	0.000	254.533	1	0	0
2033	9	106326.89	0	0	0	0	0	0	0	0	1	0	0	1	0.696	176.959	1	0	0
2033	10	106493.31	0	0	0	0	0	0	0	0	0	1	0	1	41.135	54.558	1	0	0
2033	11	106660.31	0	0	0	0	0	0	0	0	0	0	1	1	232.738	4.977	1	0	0
2033	12	106827.79	0	0	0	0	0	0	0	0	0	0	0	1	545.497	0.063	1	0	0
2034	1	106998.38	1	0	0	0	0	0	0	0	0	0	0	1	792.471	0.000	1	0	0
2034	2	107160.96	0	1	0	0	0	0	0	0	0	0	0	1	885.309	0.000	1	0	0
2034	3	107323.69	0	0	1	0	0	0	0	0	0	0	0	1	703.560	0.221	1	0	0
2034	4	107491.97	0	0	0	1	0	0	0	0	0	0	0	1	389.426	2.548	1	0	0
2034	5	107660.19	0	0	0	0	1	0	0	0	0	0	0	1	124.656	18.512	1	0	0
2034	6	107828.24	0	0	0	0	0	1	0	0	0	0	0	1	17.782	106.676	1	0	0
2034	7	107996.01	0	0	0	0	0	0	1	0	0	0	0	1	0.189	243.038	1	0	0
2034	8	108166.22	0	0	0	0	0	0	0	1	0	0	0	1	0.000	254.533	1	0	0
2034	9	108333.41	0	0	0	0	0	0	0	0	1	0	0	1	0.696	176.959	1	0	0
2034	10	108500.38	0	0	0	0	0	0	0	0	0	1	0	1	41.135	54.558	1	0	0
2034	11	108667.18	0	0	0	0	0	0	0	0	0	0	1	1	232.738	4.977	1	0	0
2034	12	108833.85	0	0	0	0	0	0	0	0	0	0	0	1	545.497	0.063	1	0	0

YEAR	MONTH	gdp_im	jandd07on	febdd07on	mardd07on	aprdd07on	maydd07on	jundd07on	juldd07on	augdd07on	sepdd07on	octdd07on	novdd07on	d16	bhdd55d70	bcdd65d70	d18on	dec17	jan18
2035	1	109003.18	1	0	0	0	0	0	0	0	0	0	0	1	792.471	0.000	1	0	0
2035	2	109164.29	0	1	0	0	0	0	0	0	0	0	0	1	885.309	0.000	1	0	0
2035	3	109325.42	0	0	1	0	0	0	0	0	0	0	0	1	703.560	0.221	1	0	0
2035	4	109492.08	0	0	0	1	0	0	0	0	0	0	0	1	389.426	2.548	1	0	0
2035	5	109658.85	0	0	0	0	1	0	0	0	0	0	0	1	124.656	18.512	1	0	0
2035	6	109825.79	0	0	0	0	0	1	0	0	0	0	0	1	17.782	106.676	1	0	0
2035	7	109992.93	0	0	0	0	0	0	1	0	0	0	0	1	0.189	243.038	1	0	0
2035	8	110163.00	0	0	0	0	0	0	0	1	0	0	0	1	0.000	254.533	1	0	0
2035	9	110330.42	0	0	0	0	0	0	0	0	1	0	0	1	0.696	176.959	1	0	0
2035	10	110497.82	0	0	0	0	0	0	0	0	0	1	0	1	41.135	54.558	1	0	0
2035	11	110665.11	0	0	0	0	0	0	0	0	0	0	1	1	232.738	4.977	1	0	0
2035	12	110832.18	0	0	0	0	0	0	0	0	0	0	0	1	545.497	0.063	1	0	0
2036	1	111001.66	1	0	0	0	0	0	0	0	0	0	0	1	792.471	0.000	1	0	0
2036	2	111165.27	0	1	0	0	0	0	0	0	0	0	0	1	885.309	0.000	1	0	0
2036	3	111328.37	0	0	1	0	0	0	0	0	0	0	0	1	703.560	0.221	1	0	0
2036	4	111493.58	0	0	0	1	0	0	0	0	0	0	0	1	389.426	2.548	1	0	0
2036	5	111658.06	0	0	0	0	1	0	0	0	0	0	0	1	124.656	18.512	1	0	0
2036	6	111821.71	0	0	0	0	0	1	0	0	0	0	0	1	17.782	106.676	1	0	0
2036	7	111984.45	0	0	0	0	0	0	1	0	0	0	0	1	0.189	243.038	1	0	0
2036	8	112148.93	0	0	0	0	0	0	0	1	0	0	0	1	0.000	254.533	1	0	0
2036	9	112309.93	0	0	0	0	0	0	0	0	1	0	0	1	0.696	176.959	1	0	0
2036	10	112470.24	0	0	0	0	0	0	0	0	0	1	0	1	41.135	54.558	1	0	0
2036	11	112629.97	0	0	0	0	0	0	0	0	0	0	1	1	232.738	4.977	1	0	0
2036	12	112789.24	0	0	0	0	0	0	0	0	0	0	0	1	545.497	0.063	1	0	0
2037	1	112950.77	1	0	0	0	0	0	0	0	0	0	0	1	792.471	0.000	1	0	0
2037	2	113104.25	0	1	0	0	0	0	0	0	0	0	0	1	885.309	0.000	1	0	0
2037	3	113257.61	0	0	1	0	0	0	0	0	0	0	0	1	703.560	0.221	1	0	0
2037	4	113416.17	0	0	0	1	0	0	0	0	0	0	0	1	389.426	2.548	1	0	0
2037	5	113574.83	0	0	0	0	1	0	0	0	0	0	0	1	124.656	18.512	1	0	0
2037	6	113733.70	0	0	0	0	0	1	0	0	0	0	0	1	17.782	106.676	1	0	0
2037	7	113892.90	0	0	0	0	0	0	1	0	0	0	0	1	0.189	243.038	1	0	0
2037	8	114055.10	0	0	0	0	0	0	0	1	0	0	0	1	0.000	254.533	1	0	0
2037	9	114215.05	0	0	0	0	0	0	0	0	1	0	0	1	0.696	176.959	1	0	0
2037	10	114375.35	0	0	0	0	0	0	0	0	0	1	0	1	41.135	54.558	1	0	0
2037	11	114535.98	0	0	0	0	0	0	0	0	0	0	1	1	232.738	4.977	1	0	0
2037	12	114696.91	0	0	0	0	0	0	0	0	0	0	0	1	545.497	0.063	1	0	0
2038	1	114860.78	1	0	0	0	0	0	0	0	0	0	0	1	792.471	0.000	1	0	0
2038	2	115016.98	0	1	0	0	0	0	0	0	0	0	0	1	885.309	0.000	1	0	0
2038	3	115173.41	0	0	1	0	0	0	0	0	0	0	0	1	703.560	0.221	1	0	0
2038	4	115335.38	0	0	0	1	0	0	0	0	0	0	0	1	389.426	2.548	1	0	0
2038	5	115497.56	0	0	0	0	1	0	0	0	0	0	0	1	124.656	18.512	1	0	0
2038	6	115659.93	0	0	0	0	0	1	0	0	0	0	0	1	17.782	106.676	1	0	0

YEAR	MONTH	gdp_im	jandd0	febdd0	mardd0	aprdd0	maydd0	jundd0	juldd0	augdd0	sepdd0	octdd0	novdd0	d16	bhdd55d70	bcdd65d70	d18on	dec17	jan18
2038	7	115822.49	0	0	0	0	0	0	1	0	0	0	0	1	0.189	243.038	1	0	0
2038	8	115987.92	0	0	0	0	0	0	0	1	0	0	0	1	0.000	254.533	1	0	0
2038	9	116150.95	0	0	0	0	0	0	0	0	1	0	0	1	0.696	176.959	1	0	0
2038	10	116314.33	0	0	0	0	0	0	0	0	0	1	0	1	41.135	54.558	1	0	0
2038	11	116478.11	0	0	0	0	0	0	0	0	0	0	1	1	232.738	4.977	1	0	0
2038	12	116642.38	0	0	0	0	0	0	0	0	0	0	0	1	545.497	0.063	1	0	0
2039	1	116809.91	1	0	0	0	0	0	0	0	0	0	0	1	792.471	0.000	1	0	0
2039	2	116969.93	0	1	0	0	0	0	0	0	0	0	0	1	885.309	0.000	1	0	0
2039	3	117130.61	0	0	1	0	0	0	0	0	0	0	0	1	703.560	0.221	1	0	0
2039	4	117297.48	0	0	0	1	0	0	0	0	0	0	0	1	389.426	2.548	1	0	0
2039	5	117465.19	0	0	0	0	1	0	0	0	0	0	0	1	124.656	18.512	1	0	0
2039	6	117633.80	0	0	0	0	0	1	0	0	0	0	0	1	17.782	106.676	1	0	0
2039	7	117803.39	0	0	0	0	0	0	1	0	0	0	0	1	0.189	243.038	1	0	0
2039	8	117976.71	0	0	0	0	0	0	0	1	0	0	0	1	0.000	254.533	1	0	0
2039	9	118148.07	0	0	0	0	0	0	0	0	1	0	0	1	0.696	176.959	1	0	0
2039	10	118320.11	0	0	0	0	0	0	0	0	0	1	0	1	41.135	54.558	1	0	0
2039	11	118492.69	0	0	0	0	0	0	0	0	0	0	1	1	232.738	4.977	1	0	0
2039	12	118665.69	0	0	0	0	0	0	0	0	0	0	0	1	545.497	0.063	1	0	0
2040	1	118841.80	1	0	0	0	0	0	0	0	0	0	0	1	792.471	0.000	1	0	0
2040	2	119012.38	0	1	0	0	0	0	0	0	0	0	0	1	885.309	0.000	1	0	0
2040	3	119182.97	0	0	1	0	0	0	0	0	0	0	0	1	703.560	0.221	1	0	0
2040	4	119356.27	0	0	0	1	0	0	0	0	0	0	0	1	389.426	2.548	1	0	0
2040	5	119529.32	0	0	0	0	1	0	0	0	0	0	0	1	124.656	18.512	1	0	0
2040	6	119701.98	0	0	0	0	0	1	0	0	0	0	0	1	17.782	106.676	1	0	0
2040	7	119874.11	0	0	0	0	0	0	1	0	0	0	0	1	0.189	243.038	1	0	0
2040	8	120048.48	0	0	0	0	0	0	0	1	0	0	0	1	0.000	254.533	1	0	0
2040	9	120219.52	0	0	0	0	0	0	0	0	1	0	0	1	0.696	176.959	1	0	0
2040	10	120390.06	0	0	0	0	0	0	0	0	0	1	0	1	41.135	54.558	1	0	0
2040	11	120560.18	0	0	0	0	0	0	0	0	0	0	1	1	232.738	4.977	1	0	0
2040	12	120729.90	0	0	0	0	0	0	0	0	0	0	0	1	545.497	0.063	1	0	0
2041	1	120902.05	1	0	0	0	0	0	0	0	0	0	0	1	792.471	0.000	1	0	0
2041	2	121065.59	0	1	0	0	0	0	0	0	0	0	0	1	885.309	0.000	1	0	0
2041	3	121228.89	0	0	1	0	0	0	0	0	0	0	0	1	703.560	0.221	1	0	0
2041	4	121397.53	0	0	0	1	0	0	0	0	0	0	0	1	389.426	2.548	1	0	0
2041	5	121566.00	0	0	0	0	1	0	0	0	0	0	0	1	124.656	18.512	1	0	0
2041	6	121734.37	0	0	0	0	0	1	0	0	0	0	0	1	17.782	106.676	1	0	0
2041	7	121902.66	0	0	0	0	0	0	1	0	0	0	0	1	0.189	243.038	1	0	0
2041	8	122073.66	0	0	0	0	0	0	0	1	0	0	0	1	0.000	254.533	1	0	0
2041	9	122241.87	0	0	0	0	0	0	0	0	1	0	0	1	0.696	176.959	1	0	0
2041	10	122410.05	0	0	0	0	0	0	0	0	0	1	0	1	41.135	54.558	1	0	0
2041	11	122578.19	0	0	0	0	0	0	0	0	0	0	1	1	232.738	4.977	1	0	0
2041	12	122746.31	0	0	0	0	0	0	0	0	0	0	0	1	545.497	0.063	1	0	0

YEAR	MONTH	gdp_im	jandummy	febdummy	mardummy	apr dummy	maydummy	jundummy	juldummy	augdummy	sepdummy	octdummy	novdummy	d16	bhdd55d70	bcdd65d70	d18on	dec17	jan18
2042	1	122917.16	1	0	0	0	0	0	0	0	0	0	0	1	792.471	0.000	1	0	0
2042	2	123079.72	0	1	0	0	0	0	0	0	0	0	0	1	885.309	0.000	1	0	0
2042	3	123242.27	0	0	1	0	0	0	0	0	0	0	0	1	703.560	0.221	1	0	0
2042	4	123410.31	0	0	0	1	0	0	0	0	0	0	0	1	389.426	2.548	1	0	0
2042	5	123578.34	0	0	0	0	1	0	0	0	0	0	0	1	124.656	18.512	1	0	0
2042	6	123746.37	0	0	0	0	0	1	0	0	0	0	0	1	17.782	106.676	1	0	0
2042	7	123914.40	0	0	0	0	0	0	1	0	0	0	0	1	0.189	243.038	1	0	0
2042	8	124085.23	0	0	0	0	0	0	0	1	0	0	0	1	0.000	254.533	1	0	0
2042	9	124253.45	0	0	0	0	0	0	0	0	1	0	0	1	0.696	176.959	1	0	0
2042	10	124421.93	0	0	0	0	0	0	0	0	0	1	0	1	41.135	54.558	1	0	0
2042	11	124590.74	0	0	0	0	0	0	0	0	0	0	1	1	232.738	4.977	1	0	0
2042	12	124760.01	0	0	0	0	0	0	0	0	0	0	0	1	545.497	0.063	1	0	0
2043	1	124932.63	1	0	0	0	0	0	0	0	0	0	0	1	792.471	0.000	1	0	0
2043	2	125097.50	0	1	0	0	0	0	0	0	0	0	0	1	885.309	0.000	1	0	0
2043	3	125263.08	0	0	1	0	0	0	0	0	0	0	0	1	703.560	0.221	1	0	0
2043	4	125435.11	0	0	0	1	0	0	0	0	0	0	0	1	389.426	2.548	1	0	0
2043	5	125608.08	0	0	0	0	1	0	0	0	0	0	0	1	124.656	18.512	1	0	0
2043	6	125782.10	0	0	0	0	0	1	0	0	0	0	0	1	17.782	106.676	1	0	0
2043	7	125957.26	0	0	0	0	0	0	1	0	0	0	0	1	0.189	243.038	1	0	0
2043	8	126136.46	0	0	0	0	0	0	0	1	0	0	0	1	0.000	254.533	1	0	0
2043	9	126313.80	0	0	0	0	0	0	0	0	1	0	0	1	0.696	176.959	1	0	0
2043	10	126492.05	0	0	0	0	0	0	0	0	0	1	0	1	41.135	54.558	1	0	0
2043	11	126671.09	0	0	0	0	0	0	0	0	0	0	1	1	232.738	4.977	1	0	0
2043	12	126850.79	0	0	0	0	0	0	0	0	0	0	0	1	545.497	0.063	1	0	0
2044	1	127034.00	1	0	0	0	0	0	0	0	0	0	0	1	792.471	0.000	1	0	0
2044	2	127211.72	0	1	0	0	0	0	0	0	0	0	0	1	885.309	0.000	1	0	0
2044	3	127389.74	0	0	1	0	0	0	0	0	0	0	0	1	703.560	0.221	1	0	0
2044	4	127570.92	0	0	0	1	0	0	0	0	0	0	0	1	389.426	2.548	1	0	0
2044	5	127752.17	0	0	0	0	1	0	0	0	0	0	0	1	124.656	18.512	1	0	0
2044	6	127933.37	0	0	0	0	0	1	0	0	0	0	0	1	17.782	106.676	1	0	0
2044	7	128114.41	0	0	0	0	0	0	1	0	0	0	0	1	0.189	243.038	1	0	0
2044	8	128298.23	0	0	0	0	0	0	0	1	0	0	0	1	0.000	254.533	1	0	0
2044	9	128478.95	0	0	0	0	0	0	0	0	1	0	0	1	0.696	176.959	1	0	0
2044	10	128659.62	0	0	0	0	0	0	0	0	0	1	0	1	41.135	54.558	1	0	0
2044	11	128840.30	0	0	0	0	0	0	0	0	0	0	1	1	232.738	4.977	1	0	0
2044	12	129021.06	0	0	0	0	0	0	0	0	0	0	0	1	545.497	0.063	1	0	0
2045	1	129204.94	1	0	0	0	0	0	0	0	0	0	0	1	792.471	0.000	1	0	0
2045	2	129380.12	0	1	0	0	0	0	0	0	0	0	0	1	885.309	0.000	1	0	0
2045	3	129555.58	0	0	1	0	0	0	0	0	0	0	0	1	703.560	0.221	1	0	0
2045	4	129737.33	0	0	0	1	0	0	0	0	0	0	0	1	389.426	2.548	1	0	0
2045	5	129919.51	0	0	0	0	1	0	0	0	0	0	0	1	124.656	18.512	1	0	0
2045	6	130102.18	0	0	0	0	0	1	0	0	0	0	0	1	17.782	106.676	1	0	0

YEAR	MONTH	gdp_im	jandd	febdd	mardd	aprdd	maydd	jundd	juldd	augdd	sepdd	octdd	novdd	d16	bhdd55d70	bcdd65d70	d18on	dec17	jan18
2045	7	130285.41	0	0	0	0	0	0	1	0	0	0	0	1	0.189	243.038	1	0	0
2045	8	130472.23	0	0	0	0	0	0	0	1	0	0	0	1	0.000	254.533	1	0	0
2045	9	130656.61	0	0	0	0	0	0	0	0	1	0	0	1	0.696	176.959	1	0	0
2045	10	130841.51	0	0	0	0	0	0	0	0	0	1	0	1	41.135	54.558	1	0	0
2045	11	131026.91	0	0	0	0	0	0	0	0	0	0	1	1	232.738	4.977	1	0	0
2045	12	131212.79	0	0	0	0	0	0	0	0	0	0	0	1	545.497	0.063	1	0	0
2046	1	131402.16	1	0	0	0	0	0	0	0	0	0	0	1	792.471	0.000	1	0	0
2046	2	131582.77	0	1	0	0	0	0	0	0	0	0	0	1	885.309	0.000	1	0	0
2046	3	131763.75	0	0	1	0	0	0	0	0	0	0	0	1	703.560	0.221	1	0	0
2046	4	131951.22	0	0	0	1	0	0	0	0	0	0	0	1	389.426	2.548	1	0	0
2046	5	132139.01	0	0	0	0	1	0	0	0	0	0	0	1	124.656	18.512	1	0	0
2046	6	132327.11	0	0	0	0	0	1	0	0	0	0	0	1	17.782	106.676	1	0	0
2046	7	132515.49	0	0	0	0	0	0	1	0	0	0	0	1	0.189	243.038	1	0	0
2046	8	132707.19	0	0	0	0	0	0	0	1	0	0	0	1	0.000	254.533	1	0	0
2046	9	132895.96	0	0	0	0	0	0	0	0	1	0	0	1	0.696	176.959	1	0	0
2046	10	133084.83	0	0	0	0	0	0	0	0	0	1	0	1	41.135	54.558	1	0	0
2046	11	133273.72	0	0	0	0	0	0	0	0	0	0	1	1	232.738	4.977	1	0	0
2046	12	133462.57	0	0	0	0	0	0	0	0	0	0	0	1	545.497	0.063	1	0	0
2047	1	133654.41	1	0	0	0	0	0	0	0	0	0	0	1	792.471	0.000	1	0	0
2047	2	133836.81	0	1	0	0	0	0	0	0	0	0	0	1	885.309	0.000	1	0	0
2047	3	134018.97	0	0	1	0	0	0	0	0	0	0	0	1	703.560	0.221	1	0	0
2047	4	134207.01	0	0	0	1	0	0	0	0	0	0	0	1	389.426	2.548	1	0	0
2047	5	134394.68	0	0	0	0	1	0	0	0	0	0	0	1	124.656	18.512	1	0	0
2047	6	134581.91	0	0	0	0	0	1	0	0	0	0	0	1	17.782	106.676	1	0	0
2047	7	134768.64	0	0	0	0	0	0	1	0	0	0	0	1	0.189	243.038	1	0	0
2047	8	134957.93	0	0	0	0	0	0	0	1	0	0	0	1	0.000	254.533	1	0	0
2047	9	135143.76	0	0	0	0	0	0	0	0	1	0	0	1	0.696	176.959	1	0	0
2047	10	135329.30	0	0	0	0	0	0	0	0	0	1	0	1	41.135	54.558	1	0	0
2047	11	135514.64	0	0	0	0	0	0	0	0	0	0	1	1	232.738	4.977	1	0	0
2047	12	135699.88	0	0	0	0	0	0	0	0	0	0	0	1	545.497	0.063	1	0	0
2048	1	135888.16	1	0	0	0	0	0	0	0	0	0	0	1	792.471	0.000	1	0	0
2048	2	136070.46	0	1	0	0	0	0	0	0	0	0	0	1	885.309	0.000	1	0	0
2048	3	136252.94	0	0	1	0	0	0	0	0	0	0	0	1	703.560	0.221	1	0	0
2048	4	136438.76	0	0	0	1	0	0	0	0	0	0	0	1	389.426	2.548	1	0	0
2048	5	136624.97	0	0	0	0	1	0	0	0	0	0	0	1	124.656	18.512	1	0	0
2048	6	136811.67	0	0	0	0	0	1	0	0	0	0	0	1	17.782	106.676	1	0	0
2048	7	136998.96	0	0	0	0	0	0	1	0	0	0	0	1	0.189	243.038	1	0	0
2048	8	137189.97	0	0	0	0	0	0	0	1	0	0	0	1	0.000	254.533	1	0	0
2048	9	137378.53	0	0	0	0	0	0	0	0	1	0	0	1	0.696	176.959	1	0	0
2048	10	137567.71	0	0	0	0	0	0	0	0	0	1	0	1	41.135	54.558	1	0	0
2048	11	137757.50	0	0	0	0	0	0	0	0	0	0	1	1	232.738	4.977	1	0	0
2048	12	137947.89	0	0	0	0	0	0	0	0	0	0	0	1	545.497	0.063	1	0	0

YEAR	MONTH	gdp_im	jandd70	febdd70	mardd70	aprdd70	maydd70	jundd70	juldd70	augdd70	sepdd70	octdd70	novdd70	d16	bhdd55d70	bcdd65d70	d18on	dec17	jan18
2049	1	138142.02	1	0	0	0	0	0	0	0	0	0	0	1	792.471	0.000	1	0	0
2049	2	138327.32	0	1	0	0	0	0	0	0	0	0	0	1	885.309	0.000	1	0	0
2049	3	138513.16	0	0	1	0	0	0	0	0	0	0	0	1	703.560	0.221	1	0	0
2049	4	138705.86	0	0	0	1	0	0	0	0	0	0	0	1	389.426	2.548	1	0	0
2049	5	138899.13	0	0	0	0	1	0	0	0	0	0	0	1	124.656	18.512	1	0	0
2049	6	139092.94	0	0	0	0	0	1	0	0	0	0	0	1	17.782	106.676	1	0	0
2049	7	139287.31	0	0	0	0	0	0	1	0	0	0	0	1	0.189	243.038	1	0	0
2049	8	139485.42	0	0	0	0	0	0	0	1	0	0	0	1	0.000	254.533	1	0	0
2049	9	139680.86	0	0	0	0	0	0	0	0	1	0	0	1	0.696	176.959	1	0	0
2049	10	139876.83	0	0	0	0	0	0	0	0	0	1	0	1	41.135	54.558	1	0	0
2049	11	140073.30	0	0	0	0	0	0	0	0	0	0	1	1	232.738	4.977	1	0	0
2049	12	140270.29	0	0	0	0	0	0	0	0	0	0	0	1	545.497	0.063	1	0	0
2050	1	140471.01	1	0	0	0	0	0	0	0	0	0	0	1	792.471	0.000	1	0	0
2050	2	140662.49	0	1	0	0	0	0	0	0	0	0	0	1	885.309	0.000	1	0	0
2050	3	140854.43	0	0	1	0	0	0	0	0	0	0	0	1	703.560	0.221	1	0	0
2050	4	141053.32	0	0	0	1	0	0	0	0	0	0	0	1	389.426	2.548	1	0	0
2050	5	141252.69	0	0	0	0	1	0	0	0	0	0	0	1	124.656	18.512	1	0	0
2050	6	141452.52	0	0	0	0	0	1	0	0	0	0	0	1	17.782	106.676	1	0	0
2050	7	141652.79	0	0	0	0	0	0	1	0	0	0	0	1	0.189	243.038	1	0	0
2050	8	141856.79	0	0	0	0	0	0	0	1	0	0	0	1	0.000	254.533	1	0	0
2050	9	142057.94	0	0	0	0	0	0	0	0	1	0	0	1	0.696	176.959	1	0	0
2050	10	142259.52	0	0	0	0	0	0	0	0	0	1	0	1	41.135	54.558	1	0	0
2050	11	142461.50	0	0	0	0	0	0	0	0	0	0	1	1	232.738	4.977	1	0	0
2050	12	142663.90	0	0	0	0	0	0	0	0	0	0	0	1	545.497	0.063	1	0	0
2051	1	142840.78	1	0	0	0	0	0	0	0	0	0	0	1	792.471	0.000	1	0	0
2051	2	143038.60	0	1	0	0	0	0	0	0	0	0	0	1	885.309	0.000	1	0	0
2051	3	143236.79	0	0	1	0	0	0	0	0	0	0	0	1	703.560	0.221	1	0	0
2051	4	143442.05	0	0	0	1	0	0	0	0	0	0	0	1	389.426	2.548	1	0	0
2051	5	143647.68	0	0	0	0	1	0	0	0	0	0	0	1	124.656	18.512	1	0	0
2051	6	143853.66	0	0	0	0	0	1	0	0	0	0	0	1	17.782	106.676	1	0	0
2051	7	144059.98	0	0	0	0	0	0	1	0	0	0	0	1	0.189	243.038	1	0	0
2051	8	144270.03	0	0	0	0	0	0	0	1	0	0	0	1	0.000	254.533	1	0	0
2051	9	144477.03	0	0	0	0	0	0	0	0	1	0	0	1	0.696	176.959	1	0	0
2051	10	144684.35	0	0	0	0	0	0	0	0	0	1	0	1	41.135	54.558	1	0	0
2051	11	144891.99	0	0	0	0	0	0	0	0	0	0	1	1	232.738	4.977	1	0	0
2051	12	145099.93	0	0	0	0	0	0	0	0	0	0	0	1	545.497	0.063	1	0	0
2052	1	145252.07	1	0	0	0	0	0	0	0	0	0	0	1	792.471	0.000	1	0	0
2052	2	145456.40	0	1	0	0	0	0	0	0	0	0	0	1	885.309	0.000	1	0	0
2052	3	145661.00	0	0	1	0	0	0	0	0	0	0	0	1	703.560	0.221	1	0	0
2052	4	145872.79	0	0	0	1	0	0	0	0	0	0	0	1	389.426	2.548	1	0	0
2052	5	146084.83	0	0	0	0	1	0	0	0	0	0	0	1	124.656	18.512	1	0	0
2052	6	146297.13	0	0	0	0	0	1	0	0	0	0	0	1	17.782	106.676	1	0	0

YEAR	MONTH	gdp_im	jandd0	febdd0	mardd0	aprdd0	maydd0	jundd0	juldd0	augdd0	sepdd0	octdd0	novdd0	d16	bhdd55d70	bcdd65d70	d18on	dec17	jan18
2052	7	146509.66	0	0	0	0	0	0	1	0	0	0	0	1	0.189	243.038	1	0	0
2052	8	146725.90	0	0	0	0	0	0	0	1	0	0	0	1	0.000	254.533	1	0	0
2052	9	146938.89	0	0	0	0	0	0	0	0	1	0	0	1	0.696	176.959	1	0	0
2052	10	147152.11	0	0	0	0	0	0	0	0	0	1	0	1	41.135	54.558	1	0	0
2052	11	147365.53	0	0	0	0	0	0	0	0	0	0	1	1	232.738	4.977	1	0	0
2052	12	147579.15	0	0	0	0	0	0	0	0	0	0	0	1	545.497	0.063	1	0	0
2053	1	147705.61	1	0	0	0	0	0	0	0	0	0	0	1	792.471	0.000	1	0	0
2053	2	147916.62	0	1	0	0	0	0	0	0	0	0	0	1	885.309	0.000	1	0	0
2053	3	148127.81	0	0	1	0	0	0	0	0	0	0	0	1	703.560	0.221	1	0	0
2053	4	148346.28	0	0	0	1	0	0	0	0	0	0	0	1	389.426	2.548	1	0	0
2053	5	148564.91	0	0	0	0	1	0	0	0	0	0	0	1	124.656	18.512	1	0	0
2053	6	148783.69	0	0	0	0	0	1	0	0	0	0	0	1	17.782	106.676	1	0	0
2053	7	149002.58	0	0	0	0	0	0	1	0	0	0	0	1	0.189	243.038	1	0	0
2053	8	149225.18	0	0	0	0	0	0	0	1	0	0	0	1	0.000	254.533	1	0	0
2053	9	149444.31	0	0	0	0	0	0	0	0	1	0	0	1	0.696	176.959	1	0	0
2053	10	149663.56	0	0	0	0	0	0	0	0	0	1	0	1	41.135	54.558	1	0	0
2053	11	149882.91	0	0	0	0	0	0	0	0	0	0	1	1	232.738	4.977	1	0	0
2053	12	150102.34	0	0	0	0	0	0	0	0	0	0	0	1	545.497	0.063	1	0	0
2054	1	150202.18	1	0	0	0	0	0	0	0	0	0	0	1	792.471	0.000	1	0	0
2054	2	150420.05	0	1	0	0	0	0	0	0	0	0	0	1	885.309	0.000	1	0	0
2054	3	150637.98	0	0	1	0	0	0	0	0	0	0	0	1	703.560	0.221	1	0	0
2054	4	150863.32	0	0	0	1	0	0	0	0	0	0	0	1	389.426	2.548	1	0	0
2054	5	151088.70	0	0	0	0	1	0	0	0	0	0	0	1	124.656	18.512	1	0	0
2054	6	151314.12	0	0	0	0	0	1	0	0	0	0	0	1	17.782	106.676	1	0	0
2054	7	151539.54	0	0	0	0	0	0	1	0	0	0	0	1	0.189	243.038	1	0	0
2054	8	151768.64	0	0	0	0	0	0	0	1	0	0	0	1	0.000	254.533	1	0	0
2054	9	151994.07	0	0	0	0	0	0	0	0	1	0	0	1	0.696	176.959	1	0	0
2054	10	152219.51	0	0	0	0	0	0	0	0	0	1	0	1	41.135	54.558	1	0	0
2054	11	152444.93	0	0	0	0	0	0	0	0	0	0	1	1	232.738	4.977	1	0	0
2054	12	152670.32	0	0	0	0	0	0	0	0	0	0	0	1	545.497	0.063	1	0	0
2055	1	152742.55	1	0	0	0	0	0	0	0	0	0	0	1	792.471	0.000	1	0	0
2055	2	152967.45	0	1	0	0	0	0	0	0	0	0	0	1	885.309	0.000	1	0	0
2055	3	153192.31	0	0	1	0	0	0	0	0	0	0	0	1	703.560	0.221	1	0	0
2055	4	153424.69	0	0	0	1	0	0	0	0	0	0	0	1	389.426	2.548	1	0	0
2055	5	153657.00	0	0	0	0	1	0	0	0	0	0	0	1	124.656	18.512	1	0	0
2055	6	153889.22	0	0	0	0	0	1	0	0	0	0	0	1	17.782	106.676	1	0	0
2055	7	154121.33	0	0	0	0	0	0	1	0	0	0	0	1	0.189	243.038	1	0	0
2055	8	154357.10	0	0	0	0	0	0	0	1	0	0	0	1	0.000	254.533	1	0	0
2055	9	154588.99	0	0	0	0	0	0	0	0	1	0	0	1	0.696	176.959	1	0	0
2055	10	154820.77	0	0	0	0	0	0	0	0	0	1	0	1	41.135	54.558	1	0	0
2055	11	155052.40	0	0	0	0	0	0	0	0	0	0	1	1	232.738	4.977	1	0	0
2055	12	155283.89	0	0	0	0	0	0	0	0	0	0	0	1	545.497	0.063	1	0	0

YEAR	MONTH	gdp_im	jandd07nn	febdd07nn	mardd07nn	aprdd07nn	maydd07nn	jundd07nn	juldd07nn	augdd07nn	sepdd07nn	octdd07nn	novdd07nn	d16	bhdd575d70	bcdd665d70	d18on	dec17	jan18
2056	1	155327.51	1	0	0	0	0	0	0	0	0	0	0	1	792.471	0.000	1	0	0
2056	2	155559.62	0	1	0	0	0	0	0	0	0	0	0	1	885.309	0.000	1	0	0
2056	3	155791.59	0	0	1	0	0	0	0	0	0	0	0	1	703.560	0.221	1	0	0
2056	4	156031.19	0	0	0	1	0	0	0	0	0	0	0	1	389.426	2.548	1	0	0
2056	5	156270.60	0	0	0	0	1	0	0	0	0	0	0	1	124.656	18.512	1	0	0
2056	6	156509.81	0	0	0	0	0	1	0	0	0	0	0	1	17.782	106.676	1	0	0
2056	7	156748.76	0	0	0	0	0	0	1	0	0	0	0	1	0.189	243.038	1	0	0
2056	8	156991.38	0	0	0	0	0	0	0	1	0	0	0	1	0.000	254.533	1	0	0
2056	9	157229.88	0	0	0	0	0	0	0	0	1	0	0	1	0.696	176.959	1	0	0
2056	10	157468.15	0	0	0	0	0	0	0	0	0	1	0	1	41.135	54.558	1	0	0
2056	11	157706.16	0	0	0	0	0	0	0	0	0	0	1	1	232.738	4.977	1	0	0
2056	12	157943.90	0	0	0	0	0	0	0	0	0	0	0	1	545.497	0.063	1	0	0
2057	1	157957.87	1	0	0	0	0	0	0	0	0	0	0	1	792.471	0.000	1	0	0
2057	2	158197.37	0	1	0	0	0	0	0	0	0	0	0	1	885.309	0.000	1	0	0
2057	3	158436.63	0	0	1	0	0	0	0	0	0	0	0	1	703.560	0.221	1	0	0
2057	4	158683.64	0	0	0	1	0	0	0	0	0	0	0	1	389.426	2.548	1	0	0
2057	5	158930.33	0	0	0	0	1	0	0	0	0	0	0	1	124.656	18.512	1	0	0
2057	6	159176.69	0	0	0	0	0	1	0	0	0	0	0	1	17.782	106.676	1	0	0
2057	7	159422.68	0	0	0	0	0	0	1	0	0	0	0	1	0.189	243.038	1	0	0
2057	8	159672.31	0	0	0	0	0	0	0	1	0	0	0	1	0.000	254.533	1	0	0
2057	9	159917.58	0	0	0	0	0	0	0	0	1	0	0	1	0.696	176.959	1	0	0
2057	10	160162.50	0	0	0	0	0	0	0	0	0	1	0	1	41.135	54.558	1	0	0
2057	11	160407.04	0	0	0	0	0	0	0	0	0	0	1	1	232.738	4.977	1	0	0
2057	12	160651.18	0	0	0	0	0	0	0	0	0	0	0	1	545.497	0.063	1	0	0

Indiana Michigan Power Company
Cooperative Energy Sales
Model Estimation

The SYSLIN Procedure
Ordinary Least Squares Estimation

Model	KWH
Dependent Variable	KWH
Label	Energy

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	18	4.863E16	2.702E15	54.79	<.0001
Error	150	7.397E15	4.931E13		
Corrected Total	168	5.603E16			

Root MSE	7022131.85	R-Square	0.86799
Dependent Mean	93051194.1	Adj R-Sq	0.85215
Coeff Var	7.54653		

Parameter Estimates

Variable	DF	Parameter Estimate	Standard Error	t Value	Pr > |t|	Variable Label
Intercept	1	69385133	13481465	5.15	<.0001	Intercept
gdp_imi	1	359.6111	187.3059	1.92	0.0568	Service Area Gross Regional Product
bhdd55d70	1	23631.22	6385.759	3.70	0.0003	Heating Degree Days 2007 On
bcdd65d70	1	54075.30	16589.02	3.26	0.0014	Cooling Degree Days 2007 On
jand07on	1	-3440917	2988018	-1.15	0.2513	Binary Variable - January 2007 On
febd07on	1	-1.269E7	3482831	-3.64	0.0004	Binary Variable - February 2007 On
mard07on	1	-1.641E7	2921870	-5.62	<.0001	Binary Variable - March 2007 On
aprd07on	1	-1.701E7	2936140	-5.79	<.0001	Binary Variable - April 2007 On
mayd07on	1	-8605587	3869334	-2.22	0.0276	Binary Variable - May 2007 On
jund07on	1	-3829813	4835807	-0.79	0.4296	Binary Variable - June 2007 On
juld07on	1	1430717	6066098	0.24	0.8139	Binary Variable - July 2007 On
augd07on	1	5310908	6157211	0.86	0.3898	Binary Variable - August 2007 On

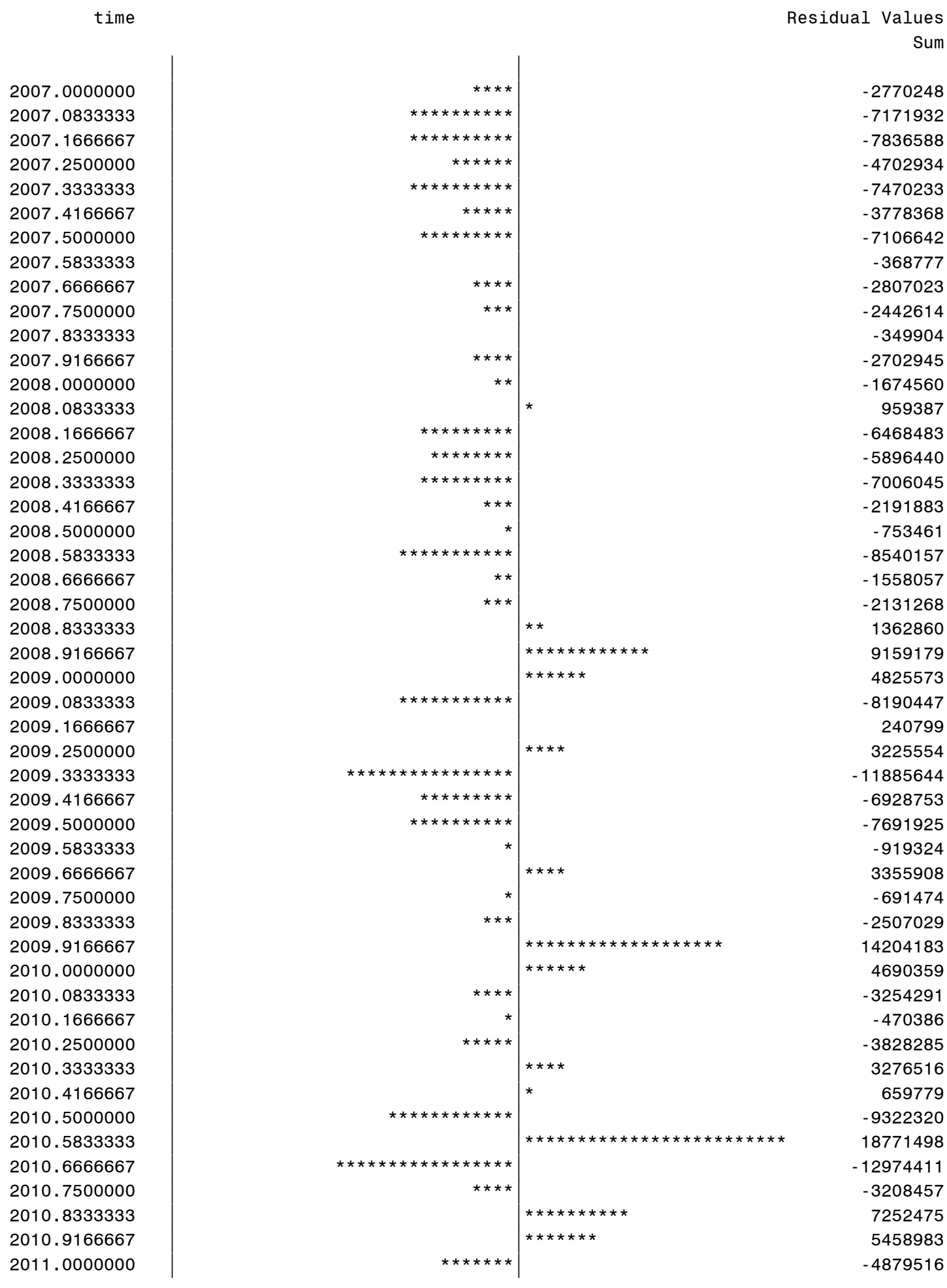
Indiana Michigan Power Company
Cooperative Energy Sales
Model Estimation

The SYSLIN Procedure
Ordinary Least Squares Estimation

Parameter Estimates

Variable	DF	Parameter Estimate	Standard Error	t Value	Pr > |t|	Variable Label
sepd07on	1	-1.268E7	5340803	-2.38	0.0188	Binary Variable - September 2007 On
octd07on	1	-8076811	4407488	-1.83	0.0689	Binary Variable - October 2007 On
novd07on	1	-7192887	3434476	-2.09	0.0379	Binary Variable - November 2007 On
d16on	1	2869811	2036461	1.41	0.1608	Binary Variable - 2016 On
d18on	1	-3.876E7	1966988	-19.70	<.0001	Binary Variable - 2018 On
dec17	1	29071191	7443409	3.91	0.0001	Binary Variable - December 2017
jan18	1	-5671896	7542188	-0.75	0.4532	Binary Variable - January 2018

Durbin-Watson	1.94693
Number of Observations	169
First-Order Autocorrelation	0.024957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Residual Values
Sum
2007.0000000 -2770248
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2007.1666667 -7836588
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2007.3333333 -7470233
2007.4166667 -3778368
2007.5000000 -7106642
2007.5833333 -368777
2007.6666667 -2807023
2007.7500000 -2442614
2007.8333333 -349904
2007.9166667 -2702945
2008.0000000 -1674560
2008.0833333 959387
2008.1666667 -6468483
2008.2500000 -5896440
2008.3333333 -7006045
2008.4166667 -2191883
2008.5000000 -753461
2008.5833333 -8540157
2008.6666667 -1558057
2008.7500000 -2131268
2008.8333333 1362860
2008.9166667 9159179
2009.0000000 4825573
2009.0833333 -8190447
2009.1666667 240799
2009.2500000 3225554
2009.3333333 -11885644
2009.4166667 -6928753
2009.5000000 -7691925
2009.5833333 -919324
2009.6666667 3355908
2009.7500000 -691474
2009.8333333 -2507029
2009.9166667 14204183
2010.0000000 4690359
2010.0833333 -3254291
2010.1666667 -470386
2010.2500000 -3828285
2010.3333333 3276516
2010.4166667 659779
2010.5000000 -9322320
2010.5833333 18771498
2010.6666667 -12974411
2010.7500000 -3208457
2010.8333333 7252475
2010.9166667 5458983
2011.0000000 -4879516

2011.0833333	**********		-8411766
2011.1666667	****		-2893861
2011.2500000		********	7106712
2011.3333333		*	746464
2011.4166667		***	2017891
2011.5000000		******************	14474475
2011.5833333	********		-6836722
2011.6666667	**********		-10937094
2011.7500000		**	1385528
2011.8333333	**		-1293901
2011.9166667		**********	10786697
2012.0000000		***	2422044
2012.0833333			-81462
2012.1666667		**	1608364
2012.2500000			-172448
2012.3333333		*******	5493055
2012.4166667		**********	11207303
2012.5000000	**********		-7713077
2012.5833333		**********	17152092
2012.6666667	*		-742545
2012.7500000	*		-861358
2012.8333333	*		-1046117
2012.9166667		***	2394287
2013.0000000	****		-3158110
2013.0833333		***	2292408
2013.1666667		******	4238444
2013.2500000		**********	9196976
2013.3333333		********	6044595
2013.4166667	*		-764189
2013.5000000		*******	5227711
2013.5833333		**********	8492576
2013.6666667		*********	6883788
2013.7500000	*		-1083151
2013.8333333		*******	5410455
2013.9166667		**	1763425
2014.0000000		**********	12644141
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2014.1666667		**********	12991873
2014.2500000			48290
2014.3333333			296553
2014.4166667	**********		-8823705
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2014.6666667	*****		-4043073
2014.7500000	*		-614436
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2015.3333333	******		-4379739

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2015.5000000		****	2932415
2015.5833333		***	-2462614
2015.6666667		**********	8487218
2015.7500000			243212
2015.8333333		**	-1683749
2015.9166667		**********	-7172408
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2016.3333333		****	-2666103
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2016.5833333		***	1948538
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2016.7500000		******	-4784231
2016.8333333		*	-434902
2016.9166667		********	-5961610
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2017.1666667		**********	-12411795
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2018.3333333		**********	7348724
2018.4166667		**	1176704
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2018.6666667		**	1512443
2018.7500000		**********	8991814
2018.8333333		****	2762777
2018.9166667		**********	-7725653
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2019.0833333		**	-1304701
2019.1666667		**********	7601068
2019.2500000		********	5912138
2019.3333333		*******	5112740
2019.4166667		***	2131238
2019.5000000			137520
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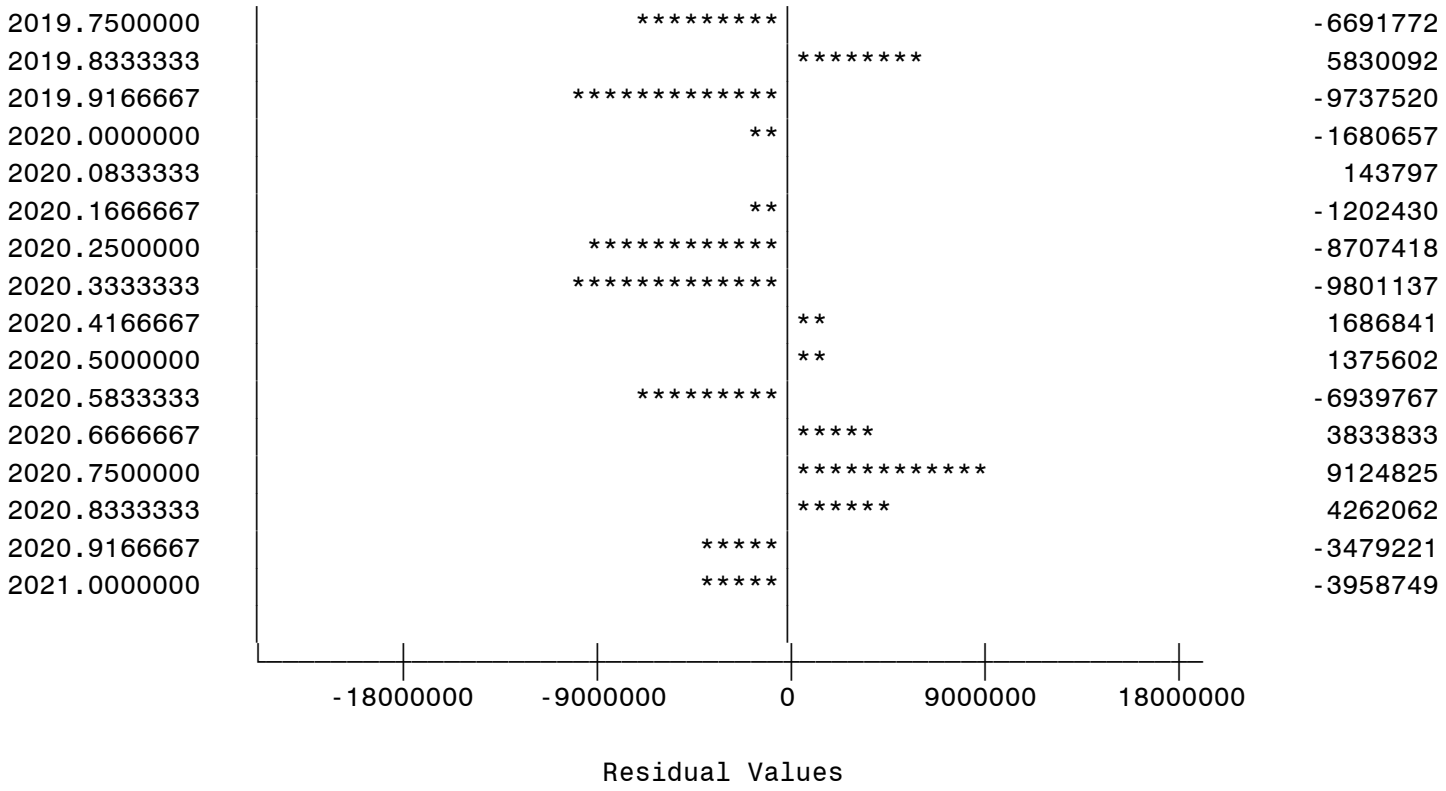
Indiana Michigan Power Company
Cooperative Energy Sales
Model Residuals



Indiana Michigan Power Company
Cooperative Energy Sales
Actual and Forecast

Year	Energy	Growth* Rate
2007	CONFID.	N/A
2008	CONFID.	N/A
2009	CONFID.	N/A
2010	CONFID.	N/A
2011	CONFID.	N/A
2012	CONFID.	N/A
2013	CONFID.	N/A
2014	CONFID.	N/A
2015	CONFID.	N/A
2016	CONFID.	N/A
2017	CONFID.	N/A
2018	CONFID.	N/A
2019	CONFID.	N/A
2020	CONFID.	N/A
2021	CONFID.	N/A
2022	CONFID.	N/A
2023	CONFID.	N/A
2024	CONFID.	N/A
2025	CONFID.	N/A
2026	CONFID.	N/A
2027	CONFID.	N/A
2028	CONFID.	N/A
2029	CONFID.	N/A
2030	CONFID.	N/A
2031	CONFID.	N/A
2032	CONFID.	N/A
2033	CONFID.	N/A
2034	CONFID.	N/A
2035	CONFID.	N/A
2036	CONFID.	N/A
2037	CONFID.	N/A
2038	CONFID.	N/A
2039	CONFID.	N/A
2040	CONFID.	N/A
2041	CONFID.	N/A
2042	CONFID.	N/A
2043	CONFID.	N/A
2044	CONFID.	N/A
2045	CONFID.	N/A
2046	CONFID.	N/A
2047	CONFID.	N/A
2048	CONFID.	N/A
2049	CONFID.	N/A
2050	CONFID.	N/A
2051	CONFID.	N/A
2052	CONFID.	N/A
2053	CONFID.	N/A
2054	CONFID.	N/A
2055	CONFID.	N/A

Indiana Michigan Power Company
Cooperative Energy Sales
Actual and Forecast

Year	Energy	Growth* Rate
2056	CONFID.	N/A
2057	CONFID.	N/A

Indiana Michigan Power Company
I.M.P.A.
Endogenous Variables

The MEANS Procedure

Variable	Label	Mean
YEAR	Year	2022.00
MONTH	Month	6.5000000

Indiana Michigan Power Company
I.M.P.A.
Endogenous Variables

Obs	YEAR	MONTH	Energy
1	1987	1	CONFID.
2	1987	2	CONFID.
3	1987	3	CONFID.
4	1987	4	CONFID.
5	1987	5	CONFID.
6	1987	6	CONFID.
7	1987	7	CONDID.
8	1987	8	CONFID.
9	1987	9	CONFID.
10	1987	10	CONFID.
11	1987	11	CONFID.
12	1987	12	CONFID.
13	1988	1	CONFID.
14	1988	2	CONFID.
15	1988	3	CONFID.
16	1988	4	CONFID.
17	1988	5	CONFID.
18	1988	6	CONFID.
19	1988	7	CONDID.
20	1988	8	CONFID.
21	1988	9	CONFID.
22	1988	10	CONFID.
23	1988	11	CONFID.
24	1988	12	CONFID.
25	1989	1	CONFID.
26	1989	2	CONFID.
27	1989	3	CONFID.
28	1989	4	CONFID.
29	1989	5	CONFID.
30	1989	6	CONFID.
31	1989	7	CONDID.
32	1989	8	CONFID.
33	1989	9	CONFID.
34	1989	10	CONFID.
35	1989	11	CONFID.
36	1989	12	CONFID.
37	1990	1	CONFID.
38	1990	2	CONFID.
39	1990	3	CONFID.
40	1990	4	CONFID.
41	1990	5	CONFID.
42	1990	6	CONFID.
43	1990	7	CONDID.
44	1990	8	CONFID.
45	1990	9	CONFID.
46	1990	10	CONFID.
47	1990	11	CONFID.
48	1990	12	CONFID.
49	1991	1	CONFID.
50	1991	2	CONFID.

Indiana Michigan Power Company
I.M.P.A.
Endogenous Variables

Obs	YEAR	MONTH	Energy
51	1991	3	CONFID.
52	1991	4	CONFID.
53	1991	5	CONFID.
54	1991	6	CONFID.
55	1991	7	CONDID.
56	1991	8	CONFID.
57	1991	9	CONFID.
58	1991	10	CONFID.
59	1991	11	CONFID.
60	1991	12	CONFID.
61	1992	1	CONFID.
62	1992	2	CONFID.
63	1992	3	CONFID.
64	1992	4	CONFID.
65	1992	5	CONFID.
66	1992	6	CONFID.
67	1992	7	CONDID.
68	1992	8	CONFID.
69	1992	9	CONFID.
70	1992	10	CONFID.
71	1992	11	CONFID.
72	1992	12	CONFID.
73	1993	1	CONFID.
74	1993	2	CONFID.
75	1993	3	CONFID.
76	1993	4	CONFID.
77	1993	5	CONFID.
78	1993	6	CONFID.
79	1993	7	CONDID.
80	1993	8	CONFID.
81	1993	9	CONFID.
82	1993	10	CONFID.
83	1993	11	CONFID.
84	1993	12	CONFID.
85	1994	1	CONFID.
86	1994	2	CONFID.
87	1994	3	CONFID.
88	1994	4	CONFID.
89	1994	5	CONFID.
90	1994	6	CONFID.
91	1994	7	CONDID.
92	1994	8	CONFID.
93	1994	9	CONFID.
94	1994	10	CONFID.
95	1994	11	CONFID.
96	1994	12	CONFID.
97	1995	1	CONFID.
98	1995	2	CONFID.
99	1995	3	CONFID.
100	1995	4	CONFID.

Indiana Michigan Power Company
I.M.P.A.
Endogenous Variables

Obs	YEAR	MONTH	Energy
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102	1995	6	CONFID.
103	1995	7	CONDID.
104	1995	8	CONFID.
105	1995	9	CONFID.
106	1995	10	CONFID.
107	1995	11	CONFID.
108	1995	12	CONFID.
109	1996	1	CONFID.
110	1996	2	CONFID.
111	1996	3	CONFID.
112	1996	4	CONFID.
113	1996	5	CONFID.
114	1996	6	CONFID.
115	1996	7	CONDID.
116	1996	8	CONFID.
117	1996	9	CONFID.
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120	1996	12	CONFID.
121	1997	1	CONFID.
122	1997	2	CONFID.
123	1997	3	CONFID.
124	1997	4	CONFID.
125	1997	5	CONFID.
126	1997	6	CONFID.
127	1997	7	CONDID.
128	1997	8	CONFID.
129	1997	9	CONFID.
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131	1997	11	CONFID.
132	1997	12	CONFID.
133	1998	1	CONFID.
134	1998	2	CONFID.
135	1998	3	CONFID.
136	1998	4	CONFID.
137	1998	5	CONFID.
138	1998	6	CONFID.
139	1998	7	CONDID.
140	1998	8	CONFID.
141	1998	9	CONFID.
142	1998	10	CONFID.
143	1998	11	CONFID.
144	1998	12	CONFID.
145	1999	1	CONFID.
146	1999	2	CONFID.
147	1999	3	CONFID.
148	1999	4	CONFID.
149	1999	5	CONFID.
150	1999	6	CONFID.

Indiana Michigan Power Company
I.M.P.A.
Endogenous Variables

Obs	YEAR	MONTH	Energy
151	1999	7	CONDID.
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155	1999	11	CONFID.
156	1999	12	CONFID.
157	2000	1	CONFID.
158	2000	2	CONFID.
159	2000	3	CONFID.
160	2000	4	CONFID.
161	2000	5	CONFID.
162	2000	6	CONFID.
163	2000	7	CONDID.
164	2000	8	CONFID.
165	2000	9	CONFID.
166	2000	10	CONFID.
167	2000	11	CONFID.
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169	2001	1	CONFID.
170	2001	2	CONFID.
171	2001	3	CONFID.
172	2001	4	CONFID.
173	2001	5	CONFID.
174	2001	6	CONFID.
175	2001	7	CONDID.
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186	2002	6	CONFID.
187	2002	7	CONDID.
188	2002	8	CONFID.
189	2002	9	CONFID.
190	2002	10	CONFID.
191	2002	11	CONFID.
192	2002	12	CONFID.
193	2003	1	CONFID.
194	2003	2	CONFID.
195	2003	3	CONFID.
196	2003	4	CONFID.
197	2003	5	CONFID.
198	2003	6	CONFID.
199	2003	7	CONDID.
200	2003	8	CONFID.

Indiana Michigan Power Company
I.M.P.A.
Endogenous Variables

Obs	YEAR	MONTH	Energy
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204	2003	12	CONFID.
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206	2004	2	CONFID.
207	2004	3	CONFID.
208	2004	4	CONFID.
209	2004	5	CONFID.
210	2004	6	CONFID.
211	2004	7	CONDID.
212	2004	8	CONFID.
213	2004	9	CONFID.
214	2004	10	CONFID.
215	2004	11	CONFID.
216	2004	12	CONFID.
217	2005	1	CONFID.
218	2005	2	CONFID.
219	2005	3	CONFID.
220	2005	4	CONFID.
221	2005	5	CONFID.
222	2005	6	CONFID.
223	2005	7	CONDID.
224	2005	8	CONFID.
225	2005	9	CONFID.
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227	2005	11	CONFID.
228	2005	12	CONFID.
229	2006	1	CONFID.
230	2006	2	CONFID.
231	2006	3	CONFID.
232	2006	4	CONFID.
233	2006	5	CONFID.
234	2006	6	CONFID.
235	2006	7	CONDID.
236	2006	8	CONFID.
237	2006	9	CONFID.
238	2006	10	CONFID.
239	2006	11	CONFID.
240	2006	12	CONFID.
241	2007	1	CONFID.
242	2007	2	CONFID.
243	2007	3	CONFID.
244	2007	4	CONFID.
245	2007	5	CONFID.
246	2007	6	CONFID.
247	2007	7	CONDID.
248	2007	8	CONFID.
249	2007	9	CONFID.
250	2007	10	CONFID.

Indiana Michigan Power Company
I.M.P.A.
Endogenous Variables

Obs	YEAR	MONTH	Energy
251	2007	11	CONFID.
252	2007	12	CONFID.
253	2008	1	CONFID.
254	2008	2	CONFID.
255	2008	3	CONFID.
256	2008	4	CONFID.
257	2008	5	CONFID.
258	2008	6	CONFID.
259	2008	7	CONDID.
260	2008	8	CONFID.
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262	2008	10	CONFID.
263	2008	11	CONFID.
264	2008	12	CONFID.
265	2009	1	CONFID.
266	2009	2	CONFID.
267	2009	3	CONFID.
268	2009	4	CONFID.
269	2009	5	CONFID.
270	2009	6	CONFID.
271	2009	7	CONDID.
272	2009	8	CONFID.
273	2009	9	CONFID.
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276	2009	12	CONFID.
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279	2010	3	CONFID.
280	2010	4	CONFID.
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282	2010	6	CONFID.
283	2010	7	CONDID.
284	2010	8	CONFID.
285	2010	9	CONFID.
286	2010	10	CONFID.
287	2010	11	CONFID.
288	2010	12	CONFID.
289	2011	1	CONFID.
290	2011	2	CONFID.
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292	2011	4	CONFID.
293	2011	5	CONFID.
294	2011	6	CONFID.
295	2011	7	CONDID.
296	2011	8	CONFID.
297	2011	9	CONFID.
298	2011	10	CONFID.
299	2011	11	CONFID.
300	2011	12	CONFID.

Indiana Michigan Power Company
I.M.P.A.
Endogenous Variables

Obs	YEAR	MONTH	Energy
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302	2012	2	CONFID.
303	2012	3	CONFID.
304	2012	4	CONFID.
305	2012	5	CONFID.
306	2012	6	CONFID.
307	2012	7	CONDID.
308	2012	8	CONFID.
309	2012	9	CONFID.
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311	2012	11	CONFID.
312	2012	12	CONFID.
313	2013	1	CONFID.
314	2013	2	CONFID.
315	2013	3	CONFID.
316	2013	4	CONFID.
317	2013	5	CONFID.
318	2013	6	CONFID.
319	2013	7	CONDID.
320	2013	8	CONFID.
321	2013	9	CONFID.
322	2013	10	CONFID.
323	2013	11	CONFID.
324	2013	12	CONFID.
325	2014	1	CONFID.
326	2014	2	CONFID.
327	2014	3	CONFID.
328	2014	4	CONFID.
329	2014	5	CONFID.
330	2014	6	CONFID.
331	2014	7	CONDID.
332	2014	8	CONFID.
333	2014	9	CONFID.
334	2014	10	CONFID.
335	2014	11	CONFID.
336	2014	12	CONFID.
337	2015	1	CONFID.
338	2015	2	CONFID.
339	2015	3	CONFID.
340	2015	4	CONFID.
341	2015	5	CONFID.
342	2015	6	CONFID.
343	2015	7	CONDID.
344	2015	8	CONFID.
345	2015	9	CONFID.
346	2015	10	CONFID.
347	2015	11	CONFID.
348	2015	12	CONFID.
349	2016	1	CONFID.
350	2016	2	CONFID.

Indiana Michigan Power Company
I.M.P.A.
Endogenous Variables

Obs	YEAR	MONTH	Energy
351	2016	3	CONFID.
352	2016	4	CONFID.
353	2016	5	CONFID.
354	2016	6	CONFID.
355	2016	7	CONDID.
356	2016	8	CONFID.
357	2016	9	CONFID.
358	2016	10	CONFID.
359	2016	11	CONFID.
360	2016	12	CONFID.
361	2017	1	CONFID.
362	2017	2	CONFID.
363	2017	3	CONFID.
364	2017	4	CONFID.
365	2017	5	CONFID.
366	2017	6	CONFID.
367	2017	7	CONDID.
368	2017	8	CONFID.
369	2017	9	CONFID.
370	2017	10	CONFID.
371	2017	11	CONFID.
372	2017	12	CONFID.
373	2018	1	CONFID.
374	2018	2	CONFID.
375	2018	3	CONFID.
376	2018	4	CONFID.
377	2018	5	CONFID.
378	2018	6	CONFID.
379	2018	7	CONDID.
380	2018	8	CONFID.
381	2018	9	CONFID.
382	2018	10	CONFID.
383	2018	11	CONFID.
384	2018	12	CONFID.
385	2019	1	CONFID.
386	2019	2	CONFID.
387	2019	3	CONFID.
388	2019	4	CONFID.
389	2019	5	CONFID.
390	2019	6	CONFID.
391	2019	7	CONDID.
392	2019	8	CONFID.
393	2019	9	CONFID.
394	2019	10	CONFID.
395	2019	11	CONFID.
396	2019	12	CONFID.
397	2020	1	CONFID.
398	2020	2	CONFID.
399	2020	3	CONFID.
400	2020	4	CONFID.

Indiana Michigan Power Company
I.M.P.A.
Endogenous Variables

Obs	YEAR	MONTH	Energy
401	2020	5	CONFID.
402	2020	6	CONFID.
403	2020	7	CONDID.
404	2020	8	CONFID.
405	2020	9	CONFID.
406	2020	10	CONFID.
407	2020	11	CONFID.
408	2020	12	CONFID.
409	2021	1	CONFID.
410	2021	2	CONFID.
411	2021	3	CONFID.
412	2021	4	CONFID.
413	2021	5	CONFID.
414	2021	6	CONFID.
415	2021	7	CONDID.
416	2021	8	CONFID.
417	2021	9	CONFID.
418	2021	10	CONFID.
419	2021	11	CONFID.
420	2021	12	CONFID.
421	2022	1	CONFID.
422	2022	2	CONFID.
423	2022	3	CONFID.
424	2022	4	CONFID.
425	2022	5	CONFID.
426	2022	6	CONFID.
427	2022	7	CONDID.
428	2022	8	CONFID.
429	2022	9	CONFID.
430	2022	10	CONFID.
431	2022	11	CONFID.
432	2022	12	CONFID.
433	2023	1	CONFID.
434	2023	2	CONFID.
435	2023	3	CONFID.
436	2023	4	CONFID.
437	2023	5	CONFID.
438	2023	6	CONFID.
439	2023	7	CONDID.
440	2023	8	CONFID.
441	2023	9	CONFID.
442	2023	10	CONFID.
443	2023	11	CONFID.
444	2023	12	CONFID.
445	2024	1	CONFID.
446	2024	2	CONFID.
447	2024	3	CONFID.
448	2024	4	CONFID.
449	2024	5	CONFID.
450	2024	6	CONFID.

Indiana Michigan Power Company
I.M.P.A.
Endogenous Variables

Obs	YEAR	MONTH	Energy
451	2024	7	CONDID.
452	2024	8	CONFID.
453	2024	9	CONFID.
454	2024	10	CONFID.
455	2024	11	CONFID.
456	2024	12	CONFID.
457	2025	1	CONFID.
458	2025	2	CONFID.
459	2025	3	CONFID.
460	2025	4	CONFID.
461	2025	5	CONFID.
462	2025	6	CONFID.
463	2025	7	CONDID.
464	2025	8	CONFID.
465	2025	9	CONFID.
466	2025	10	CONFID.
467	2025	11	CONFID.
468	2025	12	CONFID.
469	2026	1	CONFID.
470	2026	2	CONFID.
471	2026	3	CONFID.
472	2026	4	CONFID.
473	2026	5	CONFID.
474	2026	6	CONFID.
475	2026	7	CONDID.
476	2026	8	CONFID.
477	2026	9	CONFID.
478	2026	10	CONFID.
479	2026	11	CONFID.
480	2026	12	CONFID.
481	2027	1	CONFID.
482	2027	2	CONFID.
483	2027	3	CONFID.
484	2027	4	CONFID.
485	2027	5	CONFID.
486	2027	6	CONFID.
487	2027	7	CONDID.
488	2027	8	CONFID.
489	2027	9	CONFID.
490	2027	10	CONFID.
491	2027	11	CONFID.
492	2027	12	CONFID.
493	2028	1	CONFID.
494	2028	2	CONFID.
495	2028	3	CONFID.
496	2028	4	CONFID.
497	2028	5	CONFID.
498	2028	6	CONFID.
499	2028	7	CONDID.
500	2028	8	CONFID.

Indiana Michigan Power Company
I.M.P.A.
Endogenous Variables

Obs	YEAR	MONTH	Energy
501	2028	9	CONFID.
502	2028	10	CONFID.
503	2028	11	CONFID.
504	2028	12	CONFID.
505	2029	1	CONFID.
506	2029	2	CONFID.
507	2029	3	CONFID.
508	2029	4	CONFID.
509	2029	5	CONFID.
510	2029	6	CONFID.
511	2029	7	CONDID.
512	2029	8	CONFID.
513	2029	9	CONFID.
514	2029	10	CONFID.
515	2029	11	CONFID.
516	2029	12	CONFID.
517	2030	1	CONFID.
518	2030	2	CONFID.
519	2030	3	CONFID.
520	2030	4	CONFID.
521	2030	5	CONFID.
522	2030	6	CONFID.
523	2030	7	CONDID.
524	2030	8	CONFID.
525	2030	9	CONFID.
526	2030	10	CONFID.
527	2030	11	CONFID.
528	2030	12	CONFID.
529	2031	1	CONFID.
530	2031	2	CONFID.
531	2031	3	CONFID.
532	2031	4	CONFID.
533	2031	5	CONFID.
534	2031	6	CONFID.
535	2031	7	CONDID.
536	2031	8	CONFID.
537	2031	9	CONFID.
538	2031	10	CONFID.
539	2031	11	CONFID.
540	2031	12	CONFID.
541	2032	1	CONFID.
542	2032	2	CONFID.
543	2032	3	CONFID.
544	2032	4	CONFID.
545	2032	5	CONFID.
546	2032	6	CONFID.
547	2032	7	CONDID.
548	2032	8	CONFID.
549	2032	9	CONFID.
550	2032	10	CONFID.

Indiana Michigan Power Company
I.M.P.A.
Endogenous Variables

Obs	YEAR	MONTH	Energy
551	2032	11	CONFID.
552	2032	12	CONFID.
553	2033	1	CONFID.
554	2033	2	CONFID.
555	2033	3	CONFID.
556	2033	4	CONFID.
557	2033	5	CONFID.
558	2033	6	CONFID.
559	2033	7	CONDID.
560	2033	8	CONFID.
561	2033	9	CONFID.
562	2033	10	CONFID.
563	2033	11	CONFID.
564	2033	12	CONFID.
565	2034	1	CONFID.
566	2034	2	CONFID.
567	2034	3	CONFID.
568	2034	4	CONFID.
569	2034	5	CONFID.
570	2034	6	CONFID.
571	2034	7	CONDID.
572	2034	8	CONFID.
573	2034	9	CONFID.
574	2034	10	CONFID.
575	2034	11	CONFID.
576	2034	12	CONFID.
577	2035	1	CONFID.
578	2035	2	CONFID.
579	2035	3	CONFID.
580	2035	4	CONFID.
581	2035	5	CONFID.
582	2035	6	CONFID.
583	2035	7	CONDID.
584	2035	8	CONFID.
585	2035	9	CONFID.
586	2035	10	CONFID.
587	2035	11	CONFID.
588	2035	12	CONFID.
589	2036	1	CONFID.
590	2036	2	CONFID.
591	2036	3	CONFID.
592	2036	4	CONFID.
593	2036	5	CONFID.
594	2036	6	CONFID.
595	2036	7	CONDID.
596	2036	8	CONFID.
597	2036	9	CONFID.
598	2036	10	CONFID.
599	2036	11	CONFID.
600	2036	12	CONFID.

Indiana Michigan Power Company
I.M.P.A.
Endogenous Variables

Obs	YEAR	MONTH	Energy
601	2037	1	CONFID.
602	2037	2	CONFID.
603	2037	3	CONFID.
604	2037	4	CONFID.
605	2037	5	CONFID.
606	2037	6	CONFID.
607	2037	7	CONDID.
608	2037	8	CONFID.
609	2037	9	CONFID.
610	2037	10	CONFID.
611	2037	11	CONFID.
612	2037	12	CONFID.
613	2038	1	CONFID.
614	2038	2	CONFID.
615	2038	3	CONFID.
616	2038	4	CONFID.
617	2038	5	CONFID.
618	2038	6	CONFID.
619	2038	7	CONDID.
620	2038	8	CONFID.
621	2038	9	CONFID.
622	2038	10	CONFID.
623	2038	11	CONFID.
624	2038	12	CONFID.
625	2039	1	CONFID.
626	2039	2	CONFID.
627	2039	3	CONFID.
628	2039	4	CONFID.
629	2039	5	CONFID.
630	2039	6	CONFID.
631	2039	7	CONDID.
632	2039	8	CONFID.
633	2039	9	CONFID.
634	2039	10	CONFID.
635	2039	11	CONFID.
636	2039	12	CONFID.
637	2040	1	CONFID.
638	2040	2	CONFID.
639	2040	3	CONFID.
640	2040	4	CONFID.
641	2040	5	CONFID.
642	2040	6	CONFID.
643	2040	7	CONDID.
644	2040	8	CONFID.
645	2040	9	CONFID.
646	2040	10	CONFID.
647	2040	11	CONFID.
648	2040	12	CONFID.
649	2041	1	CONFID.
650	2041	2	CONFID.

Indiana Michigan Power Company
I.M.P.A.
Endogenous Variables

Obs	YEAR	MONTH	Energy
651	2041	3	CONFID.
652	2041	4	CONFID.
653	2041	5	CONFID.
654	2041	6	CONFID.
655	2041	7	CONDID.
656	2041	8	CONFID.
657	2041	9	CONFID.
658	2041	10	CONFID.
659	2041	11	CONFID.
660	2041	12	CONFID.
661	2042	1	CONFID.
662	2042	2	CONFID.
663	2042	3	CONFID.
664	2042	4	CONFID.
665	2042	5	CONFID.
666	2042	6	CONFID.
667	2042	7	CONDID.
668	2042	8	CONFID.
669	2042	9	CONFID.
670	2042	10	CONFID.
671	2042	11	CONFID.
672	2042	12	CONFID.
673	2043	1	CONFID.
674	2043	2	CONFID.
675	2043	3	CONFID.
676	2043	4	CONFID.
677	2043	5	CONFID.
678	2043	6	CONFID.
679	2043	7	CONDID.
680	2043	8	CONFID.
681	2043	9	CONFID.
682	2043	10	CONFID.
683	2043	11	CONFID.
684	2043	12	CONFID.
685	2044	1	CONFID.
686	2044	2	CONFID.
687	2044	3	CONFID.
688	2044	4	CONFID.
689	2044	5	CONFID.
690	2044	6	CONFID.
691	2044	7	CONDID.
692	2044	8	CONFID.
693	2044	9	CONFID.
694	2044	10	CONFID.
695	2044	11	CONFID.
696	2044	12	CONFID.
697	2045	1	CONFID.
698	2045	2	CONFID.
699	2045	3	CONFID.
700	2045	4	CONFID.

Indiana Michigan Power Company
I.M.P.A.
Endogenous Variables

Obs	YEAR	MONTH	Energy
701	2045	5	CONFID.
702	2045	6	CONFID.
703	2045	7	CONDID.
704	2045	8	CONFID.
705	2045	9	CONFID.
706	2045	10	CONFID.
707	2045	11	CONFID.
708	2045	12	CONFID.
709	2046	1	CONFID.
710	2046	2	CONFID.
711	2046	3	CONFID.
712	2046	4	CONFID.
713	2046	5	CONFID.
714	2046	6	CONFID.
715	2046	7	CONDID.
716	2046	8	CONFID.
717	2046	9	CONFID.
718	2046	10	CONFID.
719	2046	11	CONFID.
720	2046	12	CONFID.
721	2047	1	CONFID.
722	2047	2	CONFID.
723	2047	3	CONFID.
724	2047	4	CONFID.
725	2047	5	CONFID.
726	2047	6	CONFID.
727	2047	7	CONDID.
728	2047	8	CONFID.
729	2047	9	CONFID.
730	2047	10	CONFID.
731	2047	11	CONFID.
732	2047	12	CONFID.
733	2048	1	CONFID.
734	2048	2	CONFID.
735	2048	3	CONFID.
736	2048	4	CONFID.
737	2048	5	CONFID.
738	2048	6	CONFID.
739	2048	7	CONDID.
740	2048	8	CONFID.
741	2048	9	CONFID.
742	2048	10	CONFID.
743	2048	11	CONFID.
744	2048	12	CONFID.
745	2049	1	CONFID.
746	2049	2	CONFID.
747	2049	3	CONFID.
748	2049	4	CONFID.
749	2049	5	CONFID.
750	2049	6	CONFID.

Indiana Michigan Power Company
I.M.P.A.
Endogenous Variables

Obs	YEAR	MONTH	Energy
751	2049	7	CONDID.
752	2049	8	CONFID.
753	2049	9	CONFID.
754	2049	10	CONFID.
755	2049	11	CONFID.
756	2049	12	CONFID.
757	2050	1	CONFID.
758	2050	2	CONFID.
759	2050	3	CONFID.
760	2050	4	CONFID.
761	2050	5	CONFID.
762	2050	6	CONFID.
763	2050	7	CONDID.
764	2050	8	CONFID.
765	2050	9	CONFID.
766	2050	10	CONFID.
767	2050	11	CONFID.
768	2050	12	CONFID.
769	2051	1	CONFID.
770	2051	2	CONFID.
771	2051	3	CONFID.
772	2051	4	CONFID.
773	2051	5	CONFID.
774	2051	6	CONFID.
775	2051	7	CONDID.
776	2051	8	CONFID.
777	2051	9	CONFID.
778	2051	10	CONFID.
779	2051	11	CONFID.
780	2051	12	CONFID.
781	2052	1	CONFID.
782	2052	2	CONFID.
783	2052	3	CONFID.
784	2052	4	CONFID.
785	2052	5	CONFID.
786	2052	6	CONFID.
787	2052	7	CONDID.
788	2052	8	CONFID.
789	2052	9	CONFID.
790	2052	10	CONFID.
791	2052	11	CONFID.
792	2052	12	CONFID.
793	2053	1	CONFID.
794	2053	2	CONFID.
795	2053	3	CONFID.
796	2053	4	CONFID.
797	2053	5	CONFID.
798	2053	6	CONFID.
799	2053	7	CONDID.
800	2053	8	CONFID.

Indiana Michigan Power Company
I.M.P.A.
Endogenous Variables

Obs	YEAR	MONTH	Energy
801	2053	9	CONFID.
802	2053	10	CONFID.
803	2053	11	CONFID.
804	2053	12	CONFID.
805	2054	1	CONFID.
806	2054	2	CONFID.
807	2054	3	CONFID.
808	2054	4	CONFID.
809	2054	5	CONFID.
810	2054	6	CONFID.
811	2054	7	CONDID.
812	2054	8	CONFID.
813	2054	9	CONFID.
814	2054	10	CONFID.
815	2054	11	CONFID.
816	2054	12	CONFID.
817	2055	1	CONFID.
818	2055	2	CONFID.
819	2055	3	CONFID.
820	2055	4	CONFID.
821	2055	5	CONFID.
822	2055	6	CONFID.
823	2055	7	CONDID.
824	2055	8	CONFID.
825	2055	9	CONFID.
826	2055	10	CONFID.
827	2055	11	CONFID.
828	2055	12	CONFID.
829	2056	1	CONFID.
830	2056	2	CONFID.
831	2056	3	CONFID.
832	2056	4	CONFID.
833	2056	5	CONFID.
834	2056	6	CONFID.
835	2056	7	CONDID.
836	2056	8	CONFID.
837	2056	9	CONFID.
838	2056	10	CONFID.
839	2056	11	CONFID.
840	2056	12	CONFID.
841	2057	1	CONFID.
842	2057	2	CONFID.
843	2057	3	CONFID.
844	2057	4	CONFID.
845	2057	5	CONFID.
846	2057	6	CONFID.
847	2057	7	CONDID.
848	2057	8	CONFID.
849	2057	9	CONFID.
850	2057	10	CONFID.

Indiana Michigan Power Company
I.M.P.A.
Endogenous Variables

Obs	YEAR	MONTH	Energy
851	2057	11	CONFID.
852	2057	12	CONFID.

Indiana Michigan Power Company
I.M.P.A. Energy Sales
Actual and Forecast

Year	Energy	Growth* Rate
2000	CONFID.	N/A
2001	CONFID.	N/A
2002	CONFID.	N/A
2003	CONFID.	N/A
2004	CONFID.	N/A
2005	CONFID.	N/A
2006	CONFID.	N/A
2007	CONFID.	N/A
2008	CONFID.	N/A
2009	CONFID.	N/A
2010	CONFID.	N/A
2011	CONFID.	N/A
2012	CONFID.	N/A
2013	CONFID.	N/A
2014	CONFID.	N/A
2015	CONFID.	N/A
2016	CONFID.	N/A
2017	CONFID.	N/A
2018	CONFID.	N/A
2019	CONFID.	N/A
2020	CONFID.	N/A
2021	CONFID.	N/A
2022	CONFID.	N/A
2023	CONFID.	N/A
2024	CONFID.	N/A
2025	CONFID.	N/A
2026	CONFID.	N/A
2027	CONFID.	N/A
2028	CONFID.	N/A
2029	CONFID.	N/A
2030	CONFID.	N/A
2031	CONFID.	N/A
2032	CONFID.	N/A
2033	CONFID.	N/A
2034	CONFID.	N/A
2035	CONFID.	N/A
2036	CONFID.	N/A
2037	CONFID.	N/A
2038	CONFID.	N/A
2039	CONFID.	N/A
2040	CONFID.	N/A
2041	CONFID.	N/A
2042	CONFID.	N/A
2043	CONFID.	N/A
2044	CONFID.	N/A
2045	CONFID.	N/A
2046	CONFID.	N/A
2047	CONFID.	N/A
2048	CONFID.	N/A

Indiana Michigan Power Company
I.M.P.A. Energy Sales
Actual and Forecast

Year	Energy	Growth* Rate
2049	CONFID.	N/A
2050	CONFID.	N/A
2051	CONFID.	N/A
2052	CONFID.	N/A
2053	CONFID.	N/A
2054	CONFID.	N/A
2055	CONFID.	N/A
2056	CONFID.	N/A
2057	CONFID.	N/A

The SAS System
City of Dowagiac
Endogenous Variables

The MEANS Procedure

Variable	Label	Mean
YEAR	Year	2027.50
MONTH	Month	6.5000000

The SAS System
City of Dowagiac
Endogenous Variables

Obs	YEAR	MONTH	Energy
1	1998	1	CONFID.
2	1998	2	CONFID.
3	1998	3	CONFID.
4	1998	4	CONFID.
5	1998	5	CONFID.
6	1998	6	CONFID.
7	1998	7	CONDID.
8	1998	8	CONFID.
9	1998	9	CONFID.
10	1998	10	CONFID.
11	1998	11	CONFID.
12	1998	12	CONFID.
13	1999	1	CONFID.
14	1999	2	CONFID.
15	1999	3	CONFID.
16	1999	4	CONFID.
17	1999	5	CONFID.
18	1999	6	CONFID.
19	1999	7	CONDID.
20	1999	8	CONFID.
21	1999	9	CONFID.
22	1999	10	CONFID.
23	1999	11	CONFID.
24	1999	12	CONFID.
25	2000	1	CONFID.
26	2000	2	CONFID.
27	2000	3	CONFID.
28	2000	4	CONFID.
29	2000	5	CONFID.
30	2000	6	CONFID.
31	2000	7	CONDID.
32	2000	8	CONFID.
33	2000	9	CONFID.
34	2000	10	CONFID.
35	2000	11	CONFID.
36	2000	12	CONFID.
37	2001	1	CONFID.
38	2001	2	CONFID.
39	2001	3	CONFID.
40	2001	4	CONFID.
41	2001	5	CONFID.
42	2001	6	CONFID.
43	2001	7	CONDID.
44	2001	8	CONFID.
45	2001	9	CONFID.
46	2001	10	CONFID.
47	2001	11	CONFID.
48	2001	12	CONFID.
49	2002	1	CONFID.
50	2002	2	CONFID.

The SAS System
City of Dowagiac
Endogenous Variables

Obs	YEAR	MONTH	Energy
51	2002	3	CONFID.
52	2002	4	CONFID.
53	2002	5	CONFID.
54	2002	6	CONFID.
55	2002	7	CONDID.
56	2002	8	CONFID.
57	2002	9	CONFID.
58	2002	10	CONFID.
59	2002	11	CONFID.
60	2002	12	CONFID.
61	2003	1	CONFID.
62	2003	2	CONFID.
63	2003	3	CONFID.
64	2003	4	CONFID.
65	2003	5	CONFID.
66	2003	6	CONFID.
67	2003	7	CONDID.
68	2003	8	CONFID.
69	2003	9	CONFID.
70	2003	10	CONFID.
71	2003	11	CONFID.
72	2003	12	CONFID.
73	2004	1	CONFID.
74	2004	2	CONFID.
75	2004	3	CONFID.
76	2004	4	CONFID.
77	2004	5	CONFID.
78	2004	6	CONFID.
79	2004	7	CONDID.
80	2004	8	CONFID.
81	2004	9	CONFID.
82	2004	10	CONFID.
83	2004	11	CONFID.
84	2004	12	CONFID.
85	2005	1	CONFID.
86	2005	2	CONFID.
87	2005	3	CONFID.
88	2005	4	CONFID.
89	2005	5	CONFID.
90	2005	6	CONFID.
91	2005	7	CONDID.
92	2005	8	CONFID.
93	2005	9	CONFID.
94	2005	10	CONFID.
95	2005	11	CONFID.
96	2005	12	CONFID.
97	2006	1	CONFID.
98	2006	2	CONFID.
99	2006	3	CONFID.
100	2006	4	CONFID.

The SAS System
City of Dowagiac
Endogenous Variables

Obs	YEAR	MONTH	Energy
101	2006	5	CONFID.
102	2006	6	CONFID.
103	2006	7	CONDID.
104	2006	8	CONFID.
105	2006	9	CONFID.
106	2006	10	CONFID.
107	2006	11	CONFID.
108	2006	12	CONFID.
109	2007	1	CONFID.
110	2007	2	CONFID.
111	2007	3	CONFID.
112	2007	4	CONFID.
113	2007	5	CONFID.
114	2007	6	CONFID.
115	2007	7	CONDID.
116	2007	8	CONFID.
117	2007	9	CONFID.
118	2007	10	CONFID.
119	2007	11	CONFID.
120	2007	12	CONFID.
121	2008	1	CONFID.
122	2008	2	CONFID.
123	2008	3	CONFID.
124	2008	4	CONFID.
125	2008	5	CONFID.
126	2008	6	CONFID.
127	2008	7	CONDID.
128	2008	8	CONFID.
129	2008	9	CONFID.
130	2008	10	CONFID.
131	2008	11	CONFID.
132	2008	12	CONFID.
133	2009	1	CONFID.
134	2009	2	CONFID.
135	2009	3	CONFID.
136	2009	4	CONFID.
137	2009	5	CONFID.
138	2009	6	CONFID.
139	2009	7	CONDID.
140	2009	8	CONFID.
141	2009	9	CONFID.
142	2009	10	CONFID.
143	2009	11	CONFID.
144	2009	12	CONFID.
145	2010	1	CONFID.
146	2010	2	CONFID.
147	2010	3	CONFID.
148	2010	4	CONFID.
149	2010	5	CONFID.
150	2010	6	CONFID.

The SAS System
City of Dowagiac
Endogenous Variables

Obs	YEAR	MONTH	Energy
151	2010	7	CONDID.
152	2010	8	CONFID.
153	2010	9	CONFID.
154	2010	10	CONFID.
155	2010	11	CONFID.
156	2010	12	CONFID.
157	2011	1	CONFID.
158	2011	2	CONFID.
159	2011	3	CONFID.
160	2011	4	CONFID.
161	2011	5	CONFID.
162	2011	6	CONFID.
163	2011	7	CONDID.
164	2011	8	CONFID.
165	2011	9	CONFID.
166	2011	10	CONFID.
167	2011	11	CONFID.
168	2011	12	CONFID.
169	2012	1	CONFID.
170	2012	2	CONFID.
171	2012	3	CONFID.
172	2012	4	CONFID.
173	2012	5	CONFID.
174	2012	6	CONFID.
175	2012	7	CONDID.
176	2012	8	CONFID.
177	2012	9	CONFID.
178	2012	10	CONFID.
179	2012	11	CONFID.
180	2012	12	CONFID.
181	2013	1	CONFID.
182	2013	2	CONFID.
183	2013	3	CONFID.
184	2013	4	CONFID.
185	2013	5	CONFID.
186	2013	6	CONFID.
187	2013	7	CONDID.
188	2013	8	CONFID.
189	2013	9	CONFID.
190	2013	10	CONFID.
191	2013	11	CONFID.
192	2013	12	CONFID.
193	2014	1	CONFID.
194	2014	2	CONFID.
195	2014	3	CONFID.
196	2014	4	CONFID.
197	2014	5	CONFID.
198	2014	6	CONFID.
199	2014	7	CONDID.
200	2014	8	CONFID.

The SAS System
City of Dowagiac
Endogenous Variables

Obs	YEAR	MONTH	Energy
201	2014	9	CONFID.
202	2014	10	CONFID.
203	2014	11	CONFID.
204	2014	12	CONFID.
205	2015	1	CONFID.
206	2015	2	CONFID.
207	2015	3	CONFID.
208	2015	4	CONFID.
209	2015	5	CONFID.
210	2015	6	CONFID.
211	2015	7	CONDID.
212	2015	8	CONFID.
213	2015	9	CONFID.
214	2015	10	CONFID.
215	2015	11	CONFID.
216	2015	12	CONFID.
217	2016	1	CONFID.
218	2016	2	CONFID.
219	2016	3	CONFID.
220	2016	4	CONFID.
221	2016	5	CONFID.
222	2016	6	CONFID.
223	2016	7	CONDID.
224	2016	8	CONFID.
225	2016	9	CONFID.
226	2016	10	CONFID.
227	2016	11	CONFID.
228	2016	12	CONFID.
229	2017	1	CONFID.
230	2017	2	CONFID.
231	2017	3	CONFID.
232	2017	4	CONFID.
233	2017	5	CONFID.
234	2017	6	CONFID.
235	2017	7	CONDID.
236	2017	8	CONFID.
237	2017	9	CONFID.
238	2017	10	CONFID.
239	2017	11	CONFID.
240	2017	12	CONFID.
241	2018	1	CONFID.
242	2018	2	CONFID.
243	2018	3	CONFID.
244	2018	4	CONFID.
245	2018	5	CONFID.
246	2018	6	CONFID.
247	2018	7	CONDID.
248	2018	8	CONFID.
249	2018	9	CONFID.
250	2018	10	CONFID.

The SAS System
City of Dowagiac
Endogenous Variables

Obs	YEAR	MONTH	Energy
251	2018	11	CONFID.
252	2018	12	CONFID.
253	2019	1	CONFID.
254	2019	2	CONFID.
255	2019	3	CONFID.
256	2019	4	CONFID.
257	2019	5	CONFID.
258	2019	6	CONFID.
259	2019	7	CONDID.
260	2019	8	CONFID.
261	2019	9	CONFID.
262	2019	10	CONFID.
263	2019	11	CONFID.
264	2019	12	CONFID.
265	2020	1	CONFID.
266	2020	2	CONFID.
267	2020	3	CONFID.
268	2020	4	CONFID.
269	2020	5	CONFID.
270	2020	6	CONFID.
271	2020	7	CONDID.
272	2020	8	CONFID.
273	2020	9	CONFID.
274	2020	10	CONFID.
275	2020	11	CONFID.
276	2020	12	CONFID.
277	2021	1	CONFID.
278	2021	2	CONFID.
279	2021	3	CONFID.
280	2021	4	CONFID.
281	2021	5	CONFID.
282	2021	6	CONFID.
283	2021	7	CONDID.
284	2021	8	CONFID.
285	2021	9	CONFID.
286	2021	10	CONFID.
287	2021	11	CONFID.
288	2021	12	CONFID.
289	2022	1	CONFID.
290	2022	2	CONFID.
291	2022	3	CONFID.
292	2022	4	CONFID.
293	2022	5	CONFID.
294	2022	6	CONFID.
295	2022	7	CONDID.
296	2022	8	CONFID.
297	2022	9	CONFID.
298	2022	10	CONFID.
299	2022	11	CONFID.
300	2022	12	CONFID.

The SAS System
City of Dowagiac
Endogenous Variables

Obs	YEAR	MONTH	Energy
301	2023	1	CONFID.
302	2023	2	CONFID.
303	2023	3	CONFID.
304	2023	4	CONFID.
305	2023	5	CONFID.
306	2023	6	CONFID.
307	2023	7	CONDID.
308	2023	8	CONFID.
309	2023	9	CONFID.
310	2023	10	CONFID.
311	2023	11	CONFID.
312	2023	12	CONFID.
313	2024	1	CONFID.
314	2024	2	CONFID.
315	2024	3	CONFID.
316	2024	4	CONFID.
317	2024	5	CONFID.
318	2024	6	CONFID.
319	2024	7	CONDID.
320	2024	8	CONFID.
321	2024	9	CONFID.
322	2024	10	CONFID.
323	2024	11	CONFID.
324	2024	12	CONFID.
325	2025	1	CONFID.
326	2025	2	CONFID.
327	2025	3	CONFID.
328	2025	4	CONFID.
329	2025	5	CONFID.
330	2025	6	CONFID.
331	2025	7	CONDID.
332	2025	8	CONFID.
333	2025	9	CONFID.
334	2025	10	CONFID.
335	2025	11	CONFID.
336	2025	12	CONFID.
337	2026	1	CONFID.
338	2026	2	CONFID.
339	2026	3	CONFID.
340	2026	4	CONFID.
341	2026	5	CONFID.
342	2026	6	CONFID.
343	2026	7	CONDID.
344	2026	8	CONFID.
345	2026	9	CONFID.
346	2026	10	CONFID.
347	2026	11	CONFID.
348	2026	12	CONFID.
349	2027	1	CONFID.
350	2027	2	CONFID.

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Obs	YEAR	MONTH	Energy
351	2027	3	CONFID.
352	2027	4	CONFID.
353	2027	5	CONFID.
354	2027	6	CONFID.
355	2027	7	CONDID.
356	2027	8	CONFID.
357	2027	9	CONFID.
358	2027	10	CONFID.
359	2027	11	CONFID.
360	2027	12	CONFID.
361	2028	1	CONFID.
362	2028	2	CONFID.
363	2028	3	CONFID.
364	2028	4	CONFID.
365	2028	5	CONFID.
366	2028	6	CONFID.
367	2028	7	CONDID.
368	2028	8	CONFID.
369	2028	9	CONFID.
370	2028	10	CONFID.
371	2028	11	CONFID.
372	2028	12	CONFID.
373	2029	1	CONFID.
374	2029	2	CONFID.
375	2029	3	CONFID.
376	2029	4	CONFID.
377	2029	5	CONFID.
378	2029	6	CONFID.
379	2029	7	CONDID.
380	2029	8	CONFID.
381	2029	9	CONFID.
382	2029	10	CONFID.
383	2029	11	CONFID.
384	2029	12	CONFID.
385	2030	1	CONFID.
386	2030	2	CONFID.
387	2030	3	CONFID.
388	2030	4	CONFID.
389	2030	5	CONFID.
390	2030	6	CONFID.
391	2030	7	CONDID.
392	2030	8	CONFID.
393	2030	9	CONFID.
394	2030	10	CONFID.
395	2030	11	CONFID.
396	2030	12	CONFID.
397	2031	1	CONFID.
398	2031	2	CONFID.
399	2031	3	CONFID.
400	2031	4	CONFID.

The SAS System
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Endogenous Variables

Obs	YEAR	MONTH	Energy
401	2031	5	CONFID.
402	2031	6	CONFID.
403	2031	7	CONDID.
404	2031	8	CONFID.
405	2031	9	CONFID.
406	2031	10	CONFID.
407	2031	11	CONFID.
408	2031	12	CONFID.
409	2032	1	CONFID.
410	2032	2	CONFID.
411	2032	3	CONFID.
412	2032	4	CONFID.
413	2032	5	CONFID.
414	2032	6	CONFID.
415	2032	7	CONDID.
416	2032	8	CONFID.
417	2032	9	CONFID.
418	2032	10	CONFID.
419	2032	11	CONFID.
420	2032	12	CONFID.
421	2033	1	CONFID.
422	2033	2	CONFID.
423	2033	3	CONFID.
424	2033	4	CONFID.
425	2033	5	CONFID.
426	2033	6	CONFID.
427	2033	7	CONDID.
428	2033	8	CONFID.
429	2033	9	CONFID.
430	2033	10	CONFID.
431	2033	11	CONFID.
432	2033	12	CONFID.
433	2034	1	CONFID.
434	2034	2	CONFID.
435	2034	3	CONFID.
436	2034	4	CONFID.
437	2034	5	CONFID.
438	2034	6	CONFID.
439	2034	7	CONDID.
440	2034	8	CONFID.
441	2034	9	CONFID.
442	2034	10	CONFID.
443	2034	11	CONFID.
444	2034	12	CONFID.
445	2035	1	CONFID.
446	2035	2	CONFID.
447	2035	3	CONFID.
448	2035	4	CONFID.
449	2035	5	CONFID.
450	2035	6	CONFID.

The SAS System
City of Dowagiac
Endogenous Variables

Obs	YEAR	MONTH	Energy
451	2035	7	CONDID.
452	2035	8	CONFID.
453	2035	9	CONFID.
454	2035	10	CONFID.
455	2035	11	CONFID.
456	2035	12	CONFID.
457	2036	1	CONFID.
458	2036	2	CONFID.
459	2036	3	CONFID.
460	2036	4	CONFID.
461	2036	5	CONFID.
462	2036	6	CONFID.
463	2036	7	CONDID.
464	2036	8	CONFID.
465	2036	9	CONFID.
466	2036	10	CONFID.
467	2036	11	CONFID.
468	2036	12	CONFID.
469	2037	1	CONFID.
470	2037	2	CONFID.
471	2037	3	CONFID.
472	2037	4	CONFID.
473	2037	5	CONFID.
474	2037	6	CONFID.
475	2037	7	CONDID.
476	2037	8	CONFID.
477	2037	9	CONFID.
478	2037	10	CONFID.
479	2037	11	CONFID.
480	2037	12	CONFID.
481	2038	1	CONFID.
482	2038	2	CONFID.
483	2038	3	CONFID.
484	2038	4	CONFID.
485	2038	5	CONFID.
486	2038	6	CONFID.
487	2038	7	CONDID.
488	2038	8	CONFID.
489	2038	9	CONFID.
490	2038	10	CONFID.
491	2038	11	CONFID.
492	2038	12	CONFID.
493	2039	1	CONFID.
494	2039	2	CONFID.
495	2039	3	CONFID.
496	2039	4	CONFID.
497	2039	5	CONFID.
498	2039	6	CONFID.
499	2039	7	CONDID.
500	2039	8	CONFID.

The SAS System
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Endogenous Variables

Obs	YEAR	MONTH	Energy
501	2039	9	CONFID.
502	2039	10	CONFID.
503	2039	11	CONFID.
504	2039	12	CONFID.
505	2040	1	CONFID.
506	2040	2	CONFID.
507	2040	3	CONFID.
508	2040	4	CONFID.
509	2040	5	CONFID.
510	2040	6	CONFID.
511	2040	7	CONDID.
512	2040	8	CONFID.
513	2040	9	CONFID.
514	2040	10	CONFID.
515	2040	11	CONFID.
516	2040	12	CONFID.
517	2041	1	CONFID.
518	2041	2	CONFID.
519	2041	3	CONFID.
520	2041	4	CONFID.
521	2041	5	CONFID.
522	2041	6	CONFID.
523	2041	7	CONDID.
524	2041	8	CONFID.
525	2041	9	CONFID.
526	2041	10	CONFID.
527	2041	11	CONFID.
528	2041	12	CONFID.
529	2042	1	CONFID.
530	2042	2	CONFID.
531	2042	3	CONFID.
532	2042	4	CONFID.
533	2042	5	CONFID.
534	2042	6	CONFID.
535	2042	7	CONDID.
536	2042	8	CONFID.
537	2042	9	CONFID.
538	2042	10	CONFID.
539	2042	11	CONFID.
540	2042	12	CONFID.
541	2043	1	CONFID.
542	2043	2	CONFID.
543	2043	3	CONFID.
544	2043	4	CONFID.
545	2043	5	CONFID.
546	2043	6	CONFID.
547	2043	7	CONDID.
548	2043	8	CONFID.
549	2043	9	CONFID.
550	2043	10	CONFID.

The SAS System
City of Dowagiac
Endogenous Variables

Obs	YEAR	MONTH	Energy
551	2043	11	CONFID.
552	2043	12	CONFID.
553	2044	1	CONFID.
554	2044	2	CONFID.
555	2044	3	CONFID.
556	2044	4	CONFID.
557	2044	5	CONFID.
558	2044	6	CONFID.
559	2044	7	CONDID.
560	2044	8	CONFID.
561	2044	9	CONFID.
562	2044	10	CONFID.
563	2044	11	CONFID.
564	2044	12	CONFID.
565	2045	1	CONFID.
566	2045	2	CONFID.
567	2045	3	CONFID.
568	2045	4	CONFID.
569	2045	5	CONFID.
570	2045	6	CONFID.
571	2045	7	CONDID.
572	2045	8	CONFID.
573	2045	9	CONFID.
574	2045	10	CONFID.
575	2045	11	CONFID.
576	2045	12	CONFID.
577	2046	1	CONFID.
578	2046	2	CONFID.
579	2046	3	CONFID.
580	2046	4	CONFID.
581	2046	5	CONFID.
582	2046	6	CONFID.
583	2046	7	CONDID.
584	2046	8	CONFID.
585	2046	9	CONFID.
586	2046	10	CONFID.
587	2046	11	CONFID.
588	2046	12	CONFID.
589	2047	1	CONFID.
590	2047	2	CONFID.
591	2047	3	CONFID.
592	2047	4	CONFID.
593	2047	5	CONFID.
594	2047	6	CONFID.
595	2047	7	CONDID.
596	2047	8	CONFID.
597	2047	9	CONFID.
598	2047	10	CONFID.
599	2047	11	CONFID.
600	2047	12	CONFID.

The SAS System
City of Dowagiac
Endogenous Variables

Obs	YEAR	MONTH	Energy
601	2048	1	CONFID.
602	2048	2	CONFID.
603	2048	3	CONFID.
604	2048	4	CONFID.
605	2048	5	CONFID.
606	2048	6	CONFID.
607	2048	7	CONDID.
608	2048	8	CONFID.
609	2048	9	CONFID.
610	2048	10	CONFID.
611	2048	11	CONFID.
612	2048	12	CONFID.
613	2049	1	CONFID.
614	2049	2	CONFID.
615	2049	3	CONFID.
616	2049	4	CONFID.
617	2049	5	CONFID.
618	2049	6	CONFID.
619	2049	7	CONDID.
620	2049	8	CONFID.
621	2049	9	CONFID.
622	2049	10	CONFID.
623	2049	11	CONFID.
624	2049	12	CONFID.
625	2050	1	CONFID.
626	2050	2	CONFID.
627	2050	3	CONFID.
628	2050	4	CONFID.
629	2050	5	CONFID.
630	2050	6	CONFID.
631	2050	7	CONDID.
632	2050	8	CONFID.
633	2050	9	CONFID.
634	2050	10	CONFID.
635	2050	11	CONFID.
636	2050	12	CONFID.
637	2051	1	CONFID.
638	2051	2	CONFID.
639	2051	3	CONFID.
640	2051	4	CONFID.
641	2051	5	CONFID.
642	2051	6	CONFID.
643	2051	7	CONDID.
644	2051	8	CONFID.
645	2051	9	CONFID.
646	2051	10	CONFID.
647	2051	11	CONFID.
648	2051	12	CONFID.
649	2052	1	CONFID.
650	2052	2	CONFID.

The SAS System
City of Dowagiac
Endogenous Variables

Obs	YEAR	MONTH	Energy
651	2052	3	CONFID.
652	2052	4	CONFID.
653	2052	5	CONFID.
654	2052	6	CONFID.
655	2052	7	CONDID.
656	2052	8	CONFID.
657	2052	9	CONFID.
658	2052	10	CONFID.
659	2052	11	CONFID.
660	2052	12	CONFID.
661	2053	1	CONFID.
662	2053	2	CONFID.
663	2053	3	CONFID.
664	2053	4	CONFID.
665	2053	5	CONFID.
666	2053	6	CONFID.
667	2053	7	CONDID.
668	2053	8	CONFID.
669	2053	9	CONFID.
670	2053	10	CONFID.
671	2053	11	CONFID.
672	2053	12	CONFID.
673	2054	1	CONFID.
674	2054	2	CONFID.
675	2054	3	CONFID.
676	2054	4	CONFID.
677	2054	5	CONFID.
678	2054	6	CONFID.
679	2054	7	CONDID.
680	2054	8	CONFID.
681	2054	9	CONFID.
682	2054	10	CONFID.
683	2054	11	CONFID.
684	2054	12	CONFID.
685	2055	1	CONFID.
686	2055	2	CONFID.
687	2055	3	CONFID.
688	2055	4	CONFID.
689	2055	5	CONFID.
690	2055	6	CONFID.
691	2055	7	CONDID.
692	2055	8	CONFID.
693	2055	9	CONFID.
694	2055	10	CONFID.
695	2055	11	CONFID.
696	2055	12	CONFID.
697	2056	1	CONFID.
698	2056	2	CONFID.
699	2056	3	CONFID.
700	2056	4	CONFID.

The SAS System
City of Dowagiac
Endogenous Variables

Obs	YEAR	MONTH	Energy
701	2056	5	CONFID.
702	2056	6	CONFID.
703	2056	7	CONDID.
704	2056	8	CONFID.
705	2056	9	CONFID.
706	2056	10	CONFID.
707	2056	11	CONFID.
708	2056	12	CONFID.
709	2057	1	CONFID.
710	2057	2	CONFID.
711	2057	3	CONFID.
712	2057	4	CONFID.
713	2057	5	CONFID.
714	2057	6	CONFID.
715	2057	7	CONDID.
716	2057	8	CONFID.
717	2057	9	CONFID.
718	2057	10	CONFID.
719	2057	11	CONFID.
720	2057	12	CONFID.

The SAS System
City of Dowagiac
Exogenous Variables

The MEANS Procedure

Variable	Label	Mean
YEAR	Year	2027.50
MONTH	Month	6.5000000
bcdd65	Service Area Cooling Degree Days	68.7267366
bhdd55	Service Area Heating Degree Days	324.1321879
N_imm	Service Area Population	328.8923694
lcom_imm	Service Area Commercial Employment	88.4052285
d04on	Binary Variable - 2004 On	0.9000000
d08on	Binary Variable - 2008 On	0.8333333
djun10on	Binary Variable - June 2010 On	0.7930556
jan17on	Binary Variable - January 2017 On	0.6833333
apr19on	Binary Variable - April 2019 On	0.6458333
apr20	Binary Variable - April 2020	0.0013889
may20	Binary Variable - May 2020	0.0013889

Obs	YEAR	MONTH	bcdd65	bhdd55	N_imm	lcom_imm	d04on	d08on	djun10on	jan17on	apr19on	apr20	may20
1	1998	1	0.000	699.51	349.866	83.516	0	0	0	0	0	0	0
2	1998	2	0.000	713.49	349.903	83.605	0	0	0	0	0	0	0
3	1998	3	0.000	581.64	349.939	83.712	0	0	0	0	0	0	0
4	1998	4	8.247	387.31	349.980	83.829	0	0	0	0	0	0	0
5	1998	5	16.003	89.31	350.022	83.961	0	0	0	0	0	0	0
6	1998	6	84.825	10.44	350.064	84.106	0	0	0	0	0	0	0
7	1998	7	244.527	4.12	350.105	84.269	0	0	0	0	0	0	0
8	1998	8	245.444	0.00	350.148	84.448	0	0	0	0	0	0	0
9	1998	9	206.729	0.20	350.191	84.637	0	0	0	0	0	0	0
10	1998	10	88.425	31.51	350.238	84.849	0	0	0	0	0	0	0
11	1998	11	4.516	204.50	350.290	85.075	0	0	0	0	0	0	0
12	1998	12	0.000	337.83	350.346	85.321	0	0	0	0	0	0	0
13	1999	1	0.000	934.39	350.411	85.589	0	0	0	0	0	0	0
14	1999	2	0.000	794.71	350.482	85.857	0	0	0	0	0	0	0
15	1999	3	0.000	728.44	350.562	86.150	0	0	0	0	0	0	0
16	1999	4	0.000	426.52	350.658	86.471	0	0	0	0	0	0	0
17	1999	5	17.017	100.01	350.766	86.805	0	0	0	0	0	0	0
18	1999	6	135.910	7.07	350.888	87.164	0	0	0	0	0	0	0
19	1999	7	272.606	0.00	351.029	87.543	0	0	0	0	0	0	0
20	1999	8	340.708	0.00	351.184	87.941	0	0	0	0	0	0	0
21	1999	9	156.593	0.62	351.349	88.341	0	0	0	0	0	0	0
22	1999	10	44.540	50.76	351.519	88.742	0	0	0	0	0	0	0
23	1999	11	3.469	175.44	351.689	89.134	0	0	0	0	0	0	0
24	1999	12	0.196	396.87	351.856	89.511	0	0	0	0	0	0	0
25	2000	1	0.000	757.11	352.018	89.862	0	0	0	0	0	0	0
26	2000	2	0.000	931.70	352.161	90.176	0	0	0	0	0	0	0
27	2000	3	2.520	465.03	352.286	90.447	0	0	0	0	0	0	0
28	2000	4	1.538	333.77	352.390	90.669	0	0	0	0	0	0	0
29	2000	5	34.526	153.55	352.470	90.833	0	0	0	0	0	0	0
30	2000	6	77.789	18.75	352.517	90.928	0	0	0	0	0	0	0
31	2000	7	158.524	1.83	352.527	90.952	0	0	0	0	0	0	0
32	2000	8	162.680	0.00	352.501	90.893	0	0	0	0	0	0	0
33	2000	9	190.890	2.85	352.444	90.772	0	0	0	0	0	0	0
34	2000	10	47.682	66.17	352.360	90.605	0	0	0	0	0	0	0
35	2000	11	3.240	178.52	352.255	90.391	0	0	0	0	0	0	0
36	2000	12	0.000	773.18	352.135	90.146	0	0	0	0	0	0	0
37	2001	1	0.000	1113.56	351.999	89.883	0	0	0	0	0	0	0
38	2001	2	0.000	892.11	351.865	89.619	0	0	0	0	0	0	0
39	2001	3	0.000	736.85	351.728	89.359	0	0	0	0	0	0	0
40	2001	4	3.240	468.54	351.590	89.103	0	0	0	0	0	0	0
41	2001	5	39.107	84.14	351.461	88.874	0	0	0	0	0	0	0
42	2001	6	65.877	28.60	351.345	88.677	0	0	0	0	0	0	0
43	2001	7	184.115	3.24	351.248	88.529	0	0	0	0	0	0	0
44	2001	8	306.084	0.00	351.169	88.427	0	0	0	0	0	0	0
45	2001	9	173.381	0.98	351.108	88.367	0	0	0	0	0	0	0
46	2001	10	25.395	54.49	351.066	88.342	0	0	0	0	0	0	0
47	2001	11	1.342	174.13	351.038	88.345	0	0	0	0	0	0	0
48	2001	12	0.000	287.53	351.022	88.360	0	0	0	0	0	0	0
49	2002	1	0.000	754.66	351.018	88.392	0	0	0	0	0	0	0
50	2002	2	0.000	648.89	351.023	88.426	0	0	0	0	0	0	0

Obs	YEAR	MONTH	bcdd65	bhdd55	N_imm	lcom_imm	d04on	d08on	djun10on	jan17on	apr19on	apr20	may20
51	2002	3	0.000	653.01	351.035	88.449	0	0	0	0	0	0	0
52	2002	4	12.469	509.15	351.053	88.464	0	0	0	0	0	0	0
53	2002	5	26.802	187.78	351.076	88.456	0	0	0	0	0	0	0
54	2002	6	66.139	71.37	351.100	88.427	0	0	0	0	0	0	0
55	2002	7	306.804	0.00	351.126	88.355	0	0	0	0	0	0	0
56	2002	8	331.283	0.00	351.152	88.250	0	0	0	0	0	0	0
57	2002	9	219.132	0.00	351.176	88.111	0	0	0	0	0	0	0
58	2002	10	93.269	46.67	351.201	87.947	0	0	0	0	0	0	0
59	2002	11	5.792	339.10	351.227	87.757	0	0	0	0	0	0	0
60	2002	12	0.000	671.50	351.255	87.552	0	0	0	0	0	0	0
61	2003	1	0.000	823.87	351.283	87.328	0	0	0	0	0	0	0
62	2003	2	0.000	1037.67	351.312	87.111	0	0	0	0	0	0	0
63	2003	3	0.000	881.44	351.342	86.890	0	0	0	0	0	0	0
64	2003	4	4.025	367.74	351.375	86.667	0	0	0	0	0	0	0
65	2003	5	9.752	145.40	351.411	86.446	0	0	0	0	0	0	0
66	2003	6	18.196	38.13	351.451	86.241	0	0	0	0	0	0	0
67	2003	7	176.556	2.00	351.492	86.053	0	0	0	0	0	0	0
68	2003	8	190.006	0.00	351.538	85.881	0	0	0	0	0	0	0
69	2003	9	201.166	0.13	351.581	85.734	0	0	0	0	0	0	0
70	2003	10	32.955	86.66	351.626	85.607	0	0	0	0	0	0	0
71	2003	11	0.982	220.64	351.664	85.505	0	0	0	0	0	0	0
72	2003	12	0.000	501.98	351.698	85.423	0	0	0	0	0	0	0
73	2004	1	0.000	745.79	351.724	85.363	1	0	0	0	0	0	0
74	2004	2	0.000	1059.60	351.740	85.326	1	0	0	0	0	0	0
75	2004	3	0.000	678.05	351.745	85.316	1	0	0	0	0	0	0
76	2004	4	5.989	364.01	351.737	85.327	1	0	0	0	0	0	0
77	2004	5	54.947	128.65	351.712	85.363	1	0	0	0	0	0	0
78	2004	6	102.792	14.46	351.671	85.420	1	0	0	0	0	0	0
79	2004	7	153.746	0.13	351.610	85.506	1	0	0	0	0	0	0
80	2004	8	154.204	0.00	351.528	85.617	1	0	0	0	0	0	0
81	2004	9	129.005	0.00	351.430	85.745	1	0	0	0	0	0	0
82	2004	10	46.143	51.97	351.318	85.881	1	0	0	0	0	0	0
83	2004	11	2.749	182.02	351.195	86.025	1	0	0	0	0	0	0
84	2004	12	0.196	494.26	351.060	86.173	1	0	0	0	0	0	0
85	2005	1	0.000	839.71	350.917	86.312	1	0	0	0	0	0	0
86	2005	2	0.000	914.16	350.774	86.435	1	0	0	0	0	0	0
87	2005	3	0.000	766.63	350.630	86.544	1	0	0	0	0	0	0
88	2005	4	2.127	444.15	350.481	86.638	1	0	0	0	0	0	0
89	2005	5	13.107	157.38	350.332	86.698	1	0	0	0	0	0	0
90	2005	6	90.863	23.12	350.189	86.724	1	0	0	0	0	0	0
91	2005	7	291.832	0.00	350.052	86.722	1	0	0	0	0	0	0
92	2005	8	308.424	0.00	349.920	86.671	1	0	0	0	0	0	0
93	2005	9	203.505	0.00	349.799	86.593	1	0	0	0	0	0	0
94	2005	10	97.294	31.19	349.686	86.495	1	0	0	0	0	0	0
95	2005	11	8.149	206.78	349.581	86.379	1	0	0	0	0	0	0
96	2005	12	0.000	703.83	349.482	86.253	1	0	0	0	0	0	0
97	2006	1	0.000	760.11	349.391	86.127	1	0	0	0	0	0	0
98	2006	2	0.000	640.67	349.310	86.009	1	0	0	0	0	0	0
99	2006	3	0.000	717.25	349.238	85.905	1	0	0	0	0	0	0
100	2006	4	1.178	415.59	349.170	85.819	1	0	0	0	0	0	0

Obs	YEAR	MONTH	bcdd65	bhdd55	N_imm	lcom_imm	d04on	d08on	djun10on	jan17on	apr19on	apr20	may20
101	2006	5	2.127	99.14	349.110	85.763	1	0	0	0	0	0	0
102	2006	6	82.502	51.00	349.057	85.748	1	0	0	0	0	0	0
103	2006	7	175.443	0.00	349.012	85.766	1	0	0	0	0	0	0
104	2006	8	289.067	0.00	348.973	85.837	1	0	0	0	0	0	0
105	2006	9	123.671	2.08	348.943	85.942	1	0	0	0	0	0	0
106	2006	10	14.072	73.08	348.917	86.085	1	0	0	0	0	0	0
107	2006	11	0.540	332.10	348.897	86.259	1	0	0	0	0	0	0
108	2006	12	0.000	481.54	348.884	86.455	1	0	0	0	0	0	0
109	2007	1	0.000	565.53	348.874	86.671	1	0	0	0	0	0	0
110	2007	2	0.000	990.30	348.868	86.894	1	0	0	0	0	0	0
111	2007	3	0.327	890.94	348.866	87.122	1	0	0	0	0	0	0
112	2007	4	8.623	355.86	348.866	87.358	1	0	0	0	0	0	0
113	2007	5	21.190	138.76	348.870	87.601	1	0	0	0	0	0	0
114	2007	6	134.176	8.49	348.876	87.832	1	0	0	0	0	0	0
115	2007	7	228.492	0.00	348.882	88.048	1	0	0	0	0	0	0
116	2007	8	242.989	0.00	348.890	88.252	1	0	0	0	0	0	0
117	2007	9	208.758	1.78	348.896	88.432	1	0	0	0	0	0	0
118	2007	10	110.564	18.23	348.901	88.587	1	0	0	0	0	0	0
119	2007	11	22.614	198.66	348.905	88.706	1	0	0	0	0	0	0
120	2007	12	0.000	615.95	348.903	88.792	1	0	0	0	0	0	0
121	2008	1	0.000	771.59	348.896	88.841	1	1	0	0	0	0	0
122	2008	2	0.000	953.25	348.884	88.843	1	1	0	0	0	0	0
123	2008	3	0.000	873.73	348.863	88.791	1	1	0	0	0	0	0
124	2008	4	0.213	488.63	348.833	88.694	1	1	0	0	0	0	0
125	2008	5	5.416	146.17	348.794	88.536	1	1	0	0	0	0	0
126	2008	6	87.394	42.84	348.745	88.314	1	1	0	0	0	0	0
127	2008	7	180.565	0.02	348.682	88.023	1	1	0	0	0	0	0
128	2008	8	226.790	0.00	348.607	87.664	1	1	0	0	0	0	0
129	2008	9	145.401	0.00	348.521	87.261	1	1	0	0	0	0	0
130	2008	10	44.785	32.97	348.427	86.819	1	1	0	0	0	0	0
131	2008	11	4.893	253.07	348.322	86.348	1	1	0	0	0	0	0
132	2008	12	0.000	734.63	348.211	85.863	1	1	0	0	0	0	0
133	2009	1	0.000	964.90	348.093	85.365	1	1	0	0	0	0	0
134	2009	2	0.000	1101.80	347.976	84.901	1	1	0	0	0	0	0
135	2009	3	0.000	706.91	347.854	84.462	1	1	0	0	0	0	0
136	2009	4	0.425	391.96	347.728	84.034	1	1	0	0	0	0	0
137	2009	5	13.221	150.02	347.600	83.654	1	1	0	0	0	0	0
138	2009	6	54.554	22.74	347.474	83.327	1	1	0	0	0	0	0
139	2009	7	162.385	0.02	347.349	83.076	1	1	0	0	0	0	0
140	2009	8	158.213	0.00	347.225	82.889	1	1	0	0	0	0	0
141	2009	9	109.746	0.00	347.107	82.770	1	1	0	0	0	0	0
142	2009	10	24.872	94.66	346.993	82.711	1	1	0	0	0	0	0
143	2009	11	0.000	223.45	346.885	82.699	1	1	0	0	0	0	0
144	2009	12	0.000	523.92	346.784	82.733	1	1	0	0	0	0	0
145	2010	1	0.000	921.64	346.689	82.797	1	1	0	0	0	0	0
146	2010	2	0.000	930.36	346.608	82.884	1	1	0	0	0	0	0
147	2010	3	0.000	727.48	346.534	82.990	1	1	0	0	0	0	0
148	2010	4	11.912	270.95	346.469	83.115	1	1	0	0	0	0	0
149	2010	5	12.567	100.58	346.415	83.237	1	1	0	0	0	0	0
150	2010	6	124.816	21.50	346.372	83.360	1	1	1	0	0	0	0

Obs	YEAR	MONTH	bcdd65	bhdd55	N_imm	lcom_imm	d04on	d08on	djun10on	jan17on	apr19on	apr20	may20
151	2010	7	249.943	0.00	346.344	83.466	1	1	1	0	0	0	0
152	2010	8	329.958	0.00	346.329	83.563	1	1	1	0	0	0	0
153	2010	9	220.097	0.00	346.323	83.647	1	1	1	0	0	0	0
154	2010	10	51.641	39.58	346.323	83.708	1	1	1	0	0	0	0
155	2010	11	5.007	209.61	346.327	83.763	1	1	1	0	0	0	0
156	2010	12	0.000	639.56	346.332	83.799	1	1	1	0	0	0	0
157	2011	1	0.000	932.31	346.336	83.823	1	1	1	0	0	0	0
158	2011	2	0.000	1020.75	346.335	83.827	1	1	1	0	0	0	0
159	2011	3	0.000	731.00	346.325	83.827	1	1	1	0	0	0	0
160	2011	4	3.403	457.33	346.307	83.812	1	1	1	0	0	0	0
161	2011	5	17.083	163.12	346.273	83.782	1	1	1	0	0	0	0
162	2011	6	126.665	21.53	346.225	83.746	1	1	1	0	0	0	0
163	2011	7	237.098	0.00	346.157	83.694	1	1	1	0	0	0	0
164	2011	8	357.039	0.00	346.068	83.636	1	1	1	0	0	0	0
165	2011	9	180.761	3.73	345.965	83.565	1	1	1	0	0	0	0
166	2011	10	29.273	43.57	345.847	83.489	1	1	1	0	0	0	0
167	2011	11	4.843	193.88	345.717	83.414	1	1	1	0	0	0	0
168	2011	12	0.000	446.77	345.580	83.339	1	1	1	0	0	0	0
169	2012	1	0.000	663.11	345.434	83.260	1	1	1	0	0	0	0
170	2012	2	0.000	754.80	345.288	83.191	1	1	1	0	0	0	0
171	2012	3	10.996	536.49	345.143	83.129	1	1	1	0	0	0	0
172	2012	4	33.168	157.00	344.999	83.074	1	1	1	0	0	0	0
173	2012	5	22.663	130.23	344.858	83.030	1	1	1	0	0	0	0
174	2012	6	143.748	8.62	344.725	83.002	1	1	1	0	0	0	0
175	2012	7	363.796	0.77	344.601	82.990	1	1	1	0	0	0	0
176	2012	8	321.597	0.00	344.489	82.995	1	1	1	0	0	0	0
177	2012	9	165.674	1.49	344.389	83.015	1	1	1	0	0	0	0
178	2012	10	27.555	72.73	344.299	83.053	1	1	1	0	0	0	0
179	2012	11	6.414	288.97	344.221	83.101	1	1	1	0	0	0	0
180	2012	12	0.000	446.63	344.154	83.162	1	1	1	0	0	0	0
181	2013	1	0.000	721.18	344.098	83.236	1	1	1	0	0	0	0
182	2013	2	0.000	856.24	344.054	83.316	1	1	1	0	0	0	0
183	2013	3	0.000	774.08	344.019	83.402	1	1	1	0	0	0	0
184	2013	4	0.000	559.53	343.994	83.496	1	1	1	0	0	0	0
185	2013	5	23.988	160.91	343.978	83.593	1	1	1	0	0	0	0
186	2013	6	99.143	30.73	343.973	83.699	1	1	1	0	0	0	0
187	2013	7	218.707	0.44	343.979	83.806	1	1	1	0	0	0	0
188	2013	8	178.061	0.00	343.992	83.920	1	1	1	0	0	0	0
189	2013	9	200.871	0.05	344.011	84.029	1	1	1	0	0	0	0
190	2013	10	75.368	21.62	344.033	84.139	1	1	1	0	0	0	0
191	2013	11	6.791	261.61	344.053	84.249	1	1	1	0	0	0	0
192	2013	12	0.000	671.37	344.070	84.358	1	1	1	0	0	0	0
193	2014	1	0.000	990.40	344.082	84.469	1	1	1	0	0	0	0
194	2014	2	0.000	1159.72	344.084	84.568	1	1	1	0	0	0	0
195	2014	3	0.000	1006.09	344.075	84.665	1	1	1	0	0	0	0
196	2014	4	0.638	542.99	344.049	84.760	1	1	1	0	0	0	0
197	2014	5	18.588	147.59	344.007	84.853	1	1	1	0	0	0	0
198	2014	6	119.842	33.69	343.944	84.943	1	1	1	0	0	0	0
199	2014	7	205.060	0.00	343.858	85.025	1	1	1	0	0	0	0
200	2014	8	153.631	0.00	343.745	85.105	1	1	1	0	0	0	0

Obs	YEAR	MONTH	bcdd65	bhdd55	N_imm	lcom_imm	d04on	d08on	djun10on	jan17on	apr19on	apr20	may20
201	2014	9	210.067	3.22	343.615	85.176	1	1	1	0	0	0	0
202	2014	10	31.760	46.68	343.469	85.249	1	1	1	0	0	0	0
203	2014	11	0.835	275.47	343.311	85.318	1	1	1	0	0	0	0
204	2014	12	0.000	673.82	343.145	85.388	1	1	1	0	0	0	0
205	2015	1	0.000	814.71	342.970	85.466	1	1	1	0	0	0	0
206	2015	2	0.000	983.39	342.805	85.541	1	1	1	0	0	0	0
207	2015	3	0.000	1023.65	342.643	85.623	1	1	1	0	0	0	0
208	2015	4	0.262	423.11	342.483	85.719	1	1	1	0	0	0	0
209	2015	5	24.332	128.83	342.332	85.822	1	1	1	0	0	0	0
210	2015	6	108.552	21.32	342.196	85.938	1	1	1	0	0	0	0
211	2015	7	151.226	0.20	342.080	86.071	1	1	1	0	0	0	0
212	2015	8	242.433	0.00	341.981	86.221	1	1	1	0	0	0	0
213	2015	9	183.526	0.21	341.902	86.373	1	1	1	0	0	0	0
214	2015	10	54.161	32.63	341.839	86.537	1	1	1	0	0	0	0
215	2015	11	1.276	162.24	341.790	86.715	1	1	1	0	0	0	0
216	2015	12	0.000	422.90	341.752	86.896	1	1	1	0	0	0	0
217	2016	1	0.000	660.96	341.724	87.091	1	1	1	0	0	0	0
218	2016	2	0.000	893.73	341.706	87.281	1	1	1	0	0	0	0
219	2016	3	0.000	644.78	341.692	87.479	1	1	1	0	0	0	0
220	2016	4	0.115	363.03	341.683	87.674	1	1	1	0	0	0	0
221	2016	5	4.631	161.37	341.677	87.879	1	1	1	0	0	0	0
222	2016	6	111.448	32.15	341.671	88.077	1	1	1	0	0	0	0
223	2016	7	197.762	0.00	341.664	88.277	1	1	1	0	0	0	0
224	2016	8	291.391	0.00	341.654	88.476	1	1	1	0	0	0	0
225	2016	9	224.499	0.00	341.642	88.657	1	1	1	0	0	0	0
226	2016	10	78.722	13.60	341.631	88.832	1	1	1	0	0	0	0
227	2016	11	7.560	149.62	341.617	88.994	1	1	1	0	0	0	0
228	2016	12	0.098	563.49	341.606	89.132	1	1	1	0	0	0	0
229	2017	1	0.000	877.82	341.597	89.257	1	1	1	1	0	0	0
230	2017	2	0.000	705.85	341.588	89.352	1	1	1	1	0	0	0
231	2017	3	0.000	532.60	341.583	89.418	1	1	1	1	0	0	0
232	2017	4	2.045	408.09	341.580	89.462	1	1	1	1	0	0	0
233	2017	5	17.508	130.05	341.583	89.472	1	1	1	1	0	0	0
234	2017	6	82.469	29.13	341.589	89.441	1	1	1	1	0	0	0
235	2017	7	185.261	0.00	341.600	89.379	1	1	1	1	0	0	0
236	2017	8	182.446	0.00	341.617	89.277	1	1	1	1	0	0	0
237	2017	9	92.925	0.00	341.640	89.146	1	1	1	1	0	0	0
238	2017	10	106.392	6.43	341.665	89.008	1	1	1	1	0	0	0
239	2017	11	6.087	274.81	341.695	88.861	1	1	1	1	0	0	0
240	2017	12	0.000	570.67	341.725	88.719	1	1	1	1	0	0	0
241	2018	1	0.000	1049.27	341.760	88.593	1	1	1	1	0	0	0
242	2018	2	0.000	920.50	341.791	88.495	1	1	1	1	0	0	0
243	2018	3	0.000	692.07	341.823	88.440	1	1	1	1	0	0	0
244	2018	4	0.000	590.18	341.856	88.425	1	1	1	1	0	0	0
245	2018	5	17.214	242.42	341.886	88.463	1	1	1	1	0	0	0
246	2018	6	126.109	5.19	341.914	88.579	1	1	1	1	0	0	0
247	2018	7	231.601	0.00	341.938	88.760	1	1	1	1	0	0	0
248	2018	8	227.592	0.00	341.960	89.031	1	1	1	1	0	0	0
249	2018	9	217.954	0.00	341.976	89.340	1	1	1	1	0	0	0
250	2018	10	87.002	52.20	341.988	89.677	1	1	1	1	0	0	0

Obs	YEAR	MONTH	bcdd65	bhdd55	N_imm	lcom_imm	d04on	d08on	djun10on	jan17on	apr19on	apr20	may20
251	2018	11	9.392	368.84	341.994	90.016	1	1	1	1	0	0	0
252	2018	12	0.000	689.29	341.997	90.340	1	1	1	1	0	0	0
253	2019	1	0.000	702.49	341.993	90.622	1	1	1	1	0	0	0
254	2019	2	0.000	1023.34	341.985	90.828	1	1	1	1	0	0	0
255	2019	3	0.000	850.59	341.970	90.948	1	1	1	1	0	0	0
256	2019	4	0.000	476.70	341.949	90.963	1	1	1	1	1	0	0
257	2019	5	1.784	172.76	341.922	90.843	1	1	1	1	1	0	0
258	2019	6	39.762	35.52	341.886	90.566	1	1	1	1	1	0	0
259	2019	7	224.172	0.00	341.845	90.103	1	1	1	1	1	0	0
260	2019	8	246.671	0.00	341.796	89.459	1	1	1	1	1	0	0
261	2019	9	143.748	0.00	341.742	88.673	1	1	1	1	1	0	0
262	2019	10	104.853	23.97	341.684	87.776	1	1	1	1	1	0	0
263	2019	11	4.942	313.69	341.623	86.795	1	1	1	1	1	0	0
264	2019	12	0.000	608.06	341.560	85.765	1	1	1	1	1	0	0
265	2020	1	0.000	594.04	341.495	84.699	1	1	1	1	1	0	0
266	2020	2	0.000	726.69	341.435	83.687	1	1	1	1	1	0	0
267	2020	3	0.000	666.30	341.374	82.725	1	1	1	1	1	0	0
268	2020	4	0.622	368.61	341.318	81.819	1	1	1	1	1	1	0
269	2020	5	4.434	242.09	341.267	81.030	1	1	1	1	1	0	1
270	2020	6	125.258	39.65	341.219	80.388	1	1	1	1	1	0	0
271	2020	7	289.656	0.00	341.179	79.917	1	1	1	1	1	0	0
272	2020	8	281.524	0.00	341.146	79.630	1	1	1	1	1	0	0
273	2020	9	210.116	1.06	341.120	79.508	1	1	1	1	1	0	0
274	2020	10	27.948	43.69	341.098	79.529	1	1	1	1	1	0	0
275	2020	11	2.029	222.24	341.078	79.672	1	1	1	1	1	0	0
276	2020	12	1.080	470.16	341.061	79.912	1	1	1	1	1	0	0
277	2021	1	0.000	727.56	341.043	80.234	1	1	1	1	1	0	0
278	2021	2	0.000	903.95	341.027	80.592	1	1	1	1	1	0	0
279	2021	3	0.461	730.81	341.008	80.992	1	1	1	1	1	0	0
280	2021	4	3.580	423.80	340.983	81.413	1	1	1	1	1	0	0
281	2021	5	17.783	152.67	340.957	81.829	1	1	1	1	1	0	0
282	2021	6	93.219	27.93	340.922	82.213	1	1	1	1	1	0	0
283	2021	7	222.622	0.74	340.881	82.552	1	1	1	1	1	0	0
284	2021	8	245.155	0.00	340.831	82.836	1	1	1	1	1	0	0
285	2021	9	177.218	0.96	340.775	83.069	1	1	1	1	1	0	0
286	2021	10	54.320	47.16	340.712	83.256	1	1	1	1	1	0	0
287	2021	11	4.678	245.32	340.646	83.408	1	1	1	1	1	0	0
288	2021	12	0.052	562.05	340.574	83.534	1	1	1	1	1	0	0
289	2022	1	0.000	810.89	340.500	83.638	1	1	1	1	1	0	0
290	2022	2	0.000	903.95	340.426	83.721	1	1	1	1	1	0	0
291	2022	3	0.461	730.81	340.350	83.799	1	1	1	1	1	0	0
292	2022	4	3.580	423.80	340.270	83.880	1	1	1	1	1	0	0
293	2022	5	17.783	152.67	340.192	83.968	1	1	1	1	1	0	0
294	2022	6	93.219	27.93	340.114	84.074	1	1	1	1	1	0	0
295	2022	7	222.622	0.74	340.037	84.196	1	1	1	1	1	0	0
296	2022	8	245.155	0.00	339.962	84.348	1	1	1	1	1	0	0
297	2022	9	177.218	0.96	339.889	84.515	1	1	1	1	1	0	0
298	2022	10	54.320	47.16	339.820	84.696	1	1	1	1	1	0	0
299	2022	11	4.678	245.32	339.751	84.893	1	1	1	1	1	0	0
300	2022	12	0.052	562.05	339.682	85.094	1	1	1	1	1	0	0

Obs	YEAR	MONTH	bcdd65	bhdd55	N_imm	lcom_imm	d04on	d08on	djun10on	jan17on	apr19on	apr20	may20
301	2023	1	0.000	810.894	339.614	85.310	1	1	1	1	1	0	0
302	2023	2	0.000	903.951	339.549	85.509	1	1	1	1	1	0	0
303	2023	3	0.461	730.812	339.482	85.706	1	1	1	1	1	0	0
304	2023	4	3.580	423.797	339.414	85.904	1	1	1	1	1	0	0
305	2023	5	17.783	152.675	339.345	86.088	1	1	1	1	1	0	0
306	2023	6	93.219	27.926	339.274	86.253	1	1	1	1	1	0	0
307	2023	7	222.622	0.742	339.202	86.407	1	1	1	1	1	0	0
308	2023	8	245.155	0.000	339.127	86.543	1	1	1	1	1	0	0
309	2023	9	177.218	0.963	339.053	86.649	1	1	1	1	1	0	0
310	2023	10	54.320	47.158	338.976	86.743	1	1	1	1	1	0	0
311	2023	11	4.678	245.317	338.899	86.820	1	1	1	1	1	0	0
312	2023	12	0.052	562.054	338.820	86.888	1	1	1	1	1	0	0
313	2024	1	0.000	810.894	338.740	86.943	1	1	1	1	1	0	0
314	2024	2	0.000	903.951	338.663	86.988	1	1	1	1	1	0	0
315	2024	3	0.461	730.812	338.584	87.030	1	1	1	1	1	0	0
316	2024	4	3.580	423.797	338.506	87.065	1	1	1	1	1	0	0
317	2024	5	17.783	152.675	338.426	87.095	1	1	1	1	1	0	0
318	2024	6	93.219	27.926	338.348	87.125	1	1	1	1	1	0	0
319	2024	7	222.622	0.742	338.269	87.158	1	1	1	1	1	0	0
320	2024	8	245.155	0.000	338.191	87.188	1	1	1	1	1	0	0
321	2024	9	177.218	0.963	338.113	87.221	1	1	1	1	1	0	0
322	2024	10	54.320	47.158	338.035	87.264	1	1	1	1	1	0	0
323	2024	11	4.678	245.317	337.960	87.296	1	1	1	1	1	0	0
324	2024	12	0.052	562.054	337.884	87.333	1	1	1	1	1	0	0
325	2025	1	0.000	810.894	337.807	87.376	1	1	1	1	1	0	0
326	2025	2	0.000	903.951	337.733	87.407	1	1	1	1	1	0	0
327	2025	3	0.461	730.812	337.661	87.447	1	1	1	1	1	0	0
328	2025	4	3.580	423.797	337.585	87.493	1	1	1	1	1	0	0
329	2025	5	17.783	152.675	337.511	87.530	1	1	1	1	1	0	0
330	2025	6	93.219	27.926	337.436	87.572	1	1	1	1	1	0	0
331	2025	7	222.622	0.742	337.361	87.610	1	1	1	1	1	0	0
332	2025	8	245.155	0.000	337.285	87.653	1	1	1	1	1	0	0
333	2025	9	177.218	0.963	337.210	87.694	1	1	1	1	1	0	0
334	2025	10	54.320	47.158	337.134	87.737	1	1	1	1	1	0	0
335	2025	11	4.678	245.317	337.058	87.774	1	1	1	1	1	0	0
336	2025	12	0.052	562.054	336.982	87.818	1	1	1	1	1	0	0
337	2026	1	0.000	810.894	336.904	87.855	1	1	1	1	1	0	0
338	2026	2	0.000	903.951	336.829	87.891	1	1	1	1	1	0	0
339	2026	3	0.461	730.812	336.755	87.935	1	1	1	1	1	0	0
340	2026	4	3.580	423.797	336.677	87.972	1	1	1	1	1	0	0
341	2026	5	17.783	152.675	336.596	88.015	1	1	1	1	1	0	0
342	2026	6	93.219	27.926	336.517	88.055	1	1	1	1	1	0	0
343	2026	7	222.622	0.742	336.435	88.095	1	1	1	1	1	0	0
344	2026	8	245.155	0.000	336.352	88.139	1	1	1	1	1	0	0
345	2026	9	177.218	0.963	336.270	88.178	1	1	1	1	1	0	0
346	2026	10	54.320	47.158	336.187	88.219	1	1	1	1	1	0	0
347	2026	11	4.678	245.317	336.103	88.259	1	1	1	1	1	0	0
348	2026	12	0.052	562.054	336.017	88.300	1	1	1	1	1	0	0
349	2027	1	0.000	810.894	335.931	88.340	1	1	1	1	1	0	0
350	2027	2	0.000	903.951	335.850	88.373	1	1	1	1	1	0	0

Obs	YEAR	MONTH	bcdd65	bhdd55	N_imm	lcom_imm	d04on	d08on	djun10on	jan17on	apr19on	apr20	may20
351	2027	3	0.461	730.812	335.765	88.414	1	1	1	1	1	0	0
352	2027	4	3.580	423.797	335.680	88.446	1	1	1	1	1	0	0
353	2027	5	17.783	152.675	335.593	88.478	1	1	1	1	1	0	0
354	2027	6	93.219	27.926	335.506	88.513	1	1	1	1	1	0	0
355	2027	7	222.622	0.742	335.420	88.544	1	1	1	1	1	0	0
356	2027	8	245.155	0.000	335.332	88.571	1	1	1	1	1	0	0
357	2027	9	177.218	0.963	335.246	88.601	1	1	1	1	1	0	0
358	2027	10	54.320	47.158	335.160	88.627	1	1	1	1	1	0	0
359	2027	11	4.678	245.317	335.073	88.651	1	1	1	1	1	0	0
360	2027	12	0.052	562.054	334.987	88.678	1	1	1	1	1	0	0
361	2028	1	0.000	810.894	334.898	88.702	1	1	1	1	1	0	0
362	2028	2	0.000	903.951	334.814	88.725	1	1	1	1	1	0	0
363	2028	3	0.461	730.812	334.728	88.748	1	1	1	1	1	0	0
364	2028	4	3.580	423.797	334.641	88.770	1	1	1	1	1	0	0
365	2028	5	17.783	152.675	334.553	88.790	1	1	1	1	1	0	0
366	2028	6	93.219	27.926	334.466	88.813	1	1	1	1	1	0	0
367	2028	7	222.622	0.742	334.378	88.841	1	1	1	1	1	0	0
368	2028	8	245.155	0.000	334.289	88.865	1	1	1	1	1	0	0
369	2028	9	177.218	0.963	334.201	88.888	1	1	1	1	1	0	0
370	2028	10	54.320	47.158	334.111	88.917	1	1	1	1	1	0	0
371	2028	11	4.678	245.317	334.024	88.944	1	1	1	1	1	0	0
372	2028	12	0.052	562.054	333.935	88.970	1	1	1	1	1	0	0
373	2029	1	0.000	810.894	333.844	88.998	1	1	1	1	1	0	0
374	2029	2	0.000	903.951	333.758	89.025	1	1	1	1	1	0	0
375	2029	3	0.461	730.812	333.672	89.052	1	1	1	1	1	0	0
376	2029	4	3.580	423.797	333.583	89.079	1	1	1	1	1	0	0
377	2029	5	17.783	152.675	333.494	89.104	1	1	1	1	1	0	0
378	2029	6	93.219	27.926	333.405	89.131	1	1	1	1	1	0	0
379	2029	7	222.622	0.742	333.315	89.161	1	1	1	1	1	0	0
380	2029	8	245.155	0.000	333.225	89.190	1	1	1	1	1	0	0
381	2029	9	177.218	0.963	333.137	89.216	1	1	1	1	1	0	0
382	2029	10	54.320	47.158	333.048	89.243	1	1	1	1	1	0	0
383	2029	11	4.678	245.317	332.959	89.266	1	1	1	1	1	0	0
384	2029	12	0.052	562.054	332.870	89.290	1	1	1	1	1	0	0
385	2030	1	0.000	810.894	332.780	89.318	1	1	1	1	1	0	0
386	2030	2	0.000	903.951	332.696	89.340	1	1	1	1	1	0	0
387	2030	3	0.461	730.812	332.610	89.365	1	1	1	1	1	0	0
388	2030	4	3.580	423.797	332.522	89.385	1	1	1	1	1	0	0
389	2030	5	17.783	152.675	332.435	89.410	1	1	1	1	1	0	0
390	2030	6	93.219	27.926	332.348	89.429	1	1	1	1	1	0	0
391	2030	7	222.622	0.742	332.260	89.450	1	1	1	1	1	0	0
392	2030	8	245.155	0.000	332.173	89.473	1	1	1	1	1	0	0
393	2030	9	177.218	0.963	332.087	89.491	1	1	1	1	1	0	0
394	2030	10	54.320	47.158	332.002	89.512	1	1	1	1	1	0	0
395	2030	11	4.678	245.317	331.914	89.526	1	1	1	1	1	0	0
396	2030	12	0.052	562.054	331.828	89.546	1	1	1	1	1	0	0
397	2031	1	0.000	810.894	331.740	89.562	1	1	1	1	1	0	0
398	2031	2	0.000	903.951	331.656	89.577	1	1	1	1	1	0	0
399	2031	3	0.461	730.812	331.570	89.586	1	1	1	1	1	0	0
400	2031	4	3.580	423.797	331.482	89.605	1	1	1	1	1	0	0

Obs	YEAR	MONTH	bcdd65	bhdd55	N_imm	lcom_imm	d04on	d08on	djun10on	jan17on	apr19on	apr20	may20
401	2031	5	17.783	152.675	331.393	89.618	1	1	1	1	1	0	0
402	2031	6	93.219	27.926	331.303	89.629	1	1	1	1	1	0	0
403	2031	7	222.622	0.742	331.212	89.641	1	1	1	1	1	0	0
404	2031	8	245.155	0.000	331.119	89.654	1	1	1	1	1	0	0
405	2031	9	177.218	0.963	331.027	89.662	1	1	1	1	1	0	0
406	2031	10	54.320	47.158	330.932	89.669	1	1	1	1	1	0	0
407	2031	11	4.678	245.317	330.836	89.681	1	1	1	1	1	0	0
408	2031	12	0.052	562.054	330.741	89.690	1	1	1	1	1	0	0
409	2032	1	0.000	810.894	330.643	89.699	1	1	1	1	1	0	0
410	2032	2	0.000	903.951	330.548	89.704	1	1	1	1	1	0	0
411	2032	3	0.461	730.812	330.453	89.714	1	1	1	1	1	0	0
412	2032	4	3.580	423.797	330.355	89.722	1	1	1	1	1	0	0
413	2032	5	17.783	152.675	330.255	89.730	1	1	1	1	1	0	0
414	2032	6	93.219	27.926	330.158	89.736	1	1	1	1	1	0	0
415	2032	7	222.622	0.742	330.059	89.747	1	1	1	1	1	0	0
416	2032	8	245.155	0.000	329.958	89.758	1	1	1	1	1	0	0
417	2032	9	177.218	0.963	329.859	89.765	1	1	1	1	1	0	0
418	2032	10	54.320	47.158	329.759	89.776	1	1	1	1	1	0	0
419	2032	11	4.678	245.317	329.660	89.785	1	1	1	1	1	0	0
420	2032	12	0.052	562.054	329.559	89.797	1	1	1	1	1	0	0
421	2033	1	0.000	810.894	329.457	89.805	1	1	1	1	1	0	0
422	2033	2	0.000	903.951	329.359	89.811	1	1	1	1	1	0	0
423	2033	3	0.461	730.812	329.260	89.823	1	1	1	1	1	0	0
424	2033	4	3.580	423.797	329.157	89.831	1	1	1	1	1	0	0
425	2033	5	17.783	152.675	329.054	89.842	1	1	1	1	1	0	0
426	2033	6	93.219	27.926	328.950	89.850	1	1	1	1	1	0	0
427	2033	7	222.622	0.742	328.845	89.859	1	1	1	1	1	0	0
428	2033	8	245.155	0.000	328.737	89.867	1	1	1	1	1	0	0
429	2033	9	177.218	0.963	328.630	89.874	1	1	1	1	1	0	0
430	2033	10	54.320	47.158	328.524	89.877	1	1	1	1	1	0	0
431	2033	11	4.678	245.317	328.415	89.889	1	1	1	1	1	0	0
432	2033	12	0.052	562.054	328.307	89.891	1	1	1	1	1	0	0
433	2034	1	0.000	810.894	328.197	89.900	1	1	1	1	1	0	0
434	2034	2	0.000	903.951	328.089	89.905	1	1	1	1	1	0	0
435	2034	3	0.461	730.812	327.983	89.913	1	1	1	1	1	0	0
436	2034	4	3.580	423.797	327.872	89.917	1	1	1	1	1	0	0
437	2034	5	17.783	152.675	327.762	89.923	1	1	1	1	1	0	0
438	2034	6	93.219	27.926	327.650	89.927	1	1	1	1	1	0	0
439	2034	7	222.622	0.742	327.538	89.930	1	1	1	1	1	0	0
440	2034	8	245.155	0.000	327.424	89.937	1	1	1	1	1	0	0
441	2034	9	177.218	0.963	327.311	89.941	1	1	1	1	1	0	0
442	2034	10	54.320	47.158	327.198	89.944	1	1	1	1	1	0	0
443	2034	11	4.678	245.317	327.085	89.950	1	1	1	1	1	0	0
444	2034	12	0.052	562.054	326.970	89.955	1	1	1	1	1	0	0
445	2035	1	0.000	810.894	326.855	89.959	1	1	1	1	1	0	0
446	2035	2	0.000	903.951	326.744	89.966	1	1	1	1	1	0	0
447	2035	3	0.461	730.812	326.632	89.970	1	1	1	1	1	0	0
448	2035	4	3.580	423.797	326.517	89.973	1	1	1	1	1	0	0
449	2035	5	17.783	152.675	326.400	89.978	1	1	1	1	1	0	0
450	2035	6	93.219	27.926	326.285	89.985	1	1	1	1	1	0	0

Obs	YEAR	MONTH	bcdd65	bhdd55	N_imm	lcom_imm	d04on	d08on	djun10on	jan17on	apr19on	apr20	may20
451	2035	7	222.622	0.742	326.169	89.987	1	1	1	1	1	0	0
452	2035	8	245.155	0.000	326.050	89.995	1	1	1	1	1	0	0
453	2035	9	177.218	0.963	325.931	89.997	1	1	1	1	1	0	0
454	2035	10	54.320	47.158	325.813	90.002	1	1	1	1	1	0	0
455	2035	11	4.678	245.317	325.694	90.008	1	1	1	1	1	0	0
456	2035	12	0.052	562.054	325.576	90.013	1	1	1	1	1	0	0
457	2036	1	0.000	810.894	325.454	90.016	1	1	1	1	1	0	0
458	2036	2	0.000	903.951	325.338	90.023	1	1	1	1	1	0	0
459	2036	3	0.461	730.812	325.219	90.025	1	1	1	1	1	0	0
460	2036	4	3.580	423.797	325.100	90.032	1	1	1	1	1	0	0
461	2036	5	17.783	152.675	324.980	90.035	1	1	1	1	1	0	0
462	2036	6	93.219	27.926	324.859	90.041	1	1	1	1	1	0	0
463	2036	7	222.622	0.742	324.739	90.047	1	1	1	1	1	0	0
464	2036	8	245.155	0.000	324.617	90.050	1	1	1	1	1	0	0
465	2036	9	177.218	0.963	324.495	90.055	1	1	1	1	1	0	0
466	2036	10	54.320	47.158	324.374	90.059	1	1	1	1	1	0	0
467	2036	11	4.678	245.317	324.253	90.063	1	1	1	1	1	0	0
468	2036	12	0.052	562.054	324.131	90.067	1	1	1	1	1	0	0
469	2037	1	0.000	810.894	324.008	90.076	1	1	1	1	1	0	0
470	2037	2	0.000	903.951	323.889	90.078	1	1	1	1	1	0	0
471	2037	3	0.461	730.812	323.769	90.078	1	1	1	1	1	0	0
472	2037	4	3.580	423.797	323.646	90.088	1	1	1	1	1	0	0
473	2037	5	17.783	152.675	323.523	90.090	1	1	1	1	1	0	0
474	2037	6	93.219	27.926	323.398	90.090	1	1	1	1	1	0	0
475	2037	7	222.622	0.742	323.272	90.093	1	1	1	1	1	0	0
476	2037	8	245.155	0.000	323.145	90.102	1	1	1	1	1	0	0
477	2037	9	177.218	0.963	323.019	90.104	1	1	1	1	1	0	0
478	2037	10	54.320	47.158	322.893	90.107	1	1	1	1	1	0	0
479	2037	11	4.678	245.317	322.763	90.110	1	1	1	1	1	0	0
480	2037	12	0.052	562.054	322.636	90.111	1	1	1	1	1	0	0
481	2038	1	0.000	810.894	322.506	90.118	1	1	1	1	1	0	0
482	2038	2	0.000	903.951	322.379	90.122	1	1	1	1	1	0	0
483	2038	3	0.461	730.812	322.254	90.120	1	1	1	1	1	0	0
484	2038	4	3.580	423.797	322.124	90.127	1	1	1	1	1	0	0
485	2038	5	17.783	152.675	321.994	90.128	1	1	1	1	1	0	0
486	2038	6	93.219	27.926	321.863	90.132	1	1	1	1	1	0	0
487	2038	7	222.622	0.742	321.730	90.134	1	1	1	1	1	0	0
488	2038	8	245.155	0.000	321.598	90.136	1	1	1	1	1	0	0
489	2038	9	177.218	0.963	321.463	90.137	1	1	1	1	1	0	0
490	2038	10	54.320	47.158	321.331	90.137	1	1	1	1	1	0	0
491	2038	11	4.678	245.317	321.198	90.136	1	1	1	1	1	0	0
492	2038	12	0.052	562.054	321.063	90.137	1	1	1	1	1	0	0
493	2039	1	0.000	810.894	320.928	90.144	1	1	1	1	1	0	0
494	2039	2	0.000	903.951	320.799	90.146	1	1	1	1	1	0	0
495	2039	3	0.461	730.812	320.667	90.148	1	1	1	1	1	0	0
496	2039	4	3.580	423.797	320.533	90.147	1	1	1	1	1	0	0
497	2039	5	17.783	152.675	320.397	90.150	1	1	1	1	1	0	0
498	2039	6	93.219	27.926	320.261	90.152	1	1	1	1	1	0	0
499	2039	7	222.622	0.742	320.123	90.150	1	1	1	1	1	0	0
500	2039	8	245.155	0.000	319.984	90.156	1	1	1	1	1	0	0

Obs	YEAR	MONTH	bcdd65	bhdd55	N_imm	lcom_imm	d04on	d08on	djun10on	jan17on	apr19on	apr20	may20
501	2039	9	177.218	0.963	319.847	90.157	1	1	1	1	1	0	0
502	2039	10	54.320	47.158	319.709	90.158	1	1	1	1	1	0	0
503	2039	11	4.678	245.317	319.571	90.161	1	1	1	1	1	0	0
504	2039	12	0.052	562.054	319.432	90.164	1	1	1	1	1	0	0
505	2040	1	0.000	810.894	319.290	90.169	1	1	1	1	1	0	0
506	2040	2	0.000	903.951	319.152	90.170	1	1	1	1	1	0	0
507	2040	3	0.461	730.812	319.016	90.173	1	1	1	1	1	0	0
508	2040	4	3.580	423.797	318.877	90.176	1	1	1	1	1	0	0
509	2040	5	17.783	152.675	318.736	90.181	1	1	1	1	1	0	0
510	2040	6	93.219	27.926	318.596	90.181	1	1	1	1	1	0	0
511	2040	7	222.622	0.742	318.456	90.189	1	1	1	1	1	0	0
512	2040	8	245.155	0.000	318.312	90.194	1	1	1	1	1	0	0
513	2040	9	177.218	0.963	318.171	90.197	1	1	1	1	1	0	0
514	2040	10	54.320	47.158	318.030	90.201	1	1	1	1	1	0	0
515	2040	11	4.678	245.317	317.888	90.207	1	1	1	1	1	0	0
516	2040	12	0.052	562.054	317.746	90.211	1	1	1	1	1	0	0
517	2041	1	0.000	810.894	317.602	90.222	1	1	1	1	1	0	0
518	2041	2	0.000	903.951	317.464	90.224	1	1	1	1	1	0	0
519	2041	3	0.461	730.812	317.326	90.232	1	1	1	1	1	0	0
520	2041	4	3.580	423.797	317.184	90.242	1	1	1	1	1	0	0
521	2041	5	17.783	152.675	317.039	90.245	1	1	1	1	1	0	0
522	2041	6	93.219	27.926	316.895	90.252	1	1	1	1	1	0	0
523	2041	7	222.622	0.742	316.751	90.260	1	1	1	1	1	0	0
524	2041	8	245.155	0.000	316.604	90.270	1	1	1	1	1	0	0
525	2041	9	177.218	0.963	316.459	90.279	1	1	1	1	1	0	0
526	2041	10	54.320	47.158	316.314	90.291	1	1	1	1	1	0	0
527	2041	11	4.678	245.317	316.168	90.298	1	1	1	1	1	0	0
528	2041	12	0.052	562.054	316.022	90.304	1	1	1	1	1	0	0
529	2042	1	0.000	810.894	315.872	90.316	1	1	1	1	1	0	0
530	2042	2	0.000	903.951	315.731	90.323	1	1	1	1	1	0	0
531	2042	3	0.461	730.812	315.588	90.335	1	1	1	1	1	0	0
532	2042	4	3.580	423.797	315.439	90.344	1	1	1	1	1	0	0
533	2042	5	17.783	152.675	315.291	90.351	1	1	1	1	1	0	0
534	2042	6	93.219	27.926	315.140	90.360	1	1	1	1	1	0	0
535	2042	7	222.622	0.742	314.992	90.371	1	1	1	1	1	0	0
536	2042	8	245.155	0.000	314.839	90.378	1	1	1	1	1	0	0
537	2042	9	177.218	0.963	314.688	90.391	1	1	1	1	1	0	0
538	2042	10	54.320	47.158	314.538	90.393	1	1	1	1	1	0	0
539	2042	11	4.678	245.317	314.386	90.405	1	1	1	1	1	0	0
540	2042	12	0.052	562.054	314.234	90.413	1	1	1	1	1	0	0
541	2043	1	0.000	810.894	314.080	90.421	1	1	1	1	1	0	0
542	2043	2	0.000	903.951	313.933	90.431	1	1	1	1	1	0	0
543	2043	3	0.461	730.812	313.786	90.439	1	1	1	1	1	0	0
544	2043	4	3.580	423.797	313.633	90.448	1	1	1	1	1	0	0
545	2043	5	17.783	152.675	313.483	90.457	1	1	1	1	1	0	0
546	2043	6	93.219	27.926	313.330	90.467	1	1	1	1	1	0	0
547	2043	7	222.622	0.742	313.179	90.475	1	1	1	1	1	0	0
548	2043	8	245.155	0.000	313.025	90.486	1	1	1	1	1	0	0
549	2043	9	177.218	0.963	312.874	90.493	1	1	1	1	1	0	0
550	2043	10	54.320	47.158	312.723	90.503	1	1	1	1	1	0	0

Obs	YEAR	MONTH	bcdd65	bhdd55	N_imm	lcom_imm	d04on	d08on	djun10on	jan17on	apr19on	apr20	may20
551	2043	11	4.678	245.317	312.571	90.513	1	1	1	1	1	0	0
552	2043	12	0.052	562.054	312.419	90.523	1	1	1	1	1	0	0
553	2044	1	0.000	810.894	312.266	90.536	1	1	1	1	1	0	0
554	2044	2	0.000	903.951	312.117	90.545	1	1	1	1	1	0	0
555	2044	3	0.461	730.812	311.967	90.555	1	1	1	1	1	0	0
556	2044	4	3.580	423.797	311.815	90.564	1	1	1	1	1	0	0
557	2044	5	17.783	152.675	311.663	90.578	1	1	1	1	1	0	0
558	2044	6	93.219	27.926	311.510	90.583	1	1	1	1	1	0	0
559	2044	7	222.622	0.742	311.358	90.595	1	1	1	1	1	0	0
560	2044	8	245.155	0.000	311.201	90.608	1	1	1	1	1	0	0
561	2044	9	177.218	0.963	311.047	90.618	1	1	1	1	1	0	0
562	2044	10	54.320	47.158	310.892	90.626	1	1	1	1	1	0	0
563	2044	11	4.678	245.317	310.738	90.641	1	1	1	1	1	0	0
564	2044	12	0.052	562.054	310.583	90.649	1	1	1	1	1	0	0
565	2045	1	0.000	810.894	310.425	90.662	1	1	1	1	1	0	0
566	2045	2	0.000	903.951	310.276	90.667	1	1	1	1	1	0	0
567	2045	3	0.461	730.812	310.126	90.679	1	1	1	1	1	0	0
568	2045	4	3.580	423.797	309.970	90.684	1	1	1	1	1	0	0
569	2045	5	17.783	152.675	309.817	90.698	1	1	1	1	1	0	0
570	2045	6	93.219	27.926	309.663	90.708	1	1	1	1	1	0	0
571	2045	7	222.622	0.742	309.509	90.718	1	1	1	1	1	0	0
572	2045	8	245.155	0.000	309.352	90.727	1	1	1	1	1	0	0
573	2045	9	177.218	0.963	309.198	90.739	1	1	1	1	1	0	0
574	2045	10	54.320	47.158	309.045	90.749	1	1	1	1	1	0	0
575	2045	11	4.678	245.317	308.892	90.756	1	1	1	1	1	0	0
576	2045	12	0.052	562.054	308.737	90.766	1	1	1	1	1	0	0
577	2046	1	0.000	810.894	308.581	90.776	1	1	1	1	1	0	0
578	2046	2	0.000	903.951	308.431	90.790	1	1	1	1	1	0	0
579	2046	3	0.461	730.812	308.281	90.794	1	1	1	1	1	0	0
580	2046	4	3.580	423.797	308.125	90.804	1	1	1	1	1	0	0
581	2046	5	17.783	152.675	307.968	90.814	1	1	1	1	1	0	0
582	2046	6	93.219	27.926	307.810	90.818	1	1	1	1	1	0	0
583	2046	7	222.622	0.742	307.651	90.831	1	1	1	1	1	0	0
584	2046	8	245.155	0.000	307.487	90.841	1	1	1	1	1	0	0
585	2046	9	177.218	0.963	307.325	90.851	1	1	1	1	1	0	0
586	2046	10	54.320	47.158	307.163	90.856	1	1	1	1	1	0	0
587	2046	11	4.678	245.317	306.999	90.863	1	1	1	1	1	0	0
588	2046	12	0.052	562.054	306.834	90.874	1	1	1	1	1	0	0
589	2047	1	0.000	810.894	306.668	90.883	1	1	1	1	1	0	0
590	2047	2	0.000	903.951	306.508	90.891	1	1	1	1	1	0	0
591	2047	3	0.461	730.812	306.349	90.898	1	1	1	1	1	0	0
592	2047	4	3.580	423.797	306.185	90.906	1	1	1	1	1	0	0
593	2047	5	17.783	152.675	306.022	90.914	1	1	1	1	1	0	0
594	2047	6	93.219	27.926	305.857	90.924	1	1	1	1	1	0	0
595	2047	7	222.622	0.742	305.695	90.933	1	1	1	1	1	0	0
596	2047	8	245.155	0.000	305.530	90.939	1	1	1	1	1	0	0
597	2047	9	177.218	0.963	305.369	90.948	1	1	1	1	1	0	0
598	2047	10	54.320	47.158	305.208	90.956	1	1	1	1	1	0	0
599	2047	11	4.678	245.317	305.048	90.964	1	1	1	1	1	0	0
600	2047	12	0.052	562.054	304.888	90.976	1	1	1	1	1	0	0

Obs	YEAR	MONTH	bcdd65	bhdd55	N_imm	lcom_imm	d04on	d08on	djun10on	jan17on	apr19on	apr20	may20
601	2048	1	0.000	810.894	304.726	90.9840	1	1	1	1	1	0	0
602	2048	2	0.000	903.951	304.568	90.9910	1	1	1	1	1	0	0
603	2048	3	0.461	730.812	304.412	91.0030	1	1	1	1	1	0	0
604	2048	4	3.580	423.797	304.253	91.0110	1	1	1	1	1	0	0
605	2048	5	17.783	152.675	304.095	91.0150	1	1	1	1	1	0	0
606	2048	6	93.219	27.926	303.935	91.0280	1	1	1	1	1	0	0
607	2048	7	222.622	0.742	303.777	91.0300	1	1	1	1	1	0	0
608	2048	8	245.155	0.000	303.614	91.0470	1	1	1	1	1	0	0
609	2048	9	177.218	0.963	303.455	91.0570	1	1	1	1	1	0	0
610	2048	10	54.320	47.158	303.295	91.0630	1	1	1	1	1	0	0
611	2048	11	4.678	245.317	303.135	91.0750	1	1	1	1	1	0	0
612	2048	12	0.052	562.054	302.976	91.0770	1	1	1	1	1	0	0
613	2049	1	0.000	810.894	302.815	91.0890	1	1	1	1	1	0	0
614	2049	2	0.000	903.951	302.660	91.0990	1	1	1	1	1	0	0
615	2049	3	0.461	730.812	302.506	91.1060	1	1	1	1	1	0	0
616	2049	4	3.580	423.797	302.346	91.1150	1	1	1	1	1	0	0
617	2049	5	17.783	152.675	302.188	91.1230	1	1	1	1	1	0	0
618	2049	6	93.219	27.926	302.027	91.1290	1	1	1	1	1	0	0
619	2049	7	222.622	0.742	301.869	91.1400	1	1	1	1	1	0	0
620	2049	8	245.155	0.000	301.708	91.1490	1	1	1	1	1	0	0
621	2049	9	177.218	0.963	301.549	91.1570	1	1	1	1	1	0	0
622	2049	10	54.320	47.158	301.390	91.1620	1	1	1	1	1	0	0
623	2049	11	4.678	245.317	301.232	91.1700	1	1	1	1	1	0	0
624	2049	12	0.052	562.054	301.074	91.1800	1	1	1	1	1	0	0
625	2050	1	0.000	810.894	300.914	91.1860	1	1	1	1	1	0	0
626	2050	2	0.000	903.951	300.761	91.1930	1	1	1	1	1	0	0
627	2050	3	0.461	730.812	300.608	91.1960	1	1	1	1	1	0	0
628	2050	4	3.580	423.797	300.451	91.2060	1	1	1	1	1	0	0
629	2050	5	17.783	152.675	300.295	91.2070	1	1	1	1	1	0	0
630	2050	6	93.219	27.926	300.140	91.2130	1	1	1	1	1	0	0
631	2050	7	222.622	0.742	299.984	91.2210	1	1	1	1	1	0	0
632	2050	8	245.155	0.000	299.827	91.2270	1	1	1	1	1	0	0
633	2050	9	177.218	0.963	299.671	91.2300	1	1	1	1	1	0	0
634	2050	10	54.320	47.158	299.518	91.2360	1	1	1	1	1	0	0
635	2050	11	4.678	245.317	299.364	91.2400	1	1	1	1	1	0	0
636	2050	12	0.052	562.054	299.211	91.2400	1	1	1	1	1	0	0
637	2051	1	0.000	810.894	299.026	91.2851	1	1	1	1	1	0	0
638	2051	2	0.000	903.951	298.875	91.2890	1	1	1	1	1	0	0
639	2051	3	0.461	730.812	298.723	91.2880	1	1	1	1	1	0	0
640	2051	4	3.580	423.797	298.569	91.2990	1	1	1	1	1	0	0
641	2051	5	17.783	152.675	298.415	91.2930	1	1	1	1	1	0	0
642	2051	6	93.219	27.926	298.266	91.2989	1	1	1	1	1	0	0
643	2051	7	222.622	0.742	298.112	91.3039	1	1	1	1	1	0	0
644	2051	8	245.155	0.000	297.959	91.3069	1	1	1	1	1	0	0
645	2051	9	177.218	0.963	297.806	91.3049	1	1	1	1	1	0	0
646	2051	10	54.320	47.158	297.659	91.3119	1	1	1	1	1	0	0
647	2051	11	4.678	245.317	297.509	91.3118	1	1	1	1	1	0	0
648	2051	12	0.052	562.054	297.361	91.3019	1	1	1	1	1	0	0
649	2052	1	0.000	810.894	297.152	91.3862	1	1	1	1	1	0	0
650	2052	2	0.000	903.951	297.003	91.3870	1	1	1	1	1	0	0

Obs	YEAR	MONTH	bcdd65	bhdd55	N_imm	lcom_imm	d04on	d08on	djun10on	jan17on	apr19on	apr20	may20
651	2052	3	0.461	730.812	296.852	91.3819	1	1	1	1	1	0	0
652	2052	4	3.580	423.797	296.701	91.3939	1	1	1	1	1	0	0
653	2052	5	17.783	152.675	296.549	91.3809	1	1	1	1	1	0	0
654	2052	6	93.219	27.926	296.406	91.3867	1	1	1	1	1	0	0
655	2052	7	222.622	0.742	296.254	91.3887	1	1	1	1	1	0	0
656	2052	8	245.155	0.000	296.104	91.3886	1	1	1	1	1	0	0
657	2052	9	177.218	0.963	295.954	91.3817	1	1	1	1	1	0	0
658	2052	10	54.320	47.158	295.813	91.3896	1	1	1	1	1	0	0
659	2052	11	4.678	245.317	295.667	91.3855	1	1	1	1	1	0	0
660	2052	12	0.052	562.054	295.524	91.3656	1	1	1	1	1	0	0
661	2053	1	0.000	810.894	295.291	91.4895	1	1	1	1	1	0	0
662	2053	2	0.000	903.951	295.144	91.4869	1	1	1	1	1	0	0
663	2053	3	0.461	730.812	294.994	91.4779	1	1	1	1	1	0	0
664	2053	4	3.580	423.797	294.846	91.4908	1	1	1	1	1	0	0
665	2053	5	17.783	152.675	294.695	91.4707	1	1	1	1	1	0	0
666	2053	6	93.219	27.926	294.558	91.4763	1	1	1	1	1	0	0
667	2053	7	222.622	0.742	294.408	91.4755	1	1	1	1	1	0	0
668	2053	8	245.155	0.000	294.263	91.4721	1	1	1	1	1	0	0
669	2053	9	177.218	0.963	294.116	91.4604	1	1	1	1	1	0	0
670	2053	10	54.320	47.158	293.980	91.4693	1	1	1	1	1	0	0
671	2053	11	4.678	245.317	293.838	91.4610	1	1	1	1	1	0	0
672	2053	12	0.052	562.054	293.700	91.4312	1	1	1	1	1	0	0
673	2054	1	0.000	810.894	293.443	91.5948	1	1	1	1	1	0	0
674	2054	2	0.000	903.951	293.298	91.5889	1	1	1	1	1	0	0
675	2054	3	0.461	730.812	293.149	91.5758	1	1	1	1	1	0	0
676	2054	4	3.580	423.797	293.003	91.5898	1	1	1	1	1	0	0
677	2054	5	17.783	152.675	292.855	91.5626	1	1	1	1	1	0	0
678	2054	6	93.219	27.926	292.723	91.5679	1	1	1	1	1	0	0
679	2054	7	222.622	0.742	292.575	91.5641	1	1	1	1	1	0	0
680	2054	8	245.155	0.000	292.434	91.5575	1	1	1	1	1	0	0
681	2054	9	177.218	0.963	292.290	91.5411	1	1	1	1	1	0	0
682	2054	10	54.320	47.158	292.160	91.5508	1	1	1	1	1	0	0
683	2054	11	4.678	245.317	292.022	91.5383	1	1	1	1	1	0	0
684	2054	12	0.052	562.054	291.888	91.4987	1	1	1	1	1	0	0
685	2055	1	0.000	810.894	291.608	91.7022	1	1	1	1	1	0	0
686	2055	2	0.000	903.951	291.465	91.6928	1	1	1	1	1	0	0
687	2055	3	0.461	730.812	291.316	91.6757	1	1	1	1	1	0	0
688	2055	4	3.580	423.797	291.174	91.6907	1	1	1	1	1	0	0
689	2055	5	17.783	152.675	291.028	91.6564	1	1	1	1	1	0	0
690	2055	6	93.219	27.926	290.902	91.6614	1	1	1	1	1	0	0
691	2055	7	222.622	0.742	290.756	91.6547	1	1	1	1	1	0	0
692	2055	8	245.155	0.000	290.618	91.6448	1	1	1	1	1	0	0
693	2055	9	177.218	0.963	290.476	91.6236	1	1	1	1	1	0	0
694	2055	10	54.320	47.158	290.353	91.6342	1	1	1	1	1	0	0
695	2055	11	4.678	245.317	290.218	91.6175	1	1	1	1	1	0	0
696	2055	12	0.052	562.054	290.089	91.5680	1	1	1	1	1	0	0
697	2056	1	0.000	810.894	289.786	91.8117	1	1	1	1	1	0	0
698	2056	2	0.000	903.951	289.644	91.7988	1	1	1	1	1	0	0
699	2056	3	0.461	730.812	289.497	91.7776	1	1	1	1	1	0	0
700	2056	4	3.580	423.797	289.357	91.7936	1	1	1	1	1	0	0

Obs	YEAR	MONTH	bcdd65	bhdd55	N_imm	lcom_imm	d04on	d08on	djun10on	jan17on	apr19on	apr20	may20
701	2056	5	17.783	152.675	289.213	91.7521	1	1	1	1	1	0	0
702	2056	6	93.219	27.926	289.093	91.7568	1	1	1	1	1	0	0
703	2056	7	222.622	0.742	288.948	91.7472	1	1	1	1	1	0	0
704	2056	8	245.155	0.000	288.814	91.7340	1	1	1	1	1	0	0
705	2056	9	177.218	0.963	288.676	91.7081	1	1	1	1	1	0	0
706	2056	10	54.320	47.158	288.558	91.7196	1	1	1	1	1	0	0
707	2056	11	4.678	245.317	288.427	91.6985	1	1	1	1	1	0	0
708	2056	12	0.052	562.054	288.303	91.6392	1	1	1	1	1	0	0
709	2057	1	0.000	810.894	287.976	91.9233	1	1	1	1	1	0	0
710	2057	2	0.000	903.951	287.837	91.9067	1	1	1	1	1	0	0
711	2057	3	0.461	730.812	287.691	91.8814	1	1	1	1	1	0	0
712	2057	4	3.580	423.797	287.554	91.8985	1	1	1	1	1	0	0
713	2057	5	17.783	152.675	287.411	91.8499	1	1	1	1	1	0	0
714	2057	6	93.219	27.926	287.296	91.8541	1	1	1	1	1	0	0
715	2057	7	222.622	0.742	287.154	91.8416	1	1	1	1	1	0	0
716	2057	8	245.155	0.000	287.024	91.8250	1	1	1	1	1	0	0
717	2057	9	177.218	0.963	286.888	91.7945	1	1	1	1	1	0	0
718	2057	10	54.320	47.158	286.775	91.8068	1	1	1	1	1	0	0
719	2057	11	4.678	245.317	286.648	91.7813	1	1	1	1	1	0	0
720	2057	12	0.052	562.054	286.529	91.7123	1	1	1	1	1	0	0

The SAS System
City of Dowagiac
Model Estimation

The SYSLIN Procedure
Ordinary Least Squares Estimation

Model	KWH
Dependent Variable	KWH
Label	Energy

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	10	1.252E14	1.252E13	100.90	<.0001
Error	244	3.027E13	1.24E11		
Corrected Total	254	1.554E14			

Root MSE	352198.952	R-Square	0.80527
Dependent Mean	6048501.20	Adj R-Sq	0.79729
Coeff Var	5.82291		

Parameter Estimates

Variable	DF	Parameter Estimate	Standard Error	t Value	Pr > |t|	Variable Label
Intercept	1	-1155660	1844243	-0.63	0.5315	Intercept
nlcomindxy	1	7096735	1815479	3.91	0.0001	Service Area Population and Commercial Employment Index
bhdd55	1	590.7799	86.43156	6.84	<.0001	Service Area Heating Degree Days
bcdd65	1	3580.176	313.4071	11.42	<.0001	Service Area Cooling Degree Days
d04on	1	698761.3	76468.32	9.14	<.0001	Binary Variable - 2004 On
d08on	1	-1319434	85457.32	-15.44	<.0001	Binary Variable - 2008 On
djun10on	1	150888.0	78003.53	1.93	0.0542	Binary Variable - June 2010 On
jan17on	1	-368434	91307.62	-4.04	<.0001	Binary Variable - January 2017 On
apr19on	1	-384261	118027.8	-3.26	0.0013	Binary Variable - April 2019 On
apr20	1	-1031843	363205.4	-2.84	0.0049	Binary Variable - April 2020
may20	1	-918692	364546.7	-2.52	0.0124	Binary Variable - May 2020

The SAS System
City of Dowagiac
Model Estimation

The SYSLIN Procedure
Ordinary Least Squares Estimation

Durbin-Watson	1.61372
Number of Observations	255
First-Order Autocorrelation	0.191145

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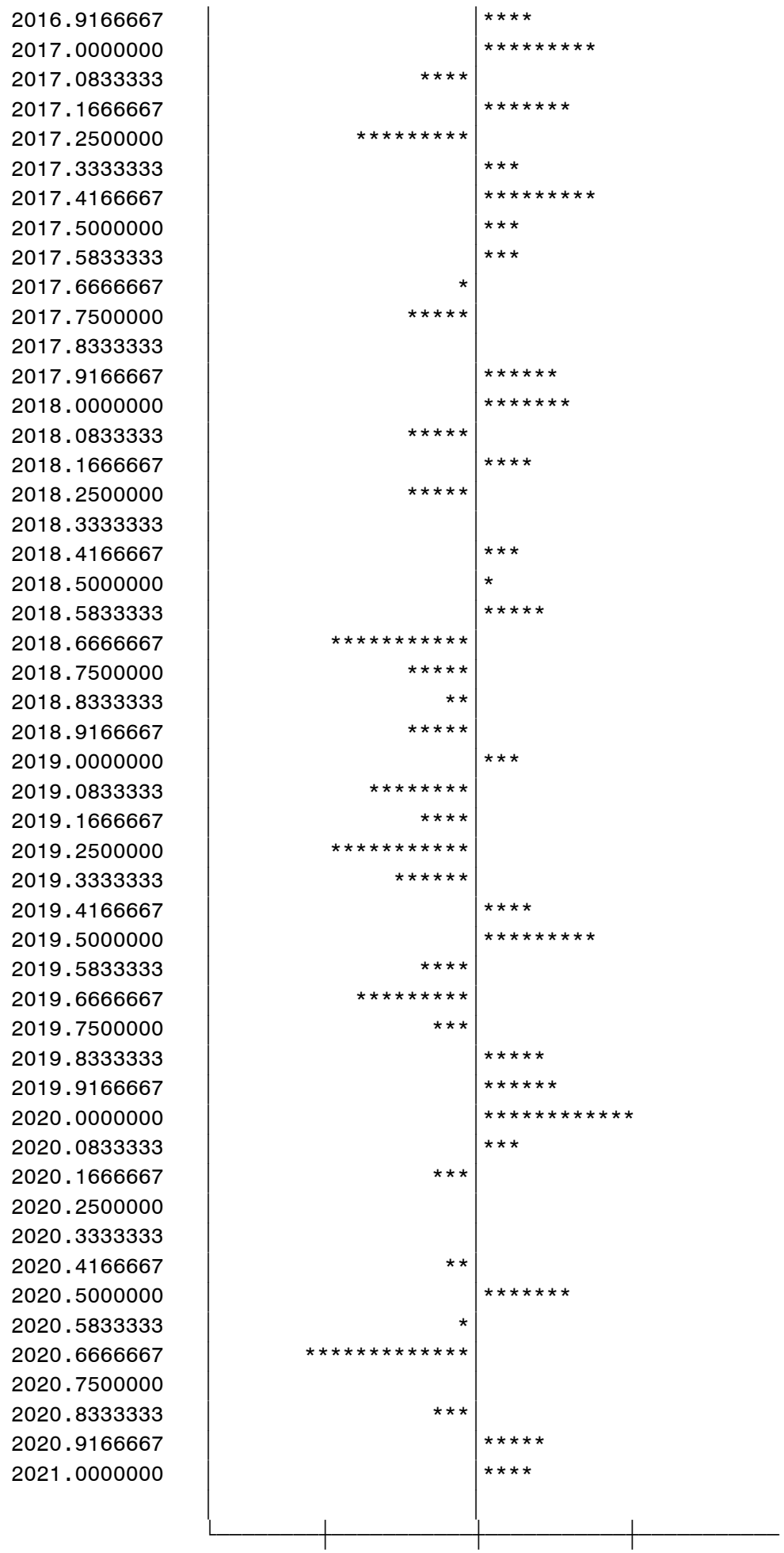
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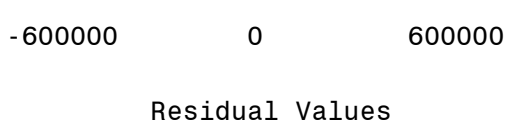
The SAS System
City of Dowagiac
Model Residuals



The SAS System
City of Dowagiac
Actual and Forecast

Year	Energy	Growth Rate
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2001	CONFID.	N/A
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2003	CONFID.	N/A
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2015	CONFID.	N/A
2016	CONFID.	N/A
2017	CONFID.	N/A
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2019	CONFID.	N/A
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2021	CONFID.	N/A
2022	CONFID.	N/A
2023	CONFID.	N/A
2024	CONFID.	N/A
2025	CONFID.	N/A
2026	CONFID.	N/A
2027	CONFID.	N/A
2028	CONFID.	N/A
2029	CONFID.	N/A
2030	CONFID.	N/A
2031	CONFID.	N/A
2032	CONFID.	N/A
2033	CONFID.	N/A
2034	CONFID.	N/A
2035	CONFID.	N/A
2036	CONFID.	N/A
2037	CONFID.	N/A
2038	CONFID.	N/A
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2041	CONFID.	N/A
2042	CONFID.	N/A
2043	CONFID.	N/A
2044	CONFID.	N/A
2045	CONFID.	N/A
2046	CONFID.	N/A

The SAS System
City of Dowagiac
Actual and Forecast

Year	Energy	Growth Rate
2047	CONFID.	N/A
2048	CONFID.	N/A
2049	CONFID.	N/A
2050	CONFID.	N/A
2051	CONFID.	N/A
2052	CONFID.	N/A
2053	CONFID.	N/A
2054	CONFID.	N/A
2055	CONFID.	N/A
2056	CONFID.	N/A
2057	CONFID.	N/A

DEMAND-SIDE MANAGEMENT

Indiana Michigan and Indiana and Michigan Jurisdictions
DSM/Energy Efficiency Included in Load Forecast
Energy (GWh) and Coincident Peak Demand (MW)

	I&M DSM/EE			I&M - Indiana DSM/EE			I&M - Michigan DSM/EE		
Year	Energy	Summer* Demand	Winter* Demand	Energy	Summer* Demand	Winter* Demand	Energy	Summer* Demand	Winter* Demand
2022	27.0	6.0	8.7	20.3	5.6	7.9	6.7	0.4	0.8
2023	37.6	8.1	8.3	29.1	7.6	5.8	8.4	0.5	2.5
2024	33.0	5.7	8.3	27.3	5.4	6.6	5.7	0.3	1.7
2025	31.5	1.9	8.8	28.6	1.5	8.4	2.9	0.5	0.4
2026	53.3	5.0	12.2	44.6	3.5	11.0	8.7	1.5	1.2
2027	72.9	7.7	15.2	59.1	5.4	13.4	13.9	2.3	1.9
2028	89.2	10.0	17.6	71.2	7.0	15.2	18.1	3.0	2.5
2029	93.8	11.0	17.9	75.1	7.8	15.3	18.8	3.2	2.6
2030	70.3	7.6	14.2	61.9	6.2	13.0	8.4	1.4	1.1
2031	38.8	2.9	9.8	38.8	2.9	9.8	0.0	0.0	0.0
2032	19.1	0.0	7.2	19.1	0.0	7.2	0.0	0.0	0.0
2033	19.1	0.0	7.2	19.1	0.0	7.2	0.1	0.0	0.0
2034	17.4	0.0	6.6	17.4	0.0	6.6	0.0	0.0	0.0
2035	10.9	0.0	8.4	10.9	0.0	8.4	0.0	0.0	0.0
2036	1.3	0.0	1.0	1.3	0.0	1.0	0.0	0.0	0.0
2037	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2038	10.4	2.2	5.0	10.1	2.1	4.9	0.3	0.1	0.1
2039	77.9	16.5	18.2	75.7	16.0	17.7	2.2	0.5	0.5
2040	121.8	25.8	28.3	118.4	25.1	27.5	3.4	0.7	0.8
2041	92.1	19.4	21.4	89.5	18.9	20.8	2.5	0.6	0.6

***Demand coincident with Company's seasonal peak demand.**

Indiana Michigan Power Company
Monthly DSM Included in Load Forecast Peak Demand (MW) and Energy (MWh)

		Peak Demand (MW)			Energy (MWh)		
Year	Month	I&M	Indiana*	Michigan*	I&M	Indiana	Michigan
2021	5	1.6	1.3	0.4	798	457	341
2021	6	2.5	2.2	0.3	1,238	934	304
2021	7	2.5	2.2	0.3	1,308	1,007	301
2021	8	2.3	2.0	0.3	1,286	972	314
2021	9	1.9	1.5	0.4	1,006	683	323
2021	10	1.4	0.9	0.5	783	419	364
2021	11	2.2	1.7	0.5	936	554	383
2021	12	3.4	2.9	0.5	1,412	997	415
2022	1	8.7	7.9	0.8	3,227	2,547	680
2022	2	7.8	7.1	0.8	2,573	1,983	590
2022	3	5.4	4.7	0.8	2,263	1,638	625
2022	4	3.1	2.2	0.9	1,288	720	568
2022	5	3.5	3.0	0.5	1,401	866	534
2022	6	6.0	5.6	0.4	2,627	2,162	465
2022	7	6.0	5.6	0.4	2,811	2,352	459
2022	8	5.4	4.9	0.5	2,738	2,261	478
2022	9	4.3	3.7	0.6	1,985	1,486	499
2022	10	2.8	2.1	0.7	1,329	760	569
2022	11	4.9	4.1	0.8	1,754	1,148	606
2022	12	8.5	7.8	0.7	3,047	2,387	660
2023	1	8.3	5.8	2.5	4,641	3,786	855
2023	2	11.5	10.5	1.0	3,696	2,955	741
2023	3	7.9	7.0	1.0	3,240	2,454	785
2023	4	4.2	3.1	1.1	1,731	1,018	713
2023	5	5.3	4.6	0.7	1,854	1,184	671
2023	6	8.2	7.7	0.5	3,558	2,979	580
2023	7	8.1	7.6	0.5	3,806	3,234	572

Indiana Michigan Power Company
Monthly DSM Included in Load Forecast Peak Demand (MW) and Energy (MWh)

		Peak Demand (MW)			Energy (MWh)		
Year	Month	I&M	Indiana*	Michigan*	I&M	Indiana	Michigan
2023	8	7.3	6.8	0.6	3,699	3,103	596
2023	9	5.1	4.4	0.7	2,672	2,048	624
2023	10	4.5	2.9	1.6	1,797	1,083	714
2023	11	8.0	7.0	1.0	2,441	1,679	761
2023	12	12.5	11.6	0.9	4,424	3,594	830
2024	1	8.3	6.6	1.7	4,879	4,302	577
2024	2	12.6	11.9	0.7	3,929	3,411	518
2024	3	8.5	7.9	0.6	3,356	2,827	529
2024	4	2.9	2.2	0.7	1,444	963	482
2024	5	3.5	3.1	0.4	1,316	863	452
2024	6	5.8	5.4	0.3	2,488	2,098	391
2024	7	5.7	5.4	0.3	2,682	2,295	387
2024	8	5.2	4.8	0.4	2,609	2,208	402
2024	9	3.6	3.1	0.5	1,920	1,500	421
2024	10	3.4	2.3	1.1	1,397	916	482
2024	11	8.2	7.6	0.6	2,374	1,861	513
2024	12	13.8	13.2	0.6	4,635	4,075	560
2025	1	8.8	8.4	0.4	5,688	5,454	235
2025	2	14.3	13.9	0.3	4,503	4,288	215
2025	3	9.8	9.5	0.3	4,032	3,805	227
2025	4	1.8	1.3	0.4	1,639	1,420	220
2025	5	1.8	1.4	0.4	1,072	846	226
2025	6	1.8	1.4	0.5	1,075	825	250
2025	7	1.9	1.5	0.5	1,201	913	289
2025	8	2.0	1.5	0.5	1,252	963	289
2025	9	1.9	1.5	0.4	1,193	952	241
2025	10	1.8	1.4	0.4	1,478	1,269	209

Indiana Michigan Power Company
Monthly DSM Included in Load Forecast Peak Demand (MW) and Energy (MWh)

		Peak Demand (MW)			Energy (MWh)		
Year	Month	I&M	Indiana*	Michigan*	I&M	Indiana	Michigan
2025	11	9.4	9.1	0.3	2,924	2,700	224
2025	12	15.7	15.4	0.4	5,432	5,192	240
2026	1	12.2	11.0	1.2	7,902	7,193	710
2026	2	18.1	17.1	1.0	6,400	5,750	651
2026	3	13.1	12.1	1.0	5,959	5,268	691
2026	4	4.5	3.2	1.3	3,221	2,554	667
2026	5	4.5	3.3	1.3	2,616	1,933	683
2026	6	4.7	3.3	1.4	2,749	1,988	761
2026	7	5.0	3.5	1.5	3,069	2,192	877
2026	8	5.0	3.6	1.5	3,142	2,265	877
2026	9	4.7	3.5	1.3	2,827	2,096	731
2026	10	4.3	3.3	1.1	3,114	2,483	632
2026	11	12.4	11.5	1.0	4,726	4,045	682
2026	12	19.8	18.8	1.1	7,600	6,873	727
2027	1	15.2	13.4	1.9	9,855	8,724	1,130
2027	2	21.5	19.8	1.7	8,091	7,052	1,039
2027	3	15.9	14.4	1.5	7,554	6,446	1,108
2027	4	7.0	5.0	2.0	4,642	3,578	1,064
2027	5	7.1	5.0	2.0	4,022	2,932	1,091
2027	6	7.3	5.1	2.2	4,265	3,051	1,214
2027	7	7.7	5.4	2.3	4,748	3,354	1,394
2027	8	7.8	5.5	2.3	4,871	3,467	1,404
2027	9	7.3	5.2	2.1	4,309	3,143	1,167
2027	10	10.0	8.6	1.4	4,583	3,581	1,002
2027	11	15.1	13.5	1.6	6,465	5,375	1,090
2027	12	23.4	21.7	1.7	9,533	8,368	1,164
2028	1	17.6	15.2	2.5	11,387	9,913	1,474

Indiana Michigan Power Company
Monthly DSM Included in Load Forecast Peak Demand (MW) and Energy (MWh)

		Peak Demand (MW)			Energy (MWh)		
Year	Month	I&M	Indiana*	Michigan*	I&M	Indiana	Michigan
2028	2	24.0	21.9	2.2	9,694	8,295	1,399
2028	3	18.2	16.1	2.0	8,955	7,515	1,440
2028	4	9.3	6.7	2.6	5,797	4,422	1,375
2028	5	9.2	6.6	2.6	5,229	3,805	1,425
2028	6	9.5	6.6	2.8	5,536	3,958	1,577
2028	7	10.0	7.0	3.0	6,143	4,334	1,809
2028	8	10.1	7.1	3.0	6,335	4,504	1,830
2028	9	9.4	6.8	2.7	5,528	4,021	1,507
2028	10	12.0	10.1	1.8	5,841	4,536	1,305
2028	11	16.8	14.7	2.1	7,762	6,345	1,417
2028	12	26.1	23.9	2.2	11,027	9,524	1,503
2029	1	17.9	15.3	2.6	11,561	10,024	1,537
2029	2	23.7	21.5	2.2	9,625	8,220	1,406
2029	3	18.1	16.1	2.1	9,249	7,756	1,493
2029	4	9.9	7.2	2.7	6,212	4,776	1,436
2029	5	9.9	7.2	2.7	5,713	4,230	1,484
2029	6	10.4	7.4	3.0	6,045	4,407	1,638
2029	7	11.0	7.8	3.2	6,755	4,871	1,885
2029	8	11.1	8.0	3.2	6,936	5,034	1,901
2029	9	9.9	7.1	2.8	6,017	4,447	1,569
2029	10	9.5	7.2	2.3	6,362	4,992	1,369
2029	11	19.0	16.8	2.1	8,089	6,614	1,475
2029	12	25.9	23.5	2.3	11,247	9,685	1,563
2030	1	14.2	13.0	1.1	9,206	8,519	687
2030	2	19.6	18.6	1.0	7,587	6,959	629
2030	3	14.7	13.8	0.9	7,201	6,534	666
2030	4	6.9	5.7	1.2	4,544	3,900	644

Indiana Michigan Power Company
Monthly DSM Included in Load Forecast Peak Demand (MW) and Energy (MWh)

		Peak Demand (MW)			Energy (MWh)		
Year	Month	I&M	Indiana*	Michigan*	I&M	Indiana	Michigan
2030	5	7.0	5.8	1.2	4,040	3,376	664
2030	6	7.2	5.9	1.3	4,225	3,496	729
2030	7	7.6	6.2	1.4	4,734	3,886	848
2030	8	7.8	6.3	1.4	4,844	3,996	849
2030	9	6.9	5.6	1.3	4,272	3,568	704
2030	10	6.8	5.7	1.0	4,636	4,024	613
2030	11	14.8	13.8	1.0	6,138	5,480	658
2030	12	21.4	20.4	1.0	8,913	8,212	701
2031	1	9.8	9.8	0.0	6,422	6,420	3
2031	2	15.5	15.5	0.0	5,126	5,124	2
2031	3	10.9	10.9	0.0	4,660	4,658	2
2031	4	2.6	2.6	0.0	2,168	2,167	0
2031	5	2.7	2.7	0.0	1,598	1,598	0
2031	6	2.7	2.7	0.0	1,625	1,625	0
2031	7	2.9	2.9	0.0	1,800	1,800	0
2031	8	3.0	3.0	0.0	1,863	1,863	0
2031	9	2.8	2.8	0.0	1,737	1,737	0
2031	10	2.7	2.7	0.0	2,095	2,094	0
2031	11	10.5	10.5	0.0	3,544	3,543	1
2031	12	17.0	17.0	0.0	6,143	6,141	3
2032	1	7.2	7.2	0.0	4,682	4,674	8
2032	2	12.9	12.9	0.0	3,669	3,662	6
2032	3	8.5	8.4	0.0	2,948	2,943	5
2032	4	0.0	0.0	0.0	689	688	1
2032	5	0.0	0.0	0.0	90	89	0
2032	6	0.0	0.0	0.0	4	4	0
2032	7	0.0	0.0	0.0	2	2	0

Indiana Michigan Power Company
Monthly DSM Included in Load Forecast Peak Demand (MW) and Energy (MWh)

		Peak Demand (MW)			Energy (MWh)		
Year	Month	I&M	Indiana*	Michigan*	I&M	Indiana	Michigan
2032	8	0.0	0.0	0.0	41	41	0
2032	9	0.1	0.1	0.0	153	153	0
2032	10	3.3	3.3	0.0	441	440	1
2032	11	7.5	7.5	0.0	1,984	1,980	4
2032	12	14.3	14.3	0.0	4,393	4,385	8
2033	1	7.2	7.2	0.0	4,705	4,692	14
2033	2	13.0	12.9	0.0	3,604	3,593	11
2033	3	8.5	8.5	0.0	2,982	2,973	9
2033	4	0.1	0.1	0.0	703	700	3
2033	5	0.0	0.0	0.0	87	86	1
2033	6	0.0	0.0	0.0	4	4	0
2033	7	0.0	0.0	0.0	2	2	0
2033	8	0.0	0.0	0.0	41	41	0
2033	9	0.1	0.1	0.0	153	153	0
2033	10	3.3	3.3	0.0	442	441	1
2033	11	7.3	7.3	0.0	1,978	1,972	6
2033	12	14.4	14.3	0.0	4,422	4,408	13
2034	1	6.6	6.6	0.0	4,275	4,267	8
2034	2	11.8	11.8	0.0	3,288	3,282	6
2034	3	7.7	7.7	0.0	2,739	2,734	5
2034	4	0.0	0.0	0.0	627	625	1
2034	5	0.0	0.0	0.0	69	69	0
2034	6	0.0	0.0	0.0	4	4	0
2034	7	0.0	0.0	0.0	2	2	0
2034	8	0.0	0.0	0.0	36	36	0
2034	9	0.1	0.1	0.0	141	140	0
2034	10	0.1	0.1	0.0	410	409	1

Indiana Michigan Power Company
Monthly DSM Included in Load Forecast Peak Demand (MW) and Energy (MWh)

Year	Month	Peak Demand (MW)			Energy (MWh)		
		I&M	Indiana*	Michigan*	I&M	Indiana	Michigan
2034	11	7.9	7.9	0.0	1,770	1,767	3
2034	12	13.1	13.1	0.0	4,068	4,061	8
2035	1	8.4	8.4	0.0	2,679	2,679	0
2035	2	7.4	7.4	0.0	2,062	2,062	0
2035	3	4.9	4.9	0.0	1,736	1,736	0
2035	4	0.0	0.0	0.0	394	394	0
2035	5	0.0	0.0	0.0	43	43	0
2035	6	0.0	0.0	0.0	2	2	0
2035	7	0.0	0.0	0.0	1	1	0
2035	8	0.0	0.0	0.0	22	22	0
2035	9	0.0	0.0	0.0	89	89	0
2035	10	0.1	0.1	0.0	253	253	0
2035	11	5.0	5.0	0.0	1,101	1,101	0
2035	12	8.2	8.2	0.0	2,554	2,554	0
2036	1	1.0	1.0	0.0	304	304	0
2036	2	0.8	0.8	0.0	242	242	0
2036	3	0.6	0.6	0.0	200	200	0
2036	4	0.0	0.0	0.0	45	45	0
2036	5	0.0	0.0	0.0	5	5	0
2036	6	0.0	0.0	0.0	0	0	0
2036	7	0.0	0.0	0.0	0	0	0
2036	8	0.0	0.0	0.0	3	3	0
2036	9	0.0	0.0	0.0	10	10	0
2036	10	0.0	0.0	0.0	29	29	0
2036	11	0.5	0.5	0.0	125	125	0
2036	12	0.9	0.9	0.0	288	288	0
2037	1	0.0	0.0	0.0	0	0	0

Indiana Michigan Power Company
Monthly DSM Included in Load Forecast Peak Demand (MW) and Energy (MWh)

		Peak Demand (MW)			Energy (MWh)		
Year	Month	I&M	Indiana*	Michigan*	I&M	Indiana	Michigan
2037	2	0.0	0.0	0.0	0	0	0
2037	3	0.0	0.0	0.0	0	0	0
2037	4	0.0	0.0	0.0	0	0	0
2037	5	0.0	0.0	0.0	0	0	0
2037	6	0.0	0.0	0.0	0	0	0
2037	7	0.0	0.0	0.0	0	0	0
2037	8	0.0	0.0	0.0	0	0	0
2037	9	0.0	0.0	0.0	0	0	0
2037	10	0.0	0.0	0.0	0	0	0
2037	11	0.0	0.0	0.0	0	0	0
2037	12	0.0	0.0	0.0	0	0	0
2038	1	5.0	4.9	0.1	1,609	1,569	40
2038	2	4.4	4.3	0.1	1,243	1,211	32
2038	3	2.9	2.9	0.1	1,023	996	27
2038	4	0.9	0.8	0.0	371	359	12
2038	5	1.2	1.1	0.0	350	339	11
2038	6	2.2	2.1	0.1	842	816	26
2038	7	2.2	2.1	0.1	917	889	28
2038	8	1.9	1.9	0.1	884	856	28
2038	9	1.5	1.4	0.0	598	580	18
2038	10	1.2	1.2	0.0	354	344	10
2038	11	2.6	2.6	0.1	710	691	18
2038	12	4.9	4.8	0.1	1,505	1,466	39
2039	1	18.2	17.7	0.5	11,862	11,569	293
2039	2	32.9	32.0	0.9	9,188	8,952	236
2039	3	21.6	21.1	0.5	7,602	7,400	202
2039	4	6.7	6.5	0.3	2,796	2,707	89

Indiana Michigan Power Company
Monthly DSM Included in Load Forecast Peak Demand (MW) and Energy (MWh)

		Peak Demand (MW)			Energy (MWh)		
Year	Month	I&M	Indiana*	Michigan*	I&M	Indiana	Michigan
2039	5	8.8	8.6	0.2	2,658	2,574	83
2039	6	16.6	16.1	0.5	6,432	6,235	196
2039	7	16.5	16.0	0.5	6,993	6,782	211
2039	8	14.7	14.2	0.5	6,763	6,552	211
2039	9	11.1	10.7	0.4	4,559	4,420	139
2039	10	9.2	9.0	0.2	2,665	2,588	77
2039	11	18.8	18.4	0.4	5,220	5,085	135
2039	12	17.5	17.1	0.4	11,138	10,851	286
2040	1	28.3	27.5	0.8	18,386	17,931	455
2040	2	51.1	49.7	1.4	14,595	14,221	374
2040	3	33.6	32.8	0.8	12,007	11,690	317
2040	4	10.6	10.2	0.4	4,306	4,167	139
2040	5	15.2	14.8	0.4	4,108	3,979	128
2040	6	26.0	25.2	0.8	10,075	9,768	307
2040	7	25.8	25.1	0.7	10,974	10,642	332
2040	8	23.0	22.2	0.7	10,568	10,237	331
2040	9	14.2	13.6	0.5	7,134	6,917	216
2040	10	10.6	10.2	0.4	4,180	4,059	121
2040	11	34.0	33.3	0.8	7,954	7,748	206
2040	12	27.3	26.6	0.7	17,503	17,053	451
2041	1	21.4	20.8	0.6	13,892	13,550	342
2041	2	38.6	37.5	1.0	10,823	10,546	277
2041	3	25.4	24.8	0.6	9,174	8,932	242
2041	4	8.0	7.7	0.3	3,300	3,196	105
2041	5	11.1	10.8	0.3	3,143	3,046	97
2041	6	19.6	18.9	0.6	7,594	7,364	230
2041	7	19.4	18.9	0.6	8,303	8,053	249

Indiana Michigan Power Company
Monthly DSM Included in Load Forecast Peak Demand (MW) and Energy (MWh)

		Peak Demand (MW)			Energy (MWh)		
Year	Month	I&M	Indiana*	Michigan*	I&M	Indiana	Michigan
2041	8	17.3	16.8	0.5	7,987	7,739	248
2041	9	10.7	10.3	0.4	5,398	5,235	162
2041	10	8.3	8.0	0.3	3,203	3,111	91
2041	11	24.5	23.9	0.6	6,081	5,925	156
2041	12	20.6	20.1	0.5	13,169	12,831	337

*Demand coincident with Company's monthly peak demand.

Indiana Michigan Power Company-Indiana
DSM/EE Included in Load Forecast

Incremental	ent filed programs																						
Energy (kWh)	Res - Low/Moderate Income / Home Energy	Res - Rebates	Res - Appliance Recycling	Res - Whole House(home energy audit)	Res - URWP Loans	Res - Statewide Core Lighting	Res - Statewide Core Home Energy Assessments	Res - Statewide Core Income Qualified Weatherization	Res - Home Energy Products	C&I - Rebates Prescriptive	C&I - Incentives	R/C/I - School Energy Education	Res - Online Audit	Res - New Construction	Res - Low Income Weatherization	Res - Home Energy Engagement	Res - Renewables & Demonstration	C&I Custom	C&I HVAC Optimization /	C&I Direct Install (Audit)	C&I Public Efficient Street Lighting	C&I Rebates / Load Management	Res - Peak Reduction	Internal Facility / EECO / Other (VVO)	Total
2008					18,000	1,800,000									471,000										**2,289,000**
2009					9,200	875,440									291,000									3,299,037	**4,474,677**
2010	467,000	9,816,000	2,469,000					90,000		4,079,000		12,000				259,000							26,331	1,755,214	**18,973,545**
2011	591,552	38,991,004	3,030,422	877,408						24,910,220		766,479												491,492	**69,658,577**
2012		(1,411,010)	4,260,656	15,295	779	21,229,646	4,237,391	1,723,888	465,733	38,491,566	5,451,966	2,063,010				3,662,381				100,691		687,018		8,588,707	**89,567,717**
2013			3,987,730	6,333,587		19,606,993		2,119,206		91,826,921	34,832,235	4,117,010	12,257,878	-	50,919	16,698,313	58,978	18,571,762	-	3,780,638			213,356		**214,455,526**
2014			4,029,025	2,181,517		15,747,122		1,529,696	525,115	23,782,606	15,441,282	2,252,528	2,818,382	369,415	1,395,949	23,776,713	40,315	20,465,602	12,985	4,383,524			62,367	7,733,573	**126,547,716**
2015			3,185,144					30,132	11,732,143	25,386,828		4,962,843	5,135,088	719,602	205,265	26,636,044		37,072,689		2,573,902			31,496	9,328,934	**127,000,110**
2016			2,343,112			8,790,461		328,281	1,245,832	25,334,528		4,108,500	3,214,949	679,203	125,105	28,721,021	15,000	23,934,086		2,690,169			88,286	18,544,218	**120,162,751**
2017			3,391,002			11,684,436		308,497	978,032	38,223,072		2,481,388	2,627,578	1,041,862	472,814	28,006,310	180,819	34,738,978		2,596,065		20,125	16,014	11,169,905	**137,936,897**
2018			3,795,000			20,850,000		533,000	429,000	47,581,000		2,141,000		1,029,000	668,000	26,361,000		25,434,000		2,047,000		8,000		13,796,000	**144,672,000**
2019	20,338,310		3,843,634					1,047,565	451,813	34,742,128		2,892,986	3,179,981	1,010,834	366,358	20,276,147		37,804,752		1,719,976		-		8,763,210	**136,437,694**
2020			3,473,194					826,508	19,052,780	18,837, 960		1,696,352	4,422,283	1,005,300		14,039,004		16,901,565		1,878,232	-			5,593,315	**68,888,532**
2021			-					1,011,963	1,023,070	13,980,450				528,046		-		24,913,939			2,484,355	86,339		23,526,669	**67,554,830**
2022			-					1,010,633	1,354,724	11,503,319				528,046		-		22,363,939			2,484,355	78,490		24,549,568	**63,873,073**
2023			-					1,010,633	1,354,724	11,503,319				528,046		-		22,363,939			2,484,355	78,490		24,549,568	**63,873,073**
Peak (kW)																									
2008					3	164									95										**262**
2009					1	79									107									-	**187**
2010	133	2,659	706					8		851		3				7							175	-	**4,542**
2011	169	10,490	866	14						5,086		219												-	**16,845**
2012		(403)	484	4	-	6,079	1,855	709	91	8,808	1,285	588				1,046				29		149		-	**20,725**
2013			1,785	1,784		4,481		616		15,151	7,397	683	3,280	243	641	5,257	9	11,075	4,632	783			59		**57,877**
2014			506	239		1,874		139	103	3,684	821	270	245	197	174	2,092	7	-	-	132			5,294	2,210	**17,987**
2015			330					109	2,697	5,600		215	483	545	395	3,762		5,021		295			5,670	4,459	**29,581**
2016			257			1,210		48	219	5,133		660	468	500	13	3,274	20	3,929		715			4,569	6,622	**27,637**
2017			393			1,601		29	289	7,965		638	550	579	42	3,193	8	4,118		626		7,098	3,045	3,453	**33,627**
2018			450			3,000		40	1,010	10,100		240		600	70	2,830		3,690		540		-		4,290	**26,860**
2019	2,322		453					77	3,851	4,945		267	197	645	30	2,611		3,739		253		-		787	**20,177**
2020			223					144	255	1,829				419		682		3,067			-	2,133		6,580	**15,333**
2021			-					145	284	1,851				419		-		3,211			-	3,013		6,580	**15,503**
2022			-					143	445	1,666				419		-		2,739			-	3,813		6,580	**15,804**
2023			-					143	445	1,666				419		-		2,739			-	3,813		6,580	**15,804**

Attachment MAB-2
Witness: M. A. Becker
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Indiana Michigan Power Company-Indiana
DSM/EE Included in Load Forecast

METHOD	Inputs to the Forecast in GWh										
Year	Residential Total	Residential Heat	Residential Cool	Residential Lighting	Residential Other	Commercial Total	Commercial Heat	Commercial Cool	Commercial Other	Industrial	Total
2008	1.14	0.14	0.09	0.90	0.01	-	-	-	-	-	1.14
2009	2.33	0.71	0.47	1.13	0.01	0.82	0.50	0.33	-	-	3.15
2010	7.75	0.93	0.61	5.30	0.90	2.23	0.72	0.48	1.02	1.02	11.00
2011	26.69	0.39	0.26	24.02	2.03	7.83	0.24	0.16	7.43	7.17	41.70
2012	32.69	4.14	2.73	23.32	2.51	21.04	1.24	0.82	18.98	15.35	69.09
2013	33.00	9.36	6.21	14.49	2.95	64.06	4.39	6.65	53.02	31.83	128.89
2014	33.05	13.73	9.11	7.53	2.67	68.87	7.60	12.63	48.64	26.59	128.51
2015	30.29	17.17	11.00	-	2.12	37.27	11.70	18.48	7.09	7.08	74.64
2016	31.24	18.07	11.61	-	1.56	32.01	12.93	19.09	-	5.50	68.75
2017	28.76	16.61	11.03	-	1.12	28.20	11.53	16.66	-	7.21	64.17
2018	27.18	13.50	9.00	3.69	1.00	24.52	9.78	14.75	-	10.96	62.66
2019	28.61	10.61	7.11	3.66	7.23	22.15	8.65	13.50	-	7.93	58.70
2020	19.24	4.62	2.52	5.70	6.40	12.44	4.54	7.90	-	-	31.68
2021	1.47	-	-	1.47	-	6.81	3.33	3.48	-	-	8.28
2022	-	-	-	-	-	18.61	9.46	9.15	-	-	18.61
2023	-	-	-	-	-	26.67	14.10	12.57	-	-	26.67
2024	-	-	-	-	-	25.03	16.14	8.89	-	-	25.03
2025	-	-	-	-	-	26.23	17.11	-	9.11	-	26.23
2026	-	-	-	-	-	40.89	18.97	-	21.92	-	40.89
2027	-	-	-	-	-	54.12	20.44	-	33.68	-	54.12
2028	-	-	-	-	-	65.20	21.40	-	43.80	-	65.20
2029	-	-	-	-	-	68.76	19.89	-	48.87	-	68.76
2030	-	-	-	-	-	56.75	17.85	-	38.90	-	56.75
2031	-	-	-	-	-	35.52	17.52	-	18.00	-	35.52
2032	-	-	-	-	-	17.46	17.46	-	-	-	17.46
2033	-	-	-	-	-	17.47	17.47	-	-	-	17.47
2034	-	-	-	-	-	15.94	15.94	-	-	-	15.94
2035	-	-	-	-	-	10.02	10.02	-	-	-	10.02
2036	0.00	-	-	-	0.00	1.15	1.15	-	-	-	1.15
2037	-	-	-	-	-	-	-	-	-	-	-
2038	-	-	-	-	-	9.27	5.82	3.45	-	-	9.27
2039	-	-	-	-	-	69.36	42.99	26.37	-	-	69.36
2040	-	-	-	-	-	108.48	67.18	41.30	-	-	108.48
2041	0.01	-	-	-	0.01	81.28	50.36	30.92	0.00	0.76	82.04

Indiana Michigan Power Company-Michigan
DSM/EE Inlcuded in Load Forecast

Incremental	current filed programs																	
Energy (kWh)	R&C - Home Energy Products	Res - Appliance Recycling	Res - Low Income EE Assistance	Res - HVAC Rebates	Res - Education	Res - Online Energy Audit	Res - Multi-Family	Res - New Construction / Education	Res - Other / EECO	Res - Pilot / Weatherpoofing	C&I - Prescriptive	C&I - Custom	C&I - Education	C&I Direct Install (Audit)	C&I Public Efficient Street Lighting	Home Energy Management / Other	Res - Home Energy Engagement	C&I Pilot / EECO	Total
2008								13,000											**13,000**
2009	690			3,623												542,064			**546,377**
2010	9,670,000	590,000	1,040,000	190,000	298,000	70,000	460,000	4,000	340,000	80,000	7,660,000	4,440,000	260,000	60,000		162,410			**25,324,410**
2011	5,797,473		578,415								10,375,900								**16,751,789**
2012	13,028,293		615,560								17,303,847								**30,947,700**
2013	14,553,201		687,609								19,329,191								**34,570,000**
2014			661,790		370,272					617,119	17,396,489	-	330,016				12,138,924	60,296	**31,574,906**
2015			565,975		364,913					477,637	8,432,371	11,619,760	276,295			808,741	12,572,861	525,460	**35,644,013**
2016	2,782,700	666,484	107,792		1,732,040	2,940,075				1,290,029	7,360,903	8,867,487	27,570	456,603		1,358,671	1,303,551		**28,893,905**
2017	4,049,765	882,678	733,131		5,542,425	925,270		366,016		44,479	9,741,657	7,462,637	358,649	1,571,641		959,593	6,950,823	14,311	**39,603,075**
2018	6,392,047	1,032,410	177,597		1,205,729				150,804	32,544	10,665,391	8,061,046	437,366	610,204		167,321	2,591,507	102,529	**31,626,495**
2019	7,132,020	963,890	54,324		793,453	1,475,928			212,134	175,615	6,766,449	7,876,379	495,920	500,863	2,561,996	124,690	1,712,700	144,223	**30,990,584**
2020	6,691,097	1,233,248	267,710		640,209	1,611,570		279,647	46,202	19,548	2,563,659	3,390,560		393,721	1,337,876		1,961,263	793,051	**21,229,361**
2021	6,432,828	892,242	388,057		682,803			134,948	582,182	79,136	5,702,993	9,357,035		252,193	0		2,581,120	817,723	**27,903,259**
2022	6,432,828	892,242	388,057		682,803			134,948	582,182	79,136	5,702,993	9,357,035		252,193	-		2,581,120	817,723	**27,903,259**
2023	6,432,828	892,242	388,057		682,803			134,948	582,182	79,136	5,702,993	9,357,035		252,193	-		2,581,120	817,723	**27,903,259**

Peak (kW)																			
2008								1											**1**
2009	-			1												-			**1**
2010	2,760	170	300	50	85	170	130	1	100	20	2,190	1,270	70		20	-			**7,336**
2011	1,656		165								2,965								**4,786**
2012	3,722		176								4,944								**8,842**
2013	4,158		196								5,523								**9,877**
2014			189		106					176	4,970	-	94				3,468	17	**9,877**
2015	353	61	16		240	239				113	1,536	909	-	114		430	89		**4,100**
2016																			**-**
2017	554	91	19		243	137		-		6	2,646	1,002	-	516		302	582	-	**6,098**
2018	747	107	19		62				48	11	2,750	1,767	-	161		130	326	32	**6,160**
2019	763	113	4		193	142			111	15	1,619	577	-	142		1,054	294	75	**5,102**
2020	883	115	51		179			119	-	6	1,274	1,302		36	0		275	-	**4,239**
2021	827	115	51		170			119	-	6	1,347	1,302		29	0		262	-	**4,227**
2022	827	115	51		170			119	-	6	1,347	1,302		29	-		262	-	**4,227**
2023	827	115	51		170			119	-	6	1,347	1,302		29	-		262	-	**4,227**

Indiana Michigan Power Company-Michigan
DSM/EE Included in Load Forecast

MATRIX METHOD	Incremental Change starting current real-time year and cumulating going forward Inputs to the Forecast in GWh										
Year	Residential Total	Residential Heat	Residential Cool	Residential Lighting	Residential Other	Commercial Total	Commercial Heat	Commercial Cool	Commercial Other	Industrial	Total
2008	0.01	0.00	0.00	0.00	0.00	-	-	-	-	-	0.01
2009	0.14	0.09	0.05	0.00	0.00	0.14	0.09	0.05	-	-	0.28
2010	6.54	0.37	0.19	4.96	1.02	6.38	0.23	0.31	5.84	-	12.91
2011	8.31	0.30	0.15	6.72	1.13	10.75	0.23	0.44	10.08	-	19.06
2012	6.53	0.03	0.02	6.26	0.22	11.83	0.23	0.49	11.10	-	18.36
2013	8.44	0.03	0.01	8.18	0.21	14.58	0.30	0.63	13.65	-	23.02
2014	6.06	1.07	0.53	-	4.45	12.50	0.27	0.57	11.65	-	18.56
2015	11.70	2.18	1.09	-	8.42	11.03	0.39	0.61	10.03	-	22.72
2016	8.72	2.43	1.27	-	5.03	8.33	0.55	0.63	7.16	-	17.06
2017	8.62	2.50	1.31	-	4.81	5.22	0.48	0.49	4.25	-	13.84
2018	8.77	1.08	0.55	2.84	4.30	4.60	0.26	0.37	3.98	-	13.36
2019	5.26	0.08	0.05	4.88	0.26	1.09	0.05	0.18	0.87	1.28	7.64
2020	5.25	0.37	0.21	4.67	-	-	-	-	-	1.86	7.11
2021	3.51	-	-	3.51	-	-	-	-	-	0.43	3.94
2022	6.02	-	-	6.02	-	-	-	-	-	0.12	6.14
2023	7.70	-	-	7.70	-	-	-	-	-	-	7.70
2024	5.21	-	-	5.21	-	-	-	-	-	-	5.21
2025	-	-	-	-	-	2.63	-	-	2.63	-	2.63
2026	-	-	-	-	-	7.99	-	-	7.99	-	7.99
2027	-	-	-	-	-	12.75	0.00	-	12.75	-	12.75
2028	-	-	-	-	-	16.61	0.01	-	16.60	-	16.61
2029	-	-	-	-	-	17.25	-	-	17.25	-	17.25
2030	-	-	-	-	-	7.72	-	-	7.72	-	7.72
2031	-	-	-	-	-	0.01	0.01	-	-	-	0.01
2032	-	-	-	-	-	0.03	0.03	-	-	-	0.03
2033	-	-	-	-	-	0.05	0.05	-	-	-	0.05
2034	-	-	-	-	-	0.03	0.03	-	-	-	0.03
2035	-	-	-	-	-	-	-	-	-	-	-
2036	-	-	-	-	-	-	-	-	-	-	-
2037	-	-	-	-	-	-	-	-	-	-	-
2038	-	-	-	-	-	0.27	0.16	0.11	-	-	0.27
2039	-	-	-	-	-	1.99	1.15	0.84	-	-	1.99
2040	-	-	-	-	-	3.11	1.79	1.31	-	-	3.11
2041	0.00	-	-	-	0.00	2.33	1.34	0.98	0.00	-	2.33

PEAK DEMAND

Indiana Michigan Power Company
Peak Demand Models by Sector
Model Input Glossary

Variable-Hourly Load
CDD65-Cooling Degree Days based on 65 Degrees F
CDD70-Cooling Degree Days based on 70 Degrees F
CDD65WkEnd-Cooling Degree Days based on 65 Degrees F, Weekends
CDD70WkEnd-Cooling Degree Days based on 75 Degrees F, Weekends
Summer Fuzzy-Summer Days Variable
Winter Fuzzy-Winter Days Variable
HLight-Hours of Sunlight
DST-Daylight Savings Time
HDD50-Heating Degree Days based on 50 Degrees F
HDD55-Heating Degree Days based on 55 Degrees F
HDD65-Heating Degree Days based on 65 Degrees F
HDD65WkEnd-Heating Degree Days based on 65 Degrees F
Weekend-Binary Variable for Weekends
January-Binary Variable January
February-Binary Variable February
March-Binary Variable March
April-Binary Variable April
May-Binary Variable May
June-Binary Variable June
July-Binary Variable July
August-Binary Variable August
September-Binary Variable September
October-Binary Variable October
November-Binary Variable November
WkDay-Week Day Binary Variable
WkEnd- Week End Binary Variable
MajorHolidays-Binary Variable for Major Holidays
Constant-Intercept
TWT-Tuesday, Wednesday and Thursday Binary Variable
Monday-Binary Variable Monday

Indiana Michigan Power Company
Summer Peak Demand (MW) Forecast by Sector

Summer	I&M Total	Residential	Commercial	Industrial	Other Retail	Wholesale
2022	3,932	1,604	855	1,015	10	449
2023	3,942	1,604	862	1,014	10	452
2024	3,936	1,601	867	1,006	10	453
2025	3,943	1,605	874	1,011	10	444
2026	3,944	1,606	869	1,014	10	445
2027	3,949	1,608	865	1,020	10	446
2028	3,952	1,607	861	1,026	10	447
2029	3,972	1,613	864	1,036	10	450
2030	3,985	1,617	866	1,041	10	452
2031	4,004	1,623	870	1,048	10	453
2032	4,012	1,628	871	1,050	10	454
2033	4,038	1,638	873	1,061	10	457
2034	3,670	1,644	875	1,070	10	72
2035	3,685	1,652	877	1,075	10	72
2036	3,691	1,657	876	1,077	10	72
2037	3,717	1,670	880	1,085	10	72
2038	3,659	1,679	879	1,090	10	0
2039	3,661	1,688	867	1,097	10	0
2040	3,657	1,692	855	1,101	10	0
2041	3,690	1,703	868	1,109	10	0

Indiana Michigan Power Company
Winter Peak Demand (MW) Forecast by Sector

Winter	I&M Total	Residential	Commercial	Industrial	Other Retail	Wholesale
2021/22	3,380	1,100	704	1,142	13	422
2022/23	3,378	1,224	699	1,020	10	424
2023/24	3,368	1,220	700	1,013	10	425
2024/25	3,382	1,226	701	1,018	10	427
2025/26	3,372	1,225	697	1,022	10	418
2026/27	3,374	1,225	692	1,028	10	419
2027/28	3,375	1,222	688	1,035	10	421
2028/29	3,391	1,230	687	1,043	10	422
2029/30	3,400	1,229	689	1,049	10	424
2030/31	3,414	1,231	692	1,055	10	425
2031/32	3,417	1,230	692	1,058	10	426
2032/33	3,439	1,237	694	1,069	10	429
2033/34	3,298	1,244	693	1,076	10	275
2034/35	3,108	1,118	697	1,209	13	72
2035/36	3,115	1,116	703	1,211	13	72
2036/37	3,138	1,125	707	1,221	13	73
2037/38	3,143	1,128	702	1,227	13	73
2038/39	3,065	1,264	685	1,106	10	0
2039/40	3,059	1,267	674	1,108	10	0
2040/41	3,081	1,274	680	1,116	10	0

Indiana Michigan Power Company-Indiana
Residential Cooling Peak Demand Model Coefficients

Variable	CDD65	CDD70	CDD65WkEnd	CDD70WkEnd	SummerFuzzy	WinterFuzzy	HLight	DST
Hour1	6.847	0.178	-1.845	1.775	52.256	-12.622	1.307	-3.765
Hour2	5.230	0.664	-0.359	0.607	48.062	-10.176	1.070	-3.749
Hour3	4.576	0.912	-0.822	0.942	41.302	-7.642	0.815	-3.318
Hour4	4.002	1.012	-0.783	0.822	36.391	-6.384	0.688	-3.027
Hour5	3.493	1.075	-0.632	0.696	32.784	-5.463	0.601	-2.964
Hour6	3.081	1.094	-0.760	0.758	28.816	-4.305	0.478	-2.492
Hour7	2.580	1.135	-0.486	0.543	25.179	-3.561	0.403	-2.282
Hour8	2.567	0.863	-0.545	0.608	24.276	-3.596	0.393	-1.925
Hour9	3.192	-0.031	-1.417	1.228	22.923	-6.083	0.634	-2.064
Hour10	3.201	0.226	0.001	0.146	25.717	-7.825	0.803	-2.172
Hour11	3.602	0.647	1.264	-0.768	34.692	-9.711	1.000	-2.646
Hour12	4.685	0.731	1.420	-0.829	43.624	-12.904	1.335	-3.625
Hour13	5.924	0.666	1.830	-0.945	53.986	-17.554	1.824	-4.993
Hour14	7.212	0.498	2.202	-1.144	64.526	-22.779	2.383	-6.875
Hour15	8.361	-0.029	2.997	-1.686	72.888	-28.670	3.002	-8.346
Hour16	9.602	-0.640	3.406	-2.022	82.572	-33.111	3.448	-8.811
Hour17	10.930	-1.367	3.905	-2.506	93.503	-35.867	3.709	-7.612
Hour18	12.138	-2.143	3.397	-2.309	100.013	-35.720	3.674	-4.256
Hour19	12.992	-2.570	1.334	-0.613	98.619	-32.737	3.346	-1.050
Hour20	12.753	-2.291	-0.407	0.771	90.499	-31.621	3.230	-3.122
Hour21	11.454	-1.362	-0.780	1.174	81.671	-28.227	2.881	-5.236
Hour22	10.289	-0.733	-1.164	1.308	75.300	-23.288	2.386	-5.421
Hour23	9.159	-0.278	-1.227	1.399	68.080	-19.847	2.036	-4.872
Hour24	7.868	0.108	-1.316	1.472	60.550	-16.316	1.688	-4.626

Indiana Michigan Power Company-Indiana
Residential Cooling Peak Demand Model Standard Errors

Variable	CDD65	CDD70	CDD65WkEnd	CDD70WkEnd	SummerFuzzy	WinterFuzzy	HLight	DST
Hour1	0.091	0.135	0.119	0.207	0.357	0.345	0.035	0.389
Hour2	0.079	0.117	0.103	0.179	0.309	0.299	0.030	0.337
Hour3	0.068	0.101	0.089	0.155	0.267	0.258	0.026	0.291
Hour4	0.060	0.090	0.079	0.137	0.236	0.228	0.023	0.258
Hour5	0.054	0.081	0.071	0.124	0.213	0.206	0.021	0.232
Hour6	0.048	0.071	0.063	0.108	0.187	0.181	0.018	0.204
Hour7	0.042	0.062	0.055	0.095	0.164	0.159	0.016	0.179
Hour8	0.040	0.059	0.052	0.090	0.156	0.151	0.015	0.170
Hour9	0.041	0.060	0.053	0.092	0.159	0.154	0.016	0.174
Hour10	0.047	0.070	0.061	0.106	0.183	0.177	0.018	0.200
Hour11	0.061	0.090	0.079	0.137	0.237	0.229	0.023	0.258
Hour12	0.077	0.115	0.101	0.175	0.302	0.292	0.030	0.329
Hour13	0.097	0.144	0.127	0.221	0.380	0.368	0.037	0.415
Hour14	0.118	0.175	0.154	0.267	0.461	0.445	0.045	0.503
Hour15	0.136	0.202	0.178	0.309	0.532	0.514	0.052	0.580
Hour16	0.154	0.228	0.201	0.349	0.602	0.582	0.059	0.657
Hour17	0.172	0.256	0.225	0.391	0.673	0.651	0.066	0.735
Hour18	0.184	0.272	0.240	0.417	0.718	0.694	0.071	0.783
Hour19	0.183	0.272	0.240	0.416	0.716	0.693	0.071	0.782
Hour20	0.172	0.255	0.225	0.390	0.672	0.650	0.066	0.733
Hour21	0.154	0.229	0.202	0.350	0.603	0.583	0.059	0.659
Hour22	0.138	0.205	0.181	0.313	0.540	0.522	0.053	0.589
Hour23	0.124	0.184	0.162	0.281	0.483	0.467	0.048	0.528
Hour24	0.108	0.160	0.141	0.244	0.421	0.407	0.041	0.459

Indiana Michigan Power Company-Indiana
Residential Cooling Peak Demand Model t-Statistics

Variable	CDD65	CDD70	CDD65WkEnd	CDD70WkEnd	SummerFuzzy	WinterFuzzy	HLight	DST
Hour1	75.030	1.311	-15.444	8.575	146.460	-36.588	37.171	-9.668
Hour2	66.173	5.663	-3.470	3.387	155.513	-34.052	35.128	-11.115
Hour3	67.050	9.004	-9.203	6.087	154.790	-29.621	31.009	-11.393
Hour4	66.266	11.286	-9.909	5.996	154.120	-27.961	29.562	-11.744
Hour5	64.148	13.302	-8.862	5.635	153.993	-26.540	28.656	-12.757
Hour6	64.478	15.424	-12.152	6.990	154.228	-23.829	25.974	-12.221
Hour7	61.518	18.238	-8.856	5.705	153.532	-22.460	24.951	-12.751
Hour8	64.471	14.600	-10.456	6.728	155.952	-23.892	25.606	-11.328
Hour9	78.326	-0.516	-26.568	13.277	143.840	-39.478	40.380	-11.866
Hour10	68.291	3.254	0.013	1.369	140.311	-44.155	44.474	-10.855
Hour11	59.528	7.207	15.961	-5.593	146.650	-42.454	42.884	-10.249
Hour12	60.681	6.375	14.049	-4.731	144.507	-44.209	44.868	-11.002
Hour13	60.895	4.613	14.371	-4.281	141.924	-47.727	48.667	-12.026
Hour14	61.232	2.850	14.287	-4.280	140.119	-51.159	52.525	-13.679
Hour15	61.476	-0.145	16.837	-5.462	137.072	-55.762	57.301	-14.379
Hour16	62.413	-2.801	16.916	-5.791	137.274	-56.930	58.168	-13.420
Hour17	63.481	-5.348	17.328	-6.416	138.892	-55.101	55.912	-10.359
Hour18	66.124	-7.866	14.137	-5.542	139.339	-51.470	51.947	-5.432
Hour19	70.909	-9.449	5.563	-1.474	137.665	-47.262	47.408	-1.343
Hour20	74.217	-8.983	-1.809	1.977	134.701	-48.676	48.783	-4.258
Hour21	74.212	-5.944	-3.860	3.352	135.336	-48.375	48.443	-7.949
Hour22	74.553	-3.580	-6.441	4.178	139.541	-44.633	44.873	-9.203
Hour23	74.078	-1.514	-7.582	4.988	140.827	-42.461	42.747	-9.234

Indiana Michigan Power Company-Indiana
Residential Cooling Peak Demand Model Statistics

Hour	Obs	DF	AdjRSq	DW	StdErr	MAD	MAPE	FObs	FMAD	FMAPE	FAvgErr
Hour1	1827	1819	0.995	0.059	3.805	2.407	14.68%	0	0.000	0.00%	0.000
Hour2	1827	1819	0.995	0.059	3.296	2.126	17.66%	0	0.000	0.00%	0.000
Hour3	1827	1819	0.995	0.067	2.846	1.857	35.49%	0	0.000	0.00%	0.000
Hour4	1827	1819	0.995	0.071	2.518	1.665	40.75%	0	0.000	0.00%	0.000
Hour5	1827	1819	0.995	0.075	2.271	1.541	452.05%	0	0.000	0.00%	0.000
Hour6	1827	1819	0.995	0.079	1.993	1.353	50.79%	0	0.000	0.00%	0.000
Hour7	1827	1819	0.995	0.081	1.749	1.206	61.70%	0	0.000	0.00%	0.000
Hour8	1827	1819	0.995	0.076	1.660	1.110	109.96%	0	0.000	0.00%	0.000
Hour9	1827	1819	0.995	0.066	1.700	1.102	18.12%	0	0.000	0.00%	0.000
Hour10	1827	1819	0.995	0.055	1.955	1.271	30.90%	0	0.000	0.00%	0.000
Hour11	1827	1819	0.995	0.054	2.523	1.618	18.14%	0	0.000	0.00%	0.000
Hour12	1827	1819	0.995	0.054	3.220	2.062	56.94%	0	0.000	0.00%	0.000
Hour13	1827	1819	0.995	0.053	4.057	2.599	23.54%	0	0.000	0.00%	0.000
Hour14	1827	1819	0.995	0.052	4.912	3.166	20.29%	0	0.000	0.00%	0.000
Hour15	1827	1819	0.995	0.049	5.671	3.660	32.01%	0	0.000	0.00%	0.000
Hour16	1827	1819	0.995	0.047	6.416	4.152	23.22%	0	0.000	0.00%	0.000
Hour17	1827	1819	0.995	0.044	7.180	4.661	39.52%	0	0.000	0.00%	0.000
Hour18	1827	1819	0.995	0.043	7.655	5.012	22.64%	0	0.000	0.00%	0.000
Hour19	1827	1819	0.995	0.043	7.641	5.025	38.98%	0	0.000	0.00%	0.000
Hour20	1827	1819	0.995	0.045	7.166	4.711	14.84%	0	0.000	0.00%	0.000
Hour21	1827	1819	0.995	0.048	6.436	4.203	20.26%	0	0.000	0.00%	0.000
Hour22	1827	1819	0.995	0.051	5.755	3.694	39.57%	0	0.000	0.00%	0.000
Hour23	1827	1819	0.995	0.053	5.156	3.288	13.59%	0	0.000	0.00%	0.000
Hour24	1827	1819	0.995	0.056	4.486	2.845	17.23%	0	0.000	0.00%	0.000

Indiana Michigan Power Company-Indiana
Residential Heating Peak Demand Model Coefficients

Variable	HDD50	HDD55	HDD65	HDD65WkEnd	SummerFuzzy	WinterFuzzy	HLight	DST
Hour1	3.705	-1.794	2.631	0.017	-10.489	73.466	0.193	8.901
Hour2	3.143	-1.296	2.784	-0.137	-17.791	77.030	0.767	8.470
Hour3	3.046	-1.265	2.936	-0.106	-21.253	77.102	0.887	10.400
Hour4	3.012	-1.136	3.036	-0.118	-25.086	78.746	1.091	11.576
Hour5	3.058	-1.211	3.306	-0.147	-27.844	81.803	1.219	12.878
Hour6	2.835	-1.178	3.587	-0.211	-29.790	83.281	1.245	14.798
Hour7	2.088	-0.623	3.840	-0.441	-33.120	90.292	1.255	18.373
Hour8	1.611	-0.295	3.606	0.110	-31.607	89.921	0.851	22.627
Hour9	1.638	-0.391	3.312	0.719	-24.407	87.106	0.212	23.827
Hour10	2.427	-0.935	2.920	0.776	-14.938	82.962	0.162	14.294
Hour11	3.399	-1.518	2.518	0.247	-8.711	76.676	0.102	8.127
Hour12	4.137	-2.044	2.154	-0.108	-4.250	68.949	-0.039	5.254
Hour13	4.711	-2.469	1.870	-0.228	-2.347	62.867	-0.170	5.026
Hour14	4.804	-2.543	1.614	-0.141	-1.447	58.077	-0.221	4.773
Hour15	4.851	-2.646	1.498	-0.127	-0.439	54.032	-0.251	4.183
Hour16	5.087	-2.885	1.465	-0.108	0.293	52.277	-0.268	3.700
Hour17	5.275	-3.039	1.677	-0.338	1.025	56.382	-0.332	3.986
Hour18	5.461	-3.147	1.977	-0.478	1.393	64.140	-0.385	4.528
Hour19	4.758	-2.751	2.133	-0.454	0.621	63.567	-0.355	4.941
Hour20	4.208	-2.378	2.129	-0.356	-1.796	62.045	-0.315	6.839
Hour21	3.736	-2.122	2.305	-0.278	-2.609	63.855	-0.484	10.040
Hour22	3.639	-2.016	2.449	-0.184	-4.247	68.355	-0.511	12.187
Hour23	3.365	-1.729	2.478	-0.068	-6.000	70.171	-0.282	10.857
Hour24	3.252	-1.530	2.518	-0.028	-7.774	72.164	-0.144	10.814

Indiana Michigan Power Company-Indiana

Residential Heating Peak Demand Model Standard Errors

Variable	HDD50	HDD55	HDD65	HDD65WkEnd	SummerFuzzy	WinterFuzzy	HLight	DST
Hour1	0.149	0.195	0.073	0.013	0.586	0.622	0.062	0.609
Hour2	0.160	0.210	0.079	0.015	0.631	0.669	0.066	0.656
Hour3	0.165	0.217	0.081	0.015	0.651	0.690	0.069	0.676
Hour4	0.173	0.227	0.085	0.016	0.682	0.723	0.072	0.708
Hour5	0.183	0.240	0.090	0.017	0.721	0.764	0.076	0.749
Hour6	0.189	0.248	0.093	0.017	0.745	0.790	0.078	0.774
Hour7	0.200	0.262	0.098	0.018	0.786	0.834	0.083	0.817
Hour8	0.194	0.254	0.095	0.018	0.764	0.810	0.080	0.794
Hour9	0.182	0.239	0.090	0.017	0.719	0.762	0.076	0.746
Hour10	0.168	0.220	0.083	0.015	0.662	0.702	0.070	0.688
Hour11	0.150	0.196	0.074	0.014	0.590	0.626	0.062	0.613
Hour12	0.131	0.171	0.064	0.012	0.515	0.546	0.054	0.535
Hour13	0.117	0.154	0.058	0.011	0.462	0.489	0.049	0.479
Hour14	0.107	0.140	0.053	0.010	0.422	0.447	0.044	0.438
Hour15	0.100	0.130	0.049	0.009	0.392	0.416	0.041	0.407
Hour16	0.096	0.126	0.047	0.009	0.380	0.403	0.040	0.395
Hour17	0.103	0.135	0.051	0.009	0.405	0.429	0.043	0.420
Hour18	0.116	0.152	0.057	0.010	0.456	0.483	0.048	0.473
Hour19	0.117	0.153	0.057	0.011	0.460	0.488	0.048	0.478
Hour20	0.116	0.152	0.057	0.010	0.456	0.484	0.048	0.474
Hour21	0.119	0.156	0.059	0.011	0.470	0.499	0.050	0.489
Hour22	0.128	0.168	0.063	0.012	0.504	0.535	0.053	0.524
Hour23	0.134	0.176	0.066	0.012	0.528	0.560	0.056	0.549
Hour24	0.140	0.184	0.069	0.013	0.552	0.586	0.058	0.574

Indiana Michigan Power Company-Indiana
Residential Heating Peak Demand Model t-Statistics

Variable	HDD50	HDD55	HDD65	HDD65WkEnd	SummerFuzzy	WinterFuzzy	HLight	DST
Hour1	24.898	-9.203	35.951	1.267	-17.892	118.197	3.122	14.615
Hour2	19.610	-6.171	35.333	-9.468	-28.181	115.085	11.538	12.916
Hour3	18.428	-5.843	36.125	-7.064	-32.642	111.691	12.943	15.377
Hour4	17.405	-5.010	35.675	-7.506	-36.795	108.938	15.207	16.345
Hour5	16.709	-5.048	36.734	-8.888	-38.618	107.010	16.057	17.194
Hour6	14.984	-4.751	38.560	-12.304	-39.974	105.399	15.869	19.115
Hour7	10.461	-2.381	39.124	-24.401	-42.119	108.300	15.161	22.492
Hour8	8.301	-1.159	37.793	6.263	-41.352	110.959	10.583	28.498
Hour9	8.981	-1.637	36.924	43.505	-33.966	114.332	2.797	31.920
Hour10	14.433	-4.245	35.311	50.963	-22.550	118.121	2.317	20.772
Hour11	22.692	-7.734	34.192	18.232	-14.765	122.578	1.649	13.261
Hour12	31.647	-11.936	33.509	-9.113	-8.253	126.275	-0.717	9.821
Hour13	40.210	-16.085	32.455	-21.521	-5.085	128.466	-3.490	10.482
Hour14	44.865	-18.128	30.658	-14.567	-3.431	129.853	-4.974	10.893
Hour15	48.718	-20.286	30.587	-14.043	-1.119	129.929	-6.087	10.266
Hour16	52.758	-22.842	30.907	-12.374	0.771	129.824	-6.705	9.379
Hour17	51.359	-22.586	33.201	-36.321	2.532	131.441	-7.797	9.484
Hour18	47.204	-20.764	34.761	-45.609	3.056	132.754	-8.024	9.566
Hour19	40.731	-17.974	37.136	-42.970	1.349	130.296	-7.322	10.336
Hour20	36.336	-15.676	37.382	-33.933	-3.938	128.270	-6.549	14.430
Hour21	31.288	-13.566	39.260	-25.733	-5.546	128.043	-9.768	20.548
Hour22	28.425	-12.019	38.906	-15.918	-8.422	127.854	-9.633	23.266
Hour23	25.095	-9.843	37.583	-5.639	-11.361	125.313	-5.077	19.789
Hour24	23.200	-8.329	36.524	-2.216	-14.076	123.247	-2.473	18.851

Indiana Michigan Power Company-Indiana
Residential Heating Peak Demand Model Statistics

Hour	Obs	DF	AdjRSq	DW	StdErr	MAD	MAPE	FObs	FMAD	FMAPE	FAvgErr
Hour1	1827	1819	0.996	0.062	5.815	3.193	4.53%	0	0.000	0.00%	0.000
Hour2	1827	1819	0.995	0.057	6.262	3.489	8.74%	0	0.000	0.00%	0.000
Hour3	1827	1819	0.995	0.057	6.459	3.622	7.63%	0	0.000	0.00%	0.000
Hour4	1827	1819	0.995	0.057	6.763	3.814	20.72%	0	0.000	0.00%	0.000
Hour5	1827	1819	0.995	0.056	7.152	4.048	6.21%	0	0.000	0.00%	0.000
Hour6	1827	1819	0.995	0.055	7.393	4.201	6.73%	0	0.000	0.00%	0.000
Hour7	1827	1819	0.995	0.053	7.800	4.460	23.82%	0	0.000	0.00%	0.000
Hour8	1827	1819	0.995	0.053	7.582	4.347	4.18%	0	0.000	0.00%	0.000
Hour9	1827	1819	0.995	0.061	7.128	4.051	3.99%	0	0.000	0.00%	0.000
Hour10	1827	1819	0.995	0.065	6.571	3.665	4.16%	0	0.000	0.00%	0.000
Hour11	1827	1819	0.996	0.062	5.852	3.203	4.84%	0	0.000	0.00%	0.000
Hour12	1827	1819	0.996	0.065	5.108	2.746	5.52%	0	0.000	0.00%	0.000
Hour13	1827	1819	0.996	0.069	4.579	2.428	6.53%	0	0.000	0.00%	0.000
Hour14	1827	1819	0.996	0.072	4.184	2.202	10.68%	0	0.000	0.00%	0.000
Hour15	1827	1819	0.996	0.075	3.891	2.035	33.62%	0	0.000	0.00%	0.000
Hour16	1827	1819	0.996	0.077	3.767	1.962	15.85%	0	0.000	0.00%	0.000
Hour17	1827	1819	0.996	0.077	4.013	2.111	26.33%	0	0.000	0.00%	0.000
Hour18	1827	1819	0.996	0.074	4.520	2.392	7.15%	0	0.000	0.00%	0.000
Hour19	1827	1819	0.996	0.070	4.564	2.417	5.53%	0	0.000	0.00%	0.000
Hour20	1827	1819	0.996	0.067	4.526	2.422	4.65%	0	0.000	0.00%	0.000
Hour21	1827	1819	0.996	0.065	4.666	2.522	5.18%	0	0.000	0.00%	0.000
Hour22	1827	1819	0.996	0.063	5.002	2.721	4.74%	0	0.000	0.00%	0.000
Hour23	1827	1819	0.996	0.062	5.239	2.863	4.24%	0	0.000	0.00%	0.000
Hour24	1827	1819	0.996	0.061	5.478	3.004	4.19%	0	0.000	0.00%	0.000

Indiana MIchigan Power Company-Indiana
Residential Lighting Peak Demand Model Coefficients

Variable	Constant	WeekEnd	January	February	March	April	May	June	July	August
Hour1	26.325	0.086	0.774	0.630	0.359	0.494	1.309	-0.702	-1.798	-1.764
Hour2	17.834	-1.172	0.544	0.552	0.449	0.619	1.797	0.583	-0.307	-0.441
Hour3	12.426	-1.432	0.389	0.237	0.019	-0.184	0.276	-0.561	-1.178	-1.197
Hour4	9.153	-0.655	0.280	0.230	0.119	0.140	0.620	-0.013	-0.492	-0.515
Hour5	7.306	-0.092	0.216	0.113	-0.024	-0.093	-0.029	-0.595	-0.901	-0.849
Hour6	8.658	0.745	0.243	0.230	0.175	0.353	0.582	-0.135	-0.462	-0.425
Hour7	13.065	1.817	0.355	0.282	0.148	0.409	0.453	-0.710	-1.159	-1.007
Hour8	18.352	1.942	0.508	-0.014	-0.592	-0.967	-2.077	-3.781	-4.347	-3.858
Hour9	20.250	0.796	0.583	-0.122	-0.871	-1.669	-3.052	-4.846	-5.481	-4.952
Hour10	18.007	-2.517	0.573	-0.135	-0.858	-2.130	-3.051	-4.374	-5.004	-4.738
Hour11	15.358	-1.870	0.484	-0.141	-0.781	-1.853	-2.739	-3.900	-4.436	-4.167
Hour12	12.752	-1.495	0.400	-0.143	-0.708	-1.599	-2.385	-3.361	-3.836	-3.579
Hour13	10.917	-1.292	0.343	-0.044	-0.458	-1.091	-1.514	-2.324	-2.757	-2.596
Hour14	10.692	-1.015	0.332	-0.036	-0.429	-1.005	-1.436	-2.249	-2.660	-2.493
Hour15	10.470	-1.026	0.325	-0.070	-0.492	-1.104	-1.614	-2.418	-2.829	-2.636
Hour16	10.606	-1.267	0.333	-0.172	-0.697	-1.509	-2.302	-3.126	-3.531	-3.272
Hour17	12.616	-1.494	0.397	-0.392	-1.175	-2.487	-4.065	-5.105	-5.487	-5.050
Hour18	17.690	-1.309	0.543	-1.007	-2.511	-4.999	-8.765	-10.431	-10.798	-9.791
Hour19	31.949	-0.288	0.946	-2.328	-5.484	-10.502	-19.171	-22.516	-22.970	-20.626
Hour20	49.205	-0.421	1.457	-3.844	-8.932	-17.118	-31.325	-36.559	-37.143	-33.347
Hour21	58.063	0.341	1.707	-2.798	-7.171	-13.931	-25.475	-31.201	-32.235	-29.043
Hour22	59.177	0.866	1.731	0.022	-1.794	-3.878	-6.727	-11.735	-13.559	-12.446
Hour23	52.827	1.201	1.539	1.215	0.708	0.841	1.934	-2.213	-4.109	-4.003
Hour24	39.376	1.016	1.145	1.137	0.962	1.489	3.045	0.015	-1.493	-1.571

Indiana MIchigan Power Company-Indiana
Residential Lighting Peak Demand Model Coefficients

Variable	September	October	November	December	WinterFuzzy	HLight
Hour1	-0.828	-0.403	0.336	0.000	0.008	0.001
Hour2	0.303	0.207	0.674	0.000	-0.075	0.067
Hour3	-0.506	-0.361	0.288	0.000	-0.100	0.073
Hour4	-0.055	-0.019	0.274	0.000	-0.022	0.057
Hour5	-0.522	-0.303	0.002	0.000	0.001	0.013
Hour6	-0.216	-0.042	0.046	0.000	0.063	-0.025
Hour7	-0.717	-0.259	-0.153	0.000	0.162	-0.054
Hour8	-3.094	-1.745	-0.885	0.000	0.192	-0.039
Hour9	-3.922	-2.367	-0.994	0.000	0.078	-0.015
Hour10	-3.544	-2.427	-0.510	0.000	-0.267	0.036
Hour11	-3.141	-2.116	-0.513	0.000	-0.191	0.034
Hour12	-2.672	-1.777	-0.460	0.000	-0.129	0.051
Hour13	-1.865	-1.250	-0.243	0.000	-0.111	0.045
Hour14	-1.813	-1.197	-0.262	0.000	-0.088	0.034
Hour15	-1.924	-1.263	-0.308	0.000	-0.078	0.045
Hour16	-2.455	-1.620	-0.465	0.000	-0.095	0.058
Hour17	-4.009	-2.646	-0.936	0.000	-0.136	0.043
Hour18	-8.122	-5.257	-2.293	0.000	-0.115	0.042
Hour19	-17.471	-11.121	-5.386	0.000	0.004	0.039
Hour20	-28.368	-18.082	-8.812	0.000	-0.012	0.039
Hour21	-24.498	-15.540	-7.300	0.000	-0.026	-0.063
Hour22	-9.749	-6.014	-2.098	0.000	-0.030	-0.127
Hour23	-2.471	-1.346	0.294	0.000	-0.035	-0.171
Hour24	-0.552	-0.150	0.658	0.000	0.003	-0.113

Indiana MIchigan Power Company-Indiana
Residential Lighting Peak Demand Model Standard Errors

Variable	Constant	WeekEnd	January	February	March	April	May	June	July	August	September
Hour1	4.493	0.254	0.572	0.797	1.230	1.621	2.035	2.243	2.136	1.786	1.392
Hour2	3.204	0.181	0.408	0.568	0.877	1.155	1.451	1.599	1.523	1.273	0.993
Hour3	2.166	0.122	0.276	0.384	0.593	0.781	0.981	1.081	1.029	0.861	0.671
Hour4	1.662	0.094	0.212	0.295	0.455	0.600	0.753	0.830	0.790	0.661	0.515
Hour5	1.231	0.070	0.157	0.219	0.337	0.444	0.558	0.615	0.585	0.489	0.382
Hour6	1.478	0.083	0.188	0.262	0.405	0.533	0.669	0.738	0.703	0.588	0.458
Hour7	2.198	0.124	0.280	0.390	0.602	0.793	0.995	1.098	1.045	0.874	0.681
Hour8	2.891	0.163	0.368	0.513	0.792	1.043	1.309	1.443	1.374	1.149	0.896
Hour9	3.105	0.175	0.396	0.551	0.850	1.120	1.406	1.550	1.476	1.234	0.962
Hour10	2.664	0.150	0.339	0.473	0.729	0.961	1.206	1.330	1.266	1.059	0.826
Hour11	2.282	0.129	0.291	0.405	0.625	0.823	1.033	1.139	1.085	0.907	0.707
Hour12	1.935	0.109	0.247	0.343	0.530	0.698	0.876	0.966	0.920	0.769	0.600
Hour13	1.704	0.096	0.217	0.302	0.466	0.614	0.771	0.851	0.810	0.677	0.528
Hour14	1.665	0.094	0.212	0.295	0.456	0.601	0.754	0.831	0.792	0.662	0.516
Hour15	1.636	0.092	0.208	0.290	0.448	0.590	0.741	0.817	0.778	0.650	0.507
Hour16	1.614	0.091	0.206	0.286	0.442	0.582	0.731	0.806	0.767	0.641	0.500
Hour17	1.759	0.099	0.224	0.312	0.482	0.634	0.797	0.878	0.836	0.699	0.545
Hour18	2.241	0.126	0.285	0.398	0.613	0.808	1.015	1.119	1.065	0.890	0.694
Hour19	3.867	0.218	0.493	0.686	1.059	1.395	1.751	1.931	1.838	1.537	1.198
Hour20	5.809	0.328	0.740	1.031	1.591	2.095	2.630	2.900	2.761	2.308	1.800
Hour21	7.436	0.420	0.947	1.319	2.036	2.682	3.367	3.712	3.534	2.955	2.304
Hour22	9.004	0.508	1.147	1.598	2.465	3.248	4.077	4.495	4.280	3.578	2.790
Hour23	8.643	0.488	1.101	1.534	2.366	3.117	3.914	4.315	4.108	3.435	2.678
Hour24	6.626	0.374	0.844	1.176	1.814	2.390	3.000	3.308	3.149	2.633	2.053

Indiana MIchigan Power Company-Indiana
Residential Lighting Peak Demand Model Standard Errors

Variable	October	November	December	WinterFuzzy	HLight
Hour1	1.112	0.623	0.000	0.981	0.425
Hour2	0.793	0.445	0.000	0.699	0.303
Hour3	0.536	0.301	0.000	0.473	0.205
Hour4	0.412	0.231	0.000	0.363	0.157
Hour5	0.305	0.171	0.000	0.269	0.117
Hour6	0.366	0.205	0.000	0.323	0.140
Hour7	0.544	0.305	0.000	0.480	0.208
Hour8	0.716	0.401	0.000	0.631	0.274
Hour9	0.769	0.431	0.000	0.678	0.294
Hour10	0.660	0.370	0.000	0.582	0.252
Hour11	0.565	0.317	0.000	0.498	0.216
Hour12	0.479	0.269	0.000	0.422	0.183
Hour13	0.422	0.236	0.000	0.372	0.161
Hour14	0.412	0.231	0.000	0.364	0.158
Hour15	0.405	0.227	0.000	0.357	0.155
Hour16	0.399	0.224	0.000	0.352	0.153
Hour17	0.435	0.244	0.000	0.384	0.166
Hour18	0.555	0.311	0.000	0.489	0.212
Hour19	0.957	0.537	0.000	0.844	0.366
Hour20	1.438	0.806	0.000	1.268	0.550
Hour21	1.841	1.032	0.000	1.623	0.704
Hour22	2.229	1.249	0.000	1.966	0.852
Hour23	2.140	1.199	0.000	1.887	0.818
Hour24	1.640	0.919	0.000	1.447	0.627

Indiana MIchigan Power Company-Indiana
Residential Lighting Peak Demand Model t-Statistics

Variable	Constant	WeekEnd	January	February	March	April	May	June	July	August
Hour1	5.859	0.338	1.352	0.790	0.292	0.305	0.643	-0.313	-0.842	-0.988
Hour2	5.567	-6.482	1.333	0.971	0.512	0.536	1.239	0.364	-0.202	-0.347
Hour3	5.737	-11.714	1.410	0.617	0.032	-0.235	0.281	-0.518	-1.144	-1.390
Hour4	5.506	-6.977	1.320	0.780	0.261	0.233	0.824	-0.016	-0.623	-0.780
Hour5	5.933	-1.323	1.380	0.518	-0.070	-0.209	-0.052	-0.968	-1.540	-1.735
Hour6	5.856	8.931	1.289	0.878	0.433	0.662	0.870	-0.183	-0.658	-0.723
Hour7	5.943	14.640	1.267	0.722	0.246	0.516	0.455	-0.647	-1.109	-1.153
Hour8	6.348	11.899	1.379	-0.027	-0.747	-0.928	-1.587	-2.620	-3.164	-3.358
Hour9	6.521	4.541	1.474	-0.221	-1.025	-1.490	-2.170	-3.126	-3.714	-4.013
Hour10	6.759	-16.737	1.689	-0.286	-1.176	-2.217	-2.529	-3.289	-3.952	-4.475
Hour11	6.730	-14.518	1.665	-0.348	-1.250	-2.252	-2.651	-3.423	-4.090	-4.595
Hour12	6.589	-13.686	1.624	-0.417	-1.336	-2.292	-2.722	-3.478	-4.171	-4.653
Hour13	6.408	-13.435	1.580	-0.147	-0.981	-1.776	-1.963	-2.733	-3.405	-3.834
Hour14	6.421	-10.799	1.564	-0.122	-0.941	-1.673	-1.905	-2.705	-3.361	-3.766
Hour15	6.399	-11.110	1.560	-0.242	-1.099	-1.871	-2.179	-2.960	-3.638	-4.054
Hour16	6.573	-13.914	1.620	-0.600	-1.577	-2.593	-3.150	-3.880	-4.604	-5.103
Hour17	7.172	-15.044	1.770	-1.255	-2.440	-3.921	-5.104	-5.813	-6.564	-7.224
Hour18	7.895	-10.347	1.902	-2.533	-4.093	-6.187	-8.639	-9.325	-10.140	-10.996
Hour19	8.261	-1.319	1.920	-3.392	-5.179	-7.530	-10.947	-11.662	-12.496	-13.421
Hour20	8.470	-1.284	1.969	-3.729	-5.616	-8.171	-11.909	-12.606	-13.453	-14.446
Hour21	7.808	0.813	1.802	-2.121	-3.522	-5.195	-7.566	-8.404	-9.120	-9.828
Hour22	6.572	1.705	1.509	0.014	-0.728	-1.194	-1.650	-2.611	-3.168	-3.478
Hour23	6.112	2.462	1.398	0.792	0.299	0.270	0.494	-0.513	-1.000	-1.166
Hour24	5.943	2.715	1.356	0.967	0.530	0.623	1.015	0.005	-0.474	-0.597

Indiana MIchigan Power Company-Indiana
Residential Lighting Peak Demand Model t-Statistics

Variable	September	October	November	December	WinterFuzzy	HLight
Hour1	-0.594	-0.362	0.539	0.000	0.008	0.003
Hour2	0.305	0.261	1.517	0.000	-0.108	0.221
Hour3	-0.754	-0.674	0.957	0.000	-0.211	0.354
Hour4	-0.106	-0.046	1.187	0.000	-0.061	0.364
Hour5	-1.367	-0.994	0.011	0.000	0.003	0.109
Hour6	-0.471	-0.115	0.224	0.000	0.195	-0.177
Hour7	-1.053	-0.476	-0.501	0.000	0.337	-0.258
Hour8	-3.455	-2.438	-2.207	0.000	0.304	-0.141
Hour9	-4.076	-3.079	-2.307	0.000	0.116	-0.050
Hour10	-4.293	-3.679	-1.381	0.000	-0.459	0.142
Hour11	-4.442	-3.746	-1.619	0.000	-0.383	0.159
Hour12	-4.455	-3.709	-1.712	0.000	-0.305	0.278
Hour13	-3.533	-2.963	-1.027	0.000	-0.298	0.277
Hour14	-3.513	-2.903	-1.134	0.000	-0.242	0.217
Hour15	-3.796	-3.119	-1.357	0.000	-0.219	0.293
Hour16	-4.910	-4.056	-2.077	0.000	-0.268	0.378
Hour17	-7.356	-6.075	-3.834	0.000	-0.355	0.260
Hour18	-11.699	-9.477	-7.375	0.000	-0.236	0.197
Hour19	-14.580	-11.616	-10.038	0.000	0.005	0.108
Hour20	-15.760	-12.573	-10.932	0.000	-0.009	0.072
Hour21	-10.633	-8.441	-7.075	0.000	-0.016	-0.090
Hour22	-3.494	-2.698	-1.679	0.000	-0.015	-0.149
Hour23	-0.923	-0.629	0.245	0.000	-0.018	-0.209
Hour24	-0.269	-0.092	0.715	0.000	0.002	-0.180

Indiana MIchigan Power Company-Indiana
Residential Lighting Peak Demand Model Statistics

Hour	Obs	DF	AdjRSq	DW	StdErr	MAD	MAPE	FObs	FMAD	FMAPE	FAvgErr
Hour1	1827	1811	0.029	0.001	4.897	4.599	17.58%	0	0.000	0.00%	0.000
Hour2	1827	1811	0.041	0.002	3.492	3.278	17.58%	0	0.000	0.00%	0.000
Hour3	1827	1811	0.091	0.005	2.361	2.214	17.58%	0	0.000	0.00%	0.000
Hour4	1827	1811	0.043	0.003	1.812	1.701	17.58%	0	0.000	0.00%	0.000
Hour5	1827	1811	0.056	0.001	1.342	1.260	17.58%	0	0.000	0.00%	0.000
Hour6	1827	1811	0.071	0.004	1.611	1.512	17.58%	0	0.000	0.00%	0.000
Hour7	1827	1811	0.155	0.007	2.396	2.244	17.58%	0	0.000	0.00%	0.000
Hour8	1827	1811	0.274	0.006	3.151	2.941	17.58%	0	0.000	0.00%	0.000
Hour9	1827	1811	0.277	0.002	3.384	3.158	17.58%	0	0.000	0.00%	0.000
Hour10	1827	1811	0.332	0.009	2.904	2.704	17.58%	0	0.000	0.00%	0.000
Hour11	1827	1811	0.328	0.007	2.487	2.316	17.58%	0	0.000	0.00%	0.000
Hour12	1827	1811	0.319	0.007	2.109	1.965	17.58%	0	0.000	0.00%	0.000
Hour13	1827	1811	0.250	0.006	1.857	1.734	17.58%	0	0.000	0.00%	0.000
Hour14	1827	1811	0.233	0.005	1.815	1.696	17.58%	0	0.000	0.00%	0.000
Hour15	1827	1811	0.253	0.005	1.783	1.665	17.58%	0	0.000	0.00%	0.000
Hour16	1827	1811	0.351	0.007	1.759	1.637	17.58%	0	0.000	0.00%	0.000
Hour17	1827	1811	0.527	0.008	1.917	1.766	17.58%	0	0.000	0.00%	0.000
Hour18	1827	1811	0.723	0.006	2.442	2.187	17.58%	0	0.000	0.00%	0.000
Hour19	1827	1811	0.802	0.004	4.215	3.670	17.58%	0	0.000	0.00%	0.000
Hour20	1827	1811	0.826	0.004	6.331	5.435	17.58%	0	0.000	0.00%	0.000
Hour21	1827	1811	0.690	0.003	8.105	7.313	17.58%	0	0.000	0.00%	0.000
Hour22	1827	1811	0.222	0.002	9.814	9.174	17.58%	0	0.000	0.00%	0.000
Hour23	1827	1811	0.048	0.002	9.420	8.842	17.58%	0	0.000	0.00%	0.000
Hour24	1827	1811	0.027	0.002	7.222	6.781	17.58%	0	0.000	0.00%	0.000

Indiana Michigan Power Company-Indiana
Residential Other Peak Demand Model Coefficients

Variable	HDD50	HDD55	HDD65	CDD65	CDD70	CDD65WkEnd	HDD65WkEnd	CDD70WkEnd	WkDay
Hour1	-5.626	13.269	-4.834	7.383	3.773	2.671	0.023	-1.953	318.631
Hour2	-1.148	7.081	-3.103	4.410	6.681	-2.987	0.220	3.578	304.873
Hour3	-2.084	7.156	-2.418	4.132	6.649	-2.029	0.027	1.603	283.052
Hour4	-2.404	6.913	-1.928	3.955	5.942	-2.445	-0.018	2.159	274.603
Hour5	-2.595	6.503	-1.517	3.323	5.748	-0.760	-0.007	-0.289	256.431
Hour6	-2.293	5.835	-1.136	3.078	5.227	-0.691	0.036	0.125	263.028
Hour7	-1.653	5.424	-1.433	2.174	6.495	-0.356	0.262	-1.334	353.530
Hour8	-2.279	5.841	-1.139	1.034	7.440	1.782	-0.316	-2.432	448.684
Hour9	-1.807	5.220	-0.809	0.513	7.908	1.614	-0.671	-0.901	440.985
Hour10	-2.051	5.276	-0.172	1.257	9.565	-2.175	-0.564	2.251	348.076
Hour11	-2.567	5.735	-0.314	1.461	12.080	-3.516	0.217	3.730	260.313
Hour12	-4.927	8.760	-1.238	5.252	11.122	-6.649	0.478	7.820	270.351
Hour13	-5.501	9.358	-1.367	7.182	12.467	-4.318	0.714	4.126	259.669
Hour14	-6.170	11.104	-2.500	7.982	15.086	-1.940	0.759	-0.429	212.642
Hour15	-7.891	14.175	-4.011	9.605	15.662	-2.042	0.614	0.399	193.230
Hour16	-7.478	13.810	-4.058	15.202	8.740	-3.132	0.508	2.664	150.793
Hour17	-8.224	16.089	-5.644	18.738	3.963	-4.348	0.468	5.451	240.556
Hour18	-6.851	15.129	-6.199	21.197	-0.545	-3.725	0.553	6.415	280.485
Hour19	-5.334	13.987	-6.069	22.285	-3.317	-3.725	0.371	5.743	376.958
Hour20	-5.954	15.212	-6.393	22.670	-6.107	-4.524	0.236	7.202	351.783
Hour21	-4.050	13.784	-6.552	18.500	-2.511	-2.995	0.459	4.812	362.794
Hour22	-1.866	11.050	-5.927	16.304	-1.544	-2.732	0.152	5.808	433.122
Hour23	-2.606	11.070	-5.321	12.054	2.167	-0.563	0.117	1.428	387.202
Hour24	-4.297	12.913	-5.643	8.694	4.787	2.028	0.017	-3.037	403.778

Indiana Michigan Power Company-Indiana
Residential Other Peak Demand Model Coefficients

Variable	WkEnd	MajorHolidays	January	February	March	April	May	June	July	August
Hour1	320.699	14.715	-13.961	-31.480	-49.931	-40.440	-36.380	17.778	46.669	30.123
Hour2	321.501	7.022	-5.041	-17.176	-35.441	-20.028	-22.841	17.961	57.106	39.146
Hour3	302.110	0.527	-1.687	-11.112	-24.662	-8.714	-13.235	22.087	57.404	43.076
Hour4	291.213	-1.113	4.433	-3.670	-17.502	-5.572	-10.513	14.857	45.545	33.610
Hour5	263.446	-4.852	3.335	-4.146	-14.990	-1.206	-10.909	11.899	44.411	32.480
Hour6	254.223	-1.399	7.498	1.506	-7.963	9.003	-2.234	12.042	39.286	30.368
Hour7	317.231	3.633	6.581	2.727	-4.252	3.643	-9.407	4.478	26.616	20.836
Hour8	387.927	3.344	13.902	25.794	26.637	32.026	18.887	24.197	35.283	44.040
Hour9	400.646	0.213	1.110	11.545	12.833	21.978	7.702	16.998	26.304	26.268
Hour10	376.051	1.413	-8.107	-11.879	-18.413	-3.166	-19.054	3.407	16.638	1.442
Hour11	305.935	27.758	-2.165	-21.609	-36.586	-19.304	-39.112	-5.776	15.816	7.875
Hour12	326.671	34.524	0.482	-32.819	-52.627	-33.982	-49.015	-6.629	17.039	13.635
Hour13	317.878	42.877	8.799	-27.864	-56.002	-32.962	-47.941	1.472	34.441	31.430
Hour14	271.249	44.122	11.806	-32.788	-65.214	-52.377	-71.410	-20.199	20.957	26.485
Hour15	254.744	27.001	9.112	-38.580	-71.361	-61.093	-73.092	-17.347	29.819	41.278
Hour16	213.428	24.660	-0.200	-44.299	-85.462	-86.250	-99.816	-41.907	26.325	39.929
Hour17	297.817	22.622	-4.913	-45.054	-75.821	-71.563	-86.179	-17.333	52.740	62.012
Hour18	316.017	16.587	-2.635	-48.310	-77.257	-72.456	-79.124	-14.781	64.937	75.636
Hour19	380.645	20.964	-9.389	-67.485	-85.745	-77.516	-69.940	4.924	79.210	90.829
Hour20	342.820	21.321	-11.143	-56.710	-85.616	-76.207	-67.268	19.165	91.805	100.102
Hour21	352.188	23.448	-8.916	-41.351	-70.893	-82.850	-82.810	7.212	75.536	72.233
Hour22	427.868	35.212	-9.556	-32.972	-45.339	-38.935	-50.436	34.549	83.732	83.675
Hour23	379.517	32.137	-16.879	-41.284	-59.037	-47.889	-48.867	8.767	55.263	53.153
Hour24	403.163	27.166	-14.634	-34.288	-44.514	-37.278	-28.700	29.334	66.616	45.987

Indiana Michigan Power Company-Indiana
Residential Other Peak Demand Model Coefficients

Variable	September	October	November	December	SummerFuzzy	WinterFuzzy	HLight	DST
Hour1	-8.318	-39.936	-41.879	0.000	-37.782	-35.090	0.150	-12.675
Hour2	-1.211	-26.244	-33.223	0.000	-19.049	-35.027	-3.115	-9.800
Hour3	9.347	-18.297	-29.361	0.000	-14.649	-34.287	-3.708	-13.878
Hour4	4.083	-17.225	-26.886	0.000	-7.219	-43.201	-4.238	-13.974
Hour5	6.837	-12.053	-25.610	0.000	-5.566	-46.232	-2.695	-17.810
Hour6	6.340	-8.257	-22.119	0.000	0.952	-49.856	-2.828	-22.236
Hour7	-3.975	-26.018	-22.454	0.000	5.883	-75.211	-6.708	-23.041
Hour8	17.146	-13.316	-18.277	0.000	-5.203	-87.809	-10.824	-43.616
Hour9	-0.043	-23.828	-24.543	0.000	-22.287	-73.058	-8.324	-32.226
Hour10	-21.926	-37.499	-28.018	0.000	-25.688	-51.611	-3.271	-10.685
Hour11	-11.505	-30.091	-25.532	0.000	-45.066	-31.991	4.412	-5.048
Hour12	-14.875	-36.116	-41.950	0.000	-52.847	-15.501	4.222	4.448
Hour13	-3.546	-26.863	-33.860	0.000	-58.960	4.379	4.383	12.803
Hour14	-8.907	-33.131	-42.804	0.000	-65.549	11.843	9.645	9.593
Hour15	4.070	-28.405	-44.880	0.000	-73.052	26.438	11.073	7.029
Hour16	-1.511	-41.510	-47.538	0.000	-86.156	26.646	15.397	3.584
Hour17	17.186	-38.219	-45.192	0.000	-92.850	18.122	8.668	-0.943
Hour18	38.345	-31.702	-47.754	0.000	-99.305	15.843	8.564	-16.239
Hour19	38.512	-42.531	-53.963	0.000	-93.766	8.516	5.531	-36.489
Hour20	38.754	-33.783	-39.729	0.000	-83.953	9.827	9.363	-48.773
Hour21	3.416	-34.523	-41.183	0.000	-71.223	-16.892	8.120	-37.328
Hour22	26.211	-26.227	-36.788	0.000	-72.955	-16.424	-1.583	-21.051
Hour23	-0.294	-50.986	-51.071	0.000	-68.405	-29.593	1.779	-15.281
Hour24	-4.945	-48.891	-47.353	0.000	-55.664	-39.157	-2.801	-15.387

Indiana Michigan Power Company-Indiana
Residential Other Peak Demand Model Standard Errors

Variable	HDD50	HDD55	HDD65	CDD65	CDD70	CDD65WkEnd	HDD65WkEnd	CDD70WkEnd	WkDay
Hour1	0.452	0.634	0.279	0.493	0.678	0.707	0.074	1.052	18.140
Hour2	0.435	0.609	0.269	0.474	0.652	0.680	0.071	1.011	17.429
Hour3	0.423	0.593	0.261	0.461	0.635	0.662	0.070	0.985	16.969
Hour4	0.421	0.589	0.260	0.458	0.631	0.658	0.069	0.978	16.861
Hour5	0.429	0.601	0.265	0.467	0.643	0.670	0.070	0.997	17.191
Hour6	0.433	0.607	0.268	0.472	0.649	0.677	0.071	1.007	17.364
Hour7	0.449	0.629	0.277	0.489	0.673	0.702	0.074	1.044	17.997
Hour8	0.458	0.642	0.283	0.499	0.687	0.716	0.075	1.066	18.371
Hour9	0.459	0.643	0.283	0.500	0.688	0.717	0.075	1.067	18.391
Hour10	0.450	0.631	0.278	0.490	0.675	0.704	0.074	1.047	18.048
Hour11	0.449	0.629	0.277	0.489	0.673	0.702	0.074	1.045	18.006
Hour12	0.456	0.639	0.282	0.497	0.684	0.713	0.075	1.061	18.289
Hour13	0.474	0.664	0.293	0.516	0.711	0.741	0.078	1.103	19.003
Hour14	0.490	0.687	0.303	0.534	0.735	0.767	0.081	1.141	19.664
Hour15	0.506	0.709	0.312	0.551	0.758	0.791	0.083	1.177	20.280
Hour16	0.524	0.734	0.324	0.571	0.785	0.819	0.086	1.218	21.000
Hour17	0.554	0.776	0.342	0.604	0.831	0.866	0.091	1.289	22.211
Hour18	0.589	0.825	0.364	0.642	0.883	0.921	0.097	1.370	23.608
Hour19	0.608	0.852	0.375	0.662	0.911	0.950	0.100	1.413	24.359
Hour20	0.602	0.844	0.372	0.656	0.903	0.942	0.099	1.401	24.143
Hour21	0.573	0.803	0.354	0.624	0.859	0.896	0.094	1.332	22.964
Hour22	0.550	0.771	0.340	0.599	0.825	0.860	0.090	1.280	22.060
Hour23	0.524	0.735	0.324	0.571	0.786	0.820	0.086	1.219	21.015
Hour24	0.486	0.681	0.300	0.529	0.728	0.759	0.080	1.130	19.472

Indiana Michigan Power Company-Indiana
Residential Other Peak Demand Model Standard Errors

Variable	WkEnd	MajorHolidays	January	February	March	April	May	June	July	August
Hour1	18.273	3.234	2.002	2.986	4.650	6.050	7.282	7.743	7.367	6.247
Hour2	17.557	3.107	1.924	2.869	4.468	5.813	6.997	7.439	7.078	6.002
Hour3	17.094	3.025	1.873	2.794	4.350	5.659	6.812	7.243	6.891	5.844
Hour4	16.985	3.006	1.861	2.776	4.322	5.624	6.769	7.197	6.848	5.807
Hour5	17.317	3.064	1.898	2.830	4.407	5.734	6.901	7.338	6.981	5.920
Hour6	17.492	3.095	1.917	2.859	4.451	5.791	6.971	7.411	7.052	5.980
Hour7	18.129	3.208	1.987	2.963	4.613	6.002	7.225	7.682	7.309	6.198
Hour8	18.506	3.275	2.028	3.025	4.709	6.127	7.375	7.841	7.461	6.327
Hour9	18.527	3.278	2.030	3.028	4.715	6.134	7.383	7.850	7.469	6.334
Hour10	18.181	3.217	1.992	2.971	4.627	6.020	7.246	7.704	7.330	6.215
Hour11	18.139	3.210	1.988	2.965	4.616	6.006	7.229	7.686	7.313	6.201
Hour12	18.424	3.260	2.019	3.011	4.688	6.100	7.342	7.806	7.428	6.298
Hour13	19.143	3.387	2.098	3.129	4.871	6.338	7.629	8.111	7.717	6.544
Hour14	19.809	3.505	2.171	3.237	5.041	6.559	7.894	8.393	7.986	6.772
Hour15	20.429	3.615	2.239	3.339	5.199	6.764	8.141	8.656	8.236	6.984
Hour16	21.154	3.743	2.318	3.457	5.383	7.004	8.430	8.963	8.528	7.232
Hour17	22.374	3.959	2.452	3.657	5.694	7.408	8.917	9.480	9.020	7.649
Hour18	23.782	4.208	2.606	3.887	6.052	7.874	9.478	10.077	9.587	8.130
Hour19	24.539	4.342	2.689	4.010	6.244	8.125	9.779	10.397	9.893	8.389
Hour20	24.321	4.304	2.665	3.975	6.189	8.052	9.692	10.305	9.805	8.314
Hour21	23.133	4.094	2.535	3.781	5.887	7.659	9.219	9.802	9.326	7.908
Hour22	22.223	3.932	2.435	3.632	5.655	7.358	8.856	9.416	8.959	7.597
Hour23	21.170	3.746	2.320	3.460	5.387	7.009	8.437	8.970	8.535	7.237
Hour24	19.616	3.471	2.149	3.206	4.992	6.495	7.817	8.311	7.908	6.706

Indiana Michigan Power Company-Indiana
Residential Other Peak Demand Model Standard Errors

Variable	September	October	November	December	SummerFuzzy	WinterFuzzy	HLight	DST
Hour1	5.277	4.163	2.194	0.000	3.539	3.480	1.723	2.677
Hour2	5.070	4.000	2.108	0.000	3.400	3.343	1.656	2.572
Hour3	4.936	3.894	2.052	0.000	3.310	3.255	1.612	2.504
Hour4	4.905	3.870	2.039	0.000	3.289	3.234	1.602	2.488
Hour5	5.001	3.945	2.079	0.000	3.354	3.298	1.633	2.537
Hour6	5.051	3.985	2.100	0.000	3.387	3.331	1.650	2.563
Hour7	5.235	4.130	2.176	0.000	3.511	3.452	1.710	2.656
Hour8	5.344	4.216	2.222	0.000	3.584	3.524	1.745	2.711
Hour9	5.350	4.221	2.224	0.000	3.588	3.528	1.747	2.714
Hour10	5.250	4.142	2.183	0.000	3.521	3.462	1.715	2.664
Hour11	5.238	4.132	2.178	0.000	3.513	3.454	1.711	2.657
Hour12	5.320	4.197	2.212	0.000	3.568	3.508	1.737	2.699
Hour13	5.528	4.361	2.298	0.000	3.707	3.645	1.805	2.805
Hour14	5.720	4.513	2.378	0.000	3.836	3.772	1.868	2.902
Hour15	5.899	4.654	2.453	0.000	3.956	3.890	1.927	2.993
Hour16	6.109	4.819	2.540	0.000	4.097	4.028	1.995	3.099
Hour17	6.461	5.097	2.686	0.000	4.333	4.260	2.110	3.278
Hour18	6.867	5.418	2.855	0.000	4.605	4.528	2.243	3.484
Hour19	7.086	5.590	2.946	0.000	4.752	4.673	2.314	3.595
Hour20	7.023	5.541	2.920	0.000	4.710	4.631	2.294	3.563
Hour21	6.680	5.270	2.777	0.000	4.480	4.405	2.182	3.389
Hour22	6.417	5.063	2.668	0.000	4.303	4.232	2.096	3.256
Hour23	6.113	4.823	2.541	0.000	4.100	4.031	1.996	3.101
Hour24	5.664	4.469	2.355	0.000	3.799	3.735	1.850	2.874

Indiana Michigan Power Company-Indiana
Residential Other Peak Demand Model t-Statistics

Variable	HDD50	HDD55	HDD65	CDD65	CDD70	CDD65WkEnd	HDD65WkEnd	CDD70WkEnd	WkDay
Hour1	-12.435	20.925	-17.296	14.978	5.562	3.776	0.310	-1.856	17.566
Hour2	-2.642	11.622	-11.555	9.310	10.251	-4.395	3.081	3.539	17.493
Hour3	-4.926	12.063	-9.248	8.960	10.478	-3.066	0.389	1.628	16.681
Hour4	-5.716	11.727	-7.423	8.631	9.423	-3.719	-0.266	2.207	16.286
Hour5	-6.052	10.821	-5.726	7.113	8.941	-1.134	-0.103	-0.290	14.917
Hour6	-5.295	9.612	-4.245	6.523	8.049	-1.020	0.505	0.124	15.148
Hour7	-3.683	8.622	-5.169	4.445	9.651	-0.507	3.556	-1.277	19.644
Hour8	-4.974	9.095	-4.024	2.072	10.829	2.487	-4.194	-2.281	24.423
Hour9	-3.939	8.120	-2.856	1.025	11.497	2.250	-8.895	-0.844	23.978
Hour10	-4.556	8.362	-0.618	2.563	14.172	-3.090	-7.624	2.150	19.286
Hour11	-5.716	9.111	-1.134	2.985	17.939	-5.007	2.942	3.571	14.457
Hour12	-10.801	13.701	-4.392	10.567	16.262	-9.322	6.379	7.370	14.782
Hour13	-11.607	14.087	-4.670	13.907	17.544	-5.826	9.160	3.742	13.665
Hour14	-12.581	16.153	-8.250	14.937	20.515	-2.529	9.415	-0.376	10.814
Hour15	-15.602	19.995	-12.835	17.429	20.651	-2.582	7.387	0.339	9.528
Hour16	-14.278	18.812	-12.543	26.639	11.129	-3.825	5.904	2.187	7.181
Hour17	-14.846	20.721	-16.492	31.045	4.771	-5.019	5.136	4.230	10.831
Hour18	-11.636	18.332	-17.041	33.040	-0.618	-4.046	5.710	4.683	11.881
Hour19	-8.779	16.424	-16.171	33.666	-3.641	-3.921	3.716	4.064	15.475
Hour20	-9.888	18.023	-17.187	34.553	-6.764	-4.805	2.386	5.141	14.571
Hour21	-7.072	17.170	-18.518	29.645	-2.924	-3.345	4.872	3.612	15.798
Hour22	-3.391	14.328	-17.437	27.196	-1.872	-3.176	1.681	4.538	19.634
Hour23	-4.973	15.069	-16.434	21.107	2.757	-0.687	1.358	1.171	18.425
Hour24	-8.849	18.969	-18.809	16.429	6.573	2.671	0.217	-2.689	20.736

Indiana Michigan Power Company-Indiana
Residential Other Peak Demand Model t-Statistics

Variable	WkEnd	MajorHolidays	January	February	March	April	May	June	July	August
Hour1	17.550	4.551	-6.972	-10.541	-10.738	-6.684	-4.996	2.296	6.335	4.822
Hour2	18.312	2.260	-2.620	-5.986	-7.933	-3.445	-3.264	2.414	8.068	6.522
Hour3	17.674	0.174	-0.901	-3.978	-5.670	-1.540	-1.943	3.050	8.330	7.371
Hour4	17.145	-0.370	2.382	-1.322	-4.049	-0.991	-1.553	2.064	6.651	5.788
Hour5	15.213	-1.583	1.757	-1.465	-3.402	-0.210	-1.581	1.622	6.361	5.486
Hour6	14.534	-0.452	3.912	0.527	-1.789	1.555	-0.320	1.625	5.571	5.078
Hour7	17.498	1.132	3.313	0.920	-0.922	0.607	-1.302	0.583	3.642	3.362
Hour8	20.962	1.021	6.855	8.528	5.656	5.227	2.561	3.086	4.729	6.961
Hour9	21.625	0.065	0.547	3.813	2.722	3.583	1.043	2.165	3.522	4.147
Hour10	20.684	0.439	-4.069	-3.998	-3.980	-0.526	-2.630	0.442	2.270	0.232
Hour11	16.866	8.648	-1.089	-7.289	-7.926	-3.214	-5.411	-0.752	2.163	1.270
Hour12	17.731	10.589	0.239	-10.899	-11.225	-5.571	-6.676	-0.849	2.294	2.165
Hour13	16.605	12.658	4.195	-8.906	-11.496	-5.201	-6.284	0.181	4.463	4.803
Hour14	13.693	12.587	5.439	-10.128	-12.937	-7.986	-9.046	-2.407	2.624	3.911
Hour15	12.470	7.469	4.071	-11.555	-13.727	-9.032	-8.978	-2.004	3.621	5.910
Hour16	10.089	6.588	-0.086	-12.813	-15.876	-12.314	-11.840	-4.675	3.087	5.521
Hour17	13.311	5.714	-2.004	-12.321	-13.317	-9.660	-9.665	-1.828	5.847	8.107
Hour18	13.288	3.942	-1.011	-12.430	-12.766	-9.202	-8.349	-1.467	6.773	9.303
Hour19	15.512	4.828	-3.492	-16.827	-13.732	-9.541	-7.152	0.474	8.007	10.827
Hour20	14.096	4.954	-4.181	-14.267	-13.834	-9.464	-6.940	1.860	9.363	12.040
Hour21	15.224	5.728	-3.517	-10.937	-12.043	-10.817	-8.983	0.736	8.100	9.134
Hour22	19.254	8.954	-3.924	-9.078	-8.018	-5.292	-5.695	3.669	9.346	11.014
Hour23	17.927	8.579	-7.276	-11.933	-10.959	-6.832	-5.792	0.977	6.475	7.344
Hour24	20.553	7.826	-6.808	-10.695	-8.918	-5.740	-3.671	3.529	8.424	6.858

Indiana Michigan Power Company-Indiana
Residential Other Peak Demand Model t-Statistics

Variable	September	October	November	December	SummerFuzzy	WinterFuzzy	HLight	DST
Hour1	-1.576	-9.593	-19.090	0.000	-10.677	-10.085	0.087	-4.735
Hour2	-0.239	-6.561	-15.762	0.000	-5.603	-10.477	-1.882	-3.810
Hour3	1.894	-4.698	-14.308	0.000	-4.426	-10.534	-2.300	-5.541
Hour4	0.832	-4.451	-13.185	0.000	-2.195	-13.357	-2.646	-5.615
Hour5	1.367	-3.055	-12.318	0.000	-1.660	-14.020	-1.650	-7.020
Hour6	1.255	-2.072	-10.533	0.000	0.281	-14.968	-1.714	-8.677
Hour7	-0.759	-6.299	-10.317	0.000	1.676	-21.787	-3.924	-8.675
Hour8	3.208	-3.158	-8.227	0.000	-1.452	-24.918	-6.202	-16.087
Hour9	-0.008	-5.645	-11.034	0.000	-6.212	-20.709	-4.764	-11.873
Hour10	-4.176	-9.053	-12.836	0.000	-7.296	-14.908	-1.908	-4.011
Hour11	-2.197	-7.282	-11.725	0.000	-12.830	-9.262	2.579	-1.900
Hour12	-2.796	-8.605	-18.966	0.000	-14.812	-4.418	2.430	1.648
Hour13	-0.642	-6.160	-14.734	0.000	-15.905	1.201	2.428	4.565
Hour14	-1.557	-7.341	-17.999	0.000	-17.088	3.140	5.163	3.305
Hour15	0.690	-6.103	-18.300	0.000	-18.466	6.796	5.748	2.348
Hour16	-0.247	-8.613	-18.719	0.000	-21.032	6.615	7.718	1.156
Hour17	2.660	-7.498	-16.825	0.000	-21.429	4.253	4.108	-0.288
Hour18	5.584	-5.851	-16.726	0.000	-21.563	3.499	3.818	-4.661
Hour19	5.435	-7.608	-18.318	0.000	-19.732	1.823	2.390	-10.150
Hour20	5.518	-6.097	-13.607	0.000	-17.825	2.122	4.082	-13.688
Hour21	0.511	-6.551	-14.829	0.000	-15.899	-3.835	3.722	-11.014
Hour22	4.085	-5.180	-13.789	0.000	-16.953	-3.881	-0.755	-6.466
Hour23	-0.048	-10.572	-20.095	0.000	-16.686	-7.341	0.891	-4.927
Hour24	-0.873	-10.940	-20.108	0.000	-14.654	-10.483	-1.514	-5.354

Indiana Michigan Power Company-Indiana
Residential Other Peak Demand Model Statistics

Hour	Obs	DF	AdjRSq	DW	StdErr	MAD	MAPE	FObs	FMAD	FMAPE	FAvgErr
Hour1	1827	1800	0.938	0.056	16.821	14.056	4.57%	0	0.000	0.00%	0.000
Hour2	1827	1800	0.927	0.057	16.162	13.454	5.03%	0	0.000	0.00%	0.000
Hour3	1827	1800	0.917	0.058	15.735	12.993	5.27%	0	0.000	0.00%	0.000
Hour4	1827	1800	0.901	0.058	15.635	12.792	5.56%	0	0.000	0.00%	0.000
Hour5	1827	1800	0.881	0.057	15.941	12.945	5.79%	0	0.000	0.00%	0.000
Hour6	1827	1800	0.862	0.056	16.102	12.994	5.76%	0	0.000	0.00%	0.000
Hour7	1827	1800	0.872	0.055	16.689	13.423	5.62%	0	0.000	0.00%	0.000
Hour8	1827	1800	0.881	0.053	17.036	13.778	5.01%	0	0.000	0.00%	0.000
Hour9	1827	1800	0.853	0.052	17.054	13.932	4.58%	0	0.000	0.00%	0.000
Hour10	1827	1800	0.862	0.058	16.736	13.761	4.38%	0	0.000	0.00%	0.000
Hour11	1827	1800	0.906	0.059	16.697	13.922	4.19%	0	0.000	0.00%	0.000
Hour12	1827	1800	0.936	0.060	16.960	14.273	4.03%	0	0.000	0.00%	0.000
Hour13	1827	1800	0.948	0.061	17.622	14.852	3.98%	0	0.000	0.00%	0.000
Hour14	1827	1800	0.957	0.063	18.235	15.279	4.02%	0	0.000	0.00%	0.000
Hour15	1827	1800	0.963	0.064	18.805	15.611	4.10%	0	0.000	0.00%	0.000
Hour16	1827	1800	0.965	0.065	19.473	15.996	4.24%	0	0.000	0.00%	0.000
Hour17	1827	1800	0.964	0.062	20.596	16.806	4.41%	0	0.000	0.00%	0.000
Hour18	1827	1800	0.961	0.059	21.892	17.865	4.47%	0	0.000	0.00%	0.000
Hour19	1827	1800	0.960	0.056	22.589	18.412	4.21%	0	0.000	0.00%	0.000
Hour20	1827	1800	0.961	0.055	22.388	18.261	4.00%	0	0.000	0.00%	0.000
Hour21	1827	1800	0.961	0.053	21.295	17.533	4.01%	0	0.000	0.00%	0.000
Hour22	1827	1800	0.951	0.051	20.457	16.977	4.14%	0	0.000	0.00%	0.000
Hour23	1827	1800	0.944	0.051	19.487	16.221	4.21%	0	0.000	0.00%	0.000
Hour24	1827	1800	0.942	0.053	18.057	15.086	4.32%	0	0.000	0.00%	0.000

Indiana Michigan Power Company-Indiana
Commercial Cooling Peak Demand Model Coefficients

Variable	CDD65	CDD70	CDD65WkEnd	CDD70WkEnd	SummerFuzzy	WinterFuzzy	HLight	DST
Hour1	2.553	0.050	-0.709	0.763	17.952	-6.779	0.701	-1.798
Hour2	1.892	0.524	-0.595	0.591	13.598	-3.992	0.411	-1.201
Hour3	1.851	0.516	-0.617	0.603	13.119	-3.731	0.383	-1.090
Hour4	1.845	0.505	-0.778	0.695	12.502	-3.407	0.349	-0.994
Hour5	2.020	0.390	-1.191	0.976	12.539	-3.505	0.359	-1.013
Hour6	2.234	0.341	-1.404	1.122	13.648	-4.051	0.417	-1.216
Hour7	2.359	0.259	-1.353	1.109	14.659	-4.679	0.484	-1.419
Hour8	2.319	0.414	-1.102	0.938	15.332	-4.878	0.511	-1.680
Hour9	2.659	0.341	-0.916	0.858	18.667	-6.614	0.696	-2.258
Hour10	3.093	0.180	-0.757	0.791	22.599	-8.713	0.916	-2.809
Hour11	3.423	0.055	-0.752	0.813	25.258	-10.121	1.065	-3.195
Hour12	3.413	0.094	-0.526	0.661	26.143	-10.600	1.116	-3.361
Hour13	3.607	0.036	-0.558	0.721	27.324	-11.108	1.169	-3.481
Hour14	3.549	0.036	-0.362	0.591	27.497	-11.267	1.186	-3.520
Hour15	3.641	-0.001	-0.410	0.631	28.023	-11.514	1.211	-3.549
Hour16	3.575	0.055	-0.395	0.609	27.584	-11.247	1.184	-3.537
Hour17	3.517	0.050	-0.579	0.736	26.434	-10.684	1.124	-3.356
Hour18	3.512	-0.081	-0.560	0.737	26.278	-10.789	1.130	-3.183
Hour19	3.414	-0.101	-0.496	0.698	25.596	-10.513	1.098	-2.999
Hour20	3.123	0.015	-0.159	0.448	24.448	-9.944	1.038	-2.851
Hour21	3.129	-0.088	-0.735	0.831	22.503	-9.068	0.945	-2.553
Hour22	2.907	0.015	-0.696	0.778	20.877	-8.191	0.854	-2.356
Hour23	2.683	0.124	-0.389	0.567	20.066	-7.700	0.802	-2.224
Hour24	2.488	0.219	-0.519	0.618	18.190	-6.661	0.692	-1.929

Indiana Michigan Power Company-Indiana
Commercial Cooling Peak Demand Model Standard Errors

Variable	CDD65	CDD70	CDD65WkEnd	CDD70WkEnd	SummerFuzzy	WinterFuzzy	HLight	DST
Hour1	0.049	0.073	0.064	0.111	0.192	0.185	0.019	0.209
Hour2	0.037	0.055	0.049	0.084	0.146	0.141	0.014	0.159
Hour3	0.036	0.053	0.047	0.082	0.141	0.136	0.014	0.154
Hour4	0.035	0.051	0.045	0.078	0.135	0.131	0.013	0.148
Hour5	0.035	0.052	0.046	0.080	0.137	0.133	0.014	0.150
Hour6	0.038	0.057	0.050	0.087	0.150	0.145	0.015	0.163
Hour7	0.041	0.061	0.054	0.093	0.160	0.155	0.016	0.175
Hour8	0.043	0.063	0.056	0.097	0.166	0.161	0.016	0.182
Hour9	0.051	0.076	0.067	0.116	0.200	0.193	0.020	0.218
Hour10	0.061	0.091	0.080	0.139	0.240	0.232	0.024	0.262
Hour11	0.068	0.101	0.089	0.155	0.267	0.258	0.026	0.291
Hour12	0.070	0.104	0.092	0.159	0.275	0.265	0.027	0.300
Hour13	0.074	0.109	0.096	0.167	0.287	0.278	0.028	0.314
Hour14	0.074	0.109	0.097	0.167	0.288	0.279	0.028	0.315
Hour15	0.075	0.112	0.098	0.171	0.294	0.284	0.029	0.321
Hour16	0.074	0.110	0.097	0.168	0.290	0.280	0.029	0.316
Hour17	0.071	0.106	0.093	0.162	0.279	0.270	0.027	0.304
Hour18	0.071	0.105	0.093	0.161	0.277	0.268	0.027	0.302
Hour19	0.069	0.102	0.090	0.156	0.270	0.261	0.027	0.294
Hour20	0.066	0.097	0.086	0.149	0.256	0.248	0.025	0.280
Hour21	0.061	0.091	0.080	0.139	0.239	0.231	0.024	0.261
Hour22	0.057	0.084	0.074	0.129	0.222	0.215	0.022	0.242
Hour23	0.054	0.081	0.071	0.123	0.212	0.205	0.021	0.232
Hour24	0.049	0.073	0.065	0.112	0.193	0.187	0.019	0.211

Indiana Michigan Power Company-Indiana
Commercial Cooling Peak Demand Model t-Statistics

Variable	CDD65	CDD70	CDD65WkEnd	CDD70WkEnd	SummerFuzzy	WinterFuzzy	HLight	DST
Hour1	52.096	0.688	-11.057	6.858	93.686	-36.590	37.103	-8.595
Hour2	50.797	9.476	-12.204	6.993	93.388	-28.356	28.665	-7.555
Hour3	51.410	9.658	-13.092	7.380	93.198	-27.409	27.597	-7.091
Hour4	53.341	9.831	-17.184	8.857	92.446	-26.054	26.178	-6.733
Hour5	57.472	7.485	-25.899	12.240	91.244	-26.379	26.503	-6.756
Hour6	58.347	6.005	-28.004	12.915	91.158	-27.985	28.283	-7.443
Hour7	57.640	4.269	-25.267	11.942	91.609	-30.241	30.705	-8.124
Hour8	54.514	6.550	-19.794	9.714	92.174	-30.331	31.179	-9.256
Hour9	51.980	4.493	-13.686	7.392	93.346	-34.209	35.332	-10.343
Hour10	50.468	1.980	-9.432	5.688	94.312	-37.606	38.808	-10.740
Hour11	50.177	0.546	-8.424	5.255	94.683	-39.240	40.506	-10.972
Hour12	48.611	0.899	-5.725	4.151	95.233	-39.935	41.267	-11.216
Hour13	49.058	0.327	-5.802	4.322	95.046	-39.961	41.261	-11.094
Hour14	48.121	0.325	-3.751	3.529	95.363	-40.413	41.740	-11.186
Hour15	48.417	-0.006	-4.166	3.697	95.312	-40.501	41.786	-11.058
Hour16	48.282	0.499	-4.078	3.623	95.265	-40.171	41.508	-11.192
Hour17	49.325	0.473	-6.206	4.550	94.811	-39.631	40.915	-11.027
Hour18	49.598	-0.768	-6.039	4.587	94.924	-40.308	41.415	-10.535
Hour19	49.499	-0.991	-5.491	4.460	94.924	-40.321	41.315	-10.189
Hour20	47.636	0.156	-1.854	3.014	95.381	-40.122	41.116	-10.192
Hour21	51.252	-0.975	-9.197	6.000	94.275	-39.293	40.165	-9.799
Hour22	51.228	0.183	-9.370	6.039	94.082	-38.177	39.038	-9.726
Hour23	49.404	1.533	-5.471	4.604	94.513	-37.509	38.331	-9.597
Hour24	50.284	2.986	-8.010	5.509	94.034	-35.614	36.308	-9.135

Indiana Michigan Power Company-Indiana
Commercial Cooling Peak Demand Model Statistics

Hour	Obs	DF	AdjRSq	DW	StdErr	MAD	MAPE	FObs	FMAD	FMAPE	FAvgErr
Hour1	1827	1819	0.991	0.059	2.044	1.232	24.23%	0	0.000	0.00%	0.000
Hour2	1827	1819	0.991	0.074	1.553	0.926	34.13%	0	0.000	0.00%	0.000
Hour3	1827	1819	0.991	0.075	1.501	0.893	23.38%	0	0.000	0.00%	0.000
Hour4	1827	1819	0.991	0.079	1.442	0.855	20.30%	0	0.000	0.00%	0.000
Hour5	1827	1819	0.991	0.086	1.466	0.867	33.56%	0	0.000	0.00%	0.000
Hour6	1827	1819	0.991	0.086	1.597	0.947	23.22%	0	0.000	0.00%	0.000
Hour7	1827	1819	0.991	0.080	1.707	1.016	73.54%	0	0.000	0.00%	0.000
Hour8	1827	1819	0.991	0.078	1.774	1.065	25.18%	0	0.000	0.00%	0.000
Hour9	1827	1819	0.991	0.068	2.133	1.291	38.32%	0	0.000	0.00%	0.000
Hour10	1827	1819	0.991	0.060	2.556	1.549	43.32%	0	0.000	0.00%	0.000
Hour11	1827	1819	0.991	0.057	2.845	1.727	19.59%	0	0.000	0.00%	0.000
Hour12	1827	1819	0.991	0.056	2.928	1.780	19.75%	0	0.000	0.00%	0.000
Hour13	1827	1819	0.991	0.055	3.066	1.863	20.31%	0	0.000	0.00%	0.000
Hour14	1827	1819	0.991	0.054	3.075	1.869	19.04%	0	0.000	0.00%	0.000
Hour15	1827	1819	0.991	0.054	3.136	1.905	52.45%	0	0.000	0.00%	0.000
Hour16	1827	1819	0.991	0.055	3.088	1.877	18.93%	0	0.000	0.00%	0.000
Hour17	1827	1819	0.991	0.056	2.974	1.805	24.88%	0	0.000	0.00%	0.000
Hour18	1827	1819	0.991	0.054	2.953	1.790	15.09%	0	0.000	0.00%	0.000
Hour19	1827	1819	0.991	0.053	2.876	1.744	20.10%	0	0.000	0.00%	0.000
Hour20	1827	1819	0.991	0.053	2.734	1.657	24.77%	0	0.000	0.00%	0.000
Hour21	1827	1819	0.991	0.055	2.546	1.540	32.13%	0	0.000	0.00%	0.000
Hour22	1827	1819	0.991	0.057	2.367	1.429	25.47%	0	0.000	0.00%	0.000
Hour23	1827	1819	0.991	0.057	2.264	1.367	83.33%	0	0.000	0.00%	0.000
Hour24	1827	1819	0.991	0.061	2.063	1.242	19.08%	0	0.000	0.00%	0.000

Indiana Michigan Power Company-Indiana
Commercial Heating Peak Demand Model Coefficients

Variable	HDD50	HDD55	HDD65	HDD65WkEnd	SummerFuzzy	WinterFuzzy	HLight	DST
Hour1	1.438	-0.698	0.128	0.061	0.540	9.050	-0.243	2.999
Hour2	1.265	-0.654	0.111	0.027	0.462	6.680	-0.150	1.729
Hour3	1.233	-0.664	0.149	0.018	0.385	6.972	-0.112	1.252
Hour4	1.248	-0.691	0.185	-0.000	0.316	7.432	-0.095	1.058
Hour5	1.271	-0.698	0.188	0.000	0.325	7.664	-0.104	1.184
Hour6	1.205	-0.638	0.235	0.004	0.177	8.983	-0.133	1.737
Hour7	1.154	-0.585	0.243	0.007	0.108	9.455	-0.167	2.281
Hour8	1.164	-0.537	0.250	0.030	0.112	10.813	-0.255	3.551
Hour9	1.269	-0.519	0.218	0.057	0.337	12.295	-0.366	4.944
Hour10	1.429	-0.549	0.144	0.061	0.641	12.691	-0.462	6.064
Hour11	1.494	-0.621	0.076	0.055	0.675	10.694	-0.387	4.965
Hour12	1.435	-0.650	0.048	0.078	0.532	7.941	-0.287	3.676
Hour13	1.264	-0.604	0.042	0.087	0.375	5.664	-0.221	2.862
Hour14	1.106	-0.552	0.043	0.079	0.302	4.356	-0.180	2.331
Hour15	0.960	-0.498	0.041	0.072	0.244	3.337	-0.146	1.886
Hour16	0.854	-0.457	0.041	0.068	0.213	2.708	-0.124	1.593
Hour17	0.807	-0.438	0.037	0.080	0.187	2.396	-0.111	1.440
Hour18	0.796	-0.429	0.035	0.073	0.177	2.420	-0.110	1.431
Hour19	0.870	-0.456	0.035	0.072	0.193	2.910	-0.125	1.632
Hour20	1.076	-0.545	0.042	0.073	0.281	4.327	-0.173	2.247
Hour21	1.225	-0.621	0.049	0.083	0.335	5.199	-0.197	2.538
Hour22	1.352	-0.678	0.060	0.072	0.400	6.086	-0.211	2.682
Hour23	1.432	-0.701	0.069	0.069	0.492	7.297	-0.222	2.763
Hour24	1.503	-0.729	0.088	0.057	0.552	8.156	-0.233	2.855

Indiana Michigan Power Company-Indiana

Commercial Heating Peak Demand Model Standard Errors

Variable	HDD50	HDD55	HDD65	HDD65WkEnd	SummerFuzzy	WinterFuzzy	HLight	DST
Hour1	0.022	0.029	0.011	0.002	0.088	0.093	0.009	0.091
Hour2	0.018	0.024	0.009	0.002	0.072	0.076	0.008	0.075
Hour3	0.018	0.024	0.009	0.002	0.072	0.076	0.008	0.075
Hour4	0.019	0.025	0.009	0.002	0.076	0.080	0.008	0.078
Hour5	0.020	0.026	0.010	0.002	0.077	0.082	0.008	0.080
Hour6	0.022	0.029	0.011	0.002	0.088	0.093	0.009	0.091
Hour7	0.023	0.030	0.011	0.002	0.090	0.096	0.010	0.094
Hour8	0.025	0.033	0.012	0.002	0.100	0.106	0.011	0.104
Hour9	0.027	0.036	0.014	0.002	0.108	0.115	0.011	0.112
Hour10	0.027	0.036	0.013	0.002	0.107	0.114	0.011	0.112
Hour11	0.025	0.032	0.012	0.002	0.097	0.102	0.010	0.100
Hour12	0.022	0.029	0.011	0.002	0.086	0.091	0.009	0.089
Hour13	0.018	0.024	0.009	0.002	0.071	0.076	0.008	0.074
Hour14	0.015	0.020	0.008	0.001	0.060	0.064	0.006	0.063
Hour15	0.013	0.017	0.006	0.001	0.051	0.054	0.005	0.053
Hour16	0.011	0.015	0.006	0.001	0.044	0.047	0.005	0.046
Hour17	0.011	0.014	0.005	0.001	0.042	0.045	0.004	0.044
Hour18	0.011	0.014	0.005	0.001	0.042	0.044	0.004	0.043
Hour19	0.012	0.015	0.006	0.001	0.046	0.049	0.005	0.048
Hour20	0.015	0.020	0.007	0.001	0.059	0.062	0.006	0.061
Hour21	0.017	0.022	0.008	0.002	0.067	0.072	0.007	0.070
Hour22	0.019	0.025	0.009	0.002	0.075	0.080	0.008	0.078
Hour23	0.021	0.027	0.010	0.002	0.082	0.087	0.009	0.085
Hour24	0.022	0.029	0.011	0.002	0.087	0.093	0.009	0.091

Indiana Michigan Power Company-Indiana
Commercial Heating Peak Demand Model t-Statistics

Variable	HDD50	HDD55	HDD65	HDD65WkEnd	SummerFuzzy	WinterFuzzy	HLight	DST
Hour1	64.571	-23.928	11.731	30.274	6.152	97.289	-26.344	32.912
Hour2	69.360	-27.375	12.360	16.510	6.431	87.720	-19.828	23.170
Hour3	67.443	-27.749	16.584	10.796	5.349	91.329	-14.840	16.735
Hour4	65.059	-27.487	19.619	-0.278	4.177	92.787	-11.935	13.488
Hour5	64.633	-27.115	19.453	0.146	4.196	93.337	-12.790	14.717
Hour6	54.221	-21.893	21.503	2.024	2.018	96.743	-14.463	19.090
Hour7	50.243	-19.439	21.491	3.512	1.196	98.575	-17.494	24.272
Hour8	45.939	-16.169	20.078	13.264	1.123	102.166	-24.249	34.245
Hour9	46.183	-14.408	16.123	22.781	3.116	107.152	-32.111	43.980
Hour10	52.411	-15.384	10.732	24.694	5.973	111.450	-40.888	54.349
Hour11	60.865	-19.321	6.306	24.858	6.985	104.331	-37.985	49.443
Hour12	65.829	-22.765	4.464	39.543	6.195	87.238	-31.807	41.214
Hour13	69.645	-25.402	4.717	53.004	5.252	74.737	-29.431	38.552
Hour14	72.131	-27.495	5.642	57.221	5.010	68.045	-28.354	37.169
Hour15	74.212	-29.361	6.508	61.118	4.781	61.761	-27.172	35.630
Hour16	75.566	-30.853	7.317	66.391	4.776	57.386	-26.381	34.471
Hour17	75.225	-31.189	6.958	82.549	4.423	53.462	-25.029	32.810
Hour18	75.271	-30.944	6.784	76.124	4.235	54.763	-25.090	33.055
Hour19	74.236	-29.675	6.082	68.201	4.173	59.430	-25.710	34.014
Hour20	72.274	-27.951	5.792	54.367	4.790	69.569	-28.029	36.861
Hour21	71.545	-27.667	5.836	53.398	4.960	72.677	-27.703	36.217
Hour22	70.924	-27.176	6.439	41.769	5.332	76.469	-26.692	34.393
Hour23	68.572	-25.614	6.750	36.477	5.980	83.675	-25.689	32.340
Hour24	67.822	-25.117	8.110	28.327	6.320	88.108	-25.345	31.474

Indiana Michigan Power Company-Indiana
Commercial Heating Peak Demand Model Statistics

Hour	Obs	DF	AdjRSq	DW	StdErr	MAD	MAPE	FObs	FMAD	FMAPE	FAvgErr
Hour1	1827	1819	0.994	0.226	0.870	0.500	75.38%	0	0.000	0.00%	0.000
Hour2	1827	1819	0.994	0.326	0.712	0.417	32.46%	0	0.000	0.00%	0.000
Hour3	1827	1819	0.994	0.202	0.714	0.396	81.05%	0	0.000	0.00%	0.000
Hour4	1827	1819	0.994	0.142	0.749	0.401	72.93%	0	0.000	0.00%	0.000
Hour5	1827	1819	0.994	0.140	0.768	0.412	32.16%	0	0.000	0.00%	0.000
Hour6	1827	1819	0.994	0.098	0.869	0.459	34.17%	0	0.000	0.00%	0.000
Hour7	1827	1819	0.994	0.095	0.897	0.479	32.37%	0	0.000	0.00%	0.000
Hour8	1827	1819	0.994	0.096	0.990	0.540	27.36%	0	0.000	0.00%	0.000
Hour9	1827	1819	0.994	0.104	1.074	0.596	23.17%	0	0.000	0.00%	0.000
Hour10	1827	1819	0.994	0.134	1.065	0.612	51.45%	0	0.000	0.00%	0.000
Hour11	1827	1819	0.994	0.276	0.959	0.575	27.42%	0	0.000	0.00%	0.000
Hour12	1827	1819	0.993	0.449	0.852	0.513	98.59%	0	0.000	0.00%	0.000
Hour13	1827	1819	0.992	0.537	0.709	0.420	67.49%	0	0.000	0.00%	0.000
Hour14	1827	1819	0.992	0.589	0.599	0.353	45.50%	0	0.000	0.00%	0.000
Hour15	1827	1819	0.992	0.639	0.506	0.297	224.51%	0	0.000	0.00%	0.000
Hour16	1827	1819	0.992	0.681	0.441	0.258	37.52%	0	0.000	0.00%	0.000
Hour17	1827	1819	0.991	0.725	0.419	0.244	58.81%	0	0.000	0.00%	0.000
Hour18	1827	1819	0.991	0.715	0.413	0.241	33.20%	0	0.000	0.00%	0.000
Hour19	1827	1819	0.992	0.673	0.458	0.267	51.67%	0	0.000	0.00%	0.000
Hour20	1827	1819	0.992	0.599	0.582	0.344	34.77%	0	0.000	0.00%	0.000
Hour21	1827	1819	0.992	0.583	0.669	0.397	50.23%	0	0.000	0.00%	0.000
Hour22	1827	1819	0.992	0.540	0.745	0.444	79.96%	0	0.000	0.00%	0.000
Hour23	1827	1819	0.993	0.464	0.816	0.488	40.43%	0	0.000	0.00%	0.000
Hour24	1827	1819	0.993	0.395	0.866	0.516	51.52%	0	0.000	0.00%	0.000

Indiana MIchigan Power Company-Indiana
Commercial Other Peak Demand Model Coefficients

Variable	HDD50	HDD55	HDD65	CDD65	CDD70	CDD65WkEnd	HDD65WkEnd	CDD70WkEnd	WkDay
Hour1	0.154	3.670	-3.166	1.742	1.541	3.511	-0.004	-4.799	409.593
Hour2	0.972	1.868	-2.184	1.431	2.820	3.039	-0.105	-5.304	411.159
Hour3	0.812	1.980	-2.130	1.236	3.188	2.836	-0.107	-4.797	408.666
Hour4	0.392	2.272	-2.075	1.433	2.913	2.885	-0.190	-4.906	404.448
Hour5	1.049	1.162	-1.596	1.294	3.186	3.153	-0.215	-5.287	409.869
Hour6	1.037	1.315	-1.668	0.962	3.151	3.994	-0.078	-6.249	429.775
Hour7	1.281	1.010	-1.688	1.154	2.804	3.874	0.214	-5.924	460.092
Hour8	1.001	1.239	-1.941	1.442	2.746	3.971	0.338	-6.267	558.102
Hour9	1.169	1.304	-2.278	1.012	3.341	4.479	0.412	-6.893	667.903
Hour10	0.636	2.102	-2.823	1.211	3.542	5.413	0.319	-8.293	694.948
Hour11	0.794	3.414	-4.181	1.546	3.171	4.157	0.295	-6.689	682.380
Hour12	2.013	2.919	-4.770	2.120	2.984	4.709	0.208	-7.471	701.444
Hour13	3.452	2.105	-5.329	1.734	3.670	4.426	0.251	-7.024	703.735
Hour14	3.536	2.726	-6.007	1.652	4.336	4.069	0.350	-6.956	681.396
Hour15	3.716	3.074	-6.505	2.471	3.461	4.194	0.495	-6.971	694.687
Hour16	4.245	2.830	-6.677	3.370	1.919	2.994	0.467	-4.626	703.176
Hour17	5.006	1.987	-6.563	3.777	1.354	3.322	0.344	-5.058	693.679
Hour18	4.856	2.187	-6.728	3.591	1.593	3.896	0.315	-5.507	679.685
Hour19	3.926	2.917	-6.484	3.098	1.714	4.863	0.253	-6.547	685.331
Hour20	3.089	3.663	-6.265	3.258	1.461	4.051	0.220	-6.127	661.522
Hour21	3.116	2.823	-5.416	3.383	0.638	4.392	0.156	-6.229	610.993
Hour22	2.772	2.494	-4.732	2.953	0.859	5.380	0.165	-7.858	591.067
Hour23	2.240	1.859	-3.597	2.578	1.136	5.362	0.287	-8.265	497.231
Hour24	1.389	2.362	-3.152	1.948	1.502	4.531	0.136	-6.387	437.313

Indiana MIchigan Power Company-Indiana
Commercial Other Peak Demand Model Coefficients

Variable	WkEnd	MajorHolidays	January	February	March	April	May	June	July	August
Hour1	395.094	-17.133	-3.089	-8.092	-21.675	-35.784	-33.318	-10.378	16.360	14.341
Hour2	407.707	-4.376	0.677	-4.917	-17.006	-28.759	-28.661	-3.197	23.559	25.119
Hour3	405.625	-7.266	-0.041	-4.303	-16.967	-29.627	-29.889	-4.922	20.598	22.425
Hour4	403.650	-10.454	4.146	-1.433	-14.961	-26.935	-27.515	-6.433	18.867	19.757
Hour5	407.611	-6.277	6.391	1.446	-11.340	-23.601	-24.208	-4.747	17.426	18.745
Hour6	414.043	-2.849	5.953	-0.384	-9.542	-20.705	-19.258	0.411	23.345	20.531
Hour7	425.593	-1.398	8.083	4.171	-2.926	-14.393	-8.268	12.567	37.699	33.964
Hour8	495.738	-12.498	8.991	9.993	8.685	4.829	8.311	26.281	53.891	55.128
Hour9	574.581	-19.024	8.215	9.750	7.129	-3.108	0.288	21.072	42.801	38.143
Hour10	588.204	-43.095	11.867	6.950	4.264	-13.056	-5.372	13.146	30.357	26.034
Hour11	578.256	-61.029	9.423	7.150	5.834	-12.271	-7.551	7.786	25.818	24.501
Hour12	596.161	-66.086	11.681	10.817	5.950	-6.515	-0.831	13.594	32.849	30.780
Hour13	604.049	-66.674	10.888	10.468	7.412	-2.531	5.398	19.748	39.845	38.839
Hour14	574.472	-55.630	7.930	8.070	4.329	-5.653	-2.192	11.907	31.705	35.245
Hour15	575.927	-44.333	6.831	11.310	9.906	3.872	8.592	21.622	39.322	46.178
Hour16	587.452	-34.097	7.748	13.845	14.032	13.333	16.920	32.508	52.361	59.229
Hour17	591.564	-35.068	10.794	10.113	12.415	11.050	12.066	31.648	54.665	58.446
Hour18	592.474	-39.928	10.239	8.208	6.201	1.983	4.530	23.008	48.825	50.257
Hour19	623.766	-36.197	7.689	-3.220	-3.149	-3.167	5.011	25.983	49.773	47.633
Hour20	610.891	-36.282	18.921	13.757	9.879	6.783	15.996	39.950	63.992	62.270
Hour21	567.194	-34.088	14.357	14.289	12.411	-1.711	4.904	31.504	57.985	58.884
Hour22	548.943	-30.777	11.112	16.007	16.493	4.988	3.917	27.362	53.137	55.708
Hour23	459.199	-22.628	5.769	4.149	-1.480	-11.491	-8.395	14.935	43.926	43.841
Hour24	415.009	-19.785	-2.738	-5.595	-17.442	-29.996	-29.816	-3.299	24.603	20.968

Indiana MIchigan Power Company-Indiana
Commercial Other Peak Demand Model Coefficients

Variable	September	October	November	December	SummerFuzzy	WinterFuzzy	HLight	DST
Hour1	-6.219	-11.546	-5.745	0.000	-21.745	-0.903	-1.325	-0.983
Hour2	-1.840	-10.600	-7.506	0.000	-17.170	-1.415	-2.942	-1.490
Hour3	-2.362	-12.782	-5.816	0.000	-16.563	-2.019	-3.321	1.172
Hour4	-2.627	-9.799	-5.059	0.000	-15.869	-2.771	-3.239	-2.056
Hour5	-1.758	-8.460	-3.793	0.000	-15.939	-2.877	-3.941	-2.662
Hour6	-0.411	-8.346	-1.467	0.000	-16.969	-3.571	-4.976	-0.828
Hour7	8.352	-2.754	2.897	0.000	-18.020	-3.375	-6.023	0.057
Hour8	21.892	8.320	7.068	0.000	-19.115	-4.300	-11.378	-0.917
Hour9	6.725	4.422	7.276	0.000	-23.147	-3.814	-17.544	14.456
Hour10	-8.615	-5.221	4.236	0.000	-27.709	-1.949	-17.071	12.935
Hour11	-6.182	-1.113	4.124	0.000	-30.448	1.543	-13.609	2.306
Hour12	0.876	4.697	10.516	0.000	-31.141	4.823	-14.370	2.830
Hour13	10.383	11.197	14.133	0.000	-32.227	7.752	-14.133	-2.323
Hour14	12.528	11.705	13.589	0.000	-32.313	9.229	-11.676	-4.404
Hour15	22.209	18.968	13.414	0.000	-32.825	10.504	-12.789	-6.452
Hour16	32.824	24.838	15.508	0.000	-32.305	10.892	-14.326	-6.486
Hour17	33.005	24.793	17.236	0.000	-31.162	10.684	-14.099	-6.239
Hour18	27.209	20.680	14.254	0.000	-31.074	10.762	-13.287	-9.261
Hour19	24.330	15.748	10.845	0.000	-30.241	9.905	-14.756	-19.852
Hour20	38.366	30.124	15.526	0.000	-29.127	7.894	-14.240	-26.863
Hour21	36.078	34.002	9.915	0.000	-27.143	5.993	-10.846	-24.480
Hour22	36.306	21.088	12.771	0.000	-25.320	3.969	-11.162	-7.573
Hour23	19.786	9.963	6.066	0.000	-24.149	1.993	-5.043	-3.841
Hour24	0.729	-5.766	-1.119	0.000	-21.889	-0.182	-1.976	-0.348

Indiana MIchigan Power Company-Indiana
Commercial Other Peak Demand Model Standard Errors

Variable	HDD50	HDD55	HDD65	CDD65	CDD70	CDD65WkEnd	HDD65WkEnd	CDD70WkEnd	WkDay
Hour1	0.300	0.420	0.185	0.326	0.449	0.468	0.049	0.697	12.009
Hour2	0.314	0.440	0.194	0.342	0.471	0.491	0.052	0.730	12.582
Hour3	0.301	0.421	0.186	0.328	0.451	0.470	0.049	0.700	12.056
Hour4	0.293	0.411	0.181	0.319	0.439	0.458	0.048	0.681	11.744
Hour5	0.290	0.406	0.179	0.316	0.434	0.453	0.048	0.674	11.612
Hour6	0.297	0.417	0.184	0.324	0.446	0.465	0.049	0.692	11.921
Hour7	0.310	0.435	0.192	0.338	0.466	0.486	0.051	0.722	12.450
Hour8	0.336	0.471	0.208	0.366	0.504	0.525	0.055	0.782	13.471
Hour9	0.359	0.504	0.222	0.392	0.539	0.562	0.059	0.836	14.409
Hour10	0.377	0.528	0.233	0.410	0.565	0.589	0.062	0.876	15.102
Hour11	0.386	0.541	0.238	0.420	0.579	0.603	0.063	0.898	15.471
Hour12	0.391	0.549	0.242	0.426	0.587	0.612	0.064	0.911	15.694
Hour13	0.396	0.555	0.245	0.432	0.594	0.620	0.065	0.922	15.886
Hour14	0.396	0.556	0.245	0.432	0.594	0.620	0.065	0.922	15.896
Hour15	0.401	0.562	0.248	0.437	0.601	0.627	0.066	0.933	16.084
Hour16	0.400	0.561	0.247	0.436	0.600	0.626	0.066	0.931	16.049
Hour17	0.405	0.567	0.250	0.441	0.607	0.633	0.067	0.941	16.226
Hour18	0.414	0.580	0.256	0.451	0.620	0.647	0.068	0.963	16.590
Hour19	0.402	0.563	0.248	0.438	0.603	0.629	0.066	0.935	16.118
Hour20	0.398	0.558	0.246	0.433	0.597	0.622	0.065	0.925	15.951
Hour21	0.384	0.539	0.237	0.419	0.576	0.601	0.063	0.894	15.405
Hour22	0.361	0.506	0.223	0.393	0.541	0.564	0.059	0.839	14.464
Hour23	0.334	0.468	0.206	0.363	0.500	0.522	0.055	0.776	13.375
Hour24	0.317	0.444	0.196	0.345	0.475	0.495	0.052	0.736	12.691

Indiana MIchigan Power Company-Indiana
Commercial Other Peak Demand Model Standard Errors

Variable	WkEnd	MajorHolidays	January	February	March	April	May	June	July	August
Hour1	12.098	2.141	1.326	1.977	3.078	4.005	4.821	5.126	4.877	4.136
Hour2	12.675	2.243	1.389	2.071	3.225	4.196	5.051	5.370	5.110	4.333
Hour3	12.145	2.149	1.331	1.985	3.091	4.021	4.840	5.146	4.896	4.152
Hour4	11.831	2.094	1.296	1.934	3.011	3.917	4.715	5.013	4.770	4.045
Hour5	11.698	2.070	1.282	1.912	2.977	3.873	4.662	4.956	4.716	3.999
Hour6	12.009	2.125	1.316	1.963	3.056	3.976	4.786	5.088	4.841	4.106
Hour7	12.542	2.219	1.374	2.050	3.191	4.152	4.998	5.314	5.056	4.288
Hour8	13.570	2.401	1.487	2.218	3.453	4.493	5.408	5.750	5.471	4.639
Hour9	14.515	2.569	1.591	2.372	3.694	4.806	5.785	6.150	5.852	4.962
Hour10	15.213	2.692	1.667	2.486	3.871	5.037	6.063	6.446	6.133	5.201
Hour11	15.585	2.758	1.708	2.547	3.966	5.160	6.211	6.604	6.283	5.328
Hour12	15.810	2.798	1.732	2.584	4.023	5.235	6.301	6.699	6.374	5.405
Hour13	16.003	2.832	1.754	2.615	4.072	5.298	6.377	6.781	6.451	5.471
Hour14	16.013	2.834	1.755	2.617	4.075	5.302	6.381	6.785	6.455	5.474
Hour15	16.202	2.867	1.775	2.648	4.123	5.364	6.457	6.865	6.532	5.539
Hour16	16.168	2.861	1.772	2.642	4.114	5.353	6.443	6.850	6.518	5.527
Hour17	16.346	2.892	1.791	2.671	4.159	5.412	6.514	6.926	6.590	5.588
Hour18	16.712	2.957	1.831	2.731	4.253	5.533	6.660	7.081	6.737	5.713
Hour19	16.237	2.873	1.779	2.654	4.132	5.376	6.471	6.880	6.546	5.551
Hour20	16.069	2.843	1.761	2.626	4.089	5.320	6.404	6.808	6.478	5.493
Hour21	15.519	2.746	1.701	2.536	3.949	5.138	6.185	6.576	6.256	5.305
Hour22	14.571	2.578	1.597	2.381	3.708	4.824	5.807	6.174	5.874	4.981
Hour23	13.473	2.384	1.476	2.202	3.429	4.461	5.369	5.709	5.432	4.606
Hour24	12.784	2.262	1.401	2.089	3.253	4.233	5.095	5.417	5.154	4.371

Indiana MIchigan Power Company-Indiana
Commercial Other Peak Demand Model Standard Errors

Variable	September	October	November	December	SummerFuzzy	WinterFuzzy	HLight	DST
Hour1	3.493	2.756	1.452	0.000	2.343	2.304	1.141	1.772
Hour2	3.660	2.888	1.522	0.000	2.454	2.414	1.195	1.857
Hour3	3.507	2.767	1.458	0.000	2.352	2.313	1.145	1.779
Hour4	3.416	2.695	1.420	0.000	2.291	2.253	1.116	1.733
Hour5	3.378	2.665	1.404	0.000	2.265	2.227	1.103	1.714
Hour6	3.468	2.736	1.442	0.000	2.326	2.287	1.133	1.759
Hour7	3.622	2.857	1.506	0.000	2.429	2.388	1.183	1.837
Hour8	3.919	3.092	1.629	0.000	2.628	2.584	1.280	1.988
Hour9	4.191	3.307	1.743	0.000	2.811	2.764	1.369	2.127
Hour10	4.393	3.466	1.826	0.000	2.946	2.897	1.435	2.229
Hour11	4.500	3.551	1.871	0.000	3.018	2.968	1.470	2.283
Hour12	4.565	3.602	1.898	0.000	3.062	3.011	1.491	2.316
Hour13	4.621	3.646	1.921	0.000	3.099	3.047	1.509	2.345
Hour14	4.624	3.648	1.922	0.000	3.101	3.049	1.510	2.346
Hour15	4.679	3.691	1.945	0.000	3.138	3.085	1.528	2.374
Hour16	4.669	3.683	1.941	0.000	3.131	3.079	1.525	2.369
Hour17	4.720	3.724	1.962	0.000	3.165	3.113	1.541	2.395
Hour18	4.826	3.807	2.006	0.000	3.236	3.182	1.576	2.448
Hour19	4.689	3.699	1.949	0.000	3.144	3.092	1.531	2.379
Hour20	4.640	3.661	1.929	0.000	3.112	3.060	1.515	2.354
Hour21	4.481	3.536	1.863	0.000	3.005	2.955	1.464	2.274
Hour22	4.208	3.320	1.749	0.000	2.822	2.775	1.374	2.135
Hour23	3.891	3.070	1.618	0.000	2.609	2.566	1.271	1.974
Hour24	3.692	2.913	1.535	0.000	2.476	2.434	1.206	1.873

Indiana MIchigan Power Company-Indiana
Commercial Other Peak Demand Model t-Statistics

Variable	HDD50	HDD55	HDD65	CDD65	CDD70	CDD65WkEnd	HDD65WkEnd	CDD70WkEnd	WkDay
Hour1	0.514	8.742	-17.113	5.339	3.431	7.497	-0.077	-6.888	34.107
Hour2	3.096	4.246	-11.267	4.186	5.993	6.193	-2.033	-7.266	32.678
Hour3	2.701	4.697	-11.467	3.772	7.071	6.031	-2.160	-6.857	33.896
Hour4	1.340	5.533	-11.469	4.490	6.632	6.298	-3.941	-7.199	34.437
Hour5	3.621	2.862	-8.922	4.100	7.337	6.963	-4.510	-7.848	35.296
Hour6	3.486	3.155	-9.082	2.969	7.068	8.590	-1.593	-9.035	36.051
Hour7	4.126	2.321	-8.797	3.410	6.022	7.979	4.188	-8.202	36.955
Hour8	2.979	2.631	-9.352	3.938	5.450	7.558	6.126	-8.019	41.429
Hour9	3.252	2.589	-10.259	2.586	6.201	7.970	6.977	-8.246	46.353
Hour10	1.689	3.982	-12.131	2.952	6.271	9.191	5.144	-9.465	46.016
Hour11	2.058	6.312	-17.539	3.677	5.481	6.889	4.650	-7.452	44.106
Hour12	5.144	5.320	-19.726	4.970	5.084	7.694	3.226	-8.204	44.694
Hour13	8.714	3.790	-21.773	4.016	6.177	7.144	3.851	-7.621	44.300
Hour14	8.919	4.906	-24.528	3.825	7.293	6.563	5.370	-7.543	42.867
Hour15	9.264	5.467	-26.248	5.654	5.754	6.686	7.502	-7.471	43.192
Hour16	10.605	5.045	-27.003	7.727	3.198	4.783	7.095	-4.968	43.813
Hour17	12.370	3.502	-26.250	8.566	2.231	5.249	5.171	-5.373	42.751
Hour18	11.736	3.770	-26.323	7.966	2.567	6.021	4.626	-5.721	40.970
Hour19	9.765	5.177	-26.110	7.072	2.844	7.736	3.833	-7.001	42.519
Hour20	7.765	6.569	-25.489	7.515	2.449	6.512	3.361	-6.621	41.472
Hour21	8.109	5.242	-22.818	8.081	1.107	7.310	2.464	-6.969	39.661
Hour22	7.684	4.933	-21.233	7.512	1.588	9.538	2.788	-9.364	40.863
Hour23	6.716	3.977	-17.456	7.094	2.270	10.280	5.242	-10.650	37.176
Hour24	4.387	5.323	-16.121	5.648	3.165	9.154	2.611	-8.674	34.459

Indiana MIchigan Power Company-Indiana
Commercial Other Peak Demand Model t-Statistics

WkEnd	MajorHolidays	January	February	March	April	May	June	July	August	September
32.659	-8.003	-2.330	-4.093	-7.041	-8.934	-6.911	-2.025	3.355	3.468	-1.780
32.167	-1.951	0.487	-2.374	-5.273	-6.853	-5.674	-0.595	4.611	5.797	-0.503
33.398	-3.381	-0.031	-2.168	-5.490	-7.368	-6.175	-0.957	4.207	5.401	-0.673
34.118	-4.993	3.198	-0.741	-4.969	-6.876	-5.836	-1.283	3.956	4.885	-0.769
34.845	-3.032	4.986	0.756	-3.810	-6.094	-5.193	-0.958	3.695	4.687	-0.521
34.477	-1.341	4.523	-0.196	-3.122	-5.207	-4.024	0.081	4.822	5.001	-0.118
33.934	-0.630	5.882	2.035	-0.917	-3.466	-1.654	2.365	7.456	7.922	2.306
36.531	-5.205	6.046	4.506	2.515	1.075	1.537	4.571	9.851	11.883	5.587
39.585	-7.406	5.165	4.110	1.930	-0.647	0.050	3.426	7.314	7.687	1.605
38.663	-16.008	7.119	2.795	1.101	-2.592	-0.886	2.039	4.950	5.006	-1.961
37.103	-22.128	5.518	2.807	1.471	-2.378	-1.216	1.179	4.109	4.598	-1.374
37.708	-23.622	6.743	4.186	1.479	-1.245	-0.132	2.029	5.154	5.695	0.192
37.747	-23.545	6.209	4.002	1.820	-0.478	0.846	2.912	6.176	7.099	2.247
35.876	-19.633	4.520	3.084	1.062	-1.066	-0.344	1.755	4.911	6.438	2.709
35.547	-15.463	3.848	4.271	2.403	0.722	1.331	3.150	6.020	8.337	4.747
36.335	-11.918	4.373	5.240	3.411	2.491	2.626	4.745	8.033	10.716	7.031
36.191	-12.124	6.026	3.786	2.985	2.042	1.852	4.570	8.296	10.459	6.993
35.452	-13.502	5.591	3.005	1.458	0.358	0.680	3.249	7.247	8.797	5.638
38.416	-12.598	4.321	-1.213	-0.762	-0.589	0.774	3.777	7.604	8.581	5.189
38.018	-12.760	10.746	5.239	2.416	1.275	2.498	5.868	9.878	11.336	8.269
36.549	-12.413	8.443	5.634	3.143	-0.333	0.793	4.791	9.268	11.099	8.051
37.674	-11.936	6.959	6.722	4.448	1.034	0.675	4.432	9.046	11.183	8.629
34.082	-9.491	3.907	1.884	-0.432	-2.576	-1.564	2.616	8.087	9.518	5.085
32.462	-8.746	-1.955	-2.678	-5.361	-7.087	-5.852	-0.609	4.774	4.798	0.198

Indiana MIchigan Power Company-Indiana
Commercial Other Peak Demand Model t-Statistics

October	November	December	SummerFuzzy	WinterFuzzy	HLight	DST
-4.189	-3.956	0.000	-9.282	-0.392	-1.162	-0.555
-3.671	-4.933	0.000	-6.995	-0.586	-2.461	-0.802
-4.620	-3.989	0.000	-7.043	-0.873	-2.900	0.659
-3.635	-3.562	0.000	-6.926	-1.230	-2.903	-1.186
-3.175	-2.701	0.000	-7.036	-1.292	-3.572	-1.553
-3.051	-1.018	0.000	-7.296	-1.562	-4.393	-0.471
-0.964	1.924	0.000	-7.420	-1.413	-5.092	0.031
2.691	4.338	0.000	-7.274	-1.664	-8.890	-0.461
1.337	4.176	0.000	-8.235	-1.380	-12.817	6.798
-1.506	2.320	0.000	-9.405	-0.673	-11.899	5.803
-0.314	2.204	0.000	-10.088	0.520	-9.259	1.010
1.304	5.541	0.000	-10.171	1.602	-9.638	1.222
3.071	7.357	0.000	-10.399	2.544	-9.365	-0.991
3.208	7.069	0.000	-10.421	3.027	-7.732	-1.877
5.139	6.896	0.000	-10.462	3.405	-8.370	-2.718
6.743	7.990	0.000	-10.318	3.538	-9.396	-2.738
6.658	8.783	0.000	-9.845	3.433	-9.146	-2.605
5.432	7.105	0.000	-9.602	3.382	-8.431	-3.782
4.257	5.564	0.000	-9.618	3.204	-9.637	-8.345
8.229	8.049	0.000	-9.361	2.580	-9.397	-11.411
9.617	5.322	0.000	-9.032	2.028	-7.411	-10.767
6.353	7.301	0.000	-8.974	1.431	-8.123	-3.547
3.246	3.750	0.000	-9.256	0.777	-3.969	-1.946
-1.980	-0.729	0.000	-8.842	-0.075	-1.639	-0.186

Indiana MIchigan Power Company-Indiana
Commercial Other Peak Demand Model Statistics

Hour	Obs	DF	AdjRSq	DW	StdErr	MAD	MAPE	FObs	FMAD	FMAPE	FAvgErr
Hour1	1827	1800	0.843	0.029	11.136	9.312	2.56%	0	0.000	0.00%	0.000
Hour2	1827	1800	0.832	0.329	11.667	9.307	2.60%	0	0.000	0.00%	0.000
Hour3	1827	1800	0.838	0.218	11.180	9.000	2.55%	0	0.000	0.00%	0.000
Hour4	1827	1800	0.833	0.143	10.891	8.851	2.53%	0	0.000	0.00%	0.000
Hour5	1827	1800	0.819	0.104	10.768	8.810	2.53%	0	0.000	0.00%	0.000
Hour6	1827	1800	0.810	0.108	11.055	9.061	2.56%	0	0.000	0.00%	0.000
Hour7	1827	1800	0.833	0.064	11.545	9.533	2.55%	0	0.000	0.00%	0.000
Hour8	1827	1800	0.882	0.060	12.492	10.315	2.54%	0	0.000	0.00%	0.000
Hour9	1827	1800	0.922	0.080	13.362	11.044	2.57%	0	0.000	0.00%	0.000
Hour10	1827	1800	0.934	0.120	14.004	11.546	2.59%	0	0.000	0.00%	0.000
Hour11	1827	1800	0.932	0.105	14.347	11.867	2.57%	0	0.000	0.00%	0.000
Hour12	1827	1800	0.935	0.098	14.554	12.027	2.55%	0	0.000	0.00%	0.000
Hour13	1827	1800	0.931	0.146	14.731	12.063	2.54%	0	0.000	0.00%	0.000
Hour14	1827	1800	0.938	0.173	14.740	12.002	2.53%	0	0.000	0.00%	0.000
Hour15	1827	1800	0.945	0.227	14.914	12.068	2.55%	0	0.000	0.00%	0.000
Hour16	1827	1800	0.945	0.253	14.883	11.986	2.54%	0	0.000	0.00%	0.000
Hour17	1827	1800	0.939	0.334	15.047	12.050	2.58%	0	0.000	0.00%	0.000
Hour18	1827	1800	0.927	0.479	15.384	12.335	2.69%	0	0.000	0.00%	0.000
Hour19	1827	1800	0.907	0.466	14.947	12.068	2.70%	0	0.000	0.00%	0.000
Hour20	1827	1800	0.899	0.454	14.792	11.985	2.70%	0	0.000	0.00%	0.000
Hour21	1827	1800	0.891	0.364	14.286	11.618	2.65%	0	0.000	0.00%	0.000
Hour22	1827	1800	0.877	0.193	13.413	11.005	2.56%	0	0.000	0.00%	0.000
Hour23	1827	1800	0.876	0.026	12.403	10.336	2.51%	0	0.000	0.00%	0.000
Hour24	1827	1800	0.854	0.058	11.768	9.853	2.56%	0	0.000	0.00%	0.000

Indiana Michigan Power Company-Indiana
Industrial Peak Demand Model Coefficients

Variable	Constant	HDD50	HDD55	HDD65	CDD65	CDD70	CDD65WkEnd	HDD65WkEnd	CDD70WkEnd
Hour1	785.020	5.905	-4.692	-0.874	0.414	-1.183	3.059	0.413	-2.998
Hour2	760.275	6.525	-5.250	-0.710	1.100	-1.657	1.458	0.141	-1.144
Hour3	782.717	6.843	-5.343	-0.962	-0.084	-0.131	2.361	0.063	-3.051
Hour4	797.119	6.678	-5.711	-0.605	1.084	-1.922	0.884	0.167	-0.240
Hour5	811.936	7.093	-5.953	-0.770	1.312	-2.231	-0.202	0.223	0.414
Hour6	841.473	6.785	-5.534	-0.692	1.449	-2.275	0.256	0.346	-0.411
Hour7	921.231	9.107	-8.252	-0.374	1.831	-3.210	0.012	0.622	-1.207
Hour8	863.431	8.889	-8.515	-0.002	1.620	-2.999	-0.510	0.947	1.081
Hour9	916.088	9.610	-9.250	-0.124	1.823	-3.355	0.802	1.148	0.133
Hour10	926.473	7.326	-6.644	-0.356	2.716	-3.177	1.746	1.014	-2.150
Hour11	892.784	8.291	-7.528	-0.619	1.368	-1.810	3.055	1.113	-3.560
Hour12	915.936	7.371	-5.871	-1.365	1.546	-2.035	2.735	1.084	-3.207
Hour13	894.849	8.875	-7.267	-1.303	1.046	-1.018	0.684	1.028	-0.284
Hour14	896.024	8.323	-6.608	-1.424	0.226	-0.153	1.155	0.954	-0.567
Hour15	880.807	8.821	-6.950	-1.562	0.715	-0.431	1.262	0.854	-2.056
Hour16	858.307	9.557	-8.600	-0.765	1.624	-2.157	0.236	0.849	0.508
Hour17	824.432	9.388	-8.172	-0.808	0.565	-1.199	0.529	0.697	-0.273
Hour18	830.037	8.538	-7.094	-1.122	0.216	-0.462	2.225	0.658	-2.452
Hour19	828.633	8.116	-7.000	-0.796	0.198	-0.215	3.173	0.496	-4.163
Hour20	816.245	7.858	-6.686	-0.633	1.368	-1.566	1.760	0.224	-2.921
Hour21	798.136	8.908	-8.451	0.026	2.014	-2.617	1.215	0.352	-0.945
Hour22	758.761	7.676	-7.472	0.038	3.299	-4.014	-0.139	0.203	0.615
Hour23	740.735	7.969	-7.868	0.285	2.517	-3.185	0.278	0.101	0.545
Hour24	768.244	8.678	-7.841	-0.315	0.841	-1.045	-1.275	-0.048	1.633

Indiana Michigan Power Company-Indiana
Industrial Peak Demand Model Coefficients

Variable	WkEnd	MajorHolidays	Monday	TWT	January	February	March	April	May	June
Hour1	-96.328	-71.355	-49.754	2.951	45.286	58.900	66.152	25.913	21.895	40.987
Hour2	-89.128	-78.047	-36.403	1.380	38.138	49.297	54.872	10.765	1.446	16.818
Hour3	-81.594	-81.052	-30.549	6.328	40.662	50.362	56.932	12.628	8.658	22.031
Hour4	-87.690	-85.849	-25.647	4.060	39.149	52.220	59.835	12.745	8.482	26.180
Hour5	-94.716	-84.922	-18.048	2.982	37.922	53.516	59.133	18.396	10.933	26.785
Hour6	-123.339	-105.228	-13.879	5.811	38.482	55.152	65.395	32.431	33.665	47.156
Hour7	-162.088	-122.892	3.966	12.627	40.927	61.469	75.029	44.267	48.141	72.588
Hour8	-193.746	-130.919	20.832	13.296	36.160	50.239	47.898	10.287	7.643	27.465
Hour9	-207.777	-130.474	24.375	14.880	38.319	51.997	50.030	14.202	11.005	37.403
Hour10	-207.146	-121.640	21.681	14.353	33.704	50.933	57.197	29.541	31.931	57.051
Hour11	-208.234	-141.966	32.928	16.274	39.842	56.398	56.962	19.287	14.707	37.810
Hour12	-202.985	-138.057	30.039	12.502	39.848	54.787	65.432	34.945	33.819	50.978
Hour13	-203.273	-132.250	33.480	11.455	41.756	55.650	66.619	33.376	30.376	42.771
Hour14	-202.738	-123.974	39.130	17.709	40.199	48.912	60.844	28.238	25.039	43.074
Hour15	-186.300	-114.469	38.648	19.010	41.022	55.295	65.443	34.629	28.013	43.826
Hour16	-159.593	-116.950	36.771	16.866	36.450	47.074	48.362	15.215	7.061	27.098
Hour17	-138.903	-115.952	31.023	10.782	37.914	44.785	48.028	16.712	1.621	19.403
Hour18	-131.465	-103.357	22.637	0.832	35.670	43.156	45.549	17.148	7.902	24.028
Hour19	-122.477	-105.974	22.654	5.374	37.885	46.786	43.920	11.436	10.457	25.367
Hour20	-103.306	-109.106	27.520	13.056	38.616	49.322	47.706	10.775	9.904	29.227
Hour21	-101.554	-104.406	30.348	17.860	40.120	47.195	46.278	5.119	-3.334	19.596
Hour22	-88.662	-109.980	38.636	26.609	39.248	44.507	41.061	-4.607	-16.215	-5.236
Hour23	-65.117	-110.393	52.638	42.703	44.477	52.331	50.881	4.881	-1.733	13.545
Hour24	-31.235	-123.576	69.387	61.042	53.845	63.448	66.333	25.629	24.673	39.257

Indiana Michigan Power Company-Indiana
Industrial Peak Demand Model Coefficients

Variable	July	August	September	October	November	December	HLight	DST
Hour1	38.208	58.424	42.294	6.533	39.412	0.000	-1.087	-15.031
Hour2	11.564	37.338	23.904	-3.688	33.102	0.000	1.054	-11.101
Hour3	20.829	38.689	20.977	-8.770	34.067	0.000	-1.416	-3.257
Hour4	24.929	40.898	20.366	-10.916	34.092	0.000	-2.797	0.875
Hour5	25.235	40.894	19.365	-15.552	29.270	0.000	-3.131	0.588
Hour6	45.129	63.845	44.870	3.107	39.910	0.000	-4.432	-3.871
Hour7	62.606	79.537	55.152	11.700	44.998	0.000	-8.774	5.341
Hour8	19.550	44.253	31.512	-2.961	41.781	0.000	-0.227	7.449
Hour9	23.823	48.166	25.091	-10.801	40.610	0.000	-3.638	10.577
Hour10	34.892	59.662	37.528	-0.750	45.542	0.000	-6.289	10.835
Hour11	25.800	52.180	35.657	2.069	49.037	0.000	-2.635	5.970
Hour12	41.825	60.059	44.746	15.573	52.816	0.000	-5.470	-0.790
Hour13	36.229	53.270	45.881	12.587	51.072	0.000	-3.043	-3.184
Hour14	33.631	51.747	39.638	4.879	50.399	0.000	-3.565	6.511
Hour15	37.402	50.845	38.912	13.439	52.048	0.000	-3.513	-0.103
Hour16	21.843	35.115	19.499	-4.385	44.809	0.000	-3.006	5.902
Hour17	23.354	37.012	21.671	-0.045	46.676	0.000	-2.139	7.171
Hour18	22.191	34.982	21.443	-2.533	39.323	0.000	-3.358	2.985
Hour19	27.101	35.150	21.269	-7.067	42.649	0.000	-4.075	6.413
Hour20	28.976	38.230	28.086	-0.886	40.601	0.000	-4.249	2.644
Hour21	16.624	30.937	22.396	-5.995	38.064	0.000	-2.235	0.800
Hour22	-5.324	14.453	11.220	-14.543	31.939	0.000	0.886	-3.085
Hour23	16.435	33.135	26.149	-7.669	30.595	0.000	0.228	-8.169
Hour24	42.064	55.580	39.404	5.848	41.613	0.000	-4.915	-4.801

Indiana Michigan Power Company-Indiana
Industrial Peak Demand Model Standard Errors

Variable	Constant	HDD50	HDD55	HDD65	CDD65	CDD70	CDD65WkEnd	HDD65WkEnd	CDD70WkEnd
Hour1	58.711	1.814	2.539	1.094	1.902	2.614	2.741	0.291	4.058
Hour2	56.756	1.754	2.455	1.058	1.839	2.527	2.650	0.281	3.923
Hour3	57.290	1.770	2.478	1.068	1.856	2.550	2.675	0.284	3.960
Hour4	57.445	1.775	2.485	1.071	1.861	2.557	2.682	0.284	3.971
Hour5	58.069	1.794	2.512	1.082	1.882	2.585	2.711	0.287	4.014
Hour6	60.939	1.883	2.636	1.136	1.975	2.713	2.845	0.302	4.212
Hour7	65.186	2.014	2.819	1.215	2.112	2.902	3.043	0.323	4.506
Hour8	68.623	2.120	2.968	1.279	2.224	3.055	3.204	0.340	4.744
Hour9	70.517	2.179	3.050	1.314	2.285	3.139	3.292	0.349	4.875
Hour10	70.484	2.178	3.049	1.314	2.284	3.138	3.291	0.349	4.872
Hour11	71.314	2.203	3.085	1.329	2.311	3.175	3.329	0.353	4.930
Hour12	71.708	2.216	3.102	1.336	2.323	3.192	3.348	0.355	4.957
Hour13	72.451	2.239	3.134	1.350	2.348	3.225	3.382	0.359	5.008
Hour14	71.866	2.220	3.108	1.339	2.329	3.199	3.355	0.356	4.968
Hour15	70.851	2.189	3.064	1.320	2.296	3.154	3.308	0.351	4.898
Hour16	69.206	2.138	2.993	1.290	2.242	3.081	3.231	0.343	4.784
Hour17	68.146	2.106	2.948	1.270	2.208	3.034	3.181	0.337	4.711
Hour18	65.353	2.019	2.827	1.218	2.118	2.909	3.051	0.324	4.518
Hour19	60.297	1.863	2.608	1.124	1.954	2.684	2.815	0.299	4.168
Hour20	58.701	1.814	2.539	1.094	1.902	2.613	2.740	0.291	4.058
Hour21	58.088	1.795	2.512	1.083	1.882	2.586	2.712	0.288	4.015
Hour22	58.034	1.793	2.510	1.082	1.880	2.583	2.709	0.287	4.012
Hour23	57.306	1.771	2.479	1.068	1.857	2.551	2.675	0.284	3.961
Hour24	59.742	1.846	2.584	1.113	1.936	2.659	2.789	0.296	4.130

Indiana Michigan Power Company-Indiana
Industrial Peak Demand Model Standard Errors

Variable	WkEnd	MajorHolidays	Monday	TWT	January	February	March	April	May	June
Hour1	8.554	13.424	5.799	4.718	8.023	11.040	16.222	22.572	27.652	30.354
Hour2	8.269	12.977	5.606	4.560	7.756	10.672	15.682	21.821	26.731	29.343
Hour3	8.347	13.099	5.659	4.603	7.829	10.773	15.829	22.026	26.983	29.620
Hour4	8.369	13.134	5.674	4.616	7.850	10.802	15.872	22.086	27.056	29.700
Hour5	8.460	13.277	5.736	4.666	7.935	10.919	16.044	22.326	27.350	30.022
Hour6	8.879	13.933	6.019	4.897	8.327	11.459	16.837	23.429	28.701	31.506
Hour7	9.497	14.905	6.439	5.238	8.908	12.257	18.011	25.062	30.702	33.702
Hour8	9.998	15.690	6.778	5.514	9.378	12.904	18.961	26.384	32.321	35.479
Hour9	10.274	16.123	6.965	5.666	9.636	13.260	19.484	27.112	33.212	36.458
Hour10	10.269	16.116	6.962	5.664	9.632	13.253	19.475	27.099	33.197	36.441
Hour11	10.390	16.306	7.044	5.730	9.745	13.409	19.704	27.418	33.588	36.870
Hour12	10.448	16.396	7.083	5.762	9.799	13.484	19.813	27.570	33.774	37.074
Hour13	10.556	16.566	7.156	5.822	9.901	13.623	20.018	27.855	34.124	37.458
Hour14	10.471	16.432	7.098	5.775	9.821	13.513	19.856	27.630	33.848	37.155
Hour15	10.323	16.200	6.998	5.693	9.682	13.322	19.576	27.240	33.370	36.631
Hour16	10.083	15.824	6.836	5.561	9.457	13.013	19.122	26.608	32.595	35.780
Hour17	9.929	15.581	6.731	5.476	9.312	12.814	18.829	26.200	32.096	35.232
Hour18	9.522	14.943	6.455	5.251	8.931	12.289	18.057	25.126	30.781	33.789
Hour19	8.785	13.787	5.956	4.845	8.240	11.338	16.660	23.182	28.399	31.174
Hour20	8.553	13.422	5.798	4.717	8.022	11.038	16.219	22.569	27.647	30.349
Hour21	8.463	13.282	5.738	4.667	7.938	10.923	16.050	22.333	27.359	30.032
Hour22	8.455	13.269	5.732	4.663	7.930	10.912	16.035	22.312	27.333	30.004
Hour23	8.349	13.103	5.660	4.605	7.831	10.776	15.834	22.033	26.991	29.628
Hour24	8.704	13.660	5.901	4.800	8.164	11.234	16.507	22.969	28.138	30.888

Indiana Michigan Power Company-Indiana
Industrial Peak Demand Model Standard Errors

Variable	July	August	September	October	November	December	HLight	DST
Hour1	28.835	24.010	18.464	14.176	8.982	0.000	5.894	10.206
Hour2	27.875	23.210	17.849	13.704	8.683	0.000	5.698	9.866
Hour3	28.138	23.429	18.017	13.833	8.765	0.000	5.752	9.959
Hour4	28.214	23.492	18.066	13.870	8.788	0.000	5.767	9.986
Hour5	28.520	23.748	18.262	14.021	8.884	0.000	5.830	10.094
Hour6	29.930	24.921	19.164	14.714	9.323	0.000	6.118	10.593
Hour7	32.016	26.658	20.500	15.739	9.973	0.000	6.545	11.331
Hour8	33.704	28.064	21.581	16.569	10.499	0.000	6.890	11.929
Hour9	34.634	28.838	22.177	17.027	10.788	0.000	7.080	12.258
Hour10	34.618	28.825	22.166	17.019	10.783	0.000	7.076	12.252
Hour11	35.025	29.164	22.427	17.219	10.910	0.000	7.160	12.397
Hour12	35.219	29.325	22.551	17.314	10.971	0.000	7.199	12.465
Hour13	35.584	29.629	22.785	17.494	11.084	0.000	7.274	12.594
Hour14	35.296	29.390	22.601	17.352	10.995	0.000	7.215	12.492
Hour15	34.798	28.975	22.282	17.107	10.839	0.000	7.113	12.316
Hour16	33.990	28.302	21.764	16.710	10.588	0.000	6.948	12.030
Hour17	33.470	27.869	21.431	16.454	10.426	0.000	6.842	11.846
Hour18	32.098	26.726	20.553	15.780	9.998	0.000	6.561	11.360
Hour19	29.615	24.659	18.963	14.559	9.225	0.000	6.054	10.482
Hour20	28.831	24.006	18.461	14.174	8.981	0.000	5.893	10.204
Hour21	28.529	23.755	18.268	14.026	8.887	0.000	5.832	10.097
Hour22	28.503	23.733	18.251	14.013	8.879	0.000	5.826	10.088
Hour23	28.146	23.436	18.022	13.837	8.767	0.000	5.753	9.962
Hour24	29.342	24.432	18.788	14.425	9.140	0.000	5.998	10.385

Indiana Michigan Power Company-Indiana
Industrial Peak Demand Model t-Statistics

Variable	Constant	HDD50	HDD55	HDD65	CDD65	CDD70	CDD65WkEnd	HDD65WkEnd	CDD70WkEnd
Hour1	13.371	3.255	-1.848	-0.799	0.218	-0.453	1.116	1.420	-0.739
Hour2	13.396	3.721	-2.139	-0.671	0.598	-0.656	0.550	0.503	-0.292
Hour3	13.662	3.866	-2.156	-0.901	-0.045	-0.051	0.883	0.222	-0.770
Hour4	13.876	3.762	-2.298	-0.565	0.582	-0.752	0.329	0.587	-0.060
Hour5	13.982	3.953	-2.370	-0.712	0.697	-0.863	-0.074	0.776	0.103
Hour6	13.809	3.604	-2.099	-0.609	0.734	-0.839	0.090	1.148	-0.098
Hour7	14.132	4.522	-2.927	-0.308	0.867	-1.106	0.004	1.927	-0.268
Hour8	12.582	4.192	-2.869	-0.002	0.728	-0.982	-0.159	2.789	0.228
Hour9	12.991	4.411	-3.033	-0.094	0.798	-1.069	0.244	3.288	0.027
Hour10	13.144	3.364	-2.179	-0.271	1.189	-1.013	0.531	2.905	-0.441
Hour11	12.519	3.763	-2.441	-0.466	0.592	-0.570	0.918	3.152	-0.722
Hour12	12.773	3.327	-1.893	-1.022	0.665	-0.637	0.817	3.053	-0.647
Hour13	12.351	3.964	-2.319	-0.965	0.445	-0.316	0.202	2.865	-0.057
Hour14	12.468	3.748	-2.126	-1.063	0.097	-0.048	0.344	2.681	-0.114
Hour15	12.432	4.029	-2.268	-1.183	0.311	-0.137	0.382	2.435	-0.420
Hour16	12.402	4.470	-2.873	-0.593	0.724	-0.700	0.073	2.479	0.106
Hour17	12.098	4.459	-2.773	-0.636	0.256	-0.395	0.166	2.066	-0.058
Hour18	12.701	4.228	-2.510	-0.921	0.102	-0.159	0.729	2.033	-0.543
Hour19	13.742	4.357	-2.684	-0.708	0.102	-0.080	1.127	1.663	-0.999
Hour20	13.905	4.333	-2.633	-0.579	0.719	-0.599	0.642	0.772	-0.720
Hour21	13.740	4.964	-3.364	0.024	1.070	-1.012	0.448	1.223	-0.235
Hour22	13.074	4.281	-2.977	0.035	1.754	-1.554	-0.051	0.706	0.153
Hour23	12.926	4.501	-3.174	0.267	1.356	-1.249	0.104	0.354	0.138
Hour24	12.859	4.701	-3.035	-0.283	0.435	-0.393	-0.457	-0.161	0.395

Indiana Michigan Power Company-Indiana
Industrial Peak Demand Model t-Statistics

Variable	WkEnd	MajorHolidays	Monday	TWT	January	February	March	April	May	June
Hour1	-11.261	-5.316	-8.580	0.625	5.645	5.335	4.078	1.148	0.792	1.350
Hour2	-10.779	-6.014	-6.493	0.303	4.917	4.619	3.499	0.493	0.054	0.573
Hour3	-9.775	-6.188	-5.398	1.375	5.194	4.675	3.597	0.573	0.321	0.744
Hour4	-10.477	-6.536	-4.520	0.880	4.987	4.834	3.770	0.577	0.314	0.881
Hour5	-11.195	-6.396	-3.147	0.639	4.779	4.901	3.686	0.824	0.400	0.892
Hour6	-13.892	-7.552	-2.306	1.187	4.621	4.813	3.884	1.384	1.173	1.497
Hour7	-17.067	-8.245	0.616	2.411	4.594	5.015	4.166	1.766	1.568	2.154
Hour8	-19.378	-8.344	3.073	2.411	3.856	3.893	2.526	0.390	0.236	0.774
Hour9	-20.224	-8.092	3.500	2.626	3.977	3.921	2.568	0.524	0.331	1.026
Hour10	-20.172	-7.548	3.114	2.534	3.499	3.843	2.937	1.090	0.962	1.566
Hour11	-20.042	-8.707	4.675	2.840	4.088	4.206	2.891	0.703	0.438	1.026
Hour12	-19.429	-8.420	4.241	2.170	4.066	4.063	3.302	1.268	1.001	1.375
Hour13	-19.257	-7.983	4.678	1.968	4.218	4.085	3.328	1.198	0.890	1.142
Hour14	-19.363	-7.545	5.512	3.067	4.093	3.620	3.064	1.022	0.740	1.159
Hour15	-18.048	-7.066	5.523	3.339	4.237	4.151	3.343	1.271	0.839	1.196
Hour16	-15.828	-7.391	5.379	3.033	3.854	3.617	2.529	0.572	0.217	0.757
Hour17	-13.990	-7.442	4.609	1.969	4.071	3.495	2.551	0.638	0.050	0.551
Hour18	-13.807	-6.917	3.507	0.158	3.994	3.512	2.522	0.682	0.257	0.711
Hour19	-13.942	-7.687	3.804	1.109	4.598	4.126	2.636	0.493	0.368	0.814
Hour20	-12.079	-8.129	4.746	2.768	4.814	4.468	2.941	0.477	0.358	0.963
Hour21	-12.000	-7.861	5.289	3.826	5.054	4.321	2.883	0.229	-0.122	0.653
Hour22	-10.486	-8.288	6.740	5.706	4.949	4.079	2.561	-0.206	-0.593	-0.175
Hour23	-7.799	-8.425	9.299	9.274	5.680	4.856	3.213	0.222	-0.064	0.457
Hour24	-3.588	-9.047	11.758	12.716	6.595	5.648	4.019	1.116	0.877	1.271

Indiana Michigan Power Company-Indiana
Industrial Peak Demand Model t-Statistics

Variable	July	August	September	October	November	December	HLight	DST
Hour1	1.325	2.433	2.291	0.461	4.388	0.000	-0.184	-1.473
Hour2	0.415	1.609	1.339	-0.269	3.812	0.000	0.185	-1.125
Hour3	0.740	1.651	1.164	-0.634	3.887	0.000	-0.246	-0.327
Hour4	0.884	1.741	1.127	-0.787	3.879	0.000	-0.485	0.088
Hour5	0.885	1.722	1.060	-1.109	3.295	0.000	-0.537	0.058
Hour6	1.508	2.562	2.341	0.211	4.281	0.000	-0.724	-0.365
Hour7	1.955	2.984	2.690	0.743	4.512	0.000	-1.341	0.471
Hour8	0.580	1.577	1.460	-0.179	3.980	0.000	-0.033	0.624
Hour9	0.688	1.670	1.131	-0.634	3.764	0.000	-0.514	0.863
Hour10	1.008	2.070	1.693	-0.044	4.223	0.000	-0.889	0.884
Hour11	0.737	1.789	1.590	0.120	4.495	0.000	-0.368	0.482
Hour12	1.188	2.048	1.984	0.899	4.814	0.000	-0.760	-0.063
Hour13	1.018	1.798	2.014	0.720	4.608	0.000	-0.418	-0.253
Hour14	0.953	1.761	1.754	0.281	4.584	0.000	-0.494	0.521
Hour15	1.075	1.755	1.746	0.786	4.802	0.000	-0.494	-0.008
Hour16	0.643	1.241	0.896	-0.262	4.232	0.000	-0.433	0.491
Hour17	0.698	1.328	1.011	-0.003	4.477	0.000	-0.313	0.605
Hour18	0.691	1.309	1.043	-0.161	3.933	0.000	-0.512	0.263
Hour19	0.915	1.425	1.122	-0.485	4.623	0.000	-0.673	0.612
Hour20	1.005	1.593	1.521	-0.062	4.521	0.000	-0.721	0.259
Hour21	0.583	1.302	1.226	-0.427	4.283	0.000	-0.383	0.079
Hour22	-0.187	0.609	0.615	-1.038	3.597	0.000	0.152	-0.306
Hour23	0.584	1.414	1.451	-0.554	3.490	0.000	0.040	-0.820
Hour24	1.434	2.275	2.097	0.405	4.553	0.000	-0.819	-0.462

Indiana Michigan Power Company-Indiana
Industrial Peak Demand Model Statistics

Hour	Obs	DF	AdjRSq	DW	StdErr	MAD	MAPE	FObs	FMAD	FMAPE	FAvgErr
Hour1	1735	1708	0.363	0.975	64.415	47.432	6.84%	0	0.000	0.00%	0.000
Hour2	1735	1708	0.360	0.945	62.270	44.999	6.55%	0	0.000	0.00%	0.000
Hour3	1735	1708	0.344	0.904	62.856	45.341	6.60%	0	0.000	0.00%	0.000
Hour4	1735	1708	0.358	0.869	63.026	45.353	6.59%	0	0.000	0.00%	0.000
Hour5	1735	1708	0.382	0.901	63.711	46.373	6.66%	0	0.000	0.00%	0.000
Hour6	1735	1708	0.468	0.926	66.859	49.013	6.85%	0	0.000	0.00%	0.000
Hour7	1735	1708	0.571	1.105	71.519	53.260	7.13%	0	0.000	0.00%	0.000
Hour8	1735	1708	0.614	1.263	75.291	57.059	7.41%	0	0.000	0.00%	0.000
Hour9	1735	1708	0.624	1.238	77.368	58.493	7.49%	0	0.000	0.00%	0.000
Hour10	1735	1708	0.623	1.325	77.332	58.826	7.57%	0	0.000	0.00%	0.000
Hour11	1735	1708	0.625	1.371	78.242	59.012	7.64%	0	0.000	0.00%	0.000
Hour12	1735	1708	0.605	1.340	78.675	58.923	7.71%	0	0.000	0.00%	0.000
Hour13	1735	1708	0.607	1.364	79.490	58.965	7.74%	0	0.000	0.00%	0.000
Hour14	1735	1708	0.619	1.374	78.848	58.726	7.69%	0	0.000	0.00%	0.000
Hour15	1735	1708	0.597	1.312	77.735	57.607	7.68%	0	0.000	0.00%	0.000
Hour16	1735	1708	0.537	1.325	75.930	56.501	7.67%	0	0.000	0.00%	0.000
Hour17	1735	1708	0.477	1.312	74.767	55.350	7.71%	0	0.000	0.00%	0.000
Hour18	1735	1708	0.440	1.235	71.703	53.559	7.62%	0	0.000	0.00%	0.000
Hour19	1735	1708	0.465	1.141	66.156	48.737	6.93%	0	0.000	0.00%	0.000
Hour20	1735	1708	0.455	1.048	64.404	47.083	6.70%	0	0.000	0.00%	0.000
Hour21	1735	1708	0.456	0.974	63.731	46.653	6.62%	0	0.000	0.00%	0.000
Hour22	1735	1708	0.449	0.993	63.672	46.298	6.61%	0	0.000	0.00%	0.000
Hour23	1735	1708	0.430	0.978	62.874	46.066	6.58%	0	0.000	0.00%	0.000
Hour24	1735	1708	0.380	0.976	65.547	48.001	6.94%	0	0.000	0.00%	0.000

Indiana Michigan Power Company-Indiana
Other Retail Peak Demand Model Coefficients

Variable	Constant	HDD50	HDD55	HDD65	CDD65	CDD70	CDD65WkEnd	HDD65WkEnd	CDD70WkEnd
Hour1	62.898	0.719	0.235	-0.412	1.141	-0.019	0.141	0.046	0.022
Hour2	62.239	0.693	0.300	-0.418	1.183	-0.043	0.048	0.030	0.118
Hour3	61.954	0.608	0.406	-0.412	1.264	-0.122	-0.007	0.017	0.166
Hour4	63.714	0.373	0.649	-0.416	1.337	-0.060	-0.144	0.009	0.271
Hour5	65.873	0.119	0.962	-0.477	1.641	-0.094	-0.628	0.011	0.672
Hour6	77.216	0.120	1.223	-0.775	2.304	-0.794	-1.660	0.072	1.858
Hour7	96.054	0.300	1.157	-0.940	2.704	-1.223	-1.944	0.114	2.302
Hour8	128.933	0.505	1.051	-1.094	2.462	-0.974	-1.395	0.149	1.804
Hour9	147.565	0.963	0.800	-1.346	2.261	-0.764	-1.097	0.202	1.551
Hour10	144.829	1.426	0.463	-1.518	1.996	-0.562	-0.816	0.263	1.234
Hour11	147.357	2.021	-0.283	-1.440	1.919	-0.482	-0.618	0.361	0.998
Hour12	150.044	2.380	-0.774	-1.379	1.839	-0.293	-0.350	0.406	0.518
Hour13	149.507	2.503	-0.951	-1.388	1.590	0.118	0.045	0.468	-0.120
Hour14	146.685	2.487	-0.924	-1.434	1.555	0.196	-0.040	0.488	-0.060
Hour15	142.526	2.413	-0.870	-1.425	1.762	-0.020	-0.344	0.480	0.320
Hour16	132.956	2.157	-0.710	-1.294	1.804	-0.218	-0.501	0.400	0.624
Hour17	120.668	1.611	-0.344	-1.024	1.746	-0.271	-0.394	0.246	0.638
Hour18	113.968	1.286	-0.036	-0.936	1.739	-0.283	-0.400	0.191	0.663
Hour19	108.489	1.097	0.151	-0.849	1.794	-0.422	-0.329	0.144	0.737
Hour20	102.978	0.955	0.284	-0.799	1.851	-0.593	-0.352	0.134	0.867
Hour21	94.450	0.704	0.448	-0.681	1.815	-0.633	-0.332	0.099	0.881
Hour22	80.551	0.625	0.477	-0.601	1.629	-0.464	-0.209	0.076	0.652
Hour23	68.701	0.652	0.473	-0.605	1.430	-0.285	-0.151	0.068	0.467
Hour24	64.290	0.632	0.534	-0.635	1.332	-0.231	-0.105	0.064	0.421

Indiana Michigan Power Company-Indiana
Other Retail Peak Demand Model Coefficients

Variable	WkEnd	MajorHolidays	Monday	TWT	January	February	March	April	May	June
Hour1	-4.397	0.083	-2.396	-1.017	1.853	-0.205	-4.607	-7.383	-7.007	-9.111
Hour2	-3.919	-0.147	-2.244	-1.055	1.747	-0.025	-4.367	-7.255	-7.188	-9.453
Hour3	-3.986	0.241	-2.115	-1.029	1.804	0.270	-3.465	-6.294	-6.723	-9.369
Hour4	-4.633	0.485	-1.296	-0.956	1.861	0.827	-2.089	-4.318	-5.040	-7.801
Hour5	-6.401	1.802	-0.519	-0.856	2.361	1.397	-1.220	-3.266	-4.547	-7.264
Hour6	-14.199	5.878	0.245	-0.364	3.141	3.226	0.150	-3.160	-4.227	-6.362
Hour7	-25.100	6.358	0.813	0.392	4.245	5.745	3.101	-0.688	-1.905	-9.092
Hour8	-36.242	5.013	1.369	1.385	6.183	8.348	5.964	1.852	2.383	-8.145
Hour9	-43.828	1.756	1.919	2.379	7.027	8.787	7.135	3.552	5.928	-7.470
Hour10	-45.698	0.243	2.045	2.791	7.403	8.999	6.119	2.110	5.130	-9.724
Hour11	-46.804	-1.128	2.494	2.806	7.209	8.927	5.432	1.835	5.274	-9.478
Hour12	-47.576	-1.589	2.879	2.917	7.510	8.853	4.608	2.389	5.811	-9.462
Hour13	-47.898	-1.905	2.930	3.311	7.510	8.680	4.092	1.821	5.698	-10.339
Hour14	-46.051	-1.921	2.665	3.279	7.156	7.959	3.396	1.039	5.102	-10.345
Hour15	-43.638	-2.030	2.865	3.120	6.906	7.724	2.836	1.358	5.473	-9.686
Hour16	-34.947	-2.456	3.143	3.373	6.203	6.909	1.482	-0.136	3.635	-8.301
Hour17	-21.950	-2.273	2.733	3.518	4.459	4.427	-0.496	-1.793	1.871	-7.489
Hour18	-16.994	-1.875	2.593	3.246	2.560	0.867	-3.332	-5.083	-1.921	-9.703
Hour19	-12.073	-3.393	2.493	3.538	3.563	3.369	-1.604	-3.544	-0.702	-8.947
Hour20	-10.558	-3.432	2.345	3.063	3.257	4.139	0.559	-1.878	-0.041	-7.505
Hour21	-8.195	-3.001	1.770	2.186	2.698	3.175	0.305	-1.926	-1.676	-8.627
Hour22	-5.857	-2.111	1.531	1.910	2.146	1.306	-2.311	-3.877	-3.092	-8.862
Hour23	-4.249	-1.213	1.423	1.772	1.802	-0.093	-4.108	-6.500	-6.161	-10.038
Hour24	-3.171	-0.658	1.656	1.836	1.606	-0.645	-4.833	-7.213	-6.919	-10.152

Indiana Michigan Power Company-Indiana
Other Retail Peak Demand Model Coefficients

Variable	July	August	September	October	November	December	HLight	DST
Hour1	-5.346	-0.304	0.538	-4.096	-2.139	0.000	1.629	1.034
Hour2	-5.731	-0.937	-0.293	-4.689	-2.316	0.000	1.563	1.251
Hour3	-5.692	-0.626	-0.004	-4.583	-2.052	0.000	1.504	0.758
Hour4	-3.504	1.596	1.732	-3.599	-1.387	0.000	1.285	-0.094
Hour5	-2.389	3.507	3.313	-2.905	-1.612	0.000	1.230	-0.139
Hour6	-1.792	4.982	4.582	-2.069	-0.761	0.000	1.080	-0.278
Hour7	-4.740	5.733	6.901	-0.573	0.701	0.000	0.485	-1.297
Hour8	-6.215	6.653	8.557	0.801	1.667	0.000	-1.457	-0.601
Hour9	-7.122	7.512	8.414	1.401	1.909	0.000	-2.419	-0.852
Hour10	-8.910	6.228	7.073	1.823	2.958	0.000	-1.780	-2.487
Hour11	-8.782	6.715	7.808	3.041	3.256	0.000	-1.752	-3.606
Hour12	-9.017	7.221	8.571	4.909	2.766	0.000	-1.788	-4.883
Hour13	-9.767	7.500	9.528	6.261	3.270	0.000	-1.702	-5.133
Hour14	-9.367	7.173	9.948	6.437	3.030	0.000	-1.574	-4.557
Hour15	-8.246	7.656	10.786	6.706	3.256	0.000	-1.431	-4.543
Hour16	-6.952	7.324	9.930	5.700	2.731	0.000	-1.368	-3.459
Hour17	-5.533	6.093	9.654	4.217	1.347	0.000	-1.481	-2.863
Hour18	-7.467	3.174	6.951	1.613	0.260	0.000	-1.152	-3.970
Hour19	-6.371	3.724	7.535	2.717	0.412	0.000	-1.226	-3.788
Hour20	-4.434	4.555	9.072	4.377	0.451	0.000	-1.046	-2.430
Hour21	-5.103	3.597	7.243	0.235	-0.427	0.000	-0.647	0.943
Hour22	-5.363	1.722	3.092	-3.000	-1.172	0.000	0.432	1.356
Hour23	-6.428	-0.751	0.683	-4.146	-1.951	0.000	1.370	1.163
Hour24	-6.791	-1.775	-0.442	-4.221	-2.376	0.000	1.622	0.775

Indiana Michigan Power Company-Indiana
Other Retail Peak Demand Model Standard Errors

Variable	Constant	HDD50	HDD55	HDD65	CDD65	CDD70	CDD65WkEnd	HDD65WkEnd	CDD70WkEnd
Hour1	5.374	0.166	0.232	0.100	0.174	0.239	0.251	0.027	0.371
Hour2	5.279	0.163	0.228	0.098	0.171	0.235	0.246	0.026	0.365
Hour3	5.361	0.166	0.232	0.100	0.174	0.239	0.250	0.027	0.371
Hour4	5.638	0.174	0.244	0.105	0.183	0.251	0.263	0.028	0.390
Hour5	5.974	0.185	0.258	0.111	0.194	0.266	0.279	0.030	0.413
Hour6	6.821	0.211	0.295	0.127	0.221	0.304	0.318	0.034	0.472
Hour7	7.439	0.230	0.322	0.139	0.241	0.331	0.347	0.037	0.514
Hour8	8.820	0.273	0.382	0.164	0.286	0.393	0.412	0.044	0.610
Hour9	10.162	0.314	0.440	0.189	0.329	0.452	0.474	0.050	0.702
Hour10	10.673	0.330	0.462	0.199	0.346	0.475	0.498	0.053	0.738
Hour11	11.173	0.345	0.483	0.208	0.362	0.497	0.522	0.055	0.772
Hour12	11.631	0.359	0.503	0.217	0.377	0.518	0.543	0.058	0.804
Hour13	11.855	0.366	0.513	0.221	0.384	0.528	0.553	0.059	0.820
Hour14	11.368	0.351	0.492	0.212	0.368	0.506	0.531	0.056	0.786
Hour15	10.888	0.336	0.471	0.203	0.353	0.485	0.508	0.054	0.753
Hour16	9.978	0.308	0.432	0.186	0.323	0.444	0.466	0.049	0.690
Hour17	8.257	0.255	0.357	0.154	0.268	0.368	0.385	0.041	0.571
Hour18	7.334	0.227	0.317	0.137	0.238	0.326	0.342	0.036	0.507
Hour19	6.569	0.203	0.284	0.122	0.213	0.292	0.307	0.033	0.454
Hour20	6.264	0.194	0.271	0.117	0.203	0.279	0.292	0.031	0.433
Hour21	6.035	0.186	0.261	0.112	0.196	0.269	0.282	0.030	0.417
Hour22	5.690	0.176	0.246	0.106	0.184	0.253	0.266	0.028	0.393
Hour23	5.297	0.164	0.229	0.099	0.172	0.236	0.247	0.026	0.366
Hour24	5.273	0.163	0.228	0.098	0.171	0.235	0.246	0.026	0.365

Indiana Michigan Power Company-Indiana
Other Retail Peak Demand Model Standard Errors

Variable	WkEnd	MajorHolidays	Monday	TWT	January	February	March	April	May	June	July
Hour1	0.783	1.229	0.531	0.432	0.734	1.011	1.485	2.066	2.531	2.778	2.639
Hour2	0.769	1.207	0.521	0.424	0.721	0.993	1.459	2.030	2.486	2.729	2.593
Hour3	0.781	1.226	0.530	0.431	0.733	1.008	1.481	2.061	2.525	2.772	2.633
Hour4	0.821	1.289	0.557	0.453	0.770	1.060	1.558	2.168	2.655	2.915	2.769
Hour5	0.870	1.366	0.590	0.480	0.816	1.123	1.651	2.297	2.814	3.089	2.934
Hour6	0.994	1.560	0.674	0.548	0.932	1.283	1.885	2.623	3.213	3.527	3.350
Hour7	1.084	1.701	0.735	0.598	1.017	1.399	2.055	2.860	3.504	3.846	3.654
Hour8	1.285	2.017	0.871	0.709	1.205	1.659	2.437	3.391	4.154	4.560	4.332
Hour9	1.481	2.324	1.004	0.817	1.389	1.911	2.808	3.907	4.786	5.254	4.991
Hour10	1.555	2.440	1.054	0.858	1.459	2.007	2.949	4.104	5.027	5.518	5.242
Hour11	1.628	2.555	1.104	0.898	1.527	2.101	3.087	4.296	5.262	5.777	5.488
Hour12	1.695	2.659	1.149	0.935	1.589	2.187	3.214	4.472	5.478	6.013	5.713
Hour13	1.727	2.711	1.171	0.953	1.620	2.229	3.276	4.558	5.584	6.129	5.823
Hour14	1.656	2.599	1.123	0.913	1.553	2.138	3.141	4.371	5.354	5.877	5.583
Hour15	1.586	2.489	1.075	0.875	1.488	2.047	3.008	4.186	5.128	5.629	5.347
Hour16	1.454	2.281	0.986	0.802	1.363	1.876	2.757	3.836	4.699	5.159	4.900
Hour17	1.203	1.888	0.816	0.663	1.128	1.553	2.281	3.175	3.889	4.269	4.055
Hour18	1.069	1.677	0.724	0.589	1.002	1.379	2.026	2.820	3.454	3.792	3.602
Hour19	0.957	1.502	0.649	0.528	0.898	1.235	1.815	2.526	3.094	3.396	3.226
Hour20	0.913	1.432	0.619	0.503	0.856	1.178	1.731	2.408	2.950	3.238	3.076
Hour21	0.879	1.380	0.596	0.485	0.825	1.135	1.667	2.320	2.842	3.120	2.964
Hour22	0.829	1.301	0.562	0.457	0.778	1.070	1.572	2.188	2.680	2.942	2.795
Hour23	0.772	1.211	0.523	0.426	0.724	0.996	1.463	2.036	2.495	2.738	2.601
Hour24	0.768	1.206	0.521	0.424	0.721	0.992	1.457	2.027	2.484	2.726	2.590

Indiana Michigan Power Company-Indiana
Other Retail Peak Demand Model Standard Errors

Variable	August	September	October	November	December	HLight	DST
Hour1	2.198	1.690	1.298	0.822	0.000	0.540	0.934
Hour2	2.159	1.660	1.275	0.808	0.000	0.530	0.918
Hour3	2.192	1.686	1.294	0.820	0.000	0.538	0.932
Hour4	2.306	1.773	1.361	0.863	0.000	0.566	0.980
Hour5	2.443	1.879	1.442	0.914	0.000	0.600	1.038
Hour6	2.790	2.145	1.647	1.044	0.000	0.685	1.186
Hour7	3.042	2.339	1.796	1.138	0.000	0.747	1.293
Hour8	3.607	2.774	2.130	1.349	0.000	0.886	1.533
Hour9	4.156	3.196	2.454	1.555	0.000	1.020	1.767
Hour10	4.365	3.357	2.577	1.633	0.000	1.072	1.855
Hour11	4.569	3.514	2.698	1.709	0.000	1.122	1.942
Hour12	4.757	3.658	2.808	1.779	0.000	1.168	2.022
Hour13	4.848	3.728	2.863	1.814	0.000	1.190	2.061
Hour14	4.649	3.575	2.745	1.739	0.000	1.141	1.976
Hour15	4.453	3.424	2.629	1.666	0.000	1.093	1.893
Hour16	4.080	3.138	2.409	1.526	0.000	1.002	1.734
Hour17	3.377	2.597	1.994	1.263	0.000	0.829	1.435
Hour18	2.999	2.307	1.771	1.122	0.000	0.736	1.275
Hour19	2.686	2.066	1.586	1.005	0.000	0.660	1.142
Hour20	2.561	1.970	1.512	0.958	0.000	0.629	1.089
Hour21	2.468	1.898	1.457	0.923	0.000	0.606	1.049
Hour22	2.327	1.789	1.374	0.871	0.000	0.571	0.989
Hour23	2.166	1.666	1.279	0.810	0.000	0.532	0.921
Hour24	2.157	1.658	1.273	0.807	0.000	0.529	0.917

Indiana Michigan Power Company-Indiana
Other Retail Peak Demand Model t-Statistics

Variable	Constant	HDD50	HDD55	HDD65	CDD65	CDD70	CDD65WkEnd	HDD65WkEnd	CDD70WkEnd
Hour1	11.704	4.331	1.010	-4.111	6.550	-0.081	0.560	1.743	0.058
Hour2	11.790	4.250	1.314	-4.250	6.915	-0.185	0.193	1.144	0.323
Hour3	11.556	3.668	1.751	-4.122	7.274	-0.512	-0.028	0.636	0.447
Hour4	11.301	2.139	2.662	-3.959	7.320	-0.240	-0.549	0.335	0.696
Hour5	11.027	0.643	3.723	-4.287	8.479	-0.352	-2.253	0.363	1.628
Hour6	11.320	0.570	4.145	-6.096	10.426	-2.614	-5.211	2.135	3.940
Hour7	12.912	1.306	3.597	-6.781	11.218	-3.693	-5.597	3.101	4.476
Hour8	14.618	1.852	2.755	-6.656	8.614	-2.481	-3.389	3.413	2.958
Hour9	14.521	3.067	1.821	-7.108	6.867	-1.689	-2.313	4.007	2.208
Hour10	13.569	4.325	1.003	-7.629	5.771	-1.182	-1.637	4.975	1.673
Hour11	13.189	5.856	-0.586	-6.916	5.300	-0.969	-1.184	6.521	1.292
Hour12	12.900	6.622	-1.539	-6.360	4.878	-0.565	-0.644	7.047	0.644
Hour13	12.611	6.832	-1.854	-6.280	4.139	0.224	0.082	7.973	-0.147
Hour14	12.903	7.081	-1.880	-6.770	4.222	0.387	-0.075	8.665	-0.077
Hour15	13.090	7.174	-1.847	-7.023	4.996	-0.041	-0.677	8.903	0.425
Hour16	13.325	6.998	-1.646	-6.956	5.579	-0.490	-1.075	8.106	0.905
Hour17	14.614	6.315	-0.963	-6.651	6.528	-0.738	-1.022	6.022	1.118
Hour18	15.539	5.676	-0.114	-6.846	7.318	-0.865	-1.169	5.256	1.308
Hour19	16.515	5.405	0.531	-6.933	8.427	-1.444	-1.072	4.437	1.623
Hour20	16.441	4.932	1.047	-6.841	9.122	-2.125	-1.204	4.312	2.002
Hour21	15.652	3.778	1.718	-6.054	9.282	-2.355	-1.177	3.317	2.113
Hour22	14.156	3.556	1.939	-5.669	8.837	-1.832	-0.786	2.693	1.656
Hour23	12.971	3.986	2.063	-6.126	8.334	-1.211	-0.610	2.584	1.276
Hour24	12.191	3.879	2.341	-6.457	7.798	-0.983	-0.426	2.459	1.154

Indiana Michigan Power Company-Indiana
Other Retail Peak Demand Model t-Statistics

Variable	WkEnd	MajorHolidays	Monday	TWT	January	February	March	April	May	June
Hour1	-5.615	0.068	-4.513	-2.354	2.523	-0.203	-3.103	-3.573	-2.768	-3.279
Hour2	-5.095	-0.122	-4.303	-2.486	2.422	-0.025	-2.994	-3.574	-2.891	-3.464
Hour3	-5.103	0.196	-3.995	-2.388	2.462	0.268	-2.339	-3.054	-2.663	-3.380
Hour4	-5.641	0.376	-2.327	-2.109	2.415	0.781	-1.341	-1.992	-1.898	-2.676
Hour5	-7.355	1.319	-0.879	-1.782	2.893	1.243	-0.739	-1.422	-1.616	-2.352
Hour6	-14.287	3.769	0.363	-0.665	3.369	2.515	0.080	-1.205	-1.316	-1.804
Hour7	-23.159	3.738	1.106	0.656	4.176	4.107	1.509	-0.241	-0.544	-2.364
Hour8	-28.202	2.486	1.571	1.955	5.130	5.033	2.447	0.546	0.574	-1.786
Hour9	-29.601	0.756	1.911	2.914	5.060	4.599	2.541	0.909	1.238	-1.422
Hour10	-29.387	0.099	1.940	3.254	5.076	4.484	2.075	0.514	1.021	-1.762
Hour11	-28.752	-0.442	2.260	3.126	4.722	4.249	1.759	0.427	1.002	-1.641
Hour12	-28.075	-0.598	2.506	3.121	4.725	4.048	1.434	0.534	1.061	-1.573
Hour13	-27.730	-0.703	2.502	3.476	4.635	3.894	1.249	0.400	1.020	-1.687
Hour14	-27.804	-0.739	2.374	3.590	4.606	3.723	1.081	0.238	0.953	-1.760
Hour15	-27.509	-0.815	2.664	3.566	4.641	3.773	0.943	0.324	1.067	-1.721
Hour16	-24.040	-1.077	3.189	4.207	4.549	3.682	0.537	-0.035	0.774	-1.609
Hour17	-18.245	-1.204	3.351	5.303	3.952	2.851	-0.217	-0.565	0.481	-1.754
Hour18	-15.903	-1.118	3.579	5.508	2.554	0.629	-1.644	-1.802	-0.556	-2.559
Hour19	-12.614	-2.259	3.842	6.703	3.969	2.727	-0.884	-1.403	-0.227	-2.634
Hour20	-11.570	-2.397	3.790	6.085	3.805	3.514	0.323	-0.780	-0.014	-2.318
Hour21	-9.320	-2.175	2.970	4.509	3.272	2.798	0.183	-0.830	-0.590	-2.765
Hour22	-7.065	-1.623	2.724	4.178	2.760	1.221	-1.470	-1.772	-1.154	-3.012
Hour23	-5.506	-1.002	2.721	4.164	2.489	-0.094	-2.807	-3.192	-2.470	-3.666
Hour24	-4.128	-0.545	3.179	4.333	2.229	-0.651	-3.317	-3.558	-2.786	-3.724

Indiana Michigan Power Company-Indiana
Other Retail Peak Demand Model t-Statistics

Variable	July	August	September	October	November	December	HLight	DST
Hour1	-2.025	-0.138	0.318	-3.157	-2.602	0.000	3.020	1.107
Hour2	-2.210	-0.434	-0.177	-3.679	-2.868	0.000	2.949	1.363
Hour3	-2.162	-0.286	-0.003	-3.540	-2.502	0.000	2.794	0.813
Hour4	-1.265	0.692	0.977	-2.644	-1.608	0.000	2.270	-0.096
Hour5	-0.814	1.436	1.763	-2.014	-1.763	0.000	2.052	-0.134
Hour6	-0.535	1.786	2.136	-1.256	-0.729	0.000	1.577	-0.234
Hour7	-1.297	1.885	2.950	-0.319	0.616	0.000	0.650	-1.003
Hour8	-1.435	1.844	3.085	0.376	1.235	0.000	-1.645	-0.392
Hour9	-1.427	1.808	2.633	0.571	1.228	0.000	-2.371	-0.482
Hour10	-1.700	1.427	2.107	0.707	1.811	0.000	-1.661	-1.341
Hour11	-1.600	1.470	2.222	1.127	1.905	0.000	-1.562	-1.857
Hour12	-1.578	1.518	2.343	1.748	1.554	0.000	-1.531	-2.415
Hour13	-1.677	1.547	2.556	2.187	1.803	0.000	-1.430	-2.491
Hour14	-1.678	1.543	2.782	2.345	1.742	0.000	-1.379	-2.306
Hour15	-1.542	1.719	3.150	2.551	1.955	0.000	-1.309	-2.400
Hour16	-1.419	1.795	3.165	2.366	1.789	0.000	-1.366	-1.994
Hour17	-1.364	1.804	3.718	2.115	1.067	0.000	-1.787	-1.995
Hour18	-2.073	1.058	3.013	0.911	0.232	0.000	-1.564	-3.114
Hour19	-1.975	1.386	3.647	1.713	0.410	0.000	-1.859	-3.317
Hour20	-1.441	1.778	4.605	2.894	0.471	0.000	-1.664	-2.232
Hour21	-1.722	1.458	3.816	0.161	-0.462	0.000	-1.068	0.899
Hour22	-1.919	0.740	1.728	-2.183	-1.346	0.000	0.756	1.371
Hour23	-2.471	-0.347	0.410	-3.242	-2.408	0.000	2.577	1.263
Hour24	-2.622	-0.823	-0.267	-3.315	-2.946	0.000	3.064	0.845

Indiana Michigan Power Company-Indiana
Other Retail Peak Demand Model Statistics

Hour	Obs	DF	AdjRSq	DW	StdErr	MAD	MAPE	FObs	FMAD	FMAPE	FAvgErr
Hour1	1735	1708	0.652	0.850	5.896	4.124	4.94%	0	0.000	0.00%	0.000
Hour2	1735	1708	0.658	0.867	5.792	4.160	5.06%	0	0.000	0.00%	0.000
Hour3	1735	1708	0.649	0.830	5.882	4.303	5.27%	0	0.000	0.00%	0.000
Hour4	1735	1708	0.643	0.803	6.186	4.593	5.58%	0	0.000	0.00%	0.000
Hour5	1735	1708	0.678	0.816	6.554	4.935	5.83%	0	0.000	0.00%	0.000
Hour6	1735	1708	0.736	0.805	7.484	5.682	6.16%	0	0.000	0.00%	0.000
Hour7	1735	1708	0.793	0.831	8.162	6.241	6.36%	0	0.000	0.00%	0.000
Hour8	1735	1708	0.803	0.842	9.677	7.187	7.03%	0	0.000	0.00%	0.000
Hour9	1735	1708	0.804	0.861	11.150	8.151	7.95%	0	0.000	0.00%	0.000
Hour10	1735	1708	0.796	0.865	11.710	8.533	8.39%	0	0.000	0.00%	0.000
Hour11	1735	1708	0.782	0.861	12.258	8.875	8.75%	0	0.000	0.00%	0.000
Hour12	1735	1708	0.773	0.829	12.761	9.265	9.20%	0	0.000	0.00%	0.000
Hour13	1735	1708	0.766	0.825	13.007	9.568	9.57%	0	0.000	0.00%	0.000
Hour14	1735	1708	0.774	0.804	12.473	9.156	9.19%	0	0.000	0.00%	0.000
Hour15	1735	1708	0.781	0.831	11.946	8.773	8.83%	0	0.000	0.00%	0.000
Hour16	1735	1708	0.760	0.834	10.947	7.992	8.28%	0	0.000	0.00%	0.000
Hour17	1735	1708	0.724	0.898	9.059	6.534	7.14%	0	0.000	0.00%	0.000
Hour18	1735	1708	0.721	0.897	8.047	5.838	6.49%	0	0.000	0.00%	0.000
Hour19	1735	1708	0.716	0.876	7.207	5.116	5.75%	0	0.000	0.00%	0.000
Hour20	1735	1708	0.704	0.789	6.872	4.909	5.47%	0	0.000	0.00%	0.000
Hour21	1735	1708	0.671	0.718	6.621	4.860	5.42%	0	0.000	0.00%	0.000
Hour22	1735	1708	0.667	0.722	6.243	4.548	5.11%	0	0.000	0.00%	0.000
Hour23	1735	1708	0.693	0.798	5.811	4.055	4.65%	0	0.000	0.00%	0.000
Hour24	1735	1708	0.686	0.809	5.786	3.987	4.66%	0	0.000	0.00%	0.000

Indiana Michigan Power Company-Michigan
Residential Cooling Peak Demand Model Coefficients

Variable	CDD65	CDD70	CDD65WkEnd	CDD70WkEnd	SummerFuzzy	WinterFuzzy	HLight	DST
Hour1	1.519	0.085	-0.369	0.283	11.766	-2.885	0.299	-0.897
Hour2	1.158	0.188	-0.040	0.034	10.824	-2.329	0.245	-0.886
Hour3	1.013	0.239	-0.150	0.124	9.303	-1.756	0.187	-0.785
Hour4	0.886	0.257	-0.145	0.107	8.198	-1.469	0.158	-0.716
Hour5	0.773	0.268	-0.114	0.086	7.387	-1.260	0.139	-0.699
Hour6	0.682	0.269	-0.147	0.109	6.493	-0.996	0.111	-0.590
Hour7	0.571	0.275	-0.088	0.068	5.674	-0.826	0.093	-0.539
Hour8	0.568	0.213	-0.102	0.085	5.469	-0.832	0.091	-0.457
Hour9	0.708	0.014	-0.299	0.225	5.163	-1.389	0.145	-0.487
Hour10	0.709	0.074	0.025	-0.028	5.791	-1.783	0.183	-0.514
Hour11	0.797	0.174	0.317	-0.254	7.810	-2.213	0.228	-0.627
Hour12	1.037	0.201	0.361	-0.289	9.821	-2.940	0.304	-0.856
Hour13	1.311	0.196	0.464	-0.342	12.154	-3.995	0.416	-1.174
Hour14	1.596	0.168	0.559	-0.414	14.529	-5.181	0.542	-1.608
Hour15	1.851	0.058	0.748	-0.560	16.412	-6.513	0.682	-1.947
Hour16	2.126	-0.072	0.849	-0.658	18.590	-7.517	0.783	-2.059
Hour17	2.422	-0.227	0.971	-0.790	21.050	-8.143	0.843	-1.796
Hour18	2.690	-0.395	0.862	-0.759	22.517	-8.113	0.835	-1.046
Hour19	2.881	-0.490	0.397	-0.374	22.205	-7.442	0.762	-0.326
Hour20	2.830	-0.431	-0.002	-0.046	20.376	-7.188	0.735	-0.789
Hour21	2.542	-0.231	-0.096	0.067	18.386	-6.419	0.656	-1.257
Hour22	2.284	-0.097	-0.191	0.118	16.951	-5.302	0.544	-1.291
Hour23	2.032	-0.002	-0.212	0.156	15.326	-4.523	0.465	-1.161
Hour24	1.745	0.077	-0.241	0.193	13.632	-3.723	0.386	-1.099

Indiana Michigan Power Company-Michigan
Residential Cooling Peak Demand Model Standard Errors

Variable	CDD65	CDD70	CDD65WkEnd	CDD70WkEnd	SummerFuzzy	WinterFuzzy	HLight	DST
Hour1	0.021	0.033	0.031	0.054	0.082	0.081	0.008	0.092
Hour2	0.019	0.028	0.027	0.047	0.071	0.070	0.007	0.080
Hour3	0.016	0.025	0.023	0.040	0.061	0.060	0.006	0.069
Hour4	0.014	0.022	0.020	0.035	0.054	0.053	0.005	0.061
Hour5	0.013	0.020	0.018	0.032	0.049	0.048	0.005	0.055
Hour6	0.011	0.017	0.016	0.028	0.043	0.042	0.004	0.048
Hour7	0.010	0.015	0.014	0.025	0.038	0.037	0.004	0.042
Hour8	0.009	0.014	0.013	0.023	0.036	0.035	0.004	0.040
Hour9	0.010	0.015	0.014	0.024	0.037	0.036	0.004	0.041
Hour10	0.011	0.017	0.016	0.028	0.042	0.042	0.004	0.047
Hour11	0.014	0.022	0.020	0.036	0.055	0.054	0.005	0.061
Hour12	0.018	0.028	0.026	0.046	0.070	0.069	0.007	0.078
Hour13	0.023	0.035	0.033	0.058	0.088	0.087	0.009	0.098
Hour14	0.028	0.043	0.040	0.070	0.107	0.105	0.011	0.119
Hour15	0.032	0.049	0.046	0.081	0.123	0.122	0.012	0.138
Hour16	0.036	0.056	0.052	0.092	0.140	0.138	0.014	0.156
Hour17	0.041	0.063	0.059	0.103	0.157	0.154	0.016	0.175
Hour18	0.043	0.067	0.062	0.109	0.167	0.165	0.017	0.187
Hour19	0.043	0.067	0.062	0.109	0.167	0.164	0.017	0.186
Hour20	0.040	0.062	0.058	0.102	0.156	0.154	0.016	0.174
Hour21	0.036	0.056	0.052	0.091	0.139	0.138	0.014	0.156
Hour22	0.032	0.050	0.047	0.082	0.125	0.123	0.013	0.139
Hour23	0.029	0.045	0.042	0.073	0.111	0.110	0.011	0.124
Hour24	0.025	0.039	0.036	0.063	0.097	0.096	0.010	0.108

Indiana Michigan Power Company-Michigan
Residential Cooling Peak Demand Model t-Statistics

Variable	CDD65	CDD70	CDD65WkEnd	CDD70WkEnd	SummerFuzzy	WinterFuzzy	HLight	DST
Hour1	71.290	2.606	-12.017	5.271	143.357	-35.637	36.262	-9.777
Hour2	62.590	6.595	-1.488	0.726	151.845	-33.135	34.227	-11.129
Hour3	63.628	9.736	-6.539	3.083	151.681	-29.027	30.423	-11.454
Hour4	62.952	11.874	-7.174	3.012	151.255	-27.489	29.091	-11.816
Hour5	60.938	13.742	-6.262	2.702	151.241	-26.158	28.256	-12.810
Hour6	61.364	15.747	-9.179	3.895	151.734	-23.606	25.735	-12.330
Hour7	58.565	18.365	-6.282	2.770	151.210	-22.327	24.790	-12.866
Hour8	61.321	14.972	-7.671	3.650	153.317	-23.640	25.353	-11.457
Hour9	74.330	0.951	-21.771	9.383	140.705	-38.389	39.320	-11.879
Hour10	64.691	4.388	1.564	-1.024	137.123	-42.817	43.188	-10.889
Hour11	56.233	7.981	15.530	-7.092	143.071	-41.114	41.588	-10.278
Hour12	57.325	7.217	13.854	-6.340	140.961	-42.785	43.479	-10.996
Hour13	57.456	5.575	14.121	-5.944	138.266	-46.082	47.043	-11.953
Hour14	57.665	3.943	14.025	-5.930	136.284	-49.270	50.637	-13.502
Hour15	57.775	1.169	16.215	-6.932	133.018	-53.520	55.048	-14.125
Hour16	58.590	-1.281	16.255	-7.190	132.990	-54.525	55.765	-13.184
Hour17	59.544	-3.627	16.587	-7.703	134.372	-52.704	53.536	-10.262
Hour18	61.993	-5.919	13.804	-6.931	134.703	-49.213	49.728	-5.600
Hour19	66.640	-7.357	6.375	-3.429	133.322	-45.309	45.510	-1.751
Hour20	69.972	-6.926	-0.037	-0.450	130.801	-46.789	46.955	-4.531
Hour21	70.199	-4.138	-1.834	0.731	131.820	-46.664	46.794	-8.066
Hour22	70.650	-1.954	-4.097	1.446	136.151	-43.183	43.477	-9.282
Hour23	70.283	-0.036	-5.103	2.144	137.593	-41.172	41.512	-9.331
Hour24	69.393	1.998	-6.652	3.043	140.723	-38.963	39.603	-10.149

Indiana Michigan Power Company-Michigan
Residential Cooling Peak Demand Model Statistics

Hour	Obs	DF	AdjRSq	DW	StdErr	MAD	MAPE	FObs	FMAD	FMAPE	FAvgErr
Hour1	1827	1819	0.994	0.073	0.898	0.544	15.72%	0	0.000	0.00%	0.000
Hour2	1827	1819	0.994	0.072	0.780	0.482	18.81%	0	0.000	0.00%	0.000
Hour3	1827	1819	0.994	0.080	0.671	0.419	36.50%	0	0.000	0.00%	0.000
Hour4	1827	1819	0.994	0.085	0.593	0.374	41.64%	0	0.000	0.00%	0.000
Hour5	1827	1819	0.994	0.089	0.534	0.346	465.00%	0	0.000	0.00%	0.000
Hour6	1827	1819	0.994	0.092	0.468	0.303	52.34%	0	0.000	0.00%	0.000
Hour7	1827	1819	0.994	0.096	0.410	0.270	63.97%	0	0.000	0.00%	0.000
Hour8	1827	1819	0.994	0.090	0.390	0.249	112.28%	0	0.000	0.00%	0.000
Hour9	1827	1819	0.994	0.077	0.401	0.249	19.27%	0	0.000	0.00%	0.000
Hour10	1827	1819	0.994	0.069	0.462	0.288	32.34%	0	0.000	0.00%	0.000
Hour11	1827	1819	0.994	0.069	0.597	0.367	19.28%	0	0.000	0.00%	0.000
Hour12	1827	1819	0.994	0.069	0.762	0.468	60.56%	0	0.000	0.00%	0.000
Hour13	1827	1819	0.994	0.067	0.962	0.591	25.13%	0	0.000	0.00%	0.000
Hour14	1827	1819	0.994	0.066	1.166	0.721	21.56%	0	0.000	0.00%	0.000
Hour15	1827	1819	0.994	0.062	1.350	0.836	33.87%	0	0.000	0.00%	0.000
Hour16	1827	1819	0.994	0.059	1.529	0.950	24.61%	0	0.000	0.00%	0.000
Hour17	1827	1819	0.994	0.056	1.714	1.066	39.70%	0	0.000	0.00%	0.000
Hour18	1827	1819	0.994	0.054	1.829	1.146	23.91%	0	0.000	0.00%	0.000
Hour19	1827	1819	0.994	0.055	1.822	1.147	40.12%	0	0.000	0.00%	0.000
Hour20	1827	1819	0.994	0.057	1.704	1.072	15.52%	0	0.000	0.00%	0.000
Hour21	1827	1819	0.994	0.061	1.526	0.953	19.54%	0	0.000	0.00%	0.000
Hour22	1827	1819	0.994	0.065	1.362	0.837	36.84%	0	0.000	0.00%	0.000
Hour23	1827	1819	0.994	0.067	1.219	0.744	14.78%	0	0.000	0.00%	0.000
Hour24	1827	1819	0.994	0.070	1.060	0.644	18.60%	0	0.000	0.00%	0.000

Indiana Michigan Power Company-Michigan
Residential Heating Peak Demand Model Standard Errors

Variable	HDD50	HDD55	HDD65	HDD65WkEnd	SummerFuzzy	WinterFuzzy	HLight	DST
Hour1	0.917	-0.459	0.620	0.004	-2.458	17.045	0.042	2.125
Hour2	0.790	-0.348	0.656	-0.032	-4.164	17.870	0.176	2.028
Hour3	0.771	-0.343	0.692	-0.024	-4.974	17.885	0.204	2.480
Hour4	0.766	-0.316	0.716	-0.027	-5.871	18.264	0.252	2.758
Hour5	0.781	-0.337	0.779	-0.034	-6.516	18.971	0.282	3.065
Hour6	0.732	-0.332	0.845	-0.049	-6.973	19.313	0.288	3.515
Hour7	0.562	-0.206	0.905	-0.103	-7.752	20.945	0.290	4.352
Hour8	0.449	-0.129	0.850	0.026	-7.400	20.863	0.196	5.342
Hour9	0.451	-0.148	0.781	0.169	-5.719	20.212	0.047	5.617
Hour10	0.627	-0.267	0.688	0.182	-3.502	19.251	0.035	3.387
Hour11	0.845	-0.395	0.593	0.058	-2.042	17.793	0.021	1.943
Hour12	1.009	-0.510	0.507	-0.025	-0.997	16.000	-0.012	1.268
Hour13	1.138	-0.605	0.440	-0.053	-0.551	14.589	-0.042	1.212
Hour14	1.156	-0.619	0.380	-0.033	-0.340	13.477	-0.054	1.150
Hour15	1.164	-0.641	0.353	-0.029	-0.104	12.538	-0.061	1.010
Hour16	1.218	-0.696	0.345	-0.025	0.072	12.131	-0.065	0.898
Hour17	1.264	-0.736	0.397	-0.079	0.265	13.087	-0.082	0.969
Hour18	1.312	-0.765	0.468	-0.111	0.358	14.890	-0.095	1.101
Hour19	1.148	-0.670	0.502	-0.106	0.146	14.753	-0.086	1.192
Hour20	1.020	-0.584	0.501	-0.083	-0.423	14.400	-0.076	1.634
Hour21	0.912	-0.526	0.542	-0.065	-0.615	14.821	-0.115	2.382
Hour22	0.893	-0.504	0.576	-0.043	-0.999	15.866	-0.122	2.885
Hour23	0.831	-0.439	0.583	-0.016	-1.409	16.286	-0.068	2.576
Hour24	0.808	-0.395	0.593	-0.006	-1.823	16.747	-0.036	2.568

Indiana Michigan Power Company-Michigan
Residential Heating Peak Demand Model Standard Errors

Variable	HDD50	HDD55	HDD65	HDD65WkEnd	SummerFuzzy	WinterFuzzy	HLight	DST
Hour1	0.037	0.049	0.018	0.003	0.150	0.151	0.016	0.149
Hour2	0.040	0.052	0.019	0.003	0.161	0.163	0.017	0.160
Hour3	0.041	0.054	0.020	0.003	0.166	0.168	0.017	0.165
Hour4	0.043	0.057	0.021	0.004	0.174	0.176	0.018	0.173
Hour5	0.046	0.060	0.022	0.004	0.184	0.186	0.019	0.182
Hour6	0.047	0.062	0.023	0.004	0.190	0.192	0.020	0.189
Hour7	0.050	0.065	0.024	0.004	0.200	0.202	0.021	0.199
Hour8	0.048	0.063	0.024	0.004	0.195	0.197	0.020	0.193
Hour9	0.046	0.060	0.022	0.004	0.183	0.185	0.019	0.182
Hour10	0.042	0.055	0.020	0.004	0.169	0.171	0.017	0.167
Hour11	0.038	0.049	0.018	0.003	0.150	0.152	0.016	0.149
Hour12	0.033	0.043	0.016	0.003	0.132	0.133	0.014	0.131
Hour13	0.029	0.038	0.014	0.002	0.118	0.119	0.012	0.117
Hour14	0.027	0.035	0.013	0.002	0.108	0.109	0.011	0.107
Hour15	0.025	0.033	0.012	0.002	0.101	0.102	0.010	0.100
Hour16	0.024	0.032	0.012	0.002	0.097	0.099	0.010	0.097
Hour17	0.026	0.034	0.013	0.002	0.104	0.105	0.011	0.103
Hour18	0.029	0.038	0.014	0.002	0.117	0.118	0.012	0.116
Hour19	0.029	0.038	0.014	0.002	0.118	0.119	0.012	0.117
Hour20	0.029	0.038	0.014	0.002	0.117	0.118	0.012	0.116
Hour21	0.030	0.039	0.015	0.003	0.120	0.122	0.012	0.119
Hour22	0.032	0.042	0.016	0.003	0.129	0.130	0.013	0.128
Hour23	0.034	0.044	0.016	0.003	0.135	0.136	0.014	0.134
Hour24	0.035	0.046	0.017	0.003	0.141	0.143	0.015	0.140

Indiana Michigan Power Company-Michigan
Residential Heating Peak Demand Model t-Statistiscs

Variable	HDD50	HDD55	HDD65	HDD65WkEnd	SummerFuzzy	WinterFuzzy	HLight	DST
Hour1	24.567	-9.427	34.231	1.428	-16.420	112.594	2.730	14.302
Hour2	19.695	-6.633	33.713	-9.428	-25.866	109.775	10.567	12.694
Hour3	18.617	-6.347	34.470	-6.995	-29.961	106.523	11.880	15.053
Hour4	17.675	-5.579	34.047	-7.440	-33.767	103.880	13.988	15.984
Hour5	17.042	-5.630	35.057	-8.837	-35.444	102.039	14.785	16.797
Hour6	15.455	-5.371	36.800	-12.295	-36.702	100.521	14.620	18.640
Hour7	11.256	-3.166	37.381	-24.565	-38.711	103.433	13.980	21.897
Hour8	9.266	-2.040	36.146	6.501	-38.044	106.060	9.733	27.673
Hour9	9.895	-2.481	35.304	44.245	-31.270	109.283	2.483	30.946
Hour10	14.921	-4.866	33.737	51.775	-20.761	112.852	2.016	20.232
Hour11	22.525	-8.055	32.601	18.585	-13.570	116.921	1.364	13.013
Hour12	30.757	-11.907	31.876	-9.053	-7.573	120.223	-0.858	9.710
Hour13	38.624	-15.720	30.814	-21.538	-4.662	122.087	-3.439	10.334
Hour14	42.902	-17.596	29.094	-14.521	-3.149	123.310	-4.816	10.723
Hour15	46.434	-19.580	29.003	-13.983	-1.038	123.294	-5.847	10.122
Hour16	50.151	-21.956	29.324	-12.297	0.735	123.128	-6.462	9.283
Hour17	48.874	-21.790	31.646	-36.391	2.552	124.729	-7.647	9.414
Hour18	45.064	-20.127	33.165	-45.773	3.064	126.098	-7.884	9.496
Hour19	39.090	-17.472	35.234	-43.150	1.241	123.836	-7.014	10.195
Hour20	35.063	-15.363	35.477	-34.064	-3.625	121.980	-6.267	14.104
Hour21	30.424	-13.433	37.277	-25.816	-5.112	121.860	-9.243	19.954
Hour22	27.799	-12.016	36.973	-15.923	-7.751	121.759	-9.115	22.562
Hour23	24.734	-10.007	35.762	-5.551	-10.446	119.427	-4.887	19.251
Hour24	22.983	-8.604	34.774	-2.093	-12.934	117.476	-2.467	18.357

Indiana Michigan Power Company-Michigan
Residential Heating Peak Demand Model Statistiscs

Hour	Obs	DF	AdjRSq	DW	StdErr	MAD	MAPE	FObs	FMAD	FMAPE	FAvgErr
Hour1	1827	1819	0.995	0.059	1.423	0.824	4.96%	0	0.000	0.00%	0.000
Hour2	1827	1819	0.995	0.055	1.530	0.898	9.94%	0	0.000	0.00%	0.000
Hour3	1827	1819	0.995	0.055	1.578	0.932	8.52%	0	0.000	0.00%	0.000
Hour4	1827	1819	0.995	0.054	1.652	0.980	23.16%	0	0.000	0.00%	0.000
Hour5	1827	1819	0.995	0.054	1.747	1.040	6.98%	0	0.000	0.00%	0.000
Hour6	1827	1819	0.995	0.053	1.806	1.079	7.37%	0	0.000	0.00%	0.000
Hour7	1827	1819	0.995	0.051	1.903	1.144	27.64%	0	0.000	0.00%	0.000
Hour8	1827	1819	0.995	0.051	1.849	1.114	4.47%	0	0.000	0.00%	0.000
Hour9	1827	1819	0.995	0.057	1.738	1.040	4.25%	0	0.000	0.00%	0.000
Hour10	1827	1819	0.995	0.061	1.603	0.943	4.49%	0	0.000	0.00%	0.000
Hour11	1827	1819	0.996	0.059	1.430	0.826	5.29%	0	0.000	0.00%	0.000
Hour12	1827	1819	0.996	0.062	1.251	0.711	6.18%	0	0.000	0.00%	0.000
Hour13	1827	1819	0.996	0.066	1.123	0.630	7.37%	0	0.000	0.00%	0.000
Hour14	1827	1819	0.996	0.069	1.027	0.572	12.24%	0	0.000	0.00%	0.000
Hour15	1827	1819	0.996	0.071	0.956	0.530	38.53%	0	0.000	0.00%	0.000
Hour16	1827	1819	0.996	0.073	0.926	0.511	22.57%	0	0.000	0.00%	0.000
Hour17	1827	1819	0.996	0.074	0.986	0.547	8.29%	0	0.000	0.00%	0.000
Hour18	1827	1819	0.996	0.072	1.110	0.618	5.14%	0	0.000	0.00%	0.000
Hour19	1827	1819	0.996	0.068	1.120	0.627	5.50%	0	0.000	0.00%	0.000
Hour20	1827	1819	0.996	0.065	1.109	0.628	5.05%	0	0.000	0.00%	0.000
Hour21	1827	1819	0.996	0.062	1.143	0.653	5.56%	0	0.000	0.00%	0.000
Hour22	1827	1819	0.996	0.061	1.225	0.703	5.07%	0	0.000	0.00%	0.000
Hour23	1827	1819	0.996	0.059	1.282	0.739	4.57%	0	0.000	0.00%	0.000
Hour24	1827	1819	0.995	0.058	1.340	0.775	4.50%	0	0.000	0.00%	0.000

Indiana Michigan Power Company-Michigan
Residential LIghting Peak Demand Model Coefficients

Variable	Constant	WeekEnd	January	February	March	April	May	June	July	August
Hour1	7.712	0.025	0.227	0.188	0.109	0.150	0.390	-0.197	-0.518	-0.510
Hour2	5.226	-0.343	0.159	0.164	0.135	0.185	0.530	0.176	-0.084	-0.125
Hour3	3.641	-0.419	0.114	0.071	0.008	-0.051	0.084	-0.160	-0.341	-0.347
Hour4	2.682	-0.191	0.082	0.069	0.036	0.043	0.184	-0.001	-0.141	-0.148
Hour5	2.141	-0.027	0.063	0.034	-0.006	-0.026	-0.006	-0.172	-0.261	-0.246
Hour6	2.536	0.218	0.071	0.069	0.053	0.105	0.173	-0.037	-0.133	-0.122
Hour7	3.827	0.531	0.104	0.084	0.045	0.122	0.136	-0.204	-0.335	-0.291
Hour8	5.375	0.567	0.149	-0.002	-0.170	-0.279	-0.602	-1.100	-1.266	-1.124
Hour9	5.931	0.233	0.171	-0.033	-0.252	-0.484	-0.887	-1.411	-1.597	-1.443
Hour10	5.276	-0.736	0.168	-0.037	-0.248	-0.619	-0.887	-1.273	-1.458	-1.381
Hour11	4.499	-0.547	0.142	-0.039	-0.226	-0.539	-0.797	-1.135	-1.292	-1.215
Hour12	3.736	-0.437	0.117	-0.040	-0.205	-0.465	-0.694	-0.978	-1.118	-1.043
Hour13	3.199	-0.378	0.100	-0.011	-0.132	-0.317	-0.440	-0.676	-0.803	-0.756
Hour14	3.133	-0.297	0.097	-0.009	-0.124	-0.291	-0.417	-0.654	-0.774	-0.726
Hour15	3.068	-0.300	0.095	-0.019	-0.142	-0.321	-0.469	-0.703	-0.824	-0.768
Hour16	3.107	-0.371	0.097	-0.049	-0.202	-0.439	-0.670	-0.910	-1.029	-0.954
Hour17	3.696	-0.437	0.116	-0.113	-0.341	-0.725	-1.185	-1.489	-1.601	-1.474
Hour18	5.181	-0.383	0.159	-0.292	-0.731	-1.458	-2.558	-3.044	-3.152	-2.858
Hour19	9.355	-0.084	0.277	-0.677	-1.599	-3.064	-5.597	-6.574	-6.707	-6.023
Hour20	14.406	-0.123	0.426	-1.118	-2.604	-4.996	-9.146	-10.675	-10.846	-9.739
Hour21	17.002	0.099	0.500	-0.811	-2.088	-4.062	-7.433	-9.105	-9.408	-8.478
Hour22	17.333	0.253	0.507	0.014	-0.515	-1.122	-1.951	-3.413	-3.947	-3.625
Hour23	15.475	0.351	0.451	0.363	0.216	0.257	0.579	-0.631	-1.186	-1.159
Hour24	11.535	0.297	0.335	0.338	0.288	0.444	0.901	0.016	-0.425	-0.451

Indiana Michigan Power Company-Michigan
Residential LIghting Peak Demand Model Coefficients

Variable	September	October	November	December	WinterFuzzy	HLight
Hour1	-0.238	-0.116	0.099	0.000	0.001	-0.001
Hour2	0.091	0.061	0.197	0.000	-0.023	0.018
Hour3	-0.146	-0.105	0.084	0.000	-0.030	0.020
Hour4	-0.015	-0.005	0.080	0.000	-0.007	0.016
Hour5	-0.151	-0.088	0.001	0.000	-0.000	0.003
Hour6	-0.062	-0.012	0.014	0.000	0.018	-0.008
Hour7	-0.208	-0.075	-0.044	0.000	0.047	-0.016
Hour8	-0.902	-0.509	-0.258	0.000	0.055	-0.012
Hour9	-1.144	-0.691	-0.290	0.000	0.022	-0.006
Hour10	-1.034	-0.709	-0.149	0.000	-0.079	0.009
Hour11	-0.916	-0.618	-0.150	0.000	-0.057	0.009
Hour12	-0.779	-0.519	-0.134	0.000	-0.039	0.014
Hour13	-0.544	-0.365	-0.071	0.000	-0.033	0.012
Hour14	-0.528	-0.349	-0.076	0.000	-0.027	0.009
Hour15	-0.561	-0.369	-0.090	0.000	-0.024	0.013
Hour16	-0.716	-0.473	-0.136	0.000	-0.028	0.016
Hour17	-1.170	-0.773	-0.273	0.000	-0.041	0.012
Hour18	-2.372	-1.536	-0.670	0.000	-0.035	0.011
Hour19	-5.103	-3.249	-1.574	0.000	-0.000	0.010
Hour20	-8.286	-5.283	-2.575	0.000	-0.006	0.009
Hour21	-7.154	-4.539	-2.132	0.000	-0.010	-0.021
Hour22	-2.842	-1.755	-0.612	0.000	-0.012	-0.041
Hour23	-0.715	-0.391	0.087	0.000	-0.013	-0.053
Hour24	-0.156	-0.042	0.193	0.000	-0.001	-0.035

Indiana Michigan Power Company-Michigan
Residential LIghting Peak Demand Model Standard Errors

Variable	Constant	WeekEnd	January	February	March	April	May	June	July	August	September
Hour1	1.341	0.076	0.171	0.238	0.367	0.483	0.607	0.669	0.637	0.533	0.415
Hour2	0.956	0.054	0.122	0.170	0.262	0.345	0.433	0.477	0.454	0.380	0.296
Hour3	0.646	0.036	0.082	0.115	0.177	0.233	0.293	0.323	0.307	0.257	0.200
Hour4	0.496	0.028	0.063	0.088	0.136	0.179	0.225	0.248	0.236	0.197	0.154
Hour5	0.367	0.021	0.047	0.065	0.101	0.133	0.166	0.183	0.175	0.146	0.114
Hour6	0.441	0.025	0.056	0.078	0.121	0.159	0.200	0.220	0.210	0.175	0.137
Hour7	0.656	0.037	0.084	0.116	0.180	0.237	0.297	0.327	0.312	0.261	0.203
Hour8	0.862	0.049	0.110	0.153	0.236	0.311	0.391	0.431	0.410	0.343	0.267
Hour9	0.926	0.052	0.118	0.164	0.254	0.334	0.419	0.463	0.440	0.368	0.287
Hour10	0.795	0.045	0.101	0.141	0.218	0.287	0.360	0.397	0.378	0.316	0.246
Hour11	0.681	0.038	0.087	0.121	0.186	0.246	0.308	0.340	0.324	0.271	0.211
Hour12	0.577	0.033	0.074	0.102	0.158	0.208	0.261	0.288	0.274	0.229	0.179
Hour13	0.508	0.029	0.065	0.090	0.139	0.183	0.230	0.254	0.242	0.202	0.157
Hour14	0.497	0.028	0.063	0.088	0.136	0.179	0.225	0.248	0.236	0.197	0.154
Hour15	0.488	0.028	0.062	0.087	0.134	0.176	0.221	0.244	0.232	0.194	0.151
Hour16	0.481	0.027	0.061	0.085	0.132	0.174	0.218	0.240	0.229	0.191	0.149
Hour17	0.525	0.030	0.067	0.093	0.144	0.189	0.238	0.262	0.249	0.209	0.163
Hour18	0.668	0.038	0.085	0.119	0.183	0.241	0.303	0.334	0.318	0.266	0.207
Hour19	1.154	0.065	0.147	0.205	0.316	0.416	0.522	0.576	0.548	0.459	0.358
Hour20	1.733	0.098	0.221	0.308	0.475	0.625	0.785	0.865	0.824	0.689	0.537
Hour21	2.219	0.125	0.283	0.394	0.607	0.800	1.005	1.108	1.054	0.882	0.687
Hour22	2.686	0.152	0.342	0.477	0.736	0.969	1.216	1.341	1.277	1.068	0.832
Hour23	2.579	0.146	0.328	0.458	0.706	0.930	1.168	1.287	1.226	1.025	0.799
Hour24	1.977	0.112	0.252	0.351	0.541	0.713	0.895	0.987	0.940	0.786	0.613

Indiana Michigan Power Company-Michigan
Residential LIghting Peak Demand Model Standard Errors

Variable	October	November	December	WinterFuzzy	HLight
Hour1	0.332	0.186	0.000	0.293	0.127
Hour2	0.237	0.133	0.000	0.209	0.090
Hour3	0.160	0.090	0.000	0.141	0.061
Hour4	0.123	0.069	0.000	0.108	0.047
Hour5	0.091	0.051	0.000	0.080	0.035
Hour6	0.109	0.061	0.000	0.096	0.042
Hour7	0.162	0.091	0.000	0.143	0.062
Hour8	0.214	0.120	0.000	0.188	0.082
Hour9	0.229	0.129	0.000	0.202	0.088
Hour10	0.197	0.110	0.000	0.174	0.075
Hour11	0.169	0.094	0.000	0.149	0.064
Hour12	0.143	0.080	0.000	0.126	0.055
Hour13	0.126	0.071	0.000	0.111	0.048
Hour14	0.123	0.069	0.000	0.108	0.047
Hour15	0.121	0.068	0.000	0.107	0.046
Hour16	0.119	0.067	0.000	0.105	0.046
Hour17	0.130	0.073	0.000	0.115	0.050
Hour18	0.165	0.093	0.000	0.146	0.063
Hour19	0.286	0.160	0.000	0.252	0.109
Hour20	0.429	0.240	0.000	0.378	0.164
Hour21	0.549	0.308	0.000	0.484	0.210
Hour22	0.665	0.373	0.000	0.586	0.254
Hour23	0.638	0.358	0.000	0.563	0.244
Hour24	0.489	0.274	0.000	0.432	0.187

Indiana Michigan Power Company-Michigan
Residential LIghting Peak Demand Model t-Statistics

Variable	Constant	WeekEnd	January	February	March	April	May	June	July	August
Hour1	5.753	0.330	1.328	0.790	0.298	0.310	0.642	-0.294	-0.813	-0.956
Hour2	5.468	-6.351	1.308	0.967	0.514	0.537	1.225	0.369	-0.185	-0.328
Hour3	5.635	-11.477	1.383	0.621	0.044	-0.218	0.287	-0.495	-1.109	-1.351
Hour4	5.409	-6.836	1.296	0.780	0.269	0.241	0.819	-0.003	-0.599	-0.753
Hour5	5.826	-1.298	1.355	0.524	-0.056	-0.193	-0.039	-0.936	-1.497	-1.688
Hour6	5.750	8.749	1.267	0.876	0.436	0.660	0.864	-0.167	-0.633	-0.697
Hour7	5.835	14.341	1.246	0.723	0.253	0.517	0.458	-0.622	-1.075	-1.118
Hour8	6.232	11.655	1.356	-0.010	-0.720	-0.898	-1.542	-2.555	-3.087	-3.278
Hour9	6.402	4.447	1.448	-0.199	-0.992	-1.448	-2.114	-3.050	-3.626	-3.920
Hour10	6.637	-16.398	1.655	-0.263	-1.139	-2.159	-2.465	-3.209	-3.859	-4.372
Hour11	6.609	-14.224	1.632	-0.324	-1.211	-2.193	-2.585	-3.340	-3.994	-4.490
Hour12	6.471	-13.409	1.592	-0.391	-1.296	-2.233	-2.655	-3.394	-4.073	-4.547
Hour13	6.293	-13.164	1.549	-0.127	-0.948	-1.727	-1.911	-2.664	-3.323	-3.744
Hour14	6.305	-10.581	1.534	-0.102	-0.908	-1.627	-1.854	-2.637	-3.280	-3.678
Hour15	6.284	-10.886	1.530	-0.220	-1.064	-1.821	-2.122	-2.887	-3.552	-3.960
Hour16	6.454	-13.633	1.589	-0.571	-1.531	-2.528	-3.074	-3.788	-4.498	-4.988
Hour17	7.042	-14.740	1.735	-1.212	-2.376	-3.828	-4.988	-5.682	-6.417	-7.066
Hour18	7.750	-10.139	1.866	-2.463	-3.996	-6.048	-8.451	-9.122	-9.921	-10.760
Hour19	8.107	-1.295	1.884	-3.305	-5.061	-7.364	-10.712	-11.412	-12.229	-13.136
Hour20	8.312	-1.261	1.932	-3.635	-5.488	-7.992	-11.654	-12.337	-13.166	-14.140
Hour21	7.664	0.794	1.768	-2.060	-3.438	-5.077	-7.399	-8.221	-8.922	-9.617
Hour22	6.452	1.669	1.482	0.030	-0.700	-1.158	-1.604	-2.545	-3.092	-3.396
Hour23	6.001	2.411	1.373	0.793	0.305	0.276	0.496	-0.490	-0.968	-1.131
Hour24	5.835	2.659	1.332	0.963	0.532	0.622	1.006	0.017	-0.452	-0.574

Indiana Michigan Power Company-Michigan
Residential LIghting Peak Demand Model t-Statistics

Variable	September	October	November	December	WinterFuzzy	HLight
Hour1	-0.573	-0.351	0.532	0.000	0.002	-0.011
Hour2	0.308	0.259	1.489	0.000	-0.112	0.202
Hour3	-0.729	-0.657	0.940	0.000	-0.214	0.332
Hour4	-0.095	-0.042	1.165	0.000	-0.066	0.342
Hour5	-1.330	-0.970	0.014	0.000	-0.003	0.092
Hour6	-0.452	-0.108	0.224	0.000	0.187	-0.187
Hour7	-1.023	-0.460	-0.486	0.000	0.326	-0.266
Hour8	-3.375	-2.383	-2.158	0.000	0.293	-0.151
Hour9	-3.984	-3.012	-2.256	0.000	0.108	-0.063
Hour10	-4.197	-3.602	-1.350	0.000	-0.457	0.124
Hour11	-4.343	-3.667	-1.583	0.000	-0.382	0.140
Hour12	-4.355	-3.631	-1.675	0.000	-0.306	0.257
Hour13	-3.452	-2.900	-1.003	0.000	-0.299	0.256
Hour14	-3.432	-2.841	-1.109	0.000	-0.244	0.197
Hour15	-3.710	-3.053	-1.327	0.000	-0.221	0.272
Hour16	-4.801	-3.971	-2.033	0.000	-0.270	0.355
Hour17	-7.197	-5.949	-3.754	0.000	-0.355	0.239
Hour18	-11.451	-9.281	-7.222	0.000	-0.238	0.178
Hour19	-14.274	-11.375	-9.830	0.000	-0.001	0.091
Hour20	-15.430	-12.313	-10.706	0.000	-0.015	0.056
Hour21	-10.407	-8.265	-6.927	0.000	-0.021	-0.102
Hour22	-3.414	-2.638	-1.642	0.000	-0.021	-0.160
Hour23	-0.895	-0.612	0.243	0.000	-0.023	-0.218
Hour24	-0.255	-0.085	0.705	0.000	-0.003	-0.190

Indiana Michigan Power Company-Michigan
Residential LIghting Peak Demand Model Statistics

Hour	Obs	DF	AdjRSq	DW	StdErr	MAD	MAPE	FObs	FMAD	FMAPE	FAvgErr
Hour1	1827	1811	0.027	0.001	1.461	1.349	17.58%	0	0.000	0.00%	0.000
Hour2	1827	1811	0.039	0.002	1.042	0.962	17.58%	0	0.000	0.00%	0.000
Hour3	1827	1811	0.087	0.005	0.704	0.650	17.58%	0	0.000	0.00%	0.000
Hour4	1827	1811	0.041	0.003	0.541	0.499	17.58%	0	0.000	0.00%	0.000
Hour5	1827	1811	0.054	0.001	0.400	0.370	17.58%	0	0.000	0.00%	0.000
Hour6	1827	1811	0.068	0.004	0.481	0.444	17.58%	0	0.000	0.00%	0.000
Hour7	1827	1811	0.150	0.007	0.715	0.658	17.58%	0	0.000	0.00%	0.000
Hour8	1827	1811	0.266	0.006	0.940	0.863	17.58%	0	0.000	0.00%	0.000
Hour9	1827	1811	0.269	0.002	1.010	0.927	17.58%	0	0.000	0.00%	0.000
Hour10	1827	1811	0.323	0.009	0.866	0.794	17.58%	0	0.000	0.00%	0.000
Hour11	1827	1811	0.318	0.007	0.742	0.680	17.58%	0	0.000	0.00%	0.000
Hour12	1827	1811	0.310	0.007	0.629	0.577	17.58%	0	0.000	0.00%	0.000
Hour13	1827	1811	0.242	0.006	0.554	0.509	17.58%	0	0.000	0.00%	0.000
Hour14	1827	1811	0.225	0.005	0.542	0.498	17.58%	0	0.000	0.00%	0.000
Hour15	1827	1811	0.246	0.005	0.532	0.489	17.58%	0	0.000	0.00%	0.000
Hour16	1827	1811	0.342	0.007	0.525	0.480	17.58%	0	0.000	0.00%	0.000
Hour17	1827	1811	0.516	0.008	0.572	0.518	17.58%	0	0.000	0.00%	0.000
Hour18	1827	1811	0.715	0.006	0.729	0.642	17.58%	0	0.000	0.00%	0.000
Hour19	1827	1811	0.795	0.004	1.258	1.077	17.58%	0	0.000	0.00%	0.000
Hour20	1827	1811	0.820	0.004	1.889	1.595	17.58%	0	0.000	0.00%	0.000
Hour21	1827	1811	0.681	0.003	2.418	2.146	17.58%	0	0.000	0.00%	0.000
Hour22	1827	1811	0.215	0.002	2.928	2.692	17.58%	0	0.000	0.00%	0.000
Hour23	1827	1811	0.046	0.002	2.810	2.595	17.58%	0	0.000	0.00%	0.000
Hour24	1827	1811	0.026	0.002	2.155	1.990	17.58%	0	0.000	0.00%	0.000

Indiana Michigan Power Company-MIchigan
Residential Other Peak Demand Model Coefficients

Variable	HDD50	HDD55	HDD65	CDD65	CDD70	CDD65WkEnd	HDD65WkEnd	CDD70WkEnd	WkDay
Hour1	-1.071	1.998	-0.425	1.308	2.160	-0.429	-0.121	1.931	43.966
Hour2	-0.839	1.512	-0.353	0.879	1.261	-1.475	-0.020	3.196	52.553
Hour3	-1.026	1.708	-0.388	0.554	1.519	-1.007	-0.045	2.263	59.206
Hour4	-1.049	1.588	-0.292	0.500	1.284	-1.203	-0.028	2.499	55.232
Hour5	-1.037	1.378	-0.151	0.731	0.614	-1.107	-0.047	2.206	59.071
Hour6	-1.080	1.381	-0.145	0.345	0.844	-0.695	-0.021	1.604	66.367
Hour7	-0.870	1.073	-0.060	0.190	0.984	-0.345	0.007	0.959	67.959
Hour8	-0.622	0.826	-0.009	0.020	1.123	0.125	-0.092	0.696	94.903
Hour9	-0.708	0.588	0.371	0.604	0.526	-0.859	-0.213	1.961	70.050
Hour10	-0.432	0.252	0.543	0.542	1.324	-1.824	-0.201	2.711	60.199
Hour11	-0.793	0.739	0.462	0.653	1.837	-2.920	-0.118	4.416	49.677
Hour12	-1.543	1.686	0.278	1.319	1.680	-2.716	-0.009	4.665	52.213
Hour13	-1.373	1.607	0.219	1.567	2.545	-2.272	0.049	3.815	39.576
Hour14	-1.231	1.536	0.212	2.548	2.255	-2.298	0.047	3.867	36.993
Hour15	-1.428	2.079	-0.080	3.510	1.768	-1.749	0.071	3.115	35.370
Hour16	-2.002	3.293	-0.690	3.814	1.599	-1.428	-0.008	3.134	27.018
Hour17	-2.440	4.211	-1.279	3.869	1.824	-1.348	0.041	2.799	42.479
Hour18	-2.086	3.882	-1.375	4.659	0.642	-1.762	0.062	3.408	59.783
Hour19	-1.512	3.610	-1.467	4.868	0.478	-1.426	-0.022	2.945	62.583
Hour20	-1.413	3.619	-1.526	4.405	0.662	-0.731	-0.054	2.276	73.486
Hour21	-0.472	2.048	-0.868	4.484	-0.070	-1.318	-0.119	3.205	71.294
Hour22	-0.690	2.105	-0.785	3.565	0.741	-0.946	-0.175	2.820	68.719
Hour23	-0.680	1.853	-0.546	3.417	0.475	-0.489	-0.122	2.107	60.098
Hour24	-0.846	1.983	-0.553	2.852	0.642	-1.088	-0.109	2.668	42.903

Indiana Michigan Power Company-MIchigan
Residential Other Peak Demand Model Coefficients

Variable	WkEnd	MajorHolidays	January	February	March	April	May	June	July	August
Hour1	48.072	9.672	9.318	3.898	-2.942	-9.313	7.611	4.993	22.206	2.064
Hour2	58.006	7.576	13.268	8.870	2.724	-0.367	14.561	10.850	30.725	9.940
Hour3	64.453	6.928	13.761	11.428	5.808	4.640	18.404	12.571	30.742	11.768
Hour4	59.386	7.468	13.076	9.780	3.528	0.360	13.223	8.008	23.590	7.367
Hour5	61.947	5.321	12.491	10.325	5.250	3.863	17.419	11.868	26.073	10.971
Hour6	63.147	5.905	13.015	12.685	10.026	7.744	21.911	14.572	28.046	13.549
Hour7	58.395	4.644	13.415	12.548	9.228	4.813	18.157	9.659	21.885	9.254
Hour8	71.521	4.013	15.470	16.706	12.718	6.461	20.432	9.257	19.106	5.186
Hour9	60.111	1.337	10.847	10.745	6.967	2.848	18.067	8.832	18.709	6.481
Hour10	72.158	3.486	7.885	5.409	-1.423	-1.104	15.303	7.058	19.117	4.608
Hour11	72.002	11.040	8.822	4.092	-5.413	-5.473	11.794	2.744	15.333	-0.909
Hour12	75.078	18.706	9.928	4.059	-3.044	-2.008	16.329	10.510	24.257	6.340
Hour13	62.220	22.943	11.666	2.647	-6.719	-5.423	12.795	8.791	27.325	7.345
Hour14	58.367	20.481	12.298	2.025	-7.029	-5.411	10.693	7.888	28.204	7.494
Hour15	56.200	14.441	14.502	4.105	-6.439	-4.010	11.866	10.680	31.913	11.491
Hour16	46.569	10.007	13.405	3.272	-8.427	-10.139	6.310	3.359	27.259	7.392
Hour17	59.518	7.271	15.408	2.843	-6.471	-9.658	8.741	2.579	29.032	8.261
Hour18	71.440	7.953	16.094	3.789	-5.187	-8.422	14.730	7.283	34.240	10.700
Hour19	69.021	5.387	15.558	1.739	-9.418	-12.449	13.466	11.158	36.907	12.437
Hour20	76.649	9.121	17.067	6.917	-5.302	-9.521	18.715	16.336	42.245	14.918
Hour21	75.857	8.852	13.463	7.428	-1.747	-9.795	18.240	13.057	39.465	10.253
Hour22	73.159	11.026	13.528	7.085	0.232	-5.116	17.492	12.582	35.986	9.781
Hour23	60.418	13.210	12.474	4.669	0.040	-6.251	15.241	8.636	28.871	6.970
Hour24	45.543	10.450	11.017	2.828	-3.587	-10.995	10.249	7.034	27.276	3.509

Indiana Michigan Power Company-MIchigan
Residential Other Peak Demand Model Coefficients

Variable	September	October	November	December	SummerFuzzy	WinterFuzzy	HLight	DST
Hour1	3.642	-0.346	-1.151	0.000	-9.685	-10.169	3.252	-2.843
Hour2	9.757	3.947	1.047	0.000	-4.776	-9.201	1.471	-3.731
Hour3	12.234	5.947	2.506	0.000	-2.213	-9.849	0.430	-4.513
Hour4	9.041	1.805	0.904	0.000	-2.828	-12.079	0.745	-2.172
Hour5	12.310	4.378	1.598	0.000	-2.686	-11.850	0.163	-4.051
Hour6	15.191	5.787	2.864	0.000	-2.578	-14.184	-0.131	-5.847
Hour7	12.894	3.467	3.031	0.000	-1.410	-16.688	0.460	-6.560
Hour8	11.201	1.192	5.816	0.000	-0.663	-20.033	-0.225	-5.652
Hour9	13.596	2.217	4.566	0.000	-4.620	-16.894	1.875	-9.645
Hour10	9.011	2.650	2.903	0.000	-6.666	-9.510	1.909	-3.461
Hour11	3.618	1.746	2.711	0.000	-7.180	-4.613	2.499	1.252
Hour12	7.576	3.832	2.443	0.000	-11.322	-2.204	2.036	1.844
Hour13	8.558	6.004	5.190	0.000	-12.153	1.818	3.120	1.619
Hour14	7.249	5.579	5.345	0.000	-10.573	2.730	3.331	1.549
Hour15	11.585	8.639	6.914	0.000	-11.199	5.582	3.221	0.967
Hour16	9.916	4.572	5.714	0.000	-13.567	4.373	4.668	-0.878
Hour17	7.835	3.368	4.331	0.000	-13.078	2.059	3.919	-2.283
Hour18	11.857	3.446	4.415	0.000	-14.066	-0.369	3.100	-3.926
Hour19	12.585	3.823	8.164	0.000	-15.289	-0.986	3.847	-7.007
Hour20	11.207	5.726	7.512	0.000	-11.143	-3.549	3.264	-10.175
Hour21	6.515	6.684	4.663	0.000	-7.638	-5.178	2.984	-8.585
Hour22	11.154	7.327	3.237	0.000	-10.374	-5.435	2.719	-6.909
Hour23	8.513	1.671	0.714	0.000	-12.993	-7.964	3.399	-6.131
Hour24	4.239	-0.453	-1.159	0.000	-12.793	-8.329	4.354	-5.229

Indiana Michigan Power Company-MIchigan
Residential Other Peak Demand Model Standard Errors

Variable	HDD50	HDD55	HDD65	CDD65	CDD70	CDD65WkEnd	HDD65WkEnd	CDD70WkEnd	WkDay
Hour1	0.104	0.144	0.061	0.107	0.152	0.164	0.015	0.252	4.053
Hour2	0.099	0.136	0.058	0.102	0.144	0.155	0.015	0.239	3.838
Hour3	0.096	0.132	0.056	0.098	0.139	0.150	0.014	0.231	3.712
Hour4	0.095	0.131	0.055	0.098	0.139	0.149	0.014	0.230	3.693
Hour5	0.096	0.133	0.056	0.099	0.140	0.151	0.014	0.233	3.740
Hour6	0.098	0.136	0.057	0.101	0.143	0.154	0.014	0.237	3.816
Hour7	0.102	0.141	0.060	0.105	0.150	0.161	0.015	0.248	3.980
Hour8	0.107	0.148	0.063	0.110	0.157	0.169	0.016	0.260	4.172
Hour9	0.106	0.146	0.062	0.108	0.154	0.166	0.016	0.255	4.102
Hour10	0.103	0.142	0.060	0.106	0.151	0.162	0.015	0.249	4.009
Hour11	0.101	0.140	0.059	0.104	0.148	0.159	0.015	0.245	3.939
Hour12	0.100	0.138	0.058	0.103	0.146	0.157	0.015	0.242	3.884
Hour13	0.101	0.139	0.059	0.104	0.147	0.159	0.015	0.244	3.926
Hour14	0.104	0.143	0.060	0.106	0.151	0.163	0.015	0.250	4.023
Hour15	0.106	0.147	0.062	0.109	0.155	0.167	0.016	0.257	4.126
Hour16	0.110	0.152	0.064	0.113	0.161	0.173	0.016	0.266	4.282
Hour17	0.116	0.160	0.068	0.119	0.170	0.183	0.017	0.281	4.517
Hour18	0.123	0.170	0.072	0.127	0.180	0.194	0.018	0.298	4.797
Hour19	0.129	0.178	0.075	0.132	0.188	0.203	0.019	0.312	5.008
Hour20	0.131	0.181	0.077	0.135	0.192	0.206	0.019	0.317	5.100
Hour21	0.132	0.182	0.077	0.135	0.192	0.207	0.019	0.318	5.114
Hour22	0.134	0.186	0.078	0.138	0.196	0.211	0.020	0.325	5.221
Hour23	0.130	0.179	0.076	0.133	0.189	0.204	0.019	0.314	5.042
Hour24	0.117	0.161	0.068	0.120	0.170	0.183	0.017	0.282	4.538

Indiana Michigan Power Company-MIchigan
Residential Other Peak Demand Model Standard Errors

Variable	WkEnd	MajorHolidays	January	February	March	April	May	June	July	August
Hour1	4.072	0.723	0.449	0.669	1.039	1.353	1.629	1.731	1.649	1.399
Hour2	3.856	0.685	0.425	0.634	0.984	1.281	1.542	1.639	1.561	1.324
Hour3	3.729	0.662	0.411	0.613	0.952	1.239	1.492	1.585	1.510	1.281
Hour4	3.710	0.659	0.409	0.610	0.947	1.232	1.484	1.577	1.502	1.274
Hour5	3.757	0.667	0.415	0.618	0.959	1.248	1.503	1.597	1.521	1.290
Hour6	3.833	0.681	0.423	0.630	0.978	1.274	1.534	1.630	1.552	1.317
Hour7	3.998	0.710	0.441	0.657	1.021	1.328	1.599	1.700	1.619	1.373
Hour8	4.191	0.744	0.462	0.689	1.070	1.393	1.677	1.782	1.697	1.439
Hour9	4.121	0.732	0.455	0.677	1.052	1.369	1.648	1.752	1.668	1.415
Hour10	4.027	0.715	0.444	0.662	1.028	1.338	1.611	1.712	1.630	1.383
Hour11	3.957	0.703	0.437	0.650	1.010	1.315	1.583	1.682	1.602	1.359
Hour12	3.902	0.693	0.430	0.641	0.996	1.296	1.561	1.659	1.580	1.340
Hour13	3.944	0.700	0.435	0.648	1.007	1.310	1.578	1.677	1.597	1.354
Hour14	4.041	0.718	0.446	0.664	1.032	1.343	1.617	1.718	1.636	1.388
Hour15	4.145	0.736	0.457	0.681	1.058	1.377	1.658	1.762	1.678	1.424
Hour16	4.302	0.764	0.475	0.707	1.098	1.429	1.721	1.829	1.742	1.477
Hour17	4.537	0.806	0.501	0.746	1.158	1.508	1.815	1.929	1.837	1.558
Hour18	4.819	0.856	0.532	0.792	1.230	1.601	1.928	2.049	1.951	1.655
Hour19	5.031	0.893	0.555	0.827	1.284	1.672	2.013	2.139	2.037	1.728
Hour20	5.123	0.910	0.565	0.842	1.308	1.702	2.049	2.178	2.074	1.759
Hour21	5.137	0.912	0.567	0.845	1.311	1.707	2.055	2.184	2.080	1.764
Hour22	5.245	0.931	0.579	0.862	1.339	1.743	2.098	2.230	2.123	1.801
Hour23	5.066	0.899	0.559	0.833	1.293	1.683	2.026	2.154	2.051	1.740
Hour24	4.559	0.809	0.503	0.749	1.164	1.515	1.824	1.938	1.846	1.566

Indiana Michigan Power Company-MIchigan
Residential Other Peak Demand Model Standard Errors

Variable	September	October	November	December	SummerFuzzy	WinterFuzzy	HLight	DST
Hour1	1.177	0.930	0.489	0.000	0.793	0.778	0.385	0.599
Hour2	1.114	0.881	0.463	0.000	0.751	0.737	0.365	0.567
Hour3	1.078	0.852	0.448	0.000	0.726	0.712	0.353	0.548
Hour4	1.072	0.847	0.446	0.000	0.722	0.709	0.351	0.545
Hour5	1.086	0.858	0.452	0.000	0.731	0.718	0.356	0.552
Hour6	1.108	0.876	0.461	0.000	0.746	0.732	0.363	0.564
Hour7	1.156	0.913	0.481	0.000	0.778	0.764	0.378	0.588
Hour8	1.211	0.957	0.504	0.000	0.816	0.801	0.397	0.616
Hour9	1.191	0.941	0.495	0.000	0.802	0.787	0.390	0.606
Hour10	1.164	0.920	0.484	0.000	0.784	0.769	0.381	0.592
Hour11	1.144	0.904	0.476	0.000	0.770	0.756	0.374	0.582
Hour12	1.128	0.891	0.469	0.000	0.760	0.745	0.369	0.574
Hour13	1.140	0.901	0.474	0.000	0.768	0.753	0.373	0.580
Hour14	1.168	0.923	0.486	0.000	0.787	0.772	0.382	0.594
Hour15	1.198	0.947	0.498	0.000	0.807	0.792	0.392	0.609
Hour16	1.243	0.983	0.517	0.000	0.837	0.822	0.407	0.632
Hour17	1.311	1.036	0.545	0.000	0.883	0.867	0.429	0.667
Hour18	1.393	1.101	0.579	0.000	0.938	0.921	0.456	0.709
Hour19	1.454	1.149	0.605	0.000	0.979	0.961	0.476	0.740
Hour20	1.481	1.170	0.616	0.000	0.997	0.979	0.485	0.753
Hour21	1.485	1.173	0.617	0.000	1.000	0.981	0.486	0.755
Hour22	1.516	1.198	0.630	0.000	1.021	1.002	0.496	0.771
Hour23	1.464	1.157	0.609	0.000	0.986	0.968	0.479	0.745
Hour24	1.318	1.041	0.548	0.000	0.887	0.871	0.431	0.670

Indiana Michigan Power Company-MIchigan
Residential Other Peak Demand Model t-Statistics

Variable	HDD50	HDD55	HDD65	CDD65	CDD70	CDD65WkEnd	HDD65WkEnd	CDD70WkEnd	WkDay
Hour1	-10.263	13.875	-6.984	12.198	14.183	-2.617	-7.928	7.657	10.846
Hour2	-8.490	11.084	-6.130	8.657	8.742	-9.503	-1.372	13.386	13.692
Hour3	-10.743	12.947	-6.957	5.644	10.895	-6.709	-3.217	9.801	15.951
Hour4	-11.041	12.100	-5.274	5.119	9.259	-8.059	-1.983	10.881	14.958
Hour5	-10.770	10.367	-2.690	7.387	4.368	-7.324	-3.295	9.482	15.796
Hour6	-10.999	10.183	-2.533	3.415	5.885	-4.507	-1.491	6.758	17.393
Hour7	-8.495	7.588	-1.008	1.803	6.584	-2.146	0.453	3.874	17.076
Hour8	-5.790	5.572	-0.151	0.182	7.163	0.743	-5.843	2.681	22.748
Hour9	-6.707	4.035	6.031	5.566	3.411	-5.182	-13.755	7.684	17.079
Hour10	-4.190	1.766	9.023	5.111	8.791	-11.256	-13.264	10.871	15.018
Hour11	-7.825	5.281	7.804	6.266	12.417	-18.333	-7.909	18.021	12.612
Hour12	-15.436	12.216	4.772	12.836	11.517	-17.297	-0.636	19.309	13.444
Hour13	-13.582	11.522	3.721	15.092	17.255	-14.311	3.302	15.621	10.081
Hour14	-11.884	10.744	3.505	23.949	14.925	-14.128	3.098	15.450	9.196
Hour15	-13.444	14.180	-1.288	32.163	11.406	-10.481	4.582	12.138	8.573
Hour16	-18.167	21.646	-10.726	33.671	9.940	-8.245	-0.515	11.766	6.310
Hour17	-20.986	26.238	-18.852	32.386	10.749	-7.382	2.391	9.960	9.405
Hour18	-16.890	22.775	-19.092	36.716	3.561	-9.083	3.415	11.420	12.462
Hour19	-11.729	20.290	-19.508	36.746	2.540	-7.040	-1.170	9.454	12.497
Hour20	-10.760	19.971	-19.921	32.657	3.456	-3.543	-2.795	7.174	14.410
Hour21	-3.585	11.269	-11.300	33.146	-0.365	-6.372	-6.156	10.074	13.942
Hour22	-5.133	11.345	-10.006	25.817	3.777	-4.483	-8.869	8.682	13.162
Hour23	-5.240	10.343	-7.211	25.616	2.507	-2.398	-6.395	6.717	11.918
Hour24	-7.245	12.299	-8.109	23.758	3.768	-5.928	-6.343	9.451	9.455

Indiana Michigan Power Company-MIchigan
Residential Other Peak Demand Model t-Statistics

Variable	WkEnd	MajorHolidays	January	February	March	April	May	June	July	August
Hour1	11.805	13.377	20.738	5.822	-2.830	-6.883	4.672	2.884	13.469	1.476
Hour2	15.044	11.065	31.188	13.993	2.768	-0.287	9.440	6.618	19.681	7.506
Hour3	17.284	10.464	33.447	18.643	6.102	3.745	12.337	7.929	20.363	9.189
Hour4	16.009	11.338	31.950	16.038	3.726	0.292	8.911	5.078	15.707	5.783
Hour5	16.489	7.977	30.135	16.718	5.475	3.095	11.590	7.430	17.142	8.503
Hour6	16.473	8.675	30.771	20.129	10.247	6.081	14.288	8.941	18.071	10.292
Hour7	14.606	6.542	30.410	19.091	9.042	3.623	11.352	5.682	13.520	6.740
Hour8	17.064	5.393	33.454	24.247	11.889	4.640	12.186	5.195	11.260	3.603
Hour9	14.588	1.828	23.860	15.863	6.624	2.080	10.961	5.041	11.215	4.580
Hour10	17.918	4.875	17.747	8.171	-1.384	-0.825	9.499	4.122	11.725	3.332
Hour11	18.196	15.713	20.206	6.291	-5.359	-4.163	7.450	1.631	9.571	-0.669
Hour12	19.242	27.001	23.062	6.329	-3.056	-1.549	10.461	6.336	15.356	4.732
Hour13	15.776	32.763	26.810	4.082	-6.674	-4.138	8.109	5.243	17.112	5.423
Hour14	14.442	28.542	27.580	3.048	-6.814	-4.030	6.614	4.590	17.237	5.399
Hour15	13.558	19.622	31.709	6.024	-6.086	-2.912	7.156	6.060	19.016	8.072
Hour16	10.826	13.102	28.245	4.627	-7.675	-7.094	3.667	1.837	15.652	5.004
Hour17	13.117	9.025	30.778	3.811	-5.588	-6.406	4.816	1.337	15.804	5.302
Hour18	14.823	9.294	30.267	4.782	-4.216	-5.260	7.640	3.554	17.548	6.464
Hour19	13.719	6.030	28.028	2.103	-7.334	-7.447	6.691	5.216	18.119	7.198
Hour20	14.961	10.027	30.194	8.213	-4.054	-5.594	9.132	7.500	20.367	8.479
Hour21	14.766	9.704	23.751	8.796	-1.332	-5.739	8.875	5.978	18.974	5.811
Hour22	13.948	11.839	23.378	8.217	0.173	-2.936	8.337	5.642	16.946	5.430
Hour23	11.927	14.687	22.319	5.607	0.031	-3.714	7.521	4.010	14.077	4.006
Hour24	9.991	12.911	21.904	3.774	-3.083	-7.260	5.620	3.629	14.779	2.241

Indiana Michigan Power Company-MIchigan
Residential Other Peak Demand Model t-Statistics

Variable	September	October	November	December	SummerFuzzy	WinterFuzzy	HLight	DST
Hour1	3.094	-0.372	-2.351	0.000	-12.217	-13.071	8.437	-4.748
Hour2	8.754	4.481	2.260	0.000	-6.362	-12.490	4.031	-6.582
Hour3	11.351	6.982	5.592	0.000	-3.049	-13.825	1.217	-8.232
Hour4	8.432	2.130	2.028	0.000	-3.916	-17.044	2.122	-3.982
Hour5	11.336	5.102	3.538	0.000	-3.673	-16.511	0.459	-7.334
Hour6	13.711	6.610	6.216	0.000	-3.455	-19.368	-0.361	-10.373
Hour7	11.158	3.797	6.307	0.000	-1.811	-21.848	1.215	-11.160
Hour8	9.246	1.245	11.546	0.000	-0.813	-25.018	-0.567	-9.172
Hour9	11.416	2.355	9.220	0.000	-5.760	-21.460	4.808	-15.920
Hour10	7.742	2.881	5.997	0.000	-8.504	-12.361	5.008	-5.846
Hour11	3.163	1.932	5.701	0.000	-9.321	-6.103	6.673	2.151
Hour12	6.718	4.300	5.210	0.000	-14.907	-2.957	5.515	3.214
Hour13	7.507	6.665	10.949	0.000	-15.829	2.412	8.358	2.791
Hour14	6.206	6.043	11.004	0.000	-13.440	3.536	8.709	2.606
Hour15	9.670	9.125	13.878	0.000	-13.879	7.048	8.210	1.587
Hour16	7.976	4.654	11.052	0.000	-16.202	5.321	11.467	-1.388
Hour17	5.974	3.249	7.941	0.000	-14.806	2.376	9.126	-3.422
Hour18	8.512	3.130	7.621	0.000	-14.992	-0.401	6.797	-5.540
Hour19	8.655	3.327	13.501	0.000	-15.611	-1.026	8.080	-9.473
Hour20	7.569	4.894	12.200	0.000	-11.173	-3.626	6.732	-13.507
Hour21	4.388	5.696	7.552	0.000	-7.638	-5.275	6.136	-11.366
Hour22	7.358	6.116	5.136	0.000	-10.160	-5.424	5.478	-8.959
Hour23	5.814	1.445	1.172	0.000	-13.176	-8.229	7.089	-8.232
Hour24	3.217	-0.435	-2.116	0.000	-14.416	-9.564	10.093	-7.801

Indiana Michigan Power Company-MIchigan
Residential Other Peak Demand Model Statistics

Hour	Obs	DF	AdjRSq	DW	StdErr	MAD	MAPE	FObs	FMAD	FMAPE	FAvgErr
Hour1	1827	1800	0.956	0.047	3.762	3.142	3.57%	0	0.000	0.00%	0.000
Hour2	1827	1800	0.942	0.048	3.562	2.955	3.80%	0	0.000	0.00%	0.000
Hour3	1827	1800	0.933	0.051	3.445	2.834	3.89%	0	0.000	0.00%	0.000
Hour4	1827	1800	0.921	0.051	3.427	2.798	4.07%	0	0.000	0.00%	0.000
Hour5	1827	1800	0.899	0.051	3.471	2.806	4.26%	0	0.000	0.00%	0.000
Hour6	1827	1800	0.885	0.050	3.541	2.847	4.24%	0	0.000	0.00%	0.000
Hour7	1827	1800	0.888	0.049	3.694	2.942	4.19%	0	0.000	0.00%	0.000
Hour8	1827	1800	0.933	0.048	3.872	3.116	3.72%	0	0.000	0.00%	0.000
Hour9	1827	1800	0.898	0.045	3.807	3.090	3.49%	0	0.000	0.00%	0.000
Hour10	1827	1800	0.877	0.051	3.720	3.053	3.30%	0	0.000	0.00%	0.000
Hour11	1827	1800	0.935	0.054	3.656	3.042	3.13%	0	0.000	0.00%	0.000
Hour12	1827	1800	0.956	0.055	3.605	3.038	3.01%	0	0.000	0.00%	0.000
Hour13	1827	1800	0.966	0.057	3.644	3.091	2.97%	0	0.000	0.00%	0.000
Hour14	1827	1800	0.972	0.058	3.734	3.164	2.97%	0	0.000	0.00%	0.000
Hour15	1827	1800	0.976	0.058	3.829	3.225	2.99%	0	0.000	0.00%	0.000
Hour16	1827	1800	0.977	0.057	3.974	3.325	3.04%	0	0.000	0.00%	0.000
Hour17	1827	1800	0.977	0.055	4.192	3.487	3.15%	0	0.000	0.00%	0.000
Hour18	1827	1800	0.975	0.051	4.452	3.694	3.23%	0	0.000	0.00%	0.000
Hour19	1827	1800	0.976	0.048	4.648	3.860	3.16%	0	0.000	0.00%	0.000
Hour20	1827	1800	0.976	0.045	4.733	3.946	3.16%	0	0.000	0.00%	0.000
Hour21	1827	1800	0.972	0.041	4.746	4.001	3.32%	0	0.000	0.00%	0.000
Hour22	1827	1800	0.962	0.037	4.845	4.122	3.62%	0	0.000	0.00%	0.000
Hour23	1827	1800	0.957	0.037	4.680	3.973	3.63%	0	0.000	0.00%	0.000
Hour24	1827	1800	0.962	0.041	4.211	3.553	3.53%	0	0.000	0.00%	0.000

Indiana Michigan Power Company-Michigan
Commercial Cooling Peak Demand Model Coefficients

Variable	CDD65	CDD70	CDD65WkEnd	CDD70WkEnd	SummerFuzzy	WinterFuzzy	HLight	DST
Hour1	0.527	0.026	-0.129	0.109	3.811	-1.452	0.150	-0.404
Hour2	0.391	0.122	-0.110	0.085	2.885	-0.860	0.089	-0.273
Hour3	0.382	0.120	-0.115	0.089	2.784	-0.804	0.083	-0.249
Hour4	0.381	0.117	-0.150	0.111	2.652	-0.736	0.075	-0.228
Hour5	0.418	0.093	-0.237	0.171	2.660	-0.756	0.078	-0.233
Hour6	0.462	0.084	-0.281	0.199	2.896	-0.873	0.090	-0.277
Hour7	0.488	0.068	-0.269	0.193	3.111	-1.007	0.104	-0.321
Hour8	0.479	0.101	-0.215	0.154	3.255	-1.050	0.110	-0.377
Hour9	0.549	0.088	-0.172	0.127	3.963	-1.420	0.150	-0.503
Hour10	0.638	0.058	-0.133	0.102	4.799	-1.866	0.196	-0.624
Hour11	0.705	0.034	-0.129	0.099	5.364	-2.166	0.228	-0.708
Hour12	0.703	0.043	-0.081	0.064	5.552	-2.268	0.239	-0.744
Hour13	0.743	0.031	-0.086	0.073	5.803	-2.377	0.250	-0.771
Hour14	0.731	0.031	-0.044	0.045	5.840	-2.410	0.254	-0.780
Hour15	0.750	0.024	-0.054	0.052	5.951	-2.463	0.259	-0.786
Hour16	0.736	0.036	-0.051	0.049	5.858	-2.406	0.254	-0.783
Hour17	0.725	0.034	-0.091	0.079	5.614	-2.286	0.241	-0.744
Hour18	0.723	0.006	-0.087	0.080	5.580	-2.308	0.242	-0.707
Hour19	0.703	0.001	-0.075	0.074	5.435	-2.248	0.235	-0.667
Hour20	0.643	0.024	-0.005	0.023	5.191	-2.127	0.222	-0.634
Hour21	0.645	0.001	-0.129	0.111	4.778	-1.940	0.202	-0.569
Hour22	0.600	0.022	-0.123	0.104	4.433	-1.754	0.183	-0.526
Hour23	0.553	0.043	-0.058	0.061	4.260	-1.649	0.172	-0.497
Hour24	0.513	0.062	-0.088	0.078	3.861	-1.428	0.149	-0.432

Indiana Michigan Power Company-Michigan
Commercial Cooling Peak Demand Model Standard Errors

Variable	CDD65	CDD70	CDD65WkEnd	CDD70WkEnd	SummerFuzzy	WinterFuzzy	HLight	DST
Hour1	0.009	0.013	0.013	0.022	0.034	0.033	0.003	0.038
Hour2	0.007	0.010	0.009	0.017	0.025	0.025	0.003	0.028
Hour3	0.006	0.010	0.009	0.016	0.025	0.024	0.002	0.027
Hour4	0.006	0.009	0.009	0.015	0.024	0.023	0.002	0.026
Hour5	0.006	0.010	0.009	0.016	0.024	0.024	0.002	0.027
Hour6	0.007	0.010	0.010	0.017	0.026	0.026	0.003	0.029
Hour7	0.007	0.011	0.010	0.018	0.028	0.028	0.003	0.031
Hour8	0.008	0.012	0.011	0.019	0.029	0.029	0.003	0.032
Hour9	0.009	0.014	0.013	0.023	0.035	0.035	0.004	0.039
Hour10	0.011	0.017	0.016	0.028	0.042	0.042	0.004	0.047
Hour11	0.012	0.019	0.018	0.031	0.047	0.046	0.005	0.053
Hour12	0.013	0.019	0.018	0.032	0.049	0.048	0.005	0.054
Hour13	0.013	0.020	0.019	0.033	0.051	0.050	0.005	0.057
Hour14	0.013	0.020	0.019	0.033	0.051	0.050	0.005	0.057
Hour15	0.014	0.021	0.019	0.034	0.052	0.051	0.005	0.058
Hour16	0.013	0.020	0.019	0.034	0.051	0.051	0.005	0.057
Hour17	0.013	0.020	0.018	0.032	0.049	0.049	0.005	0.055
Hour18	0.013	0.020	0.018	0.032	0.049	0.048	0.005	0.055
Hour19	0.012	0.019	0.018	0.031	0.048	0.047	0.005	0.053
Hour20	0.012	0.018	0.017	0.030	0.045	0.045	0.005	0.051
Hour21	0.011	0.017	0.016	0.028	0.042	0.042	0.004	0.047
Hour22	0.010	0.016	0.015	0.026	0.039	0.039	0.004	0.044
Hour23	0.010	0.015	0.014	0.025	0.037	0.037	0.004	0.042
Hour24	0.009	0.014	0.013	0.022	0.034	0.034	0.003	0.038

Indiana Michigan Power Company-Michigan
Commercial Cooling Peak Demand Model t-Statistics

Variable	CDD65	CDD70	CDD65WkEnd	CDD70WkEnd	SummerFuzzy	WinterFuzzy	HLight	DST
Hour1	60.182	1.953	-10.219	4.952	113.014	-43.665	44.347	-10.722
Hour2	59.253	12.018	-11.576	5.123	113.661	-34.358	34.808	-9.634
Hour3	60.059	12.237	-12.560	5.550	113.548	-33.273	33.579	-9.097
Hour4	62.481	12.456	-17.058	7.189	112.828	-31.725	31.956	-8.694
Hour5	67.417	9.773	-26.592	10.921	111.391	-32.113	32.344	-8.722
Hour6	68.321	8.066	-28.840	11.654	111.105	-33.960	34.397	-9.515
Hour7	67.272	6.063	-25.774	10.556	111.359	-36.528	37.161	-10.285
Hour8	63.479	8.660	-19.792	8.100	111.932	-36.611	37.696	-11.617
Hour9	60.156	6.287	-13.083	5.541	112.840	-40.987	42.390	-12.822
Hour10	58.126	3.422	-8.446	3.687	113.583	-44.793	46.283	-13.218
Hour11	57.659	1.798	-7.345	3.221	113.813	-46.608	48.169	-13.453
Hour12	55.757	2.196	-4.437	2.028	114.358	-47.371	49.007	-13.721
Hour13	56.286	1.548	-4.518	2.208	114.137	-47.400	48.999	-13.579
Hour14	55.147	1.544	-2.313	1.351	114.441	-47.894	49.524	-13.674
Hour15	55.493	1.170	-2.759	1.533	114.375	-47.992	49.573	-13.523
Hour16	55.353	1.741	-2.665	1.453	114.359	-47.628	49.269	-13.687
Hour17	56.631	1.713	-4.954	2.451	113.912	-47.040	48.622	-13.509
Hour18	56.911	0.310	-4.772	2.492	113.964	-47.787	49.159	-12.918
Hour19	56.799	0.055	-4.183	2.354	113.960	-47.798	49.039	-12.513
Hour20	54.621	1.346	-0.277	0.790	114.512	-47.570	48.811	-12.517
Hour21	58.955	0.074	-8.177	4.018	113.353	-46.671	47.771	-12.081
Hour22	59.019	1.382	-8.377	4.061	113.277	-45.438	46.527	-12.021
Hour23	56.911	2.906	-4.178	2.499	113.849	-44.682	45.726	-11.879
Hour24	58.106	4.562	-6.935	3.485	113.545	-42.575	43.471	-11.375

Indiana Michigan Power Company-Michigan
Commercial Cooling Peak Demand Model Statistics

Hour	Obs	DF	AdjRSq	DW	StdErr	MAD	MAPE	FObs	FMAD	FMAPE	FAvgErr
Hour1	1827	1819	0.993	0.066	0.369	0.228	25.49%	0	0.000	0.00%	0.000
Hour2	1827	1819	0.993	0.086	0.278	0.170	36.05%	0	0.000	0.00%	0.000
Hour3	1827	1819	0.993	0.087	0.268	0.164	24.18%	0	0.000	0.00%	0.000
Hour4	1827	1819	0.993	0.092	0.257	0.157	21.48%	0	0.000	0.00%	0.000
Hour5	1827	1819	0.993	0.097	0.261	0.159	34.30%	0	0.000	0.00%	0.000
Hour6	1827	1819	0.993	0.096	0.285	0.174	23.75%	0	0.000	0.00%	0.000
Hour7	1827	1819	0.993	0.089	0.306	0.187	76.18%	0	0.000	0.00%	0.000
Hour8	1827	1819	0.993	0.088	0.318	0.196	25.91%	0	0.000	0.00%	0.000
Hour9	1827	1819	0.993	0.076	0.384	0.239	39.46%	0	0.000	0.00%	0.000
Hour10	1827	1819	0.992	0.067	0.462	0.287	46.19%	0	0.000	0.00%	0.000
Hour11	1827	1819	0.992	0.063	0.516	0.321	20.25%	0	0.000	0.00%	0.000
Hour12	1827	1819	0.992	0.062	0.531	0.331	20.38%	0	0.000	0.00%	0.000
Hour13	1827	1819	0.992	0.061	0.556	0.346	21.05%	0	0.000	0.00%	0.000
Hour14	1827	1819	0.992	0.060	0.558	0.347	19.81%	0	0.000	0.00%	0.000
Hour15	1827	1819	0.992	0.060	0.569	0.354	56.33%	0	0.000	0.00%	0.000
Hour16	1827	1819	0.992	0.061	0.560	0.349	19.65%	0	0.000	0.00%	0.000
Hour17	1827	1819	0.992	0.062	0.539	0.335	25.87%	0	0.000	0.00%	0.000
Hour18	1827	1819	0.992	0.060	0.536	0.333	15.77%	0	0.000	0.00%	0.000
Hour19	1827	1819	0.992	0.059	0.522	0.324	20.81%	0	0.000	0.00%	0.000
Hour20	1827	1819	0.992	0.059	0.496	0.308	25.62%	0	0.000	0.00%	0.000
Hour21	1827	1819	0.992	0.061	0.461	0.286	33.70%	0	0.000	0.00%	0.000
Hour22	1827	1819	0.992	0.064	0.428	0.265	26.77%	0	0.000	0.00%	0.000
Hour23	1827	1819	0.993	0.065	0.409	0.253	89.62%	0	0.000	0.00%	0.000
Hour24	1827	1819	0.993	0.069	0.372	0.230	19.91%	0	0.000	0.00%	0.000

Indiana Michigan Power Company-Michigan
Commercial Heating Peak Demand Model Coefficients

Variable	HDD50	HDD55	HDD65	HDD65WkEnd	SummerFuzzy	WinterFuzzy	HLight	DST
Hour1	0.546	-0.273	0.051	0.023	0.225	3.355	-0.093	1.119
Hour2	0.481	-0.256	0.044	0.010	0.201	2.490	-0.058	0.649
Hour3	0.467	-0.257	0.058	0.007	0.167	2.579	-0.044	0.466
Hour4	0.472	-0.267	0.071	-0.000	0.137	2.742	-0.037	0.396
Hour5	0.481	-0.270	0.072	0.000	0.140	2.828	-0.040	0.443
Hour6	0.456	-0.246	0.089	0.002	0.073	3.304	-0.050	0.646
Hour7	0.438	-0.226	0.092	0.003	0.044	3.478	-0.062	0.847
Hour8	0.443	-0.210	0.094	0.011	0.044	3.979	-0.095	1.316
Hour9	0.483	-0.205	0.083	0.021	0.133	4.525	-0.136	1.831
Hour10	0.543	-0.219	0.057	0.023	0.255	4.680	-0.173	2.249
Hour11	0.572	-0.249	0.031	0.021	0.274	3.989	-0.146	1.858
Hour12	0.547	-0.257	0.020	0.029	0.221	2.980	-0.109	1.374
Hour13	0.480	-0.235	0.016	0.032	0.154	2.131	-0.084	1.069
Hour14	0.419	-0.213	0.016	0.029	0.124	1.643	-0.068	0.870
Hour15	0.364	-0.191	0.015	0.027	0.099	1.263	-0.055	0.702
Hour16	0.323	-0.175	0.015	0.025	0.086	1.027	-0.046	0.591
Hour17	0.305	-0.167	0.013	0.030	0.074	0.912	-0.042	0.533
Hour18	0.301	-0.164	0.013	0.027	0.071	0.920	-0.041	0.530
Hour19	0.329	-0.175	0.013	0.027	0.078	1.103	-0.047	0.606
Hour20	0.408	-0.210	0.016	0.027	0.115	1.632	-0.065	0.837
Hour21	0.465	-0.240	0.018	0.031	0.138	1.958	-0.074	0.946
Hour22	0.514	-0.264	0.023	0.027	0.167	2.290	-0.080	1.001
Hour23	0.545	-0.275	0.028	0.026	0.209	2.739	-0.085	1.035
Hour24	0.573	-0.287	0.036	0.021	0.237	3.053	-0.090	1.073

Indiana Michigan Power Company-Michigan
Commercial Heating Peak Demand Model Standard Errors

Variable	HDD50	HDD55	HDD65	HDD65WkEnd	SummerFuzzy	WinterFuzzy	HLight	DST
Hour1	0.007	0.009	0.003	0.001	0.029	0.029	0.003	0.029
Hour2	0.006	0.008	0.003	0.000	0.024	0.024	0.002	0.024
Hour3	0.006	0.008	0.003	0.000	0.023	0.024	0.002	0.023
Hour4	0.006	0.008	0.003	0.001	0.024	0.025	0.003	0.024
Hour5	0.006	0.008	0.003	0.001	0.025	0.025	0.003	0.025
Hour6	0.007	0.009	0.003	0.001	0.028	0.029	0.003	0.028
Hour7	0.007	0.009	0.004	0.001	0.029	0.030	0.003	0.029
Hour8	0.008	0.010	0.004	0.001	0.032	0.033	0.003	0.032
Hour9	0.009	0.011	0.004	0.001	0.035	0.035	0.004	0.035
Hour10	0.009	0.011	0.004	0.001	0.035	0.035	0.004	0.035
Hour11	0.008	0.010	0.004	0.001	0.032	0.032	0.003	0.032
Hour12	0.007	0.009	0.004	0.001	0.029	0.030	0.003	0.029
Hour13	0.006	0.008	0.003	0.001	0.025	0.025	0.003	0.024
Hour14	0.005	0.007	0.003	0.000	0.021	0.021	0.002	0.021
Hour15	0.004	0.006	0.002	0.000	0.018	0.018	0.002	0.018
Hour16	0.004	0.005	0.002	0.000	0.016	0.016	0.002	0.015
Hour17	0.004	0.005	0.002	0.000	0.015	0.015	0.002	0.015
Hour18	0.004	0.005	0.002	0.000	0.015	0.015	0.002	0.015
Hour19	0.004	0.005	0.002	0.000	0.016	0.016	0.002	0.016
Hour20	0.005	0.007	0.002	0.000	0.020	0.021	0.002	0.020
Hour21	0.006	0.008	0.003	0.000	0.023	0.024	0.002	0.023
Hour22	0.006	0.008	0.003	0.001	0.026	0.026	0.003	0.026
Hour23	0.007	0.009	0.003	0.001	0.028	0.028	0.003	0.028
Hour24	0.007	0.010	0.004	0.001	0.029	0.030	0.003	0.029

Indiana Michigan Power Company-Michigan
Commercial Heating Peak Demand Model t-Statistics

Variable	HDD50	HDD55	HDD65	HDD65WkEnd	SummerFuzzy	WinterFuzzy	HLight	DST
Hour1	76.096	-29.155	14.555	37.699	7.811	115.182	-31.059	39.132
Hour2	80.887	-32.986	15.233	20.272	8.406	103.150	-23.603	27.377
Hour3	79.697	-33.661	20.419	13.543	7.129	108.567	-17.983	19.996
Hour4	77.354	-33.461	24.059	-0.285	5.604	110.777	-14.602	16.304
Hour5	76.863	-33.023	23.855	0.251	5.599	111.432	-15.580	17.775
Hour6	64.785	-26.741	26.066	2.678	2.590	115.638	-17.177	23.037
Hour7	60.162	-23.841	25.960	4.558	1.519	117.870	-20.605	29.233
Hour8	55.154	-20.011	24.239	16.878	1.357	122.182	-28.414	41.177
Hour9	55.383	-18.000	19.690	28.855	3.798	127.999	-37.656	52.787
Hour10	62.372	-19.243	13.478	31.013	7.300	132.406	-47.807	64.846
Hour11	71.448	-23.814	7.973	30.669	8.533	122.923	-44.059	58.331
Hour12	75.228	-27.011	5.544	47.551	7.563	100.978	-36.134	47.450
Hour13	78.534	-29.394	5.434	63.127	6.296	85.966	-33.007	43.928
Hour14	80.720	-31.421	6.292	67.718	5.942	77.967	-31.550	42.049
Hour15	82.440	-33.194	7.095	71.871	5.605	70.567	-29.947	39.947
Hour16	83.424	-34.595	7.883	77.636	5.540	65.397	-28.827	38.329
Hour17	82.387	-34.607	7.270	95.860	5.012	60.673	-27.019	36.121
Hour18	82.599	-34.430	7.124	88.535	4.848	62.201	-27.156	36.466
Hour19	82.010	-33.306	6.490	79.804	4.869	67.669	-28.108	37.862
Hour20	80.720	-31.863	6.431	64.182	5.675	79.508	-31.076	41.556
Hour21	80.074	-31.633	6.544	63.146	5.907	83.102	-30.804	40.905
Hour22	79.959	-31.432	7.456	49.638	6.493	87.840	-30.006	39.116
Hour23	78.223	-30.162	8.143	43.797	7.467	96.835	-29.430	37.297
Hour24	78.287	-30.057	10.021	34.397	8.075	102.779	-29.539	36.795

Indiana Michigan Power Company-Michigan
Commercial Heating Peak Demand Model Statistics

Hour	Obs	DF	AdjRSq	DW	StdErr	MAD	MAPE	FObs	FMAD	FMAPE	FAvgErr
Hour1	1827	1819	0.996	0.259	0.274	0.169	65.10%	0	0.000	0.00%	0.000
Hour2	1827	1819	0.996	0.382	0.227	0.142	43.43%	0	0.000	0.00%	0.000
Hour3	1827	1819	0.996	0.212	0.223	0.134	35.21%	0	0.000	0.00%	0.000
Hour4	1827	1819	0.996	0.136	0.233	0.135	66.36%	0	0.000	0.00%	0.000
Hour5	1827	1819	0.996	0.133	0.238	0.139	29.40%	0	0.000	0.00%	0.000
Hour6	1827	1819	0.996	0.088	0.269	0.155	31.13%	0	0.000	0.00%	0.000
Hour7	1827	1819	0.996	0.085	0.277	0.162	30.39%	0	0.000	0.00%	0.000
Hour8	1827	1819	0.996	0.085	0.306	0.182	24.94%	0	0.000	0.00%	0.000
Hour9	1827	1819	0.996	0.093	0.332	0.201	45.21%	0	0.000	0.00%	0.000
Hour10	1827	1819	0.996	0.135	0.332	0.208	35.74%	0	0.000	0.00%	0.000
Hour11	1827	1819	0.996	0.332	0.305	0.196	30.75%	0	0.000	0.00%	0.000
Hour12	1827	1819	0.995	0.544	0.277	0.178	267.46%	0	0.000	0.00%	0.000
Hour13	1827	1819	0.995	0.645	0.233	0.146	37.94%	0	0.000	0.00%	0.000
Hour14	1827	1819	0.994	0.705	0.198	0.124	40.58%	0	0.000	0.00%	0.000
Hour15	1827	1819	0.994	0.762	0.168	0.104	59.31%	0	0.000	0.00%	0.000
Hour16	1827	1819	0.994	0.806	0.148	0.091	35.49%	0	0.000	0.00%	0.000
Hour17	1827	1819	0.994	0.857	0.141	0.087	60.17%	0	0.000	0.00%	0.000
Hour18	1827	1819	0.994	0.842	0.139	0.086	41.22%	0	0.000	0.00%	0.000
Hour19	1827	1819	0.994	0.797	0.153	0.095	30.52%	0	0.000	0.00%	0.000
Hour20	1827	1819	0.994	0.718	0.193	0.121	28.26%	0	0.000	0.00%	0.000
Hour21	1827	1819	0.994	0.700	0.221	0.139	36.76%	0	0.000	0.00%	0.000
Hour22	1827	1819	0.995	0.653	0.245	0.155	34.21%	0	0.000	0.00%	0.000
Hour23	1827	1819	0.995	0.564	0.266	0.169	39.04%	0	0.000	0.00%	0.000
Hour24	1827	1819	0.995	0.478	0.279	0.177	55.86%	0	0.000	0.00%	0.000

Indiana MIchigan Power Company-Michigan
Commercial Other Peak Demand Model Coefficients

Variable	HDD50	HDD55	HDD65	CDD65	CDD70	CDD65WkEnd	HDD65WkEnd	CDD70WkEnd	WkDay	WkEnd
Hour1	0.877	-0.144	-0.514	1.272	-1.129	-1.332	-0.023	2.374	68.110	66.671
Hour2	0.833	-0.049	-0.519	1.105	-1.237	-1.286	-0.010	2.793	67.535	68.173
Hour3	0.815	-0.043	-0.499	1.077	-1.194	-1.268	-0.012	2.697	66.742	67.276
Hour4	0.802	-0.043	-0.493	1.066	-1.169	-1.208	-0.001	2.579	65.628	65.403
Hour5	0.752	0.003	-0.506	1.048	-1.146	-1.040	0.001	2.312	68.290	67.353
Hour6	0.693	0.101	-0.555	0.944	-1.118	-0.983	0.011	2.350	70.551	68.695
Hour7	0.718	0.078	-0.548	0.931	-1.049	-0.982	0.005	2.312	75.657	72.415
Hour8	0.704	0.065	-0.541	1.075	-1.090	-1.136	0.020	2.417	88.246	82.591
Hour9	0.658	0.145	-0.596	0.902	-0.834	-1.025	0.034	2.316	104.190	94.946
Hour10	0.570	0.258	-0.630	0.972	-0.907	-1.126	0.026	2.479	104.769	93.363
Hour11	0.549	0.380	-0.716	0.961	-0.659	-1.153	0.030	2.415	88.425	76.593
Hour12	0.711	0.263	-0.727	1.234	-0.696	-1.144	0.042	2.216	89.118	77.717
Hour13	0.989	0.070	-0.757	1.500	-0.947	-1.479	0.020	2.621	92.289	81.354
Hour14	1.083	0.148	-0.913	1.437	-0.705	-1.470	0.038	2.527	93.446	81.709
Hour15	1.240	0.047	-0.958	1.552	-0.755	-1.390	0.056	2.413	91.525	78.150
Hour16	1.336	-0.066	-0.935	1.927	-1.190	-1.686	0.040	2.786	87.409	73.651
Hour17	1.427	-0.198	-0.882	2.117	-1.343	-1.746	0.022	2.821	84.784	70.664
Hour18	1.468	-0.220	-0.895	2.062	-1.233	-1.760	0.014	2.761	83.253	70.111
Hour19	1.475	-0.207	-0.904	2.097	-1.326	-1.743	-0.011	2.753	88.960	80.089
Hour20	1.439	-0.240	-0.844	2.054	-1.475	-1.864	-0.034	3.058	88.777	82.417
Hour21	1.288	-0.217	-0.749	1.953	-1.447	-1.661	-0.038	2.961	84.882	79.983
Hour22	1.182	-0.224	-0.666	1.792	-1.316	-1.559	-0.027	2.798	85.208	81.020
Hour23	1.078	-0.239	-0.570	1.626	-1.249	-1.512	-0.023	2.649	73.917	70.866
Hour24	0.962	-0.202	-0.525	1.437	-1.242	-1.360	-0.029	2.414	68.922	66.932

Indiana MIchigan Power Company-Michigan
Commercial Other Peak Demand Model Coefficients

Variable	MajorHolidays	January	February	March	April	May	June	July	August	September	October
Hour1	-2.847	-2.721	-1.868	-3.449	-5.948	-6.777	-3.983	4.821	4.604	-0.538	-10.159
Hour2	-3.158	-2.501	-1.336	-2.829	-5.012	-5.901	-3.277	5.507	5.766	-0.116	-9.992
Hour3	-2.981	-2.076	-0.841	-2.313	-4.200	-5.013	-2.850	5.373	5.672	0.291	-9.786
Hour4	-2.400	-1.801	-0.551	-1.997	-3.974	-4.874	-3.120	4.442	5.131	0.335	-9.791
Hour5	-1.926	-2.145	-0.636	-1.743	-3.513	-4.256	-2.719	4.537	5.160	0.373	-9.634
Hour6	-1.919	-2.425	-0.729	-1.518	-3.291	-4.226	-2.943	4.233	4.807	0.317	-9.563
Hour7	-2.539	-2.701	-0.845	-1.277	-3.102	-4.360	-3.475	3.885	4.512	0.035	-9.736
Hour8	-3.081	-2.529	0.682	1.163	-0.058	-1.805	-1.212	6.428	8.236	3.431	-7.758
Hour9	-3.973	-1.957	1.732	1.496	-0.991	-1.720	1.903	7.371	7.279	3.253	-8.331
Hour10	-4.916	-1.790	-0.525	-1.008	-1.924	-0.741	4.312	10.202	9.146	2.373	-8.888
Hour11	-5.802	-1.456	-0.749	-1.969	-4.162	-4.483	1.047	8.336	9.067	3.175	-7.280
Hour12	-7.121	-0.454	0.811	-0.365	-3.254	-2.925	3.607	10.977	12.461	5.754	-5.545
Hour13	-7.710	-1.670	0.471	-1.501	-4.309	-4.448	3.056	12.090	13.758	5.334	-6.611
Hour14	-7.352	-1.926	0.101	-2.508	-5.445	-5.391	1.960	11.292	13.246	5.425	-7.587
Hour15	-6.849	-2.292	-0.710	-3.414	-6.402	-6.176	0.209	10.109	12.274	5.429	-7.786
Hour16	-6.244	-2.412	-1.146	-4.616	-8.193	-8.364	-2.625	8.352	10.722	4.547	-8.548
Hour17	-5.251	-2.691	-2.100	-5.154	-8.965	-8.827	-2.622	8.469	10.799	4.538	-8.665
Hour18	-5.520	-2.509	-3.003	-5.828	-9.739	-9.850	-2.849	8.460	11.036	4.006	-9.441
Hour19	-4.928	-4.134	-7.026	-9.255	-11.622	-11.875	-4.710	6.531	8.271	0.329	-13.028
Hour20	-5.393	-1.592	-2.459	-7.030	-9.634	-9.555	-3.094	9.224	10.149	1.281	-10.363
Hour21	-5.782	-1.591	-0.635	-3.344	-7.563	-7.858	-1.590	10.909	10.976	3.009	-5.142
Hour22	-4.655	-1.288	0.094	-1.095	-4.885	-7.278	-2.745	7.840	9.176	3.227	-7.470
Hour23	-3.963	-1.846	-1.189	-2.983	-5.606	-6.958	-3.622	7.157	7.983	0.752	-8.956
Hour24	-3.399	-2.343	-1.802	-3.709	-6.641	-7.949	-4.583	5.324	4.547	-0.972	-10.257

Indiana MIchigan Power Company-Michigan
Commercial Other Peak Demand Model Coefficients

Variable	November	December	SummerFuzzy	WinterFuzzy	HLight	DST
Hour1	0.653	0.000	-4.381	-1.720	1.029	-0.597
Hour2	1.029	0.000	-3.362	-1.461	0.767	0.013
Hour3	1.208	0.000	-3.238	-1.600	0.644	0.183
Hour4	1.553	0.000	-3.084	-1.827	0.675	0.372
Hour5	1.128	0.000	-3.118	-1.876	0.501	0.085
Hour6	0.842	0.000	-3.313	-2.201	0.432	-0.299
Hour7	0.884	0.000	-3.533	-2.216	0.298	-0.436
Hour8	1.679	0.000	-3.730	-2.632	-0.476	-0.586
Hour9	1.377	0.000	-4.600	-2.773	-1.559	1.800
Hour10	0.260	0.000	-5.575	-2.476	-1.284	1.824
Hour11	1.120	0.000	-6.158	-1.456	0.555	-0.331
Hour12	2.415	0.000	-6.229	-0.366	0.572	-0.208
Hour13	2.078	0.000	-6.394	0.588	0.481	0.727
Hour14	1.323	0.000	-6.421	1.133	0.550	1.672
Hour15	1.220	0.000	-6.505	1.572	0.935	0.645
Hour16	0.409	0.000	-6.412	1.774	1.407	0.187
Hour17	0.378	0.000	-6.153	1.770	1.609	-0.327
Hour18	0.210	0.000	-6.125	1.770	1.720	-1.000
Hour19	-0.667	0.000	-5.993	1.531	1.186	-2.080
Hour20	0.776	0.000	-5.782	0.885	0.955	-4.180
Hour21	1.686	0.000	-5.354	0.320	0.992	-5.381
Hour22	1.309	0.000	-5.022	-0.250	0.558	-1.320
Hour23	0.540	0.000	-4.829	-0.858	1.323	-1.245
Hour24	0.359	0.000	-4.422	-1.433	1.394	-0.847

Indiana MIchigan Power Company-Michigan
Commercial Other Peak Demand Model Standard Errors

Variable	HDD50	HDD55	HDD65	CDD65	CDD70	CDD65WkEnd	HDD65WkEnd	CDD70WkEnd	WkDay
Hour1	0.093	0.128	0.054	0.095	0.135	0.146	0.014	0.224	3.602
Hour2	0.093	0.128	0.054	0.095	0.135	0.146	0.014	0.224	3.602
Hour3	0.090	0.124	0.053	0.093	0.132	0.142	0.013	0.218	3.502
Hour4	0.089	0.123	0.052	0.091	0.130	0.139	0.013	0.215	3.450
Hour5	0.088	0.122	0.052	0.091	0.129	0.139	0.013	0.214	3.436
Hour6	0.089	0.123	0.052	0.091	0.130	0.139	0.013	0.215	3.448
Hour7	0.092	0.127	0.054	0.095	0.135	0.145	0.014	0.223	3.581
Hour8	0.097	0.134	0.056	0.099	0.141	0.152	0.014	0.234	3.760
Hour9	0.101	0.139	0.059	0.103	0.147	0.158	0.015	0.243	3.913
Hour10	0.105	0.145	0.061	0.108	0.153	0.165	0.015	0.253	4.074
Hour11	0.110	0.152	0.064	0.113	0.160	0.173	0.016	0.265	4.266
Hour12	0.115	0.159	0.067	0.118	0.168	0.180	0.017	0.278	4.462
Hour13	0.118	0.163	0.069	0.121	0.172	0.186	0.017	0.286	4.591
Hour14	0.119	0.164	0.069	0.122	0.173	0.186	0.017	0.287	4.608
Hour15	0.120	0.165	0.070	0.123	0.174	0.188	0.018	0.289	4.642
Hour16	0.120	0.166	0.070	0.124	0.176	0.189	0.018	0.291	4.672
Hour17	0.119	0.165	0.070	0.123	0.174	0.188	0.018	0.289	4.642
Hour18	0.119	0.164	0.069	0.122	0.173	0.186	0.017	0.286	4.604
Hour19	0.116	0.160	0.068	0.119	0.169	0.182	0.017	0.280	4.502
Hour20	0.114	0.157	0.066	0.117	0.166	0.179	0.017	0.275	4.422
Hour21	0.110	0.152	0.064	0.113	0.160	0.172	0.016	0.265	4.266
Hour22	0.107	0.148	0.062	0.110	0.156	0.168	0.016	0.258	4.153
Hour23	0.104	0.144	0.061	0.107	0.152	0.164	0.015	0.252	4.056
Hour24	0.099	0.136	0.058	0.101	0.144	0.155	0.014	0.238	3.831

Indiana MIchigan Power Company-Michigan
Commercial Other Peak Demand Model Standard Errors

Variable	WkEnd	MajorHolidays	January	February	March	April	May	June	July	August
Hour1	3.619	0.642	0.399	0.595	0.924	1.202	1.448	1.539	1.465	1.243
Hour2	3.618	0.642	0.399	0.595	0.924	1.202	1.447	1.538	1.465	1.243
Hour3	3.518	0.625	0.388	0.578	0.898	1.169	1.407	1.496	1.424	1.208
Hour4	3.466	0.615	0.382	0.570	0.885	1.152	1.386	1.474	1.403	1.190
Hour5	3.452	0.613	0.381	0.567	0.881	1.147	1.381	1.468	1.398	1.186
Hour6	3.464	0.615	0.382	0.569	0.884	1.151	1.386	1.473	1.403	1.190
Hour7	3.597	0.639	0.397	0.591	0.918	1.195	1.439	1.529	1.456	1.235
Hour8	3.777	0.671	0.417	0.621	0.964	1.255	1.511	1.606	1.529	1.297
Hour9	3.931	0.698	0.434	0.646	1.003	1.306	1.572	1.671	1.591	1.350
Hour10	4.093	0.727	0.452	0.673	1.045	1.360	1.637	1.740	1.657	1.406
Hour11	4.286	0.761	0.473	0.705	1.094	1.424	1.715	1.822	1.735	1.472
Hour12	4.482	0.796	0.495	0.737	1.144	1.489	1.793	1.906	1.815	1.539
Hour13	4.612	0.819	0.509	0.758	1.177	1.532	1.845	1.961	1.867	1.584
Hour14	4.629	0.822	0.511	0.761	1.182	1.538	1.852	1.968	1.874	1.590
Hour15	4.664	0.828	0.515	0.767	1.190	1.549	1.866	1.983	1.888	1.602
Hour16	4.694	0.833	0.518	0.772	1.198	1.559	1.878	1.996	1.900	1.612
Hour17	4.663	0.828	0.514	0.767	1.190	1.549	1.865	1.983	1.888	1.601
Hour18	4.625	0.821	0.510	0.760	1.180	1.537	1.850	1.966	1.872	1.588
Hour19	4.523	0.803	0.499	0.743	1.154	1.503	1.809	1.923	1.831	1.553
Hour20	4.443	0.789	0.490	0.730	1.134	1.476	1.777	1.889	1.799	1.526
Hour21	4.286	0.761	0.473	0.704	1.094	1.424	1.714	1.822	1.735	1.472
Hour22	4.173	0.741	0.460	0.686	1.065	1.386	1.669	1.774	1.689	1.433
Hour23	4.074	0.723	0.450	0.670	1.040	1.354	1.630	1.732	1.650	1.399
Hour24	3.849	0.683	0.425	0.633	0.982	1.279	1.540	1.636	1.558	1.322

Indiana MIchigan Power Company-Michigan
Commercial Other Peak Demand Model Standard Errors

Variable	September	October	November	December	SummerFuzzy	WinterFuzzy	HLight	DST
Hour1	1.046	0.827	0.435	0.000	0.704	0.691	0.342	0.532
Hour2	1.046	0.826	0.435	0.000	0.704	0.691	0.342	0.532
Hour3	1.017	0.804	0.423	0.000	0.685	0.672	0.333	0.517
Hour4	1.002	0.792	0.417	0.000	0.675	0.662	0.328	0.510
Hour5	0.998	0.788	0.415	0.000	0.672	0.659	0.327	0.508
Hour6	1.001	0.791	0.416	0.000	0.674	0.662	0.328	0.509
Hour7	1.040	0.822	0.432	0.000	0.700	0.687	0.340	0.529
Hour8	1.092	0.863	0.454	0.000	0.735	0.722	0.357	0.555
Hour9	1.136	0.898	0.472	0.000	0.765	0.751	0.372	0.578
Hour10	1.183	0.935	0.492	0.000	0.797	0.782	0.387	0.602
Hour11	1.239	0.979	0.515	0.000	0.834	0.819	0.406	0.630
Hour12	1.296	1.024	0.539	0.000	0.873	0.856	0.424	0.659
Hour13	1.333	1.053	0.554	0.000	0.898	0.881	0.436	0.678
Hour14	1.338	1.057	0.556	0.000	0.901	0.884	0.438	0.681
Hour15	1.348	1.065	0.561	0.000	0.908	0.891	0.441	0.686
Hour16	1.357	1.072	0.564	0.000	0.914	0.897	0.444	0.690
Hour17	1.348	1.065	0.560	0.000	0.908	0.891	0.441	0.686
Hour18	1.337	1.056	0.556	0.000	0.900	0.884	0.438	0.680
Hour19	1.307	1.033	0.544	0.000	0.880	0.864	0.428	0.665
Hour20	1.284	1.015	0.534	0.000	0.865	0.849	0.420	0.653
Hour21	1.239	0.979	0.515	0.000	0.834	0.819	0.406	0.630
Hour22	1.206	0.953	0.502	0.000	0.812	0.797	0.395	0.614
Hour23	1.178	0.931	0.490	0.000	0.793	0.778	0.386	0.599
Hour24	1.112	0.879	0.463	0.000	0.749	0.735	0.364	0.566

Indiana MIchigan Power Company-Michigan
Commercial Other Peak Demand Model t-Statistics

Variable	HDD50	HDD55	HDD65	CDD65	CDD70	CDD65WkEnd	HDD65WkEnd	CDD70WkEnd	WkDay
Hour1	9.462	-1.123	-9.508	13.351	-8.340	-9.147	-1.683	10.594	18.909
Hour2	8.985	-0.381	-9.601	11.593	-9.145	-8.831	-0.737	12.463	18.751
Hour3	9.035	-0.345	-9.479	11.622	-9.074	-8.955	-0.921	12.377	19.058
Hour4	9.025	-0.350	-9.509	11.684	-9.021	-8.661	-0.076	12.017	19.023
Hour5	8.502	0.026	-9.799	11.533	-8.879	-7.486	0.090	10.814	19.874
Hour6	7.809	0.824	-10.726	10.351	-8.630	-7.047	0.830	10.953	20.459
Hour7	7.784	0.613	-10.187	9.833	-7.795	-6.781	0.406	10.380	21.129
Hour8	7.278	0.487	-9.585	10.814	-7.718	-7.470	1.408	10.335	23.472
Hour9	6.536	1.041	-10.141	8.717	-5.676	-6.481	2.318	9.515	26.630
Hour10	5.439	1.779	-10.292	9.023	-5.924	-6.835	1.667	9.780	25.714
Hour11	5.000	2.504	-11.174	8.520	-4.114	-6.686	1.863	9.100	20.726
Hour12	6.186	1.662	-10.855	10.458	-4.153	-6.340	2.507	7.983	19.974
Hour13	8.367	0.428	-10.983	12.352	-5.489	-7.966	1.178	9.179	20.104
Hour14	9.130	0.901	-13.194	11.789	-4.073	-7.891	2.185	8.815	20.280
Hour15	10.378	0.286	-13.735	12.636	-4.328	-7.406	3.209	8.357	19.716
Hour16	11.105	-0.396	-13.320	15.596	-6.782	-8.925	2.279	9.585	18.708
Hour17	11.944	-1.199	-12.652	17.245	-7.700	-9.301	1.228	9.769	18.266
Hour18	12.391	-1.347	-12.947	16.933	-7.132	-9.455	0.802	9.640	18.084
Hour19	12.731	-1.295	-13.367	17.609	-7.838	-9.574	-0.640	9.828	19.760
Hour20	12.638	-1.528	-12.710	17.558	-8.881	-10.424	-2.057	11.115	20.075
Hour21	11.726	-1.430	-11.693	17.309	-9.028	-9.627	-2.326	11.159	19.898
Hour22	11.057	-1.515	-10.669	16.314	-8.437	-9.284	-1.740	10.829	20.515
Hour23	10.326	-1.662	-9.362	15.155	-8.197	-9.219	-1.525	10.498	18.226
Hour24	9.754	-1.485	-9.121	14.184	-8.631	-8.778	-1.975	10.131	17.991

Indiana MIchigan Power Company-Michigan
Commercial Other Peak Demand Model t-Statistics

Variable	WkEnd	MajorHolidays	January	February	March	April	May	June	July	August
Hour1	18.425	-4.431	-6.814	-3.140	-3.734	-4.947	-4.681	-2.589	3.290	3.705
Hour2	18.841	-4.915	-6.265	-2.245	-3.063	-4.169	-4.077	-2.130	3.759	4.640
Hour3	19.122	-4.773	-5.348	-1.455	-2.576	-3.593	-3.562	-1.905	3.772	4.695
Hour4	18.871	-3.899	-4.711	-0.968	-2.257	-3.451	-3.515	-2.118	3.166	4.310
Hour5	19.511	-3.143	-5.632	-1.121	-1.978	-3.063	-3.082	-1.853	3.246	4.353
Hour6	19.830	-3.120	-6.345	-1.279	-1.716	-2.860	-3.049	-1.998	3.018	4.040
Hour7	20.130	-3.976	-6.805	-1.428	-1.391	-2.596	-3.030	-2.272	2.668	3.652
Hour8	21.867	-4.594	-6.069	1.098	1.206	-0.047	-1.195	-0.755	4.203	6.350
Hour9	24.155	-5.693	-4.513	2.680	1.491	-0.759	-1.094	1.139	4.632	5.392
Hour10	22.810	-6.764	-3.963	-0.780	-0.965	-1.415	-0.453	2.478	6.156	6.506
Hour11	17.870	-7.624	-3.080	-1.062	-1.800	-2.923	-2.615	0.574	4.804	6.160
Hour12	17.339	-8.948	-0.919	1.100	-0.319	-2.185	-1.631	1.893	6.049	8.095
Hour13	17.640	-9.415	-3.283	0.622	-1.275	-2.812	-2.411	1.558	6.475	8.686
Hour14	17.651	-8.944	-3.771	0.133	-2.123	-3.540	-2.911	0.996	6.025	8.332
Hour15	16.757	-8.272	-4.455	-0.926	-2.868	-4.132	-3.311	0.105	5.354	7.663
Hour16	15.691	-7.492	-4.658	-1.486	-3.853	-5.253	-4.454	-1.315	4.395	6.651
Hour17	15.154	-6.342	-5.230	-2.740	-4.331	-5.786	-4.732	-1.322	4.486	6.744
Hour18	15.160	-6.722	-4.916	-3.950	-4.937	-6.338	-5.324	-1.449	4.518	6.948
Hour19	17.708	-6.136	-8.284	-9.450	-8.017	-7.734	-6.563	-2.449	3.566	5.325
Hour20	18.551	-6.837	-3.247	-3.367	-6.200	-6.526	-5.376	-1.638	5.128	6.652
Hour21	18.664	-7.599	-3.365	-0.902	-3.057	-5.312	-4.584	-0.872	6.288	7.458
Hour22	19.417	-6.283	-2.798	0.138	-1.028	-3.524	-4.360	-1.547	4.641	6.403
Hour23	17.393	-5.478	-4.106	-1.776	-2.868	-4.141	-4.269	-2.091	4.339	5.705
Hour24	17.391	-4.974	-5.518	-2.849	-3.776	-5.194	-5.163	-2.801	3.417	3.440

Indiana MIchigan Power Company-Michigan
Commercial Other Peak Demand Model t-Statistics

Variable	September	October	November	December	SummerFuzzy	WinterFuzzy	HLight	DST
Hour1	-0.515	-12.292	1.502	0.000	-6.220	-2.488	3.005	-1.122
Hour2	-0.111	-12.090	2.367	0.000	-4.773	-2.114	2.239	0.025
Hour3	0.286	-12.178	2.856	0.000	-4.728	-2.381	1.934	0.354
Hour4	0.334	-12.368	3.729	0.000	-4.572	-2.759	2.059	0.729
Hour5	0.374	-12.218	2.718	0.000	-4.640	-2.845	1.534	0.168
Hour6	0.317	-12.086	2.023	0.000	-4.913	-3.325	1.317	-0.587
Hour7	0.034	-11.850	2.045	0.000	-5.045	-3.224	0.875	-0.824
Hour8	3.143	-8.993	3.699	0.000	-5.073	-3.647	-1.333	-1.054
Hour9	2.864	-9.280	2.915	0.000	-6.012	-3.692	-4.191	3.115
Hour10	2.006	-9.507	0.528	0.000	-6.997	-3.167	-3.314	3.031
Hour11	2.563	-7.437	2.174	0.000	-7.381	-1.778	1.368	-0.525
Hour12	4.442	-5.416	4.482	0.000	-7.139	-0.427	1.349	-0.315
Hour13	4.001	-6.276	3.750	0.000	-7.122	0.668	1.103	1.072
Hour14	4.054	-7.176	2.377	0.000	-7.125	1.281	1.255	2.456
Hour15	4.028	-7.310	2.177	0.000	-7.166	1.764	2.118	0.940
Hour16	3.352	-7.973	0.726	0.000	-7.017	1.978	3.168	0.271
Hour17	3.367	-8.136	0.675	0.000	-6.779	1.987	3.646	-0.477
Hour18	2.997	-8.937	0.378	0.000	-6.804	2.003	3.931	-1.471
Hour19	0.252	-12.611	-1.227	0.000	-6.807	1.772	2.771	-3.128
Hour20	0.997	-10.213	1.454	0.000	-6.685	1.043	2.271	-6.398
Hour21	2.429	-5.254	3.273	0.000	-6.418	0.391	2.445	-8.539
Hour22	2.676	-7.838	2.611	0.000	-6.183	-0.314	1.413	-2.152
Hour23	0.638	-9.624	1.103	0.000	-6.088	-1.102	3.432	-2.078
Hour24	-0.874	-11.668	0.775	0.000	-5.903	-1.948	3.828	-1.497

Indiana MIchigan Power Company-Michigan
Commercial Other Peak Demand Model Statistics

Hour	Obs	DF	AdjRSq	DW	StdErr	MAD	MAPE	FObs	FMAD	FMAPE	FAvgErr
Hour1	1827	1800	0.846	0.051	3.343	2.707	3.71%	0	0.000	0.00%	0.000
Hour2	1827	1800	0.828	0.221	3.343	2.658	3.73%	0	0.000	0.00%	0.000
Hour3	1827	1800	0.821	0.201	3.250	2.588	3.71%	0	0.000	0.00%	0.000
Hour4	1827	1800	0.818	0.184	3.202	2.556	3.71%	0	0.000	0.00%	0.000
Hour5	1827	1800	0.811	0.159	3.189	2.554	3.70%	0	0.000	0.00%	0.000
Hour6	1827	1800	0.795	0.123	3.200	2.580	3.72%	0	0.000	0.00%	0.000
Hour7	1827	1800	0.775	0.113	3.323	2.684	3.72%	0	0.000	0.00%	0.000
Hour8	1827	1800	0.780	0.074	3.489	2.832	3.71%	0	0.000	0.00%	0.000
Hour9	1827	1800	0.776	0.058	3.631	2.947	3.73%	0	0.000	0.00%	0.000
Hour10	1827	1800	0.822	0.039	3.781	3.056	3.73%	0	0.000	0.00%	0.000
Hour11	1827	1800	0.847	0.049	3.960	3.176	3.70%	0	0.000	0.00%	0.000
Hour12	1827	1800	0.862	0.087	4.141	3.295	3.68%	0	0.000	0.00%	0.000
Hour13	1827	1800	0.879	0.104	4.261	3.372	3.66%	0	0.000	0.00%	0.000
Hour14	1827	1800	0.894	0.088	4.277	3.374	3.62%	0	0.000	0.00%	0.000
Hour15	1827	1800	0.903	0.087	4.308	3.390	3.61%	0	0.000	0.00%	0.000
Hour16	1827	1800	0.912	0.111	4.336	3.402	3.61%	0	0.000	0.00%	0.000
Hour17	1827	1800	0.921	0.111	4.308	3.380	3.60%	0	0.000	0.00%	0.000
Hour18	1827	1800	0.923	0.113	4.273	3.353	3.60%	0	0.000	0.00%	0.000
Hour19	1827	1800	0.915	0.138	4.178	3.293	3.64%	0	0.000	0.00%	0.000
Hour20	1827	1800	0.905	0.142	4.104	3.249	3.66%	0	0.000	0.00%	0.000
Hour21	1827	1800	0.895	0.069	3.959	3.143	3.61%	0	0.000	0.00%	0.000
Hour22	1827	1800	0.872	0.061	3.855	3.077	3.62%	0	0.000	0.00%	0.000
Hour23	1827	1800	0.872	0.063	3.764	3.030	3.67%	0	0.000	0.00%	0.000
Hour24	1827	1800	0.859	0.070	3.556	2.882	3.71%	0	0.000	0.00%	0.000

Indiana Michigan Power Company-Michigan
Industrial Peak Demand Model Coefficients

Variable	Constant	HDD50	HDD55	HDD65	CDD65	CDD70	CDD65WkEnd	HDD65WkEnd	CDD70WkEnd
Hour1	88.159	-0.137	0.515	-0.334	-0.130	0.121	0.307	0.067	-0.084
Hour2	86.508	-0.052	0.432	-0.328	-0.041	-0.010	0.176	0.059	0.111
Hour3	85.560	-0.070	0.431	-0.310	-0.043	-0.012	0.139	0.050	0.179
Hour4	87.493	-0.100	0.444	-0.301	-0.030	-0.007	0.201	0.054	0.055
Hour5	90.201	-0.176	0.549	-0.339	-0.123	0.138	0.262	0.056	-0.086
Hour6	94.496	-0.241	0.641	-0.375	-0.036	0.017	0.209	0.075	0.008
Hour7	100.132	-0.289	0.663	-0.370	0.035	-0.101	0.252	0.109	-0.040
Hour8	107.712	-0.361	0.734	-0.372	0.117	-0.203	0.344	0.108	-0.172
Hour9	111.433	-0.325	0.743	-0.412	0.083	-0.153	0.328	0.105	-0.206
Hour10	113.149	-0.267	0.663	-0.390	0.215	-0.301	0.142	0.103	0.016
Hour11	111.701	-0.178	0.558	-0.372	0.271	-0.367	0.250	0.116	-0.128
Hour12	109.662	-0.150	0.521	-0.372	0.296	-0.378	0.218	0.132	-0.104
Hour13	109.327	-0.136	0.551	-0.420	0.232	-0.302	0.218	0.134	-0.092
Hour14	108.326	-0.137	0.556	-0.420	0.375	-0.523	0.071	0.126	0.130
Hour15	106.095	-0.077	0.479	-0.405	0.411	-0.557	0.033	0.119	0.175
Hour16	103.775	-0.013	0.418	-0.411	0.391	-0.490	0.047	0.115	0.118
Hour17	97.789	-0.071	0.503	-0.442	0.313	-0.379	-0.047	0.106	0.235
Hour18	93.837	-0.042	0.435	-0.392	0.338	-0.423	-0.048	0.088	0.243
Hour19	93.870	0.013	0.377	-0.376	0.293	-0.394	0.009	0.069	0.145
Hour20	90.028	0.092	0.254	-0.314	0.431	-0.579	-0.151	0.033	0.367
Hour21	91.462	0.206	0.110	-0.280	0.402	-0.538	-0.230	0.015	0.404
Hour22	91.783	0.291	-0.038	-0.221	0.390	-0.503	-0.109	0.012	0.183
Hour23	91.976	0.291	-0.056	-0.214	0.366	-0.479	-0.045	0.005	0.078
Hour24	90.851	0.375	-0.159	-0.188	0.408	-0.514	-0.068	0.004	0.070

Indiana Michigan Power Company-Michigan
Industrial Peak Demand Model Coefficients

Variable	WkEnd	MajorHolidays	Monday	TWT	January	February	March	April	May	June
Hour1	-21.710	-13.762	-13.738	0.632	6.534	8.140	8.601	3.369	6.316	13.481
Hour2	-21.154	-14.134	-12.430	0.925	6.540	7.743	8.089	2.866	5.511	12.189
Hour3	-20.813	-14.370	-11.374	1.072	6.405	7.503	8.134	3.036	5.545	12.150
Hour4	-21.035	-14.770	-10.525	1.210	6.544	7.895	8.561	3.738	6.695	13.252
Hour5	-21.920	-15.390	-9.653	1.529	6.832	8.339	8.715	4.053	7.305	14.053
Hour6	-25.208	-16.692	-9.125	2.005	6.777	8.239	8.391	3.611	7.478	14.495
Hour7	-30.776	-18.096	-9.193	2.621	7.639	9.016	9.217	4.297	8.259	15.518
Hour8	-35.520	-19.911	-8.428	3.375	8.727	9.893	10.128	4.590	8.933	16.754
Hour9	-37.917	-20.180	-7.929	3.689	8.718	10.013	10.040	4.315	8.824	17.014
Hour10	-38.218	-20.530	-7.680	3.630	8.880	10.473	10.706	5.384	10.348	18.907
Hour11	-39.355	-21.079	-7.504	3.966	8.846	9.987	10.582	5.013	9.753	18.495
Hour12	-39.438	-20.342	-6.946	4.078	8.911	9.919	10.425	4.753	9.369	18.463
Hour13	-39.492	-20.148	-6.434	4.467	9.007	10.104	10.109	4.637	8.904	17.998
Hour14	-39.866	-20.043	-5.964	5.109	8.630	9.433	9.350	3.280	7.587	16.666
Hour15	-38.229	-19.655	-5.514	5.058	8.534	9.365	9.443	3.125	7.361	16.068
Hour16	-34.297	-19.657	-4.427	5.483	8.144	9.173	9.366	3.438	7.849	16.047
Hour17	-30.722	-19.493	-3.531	5.406	7.492	8.652	8.650	3.298	7.353	15.576
Hour18	-28.060	-18.501	-3.207	4.967	6.923	7.813	8.022	2.669	6.398	14.693
Hour19	-25.533	-18.287	-2.369	5.196	7.462	8.459	8.470	2.847	6.634	14.652
Hour20	-21.461	-19.289	0.200	6.614	7.793	8.898	8.554	2.627	6.607	14.137
Hour21	-19.192	-19.565	3.217	8.832	8.001	9.557	9.697	3.947	7.895	15.423
Hour22	-16.565	-19.433	5.359	9.438	8.810	10.502	11.199	5.803	9.963	16.954
Hour23	-14.412	-19.539	7.104	10.652	9.648	11.239	12.310	7.334	11.440	18.518
Hour24	-11.054	-20.486	10.104	12.872	9.768	11.353	12.779	8.176	12.287	19.345

Indiana Michigan Power Company-Michigan
Industrial Peak Demand Model Coefficients

Variable	July	August	September	October	November	December	HLight	DST
Hour1	11.968	15.264	11.701	10.083	3.731	0.000	-0.638	-1.213
Hour2	11.019	14.150	10.637	9.527	3.590	0.000	-0.538	-1.183
Hour3	10.638	14.066	10.506	9.752	3.558	0.000	-0.523	-1.306
Hour4	11.465	14.771	11.138	10.008	3.621	0.000	-0.753	-1.245
Hour5	12.554	15.612	11.828	9.873	3.789	0.000	-0.946	-0.946
Hour6	12.997	16.119	11.927	10.123	3.948	0.000	-1.018	-0.647
Hour7	14.333	18.056	13.597	11.291	4.702	0.000	-1.069	-0.837
Hour8	15.023	18.728	14.107	12.515	5.299	0.000	-1.343	-0.311
Hour9	15.167	18.545	13.283	12.159	5.256	0.000	-1.405	0.182
Hour10	16.951	20.186	14.950	12.933	5.632	0.000	-1.550	-0.028
Hour11	16.516	19.907	15.206	13.325	5.654	0.000	-1.285	-0.619
Hour12	16.419	19.923	15.439	13.363	5.708	0.000	-1.155	-0.678
Hour13	16.039	19.611	15.189	12.809	5.974	0.000	-1.166	-0.283
Hour14	14.857	18.590	14.170	12.083	5.747	0.000	-1.033	0.296
Hour15	14.334	18.170	13.730	12.105	5.734	0.000	-0.991	0.138
Hour16	14.481	17.883	13.638	11.757	5.765	0.000	-1.176	0.123
Hour17	14.363	17.564	13.832	11.369	5.459	0.000	-0.948	-0.551
Hour18	13.452	16.042	12.621	9.986	4.961	0.000	-0.875	-0.554
Hour19	13.506	15.834	11.833	9.496	4.613	0.000	-1.082	-0.437
Hour20	12.645	15.289	11.460	9.546	4.499	0.000	-1.010	-0.445
Hour21	14.033	16.162	11.898	9.388	4.440	0.000	-1.440	-0.150
Hour22	15.400	17.505	12.817	10.858	5.224	0.000	-1.578	-0.675
Hour23	16.767	18.562	13.596	11.598	5.584	0.000	-1.818	-0.608
Hour24	17.139	19.001	13.870	11.477	5.294	0.000	-2.029	-0.674

Indiana Michigan Power Company-Michigan
Industrial Peak Demand Model Standard Errors

Variable	Constant	HDD50	HDD55	HDD65	CDD65	CDD70	CDD65WkEnd	HDD65WkEnd	CDD70WkEnd
Hour1	10.105	0.317	0.438	0.182	0.318	0.451	0.488	0.046	0.747
Hour2	9.947	0.312	0.431	0.179	0.313	0.444	0.480	0.045	0.736
Hour3	9.809	0.308	0.425	0.177	0.309	0.438	0.474	0.045	0.725
Hour4	9.809	0.308	0.425	0.177	0.309	0.438	0.474	0.045	0.725
Hour5	10.126	0.318	0.439	0.182	0.319	0.452	0.489	0.046	0.749
Hour6	10.914	0.342	0.473	0.196	0.344	0.487	0.527	0.050	0.807
Hour7	12.036	0.378	0.521	0.217	0.379	0.537	0.581	0.055	0.890
Hour8	13.138	0.412	0.569	0.236	0.414	0.586	0.634	0.060	0.972
Hour9	13.597	0.427	0.589	0.245	0.428	0.607	0.656	0.062	1.006
Hour10	13.823	0.434	0.599	0.249	0.435	0.617	0.667	0.063	1.022
Hour11	14.059	0.441	0.609	0.253	0.443	0.627	0.679	0.064	1.040
Hour12	13.847	0.434	0.600	0.249	0.436	0.618	0.669	0.063	1.024
Hour13	13.678	0.429	0.593	0.246	0.431	0.610	0.660	0.062	1.012
Hour14	13.762	0.432	0.596	0.248	0.433	0.614	0.664	0.063	1.018
Hour15	13.290	0.417	0.576	0.239	0.418	0.593	0.642	0.061	0.983
Hour16	12.371	0.388	0.536	0.223	0.389	0.552	0.597	0.056	0.915
Hour17	11.704	0.367	0.507	0.211	0.368	0.522	0.565	0.053	0.866
Hour18	11.009	0.345	0.477	0.198	0.346	0.491	0.532	0.050	0.814
Hour19	10.456	0.328	0.453	0.188	0.329	0.467	0.505	0.048	0.773
Hour20	9.807	0.308	0.425	0.177	0.309	0.438	0.474	0.045	0.725
Hour21	9.258	0.290	0.401	0.167	0.291	0.413	0.447	0.042	0.685
Hour22	9.174	0.288	0.397	0.165	0.289	0.409	0.443	0.042	0.678
Hour23	9.284	0.291	0.402	0.167	0.292	0.414	0.448	0.042	0.687
Hour24	9.559	0.300	0.414	0.172	0.301	0.427	0.462	0.044	0.707

Indiana Michigan Power Company-Michigan
Industrial Peak Demand Model Standard Errors

Variable	WkEnd	MajorHolidays	Monday	TWT	January	February	March	April	May	June	July
Hour1	1.408	2.310	0.999	0.813	1.385	1.906	2.784	3.877	4.757	5.224	4.967
Hour2	1.386	2.274	0.983	0.801	1.364	1.876	2.740	3.816	4.683	5.142	4.889
Hour3	1.367	2.243	0.970	0.790	1.345	1.850	2.703	3.763	4.618	5.071	4.821
Hour4	1.367	2.242	0.970	0.790	1.345	1.850	2.702	3.763	4.618	5.071	4.821
Hour5	1.411	2.315	1.001	0.815	1.388	1.910	2.790	3.885	4.767	5.235	4.977
Hour6	1.521	2.495	1.079	0.878	1.496	2.058	3.007	4.187	5.138	5.642	5.364
Hour7	1.677	2.751	1.190	0.969	1.650	2.270	3.316	4.617	5.666	6.222	5.916
Hour8	1.831	3.004	1.299	1.057	1.801	2.478	3.620	5.040	6.185	6.792	6.458
Hour9	1.895	3.108	1.344	1.094	1.864	2.564	3.746	5.216	6.401	7.029	6.683
Hour10	1.926	3.160	1.367	1.113	1.895	2.607	3.808	5.303	6.508	7.146	6.794
Hour11	1.959	3.214	1.390	1.132	1.927	2.652	3.873	5.393	6.619	7.268	6.910
Hour12	1.930	3.165	1.369	1.114	1.898	2.611	3.815	5.312	6.519	7.158	6.806
Hour13	1.906	3.127	1.352	1.101	1.875	2.580	3.768	5.247	6.439	7.071	6.723
Hour14	1.918	3.146	1.361	1.108	1.887	2.596	3.792	5.279	6.479	7.114	6.764
Hour15	1.852	3.038	1.314	1.070	1.822	2.506	3.661	5.098	6.256	6.870	6.532
Hour16	1.724	2.828	1.223	0.996	1.696	2.333	3.408	4.746	5.824	6.395	6.081
Hour17	1.631	2.676	1.157	0.942	1.604	2.207	3.225	4.490	5.510	6.050	5.753
Hour18	1.534	2.517	1.088	0.886	1.509	2.076	3.033	4.223	5.183	5.691	5.411
Hour19	1.457	2.390	1.034	0.842	1.433	1.972	2.881	4.011	4.922	5.405	5.139
Hour20	1.367	2.242	0.970	0.789	1.344	1.850	2.702	3.762	4.617	5.070	4.820
Hour21	1.290	2.117	0.915	0.745	1.269	1.746	2.551	3.552	4.358	4.786	4.551
Hour22	1.278	2.097	0.907	0.738	1.258	1.730	2.527	3.519	4.319	4.742	4.509
Hour23	1.294	2.122	0.918	0.747	1.273	1.751	2.558	3.561	4.371	4.799	4.563
Hour24	1.332	2.185	0.945	0.769	1.310	1.803	2.634	3.667	4.500	4.942	4.699

Indiana Michigan Power Company-Michigan
Industrial Peak Demand Model Standard Errors

Variable	August	September	October	November	December	HLight	DST
Hour1	4.140	3.182	2.440	1.544	0.000	1.012	1.758
Hour2	4.075	3.133	2.402	1.520	0.000	0.996	1.730
Hour3	4.019	3.089	2.368	1.499	0.000	0.983	1.706
Hour4	4.019	3.089	2.368	1.499	0.000	0.983	1.706
Hour5	4.149	3.189	2.445	1.547	0.000	1.014	1.762
Hour6	4.472	3.437	2.635	1.667	0.000	1.093	1.899
Hour7	4.931	3.790	2.906	1.839	0.000	1.206	2.094
Hour8	5.383	4.138	3.172	2.007	0.000	1.316	2.286
Hour9	5.571	4.282	3.283	2.077	0.000	1.362	2.365
Hour10	5.664	4.353	3.337	2.112	0.000	1.385	2.405
Hour11	5.760	4.428	3.394	2.148	0.000	1.408	2.446
Hour12	5.673	4.361	3.343	2.115	0.000	1.387	2.409
Hour13	5.604	4.308	3.302	2.090	0.000	1.370	2.379
Hour14	5.638	4.334	3.323	2.103	0.000	1.379	2.394
Hour15	5.445	4.185	3.209	2.030	0.000	1.331	2.312
Hour16	5.069	3.896	2.987	1.890	0.000	1.239	2.152
Hour17	4.795	3.686	2.826	1.788	0.000	1.172	2.036
Hour18	4.510	3.467	2.658	1.682	0.000	1.103	1.915
Hour19	4.284	3.293	2.524	1.597	0.000	1.047	1.819
Hour20	4.018	3.089	2.368	1.498	0.000	0.982	1.706
Hour21	3.793	2.916	2.235	1.414	0.000	0.927	1.611
Hour22	3.759	2.889	2.215	1.402	0.000	0.919	1.596
Hour23	3.804	2.924	2.241	1.418	0.000	0.930	1.615
Hour24	3.917	3.010	2.308	1.460	0.000	0.958	1.663

Indiana Michigan Power Company-Michigan
Industrial Peak Demand Model t-Statistics

Variable	Constant	HDD50	HDD55	HDD65	CDD65	CDD70	CDD65WkEnd	HDD65WkEnd	CDD70WkEnd
Hour1	8.724	-0.432	1.177	-1.838	-0.408	0.268	0.630	1.453	-0.112
Hour2	8.697	-0.168	1.002	-1.829	-0.129	-0.023	0.366	1.296	0.151
Hour3	8.722	-0.227	1.015	-1.754	-0.139	-0.028	0.294	1.125	0.247
Hour4	8.919	-0.324	1.046	-1.706	-0.097	-0.017	0.425	1.217	0.076
Hour5	8.908	-0.554	1.252	-1.858	-0.387	0.304	0.536	1.214	-0.114
Hour6	8.658	-0.703	1.356	-1.910	-0.105	0.035	0.397	1.513	0.010
Hour7	8.320	-0.765	1.273	-1.707	0.093	-0.188	0.434	1.983	-0.045
Hour8	8.198	-0.875	1.290	-1.572	0.284	-0.346	0.542	1.795	-0.177
Hour9	8.196	-0.762	1.262	-1.682	0.195	-0.253	0.500	1.695	-0.205
Hour10	8.185	-0.615	1.107	-1.569	0.493	-0.487	0.213	1.638	0.016
Hour11	7.945	-0.404	0.917	-1.468	0.612	-0.585	0.369	1.813	-0.123
Hour12	7.920	-0.346	0.868	-1.494	0.680	-0.613	0.326	2.085	-0.102
Hour13	7.993	-0.317	0.930	-1.705	0.538	-0.495	0.330	2.152	-0.091
Hour14	7.871	-0.318	0.932	-1.694	0.866	-0.851	0.107	2.005	0.128
Hour15	7.983	-0.184	0.832	-1.695	0.984	-0.939	0.052	1.969	0.178
Hour16	8.389	-0.034	0.780	-1.847	1.005	-0.888	0.078	2.046	0.129
Hour17	8.355	-0.193	0.993	-2.097	0.849	-0.725	-0.083	1.984	0.272
Hour18	8.524	-0.121	0.912	-1.976	0.975	-0.861	-0.091	1.756	0.298
Hour19	8.978	0.039	0.833	-1.998	0.891	-0.844	0.019	1.456	0.187
Hour20	9.180	0.300	0.598	-1.781	1.397	-1.323	-0.320	0.731	0.505
Hour21	9.879	0.710	0.275	-1.678	1.378	-1.303	-0.514	0.353	0.591
Hour22	10.005	1.011	-0.096	-1.341	1.352	-1.230	-0.247	0.287	0.270
Hour23	9.907	0.998	-0.139	-1.282	1.254	-1.156	-0.101	0.130	0.113
Hour24	9.504	1.249	-0.385	-1.092	1.358	-1.206	-0.148	0.095	0.099

Indiana Michigan Power Company-Michigan
Industrial Peak Demand Model t-Statistics

Variable	WkEnd	MajorHolidays	Monday	TWT	January	February	March	April	May	June	July
Hour1	-15.416	-5.957	-13.751	0.777	4.717	4.271	3.090	0.869	1.328	2.581	2.410
Hour2	-15.260	-6.215	-12.639	1.156	4.796	4.127	2.952	0.751	1.177	2.371	2.254
Hour3	-15.224	-6.408	-11.728	1.357	4.763	4.056	3.010	0.807	1.201	2.396	2.206
Hour4	-15.387	-6.586	-10.853	1.533	4.866	4.268	3.168	0.993	1.450	2.613	2.378
Hour5	-15.533	-6.648	-9.642	1.876	4.922	4.367	3.124	1.043	1.532	2.685	2.522
Hour6	-16.573	-6.690	-8.456	2.282	4.530	4.003	2.791	0.863	1.455	2.569	2.423
Hour7	-18.349	-6.577	-7.726	2.706	4.630	3.972	2.780	0.931	1.458	2.494	2.423
Hour8	-19.399	-6.629	-6.488	3.191	4.845	3.993	2.798	0.911	1.444	2.467	2.326
Hour9	-20.010	-6.492	-5.899	3.371	4.678	3.905	2.680	0.827	1.379	2.421	2.270
Hour10	-19.838	-6.497	-5.619	3.263	4.687	4.017	2.811	1.015	1.590	2.646	2.495
Hour11	-20.086	-6.558	-5.398	3.505	4.590	3.766	2.732	0.929	1.474	2.545	2.390
Hour12	-20.437	-6.426	-5.074	3.659	4.695	3.798	2.733	0.895	1.437	2.579	2.412
Hour13	-20.717	-6.443	-4.758	4.058	4.804	3.917	2.682	0.884	1.383	2.545	2.386
Hour14	-20.786	-6.371	-4.383	4.612	4.575	3.634	2.466	0.621	1.171	2.343	2.196
Hour15	-20.641	-6.469	-4.197	4.728	4.685	3.737	2.579	0.613	1.177	2.339	2.194
Hour16	-19.893	-6.951	-3.619	5.506	4.802	3.932	2.748	0.724	1.348	2.509	2.382
Hour17	-18.835	-7.285	-3.051	5.738	4.669	3.920	2.683	0.735	1.335	2.574	2.497
Hour18	-18.289	-7.351	-2.946	5.605	4.588	3.763	2.645	0.632	1.235	2.582	2.486
Hour19	-17.522	-7.651	-2.292	6.174	5.207	4.290	2.940	0.710	1.348	2.711	2.628
Hour20	-15.702	-8.604	0.207	8.378	5.797	4.811	3.166	0.698	1.431	2.788	2.623
Hour21	-14.875	-9.244	3.515	11.853	6.305	5.473	3.802	1.111	1.811	3.223	3.084
Hour22	-12.957	-9.266	5.908	12.782	7.006	6.070	4.431	1.649	2.307	3.575	3.415
Hour23	-11.139	-9.206	7.740	14.255	7.582	6.419	4.813	2.059	2.617	3.858	3.674
Hour24	-8.297	-9.374	10.691	16.730	7.454	6.297	4.852	2.230	2.730	3.915	3.648

Indiana Michigan Power Company-Michigan
Industrial Peak Demand Model t-Statistics

Variable	August	September	October	November	December	HLight	DST
Hour1	3.687	3.677	4.133	2.417	0.000	-0.630	-0.690
Hour2	3.472	3.396	3.967	2.362	0.000	-0.540	-0.684
Hour3	3.500	3.401	4.118	2.374	0.000	-0.533	-0.766
Hour4	3.675	3.605	4.226	2.416	0.000	-0.766	-0.730
Hour5	3.763	3.709	4.038	2.449	0.000	-0.932	-0.537
Hour6	3.605	3.470	3.842	2.368	0.000	-0.931	-0.341
Hour7	3.662	3.587	3.886	2.557	0.000	-0.887	-0.400
Hour8	3.479	3.409	3.945	2.640	0.000	-1.020	-0.136
Hour9	3.329	3.102	3.704	2.530	0.000	-1.032	0.077
Hour10	3.564	3.434	3.875	2.667	0.000	-1.119	-0.012
Hour11	3.456	3.434	3.926	2.632	0.000	-0.912	-0.253
Hour12	3.512	3.540	3.997	2.698	0.000	-0.833	-0.281
Hour13	3.499	3.526	3.879	2.859	0.000	-0.851	-0.119
Hour14	3.297	3.269	3.636	2.733	0.000	-0.750	0.124
Hour15	3.337	3.281	3.773	2.824	0.000	-0.744	0.060
Hour16	3.528	3.501	3.936	3.050	0.000	-0.949	0.057
Hour17	3.663	3.753	4.023	3.053	0.000	-0.809	-0.271
Hour18	3.557	3.640	3.757	2.950	0.000	-0.793	-0.289
Hour19	3.696	3.594	3.762	2.888	0.000	-1.033	-0.240
Hour20	3.805	3.710	4.032	3.003	0.000	-1.028	-0.261
Hour21	4.261	4.081	4.200	3.139	0.000	-1.553	-0.093
Hour22	4.657	4.436	4.903	3.727	0.000	-1.717	-0.423
Hour23	4.880	4.650	5.174	3.937	0.000	-1.955	-0.376
Hour24	4.851	4.607	4.973	3.625	0.000	-2.119	-0.405

Indiana Michigan Power Company-Michigan
Industrial Peak Demand Model Statistics

Hour	Obs	DF	AdjRSq	DW	StdErr	MAD	MAPE	FObs	FMAD	FMAPE	FAvgErr
Hour1	1735	1708	0.490	1.214	11.093	8.330	12.37%	0	0.000	0.00%	0.000
Hour2	1735	1708	0.490	1.197	10.919	8.219	12.27%	0	0.000	0.00%	0.000
Hour3	1735	1708	0.490	1.213	10.768	8.060	12.12%	0	0.000	0.00%	0.000
Hour4	1735	1708	0.492	1.216	10.768	8.090	12.15%	0	0.000	0.00%	0.000
Hour5	1735	1708	0.496	1.214	11.116	8.333	12.38%	0	0.000	0.00%	0.000
Hour6	1735	1708	0.521	1.263	11.981	8.937	12.91%	0	0.000	0.00%	0.000
Hour7	1735	1708	0.560	1.359	13.212	9.648	13.48%	0	0.000	0.00%	0.000
Hour8	1735	1708	0.588	1.421	14.423	10.418	14.05%	0	0.000	0.00%	0.000
Hour9	1735	1708	0.604	1.475	14.926	10.644	14.14%	0	0.000	0.00%	0.000
Hour10	1735	1708	0.604	1.491	15.175	10.796	14.24%	0	0.000	0.00%	0.000
Hour11	1735	1708	0.609	1.497	15.433	10.951	14.32%	0	0.000	0.00%	0.000
Hour12	1735	1708	0.617	1.496	15.200	10.725	14.07%	0	0.000	0.00%	0.000
Hour13	1735	1708	0.626	1.464	15.015	10.564	13.91%	0	0.000	0.00%	0.000
Hour14	1735	1708	0.636	1.464	15.107	10.532	13.84%	0	0.000	0.00%	0.000
Hour15	1735	1708	0.636	1.460	14.589	10.128	13.51%	0	0.000	0.00%	0.000
Hour16	1735	1708	0.631	1.404	13.580	9.460	12.98%	0	0.000	0.00%	0.000
Hour17	1735	1708	0.618	1.316	12.848	9.115	12.74%	0	0.000	0.00%	0.000
Hour18	1735	1708	0.608	1.254	12.085	8.610	12.26%	0	0.000	0.00%	0.000
Hour19	1735	1708	0.601	1.177	11.478	8.204	11.77%	0	0.000	0.00%	0.000
Hour20	1735	1708	0.601	0.982	10.766	7.711	11.00%	0	0.000	0.00%	0.000
Hour21	1735	1708	0.628	0.872	10.163	7.295	10.41%	0	0.000	0.00%	0.000
Hour22	1735	1708	0.601	0.869	10.070	7.571	10.79%	0	0.000	0.00%	0.000
Hour23	1735	1708	0.581	0.946	10.191	7.774	11.20%	0	0.000	0.00%	0.000
Hour24	1735	1708	0.551	1.066	10.494	8.099	11.84%	0	0.000	0.00%	0.000

Indiana Michigan Power Company-Michigan
Other Retail Peak Demand Model Coefficients

Variable	Constant	HDD50	HDD55	HDD65	CDD65	CDD70	CDD65WkEnd	HDD65WkEnd	CDD70WkEnd
Hour1	11.461	0.042	0.058	-0.022	0.087	0.020	-0.024	0.001	0.043
Hour2	11.263	0.038	0.066	-0.021	0.087	0.021	-0.020	-0.001	0.028
Hour3	11.049	0.039	0.063	-0.016	0.089	0.025	-0.007	-0.000	0.007
Hour4	10.871	0.022	0.086	-0.021	0.104	0.013	-0.035	-0.000	0.032
Hour5	10.969	0.023	0.083	-0.017	0.112	0.010	-0.055	-0.003	0.052
Hour6	11.945	0.034	0.067	-0.017	0.151	0.002	-0.038	-0.002	0.001
Hour7	15.160	0.055	0.049	-0.026	0.166	0.051	-0.023	-0.004	-0.061
Hour8	18.854	0.125	-0.024	-0.033	0.142	0.088	0.176	0.006	-0.268
Hour9	20.491	0.183	-0.083	-0.037	0.171	0.035	0.253	0.010	-0.318
Hour10	20.431	0.200	-0.063	-0.073	0.204	0.013	0.188	0.011	-0.252
Hour11	20.861	0.237	-0.079	-0.098	0.199	0.024	0.165	0.017	-0.201
Hour12	21.299	0.260	-0.078	-0.124	0.186	0.034	0.172	0.024	-0.196
Hour13	21.247	0.287	-0.090	-0.139	0.188	0.055	0.149	0.033	-0.183
Hour14	21.666	0.312	-0.104	-0.153	0.188	0.064	0.135	0.039	-0.164
Hour15	21.780	0.300	-0.085	-0.163	0.188	0.053	0.111	0.041	-0.127
Hour16	20.418	0.255	-0.042	-0.155	0.197	0.028	0.091	0.034	-0.094
Hour17	18.308	0.229	-0.031	-0.133	0.196	0.016	0.041	0.026	-0.030
Hour18	17.069	0.158	0.045	-0.137	0.167	0.039	0.047	0.019	-0.035
Hour19	15.804	0.143	0.040	-0.110	0.179	0.011	0.074	0.018	-0.049
Hour20	14.826	0.128	0.028	-0.082	0.172	0.010	0.053	0.012	-0.020
Hour21	14.303	0.110	0.033	-0.067	0.143	0.026	0.051	0.011	-0.024
Hour22	12.704	0.086	0.040	-0.046	0.124	0.026	0.031	0.007	0.000
Hour23	11.530	0.046	0.079	-0.046	0.116	0.027	0.000	0.004	0.029
Hour24	11.054	0.028	0.091	-0.041	0.094	0.044	-0.001	0.005	0.022

Indiana Michigan Power Company-Michigan
Other Retail Peak Demand Model Coefficients

Variable	WkEnd	MajorHolidays	Monday	TWT	January	February	March	April	May	June
Hour1	-0.216	0.208	-0.225	-0.071	0.226	0.444	0.148	-0.315	-0.550	0.095
Hour2	-0.182	0.205	-0.181	-0.069	0.293	0.508	0.201	-0.237	-0.504	0.122
Hour3	-0.226	0.218	-0.093	-0.038	0.258	0.470	0.155	-0.324	-0.664	0.001
Hour4	-0.416	0.389	-0.006	-0.062	0.270	0.541	0.253	-0.232	-0.649	-0.045
Hour5	-0.670	0.623	0.048	-0.058	0.502	0.716	0.432	-0.082	-0.493	0.185
Hour6	-1.694	1.118	0.109	-0.059	0.554	0.859	0.711	-0.088	-0.489	0.023
Hour7	-3.269	1.589	0.114	0.048	0.793	1.275	1.111	0.125	-0.159	0.057
Hour8	-5.735	1.225	0.385	0.335	0.930	1.576	1.353	-0.198	-0.100	-0.522
Hour9	-7.268	0.854	0.561	0.591	1.090	1.623	1.548	-0.253	0.330	-0.659
Hour10	-7.307	0.732	0.556	0.670	1.059	1.654	1.581	-0.301	0.262	-0.897
Hour11	-7.348	0.714	0.664	0.735	1.005	1.619	1.465	-0.479	0.160	-1.023
Hour12	-7.535	0.821	0.670	0.865	0.934	1.487	1.244	-0.579	0.155	-1.006
Hour13	-7.273	0.697	0.671	0.890	0.823	1.351	1.136	-0.473	0.241	-0.997
Hour14	-6.884	0.479	0.707	0.873	0.814	1.396	1.282	-0.212	0.481	-0.630
Hour15	-6.359	0.413	0.771	0.962	0.824	1.378	1.259	-0.019	0.813	-0.182
Hour16	-5.069	0.239	0.876	1.022	0.820	1.300	1.051	0.042	0.728	0.162
Hour17	-3.738	0.136	0.771	0.862	0.689	1.003	0.738	-0.089	0.480	0.280
Hour18	-2.989	0.205	0.673	0.802	0.331	0.394	0.182	-0.657	-0.137	-0.074
Hour19	-2.447	0.048	0.662	0.785	0.432	0.636	0.070	-0.675	-0.333	-0.177
Hour20	-1.924	-0.037	0.603	0.732	0.377	0.813	0.445	-0.440	-0.288	-0.076
Hour21	-1.682	0.153	0.397	0.545	0.383	0.867	0.700	-0.115	-0.298	-0.164
Hour22	-1.146	0.091	0.218	0.360	0.304	0.643	0.364	-0.272	-0.387	-0.279
Hour23	-0.680	0.008	0.089	0.206	0.245	0.468	0.086	-0.569	-0.718	-0.361
Hour24	-0.380	0.004	0.044	0.112	0.212	0.347	0.065	-0.511	-0.745	-0.283

Indiana Michigan Power Company-Michigan
Other Retail Peak Demand Model Coefficients

Variable	July	August	September	October	November	December	HLight	DST
Hour1	0.346	0.010	-0.336	-0.565	-0.327	0.000	-0.044	-0.238
Hour2	0.413	0.078	-0.264	-0.483	-0.256	0.000	-0.047	-0.228
Hour3	0.218	-0.047	-0.372	-0.573	-0.322	0.000	-0.030	-0.234
Hour4	0.395	0.088	-0.183	-0.481	-0.308	0.000	0.003	-0.374
Hour5	0.657	0.296	0.020	-0.287	-0.256	0.000	0.022	-0.494
Hour6	0.463	0.394	0.240	-0.189	-0.216	0.000	0.053	-0.684
Hour7	0.645	0.704	0.774	0.212	-0.044	0.000	-0.057	-0.821
Hour8	-0.573	-0.501	1.013	0.708	0.151	0.000	-0.125	-0.885
Hour9	-1.115	-1.176	1.080	1.059	0.234	0.000	-0.105	-1.024
Hour10	-1.368	-1.288	1.097	1.037	0.277	0.000	-0.036	-1.134
Hour11	-1.587	-1.355	1.130	0.958	0.226	0.000	-0.027	-1.129
Hour12	-1.753	-1.424	1.146	0.836	0.219	0.000	-0.031	-1.057
Hour13	-1.530	-1.215	1.413	0.996	0.254	0.000	-0.049	-1.097
Hour14	-1.177	-0.841	1.671	1.014	0.222	0.000	-0.135	-0.989
Hour15	-0.802	-0.236	1.873	0.976	0.168	0.000	-0.210	-0.919
Hour16	-0.306	0.293	1.734	0.902	0.081	0.000	-0.235	-0.796
Hour17	0.018	0.419	1.272	0.585	-0.037	0.000	-0.179	-0.795
Hour18	-0.317	0.002	0.491	0.078	-0.114	0.000	-0.103	-1.003
Hour19	-0.593	-0.362	0.119	0.089	-0.011	0.000	-0.072	-1.039
Hour20	-0.466	-0.393	0.082	0.507	-0.015	0.000	-0.055	-1.147
Hour21	-0.435	-0.352	0.212	0.281	-0.013	0.000	-0.069	-0.718
Hour22	-0.442	-0.325	-0.165	-0.087	-0.116	0.000	0.003	-0.467
Hour23	-0.407	-0.528	-0.482	-0.319	-0.219	0.000	0.046	-0.375
Hour24	-0.202	-0.378	-0.516	-0.445	-0.247	0.000	0.028	-0.299

Indiana Michigan Power Company-Michigan
Other Retail Peak Demand Model Standard Errors

Variable	Constant	HDD50	HDD55	HDD65	CDD65	CDD70	CDD65WkEnd	HDD65WkEnd	CDD70WkEnd
Hour1	0.728	0.023	0.032	0.013	0.023	0.033	0.035	0.003	0.054
Hour2	0.724	0.023	0.031	0.013	0.023	0.032	0.035	0.003	0.054
Hour3	0.724	0.023	0.031	0.013	0.023	0.032	0.035	0.003	0.054
Hour4	0.732	0.023	0.032	0.013	0.023	0.033	0.035	0.003	0.054
Hour5	0.767	0.024	0.033	0.014	0.024	0.034	0.037	0.003	0.057
Hour6	0.891	0.028	0.039	0.016	0.028	0.040	0.043	0.004	0.066
Hour7	1.113	0.035	0.048	0.020	0.035	0.050	0.054	0.005	0.082
Hour8	1.635	0.051	0.071	0.029	0.051	0.073	0.079	0.007	0.121
Hour9	2.078	0.065	0.090	0.037	0.065	0.093	0.100	0.009	0.154
Hour10	2.167	0.068	0.094	0.039	0.068	0.097	0.105	0.010	0.160
Hour11	2.174	0.068	0.094	0.039	0.068	0.097	0.105	0.010	0.161
Hour12	2.140	0.067	0.093	0.039	0.067	0.095	0.103	0.010	0.158
Hour13	2.145	0.067	0.093	0.039	0.068	0.096	0.104	0.010	0.159
Hour14	2.114	0.066	0.092	0.038	0.067	0.094	0.102	0.010	0.156
Hour15	2.015	0.063	0.087	0.036	0.063	0.090	0.097	0.009	0.149
Hour16	1.785	0.056	0.077	0.032	0.056	0.080	0.086	0.008	0.132
Hour17	1.533	0.048	0.066	0.028	0.048	0.068	0.074	0.007	0.113
Hour18	1.358	0.043	0.059	0.024	0.043	0.061	0.066	0.006	0.100
Hour19	1.284	0.040	0.056	0.023	0.040	0.057	0.062	0.006	0.095
Hour20	1.212	0.038	0.053	0.022	0.038	0.054	0.059	0.006	0.090
Hour21	1.105	0.035	0.048	0.020	0.035	0.049	0.053	0.005	0.082
Hour22	0.974	0.031	0.042	0.018	0.031	0.043	0.047	0.004	0.072
Hour23	0.782	0.025	0.034	0.014	0.025	0.035	0.038	0.004	0.058
Hour24	0.712	0.022	0.031	0.013	0.022	0.032	0.034	0.003	0.053

Indiana Michigan Power Company-Michigan
Other Retail Peak Demand Model Standard Errors

Variable	WkEnd	MajorHolidays	Monday	TWT	January	February	March	April	May	June	July
Hour1	0.102	0.167	0.072	0.059	0.100	0.137	0.201	0.279	0.343	0.377	0.358
Hour2	0.101	0.166	0.072	0.058	0.099	0.137	0.199	0.278	0.341	0.374	0.356
Hour3	0.101	0.166	0.072	0.058	0.099	0.137	0.199	0.278	0.341	0.374	0.356
Hour4	0.102	0.167	0.072	0.059	0.100	0.138	0.202	0.281	0.345	0.378	0.360
Hour5	0.107	0.175	0.076	0.062	0.105	0.145	0.211	0.294	0.361	0.397	0.377
Hour6	0.124	0.204	0.088	0.072	0.122	0.168	0.246	0.342	0.420	0.461	0.438
Hour7	0.155	0.254	0.110	0.090	0.153	0.210	0.307	0.427	0.524	0.575	0.547
Hour8	0.228	0.374	0.162	0.132	0.224	0.308	0.451	0.627	0.770	0.845	0.804
Hour9	0.290	0.475	0.205	0.167	0.285	0.392	0.573	0.797	0.978	1.074	1.022
Hour10	0.302	0.495	0.214	0.174	0.297	0.409	0.597	0.831	1.020	1.120	1.065
Hour11	0.303	0.497	0.215	0.175	0.298	0.410	0.599	0.834	1.024	1.124	1.069
Hour12	0.298	0.489	0.212	0.172	0.293	0.404	0.589	0.821	1.007	1.106	1.052
Hour13	0.299	0.490	0.212	0.173	0.294	0.405	0.591	0.823	1.010	1.109	1.054
Hour14	0.295	0.483	0.209	0.170	0.290	0.399	0.582	0.811	0.995	1.093	1.039
Hour15	0.281	0.461	0.199	0.162	0.276	0.380	0.555	0.773	0.948	1.042	0.990
Hour16	0.249	0.408	0.176	0.144	0.245	0.337	0.492	0.685	0.840	0.923	0.877
Hour17	0.214	0.350	0.152	0.123	0.210	0.289	0.422	0.588	0.722	0.793	0.754
Hour18	0.189	0.310	0.134	0.109	0.186	0.256	0.374	0.521	0.639	0.702	0.667
Hour19	0.179	0.293	0.127	0.103	0.176	0.242	0.354	0.492	0.604	0.664	0.631
Hour20	0.169	0.277	0.120	0.098	0.166	0.229	0.334	0.465	0.571	0.627	0.596
Hour21	0.154	0.253	0.109	0.089	0.152	0.208	0.305	0.424	0.520	0.571	0.543
Hour22	0.136	0.223	0.096	0.078	0.134	0.184	0.268	0.374	0.459	0.504	0.479
Hour23	0.109	0.179	0.077	0.063	0.107	0.147	0.215	0.300	0.368	0.404	0.384
Hour24	0.099	0.163	0.070	0.057	0.098	0.134	0.196	0.273	0.335	0.368	0.350

Indiana Michigan Power Company-Michigan
Other Retail Peak Demand Model Standard Errors

Variable	August	September	October	November	December	HLight	DST
Hour1	0.298	0.229	0.176	0.111	0.000	0.073	0.127
Hour2	0.297	0.228	0.175	0.111	0.000	0.073	0.126
Hour3	0.297	0.228	0.175	0.111	0.000	0.073	0.126
Hour4	0.300	0.231	0.177	0.112	0.000	0.073	0.127
Hour5	0.314	0.242	0.185	0.117	0.000	0.077	0.133
Hour6	0.365	0.281	0.215	0.136	0.000	0.089	0.155
Hour7	0.456	0.351	0.269	0.170	0.000	0.112	0.194
Hour8	0.670	0.515	0.395	0.250	0.000	0.164	0.285
Hour9	0.852	0.655	0.502	0.318	0.000	0.208	0.362
Hour10	0.888	0.683	0.523	0.331	0.000	0.217	0.377
Hour11	0.891	0.685	0.525	0.332	0.000	0.218	0.378
Hour12	0.877	0.674	0.517	0.327	0.000	0.214	0.372
Hour13	0.879	0.676	0.518	0.328	0.000	0.215	0.373
Hour14	0.866	0.666	0.510	0.323	0.000	0.212	0.368
Hour15	0.825	0.634	0.486	0.308	0.000	0.202	0.350
Hour16	0.731	0.562	0.431	0.273	0.000	0.179	0.311
Hour17	0.628	0.483	0.370	0.234	0.000	0.154	0.267
Hour18	0.556	0.428	0.328	0.207	0.000	0.136	0.236
Hour19	0.526	0.404	0.310	0.196	0.000	0.129	0.223
Hour20	0.497	0.382	0.293	0.185	0.000	0.121	0.211
Hour21	0.453	0.348	0.267	0.169	0.000	0.111	0.192
Hour22	0.399	0.307	0.235	0.149	0.000	0.098	0.170
Hour23	0.320	0.246	0.189	0.119	0.000	0.078	0.136
Hour24	0.292	0.224	0.172	0.109	0.000	0.071	0.124

Indiana Michigan Power Company-Michigan
Other Retail Peak Demand Model t-Statistics

Variable	Constant	HDD50	HDD55	HDD65	CDD65	CDD70	CDD65WkEnd	HDD65WkEnd	CDD70WkEnd
Hour1	15.735	1.851	1.830	-1.655	3.777	0.609	-0.687	0.373	0.794
Hour2	15.555	1.691	2.106	-1.626	3.822	0.662	-0.586	-0.437	0.518
Hour3	15.259	1.703	2.012	-1.251	3.903	0.762	-0.213	-0.143	0.125
Hour4	14.852	0.972	2.711	-1.612	4.502	0.395	-1.001	-0.061	0.592
Hour5	14.299	0.953	2.499	-1.263	4.645	0.300	-1.487	-0.971	0.909
Hour6	13.403	1.205	1.725	-1.090	5.380	0.046	-0.890	-0.556	0.018
Hour7	13.619	1.567	1.015	-1.281	4.750	1.019	-0.433	-0.725	-0.744
Hour8	11.528	2.435	-0.332	-1.137	2.763	1.208	2.228	0.820	-2.219
Hour9	9.859	2.812	-0.922	-0.978	2.616	0.373	2.517	1.095	-2.066
Hour10	9.427	2.939	-0.675	-1.867	2.996	0.131	1.798	1.112	-1.569
Hour11	9.594	3.478	-0.836	-2.513	2.906	0.243	1.575	1.726	-1.250
Hour12	9.954	3.870	-0.840	-3.208	2.764	0.360	1.663	2.507	-1.238
Hour13	9.904	4.271	-0.969	-3.612	2.780	0.575	1.442	3.341	-1.155
Hour14	10.249	4.708	-1.133	-4.029	2.826	0.675	1.325	4.005	-1.049
Hour15	10.810	4.750	-0.972	-4.505	2.971	0.595	1.137	4.492	-0.849
Hour16	11.439	4.545	-0.549	-4.812	3.504	0.356	1.059	4.186	-0.710
Hour17	11.942	4.751	-0.472	-4.810	4.072	0.239	0.553	3.689	-0.268
Hour18	12.572	3.711	0.767	-5.610	3.919	0.647	0.715	3.098	-0.344
Hour19	12.310	3.543	0.721	-4.769	4.422	0.194	1.192	3.154	-0.517
Hour20	12.232	3.354	0.532	-3.736	4.522	0.192	0.909	2.221	-0.220
Hour21	12.941	3.167	0.688	-3.380	4.116	0.528	0.949	2.122	-0.295
Hour22	13.038	2.822	0.954	-2.634	4.036	0.591	0.657	1.534	0.001
Hour23	14.747	1.868	2.338	-3.261	4.715	0.771	0.001	1.081	0.497
Hour24	15.520	1.236	2.946	-3.194	4.208	1.375	-0.015	1.469	0.413

Indiana Michigan Power Company-Michigan
Other Retail Peak Demand Model t-Statistics

Variable	WkEnd	MajorHolidays	Monday	TWT	January	February	March	April	May	June
Hour1	-2.123	1.251	-3.130	-1.216	2.259	3.229	0.738	-1.128	-1.605	0.253
Hour2	-1.804	1.239	-2.523	-1.177	2.951	3.719	1.008	-0.852	-1.479	0.327
Hour3	-2.239	1.314	-1.296	-0.645	2.601	3.439	0.777	-1.166	-1.949	0.002
Hour4	-4.076	2.327	-0.082	-1.052	2.692	3.920	1.253	-0.826	-1.885	-0.119
Hour5	-6.271	3.550	0.632	-0.933	4.770	4.949	2.043	-0.278	-1.366	0.467
Hour6	-13.636	5.489	1.236	-0.818	4.537	5.113	2.895	-0.259	-1.165	0.049
Hour7	-21.070	6.246	1.032	0.536	5.200	6.072	3.623	0.292	-0.304	0.099
Hour8	-25.160	3.275	2.380	2.547	4.150	5.109	3.003	-0.315	-0.129	-0.618
Hour9	-25.093	1.796	2.731	3.532	3.824	4.142	2.703	-0.318	0.337	-0.613
Hour10	-24.194	1.478	2.593	3.843	3.566	4.047	2.648	-0.362	0.257	-0.800
Hour11	-24.247	1.437	3.090	4.198	3.372	3.947	2.445	-0.575	0.156	-0.911
Hour12	-25.269	1.678	3.167	5.024	3.184	3.685	2.110	-0.705	0.154	-0.909
Hour13	-24.329	1.422	3.165	5.153	2.800	3.340	1.921	-0.574	0.239	-0.899
Hour14	-23.366	0.990	3.384	5.130	2.810	3.502	2.200	-0.261	0.483	-0.576
Hour15	-22.648	0.896	3.869	5.933	2.983	3.627	2.269	-0.024	0.858	-0.175
Hour16	-20.378	0.585	4.964	7.112	3.350	3.861	2.138	0.061	0.866	0.176
Hour17	-17.493	0.388	5.083	6.988	3.276	3.470	1.748	-0.151	0.665	0.353
Hour18	-15.799	0.662	5.013	7.339	1.778	1.537	0.487	-1.262	-0.215	-0.106
Hour19	-13.676	0.165	5.213	7.593	2.453	2.627	0.197	-1.370	-0.552	-0.267
Hour20	-11.393	-0.132	5.031	7.505	2.270	3.558	1.333	-0.946	-0.505	-0.121
Hour21	-10.920	0.604	3.631	6.130	2.527	4.162	2.298	-0.272	-0.573	-0.287
Hour22	-8.439	0.409	2.268	4.591	2.276	3.497	1.355	-0.727	-0.844	-0.555
Hour23	-6.240	0.046	1.153	3.274	2.289	3.173	0.397	-1.898	-1.951	-0.893
Hour24	-3.824	0.026	0.629	1.951	2.174	2.581	0.333	-1.871	-2.223	-0.768

Indiana Michigan Power Company-Michigan
Other Retail Peak Demand Model t-Statistics

Variable	July	August	September	October	November	December	HLight	DST
Hour1	0.967	0.034	-1.463	-3.213	-2.940	0.000	-0.600	-1.878
Hour2	1.161	0.265	-1.160	-2.765	-2.311	0.000	-0.644	-1.810
Hour3	0.612	-0.158	-1.632	-3.279	-2.910	0.000	-0.415	-1.859
Hour4	1.098	0.294	-0.796	-2.723	-2.753	0.000	0.041	-2.939
Hour5	1.742	0.943	0.081	-1.551	-2.188	0.000	0.283	-3.701
Hour6	1.058	1.080	0.854	-0.878	-1.589	0.000	0.591	-4.412
Hour7	1.179	1.544	2.209	0.790	-0.258	0.000	-0.511	-4.242
Hour8	-0.713	-0.748	1.966	1.794	0.604	0.000	-0.760	-3.110
Hour9	-1.092	-1.381	1.650	2.111	0.736	0.000	-0.505	-2.834
Hour10	-1.284	-1.450	1.608	1.983	0.837	0.000	-0.164	-3.009
Hour11	-1.485	-1.521	1.650	1.825	0.681	0.000	-0.125	-2.984
Hour12	-1.667	-1.625	1.700	1.619	0.670	0.000	-0.143	-2.840
Hour13	-1.451	-1.382	2.092	1.922	0.774	0.000	-0.226	-2.940
Hour14	-1.132	-0.971	2.511	1.986	0.686	0.000	-0.636	-2.689
Hour15	-0.809	-0.286	2.951	2.006	0.545	0.000	-1.041	-2.622
Hour16	-0.349	0.400	3.084	2.093	0.297	0.000	-1.314	-2.564
Hour17	0.023	0.667	2.634	1.580	-0.156	0.000	-1.167	-2.982
Hour18	-0.476	0.004	1.148	0.239	-0.550	0.000	-0.759	-4.245
Hour19	-0.940	-0.688	0.295	0.289	-0.057	0.000	-0.559	-4.652
Hour20	-0.782	-0.791	0.214	1.732	-0.082	0.000	-0.455	-5.439
Hour21	-0.802	-0.778	0.608	1.052	-0.078	0.000	-0.627	-3.736
Hour22	-0.924	-0.815	-0.536	-0.371	-0.779	0.000	0.028	-2.752
Hour23	-1.060	-1.649	-1.959	-1.688	-1.829	0.000	0.588	-2.760
Hour24	-0.577	-1.296	-2.300	-2.588	-2.274	0.000	0.388	-2.415

Indiana Michigan Power Company-Michigan
Other Retail Peak Demand Model Statistics

Hour	Obs	DF	AdjRSq	DW	StdErr	MAD	MAPE	FObs	FMAD	FMAPE	FAvgErr
Hour1	1735	1708	0.668	0.767	0.800	0.622	5.56%	0	0.000	0.00%	0.000
Hour2	1735	1708	0.687	0.777	0.795	0.612	5.52%	0	0.000	0.00%	0.000
Hour3	1735	1708	0.705	0.785	0.795	0.615	5.57%	0	0.000	0.00%	0.000
Hour4	1735	1708	0.715	0.799	0.803	0.624	5.54%	0	0.000	0.00%	0.000
Hour5	1735	1708	0.714	0.765	0.842	0.655	5.63%	0	0.000	0.00%	0.000
Hour6	1735	1708	0.704	0.767	0.978	0.742	5.93%	0	0.000	0.00%	0.000
Hour7	1735	1708	0.745	0.801	1.222	0.904	6.47%	0	0.000	0.00%	0.000
Hour8	1735	1708	0.735	0.711	1.795	1.296	8.48%	0	0.000	0.00%	0.000
Hour9	1735	1708	0.715	0.708	2.282	1.640	9.95%	0	0.000	0.00%	0.000
Hour10	1735	1708	0.704	0.684	2.379	1.716	10.16%	0	0.000	0.00%	0.000
Hour11	1735	1708	0.703	0.677	2.387	1.722	10.06%	0	0.000	0.00%	0.000
Hour12	1735	1708	0.715	0.676	2.349	1.703	9.82%	0	0.000	0.00%	0.000
Hour13	1735	1708	0.700	0.638	2.355	1.697	9.98%	0	0.000	0.00%	0.000
Hour14	1735	1708	0.686	0.617	2.321	1.666	9.99%	0	0.000	0.00%	0.000
Hour15	1735	1708	0.682	0.583	2.212	1.580	9.71%	0	0.000	0.00%	0.000
Hour16	1735	1708	0.670	0.571	1.959	1.392	8.97%	0	0.000	0.00%	0.000
Hour17	1735	1708	0.646	0.536	1.683	1.204	8.21%	0	0.000	0.00%	0.000
Hour18	1735	1708	0.644	0.539	1.490	1.077	7.67%	0	0.000	0.00%	0.000
Hour19	1735	1708	0.627	0.536	1.409	1.030	7.62%	0	0.000	0.00%	0.000
Hour20	1735	1708	0.612	0.557	1.331	0.968	7.39%	0	0.000	0.00%	0.000
Hour21	1735	1708	0.594	0.571	1.213	0.893	6.90%	0	0.000	0.00%	0.000
Hour22	1735	1708	0.580	0.567	1.070	0.808	6.46%	0	0.000	0.00%	0.000
Hour23	1735	1708	0.652	0.617	0.858	0.663	5.54%	0	0.000	0.00%	0.000
Hour24	1735	1708	0.677	0.650	0.782	0.606	5.29%	0	0.000	0.00%	0.000

RESIDENTIAL AND COMMERCIAL SAE DOCUMENTATION

Residential Statistically Adjusted End-Use (SAE) Spreadsheets – 2020 AEO Update

The Residential SAE spreadsheets and models have recently been updated based on the Energy Information Administration's (EIA) 2020 Annual Energy Outlook (AEO).

This is the second EIA release based on the 2015 Residential Energy Consumption Survey (RECS). The EIA forecast is an end-use based projection where 2015 is the "first" forecast year. The model starts with reported 2015 saturation rates and estimated stock efficiency. Saturation and stock estimates move forward from this point based on assumptions of relative technology efficiency, new appliance purchases, appliance costs (including rebates for utility efficiency programs), electricity prices, weather trends, and stock utilization. Results are calibrated into actual customer usage and the EIA short-term energy forecast.

The 2020 residential SAE spreadsheets and MetrixND project files include:

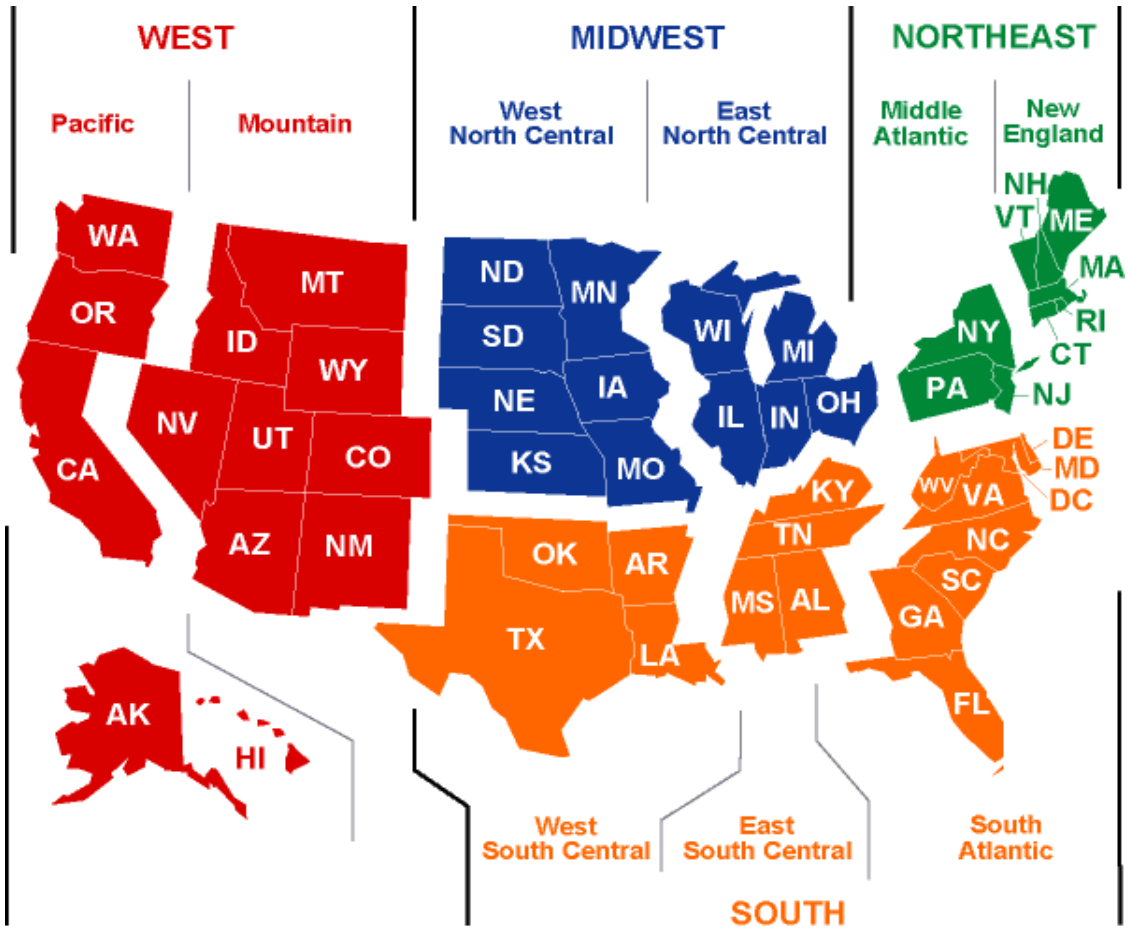
- Updated equipment efficiency trends
- Updated equipment and appliance saturation trends
- Updated structural indices
- Updated annual heating, cooling, water heating, and non-HVAC indices
- Updated regional sales forecasts

End-use saturation, efficiency, structural changes (building shell efficiency improvements and square footage projections), and base-year end-use energy use are combined to develop historical and projected end-use intensity estimates. Resulting intensities can be used in constructing heating, cooling, and other use variables for residential average use and total sales forecast models.

EIA end-use saturation, efficiency, and annual appliance usage (UEC – Unit Energy Consumption) are derived from the National End-Use Model System (NEMS). While NEMS generates detailed end-use data, EIA is primarily concerned with the high-level projection of total energy requirements (measured in Btu) across all end-uses and sectors including transportation. From an electric or natural gas utility forecaster's perspective, it is the underlying end-use and technology level detail that provides insights into how individual residential and commercial customers are using electricity and natural gas, trends in end-use energy consumption, and what these trends imply for future electric and gas usage at the regional level.

EIA provides end-use detail for nine census divisions, depicted in Figure 1.

Figure 1: Forecast Census Divisions



The 2020 AEO forecast is based on the 2015 Residential Energy Consumption Survey (RECS) and does not include any potential impact due to the COVID-19 pandemic. Base-year UECs, saturations, and stock efficiencies are derived from reported saturation results. The NEMS model tracks end-use saturation, stock efficiency, and usage change over time as appliances are replaced, new appliances are purchase, and utilization changes with change in economic, price, and weather conditions. Appliance choice decisions are driven by appliance costs, efficiency options and standards, natural gas availability, and fuel prices for electricity and natural gas. Forecasts are developed for three housing types – single family, multi-family, and mobile homes, for twenty end-uses, including:

- Resistance heating/furnaces
- Air-source heat pumps (heating)
- Ground-source heat pumps (heating)
- Secondary heating
- Central air conditioning
- Air-source heat pumps (cooling)
- Ground-source heat pumps (cooling)
- Room air conditioning
- Water heating

- Cooking
- 1st refrigerators
- 2nd refrigerators
- Freezers
- Dishwashers
- Clothes washers
- Clothes dryers
- TVs and related equipment
- Furnace fans
- Lighting
- Miscellaneous

In the Statistically Adjusted End-Use (SAE) model, detailed end-use data derived from the EIA forecasts is used to construct end-use intensities (kWh per household) that are then integrated into monthly heating, cooling, and other use model variables. These variables are then used to forecast utility-level residential and commercial sales through estimated linear regression models. This approach allows utilities to capture the significant improvements in energy efficiency reflected in past usage and to account for expected improvements due to standards, new technologies, as well as state and utility efficiency programs in the future.

To support econometric modeling, Itron maintains and updates historical end-use data trends that are consistent with the 2015 RECS and earlier RECS (such as the 2005 and 2009 RECS). Doing so sometimes requires adjusting historical end-use saturation and efficiency trends to reflect what EIA believes is the current state of appliance ownership, stock efficiency, and housing characteristics. The 2020 SAE spreadsheets reflect Itron's best estimates of historical end-use saturations, efficiency, and usage given EIA's 2015 base-year starting point and past estimates of end-use stock characteristics.

Modification to Electric SAE Excel Files

Over the last few years, we have pointed out to EIA that in general, we believed the NEMS model has been underestimating heating and cooling use and over-estimating non-weather sensitive use. While total intensity did not change significantly from 2019. EIA moved towards correcting that by increasing cooling and heating use and lowered base use. Our Census-level SAE models indicate that for some census division's, it is still not enough. In this year's release we calibrated the SAE spreadsheets to census-level monthly usage through the SAE model specification. Estimated model coefficients tell us how much the primary end-uses (Cooling, Heating, and Other Use) need to be adjusted up or down. For most Census Divisions cooling is adjusted upwards, heating slightly higher to no change, and other use is adjusted down.

The adjustments are made on the calibration sheet. Figure 2 shows the calibration sheet for the North Atlantic Census Division.

Figure 2: North Atlantic Census Division Calibration Sheet

Base Year (2015)	EFurn	HPHeat	GHPHeat	SecHt	CAC	HPCool	GHPCool	RAC
Consumption (mmBtu)	22,216,471	9,508,042	2,282,679	24,325,159	20,582,519	4,577,480	1,222,376	23,744,783
Equipment Stock (units)	1,743,451	451,977	129,024	3,269,636	4,586,680	451,977	129,024	17,453,505
UEC (kWh/unit)	3,735	6,165	5,185	2,180	1,315	2,968	2,777	399
Share (%)	11.3%	2.9%	0.8%	21.2%	29.8%	2.9%	0.8%	113.3%
Raw Intensity (kWh/year)	423	181	43	463	392	87	23	452
Model-Scaled Intensity (kWh/year)	388	166	40	425	555	123	33	641
Observed Use Per Customer (kWh/year)	8,736							
Adjustment Factor	0.993							
Adjusted Intensity (kWh/year)	386	165	40	422	551	123	33	636
XHeat	0.919							
XCool	1.418							
XOther	0.923							

For North Atlantic starting intensities for heating and other use are adjusted down and cooling use is adjusted up.

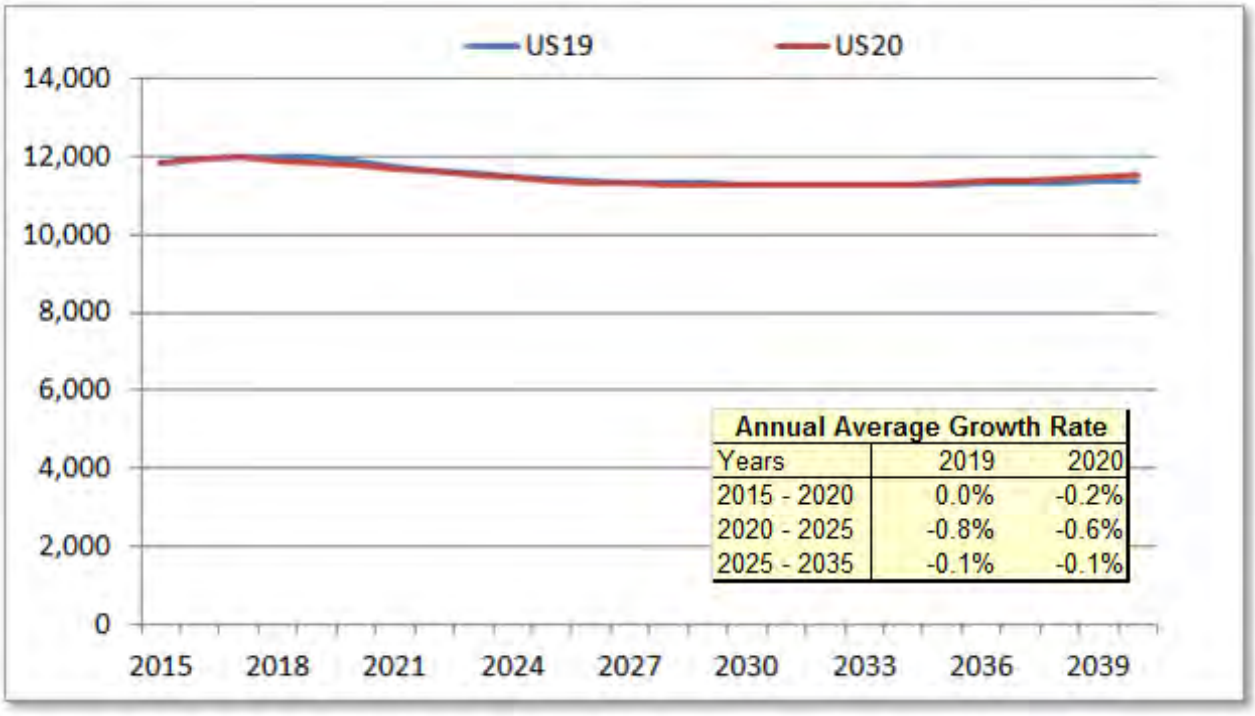
Another change in the calibration sheet is that only miscellaneous use is adjusted with the *XOther* coefficient. We believe miscellaneous use is too high. We assume that starting kWh usage for the other end-uses are correct. In the next release, we will separate measured miscellaneous end-uses from unmeasured miscellaneous electric sales (MELS). The adjustment will only be applied to MELS.

In general, we believe that overall heating and cooling load are still underestimated and miscellaneous use (primarily MELS) is over estimated. The calibration factors will help correct this. Also, it is important to note that these calibration factors can be further adjusted to reflect your specific customer usage levels and mix of heating, cooling, and base-use consumption.

Changes from 2020 Forecast - Electricity

Figure 3 compares the SAE 2019 and SAE 2020 residential total household intensity projections for the U.S. Intensities, measured in kWh per household.

Figure 3: U.S. Residential Total Intensity (kWh/household)

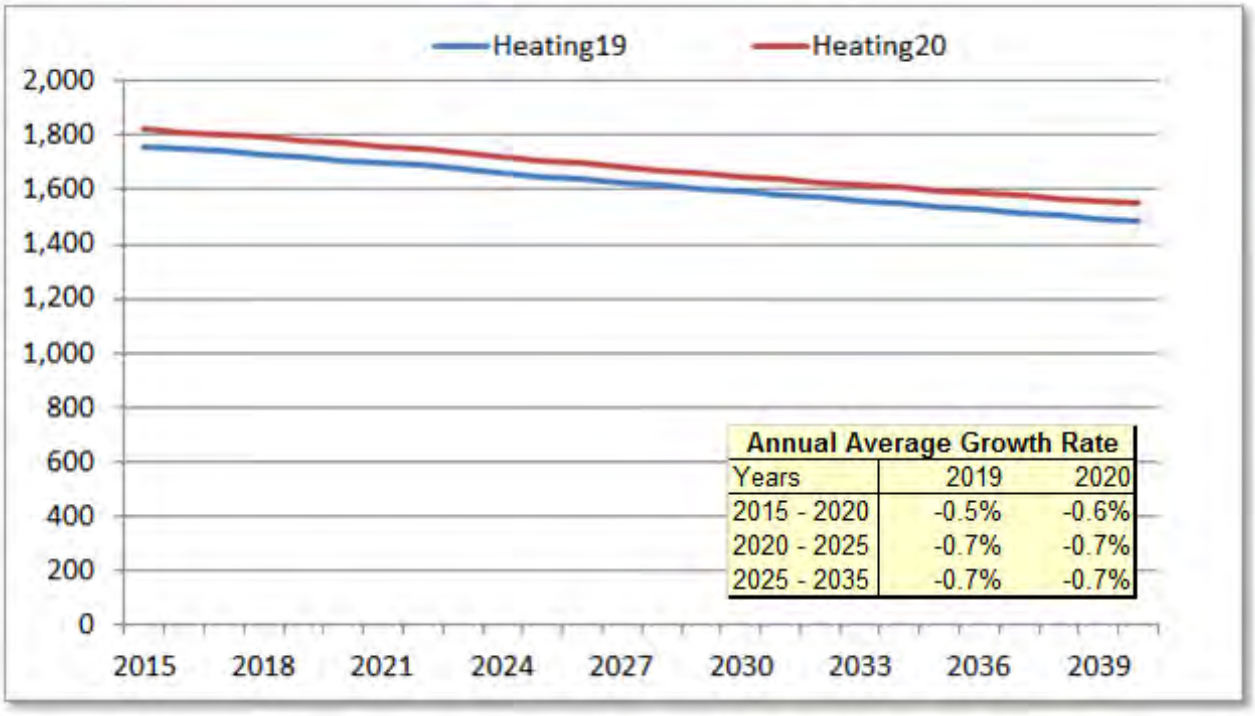


In terms of total intensity, there is little change from the 2019 forecast. Total intensity declines through 2025 and then flattens out after that point as the impact of current appliance standards begin to slow; after 2035 intensities turn slightly positive largely as a result of increasing miscellaneous loads.

Electric Heating

Electric heating includes resistant electric heat, heat pumps, and furnace fan loads. Figure 4 shows the 2019 and 2020 heating intensity forecasts.

Figure 4: U.S. Heating Intensity Projections (kWh/household)

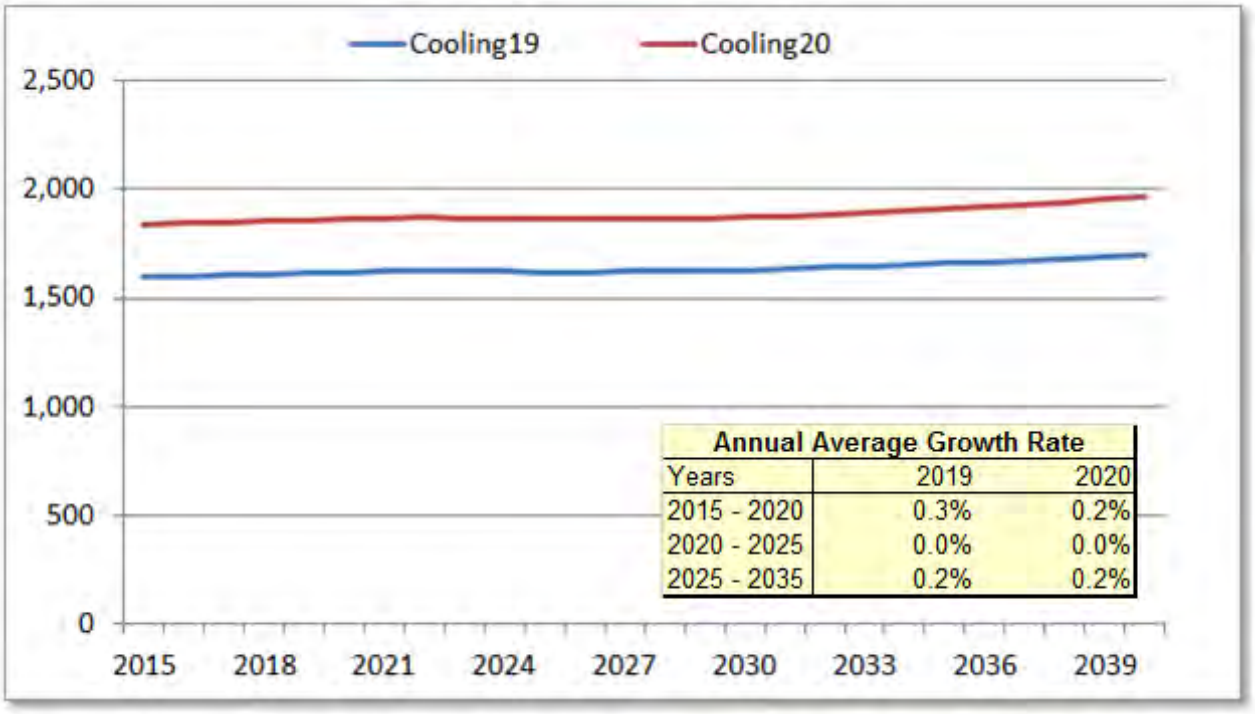


While the absolute heating intensity is slightly higher due to more energy being allocated to heat pumps, the expected intensity trend is the same with heating declining 0.7% per year. The strong decline is attributable to declining resistant heat saturation, adoption of more efficient heat pumps, and significant improvements in motor loads (including furnace fans) related to delivering heat through the house.

Cooling

Cooling includes central and room air conditioning, and air-source heat pumps. There is also a small amount of cooling load from ground-source heat pumps. Figure 5 compares the 2019 and 2020 cooling intensity projections.

Figure 5: U.S. Cooling Intensity Projections (kWh/household)

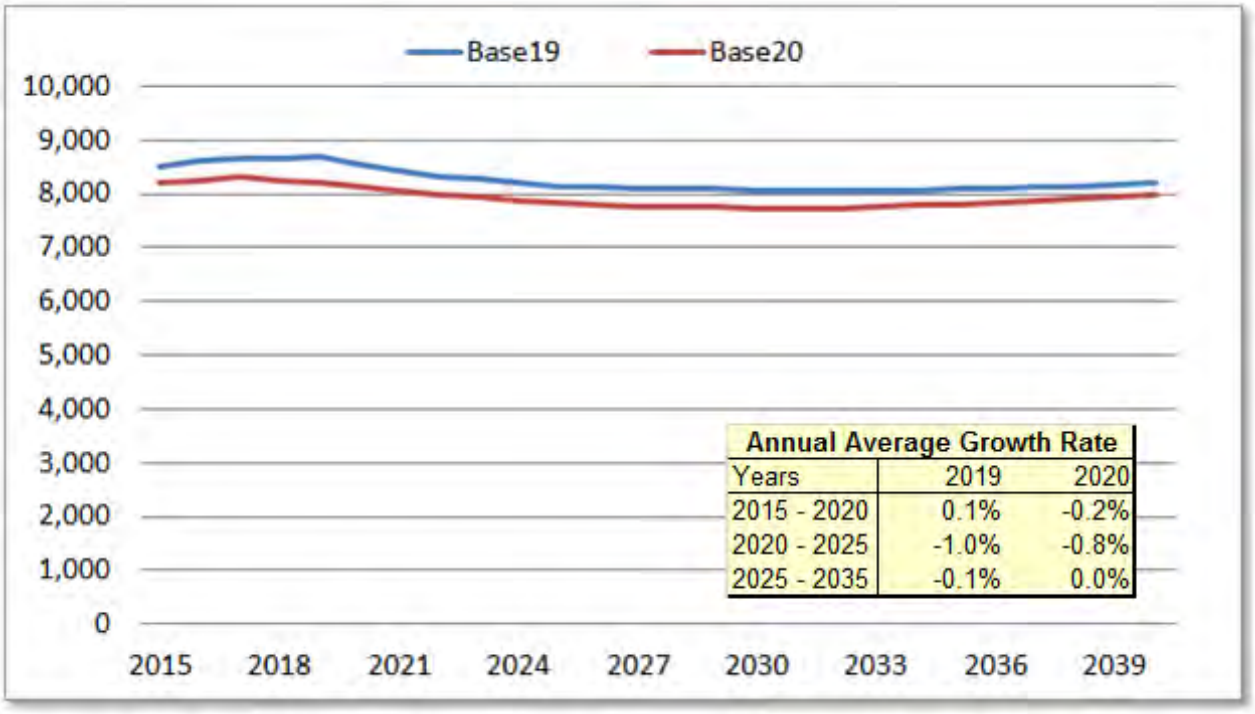


The 2020 cooling intensity are adjusted up again as a result more of the residential total energy being allocated to heat pumps. While starting magnitude is higher there is little change in total cooling intensity projections; increasing saturation and mitigated by improving efficiency. We do see some growth in intensities after 2035 as overall efficiency gains flatten out.

Electric Base Use

Electric base use (loads which are not weather sensitive) accounts for the largest share of residential electricity use with base use accounting for over 70% of residential sales. Figure 6 compares base-use intensity projections.

Figure 6: U.S Base-Use Intensity (kWh/household)



Starting 2020 base-use intensity is slightly lower than last year's forecast. This is the outcome of the re-calibration process: heating and cooling are adjusted up, base-use is adjusted down.

Base use follows a similar path to last year's forecast with relatively strong decline through 2025 and flattens out as impact of new efficiency standards slow.

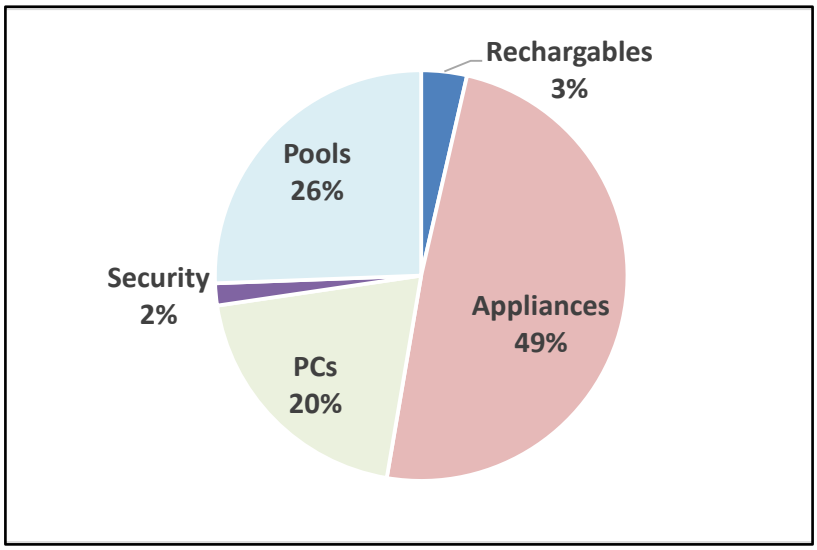
Miscellaneous

Miscellaneous electric loads accounts for over 30% of customer usage. Miscellaneous includes a number of specific appliances such a dehumidifier, microwave ovens, and ceiling fans in addition to the largest category – other electric loads. Specific miscellaneous end-uses include:

- Rechargeable Devices
- Ceiling Fans
- Coffee Makers
- Dehumidifiers
- Microwaves
- Pool Heaters
- Spas
- Wine Coolers
- Personal Computers and Related Peripherals

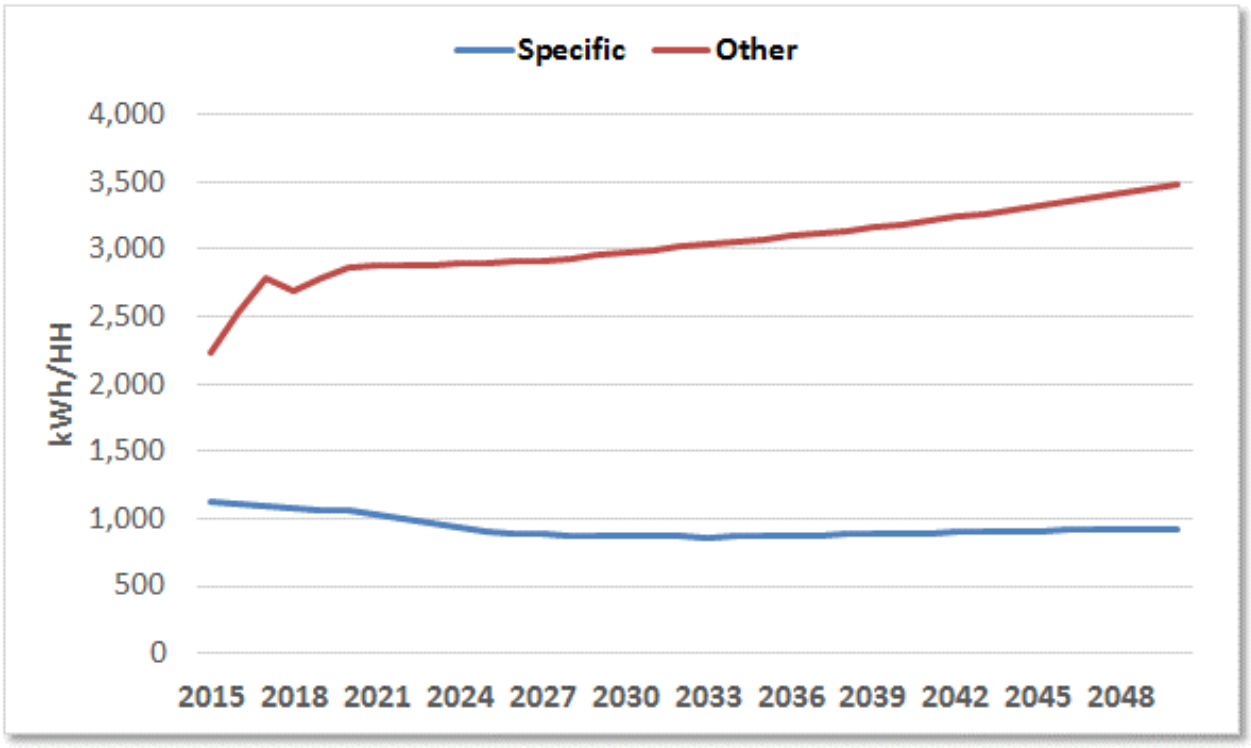
Error! Reference source not found. shows the distribution of sales across these end-uses.

Figure 7: Miscellaneous End Uses



Other electric loads account for over 70% of the miscellaneous. Figure 8 shows electric other intensity trend and that of the specific end uses identified above.

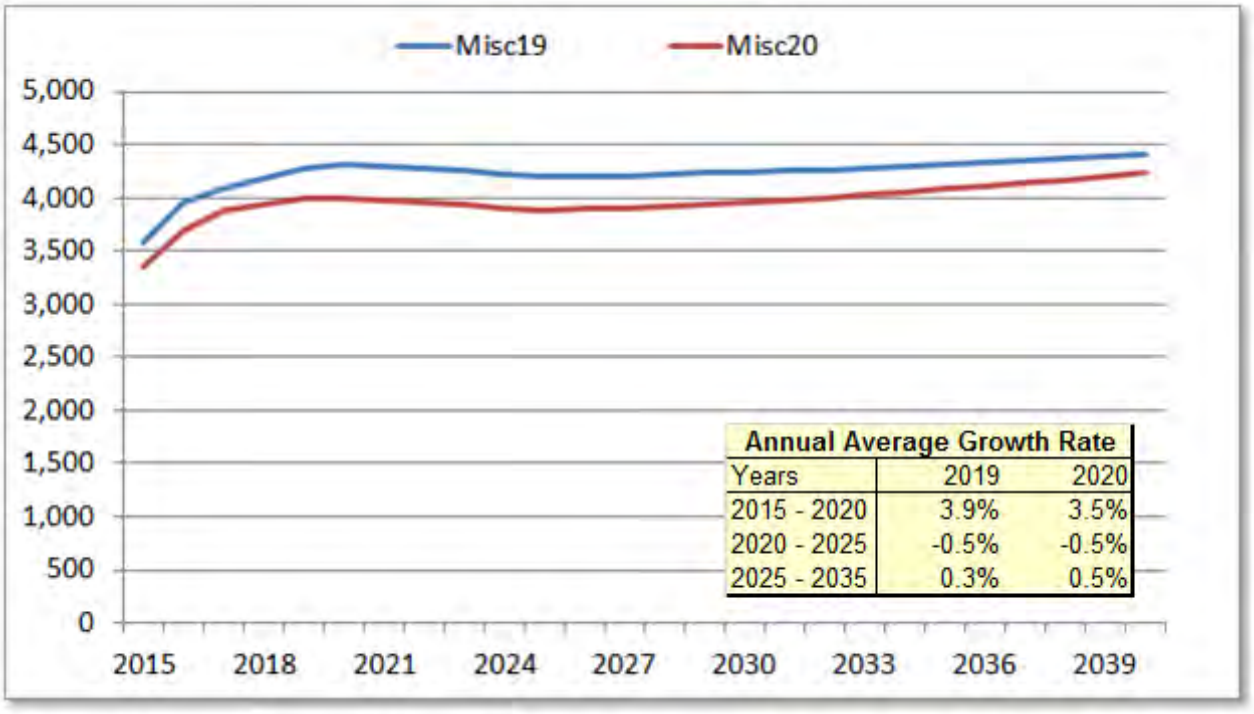
Figure 8: Miscellaneous Intensity Trends (kWh/household)



For specific end uses identified, end-use intensities have been declining as efficiency gains have outweighed new unit growth; the path is similar to most household appliances. Virtually, all the miscellaneous sales growth is in electric other load.

Figure 9 compares total miscellaneous energy intensity forecasts for the current and prior-year forecasts.

Figure 9: U.S. Miscellaneous Intensity Projections (kWh/household)



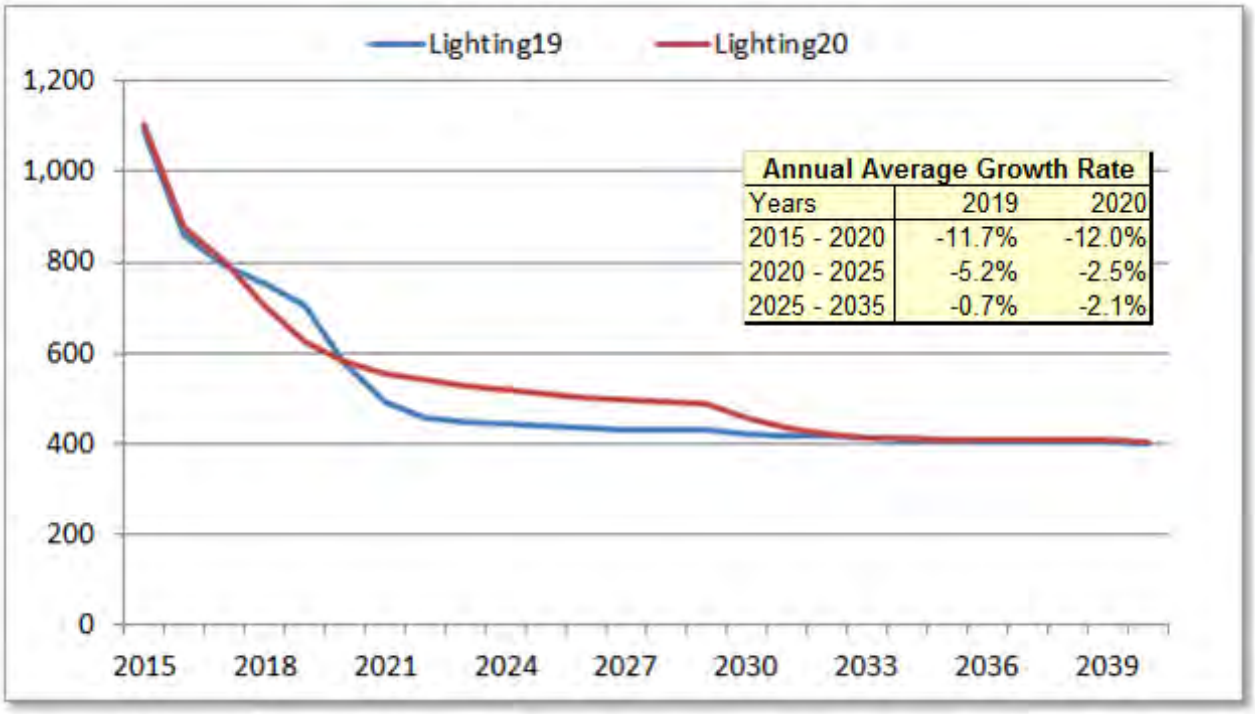
Total miscellaneous intensity is slightly lower than last year as some the sales are re-allocated to heating and cooling. The 2020 historical growth rate is slightly lower than the prior year estimates and increases at the same rate through 2025; there is slightly faster growth in the later years.

The miscellaneous curve is still rather extreme with the intensity increasing 3.5% per year through 2020 and then turning negative. As an alternative, the SAE spreadsheets include our adjusted miscellaneous curve based on a Bass-Diffusion model that smooths the miscellaneous adoption path. We are continuing work on other electric loads and will attempt to isolate them from measured miscellaneous appliance loads in the next release.

Lighting

Lighting is the one end use that changed significantly from last year. Lighting declines at a significantly slower rate over the next five years (2.5% vs. 5.2%). EIA assumes lower expenditures on utility lighting incentive programs, which increases the relative cost of LED technology in the choice model; this in turn slows the adoption of LED. After 2030, incentive assumptions return to the 2019 level. While the near-term adoption path is not as fast, intensities reach the same level. Figure 10 shows lighting intensity projections.

Figure 10: U.S. Lighting Intensity (kWh/household)



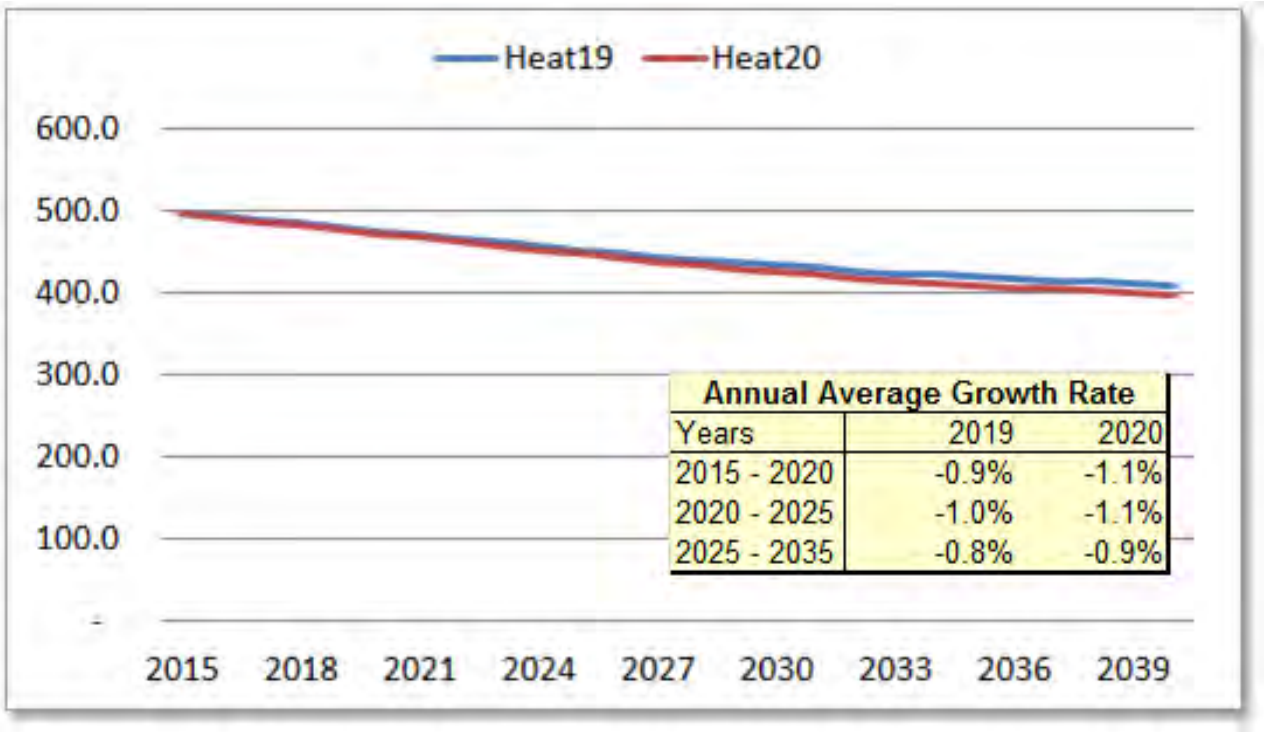
Changes from 2019 – Natural Gas

Space heating and water heating account for 95% of residential natural gas usage, with cooking and clothes dryers accounting for the remainder. At the U.S. level, roughly 50% of households have gas space and water heating. The share of homes with gas space heat has been relatively constant and is expected to increase just slightly over the next 20 years.

Gas Heating

Over the last 10 years, there have been significant improvements in heating system efficiency and housing thermal insulation; these gains are expected to continue over the next thirty years. Given a relatively flat saturation, efficiency improvements drive gas intensity lower. Gas heating intensity starts at a higher usage level as a result of the calibration into the new 2015 base year, but then declines at a faster rate driven by slightly stronger improvements in gas system efficiency and thermal shell integrity. Figure 11 compares the 2019 and 2020 gas heating intensity projections.

Figure 11: U.S. Heating Intensity (therms/household)

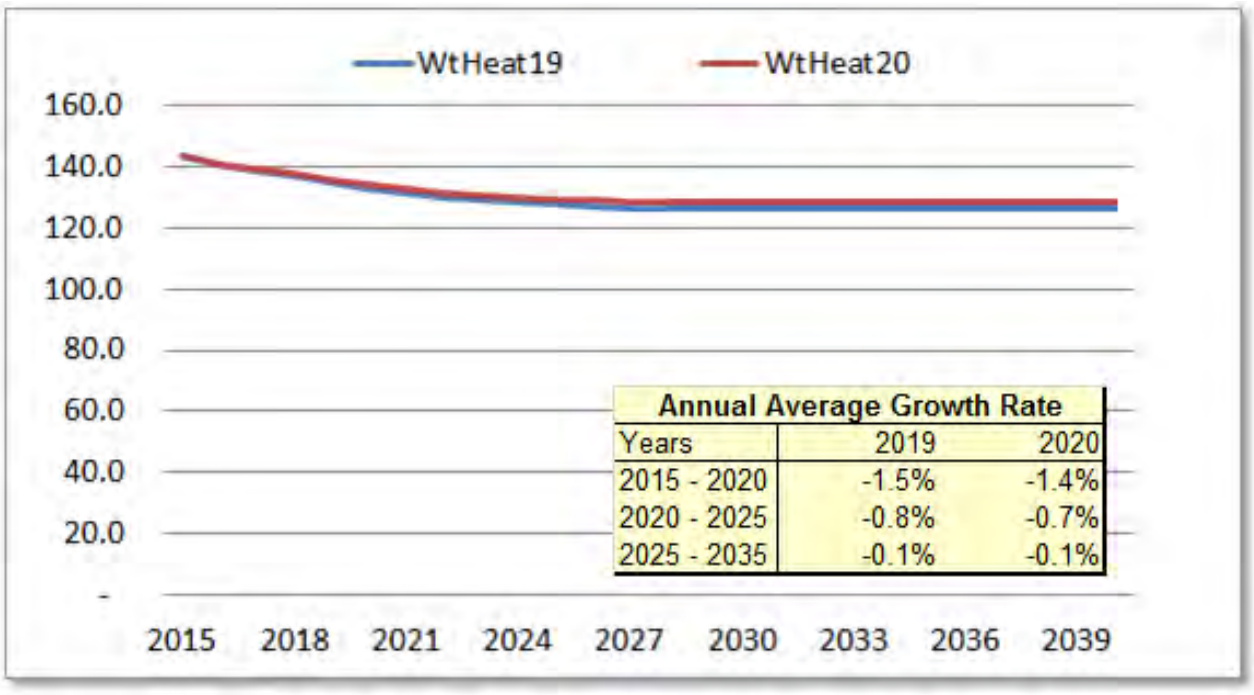


The 2020 natural gas heating projections decline slightly faster than in 2019 forecast.

Water Heating

Water heating is the second largest gas end-use, accounting for approximately 30% of residential natural gas usage. As with furnaces and gas boilers, water heaters have seen significant improvements in energy efficiency. Because efficiency has been increasing while saturation has been flat to declining, gas water heating intensity has also been declining. Figure 12 shows the 2019 and 2020 gas water heating intensity forecast.

Figure 12: U.S Gas Water Heating Intensity (therms/household)

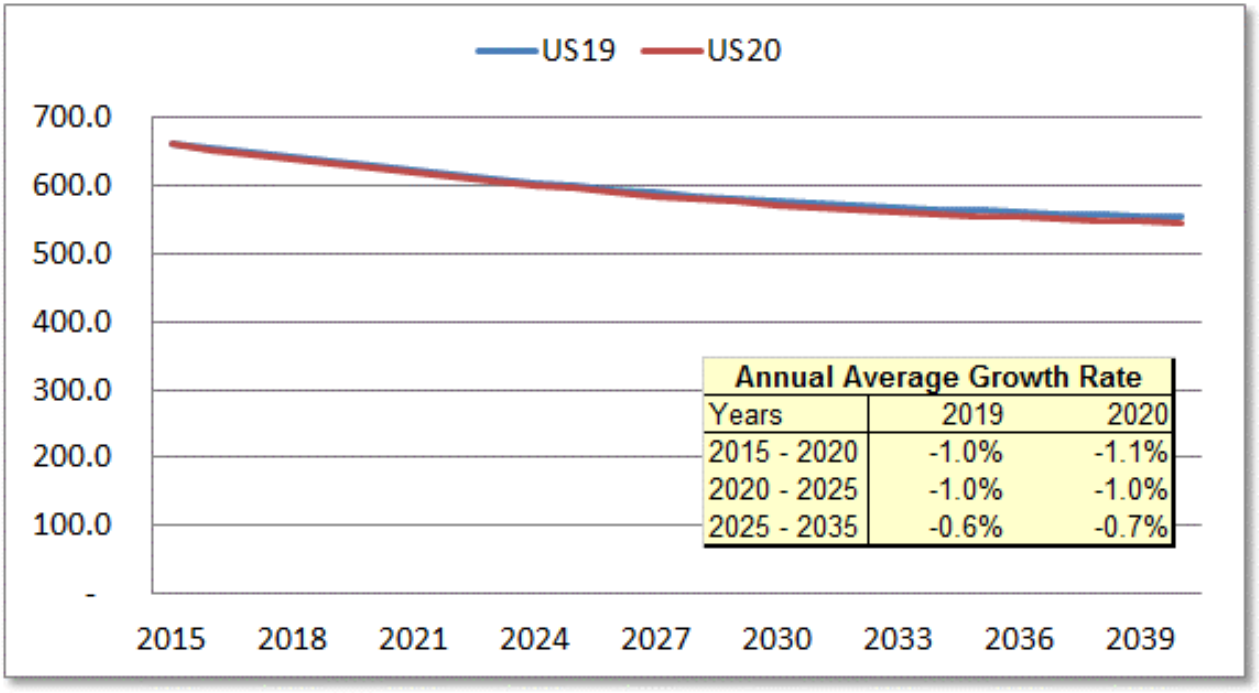


Annual Average Growth Rate		
Years	2019	2020
2015 - 2020	-1.5%	-1.4%
2020 - 2025	-0.8%	-0.7%
2025 - 2035	-0.1%	-0.1%

There is little difference between 2019 and 2020 natural gas water heating usage projections.

Gas cooking energy intensities are also projected to decline through the forecast horizon whereas dryer use is expected to increase slightly. When all gas appliances are aggregated, total residential gas intensity averages 1.0% annual decline over the next 5 years and 0.7% thereafter. This is not significantly different from the 2019 forecast. Figure 13 shows total residential gas intensity forecast.

Figure 13: U.S. Residential Gas Intensity (therms/household)



Summary

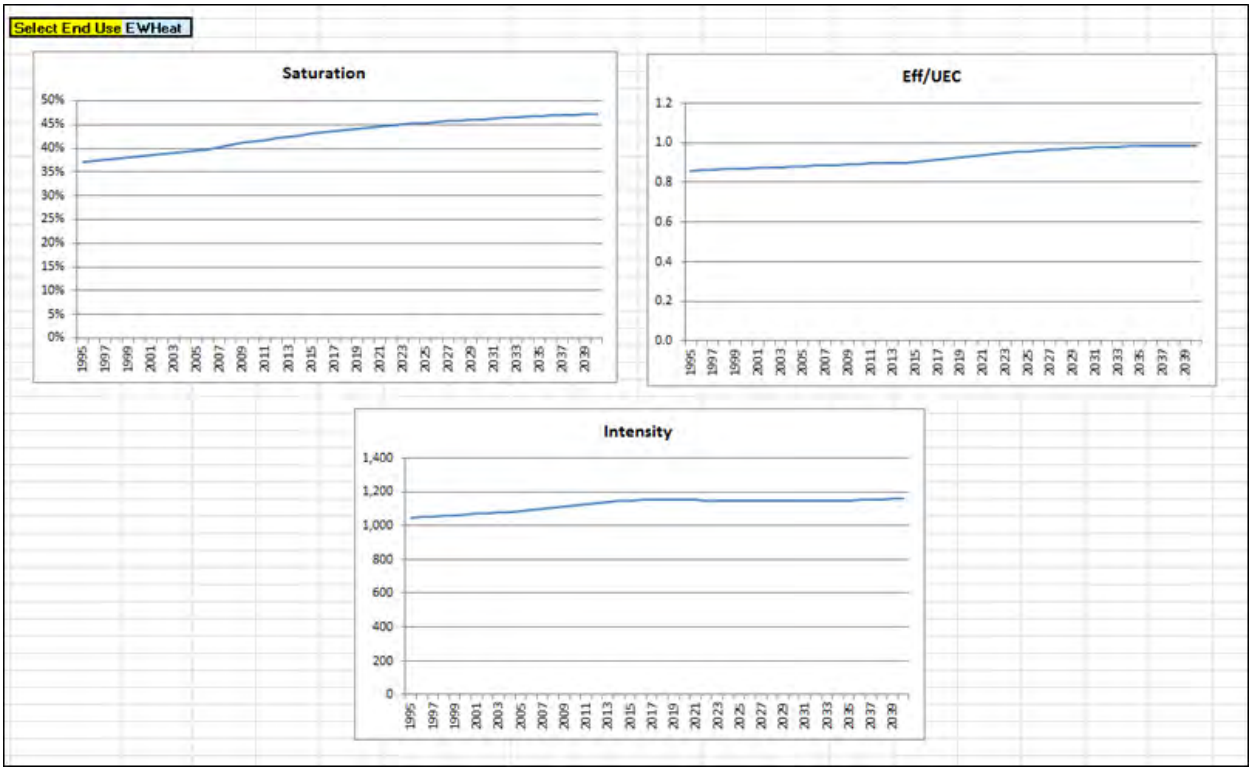
Overall, there is little change in residential electric and natural gas projections from last year's forecast. On the electric side, there is an increase in cooling and heating loads and a decrease in non-weather sensitive loads. The largest reduction in non-sensitive loads is in miscellaneous sales. We still believe that in general heating and cooling loads are underestimated and miscellaneous loads are over estimated. This year, we incorporated calibration factors to adjust for this bias. The calibration factors are based on census-level SAE models. These calibration factors can be further adjusted to reflect sales usage in your own service area.

Appendix A:
Using the SAE Spreadsheets

Updates to the SAE Spreadsheets

Itron continually works to simplify and improve the SAE spreadsheets to allow analysts to view end-use intensity trends, to understand how the indices are calculated, and to customize the SAE inputs (such as end-use saturations and starting UEC) to their own service area. Last year, Itron added a new *Graph* tab that allows the analyst to select an end-use and graph the end-use saturation, efficiency/UEC, and calculated intensity. Figure 14 shows this feature for electric water heaters.

Figure 14: SAE Spreadsheet End-Use Graph - Electric Water Heat



SAE Spreadsheet Organization

The SAE spreadsheets are organized to allow the analyst to calibrate end-use intensities to a specific utility service area organization where service area specific saturation and UEC estimates are available. The spreadsheet tabs include:

- **Definitions** provides descriptive information about end-uses, units and brief descriptions of the other worksheets.
- **EIAData** contains EIA efficiency, consumption, equipment stock, household, floor space and price projections.

- **Calibration** provides base year usage information. It can also be used to customize the spreadsheet to the user's service territory. Figure 15 shows the layout of the Calibration worksheet.

Figure 15: Calibration Worksheet

	A	B	C	D	E	F	G	H	I	J	K
1	Base Year (2009)	EFurn	HPHeat	GHPHeat	SecHt	CAC	HPCool	GHPCool	RAC	EWHeat	ECook
2	Consumption (mmBtu)	295,156,965	49,006,093	3,298,852	60,466,462	469,614,726	92,426,664	4,189,994	68,043,412	428,267,637	104,815,834
3	Equipment Stock (units)	29,626,185	9,099,838	699,168	28,312,038	61,707,187	9,099,838	699,168	49,101,682	46,763,693	68,137,629
4	UEC (kWh/unit)	2,920	1,578	1,383	626	2,230	2,977	1,756	406	2,684	451
5	Share (%)	26.0%	8.0%	0.6%	23.4%	54.2%	8.0%	0.6%	43.1%	41.1%	59.9%
6	Raw Intensity (kWh/year)	760	126	8	147	1,209	238	11	175	1,103	270
7	Model-Scaled Intensity (kWh/year)	760	126	8	147	1,209	238	11	175	1,103	270
8											
9	Observed Use Per Customer (kWh/year)	11,909									
10	Adjustment Factor	1.010									
11	Adjusted Intensity (kWh/year)	768	127	9	148	1,222	240	11	177	1,114	273
12											
13	XHeat	1.000									
14	XCool	1.000									
15	XOther	1.000									
16											

Base-year use-per-customer (kWh) for the utility service area is depicted in Row 9 and can be used to calibrate the spreadsheet to the user's service territory. To do this, substitute your weather-normalized average use for the Census Division average-use in Cell B9.

In additional to basic calibration to observed usage, in 2017 we have also added another layer of calibration to better tailor the regional data to utility-specific conditions. In order to get better starting estimates of electric usage by end use, we have utilized MetrixND models to "true up" EIA estimates to the regions. You can do this on the utility level by substituting the adjustment factors in cells B13-15 with estimated coefficients on SAE variables in your residential model. Figure 16 below provides an example.

Figure 16: Model-Based Calibration

	A	B	C	D	E	F	G	H	I	J	K
1	Base Year (2009)	EFurn	HPHeat	GHPHeat	SecHt	CAC	HPCool	GHPCool	RAC	EWHeat	ECook
2	Consumption (mmBtu)	295,156,965	49,006,093	3,298,852	60,466,462	469,614,726	92,426,664	4,189,994	68,043,412	428,267,637	104,815,834
3	Equipment Stock (units)	29,626,185	9,099,838	699,168	28,312,038	61,707,187	9,099,838	699,168	49,101,682	46,763,693	68,137,629
4	UEC (kWh/unit)	2,920	1,578	1,383	626	2,230	2,977	1,756	406	2,684	451
5	Share (%)	26.0%	8.0%	0.6%	23.4%	54.2%	8.0%	0.6%	43.1%	41.1%	59.9%
6	Raw Intensity (kWh/year)	760	126	8	147	1,209	238	11	175	1,103	270
7	Model-Scaled Intensity (kWh/year)	1,853	308	21	358	2,389	470	21	346	677	166
8											
9	Observed Use Per Customer (kWh/year)	11,909									
10	Adjustment Factor	0.999									
11	Adjusted Intensity (kWh/year)	1,852	307	21	357	2,387	470	21	346	677	166
12											
13	XHeat	2.438									
14	XCool	1.975									
15	XOther	0.614									
16											

In this case, model-based calibration adjusts heating and cooling starting year usage up based on model coefficients estimated from observed use per customer data. Other usage is adjusted downward.

Resulting end-use intensities are written to the *Intensities* tab. MetrixND project files can link to the *Intensities* tab as the source-data for the constructing of SAE model variables.

StructuralVars

This worksheet contains data about the size of homes and their building shell efficiencies. The results of the calculations on this tab are used in the development of energy intensities for heating and cooling end-uses.

Analysts can substitute local household and floor space estimates for the regional estimates to reflect local conditions in the final energy intensities. Total floor space can be modified in Column E and number of households in Column I.

Shares

The *Shares* tab contains historical saturation estimates and forecasts developed by the EIA. Data from appliance saturation surveys can be used to modify the default saturations. Depending on data availability, these changes can either shift the projections up or down (one survey) or modify the growth rate in the trends (two or more surveys).

Efficiencies

The *Efficiencies* tab provides historical and forecasted end-use efficiency. UEC estimates are used as a proxy for efficiency where specific technology efficiency data (as central air conditioner SEER) are not available. Efficiency trends can also be modified to reflect the utility service area. As a practical matter however, average efficiency for most equipment varies little between regions.

Intensities

Intensities are per-household end-use energy estimate derived from combining end-use saturation, efficiency, and starting UEC. If the user changes saturation and/or efficiency, the changes are reflected in the end-use intensity calculations.

MonthlyMults

The *MonthlyMults* tab provides seasonal multipliers for non-HVAC end-uses. This allows us to accurately gauge seasonal usage for such non weather-sensitive end-uses as water heating, refrigeration and lighting.

Graphs

The *Graphs* tab provides an interface to select an end-use and view historical and projected end-use saturation, efficiency (or UEC where an efficiency measure is not available) and resulting end-use intensity.

EV

Electric vehicle load is added to the base (other) end-use in the SAE model. Input data rows are highlighted in red and include:

- **Households.** Historical and forecasted number of households (column B)
- **EVSold.** Number of EV vehicles sold in any given year (column C)
- **EVDecay.** Number of EV vehicles removed (column D)
- **AnnualMiles.** Annual average miles driven (column G)
- **MilePerKwh.** Average vehicle efficiency (column H)

Additional columns include:

- **EVStock.** Calculated as the sum of all new purchases minus vehicle decay (column E).
- **Share.** The share of households with EVs (column F), calculated as EVStock / Households.
- **UEC.** The Unit Energy Consumption (kWh) for those households that own an EV. Calculated as the number of miles driven divided by the average vehicle miles per kWh (column I).
- **ShareUEC.** Use per household (column K), calculated by multiplying the vehicle UEC and the share of households that own an EV. The resulting annual EV energy intensity is on a kWh per household basis and can be added to the base or other use index in the SAE model.

PV

The SAE spreadsheets also include a worksheet for calculating PV (photovoltaic) energy impacts. Input data rows are highlighted in red and include:

- **Households.** Historical and forecasted Households or customers (column B)
- **PVInstalls.** Number of new PV installations (column C)
- **AvgPVSize.** Average PV kW capacity (column E)
- **PVDecayKW.** PV capacity decay in kW (column G)
- **CapacityFactor.** Capacity Factor (column I)

Additional columns include:

- **PVStockKW.** Estimated PV kW capacity (column H), calculated by summing current and all past PV installed capacity and subtracting the decay, calculated as:

	A	B	C	D	E	F	G	H	I	J	K
1	Base Year (2009)	EFurn	HPHeat	GHPHeat	SecHt	CAC	HPCool	GHPCool	RAC	EWHeat	ECook
2	Consumption (mmBtu)	295,156,965	49,006,093	3,298,852	60,466,462	469,614,726	92,426,664	4,189,994	68,043,412	428,267,637	104,815,834
3	Equipment Stock (units)	29,626,185	9,099,838	699,168	28,312,038	61,707,187	9,099,838	699,168	49,101,682	46,763,693	68,137,629
4	UEC (kWh/unit)	2,920	1,578	1,383	626	2,230	2,977	1,756	406	2,684	451
5	Share (%)	26.0%	8.0%	0.6%	23.4%	54.2%	8.0%	0.6%	43.1%	41.1%	59.9%
6	Raw Intensity (kWh/year)	760	126	8	147	1,209	238	11	175	1,103	270
7	Model-Scaled Intensity (kWh/year)	1,853	308	21	358	2,389	470	21	346	677	166
8											
9	Observed Use Per Customer (kWh/year)	11,909									
10	Adjustment Factor	0.999									
11	Adjusted Intensity (kWh/year)	1,852	307	21	357	2,387	470	21	346	677	166
12											
13	XHeat	2.438									
14	XCool	1.975									
15	XOther	0.614									
16											

- **PVEnergy.** PV MWh (column J) is derived by applying the capacity factor to the PV Capacity Stock, calculated as:

$$(PVStockKW \times 8760 \times CapacityFactor)/1000$$

- **ShareUEC.** Final PV energy intensity (column K) is derived by dividing PVEnergy by total number of households. The estimate is negative, as it represents a load reduction.

Appendix B:
Residential SAE Modeling Framework

The traditional approach to forecasting monthly sales for a customer class is to develop an econometric model that relates monthly sales to weather, seasonal variables, and economic conditions. From a forecasting perspective, econometric models are well suited to identifying historical trends and to projecting these trends into the future. In contrast, end-use models can incorporate the end-use factors driving energy use. By including end-use structure in an econometric model, the statistically adjusted end-use (SAE) modeling framework exploits the strengths of both approaches.

There are several advantages to this approach.

- The equipment efficiency and saturation trends, dwelling square footage, and thermal integrity changes embodied in the long-run end-use forecasts are introduced explicitly into the short-term monthly sales forecast. This provides a strong bridge between the two forecasts.
- By explicitly incorporating trends in equipment saturations, equipment efficiency, dwelling square footage, and thermal integrity levels, it is easier to explain changes in usage levels and changes in weather-sensitivity over time.
- Data for short-term models are often not sufficiently robust to support estimation of a full set of price, economic, and demographic effects. By bundling these factors with equipment-oriented drivers, a rich set of elasticities can be incorporated into the final model.

This section describes this approach, the associated supporting SAE spreadsheets, and the MetrixND project files that are used in the implementation. The main source of the residential SAE spreadsheets is the 2020 Annual Energy Outlook (AEO) database provided by the Energy Information Administration (EIA).

Statistically Adjusted End-Use Modeling Framework

The statistically adjusted end-use modeling framework begins by defining energy use ($USE_{y,m}$) in year (y) and month (m) as the sum of energy used by heating equipment ($Heat_{y,m}$), cooling equipment ($Cool_{y,m}$), and other equipment ($Other_{y,m}$). Formally,

$$USE_{y,m} = Heat_{y,m} + Cool_{y,m} + \text{Other}_{y,m} \quad (1)$$

Although monthly sales are measured for individual customers, the end-use components are not. Substituting estimates for the end-use elements gives the following econometric equation.

$$USE_m = a + b_1 \times XHeat_m + b_2 \times XCool_m + b_3 \times XOther_m + \varepsilon_m \quad (2)$$

$XHeat_m$, $XCool_m$, and $XOther_m$ are explanatory variables constructed from end-use information, dwelling data, weather data, and market data. As will be shown below, the equations used to construct these X-variables are simplified end-use models, and the X-variables are the estimated usage levels for each of the major end uses based on these models. The estimated model can then be thought of as a statistically adjusted end-use model, where the estimated slopes are the adjustment factors.

Constructing XHeat

As represented in the SAE spreadsheets, energy use by space heating systems depends on the following types of variables.

- Heating degree days
- Heating equipment saturation levels
- Heating equipment operating efficiencies
- Average number of days in the billing cycle for each month
- Thermal integrity and footage of homes
- Average household size, household income, and energy prices

The heating variable is represented as the product of an annual equipment index and a monthly usage multiplier. That is:

$$XHeat_{y,m} = HeatIndex_{y,m} \times HeatUse_{y,m} \quad (3)$$

Where:

- $XHeat_{y,m}$ is estimated heating energy use in year (*y*) and month (*m*)
- $HeatIndex_{y,m}$ is the monthly index of heating equipment
- $HeatUse_{y,m}$ is the monthly usage multiplier

The heating equipment index is defined as a weighted average across equipment types of equipment saturation levels normalized by operating efficiency levels. Given a set of fixed weights, the index will change over time with changes in equipment saturations (*Sat*), operating efficiencies (*Eff*), building structural index (*StructuralIndex*), and energy prices. Formally, the equipment index is defined as:

$$HeatIndex_y = StructuralIndex_y \times \sum_{Type} Weight^{Type} \times \frac{\left(Sat_y^{Type} / Eff_y^{Type}\right)}{\left(Sat_{15}^{Type} / Eff_{15}^{Type}\right)} \quad (4)$$

The *StructuralIndex* is constructed by combining the EIA's building shell efficiency index trends with surface area estimates, and then it is indexed to the 2015 value:

$$StructuralIndex_y = \frac{BuildingShellEfficiencyIndex_y \times SurfaceArea_y}{BuildingShellEfficiencyIndex_{15} \times SurfaceArea_{15}} \quad (5)$$

The *StructuralIndex* is defined on the *StructuralVars* tab of the SAE spreadsheets. Surface area is derived to account for roof and wall area of a standard dwelling based on the regional average square footage data obtained from EIA. The relationship between the square footage and surface area is constructed assuming an aspect ratio of 0.75 and an average of 25% two-story and 75% single-story. Given these assumptions, the approximate linear relationship for surface area is:

$$SurfaceArea_y = 892 + 1.44 \times Footage_y \quad (6)$$

In Equation 4, 2015 is used as a base year for normalizing the index. As a result, the ratio on the right is equal to 1.0 in 2015. In other years, it will be greater than 1.0 if equipment saturation levels are above

their 2015 level. This will be counteracted by higher efficiency levels, which will drive the index downward. The weights are defined as follows.

$$Weight^{Type} = \frac{Energy_{15}^{Type}}{HH_{15}} \times HeatShare_{15}^{Type} \quad (7)$$

In the SAE spreadsheets, these weights are referred to as Intensities and are defined on the *EIAData* tab. With these weights, the $HeatIndex$ value in 2015 will be equal to estimated annual heating intensity per household in that year. Variations from this value in other years will be proportional to saturation and efficiency variations around their base values.

For electric heating equipment, the SAE spreadsheets contain two equipment types: electric resistance furnaces/room units and electric space heating heat pumps. Examples of weights for these two equipment types for the U.S. are given in Table 1.

Table 1: Electric Space Heating Equipment Weights

Equipment Type	Weight (kWh)
Electric Resistance Furnace/Room units	916
Electric Space Heating Heat Pump	346

Data for the equipment saturation and efficiency trends are presented on the *Shares* and *Efficiencies* tabs of the SAE spreadsheets. The efficiency for electric space heating heat pumps are given in terms of Heating Seasonal Performance Factor [BTU/Wh], and the efficiencies for electric furnaces and room units are estimated as 100%, which is equivalent to 3.41 BTU/Wh.

Price Impacts. In the 2007 version of the SAE models and thereafter, the Heat Index has been extended to account for the long-run impact of electric and natural gas prices. Since the Heat Index represents changes in the stock of space heating equipment, the price impacts are modeled to play themselves out over a 10-year horizon. To introduce price effects, the Heat Index as defined by Equation 4 above is multiplied by a 10-year moving-average of electric and gas prices. The level of the price impact is guided by the long-term price elasticities:

$$HeatIndex_y = StructuralIndex_y \times \sum_{Type} Weight^{Type} \times \frac{\left(Sat_y^{Type} / Eff_y^{Type}\right)}{\left(Sat_{15}^{Type} / Eff_{15}^{Type}\right)} \times$$

$$\left(TenYearMovingAverageElectric\,\mathrm{Pr}\,ice_{y,m}\right)^{\varphi} \times \left(TenYearMovingAverageGas\,\mathrm{Pr}\,ice_{y,m}\right)^{\gamma} \quad (8)$$

Since the trends in the Structural index (the equipment saturations and efficiency levels) are provided exogenously by the EIA, the price impacts are introduced in a multiplicative form. As a result, the long-run change in the Heat Index represents a combination of adjustments to the structural integrity of new

homes, saturations in equipment and efficiency levels relative to what was contained in the base EIA long-term forecast.

Heating system usage levels are impacted on a monthly basis by several factors, including weather, household size, income levels, prices, and billing days. The estimates for space heating equipment usage levels are computed as follows:

$$HeatUse_{y,m} = \left(\frac{WgtHDD_{y,m}}{HDD_{15}}\right) \times \left(\frac{HHSize_y}{HHSize_{15}}\right)^{0.25} \times \left(\frac{Income_y}{Income_{15}}\right)^{0.20} \times \left(\frac{Elec\,Price_{y,m}}{Elec\,Price_{15,7}}\right)^{\lambda} \times \left(\frac{Gas\,Price_{y,m}}{Gas\,Price_{15,7}}\right)^{\kappa} \quad (9)$$

Where:

- $WgtHDD$ is the weighted number of heating degree days in year (y) and month (m). This is constructed as the weighted sum of the current month's HDD and the prior month's HDD. The weights are 75% on the current month and 25% on the prior month.
- HDD is the annual heating degree days for 2015
- $HHSize$ is average household size in a year (y)
- $Income$ is average real income per household in year (y)
- $ElecPrice$ is the average real price of electricity in month (m) and year (y)
- $GasPrice$ is the average real price of natural gas in month (m) and year (y)

By construction, the $HeatUse_{y,m}$ variable has an annual sum that is close to 1.0 in the base year (2015). The first two terms, which involve billing days and heating degree days, serve to allocate annual values to months of the year. The remaining terms average to 1.0 in the base year. In other years, the values will reflect changes in the economic drivers, as transformed through the end-use elasticity parameters. The price impacts captured by the Usage equation represent short-term price response.

Constructing XCool

The explanatory variable for cooling loads is constructed in a similar manner. The amount of energy used by cooling systems depends on the following types of variables.

- Cooling degree days
- Cooling equipment saturation levels
- Cooling equipment operating efficiencies
- Average number of days in the billing cycle for each month
- Thermal integrity and footage of homes
- Average household size, household income, and energy prices

The cooling variable is represented as the product of an equipment-based index and monthly usage multiplier. That is,

$$XCool_{y,m} = CoolIndex_y \times CoolUse_{y,m} \quad (10)$$

Where

- $XCool_{y,m}$ is estimated cooling energy use in year (y) and month (m)
- $CoolIndex_y$ is an index of cooling equipment
- $CoolUse_{y,m}$ is the monthly usage multiplier

As with heating, the cooling equipment index is defined as a weighted average across equipment types of equipment saturation levels normalized by operating efficiency levels. Formally, the cooling equipment index is defined as:

$$CoolIndex_y = StructuralIndex_y \times \sum_{Type} Weight^{Type} \times \frac{\left({Sat_y^{Type}} / {Eff_y^{Type}} \right)}{\left({Sat_{15}^{Type}} / {Eff_{15}^{Type}} \right)} \quad (11)$$

Data values in 2015 are used as a base year for normalizing the index, and the ratio on the right is equal to 1.0 in 2015. In other years, it will be greater than 1.0 if equipment saturation levels are above their 2015 level. This will be counteracted by higher efficiency levels, which will drive the index downward. The weights are defined as follows.

$$Weight^{Type} = \frac{Energy_{15}^{Type}}{HH_{15}} \times CoolShare_{15}^{Type} \quad (12)$$

In the SAE spreadsheets, these weights are referred to as Intensities and are defined on the *EIAData* tab. With these weights, the $CoolIndex$ value in 2015 will be equal to estimated annual cooling intensity per household in that year. Variations from this value in other years will be proportional to saturation and efficiency variations around their base values.

For cooling equipment, the SAE spreadsheets contain three equipment types: central air conditioning, space cooling heat pump, and room air conditioning. Examples of weights for these three equipment types for the U.S. are given in Table 2.

Table 2: Space Cooling Equipment Weights

Equipment Type	Weight (kWh)
Central Air Conditioning	1,012
Space Cooling Heat Pump	306
Room Air Conditioning	277

The equipment saturation and efficiency trends data are presented on the *Shares* and *Efficiencies* tabs of the SAE spreadsheets. The efficiency for space cooling heat pumps and central air conditioning (A/C) units are given in terms of Seasonal Energy Efficiency Ratio [BTU/Wh], and room A/C units efficiencies are given in terms of Energy Efficiency Ratio [BTU/Wh].

Price Impacts. In the 2007 SAE models and thereafter, the Cool Index has been extended to account for changes in electric and natural gas prices. Since the Cool Index represents changes in the stock of space heating equipment, it is anticipated that the impact of prices will be long-term in nature. The Cool Index

as defined Equation 11 above is then multiplied by a 10-year moving average of electric and gas prices. The level of the price impact is guided by the long-term price elasticities.

$$CoolIndex_y = StructuralIndex_y \times \sum_{Type} Weight^{Type} \times \frac{\left(Sat_y^{Type} / Eff_y^{Type}\right)}{\left(Sat_{15}^{Type} / Eff_{15}^{Type}\right)} \times$$

$$\left(TenYearMovingAverageElectric\,Price_{y,m}\right)^{\varphi} \times \left(TenYearMovingAverageGas\,Price_{y,m}\right)^{\gamma} \quad (13)$$

Since the trends in the Structural index, equipment saturations and efficiency levels are provided exogenously by the EIA, price impacts are introduced in a multiplicative form. The long-run change in the Cool Index represents a combination of adjustments to the structural integrity of new homes, saturations in equipment and efficiency levels. Without a detailed end-use model, it is not possible to isolate the price impact on any one of these concepts.

Cooling system usage levels are impacted on a monthly basis by several factors, including weather, household size, income levels, and prices. The estimates of cooling equipment usage levels are computed as follows:

$$CoolUse_{y,m} = \left(\frac{WgtCDD_{y,m}}{CDD_{15}}\right) \times \left(\frac{HHSize_y}{HHSize_{15}}\right)^{0.25} \times \left(\frac{Income_y}{Income_{15}}\right)^{0.20} \times \left(\frac{Elec\,Price_{y,m}}{Elec\,Price_{15}}\right)^{\lambda} \times \left(\frac{Gas\,Price_{y,m}}{Gas\,Price_{15}}\right)^{\kappa} \quad (14)$$

Where:

- $WgtCDD$ is the weighted number of cooling degree days in year (y) and month (m). This is constructed as the weighted sum of the current month's CDD and the prior month's CDD. The weights are 75% on the current month and 25% on the prior month.
- CDD is the annual cooling degree days for 2015.

By construction, the $CoolUse$ variable has an annual sum that is close to 1.0 in the base year (2015). The first two terms, which involve billing days and cooling degree days, serve to allocate annual values to months of the year. The remaining terms average to 1.0 in the base year. In other years, the values will change to reflect changes in the economic driver changes.

Constructing XOther

Monthly estimates of non-weather sensitive sales can be derived in a similar fashion to space heating and cooling. Based on end-use concepts, other sales are driven by:

- Appliance and equipment saturation levels
- Appliance efficiency levels
- Average number of days in the billing cycle for each month
- Average household size, real income, and real prices

The explanatory variable for other uses is defined as follows:

$$XOther_{y,m} = OtherEqpIndex_{y,m} \times OtherUse_{y,m} \quad (15)$$

The first term on the right-hand side of this expression ($OtherEqpIndex_y$) embodies information about appliance saturation and efficiency levels and monthly usage multipliers. The second term ($OtherUse$) captures the impact of changes in prices, income, household size, and number of billing-days on appliance utilization.

End-use indices are constructed in the SAE models. A separate end-use index is constructed for each end-use equipment type using the following function form.

$$ApplianceIndex_{y,m} = Weight^{Type} \times \frac{\left(Sat_y^{Type} \Big/ \frac{1}{UEC_y^{Type}} \right)}{\left(Sat_{15}^{Type} \Big/ \frac{1}{UEC_{15}^{Type}} \right)} \times MoMult_m^{Type} \times$$

$$(TenYearMovingAverageElectric\,Pr\,i\,ce)^{\lambda} \times$$

$$(TenYearMovingAverageGas\,Pr\,i\,ce)^{\kappa} \quad (16)$$

Where:

- $Weight$ is the weight for each appliance type
- Sat represents the fraction of households, who own an appliance type
- $MoMult_m$ is a monthly multiplier for the appliance type in month (m)
- Eff is the average operating efficiency the appliance
- UEC is the unit energy consumption for appliances

This index combines information about trends in saturation levels and efficiency levels for the main appliance categories with monthly multipliers for lighting, water heating, and refrigeration.

The appliance saturation and efficiency trends data are presented on the Shares and Efficiencies tabs of the SAE spreadsheets.

Further monthly variation is introduced by multiplying by usage factors that cut across all end uses, constructed as follows:

$$ApplianceUse_{y,m} = \left(\frac{BDays_{y,m}}{30.44}\right) \times \left(\frac{HHSize_y}{HHSize_{15}}\right)^{0.46} \times \left(\frac{Income_y}{Income_{15}}\right)^{0.10} \times$$
$$\left(\frac{Elec\,Pr\,ice_{y,m}}{Elec\,Pr\,ice_{15}}\right)^{\varphi} \times \left(\frac{Gas\,Pr\,ice_{y,m}}{Gas\,Pr\,ice_{15}}\right)^{\lambda} \quad (17)$$

The index for other uses is derived then by summing across the appliances:

$$OtherEqpIndex_{y,m} = \sum_k ApplianceIndex_{y,m} \times ApplianceUse_{y,m} \quad (18)$$

Supporting Spreadsheets and MetrixND Project Files

The SAE approach described above has been implemented for each of the nine Census Divisions. A mapping of states to Census Divisions is presented in Figure 17. This section describes the contents of each file and a procedure for customizing the files for specific utility data. A total of 18 files are provided. These files are listed in Table 3 and are now in xlsx Excel file format.

Figure 17: Mapping of States to Census Divisions

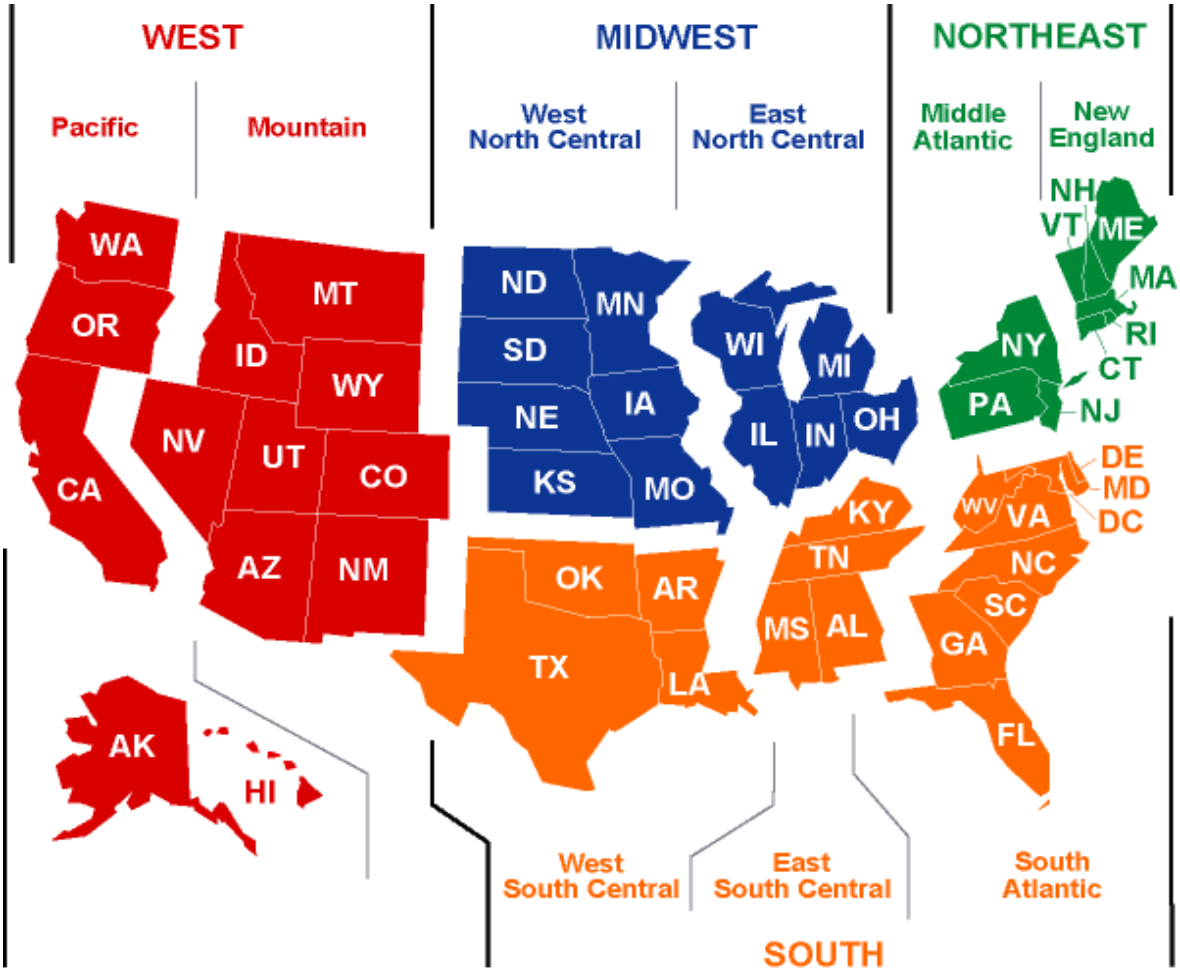


Table 3: List of SAE Files

Spreadsheet	MetrixND Project File
NewEngland.xlsx	SAE_NewEngland.ndm
MiddleAtlantic.xlsx	SAE_MiddleAtlantic.ndm
EastNorthCentral.xlsx	SAE_EastNorthCentral.ndm
WestNorthCentral.xlsx	SAE_WestNorthCentral.ndm
SouthAtlantic.xlsx	SAE_SouthAltantic.ndm
EastSouthCentral.xlsx	SAE_EastSouthCentral.ndm
WestSouthCentral.xlsx	SAE_WestSouthCentral.ndm
Mountain.xlsx	SAE_Mountain.ndm
Pacific.xlsx	SAE_Pacific.ndm

As defaults, the SAE spreadsheets include regional data, but utility data can be entered to generate the *Heat*, *Cool*, and *Other* equipment indices used in the SAE approach. The MetrixND project files link to the data in these spreadsheets. These project files calculate the end-use Usage variables are constructed and the estimated SAE models.

Each of the nine SAE spreadsheets contains the following tabs:

- **Definitions** contains equipment, end use, worksheet, and Census Division definitions.
- **Intensities** calculates the annual equipment indices.
- **Shares** contains historical and forecasted equipment shares. The default forecasted values are provided by the EIA. The raw EIA projections are provided on the *EIAData* tab.
- **Efficiencies** contains historical and forecasted equipment efficiency trends. The forecasted values are based on projections provided by the EIA. The raw EIA projections are provided on the *EIAData* tab.
- **StructuralVars** contains historical and forecasted square footage, number of households, building shell efficiency index, and calculation of structural variable. The forecasted values are based on projections provided by the EIA.
- **Calibration** contains calculations of the base year Intensity values used to weight the equipment indices.
- **EIAData** contains the raw forecasted data provided by the EIA.
- **MonthlyMults** contains monthly multipliers that are used to spread the annual equipment indices across the months.
- **EV** contains a worksheet for incorporating electric vehicle (EV) impacts.
- **PV** contains a worksheet for incorporating photovoltaic battery (PV) impacts.

The MetrixND Project files are linked to the A*nnualIndices*, *ShareUEC*, and *MonthlyMults* tabs in the spreadsheets. Sales, economic, price and weather information for the Census Division is provided in the linkless data table *UtilityData*. In this way, utility specific data and the equipment indices are brought into the project file. The MetrixND project files contain the objects described below.

Parameter Tables

- **Elas.** This parameter table includes the values of the elasticities used to calculate the Usage variables for each end-use. There are five types of elasticities included on this table.
    - Economic variable elasticities
    - Short-term own price elasticities
    - Short-term cross price elasticities
    - Long-term own price elasticities
    - Long-term cross price elasticities

The short-term price elasticities drive the end-use usage equations. The long-term price elasticities drive the Heat, Cool and other appliance indices. The combined price impact is an aggregation of the short and long-term price elasticities. As such, the long-term price elasticities are input as incremental price impact. That is, the long-term price elasticity is the difference between the overall price impact and the short-term price elasticity.

Data Tables

- **AnnualEquipmentIndices** links to the *AnnualIndices* tab for heating and cooling indices, and *ShareUEC* tab for water heating, lighting, and appliances in the SAE spreadsheet.
- **UtilityData** is a linkless data table that contains sales, price, economic and weather data specific to a given Census Division.
- **MonthlyMults** links to the corresponding tab in the SAE spreadsheet.

Transformation Tables

- **EconTrans** computes the average usage, and household size, household income, and price indices used in the usage equations.
- **WeatherTrans** computes the HDD and CDD indices used in the usage equations.
- **ResidentialVars** computes the *Heat*, *Cool* and *Other Usage* variables, as well as the *XHeat*, *XCool* and *XOther* variables that are used in the regression model.
- **BinaryVars** computes the calendar binary variables that could be required in the regression model.
- **AnnualFcst** computes the annual historical and forecast sales and annual change in sales.
- **EndUseFcst** computes the monthly sales forecasts by end uses.

Models

- **ResModel** is the Statistically Adjusted End-Use Model.

Steps to Customize the Files for Your Service Territory

The files that are distributed along with this document contain regional data. If you have more accurate data for your service territory, you are encouraged to tailor the spreadsheets with that information. This section describes the steps needed to customize the files.

Minimum Customization

- Save the MetrixND project file and the spreadsheet into the same folder
- Select the spreadsheet and MetrixND project file from the appropriate Census Division
- Open the spreadsheet and navigate to the *Calibration* tab
- In cell "B9", replace base year Census Division use-per-customer with observed use-per-customer for your service territory
- Save the spreadsheet and open the MetrixND project file
- Click on the *Update All Links* button on the *Menu* bar
- Review the model results

Further Customization of Starting Usage Levels

In addition to the minimum steps listed above, you can also utilize model-based calibration process described previously to further fine-tune starting year usage estimates to your service territory.

Customizing the End-use Share Paths

You can also install your own share history and forecasts. To do this, navigate to the *Share* tab in the spreadsheet and paste in the values for your region. Make sure that base year shares on the *Calibration* tab reflect changes on the *Shares* tab.

Customizing the End-use Efficiency Paths

Finally, you can override the end-use efficiency paths that are contained on the *Efficiencies* tab of the spreadsheet.

Commercial Statistically Adjusted End-Use (SAE) Spreadsheets – 2020 AEO Update

The 2020 Commercial Statistically Adjusted End-Use (SAE) spreadsheets and models have been updated to reflect the Energy Information Administration's (EIA) 2020 Annual Energy Outlook (AEO). All comparisons within this document compare the 2020 forecast with the 2019 forecast unless stated otherwise. Elements that have been updated include:

- End-use energy intensity projections
- End-use efficiency projections
- Floor stock projections
- Census Division commercial SAE project files (MetrixND)
- Revised historical saturations and efficiencies

The 2020 Commercial Statistically Adjusted End-Use (SAE) spreadsheets and the Energy Information Administration's (EIA) 2020 Annual Energy Outlook (AEO) do not include any potential impact due to the COVID-19 pandemic.

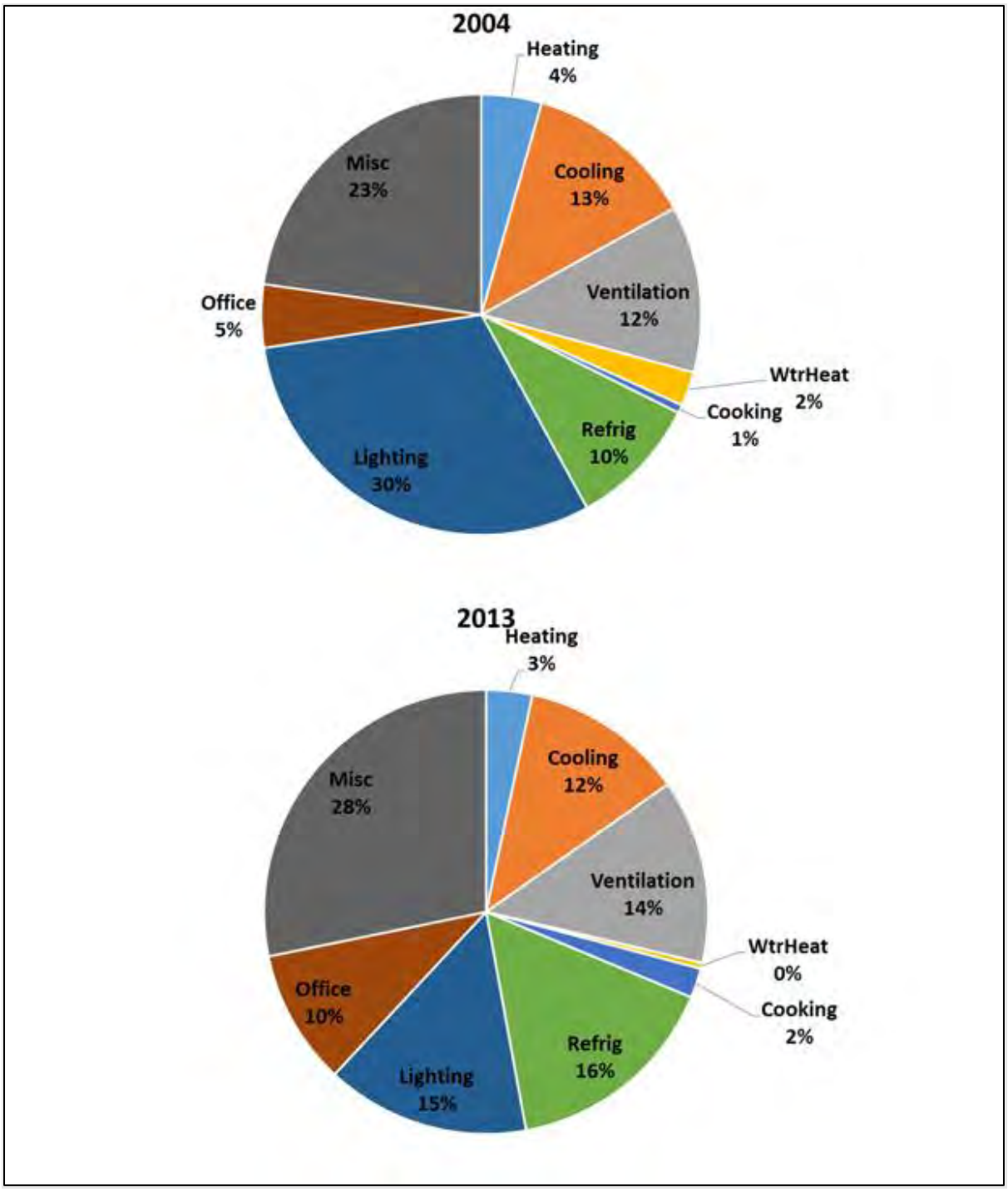
Each year, EIA develops a long-term electric and gas forecast for the commercial sector based on an end-use model, which is a component of the National Energy Modeling System (NEMS). EIA develops forecasts for 11 commercial building types, 9 electric end-uses, and 5 natural gas end-uses. The largest electric end-uses include lighting, cooling, ventilation, refrigeration, and miscellaneous use. On the gas, heating is, by far, the largest end-use, followed by water heating, and cooking.

End-use intensities are key inputs in constructing commercial SAE model variables. End-use intensities are measured on a kWh per square foot basis and natural gas end-uses are on a therms per square foot basis. Other than miscellaneous use, intensities have been declining over the last 10 years and are expected to continue to decline over the next 20 years. The decline in energy intensities are largely driven by end-use efficiency improvements. Factors driving efficiency improvements include new building and end-use standards, the availability of more efficient technology options, declining costs for high efficient technology, and federal, state, and utility programs that encourage and subsidize the adoption of more efficient technology options and building shell improvements.

2012 CBECS Update

Starting in 2017, the AEO forecast has been based on the 2012 Commercial Buildings Energy Consumption Survey (CBECS). The forecast base year has been changed from 2004 to 2013. As a result, the composition of commercial building square footage as well as end-use energy consumption has changed. The largest change has been in lighting. In 2004, lighting accounted for almost a third of total usage, by 2013 that number dropped to 15%. Lighting intensity continues to decline through the forecast period with the increased adoption of LED lighting. Figure 1 compares the distribution of end-use consumption between 2004 and 2013.

Figure 1: Base Year Electric End-Use Distribution Comparison



Where lighting has declined from 30% to 15%, the miscellaneous category has increased to from 21% to 28%. Refrigeration also saw a large increase with refrigeration now representing 16% vs. 10% in 2004. The share of electricity used in office equipment increased from 5% in 2004 to 10% in 2013.

Electric Forecast Updates

End-use energy intensity projections are based on end-use efficiency and commercial equipment saturation. Changes in equipment stock are driven by assumptions about available technology, associated costs, energy prices, and economic conditions. Commercial electric intensities are calculated for the primary end-uses, including:

- Heating
- Cooling
- Ventilation
- Water Heating
- Cooking
- Refrigeration
- Lighting
- Office Equipment (PCs)
- Miscellaneous

Energy intensities indices provided in the SAE spreadsheets are derived from the AEO commercial forecast database. End-use intensity projections are calculated for 11 building types within 9 Census Divisions. The energy intensity (EI) is derived by dividing end-use energy consumption by square footage projections:

$$EI_{bet} = {Energy_{bet}}/{sqft_{bt}}$$

Where:

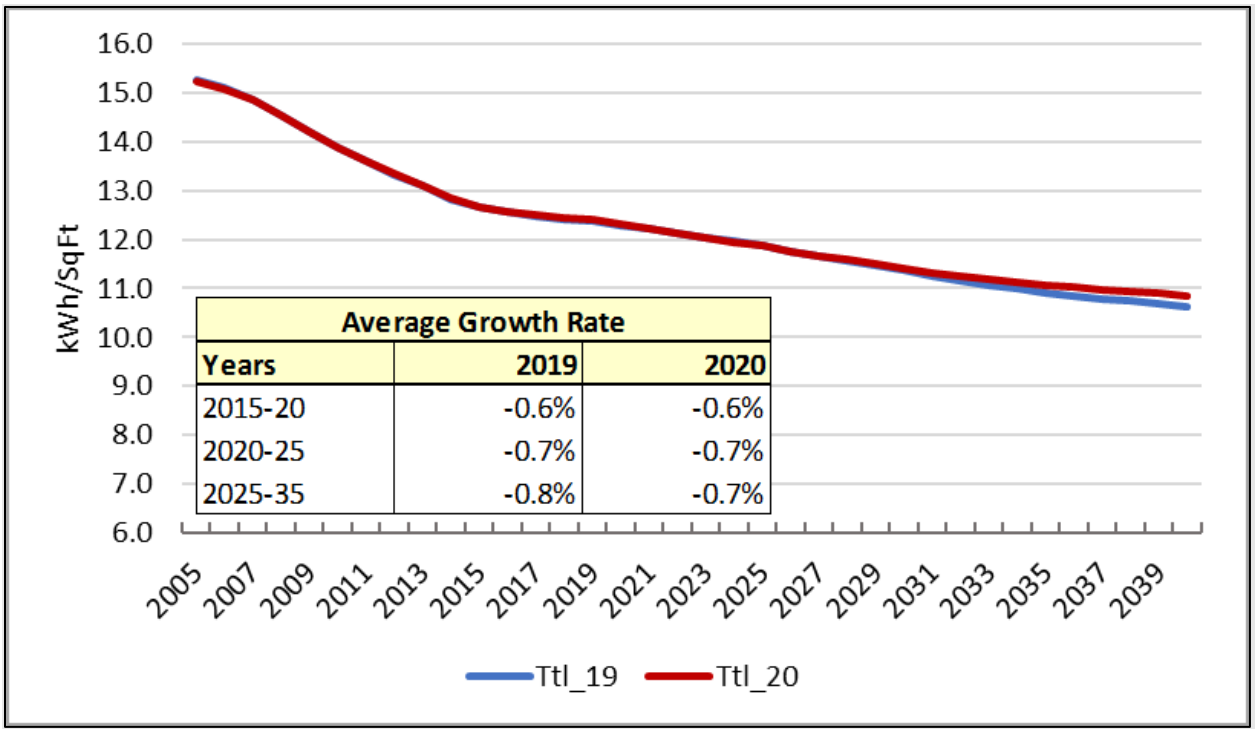
- $Energybet$ = Energy consumption for end-use e, building type *b*, year *t*
- $Sqftbt$ = Square footage for building type *b* in year *t*

Total end-use energy intensities (across building types) are calculated as a weighted average of the building type intensities where the weights are based on building type square footage:

$$EI_{et} = \sum_b EI_{bet} \times \left({sqft_{bt}}/{\sum_b sqft_{bt}}\right)$$

In the current forecast, EIA projects that electric intensity will decline 0.7% annually between 2020 and 2025, this is unchanged from the decline projected in the AEO 2019 forecast. In the long-term the current forecast declines slightly slower than the prior forecast at 0.7% vs 0.8%. Figure 1 compares total commercial electric intensity projections.

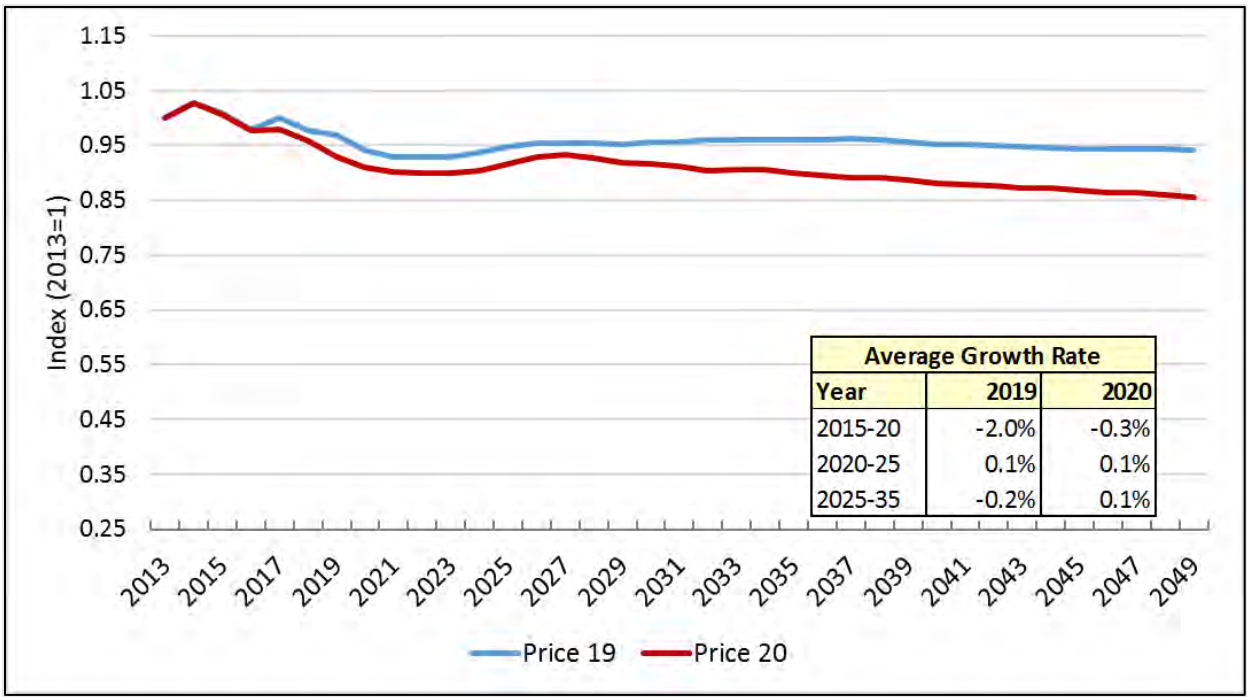
Figure 1: Total Commercial Building Electricity Intensity (kWh/SqFt)



Average Growth Rate		
Years	2019	2020
2015-20	-0.6%	-0.6%
2020-25	-0.7%	-0.7%
2025-35	-0.8%	-0.7%

In addition to technology options and equipment costs, energy prices are also a key factor in driving equipment efficiency choices and utilization. There have been revisions to the historical and near-term price projections. The 2020 AEO prices forecast follows a similar path, albeit lower, to the 2019 AEO through 2027. After which point the current forecast projects prices to decline whereas the prior forecast held prices constant. Declining electricity prices are tied to lower natural gas prices used in electricity generation. Figure 3 compares AEO 2019 and 2020 commercial price projections.

Figure 2: Commercial Electric Prices (real cents per kWh)

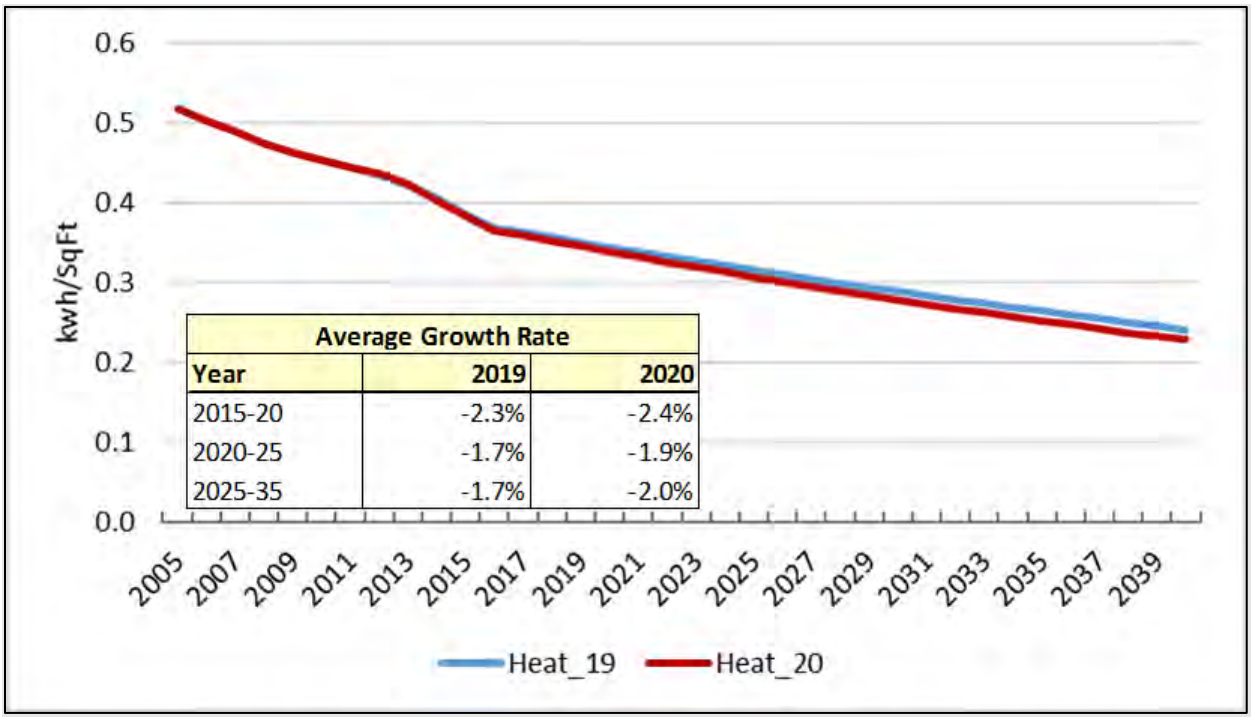


Average Growth Rate		
Year	2019	2020
2015-20	-2.0%	-0.3%
2020-25	0.1%	0.1%
2025-35	-0.2%	0.1%

Electric Heating

Although electric heating is a relatively small end-use, heating intensity projections contribute to the overall decline in commercial building usage. Electric heating intensity declines on 2.0% per year through the forecast. Heating intensity declines at a slower rate than the prior forecast as a result of increasing heating saturations. Figure 4 compares the 2019 and 2020 heating intensity forecasts.

Figure 3: Electric Heating Intensity (kWh/SqFt)

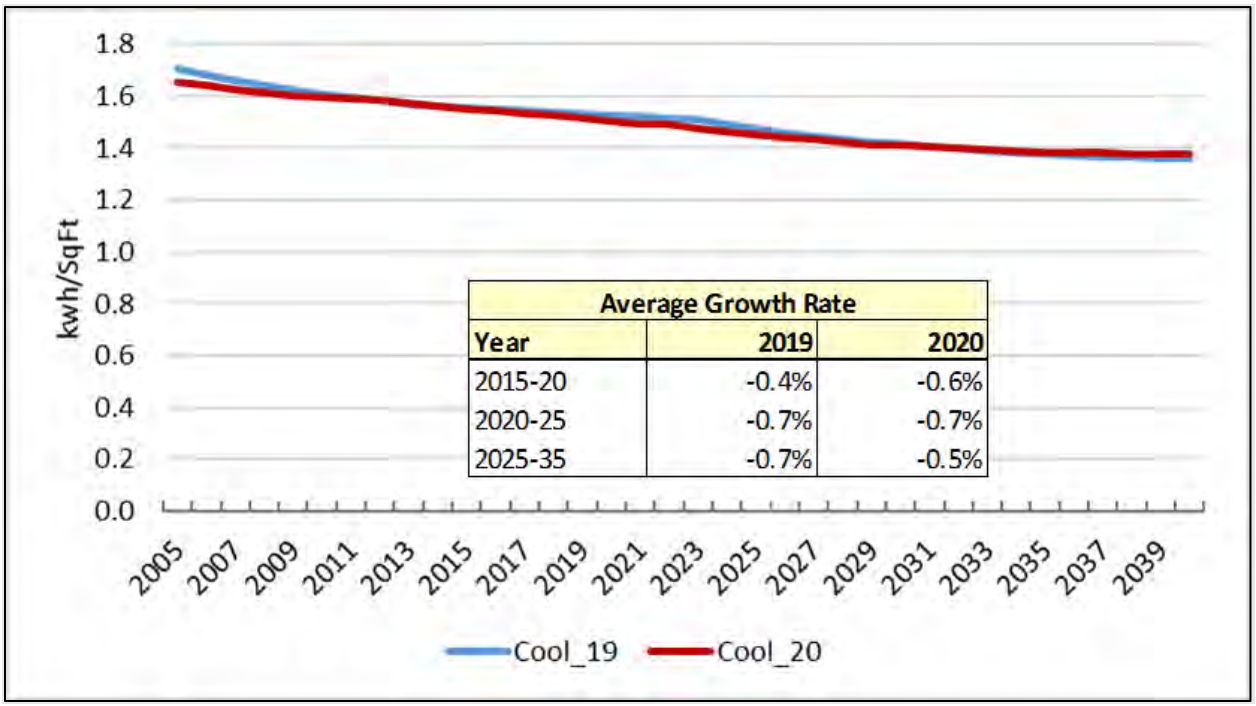


Average Growth Rate		
Year	2019	2020
2015-20	-2.3%	-2.4%
2020-25	-1.7%	-1.9%
2025-35	-1.7%	-2.0%

Cooling

Near-term Cooling intensities are largely unchanged from the prior forecast, long-term intensity declines at a slightly slower rate. Figure 5 compares AEO 2019 and AEO 2020 cooling intensity projections.

Figure 4: Cooling Intensity (kWh/SqFt)

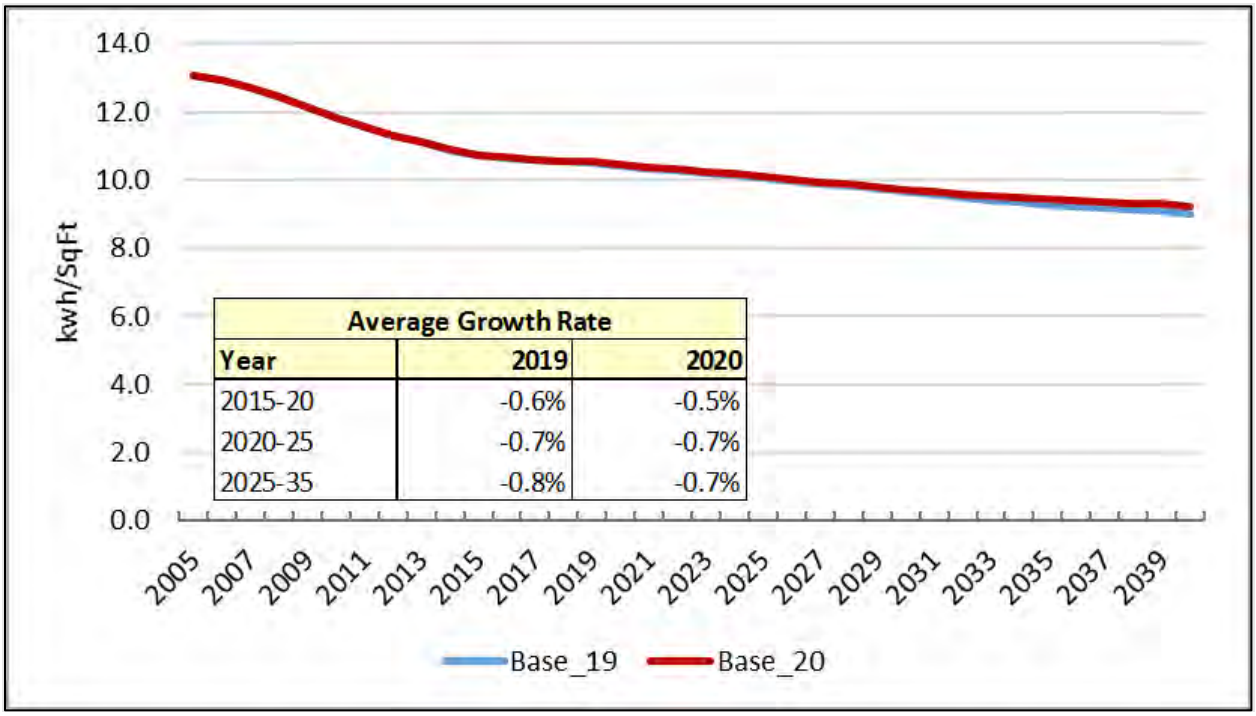


Average Growth Rate		
Year	2019	2020
2015-20	-0.4%	-0.6%
2020-25	-0.7%	-0.7%
2025-35	-0.7%	-0.5%

Electric Other Use

Other large electric end-uses include ventilation, refrigeration, lighting, office equipment and miscellaneous use. The 2020 base-use intensity is largely unchanged from 2019. The aggregation of these end-use intensities is shown in Figure 6.

Figure 5: Base Intensity (kWh/SqFt)

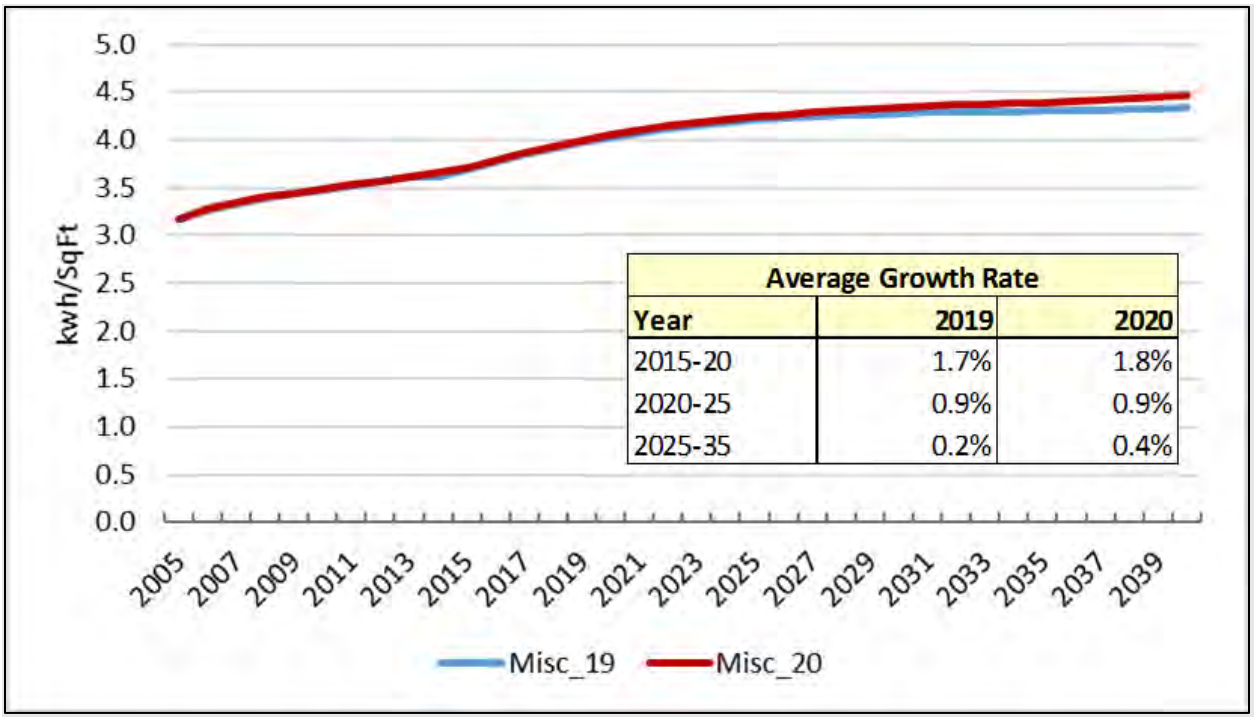


Average Growth Rate		
Year	2019	2020
2015-20	-0.6%	-0.5%
2020-25	-0.7%	-0.7%
2025-35	-0.8%	-0.7%

Miscellaneous End-Use

Approximately 30% of commercial electric use is classified as miscellaneous, which includes everything from elevator loads to medical equipment to other office plug-in loads. It is the one end-use where intensity is expected to increase. The AEO 2020 miscellaneous intensity is largely unchanged from 2019. Since the AEO 2018 the EIA indexes miscellaneous consumption to domestic non-manufacturing gross output. In prior years, miscellaneous use was indexed to output for a few service industries. Figure 7 shows the AEO 2019 and AEO 2020 miscellaneous intensity forecasts.

Figure 7: Miscellaneous Electric Intensity (kWh/SqFt)

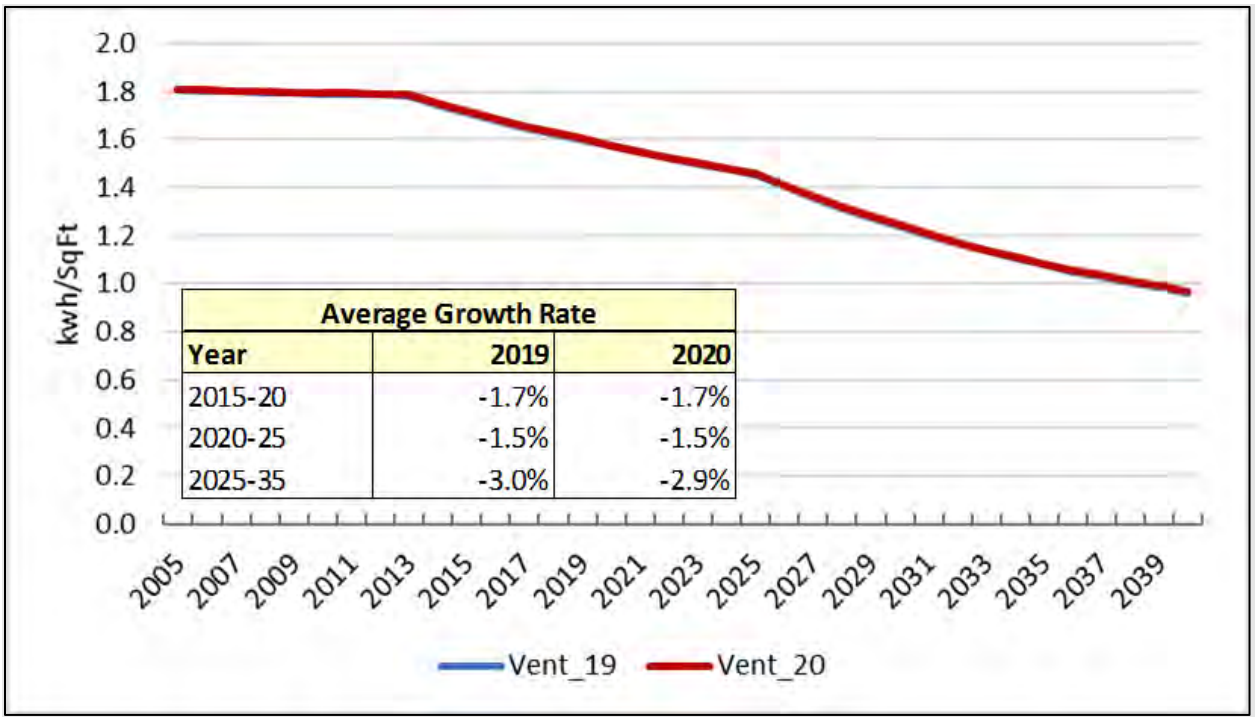


Average Growth Rate		
Year	2019	2020
2015-20	1.7%	1.8%
2020-25	0.9%	0.9%
2025-35	0.2%	0.4%

Ventilation End-Use

Ventilation accounts for rough 15% of commercial building use; it is the fourth largest commercial end-use. As commercial ventilation saturation is nearly a 100 percent, changes in ventilation intensity are largely driven by changes in system efficiency. Beginning in 2017, EIA made a significant change in projected ventilation efficiency gains. EIA now projects ventilation efficiency to improve 2.0% to 3.0% per year compared with 0.2% annual improvement in the 2016 forecast. Figure 8 compares ventilation intensity projections.

Figure 8: Ventilation Intensity (kWh/SqFt)



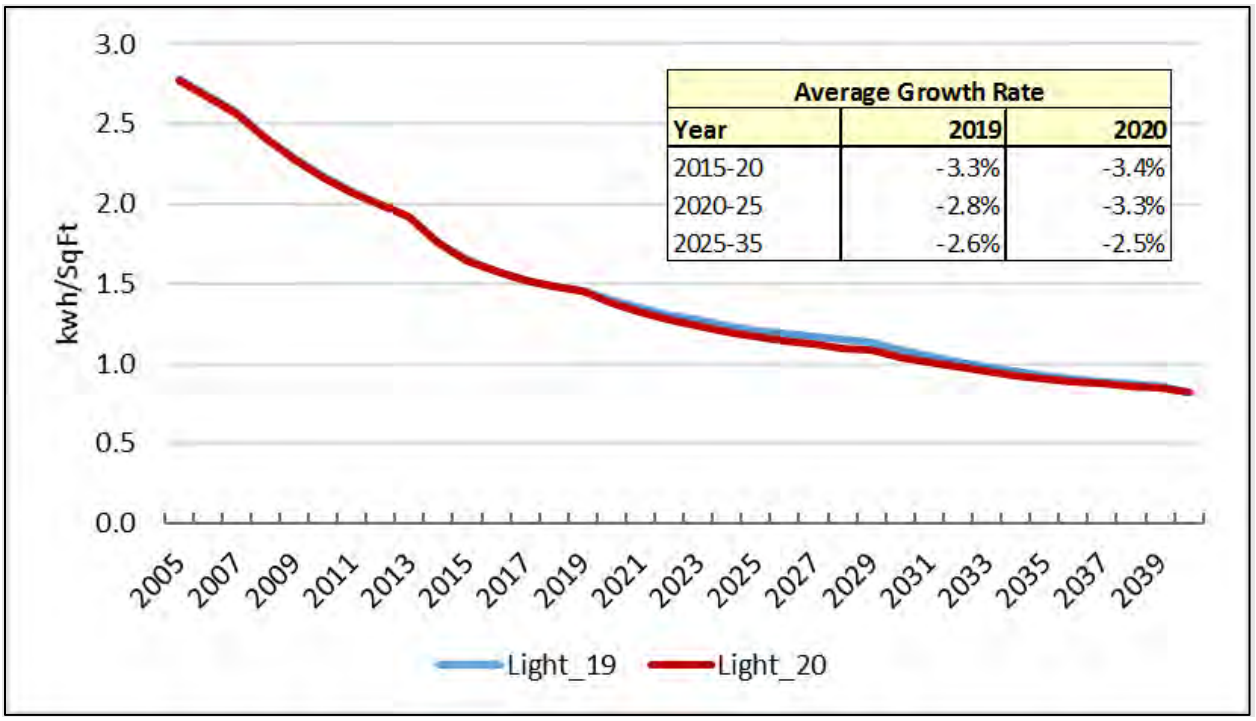
Average Growth Rate		
Year	2019	2020
2015-20	-1.7%	-1.7%
2020-25	-1.5%	-1.5%
2025-35	-3.0%	-2.9%

The stronger efficiency improvements assume that commercial customers will work to meet the new ASHRAE ventilation standards. Given the relative size of ventilation load, the new ventilation intensity has a significant impact on commercial sales when incorporated into the SAE forecast model. This year, the new ventilation intensity is included, but we are also providing the 2016 intensity.

Lighting End-Use

Commercial lighting, which in 2004 accounted for 30% of total consumption, now accounts for roughly 15% of commercial building usage. The decline in lighting as share of consumption usage has been driven by strong commercial lighting efficiency improvements. Like ventilation, starting in 2017 EIA significantly increased commercial lighting efficiency projections. The commercial lighting intensity now follows a similar path to residential; we feel these projections are reasonable and believe these efficient improvements will result in significant decreasing in lighting intensity. There have been little to no change between the 2019 and 2020 lighting intensities. Figure 9 compares the 2019 and 2020 lighting intensity projections.

Figure 9: Lighting Intensity (kWh/SqFt)



Average Growth Rate		
Year	2019	2020
2015-20	-3.3%	-3.4%
2020-25	-2.8%	-3.3%
2025-35	-2.6%	-2.5%

Solar Adjustment

The 2020 end-use intensity forecasts incorporate EIA's commercial own-use solar load forecast (own-use is defined as load that displaces customer use vs. sold back to the utility). For our purposes, since most utilities have their own solar load forecast, EIA's solar load forecast is added back into SAE indices. The end-uses impacted by solar are cooling and miscellaneous. **Error! Reference source not found.** and Figure 6 compare the solar adjusted intensities.

Figure 10: Solar Adjustment Cooling

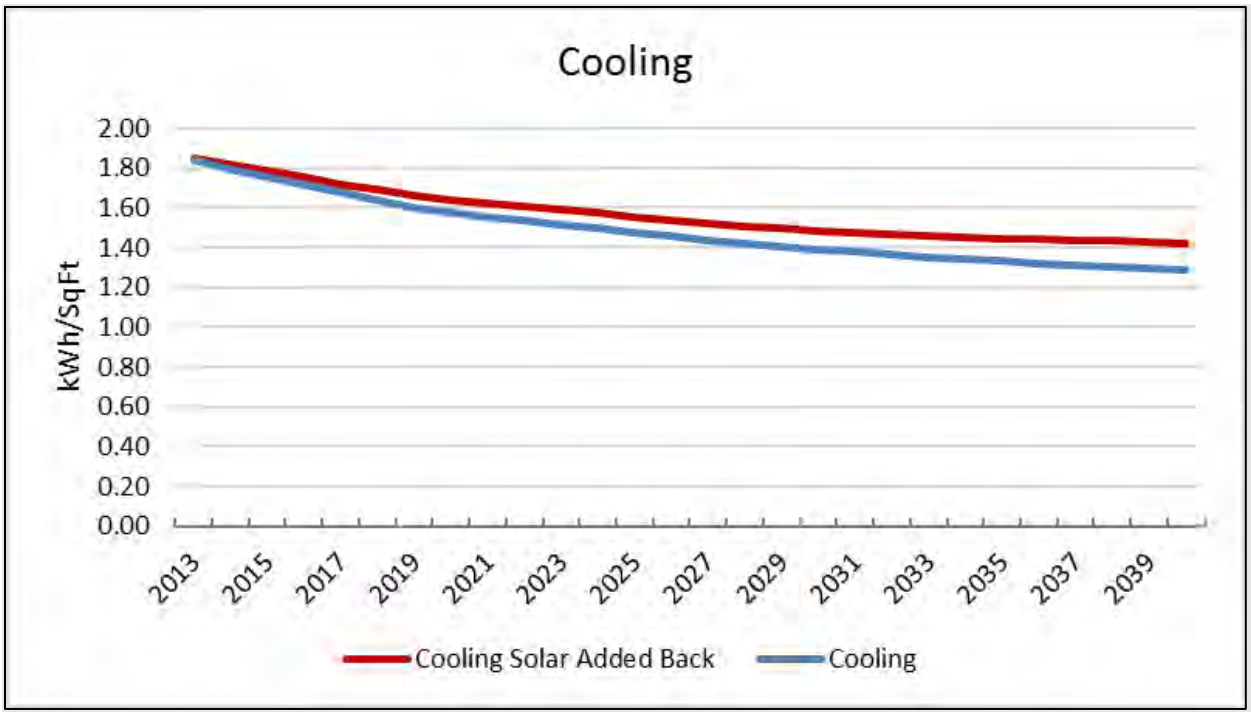
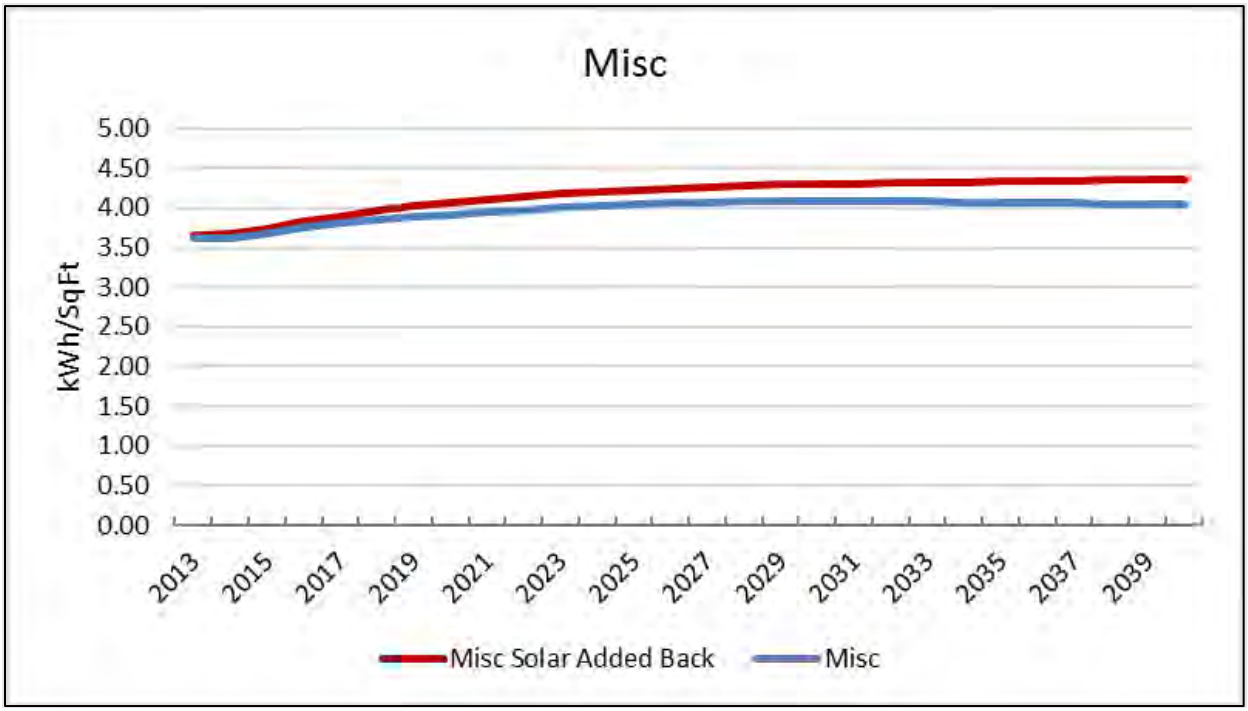


Figure 6:Solar Adjustment Miscellaneous



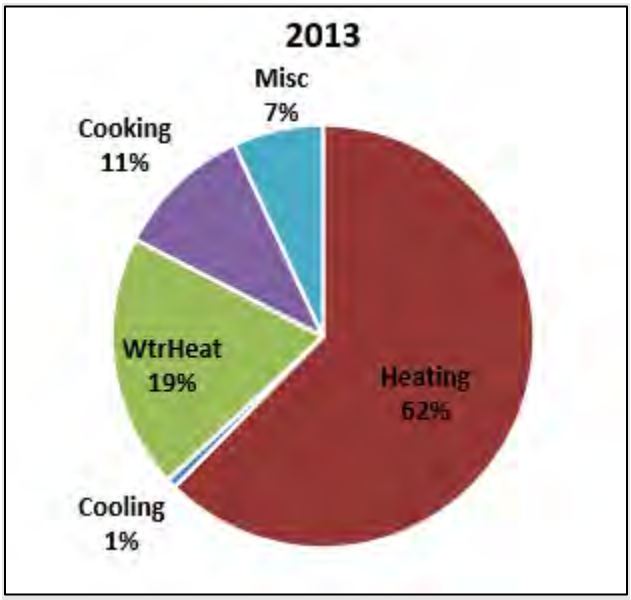
Gas Forecast Updates

Commercial gas intensities are calculated for the primary end-uses, including:

- Space Heating
- Space Cooling
- Water Heating
- Cooking
- Miscellaneous

Figure 12 shows the distribution of commercial gas consumption by end-use for the 2013 base year.

Figure 12: Gas End-Use Distribution

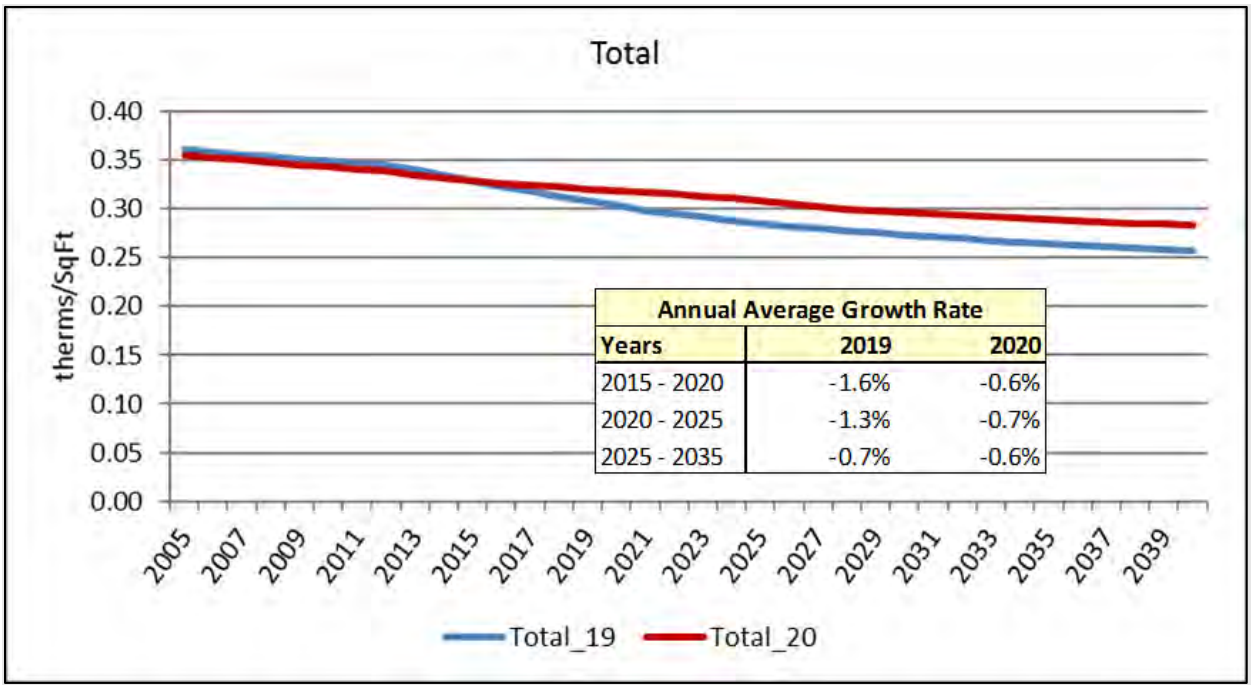


Gas Prices

The most significant change from the 2019 AEO are the gas price projections. Similar to the changes to electric prices but even to a greater degree, gas prices are significantly lower in the 2020 AEO.

Figure 13 compares the 2019 and 2020 total commercial building gas intensity.

Figure 13: Total Commercial Gas Intensity Forecast (therm/sqft)



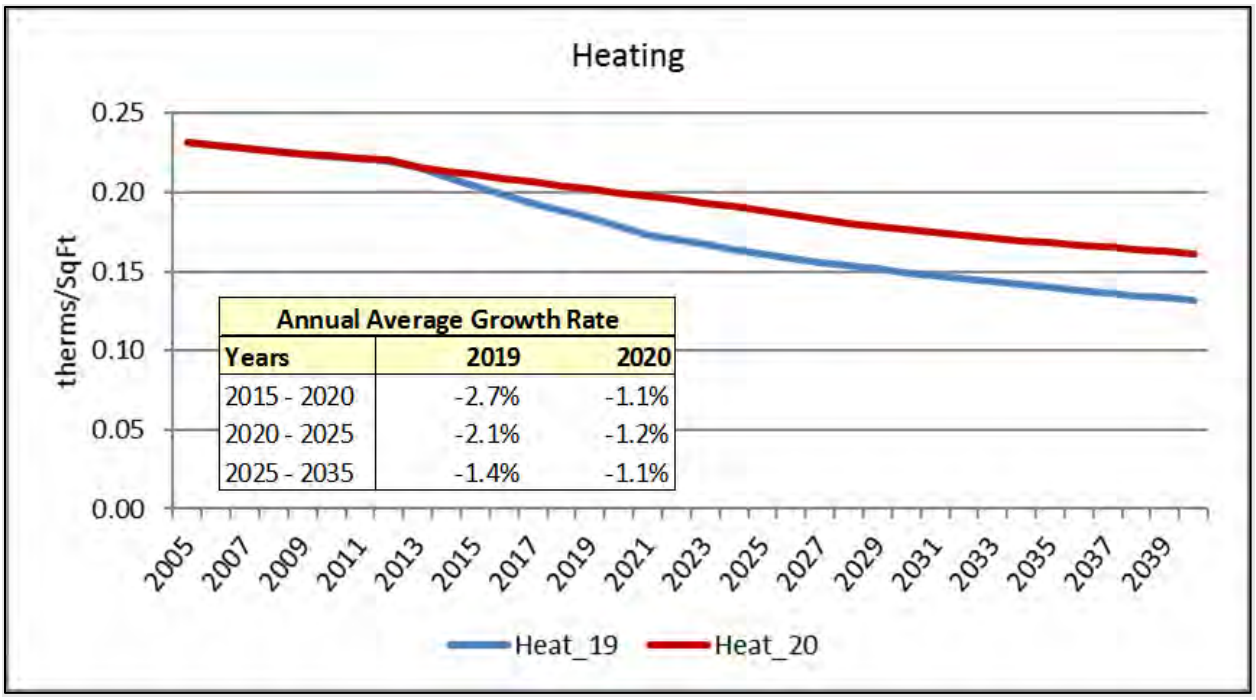
Annual Average Growth Rate		
Years	2019	2020
2015 - 2020	-1.6%	-0.6%
2020 - 2025	-1.3%	-0.7%
2025 - 2035	-0.7%	-0.6%

Gas intensity (therm per sqft) is expected decline on average 0.7% per year through 2025 and 0.6% between 2025 and 2035. The 0.7% near-term decline is roughly half the decline forecasted in the prior SAE. The largest contributor to this decline is the heating intensity projections.

Gas Heating

Natural gas is the predominant energy source for commercial heating. Heating intensity is expected to decline at 1.2% per year through 2025, this is in sharp contrast to the 2.1% decline in the 2019 SAE. Changes to price projections is the primary explanation for this difference. Figure 14 compares gas heating intensity projections.

Figure 7: Gas Heating Intensity (therm/sqft)

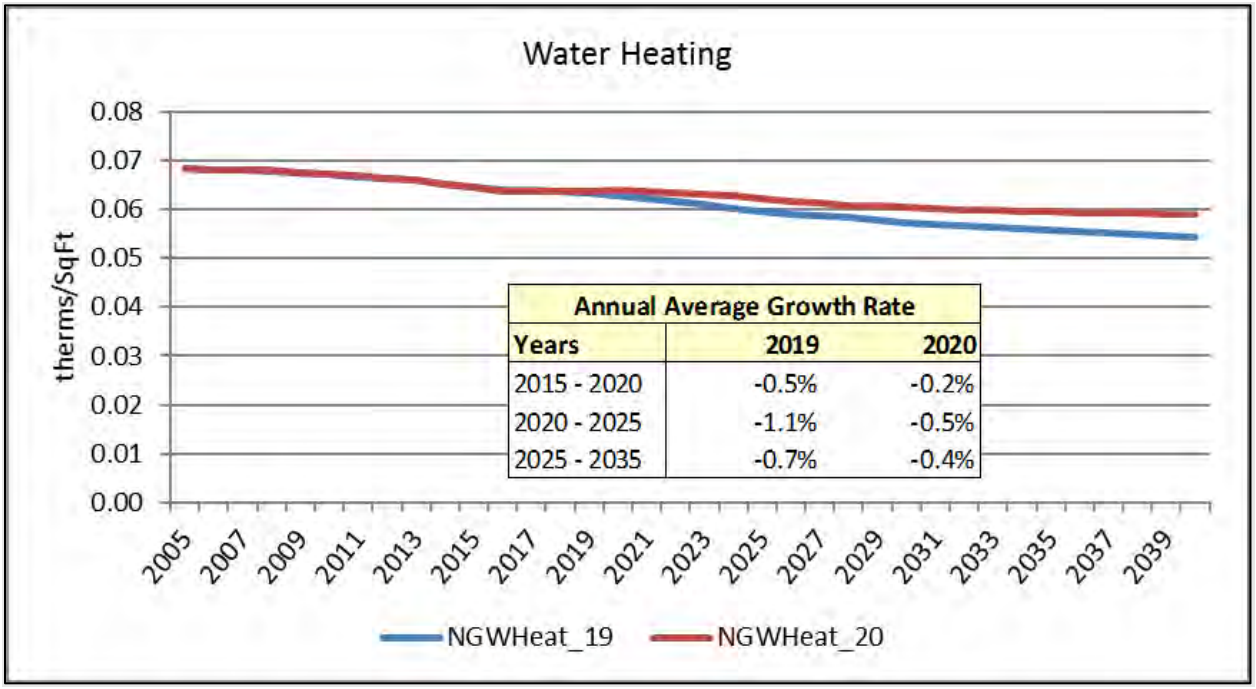


Annual Average Growth Rate		
Years	2019	2020
2015 - 2020	-2.7%	-1.1%
2020 - 2025	-2.1%	-1.2%
2025 - 2035	-1.4%	-1.1%

Gas Other End-Uses

After space heating, gas water heating is the second largest gas end-use, accounting for approximately 20% of commercial gas use. There was a small increase to the efficiency projections in the 2020 AEO but offsetting efficiency is the change to prices. Figure 15 compares the 2019 and 2020 gas water heating intensity projections.

Figure 15: Gas Water Heating Intensity Projections (therm/sqft)



Annual Average Growth Rate		
Years	2019	2020
2015 - 2020	-0.5%	-0.2%
2020 - 2025	-1.1%	-0.5%
2025 - 2035	-0.7%	-0.4%

SAE Forecast Model Updates

MetrixND SAE models are constructed for each Census Division. The set of project files include simple floor stock models designed to mimic the EIA commercial sales forecast. In the floor stock models, monthly commercial sales are defined as a function of square footage (SqFt), end-use energy intensities (*CoolEI*, *HeatEI* and *OtherEI*), and monthly heating and cooling degree-day indices (*HDDIndex*, *CDDIndex*):

$$Sales_t = b_0 + b_1 \times (CoolEI_t \times SqFt_t \times CDDIndex_t) + b_2 \times (HeatEI_t \times SqFt_t \times HDDIndex_t) + b_3 \times (OtherEI_t \times SqFt_t) + e_t$$

The regional models incorporate EIA's 2020 end-use intensity and square footage projections. The models can be calibrated to an individual utility service area by replacing EIA historical and forecasted square footage with utility-specific square footage estimates. A standard approach for developing a square footage forecast is to estimate a square footage model as a function of commercial employment:

$$SqFt_{t=}a_0 + a_1 \times ComEmploy_t + e_t$$

For most utilities, historical floor stock data is difficult to construct. Further, the simple floor stock model may not adequately capture the impact of short-term variations in economic activity and rate changes. The new project files also include the SAE model specifications from earlier years. In the SAE specification, estimates of long-term monthly end-use energy are imported from the SAE spreadsheet, and interacted with GDP, price, and weather conditions. An elasticity that is consistent with forecasts derived from the simple stock model is imposed on GDP. A description of the SAE model specification is outlined in Appendix A.

Excel File Updates

The 2015 and prior electric SAE files contained separate Indoor and Outdoor Lighting end-uses, which have been aggregated to total Lighting starting with the 2017 files. Additionally, the non-weather sensitive end-uses, which in the past were aggregated and labeled "NonHVAC", are now labeled "Base". We felt this was a more accurate description considering ventilation is included in the aggregation. MetrixND file links will need to be edited for imports to work properly. The 2020 SAE spreadsheets are now in xlsx Excel file format.

Appendix A:
Commercial Statistically Adjusted End-Use Model

The traditional approach to forecasting monthly sales for a customer class is to develop an econometric model that relates monthly sales to weather, seasonal variables, and economic conditions. From a forecasting perspective, econometric models are well suited to identifying historical trends and to projecting these trends into the future. In contrast, end-use models can incorporate the end-use factors driving energy use. By including end-use structure in an econometric model, the statistically adjusted end-use (SAE) modeling framework exploits the strengths of both approaches.

There are several advantages to the SAE approach.

- The equipment efficiency trends and saturation changes embodied in the long-run end-use forecasts are introduced explicitly into the short-term monthly sales forecast, thereby providing a strong bridge between the two forecasts.
- By explicitly introducing trends in equipment saturations and efficiency levels, SAE models can explain changes in usage levels and weather-sensitivity over time.
- Data for short-term models are often not sufficiently robust to support estimation of a full set of price, economic, and demographic effects. By bundling these factors with equipment-oriented drivers, a rich set of elasticities can be built into the final model.

This section describes this approach, the associated supporting Commercial SAE spreadsheets, and MetrixND project files that are used in the implementation. The source for the commercial SAE spreadsheets is the 2020 Annual Energy Outlook (AEO) database provided by the Energy Information Administration (EIA).

Statistically Adjusted End-Use Model Framework

The statistically adjusted end-use modeling framework begins by defining energy use ($USE_{y,m}$) in year (y) and month (m) as the sum of energy used by heating equipment ($Heat_{y,m}$), cooling equipment ($Cool_{y,m}$), and other equipment ($Other_{y,m}$). Formally,

$$USE_{y,m} = Heat_{y,m} + Cool_{y,m} + \text{Other}_{y,m} \quad (1)$$

Although monthly sales are measured for individual customers, the end-use components are not. Substituting estimates for the end-use elements gives the following econometric equation.

$$USE_m = a + b_1 \times XHeat_m + b_2 \times XCool_m + b_3 \times XOther_m + \varepsilon_m \quad (2)$$

$XHeat_m$, $XCool_m$, and $XOther_m$ are explanatory variables constructed from end-use information, dwelling data, weather data, and market data. As will be shown below, the equations used to construct these X-variables are simplified end-use models, and the X-variables are the estimated usage levels for each of the major end uses based on these models. The estimated model can then be thought of as a statistically adjusted end-use model, where the estimated slopes are the adjustment factors.

Constructing XHeat

As represented in the Commercial SAE spreadsheets, energy use by space heating systems depends on the following types of variables.

- Heating degree days,
- Heating intensity,
- Commercial output and energy price.

The heating variable is represented as the product of an annual equipment index and a monthly usage multiplier. That is,

$$XHeat_{y,m} = HeatIndex_{y,m} \times HeatUse_{y,m} \quad (3)$$

Where:

- $XHeat_{y,m}$ is estimated heating energy use in year (y) and month (m)
- $HeatIndex_{y,m}$ is the annual index of heating equipment
- $HeatUse_{y,m}$ is the monthly usage multiplier

The heating equipment index is composed of electric space heating intensity. The index will change over time with changes in heating intensity. Formally, the equipment index is defined as:

$$HeatIndex_y = HeatSales_{13} \times \frac{(HeatIntensity_y)}{(HeatIntensity_{13})} \quad (4)$$

In this expression, 2013 is used as a base year for normalizing the index. The ratio on the right is equal to 1.0 in 2013. In other years, it will be greater than 1.0 if intensity levels are above their 2013 level.

$$HeatSales_{13} = \left(\frac{kWh}{Sqft}\right)_{Heating} \times \left(\frac{CommercialSales_{13}}{\sum_e {}^{kWh}/_{Sqft_e}}\right) \quad (5)$$

Here, base-year sales for space heating is the product of the average space heating intensity value and the ratio of total commercial sales in the base year over the sum of the end-use intensity values. In the Commercial SAE Spreadsheets, the space heating sales value is defined on the *BaseYrInput* tab. The resulting $HeatIndex_y$ value in 2013 will be equal to the estimated annual heating sales in that year. Variations from this value in other years will be proportional to saturation and efficiency variations around their base values.

Heating system usage levels are impacted on a monthly basis by several factors, including weather, commercial level economic activity, and prices. Using the COMMEND default elasticity parameters, the estimates for space heating equipment usage levels are computed as follows:

$$HeatUse_{y,m} = \left(\frac{WgtHDD_{y,m}}{HDD_{13}}\right) \times \left(\frac{Output_y}{Output_{13}}\right) \times \left(\frac{Price_{y,m}}{Price_{13}}\right)^{-0.18} \quad (6)$$

Where

- *WgtHDD* is the weighted number of heating degree days in year *y* and month *m*. This is constructed as the weighted sum of the current month's HDD and the prior month's HDD. The weights are 75% on the current month and 25% on the prior month
- *HDD* is the annual heating degree days for 2013,
- *Output* is a real commercial output driver in year *y*,
- *Price* is the average real price of electricity in month *m* and year *y*,

By construction, the $HeatUse_{y,m}$ variable has an annual sum that is close to 1.0 in the base year (2013). The first terms, which involve heating degree days, serves to allocate annual values to months of the year. The remaining terms average to 1.0 in the base year. In other years, the values will reflect changes in commercial output and prices, as transformed through the end-use elasticity parameters. For example, if the real price of electricity goes up 10% relative to the base year value, the price term will contribute a multiplier of about .98 (computed as 1.10 to the -0.18 power).

Constructing XCool

The explanatory variable for cooling loads is constructed in a similar manner. The amount of energy used by cooling systems depends on the following types of variables.

- Cooling degree days,
- Cooling intensity,
- Commercial output and energy price.

The cooling variable is represented as the product of an equipment-based index and monthly usage multiplier. That is,

$$XCool_{y,m} = CoolIndex_y \times CoolUse_{y,m} \quad (7)$$

Where:

- $XCool_{y,m}$ is estimated cooling energy use in year y and month m,
- $CoolIndex_y$ is an index of cooling equipment, and
- $CoolUse_{y,m}$ is the monthly usage multiplier.

As with heating, the cooling equipment index depends on equipment saturation levels (*CoolShare*) normalized by operating efficiency levels (Eff). Formally, the cooling equipment index is defined as:

$$CoolIndex_y = CoolSales_{13} \times \frac{\left(CoolShare_y / Eff_y\right)}{\left(CoolShare_{13} / Eff_{13}\right)} \quad (8)$$

Data values in 2013 are used as a base year for normalizing the index, and the ratio on the right is equal to 1.0 in 2013. In other years, it will be greater than 1.0 if equipment saturation levels are above their 2013 level. This will be counteracted by higher efficiency levels, which will drive the index downward. Estimates of base year cooling sales are defined as follows.

$$CoolSales_{13} = \left(\frac{kWh}{Sqft}\right)_{Cooling} \times \left(\frac{CommercialSales_{13}}{\sum_e {}^{kWh}/_{Sqft_e}}\right) \quad (9)$$

Here, base-year sales for space cooling is the product of the average space cooling intensity value and the ratio of total commercial sales in the base year over the sum of the end-use intensity values. In the Commercial SAE Spreadsheets, the space cooling sales value is defined on the *BaseYrInput* tab. The resulting *CoolIndex* value in 2013 will be equal to the estimated annual cooling sales in that year. Variations from this value in other years will be proportional to saturation and efficiency variations around their base values.

Cooling system usage levels are impacted on a monthly basis by several factors, including weather, economic activity levels and prices. Using the COMMEND default parameters, the estimates of cooling equipment usage levels are computed as follows:

$$CoolUse_{y,m} = \left(\frac{WgtCDD_{y,m}}{CDD_{13}}\right) \times \left(\frac{Output_y}{Output_{13}}\right) \times \left(\frac{Price_{y,m}}{Price_{13}}\right)^{-0.18} \quad (10)$$

Where:

- *WgtCDD* is the weighted number of cooling degree days in year (*y*) and month (*m*). This is constructed as the weighted sum of the current month's CDD and the prior month's CDD. The weights are 75% on the current month and 25% on the prior month.
- *CDD* is the annual cooling degree days for 2013.

By construction, the *CoolUse* variable has an annual sum that is close to 1.0 in the base year (2013). The first two terms, which involve billing days and cooling degree days, serve to allocate annual values to months of the year. The remaining terms average to 1.0 in the base year. In other years, the values will change to reflect changes in commercial output and prices.

Constructing XOther

Monthly estimates of non-weather sensitive sales can be derived in a similar fashion to space heating and cooling. Based on end-use concepts, other sales are driven by:

- Equipment intensities,
- Average number of days in the billing cycle for each month, and
- Real commercial output and real prices.

The explanatory variable for other uses is defined as follows:

$$XOther_{y,m} = OtherIndex_{y,m} \times OtherUse_{y,m} \quad (11)$$

The second term on the right-hand side of this expression embodies information about equipment saturation levels and efficiency levels. The equipment index for other uses is defined as follows:

$$OtherIndex_{y,m} = \sum_{Type} Weight_{13}^{Type} \times \left(\frac{Share_y^{Type} / Eff_y^{Type}}{Share_{13}^{Type} / Eff_{13}^{Type}} \right) \quad (12)$$

Where:

- Weight is the weight for each equipment type,
- Share represents the fraction of floor stock with an equipment type, and
- Eff is the average operating efficiency.

This index combines information about trends in saturation levels and efficiency levels for the main equipment categories. The weights are defined as follows.

$$Weight_{13}^{Type} = \left(\frac{kWh}{Sqft}\right)_{Type} \times \left(\frac{CommercialSales_{13}}{\sum_e {}^{kWh}/_{Sqft_e}} \right) \quad (13)$$

Further monthly variation is introduced by multiplying by usage factors that cut across all end-uses, constructed as follows:

$$OtherUse_{y,m} = \left(\frac{BDays_{y,m}}{30.44}\right) \times \left(\frac{Output_y}{Output_{13}}\right) \times \left(\frac{Price_{y.m}}{Price_{13}}\right)^{-0.18} \quad (14)$$

In this expression, the elasticities on output and real price are computed from the COMMEND default values.

Supporting Spreadsheets and MetrixND Project Files

The SAE approach described above has been implemented for each of the nine census divisions. A mapping of states to census divisions is presented in Figure 1. This section describes the contents of each file and a procedure for customizing the files for specific utility data. A total of 18 files are provided. These files are listed in Table 1.

Figure 1: Mapping of States to Census Divisions

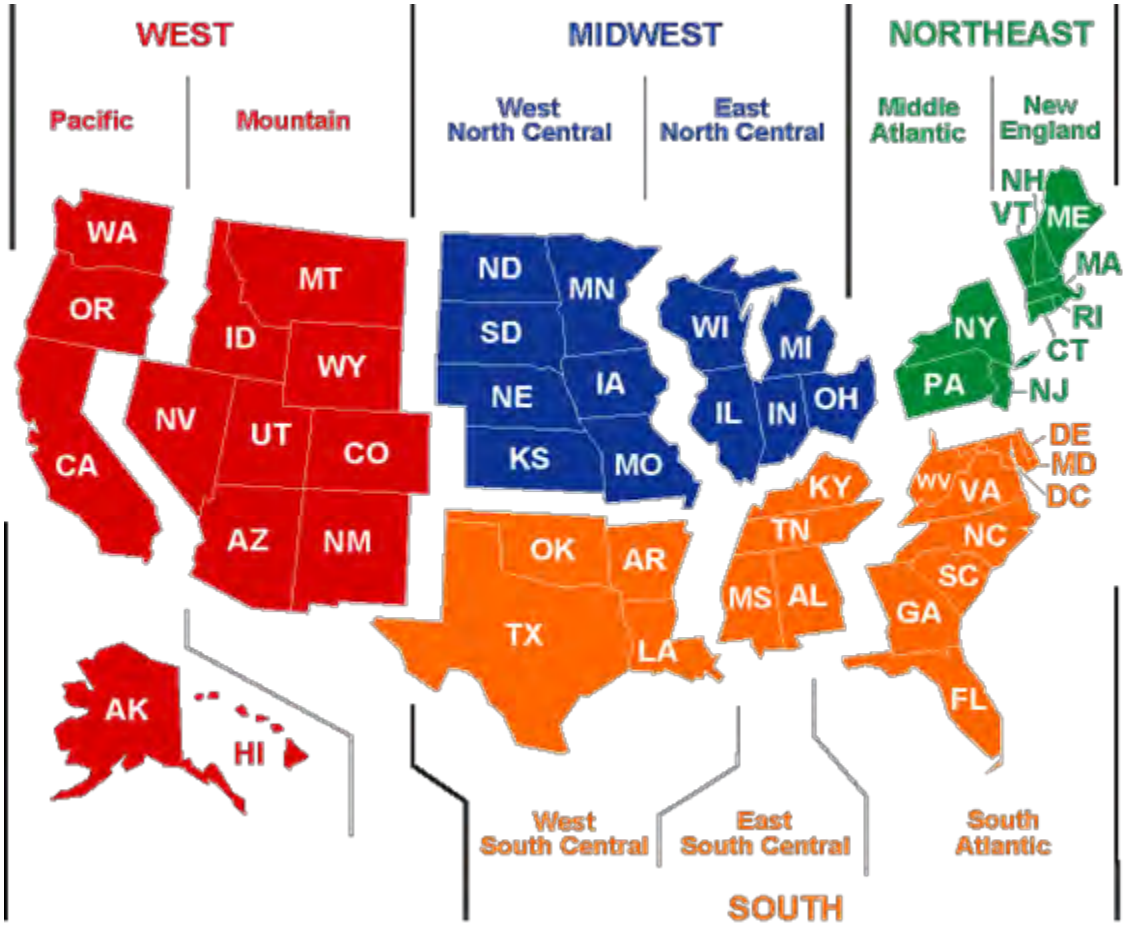


Table 1: List of SAE Electric Files

Spreadsheets	***MetrixND* Project Files**
NewEnglandCom20.xlsx	NewEnglandCom20.ndm
MiddleAtlanticCom20.xlsx	MiddleAtlanticCom20.ndm
EastNorthCentralCom20.xlsx	EastNorthCentralCom20.ndm
WestNorthCentralCom20.xlsx	WestNorthCentralCom20.ndm
SouthAtlanticCom20.xlsx	SouthAltanticCom20.ndm
EastSouthCentralCom20.xlsx	EastSouthCentralCom20.ndm
WestSouthCentralCom20.xlsx	WestSouthCentralCom20.ndm
MountainCom20.xlsx	MountainCom20.ndm
PacificCom20.xlsx	PacificCom20.ndm

As defaults, the SAE spreadsheets include regional data, but utility data can be entered to generate the *Heat*, *Cool*, and *Other* equipment indices used in the SAE approach. The data from these spreadsheets

are linked to the MetrixND project files. In these project files, the end-use *Usage* variables (Equations 6, 10, and 14 above) are constructed and the SAE model is estimated.

The nine spreadsheets contain the following tabs.

- **EIAData** contains the raw forecasted data provided by the EIA.
- **BaseYrInput** contains base year Census Division intensities by end-use and building type as well as default building type weights. It also contains functionality for changing the weights to reflect utility service territory.
- **Efficiency** contains historical and forecasted end-use equipment efficiency trends. The forecasted values are based on projections provided by the EIA.
- **Shares** contains historical and forecasted end-use saturations.
- **Intensity** contains the annual intensity (kWh/sqft) projections by end use.
- **AnnualIndices** contains the annual *Heat*, *Cool* and *Other* equipment indices.
- **FloorSpace** contains the annual floor space (sqft) projections by end use.
- **PV** incorporates the impact of photovoltaic batteries into the forecast.
- **Graphs** contains graphs of Efficiency and Intensities, which can be updating by selecting from the list in cell B2.

The MetrixND project files contain the following objects.

Parameter Tables

- **Parameters.** This parameter table includes the values of the annual HDD and CDD in 2013 used to calculate the Usage variables for each end-use.
- **Elas.** This parameter table includes the values of the elasticities used to calculate the Usage variables for each end-use.

Data Tables

- **AnnualIndices.** This data table is linked to the *AnnualIndices* tab in the Commercial SAE spreadsheet and contains sales-adjusted commercial SAE indices.
- **Intensity.** This data table is linked to the *Intensity* tab in the Commercial SAE spreadsheet.
- **FloorSpace.** This data table links to *FloorSpace* tab in the Commercial SAE spreadsheet.
- **UtilityData.** This linkless data table contains Census Division level data. It can be populated with utility-specific data.

Transformation Tables

- **EconTrans.** This transformation table is used to compute the output and price indices used in the usage equations.
- **WeatherTrans.** This transformation table is used to compute the HDD and CDD indices used in the usage equations.
- **CommercialVars.** This transformation table is used to compute the *Heat*, *Cool* and *Other* Usage variables, as well as the *XHeat*, *XCool* and *XOther* variables that are used in the regression model. Structural variables based on the intensity/floor space combination are also calculated here.
- **BinaryVars.** This transformation table is used to compute the calendar binary variables that could be required in the regression model.

- **AnnualFcst.** This transformation table is used to compute the annual historical and forecast sales and annual change in sales.
- **EndUseFcst.** This transformation table breaks the forecast down into its heating, cooling, and other components.

Models

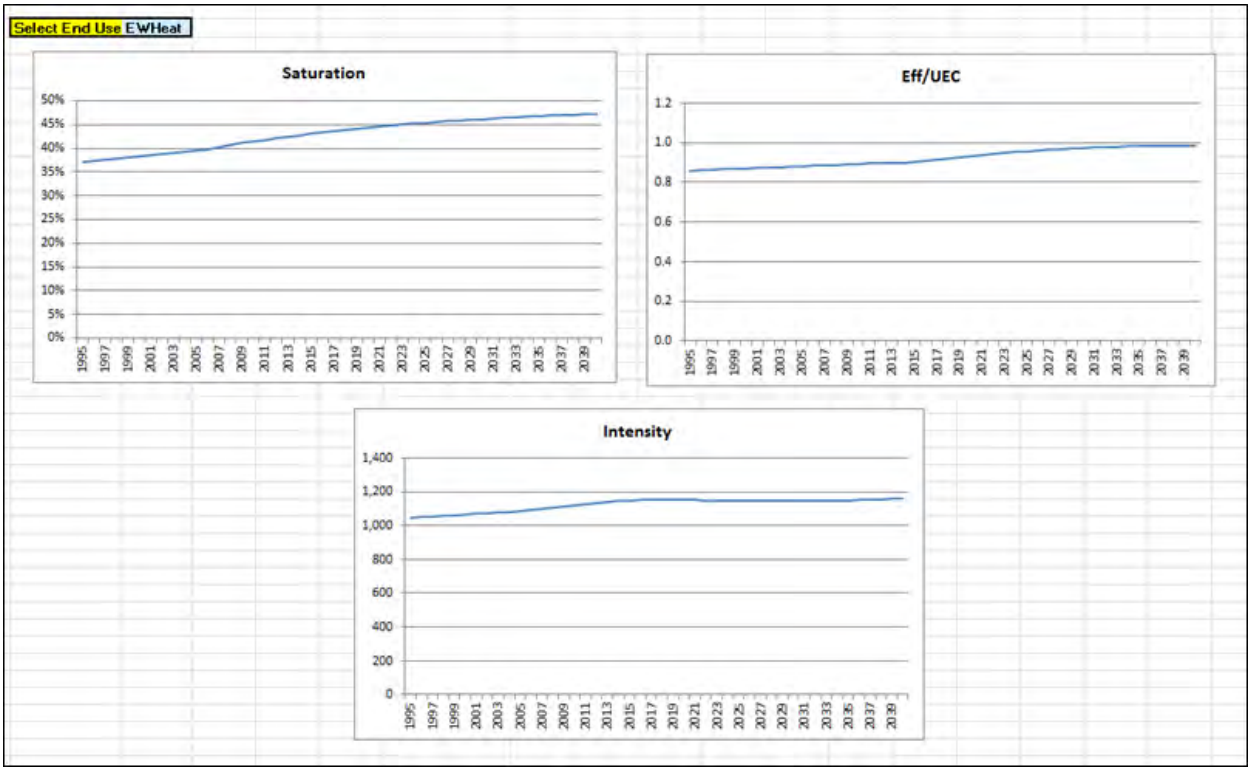
- **ComSAE.** The commercial SAE model (energy forecast driven by end-use indices, price, and output projections).
- **ComStruct.** Simple stock model (energy forecast driven by end-use energy intensities, and square footage).

Appendix A: Using the SAE Spreadsheets

Updates to the SAE Spreadsheets

Itron continually works to simplify and improve the SAE spreadsheets to allow analysts to view end-use intensity trends, to understand how the indices are calculated, and to customize the SAE inputs (such as end-use saturations and starting UEC) to their own service area. Last year, Itron added a new *Graph* tab that allows the analyst to select an end-use and graph the end-use saturation, efficiency/UEC, and calculated intensity. Figure 14 shows this feature for electric water heaters.

Figure 14: SAE Spreadsheet End-Use Graph - Electric Water Heat



SAE Spreadsheet Organization

The SAE spreadsheets are organized to allow the analyst to calibrate end-use intensities to a specific utility service area organization where service area specific saturation and UEC estimates are available. The spreadsheet tabs include:

- **Definitions** provides descriptive information about end-uses, units and brief descriptions of the other worksheets.
- **EIAData** contains EIA efficiency, consumption, equipment stock, household, floor space and price projections.
- **Calibration** provides base year usage information. It can also be used to customize the spreadsheet to the user's service territory. Figure 15 shows the layout of the Calibration worksheet.

Figure 15: Calibration Worksheet

	A	B	C	D	E	F	G	H	I	J	K
1	Base Year (2009)	EFurn	HPHeat	GHPHeat	SecHt	CAC	HPCool	GHPCool	RAC	EWHeat	ECook
2	Consumption (mmBtu)	295,156,965	49,006,093	3,298,852	60,466,462	469,614,726	92,426,664	4,189,994	68,043,412	428,267,637	104,815,834
3	Equipment Stock (units)	29,626,185	9,099,838	699,168	28,312,038	61,707,187	9,099,838	699,168	49,101,682	46,763,693	68,137,629
4	UEC (kWh/unit)	2,920	1,578	1,383	626	2,230	2,977	1,756	406	2,684	451
5	Share (%)	26.0%	8.0%	0.6%	23.4%	54.2%	8.0%	0.6%	43.1%	41.1%	59.9%
6	Raw Intensity (kWh/year)	760	126	8	147	1,209	238	11	175	1,103	270
7	Model-Scaled Intensity (kWh/year)	760	126	8	147	1,209	238	11	175	1,103	270
8											
9	Observed Use Per Customer (kWh/year)	11,909									
10	Adjustment Factor	1.010									
11	Adjusted Intensity (kWh/year)	768	127	9	148	1,222	240	11	177	1,114	273
12											
13	XHeat	1.000									
14	XCool	1.000									
15	XOther	1.000									
16											

Base-year use-per-customer (kWh) for the utility service area is depicted in Row 9 and can be used to calibrate the spreadsheet to the user's service territory. To do this, substitute your weather-normalized average use for the Census Division average-use in Cell B9.

In additional to basic calibration to observed usage, in 2017 we have also added another layer of calibration to better tailor the regional data to utility-specific conditions. In order to get better starting estimates of electric usage by end use, we have utilized MetrixND models to "true up" EIA estimates to the regions. You can do this on the utility level by substituting the adjustment factors in cells B13-15 with estimated coefficients on SAE variables in your residential model. Figure 16 below provides an example.

Figure 16: Model-Based Calibration

	A	B	C	D	E	F	G	H	I	J	K
1	Base Year (2009)	EFurn	HPHeat	GHPHeat	SecHt	CAC	HPCool	GHPCool	RAC	EWHeat	ECook
2	Consumption (mmBtu)	295,156,965	49,006,093	3,298,852	60,466,462	469,614,726	92,426,664	4,189,994	68,043,412	428,267,637	104,815,834
3	Equipment Stock (units)	29,626,185	9,099,838	699,168	28,312,038	61,707,187	9,099,838	699,168	49,101,682	46,763,693	68,137,629
4	UEC (kWh/unit)	2,920	1,578	1,383	626	2,230	2,977	1,756	406	2,684	451
5	Share (%)	26.0%	8.0%	0.6%	23.4%	54.2%	8.0%	0.6%	43.1%	41.1%	59.9%
6	Raw Intensity (kWh/year)	760	126	8	147	1,209	238	11	175	1,103	270
7	Model-Scaled Intensity (kWh/year)	1,853	308	21	358	2,389	470	21	346	677	166
8											
9	Observed Use Per Customer (kWh/year)	11,909									
10	Adjustment Factor	0.999									
11	Adjusted Intensity (kWh/year)	1,852	307	21	357	2,387	470	21	346	677	166
12											
13	XHeat	2.438									
14	XCool	1.975									
15	XOther	0.614									
16											

In this case, model-based calibration adjusts heating and cooling starting year usage up based on model coefficients estimated from observed use per customer data. Other usage is adjusted downward.

Resulting end-use intensities are written to the *Intensities* tab. MetrixND project files can link to the *Intensities* tab as the source-data for the constructing of SAE model variables.

StructuralVars

This worksheet contains data about the size of homes and their building shell efficiencies. The results of the calculations on this tab are used in the development of energy intensities for heating and cooling end-uses.

Analysts can substitute local household and floor space estimates for the regional estimates to reflect local conditions in the final energy intensities. Total floor space can be modified in Column E and number of households in Column I.

Shares

The *Shares* tab contains historical saturation estimates and forecasts developed by the EIA. Data from appliance saturation surveys can be used to modify the default saturations. Depending on data availability, these changes can either shift the projections up or down (one survey) or modify the growth rate in the trends (two or more surveys).

Efficiencies

The *Efficiencies* tab provides historical and forecasted end-use efficiency. UEC estimates are used as a proxy for efficiency where specific technology efficiency data (as central air conditioner SEER) are not available. Efficiency trends can also be modified to reflect the utility service area. As a practical matter however, average efficiency for most equipment varies little between regions.

Intensities

Intensities are per-household end-use energy estimate derived from combining end-use saturation, efficiency, and starting UEC. If the user changes saturation and/or efficiency, the changes are reflected in the end-use intensity calculations.

MonthlyMults

The *MonthlyMults* tab provides seasonal multipliers for non-HVAC end-uses. This allows us to accurately gauge seasonal usage for such non weather-sensitive end-uses as water heating, refrigeration and lighting.

Graphs

The *Graphs* tab provides an interface to select an end-use and view historical and projected end-use saturation, efficiency (or UEC where an efficiency measure is not available) and resulting end-use intensity.

EV

Electric vehicle load is added to the base (other) end-use in the SAE model. Input data rows are highlighted in red and include:

- **Households.** Historical and forecasted number of households (column B)
- **EVSold.** Number of EV vehicles sold in any given year (column C)
- **EVDecay.** Number of EV vehicles removed (column D)
- **AnnualMiles.** Annual average miles driven (column G)
- **MilePerKwh.** Average vehicle efficiency (column H)

Additional columns include:

- **EVStock.** Calculated as the sum of all new purchases minus vehicle decay (column E).
- **Share.** The share of households with EVs (column F), calculated as EVStock / Households.
- **UEC.** The Unit Energy Consumption (kWh) for those households that own an EV. Calculated as the number of miles driven divided by the average vehicle miles per kWh (column I).

- **ShareUEC.** Use per household (column K), calculated by multiplying the vehicle UEC and the share of households that own an EV. The resulting annual EV energy intensity is on a kWh per household basis and can be added to the base or other use index in the SAE model.

PV

The SAE spreadsheets also include a worksheet for calculating PV (photovoltaic) energy impacts. Input data rows are highlighted in red and include:

- **Households.** Historical and forecasted Households or customers (column B)
- **PVInstalls.** Number of new PV installations (column C)
- **AvgPVSize.** Average PV kW capacity (column E)
- **PVDecayKW.** PV capacity decay in kW (column G)
- **CapacityFactor.** Capacity Factor (column I)

Additional columns include:

- **PVStockKW.** Estimated PV kW capacity (column H), calculated by summing current and all past PV installed capacity and subtracting the decay, calculated as:

	A	B	C	D	E	F	G	H	I	J	K
1	Base Year (2009)	EFurn	HPHeat	GHPHeat	SecHt	CAC	HPCool	GHPCool	RAC	EWHeat	ECook
2	Consumption (mmBtu)	295,156,965	49,006,093	3,298,852	60,466,462	469,614,726	92,426,664	4,189,994	68,043,412	428,267,637	104,815,834
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4	UEC (kWh/unit)	2,920	1,578	1,383	626	2,230	2,977	1,756	406	2,684	451
5	Share (%)	26.0%	8.0%	0.6%	23.4%	54.2%	8.0%	0.6%	43.1%	41.1%	59.9%
6	Raw Intensity (kWh/year)	760	126	8	147	1,209	238	11	175	1,103	270
7	Model-Scaled Intensity (kWh/year)	1,853	308	21	358	2,389	470	21	346	677	166
8											
9	Observed Use Per Customer (kWh/year)	11,909									
10	Adjustment Factor	0.999									
11	Adjusted Intensity (kWh/year)	1,852	307	21	357	2,387	470	21	346	677	166
12											
13	XHeat	2.438									
14	XCool	1.975									
15	XOther	0.614									
16											

- **PVEnergy.** PV MWh (column J) is derived by applying the capacity factor to the PV Capacity Stock, calculated as:

$$(PVStockKW \times 8760 \times CapacityFactor)/1000$$

- **ShareUEC.** Final PV energy intensity (column K) is derived by dividing PVEnergy by total number of households. The estimate is negative, as it represents a load reduction.

Appendix B: Residential SAE Modeling Framework

The traditional approach to forecasting monthly sales for a customer class is to develop an econometric model that relates monthly sales to weather, seasonal variables, and economic conditions. Econometric models are well suited to identifying historical trends and to projecting these trends into the future. In contrast, end-use models are able to identify and isolate the end-use factors that are driving energy use. By incorporating end-use structure into an econometric model, the statistically adjusted end-use (SAE) modeling framework exploits the strengths of both approaches.

There are several advantages to this approach.

- The equipment efficiency and saturation trends, dwelling square footage, and thermal integrity changes embodied in the long-run end-use forecasts are introduced explicitly into the short-term monthly sales forecast. This provides a strong bridge between the two forecasts.
- By explicitly incorporating trends in equipment saturations, equipment efficiency, dwelling square footage, and thermal integrity levels, it is easier to explain changes in usage levels and changes in weather-sensitivity over time.
- Data for short-term models are often not sufficiently robust to support estimation of a full set of price, economic, and demographic effects. By bundling these factors with equipment-oriented drivers, a rich set of elasticities can be incorporated into the final model.

This section describes this approach, the associated supporting SAE spreadsheets, and the MetrixND project files that are used in the implementation. The main source of the SAE spreadsheets is the 2020 Annual Energy Outlook (AEO) database provided by the Energy Information Administration (EIA).

Statistically Adjusted End-Use Modeling Framework

The statistically adjusted end-use modeling framework begins by defining energy use ($USE_{y,m}$) in year (y) and month (m) as the sum of energy used by heating equipment ($Heat_{y,m}$), cooling equipment ($Cool_{y,m}$), and other equipment ($Other_{y,m}$). Formally,

$$USE_{y,m} = Heat_{y,m} + Cool_{y,m} + \text{Other}_{y,m} \quad (1)$$

Although monthly sales are measured for individual customers, the end-use components are not. Substituting estimates for the end-use elements gives the following econometric equation.

$$USE_m = a + b_1 \times XHeat_m + b_2 \times XCool_m + b_3 \times XOther_m + \varepsilon_m \quad (2)$$

$XHeat_m$, $XCool_m$, and $XOther_m$ are explanatory variables constructed from end-use information, dwelling data, weather data, and market data. As will be shown below, the equations used to construct these X-variables are simplified end-use models, and the X-variables are the estimated usage levels for each of the major end uses based on these models. The estimated model can then be thought of as a statistically adjusted end-use model, where the estimated slopes are the adjustment factors.

Constructing XHeat

As represented in the SAE spreadsheets, energy use by space heating systems depends on the following types of variables.

- Heating degree days

- Heating equipment saturation levels
- Heating equipment operating efficiencies
- Average number of days in the billing cycle for each month
- Thermal integrity and footage of homes
- Average household size, household income, and energy prices

The heating variable is represented as the product of an annual equipment index and a monthly usage multiplier:

$$XHeat_{y,m} = HeatIndex_{y,m} \times HeatUse_{y,m} \quad (3)$$

Where:

- $XHeat_{y,m}$ is estimated heating energy use in year (*y*) and month (*m*)
- $HeatIndex_{y,m}$ is the monthly index of heating equipment
- $HeatUse_{y,m}$ is the monthly usage multiplier

The heating equipment index is defined as a weighted average across equipment types of equipment saturation levels normalized by operating efficiency levels. Given a set of fixed weights, the index will change over time with changes in equipment saturations (*Sat*), operating efficiencies (*Eff*), building structural index (*StructuralIndex*), and energy prices. Formally, the equipment index is defined as:

$$HeatIndex_y = StructuralIndex_y \times \sum_{Type} Weight^{Type} \times \frac{\left({Sat_y^{Type}} / {Eff_y^{Type}} \right)}{\left({Sat_{15}^{Type}} / {Eff_{15}^{Type}} \right)} \quad (4)$$

The *StructuralIndex* is constructed by combining the EIA's building shell efficiency index trends with surface area estimates, and then it is indexed to the 2015 value:

$$StructuralIndex_y = \frac{BuildingShellEfficiencyIndex_y \times SurfaceArea_y}{BuildingShellEfficiencyIndex_{15} \times SurfaceArea_{15}} \quad (5)$$

The *StructuralIndex* is defined on the *StructuralVars* tab of the SAE spreadsheets. Surface area is derived to account for roof and wall area of a standard dwelling based on the regional average square footage data obtained from EIA. The relationship between the square footage and surface area is constructed assuming an aspect ratio of 0.75 and an average of 25% two-story and 75% single-story. Given these assumptions, the approximate linear relationship for surface area is:

$$SurfaceArea_y = 892 + 1.44 \times Footage_y \quad (6)$$

In Equation 4, 2015 is used as a base year for normalizing the index. As a result, the ratio on the right is equal to 1.0 in 2015. In other years, it will be greater than 1.0 if equipment saturation levels are above their 2015 level. This will be counteracted by higher efficiency levels, which will drive the index downward. The weights are defined as follows.

$$Weight^{Type} = \frac{Energy_{15}^{Type}}{HH_{15}} \times HeatShare_{15}^{Type} \quad (7)$$

In the SAE spreadsheets, these weights are referred to as Intensities and are defined on the *EIAData* tab. With these weights, the *HeatIndex* value in 2015 will be equal to estimated annual heating intensity per household in that year. Variations from this value in other years will be proportional to saturation and efficiency variations around their base values.

For electric heating equipment, the SAE spreadsheets contain two equipment types: electric resistance furnaces/room units and electric space heating heat pumps. Examples of weights for these two equipment types for the U.S. are given in Table 1.

Table 1: Electric Space Heating Equipment Weights

Equipment Type	Weight (kWh)
Electric Resistance Furnace/Room units	916
Electric Space Heating Heat Pump	346

Data for the equipment saturation and efficiency trends are presented on the *Shares* and *Efficiencies* tabs of the SAE spreadsheets. The efficiency for electric space heating heat pumps are given in terms of Heating Seasonal Performance Factor [BTU/Wh], and the efficiencies for electric furnaces and room units are estimated as 100%, which is equivalent to 3.41 BTU/Wh.

Price Impacts. In the 2007 version of the SAE models and thereafter, the Heat Index has been extended to account for the long-run impact of electric and natural gas prices. Since the Heat Index represents changes in the stock of space heating equipment, the price impacts are modeled to play themselves out over a 10-year horizon. To introduce price effects, the Heat Index as defined by Equation 4 above is multiplied by a 10-year moving-average of electric and gas prices. The level of the price impact is guided by the long-term price elasticities:

$$HeatIndex_y = StructuralIndex_y \times \sum_{Type} Weight^{Type} \times \frac{\left(Sat_y^{Type} \Big/ Eff_y^{Type} \right)}{\left(Sat_{15}^{Type} \Big/ Eff_{15}^{Type} \right)} \times$$

$$\left(TenYearMovingAverageElectric\,\mathrm{Pr}\,ice_{y,m}\right)^{\varphi} \times \left(TenYearMovingAverageGas\,\mathrm{Pr}\,ice_{y,m}\right)^{\gamma} \quad (8)$$

Since the trends in the Structural index (the equipment saturations and efficiency levels) are provided exogenously by the EIA, the price impacts are introduced in a multiplicative form. As a result, the long-run change in the Heat Index represents a combination of adjustments to the structural integrity of new homes, saturations in equipment and efficiency levels relative to what was contained in the base EIA long-term forecast.

Heating system usage levels are impacted on a monthly basis by several factors, including weather, household size, income levels, prices, and billing days. The estimates for space heating equipment usage levels are computed as follows:

$$HeatUse_{y,m} = \left(\frac{WgtHDD_{y,m}}{HDD_{15}}\right) \times \left(\frac{HHSize_y}{HHSize_{15}}\right)^{0.25} \times \left(\frac{Income_y}{Income_{15}}\right)^{0.20} \times \left(\frac{Elec\,\mathrm{Price}_{y,m}}{Elec\,\mathrm{Price}_{15,7}}\right)^{\lambda} \times \left(\frac{Gas\,\mathrm{Price}_{y,m}}{Gas\,\mathrm{Price}_{15,7}}\right)^{\kappa} \quad (9)$$

Where:

- $WgtHDD$ is the weighted number of heating degree days in year (y) and month (m). This is constructed as the weighted sum of the current month's HDD and the prior month's HDD. The weights are 75% on the current month and 25% on the prior month.
- HDD is the annual heating degree days for 2015
- $HHSize$ is average household size in a year (y)
- $Income$ is average real income per household in year (y)
- $ElecPrice$ is the average real price of electricity in month (m) and year (y)
- $GasPrice$ is the average real price of natural gas in month (m) and year (y)

By construction, the $HeatUse_{y,m}$ variable has an annual sum that is close to 1.0 in the base year (2015). The first two terms, which involve billing days and heating degree days, serve to allocate annual values to months of the year. The remaining terms average to 1.0 in the base year. In other years, the values will reflect changes in the economic drivers, as transformed through the end-use elasticity parameters. The price impacts captured by the Usage equation represent short-term price response.

Constructing XCool

The explanatory variable for cooling loads is constructed in a similar manner. The amount of energy used by cooling systems depends on the following types of variables.

- Cooling degree days
- Cooling equipment saturation levels
- Cooling equipment operating efficiencies
- Average number of days in the billing cycle for each month
- Thermal integrity and footage of homes
- Average household size, household income, and energy prices

The cooling variable is represented as the product of an equipment-based index and monthly usage multiplier. That is,

$$XCool_{y,m} = CoolIndex_y \times CoolUse_{y,m} \quad (10)$$

Where

- $XCool_{y,m}$ is estimated cooling energy use in year (y) and month (m)
- $CoolIndex_y$ is an index of cooling equipment
- $CoolUse_{y,m}$ is the monthly usage multiplier

As with heating, the cooling equipment index is defined as a weighted average across equipment types of equipment saturation levels normalized by operating efficiency levels. Formally, the cooling equipment index is defined as:

$$CoolIndex_y = StructuralIndex_y \times \sum_{Type} Weight^{Type} \times \frac{\left({Sat_y^{Type}} / {Eff_y^{Type}} \right)}{\left({Sat_{15}^{Type}} / {Eff_{15}^{Type}} \right)} \quad (11)$$

Data values in 2015 are used as a base year for normalizing the index, and the ratio on the right is equal to 1.0 in 2015. In other years, it will be greater than 1.0 if equipment saturation levels are above their 2015 level. This will be counteracted by higher efficiency levels, which will drive the index downward. The weights are defined as follows.

$$Weight^{Type} = \frac{Energy_{15}^{Type}}{HH_{15}} \times CoolShare_{15}^{Type} \quad (12)$$

In the SAE spreadsheets, these weights are referred to as Intensities and are defined on the *EIAData* tab. With these weights, the $CoolIndex$ value in 2015 will be equal to estimated annual cooling intensity per household in that year. Variations from this value in other years will be proportional to saturation and efficiency variations around their base values.

For cooling equipment, the SAE spreadsheets contain three equipment types: central air conditioning, space cooling heat pump, and room air conditioning. Examples of weights for these three equipment types for the U.S. are given in Table 2.

Table 2: Space Cooling Equipment Weights

Equipment Type	Weight (kWh)
Central Air Conditioning	1,012
Space Cooling Heat Pump	306
Room Air Conditioning	277

The equipment saturation and efficiency trends data are presented on the *Shares* and *Efficiencies* tabs of the SAE spreadsheets. The efficiency for space cooling heat pumps and central air conditioning (A/C) units are given in terms of Seasonal Energy Efficiency Ratio [BTU/Wh], and room A/C units efficiencies are given in terms of Energy Efficiency Ratio [BTU/Wh].

Price Impacts. In the 2007 SAE models and thereafter, the Cool Index has been extended to account for changes in electric and natural gas prices. Since the Cool Index represents changes in the stock of space heating equipment, it is anticipated that the impact of prices will be long-term in nature. The Cool Index as defined Equation 11 above is then multiplied by a 10-year moving average of electric and gas prices. The level of the price impact is guided by the long-term price elasticities.

$$CoolIndex_y = StructuralIndex_y \times \sum_{Type} Weight^{Type} \times \frac{\left(Sat_y^{Type} / Eff_y^{Type}\right)}{\left(Sat_{15}^{Type} / Eff_{15}^{Type}\right)} \times$$

$$\left(TenYearMovingAverageElectric\,Pr\,i\,ce_{y,m}\right)^{\varphi} \times \left(TenYearMovingAverageGas\,Pr\,i\,ce_{y,m}\right)^{\gamma} \quad (13)$$

Since the trends in the Structural index, equipment saturations and efficiency levels are provided exogenously by the EIA, price impacts are introduced in a multiplicative form. The long-run change in the Cool Index represents a combination of adjustments to the structural integrity of new homes, saturations in equipment and efficiency levels. Without a detailed end-use model, it is not possible to isolate the price impact on any one of these concepts.

Cooling system usage levels are impacted on a monthly basis by several factors, including weather, household size, income levels, and prices. The estimates of cooling equipment usage levels are computed as follows:

$$CoolUse_{y,m} = \left(\frac{WgtCDD_{y,m}}{CDD_{15}}\right) \times \left(\frac{HHSize_y}{HHSize_{15}}\right)^{0.25} \times \left(\frac{Income_y}{Income_{15}}\right)^{0.20} \times \left(\frac{Elec\,Pr\,ice_{y,m}}{Elec\,Pr\,ice_{15}}\right)^{\lambda} \times \left(\frac{Gas\,Pr\,ice_{y,m}}{Gas\,Pr\,ice_{15}}\right)^{\kappa} \quad (14)$$

Where:

- $WgtCDD$ is the weighted number of cooling degree days in year (y) and month (m). This is constructed as the weighted sum of the current month's CDD and the prior month's CDD. The weights are 75% on the current month and 25% on the prior month.
- CDD is the annual cooling degree days for 2015.

By construction, the $CoolUse$ variable has an annual sum that is close to 1.0 in the base year (2015). The first two terms, which involve billing days and cooling degree days, serve to allocate annual values to months of the year. The remaining terms average to 1.0 in the base year. In other years, the values will change to reflect changes in the economic driver changes.

Constructing XOther

Monthly estimates of non-weather sensitive sales can be derived in a similar fashion to space heating and cooling. Based on end-use concepts, other sales are driven by:

- Appliance and equipment saturation levels
- Appliance efficiency levels
- Average number of days in the billing cycle for each month
- Average household size, real income, and real prices

The explanatory variable for other uses is defined as follows:

$$XOther_{y,m} = OtherEqpIndex_{y,m} \times OtherUse_{y,m} \quad (15)$$

The first term on the right-hand side of this expression ($OtherEqpIndex_y$) embodies information about appliance saturation and efficiency levels and monthly usage multipliers. The second term ($OtherUse$) captures the impact of changes in prices, income, household size, and number of billing-days on appliance utilization.

End-use indices are constructed in the SAE models. A separate end-use index is constructed for each end-use equipment type using the following function form.

$$ApplianceIndex_{y,m} = Weight^{Type} \times \frac{\left(Sat_y^{Type} \Big/ \frac{1}{UEC_y^{Type}} \right)}{\left(Sat_{15}^{Type} \Big/ \frac{1}{UEC_{15}^{Type}} \right)} \times MoMult_m^{Type} \times$$

$$(TenYearMovingAverageElectric\ Pr\ i\ ce)^{\lambda} \times$$

$$(TenYearMovingAverageGas\ Pr\ i\ ce)^{\kappa} \qquad (16)$$

Where:

- $Weight$ is the weight for each appliance type
- Sat represents the fraction of households, who own an appliance type
- $MoMult_m$ is a monthly multiplier for the appliance type in month (m)
- Eff is the average operating efficiency the appliance
- UEC is the unit energy consumption for appliances

This index combines information about trends in saturation levels and efficiency levels for the main appliance categories with monthly multipliers for lighting, water heating, and refrigeration.

The appliance saturation and efficiency trends data are presented on the Shares and Efficiencies tabs of the SAE spreadsheets.

Further monthly variation is introduced by multiplying by usage factors that cut across all end uses, constructed as follows:

$$ApplianceUse_{y,m} = \left(\frac{BDays_{y,m}}{30.44}\right) \times \left(\frac{HHSize_y}{HHSize_{15}}\right)^{0.46} \times \left(\frac{Income_y}{Income_{15}}\right)^{0.10} \times \left(\frac{Elec\ Pr\ ice_{y,m}}{Elec\ Pr\ ice_{15}}\right)^{\varphi} \times \left(\frac{Gas\ Pr\ ice_{y,m}}{Gas\ Pr\ ice_{15}}\right)^{\lambda} \qquad (17)$$

The index for other uses is derived then by summing across the appliances:

$$OtherEqpIndex_{y,m} = \sum_k ApplianceIndex_{y,m} \times ApplianceUse_{y,m} \qquad (18)$$

Supporting Spreadsheets and MetrixND Project Files

The SAE approach described above has been implemented for each of the nine Census Divisions. A mapping of states to Census Divisions is presented in Figure 17. This section describes the contents of each file and a procedure for customizing the files for specific utility data. A total of 18 files are provided. These files are listed in Table 3.

Figure 17: Mapping of States to Census Divisions

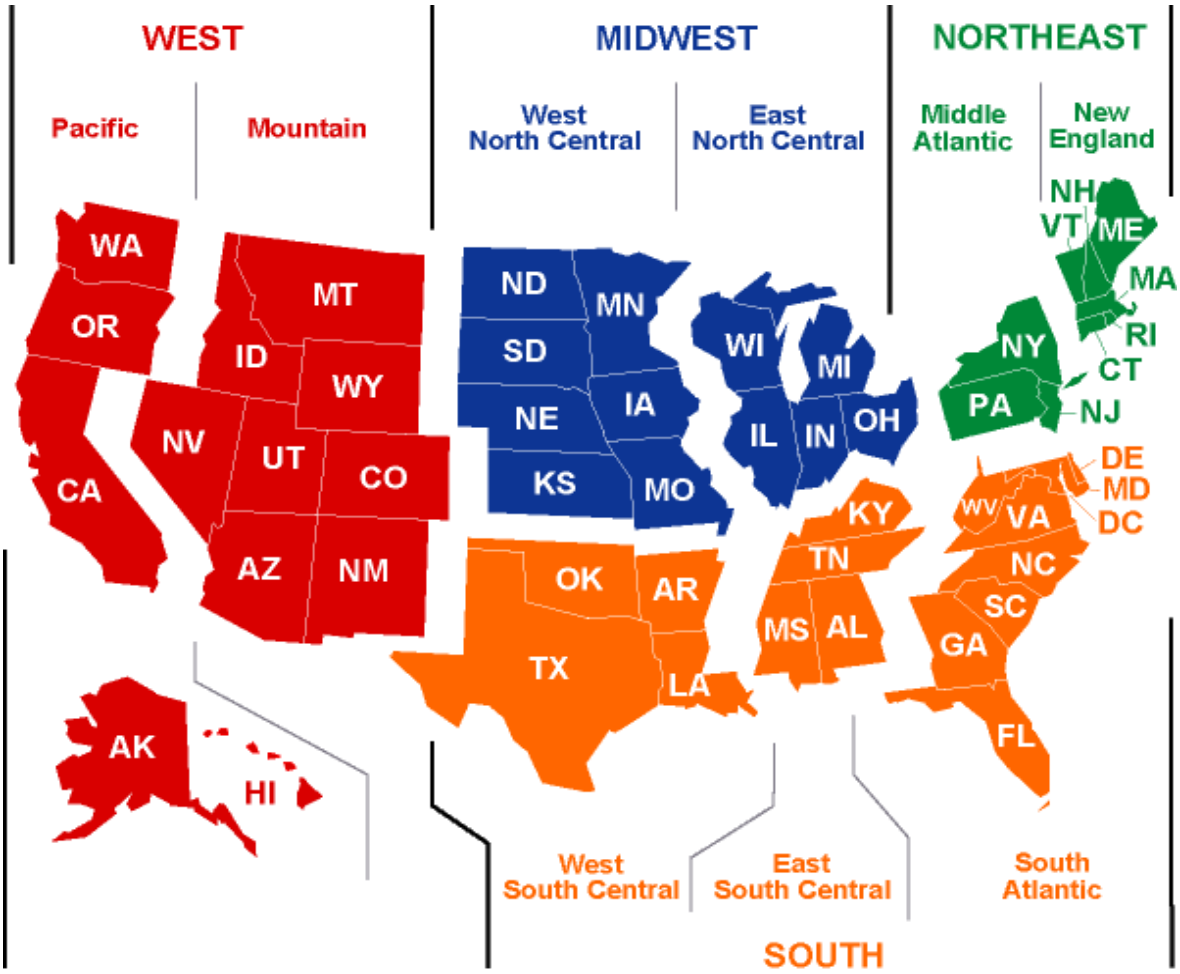

Table 3: List of SAE Files

Spreadsheet	*MetrixND* Project File
NewEngland.xls	SAE_NewEngland.ndm
MiddleAtlantic.xls	SAE_MiddleAtlantic.ndm
EastNorthCentral.xls	SAE_EastNorthCentral.ndm
WestNorthCentral.xls	SAE_WestNorthCentral.ndm
SouthAtlantic.xls	SAE_SouthAltantic.ndm
EastSouthCentral.xls	SAE_EastSouthCentral.ndm
WestSouthCentral.xls	SAE_WestSouthCentral.ndm
Mountain.xls	SAE_Mountain.ndm
Pacific.xls	SAE_Pacific.ndm

As defaults, the SAE spreadsheets include regional data, but utility data can be entered to generate the Heat, Cool, and Other equipment indices used in the SAE approach. The MetrixND project files link to the data in these spreadsheets. These project files calculate the end-use Usage variables are constructed and the estimated SAE models.

Each of the nine SAE spreadsheets contains the following tabs:

- **Definitions.** Contains equipment, end use, worksheet, and Census Division definitions.
- **Intensities.** Calculates the annual equipment indices.
- **Shares.** Contains historical and forecasted equipment shares. The default forecasted values are provided by the EIA. The raw EIA projections are provided on the *EIAData* tab.
- **Efficiencies.** Contains historical and forecasted equipment efficiency trends. The forecasted values are based on projections provided by the EIA. The raw EIA projections are provided on the *EIAData* tab.
- **StructuralVars.** Contains historical and forecasted square footage, number of households, building shell efficiency index, and calculation of structural variable. The forecasted values are based on projections provided by the EIA.
- **Calibration.** This tab contains calculations of the base year Intensity values used to weight the equipment indices.
- **EIAData.** Contains the raw forecasted data provided by the EIA.
- **MonthlyMults.** Contains monthly multipliers that are used to spread the annual equipment indices across the months.
- **EV.** Worksheet for incorporating electric vehicle (EV) impacts.
- **PV.** Worksheet for incorporating photovoltaic battery (PV) impacts.

The MetrixND Project files are linked to the A*nnualIndices*, *ShareUEC*, and *MonthlyMults* tabs in the spreadsheets. Sales, economic, price and weather information for the Census Division is provided in the linkless data table *UtilityData*. In this way, utility specific data and the equipment indices are brought into the project file. The MetrixND project files contain the objects described below.

Parameter Tables

- **Elas.** This parameter table includes the values of the elasticities used to calculate the Usage variables for each end-use. There are five types of elasticities included on this table.
    - Economic variable elasticities
    - Short-term own price elasticities
    - Short-term cross price elasticities
    - Long-term own price elasticities
    - Long-term cross price elasticities

The short-term price elasticities drive the end-use usage equations. The long-term price elasticities drive the Heat, Cool and other appliance indices. The combined price impact is an aggregation of the short and long-term price elasticities. As such, the long-term price elasticities are input as incremental price impact. That is, the long-term price elasticity is the difference between the overall price impact and the short-term price elasticity.

Data Tables

- **AnnualEquipmentIndices** links to the *AnnualIndices* tab for heating and cooling indices, and *ShareUEC* tab for water heating, lighting, and appliances in the SAE spreadsheet.
- **UtilityData** is a linkless data table that contains sales, price, economic and weather data specific to a given Census Division.
- **MonthlyMults** links to the corresponding tab in the SAE spreadsheet.

Transformation Tables

- **EconTrans** computes the average usage, and household size, household income, and price indices used in the usage equations.
- **WeatherTrans** computes the HDD and CDD indices used in the usage equations.
- **ResidentialVars** computes the *Heat*, *Cool* and *Other Usage* variables, as well as the *XHeat*, *XCool* and *XOther* variables that are used in the regression model.
- **BinaryVars** computes the calendar binary variables that could be required in the regression model.
- **AnnualFcst** computes the annual historical and forecast sales and annual change in sales.
- **EndUseFcst** computes the monthly sales forecasts by end uses.

Models

- **ResModel** is the Statistically Adjusted End-Use Model.

Steps to Customize the Files for Your Service Territory

The files that are distributed along with this document contain regional data. If you have more accurate data for your service territory, you are encouraged to tailor the spreadsheets with that information. This section describes the steps needed to customize the files.

Minimum Customization

- Save the MetrixND project file and the spreadsheet into the same folder

- Select the spreadsheet and MetrixND project file from the appropriate Census Division
- Open the spreadsheet and navigate to the *Calibration* tab
- In cell "B9", replace base year Census Division use-per-customer with observed use-per-customer for your service territory
- Save the spreadsheet and open the MetrixND project file
- Click on the *Update All Links* button on the *Menu* bar
- Review the model results

Further Customization of Starting Usage Levels

In addition to the minimum steps listed above, you can also utilize model-based calibration process described previously to further fine-tune starting year usage estimates to your service territory.

Customizing the End-use Share Paths

You can also install your own share history and forecasts. To do this, navigate to the *Share* tab in the spreadsheet and paste in the values for your region. Make sure that base year shares on the *Calibration* tab reflect changes on the *Shares* tab.

Customizing the End-use Efficiency Paths

Finally, you can override the end-use efficiency paths that are contained on the *Efficiencies* tab of the spreadsheet.

INTEGRATED RESOURCE PLANNING REPORT

to the:
Indiana Utility Regulatory Commission

Appendix – Volume 3
PUBLIC REDACTED

Submitted Pursuant to:
Commission Rule 170 IAC 4-7

January 31, 2022

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Exhibit F OVEC 2030 Supplemental Analysis

Maps are CEII and intentionally excluded from I&M's 2021 IRP filing.

AMERICAN ELECTRIC POWER*

FERC FORM 715 – ANNUAL TRANSMISSION PLANNING AND EVALUATION REPORT

Critical Energy Infrastructure Information

DO NOT RELEASE

2021 FILING

***Filed by American Electric Power on behalf of:**

Appalachian Power Company
Indiana Michigan Power Company
Kentucky Power Company
Kingsport Power Company
Ohio Power Company
Wheeling Power Company
AEP Appalachian Transmission Company
AEP Kentucky Transmission Company
AEP Indiana Michigan Transmission Company
AEP Ohio Transmission Company
AEP West Virginia Transmission Company

AMERICAN ELECTRIC POWER – 2021 FILING

FERC FORM 715 – ANNUAL TRANSMISSION PLANNING AND EVALUATION REPORT

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FERC Form No. 715
Part 1

DATA REQUEST PROCESS AND FEE SCHEDULE

Parts 2, 3, and 6 of the completed FERC Form 715 are Critical Energy Infrastructure Information ("CEII") as that term is defined in Section 388.113 of Title 18 of the Code of Federal Regulations.

FERC Form No. 715
Part 1
IDENTIFICATION AND CERTIFICATION

In compliance with the requirements of this FERC Form No. 715 "Annual Transmission Planning Evaluation Report" set forth in 18 CFR § 141.300, PJM Interconnection, L.L.C. (PJM) the information herein on behalf of its transmission owners subject to the reporting requirements of this FERC Form No. 715. The following is a list of the PJM transmission owners whose information is included in this report:

- AMP Transmission, LLC
- American Electric Power Service Corporation
- Baltimore Gas and Electric Company
- City of Cleveland, Department of Public Utilities, Division of Cleveland Public Power
- Commonwealth Edison Company
- Dayton Power and Light Company
- Duke Energy – Ohio and Kentucky
- Duquesne Light Company
- East Kentucky Power Cooperative
- Essential Power Rock Springs, LLC
- FirstEnergy Operating Companies:
  - Allegheny Power
  - American Transmission Systems, Inc.
  - Jersey Central Power and Light Company
  - Metropolitan Edison Company
  - Pennsylvania Electric Company
  - Trans-Allegheny Interstate Line Company
- Hudson Transmission Partners, LLC
- Neptune Regional Transmission System, LLC
- NextEra MidAtlantic Indiana
- ITC Interconnection, LLC
- Ohio Valley Electric Corporation
- PECO Energy Company
- Pennsylvania Power and Light Company
- Pepco Holdings, Inc. (PHI)
  - Atlantic City Electric Company
  - Delmarva Power and Light Company
  - Potomac Electric Power Company
- Public Service Electric and Gas Company
- Rockland Electric Company
- Silver Run
- Southern Maryland Electric Cooperative
- Transource West Virginia
- UGI Utilities, Inc. - Electric Division
- Virginia Electric & Power Company

This Part 1 contains each member transmission owner's Identification and Certification form. Requests for this information are to be directed to the following regional contact:

Regional Contact Information

Address: PJM
2750 Monroe Blvd.
Audubon, PA 19403

Contact Person: Mark J. Kuras
Title: Senior Lead Engineer
NERC Compliance
Phone: (610) 666-8924
E-mail: mark.kuras@pjm.com

FERC FORM 715
ANNUAL TRANSMISSION PLANNING AND EVALUATION REPORT
Part 1: Identification and Certification
April 1, 2021

Transmitting Utility Name (Collectively referred to as "AEP")

Appalachian Power Company
Indiana Michigan Power Company
Kentucky Power Company
Kingsport Power Company
Ohio Power Company
Wheeling Power Company

AEP Appalachian Transmission Company
AEP Kentucky Transmission Company
AEP Indiana Michigan Transmission Company
AEP Ohio Transmission Company
AEP West Virginia Transmission Company

Transmitting Utility Mailing Address

American Electric Power
8500 Smiths Mill Road
New Albany, OH 43054

Contact Person

Name Nicolas Koehler

Title Director, East Transmission Planning

Phone [redacted]

E-mail Address [redacted]

Certifying Official

By affixing my signature I certify that the information supplied in this filing by my Transmitting Utility is accurate.

Signature _____

Name Kamran Ali

Title Vice President, Transmission Planning & Analysis

Phone [redacted]

E-mail Address [redacted]

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FERC FORM 715 – ANNUAL TRANSMISSION PLANNING AND EVALUATION REPORT

PART 3 – TRANSMITTING UTILITY MAPS AND DIAGRAMS EASTERN AEP

The following maps and diagrams for the Appalachian Power Company, Kentucky Power Company, Kingsport Power Company, Indiana Michigan Power Company, Ohio Power Company, and Wheeling Power Company are attached as listed:

AEP System Map – Transmission Facilities

[redacted]

2021 EHV and Major Generating Station Diagram for AEP East

System Operating Maps [Transmission System One-Line Diagram]

[redacted]

AMERICAN ELECTRIC POWER – 2021 FILING

FERC FORM 715 – ANNUAL TRANSMISSION PLANNING AND EVALUATION REPORT

PART 4 – TRANSMISSION PLANNING RELIABILITY CRITERIA

Attached is a document entitled 'The American Electric Power System Transmission Planning Criteria". This document provides the criteria to test and assess the strength of AEP's transmission system to meet its load serving responsibility and provides a description of transmission planning criteria for the AEP System.

Purpose

This report presents an overview of AEP's transmission planning criteria.

The AEP criteria described herein supplements the: 1) North American Electric Reliability Corporation (NERC) Reliability Standards; 2) ReliabilityFirst Corporation (RFC) Standards, 3) PJM Planning and Operating Manuals: Manual 14B, 4) SPP Criteria with Appendices Section 3, Regional Transmission Planning, and 5) ERCOT Planning Guide Section 4, Transmission Planning Criteria where applicable.

Nominal Voltage Levels

Nominal 765 kV, 345 kV, 161 kV, and 138 kV voltage levels will normally be used for most new power transmission lines and are considered Bulk Electric System (BES). Some interconnection lines may be at 500 kV, 230 kV, or 115 kV to match neighboring utilities' voltage, and some 69 kV lines may be constructed in appropriate situations.

The AEP transmission facilities for the PJM and MISO regions are divided into the following three performance categories:

- EHV Facilities:
  Transmission lines rated 765 kV, 500 kV, and 345 kV, and transformers with secondary voltages at or above 345 kV, are considered Extra High Voltage (EHV) facilities, and are referred to as "EHV facilities" in this document. These facilities are part of the BES.

- HV Facilities:
  Transmission lines rated 230 kV, 161 kV, and 138 kV, and transformers with secondary voltages above 100 kV but below 345 kV, are considered High Voltage (HV) facilities, and are referred to as "HV facilities" in this document. These facilities are part of the BES.

- Sub-T Facilities:
  Transmission lines rated below 100 kV, and transformers with secondary voltages below 100 kV are considered sub-transmission (Sub-T) facilities, and are referred to as "Sub-T facilities" in this document. These facilities are not part of the BES.

Voltage Limits

For the SPP and ERCOT Regions:

Transmission level buses above 60 kV shall meet the following steady state voltage response and post-contingency voltage deviation criteria:

- 0.95 per unit to 1.05 per unit in the pre-contingency state following the occurrence of any operating condition in category P0 of the NERC Reliability Standard TPL-001-4 addressing Transmission System Planning Performance Requirements. Facilities associated with series line compensating capacitors are permitted to operate above 1.05 per unit.
- 0.92 per unit to 1.05 per unit in the post-contingency state following the occurrence of any

operating condition in categories P1 through P7 of the NERC Reliability Standard TPL-001-4 addressing Transmission System Planning Performance Requirements. Facilities associated with series line compensating capacitors are permitted to operate above 1.05 per unit.

- Following the occurrence of any operating condition in categories P1 through P7 of the NERC Reliability Standard TPL-001-4, further analysis is required in the event of a post-contingency steady-state voltage deviation that exceeds 8% at any load-serving bus above 100 kV, exclusive of buses on a radial system that serve only Resource Entities and/or Load.

For the PJM and MISO Regions:

Transmission level buses shall meet the following steady state voltage response and post-contingency voltage deviation criteria:

- 0.95 per unit to 1.05 per unit in the pre-contingency state following the occurrence of any operating condition in category P0 of the NERC Reliability Standard TPL-001-4 addressing Transmission System Planning Performance Requirements. Certain 500 kV facilities are permitted to operate above 1.05 per unit to match neighboring utilities operating criteria.
- 0.92 per unit to 1.05 per unit in the post-contingency state following the occurrence of any operating condition in categories P1 through P7 of the NERC Reliability Standard TPL-001-4 addressing Transmission System Planning Performance Requirements. Certain 500 kV facilities are permitted to operate above 1.05 per unit to match neighboring utilities operating criteria.
- Following the occurrence of any operating condition in categories P1 through P7 of the NERC Reliability Standard TPL-001-4, a voltage deviation from system normal of 8% or greater is not acceptable at any station.

Transmission voltages during emergencies should not result in customer voltages exceeding or falling below prescribed limits at distribution substations on the transmission system and voltages at generating stations below minimum acceptable levels established for each station must be avoided to prevent tripping of the generating units. Static and dynamic reactive devices and LTC auto-transformers are used in transmission substations to hold voltage levels within acceptable ranges during normal and emergency conditions. The voltage limits of these reactive devices can exceed prescribed limits if distribution regulating equipment maintains customer voltage within acceptable limits. Voltage fluctuations (flicker) are addressed in the AEP Interconnection Guidelines.

Thermal Limits

Thermal ratings define transmission facility loading limits. Normal ratings are generally based upon no abnormal loss of facility life or equipment damage. Emergency ratings accept some loss of life or strength, over a defined time limit for operation at the rated loading level. The thermal rating for a transmission line is defined by the most limiting element, be it a conductor capability, sag clearance, or terminal equipment rating. Thermal limits establish the maximum amount of

electrical current that a transmission circuit or electrical facility can conduct over a specified time period before it sustains permanent damage by overheating or before it violates public safety requirements. Normal and emergency transmission equipment ratings are documented by AEP standards and guidelines.

For the SPP and ERCOT Regions:

Transmission level buses above 60 kV shall meet the following performance criteria:

- No facility may exceed its normal rating in the pre-contingency state following the occurrence of any operating condition in category P0 of the NERC Reliability Standard TPL-001-4 addressing Transmission System Planning Performance Requirements.
- No facility may exceed its emergency rating in the post-contingency state following the occurrence of any operating condition in categories P1 through P7 of the NERC Reliability Standard TPL-001-4 addressing Transmission System Planning Performance Requirements.

For the PJM and MISO Regions:

Transmission level buses shall meet the following performance criteria:

- No facility may exceed its normal rating in the pre-contingency state following the occurrence of any operating condition in category P0 of the NERC Reliability Standard TPL-001-4 addressing Transmission System Planning Performance Requirements.
- No facility may exceed its emergency rating in the post-contingency state following the occurrence of any operating condition in categories P1 through P7 of the NERC Reliability Standard TPL-001-4 addressing Transmission System Planning Performance Requirements.

Steady State Testing Criteria

The AEP transmission system will be designed so that there are no thermal or voltage criteria violations for a maintenance outage followed by an unscheduled outage of any transmission element during off-peak load periods. Load shedding is not permitted to maintain facilities within thermal and voltage limits.

For the ERCOT Region:

Steady State testing of the AEP transmission system is in accordance with NERC Reliability Standard TPL-001-4 and the ERCOT Planning Guide Section 4.

For the PJM, MISO and SPP Regions:

Steady State testing of the AEP transmission system is in accordance with NERC Reliability Standard TPL-001-4.

Short Circuit Testing Criteria

For the SPP and ERCOT Regions:

AEP steady state planning criteria requires that no bus voltage on AEP system shall exceed 1.05 per unit under system normal or contingency conditions. This voltage limit takes into consideration the equipment capabilities on AEP system. Short circuit assessment is performed assuming 1.05 per unit voltage at all the AEP system buses.

For the PJM and MISO Regions:

AEP steady state planning criteria requires that no bus voltage on AEP system shall exceed 1.05 per unit under system normal or contingency conditions. This voltage limit takes into consideration the equipment capabilities on AEP system. Short circuit assessment is performed assuming 1.05 per unit voltage at all the AEP system buses. This is a conservative approach but accounts for a wide range of system conditions. Circuit breakers at or near a generator plant shall be analyzed differently based on the scheduled voltage at the generator bus. This exception only applies to generator plants already in operation with established scheduled voltages.

Stability Testing and Generation Ride-Through Performance Criteria

Stability testing of the AEP transmission system is in accordance with NERC TPL-001-4. In addition, testing of the AEP system in the ERCOT Region is in accordance with the ERCOT Planning Guide Section 4.

TPL-001-4 R4.1.3 acceptable damping and R5 transient voltage response criteria may be found in PJM Manual 14B Section G.2.2, ERCOT Planning Guide Sections 4.1.1.5 and 4.1.1.6, and the SPP Disturbance Performance Requirements document for the PJM, ERCOT, and SPP areas, respectively.

An exception to TPL-001-4 stability testing criteria is that P7 category Planning Events are simulated with three-phase faults instead of phase-to-ground faults because three-phase is more conservative for common tower structure outages.

All transmission and sub-transmission connected generation, including wind and solar projects, are required to maintain stability and continuity of real and reactive power delivery through all TPL-001-4 planning events. ERCOT generation is further required to abide by the low and high voltage ride-through requirements of Nodal Operating Guide Section 2.9.

Generation that becomes radial through a series capacitor bank or multiple series capacitor banks may be exposed to RMS voltages greater than NERC PRC-024 and RTO criteria for High-Voltage Ride-Through (HVRT) no-trip zone levels because of natural system resonance. If such a radial configuration can result from N-1 or N-2 transmission outages, the generation must remain connected and producing power for the duration of such configuration even if voltages exceed the HVRT no-trip zone boundaries. An HVRT ride-through waver will be granted only under the following conditions:

1. Any SSR or SSCI resulting from the radial configuration is effectively mitigated, and
2. The potential loss of generation does not exceed the largest single unit in the interconnection, and

3. N-3 or greater configuration is necessary for the generation to become radial to a series capacitor, and
4. Agreed to by the RTO

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FERC FORM 715 – ANNUAL TRANSMISSION PLANNING AND EVALUATION REPORT

PART 5 – TRANSMISSION PLANNING ASSESSMENT PRACTICES EASTERN AEP

On an annual basis, AEP, in conjunction with PJM, develops base case power flow models for the eastern AEP transmission system, representing the summer peak, winter peak, and light load conditions. These models are developed to represent the composite transmission/generation system into the future, although not for every year or season.

On an as-needed basis, AEP performs system reliability studies for the eastern AEP operating companies to determine future system needs. Such studies analyze the effect of single contingency outages of transmission lines, transformers, and generation units. In addition, the effects of less probable contingencies are also analyzed. These less probable contingencies involve outages such as loss of all generating units at a station, loss of all transmission lines on a common right-of-way, and other events resulting in loss of two or more components. If violations of the Planning Criteria are identified by the studies, alternative solutions are developed and analyzed. The recommended solutions then become part of the PJM Regional Transmission Expansion Plan (RTEP). In the annual PJM RTEP process, PJM performs power flow analyses as outlined in Manual 14b, checking for base case and contingency thermal and voltage violations. PJM tests the mitigation plans for effectiveness in mitigating the violations. PJM also performs a Short Circuit evaluation and coordinates with AEPSC on the interrupting capabilities of fault interrupting devices and mitigation plans for any capability exceedances. The resulting mitigation plans become a part of the PJM RTEP, along with PJM interconnection projects and other AEP projects.

In performing such studies, AEP and PJM follow the practices outlined in the NERC Reliability Standards, the Reliability*First* Reliability Standards, and the AEP Transmission Planning Criteria described in Part 4.

Vol 3, Exhibit B **Projected Fuel Costs**

Indiana Michigan Power Company
Projected Fuel Costs

Year	¢/Mbtu		$/MMBtu	
	Donald C. Cook 1	Donald C. Cook	Rockport 1	Rockport 2
2021	[redacted]			
2022				
2023				
2024				
2025				
2026				
2027				
2028				
2029				
2030				
2031				
2032				
2033				
2034				
2035				
2036				
2037				
2038				
2039				
2040				
2041				
2042				
2043				
2044				
2045				
2046				
2047				
2048				
2049				
2050				

(REDACTED)

Volume 3, Exhibit C

INDIANA INDUSTRIAL ENERGY MODELS AND INPUT DATA

INDIANA MICHIGAN POWER COMPANY
INDIANA SERVICE AREA
MANUFACTURING ENERGY SALES
ENDOGENOUS VARIABLE

The MEANS Procedure

Variable	Label	Mean
year	year	2026.00
month	month	6.5000000
ei_imi	BILLED KWH	562.8658715

INDIANA MICHIGAN POWER COMPANY
INDIANA SERVICE AREA
MANUFACTURING ENERGY SALES
ENDOGENOUS VARIABLE

Obs	year	month	ei_imi
1	1995	1	445.063
2	1995	2	434.885
3	1995	3	485.973
4	1995	4	462.101
5	1995	5	477.43
6	1995	6	484.029
7	1995	7	446.893
8	1995	8	483.124
9	1995	9	451.58
10	1995	10	495.133
11	1995	11	473.149
12	1995	12	454.79
13	1996	1	506.5363
14	1996	2	510.7182
15	1996	3	509.1997
16	1996	4	523.2746
17	1996	5	549.2134
18	1996	6	523.7555
19	1996	7	532.4252
20	1996	8	562.1799
21	1996	9	533.4938
22	1996	10	557.9409
23	1996	11	489.2345
24	1996	12	516.5402
25	1997	1	537.9642
26	1997	2	514.5719
27	1997	3	513.6808
28	1997	4	555.2667
29	1997	5	531.4818
30	1997	6	553.8671
31	1997	7	557.1743
32	1997	8	555.3932
33	1997	9	559.4926
34	1997	10	570.845
35	1997	11	521.8339
36	1997	12	548.9433
37	1998	1	522.1611
38	1998	2	523.2191
39	1998	3	555.7506
40	1998	4	554.6195
41	1998	5	558.8179
42	1998	6	576.8707
43	1998	7	532.5246
44	1998	8	617.8052
45	1998	9	580.4243
46	1998	10	603.798
47	1998	11	558.0011
48	1998	12	579.6036
49	1999	1	519.1415

INDIANA MICHIGAN POWER COMPANY
INDIANA SERVICE AREA
MANUFACTURING ENERGY SALES
ENDOGENOUS VARIABLE

Obs	year	month	ei_imi
50	1999	2	571.4783
51	1999	3	600.4029
52	1999	4	609.3566
53	1999	5	588.3993
54	1999	6	604.8096
55	1999	7	595.7039
56	1999	8	627.5208
57	1999	9	619.0776
58	1999	10	598.5051
59	1999	11	601.8821
60	1999	12	586.8782
61	2000	1	593.8731
62	2000	2	601.5177
63	2000	3	610.609
64	2000	4	581.0451
65	2000	5	624.1091
66	2000	6	620.2041
67	2000	7	595.2475
68	2000	8	602.1409
69	2000	9	609.4992
70	2000	10	578.3946
71	2000	11	534.1597
72	2000	12	587.5377
73	2001	1	562.522
74	2001	2	549.0661
75	2001	3	586.6955
76	2001	4	570.2732
77	2001	5	597.5152
78	2001	6	594.6218
79	2001	7	730.9623
80	2001	8	631.9577
81	2001	9	589.4201
82	2001	10	572.8912
83	2001	11	537.5029
84	2001	12	544.2759
85	2002	1	565.8917
86	2002	2	554.4982
87	2002	3	578.8751
88	2002	4	582.4315
89	2002	5	602.319
90	2002	6	594.2844
91	2002	7	602.8749
92	2002	8	614.3839
93	2002	9	617.7006
94	2002	10	591.8831
95	2002	11	580.0996
96	2002	12	580.2616
97	2003	1	573.4895
98	2003	2	558.3607

INDIANA MICHIGAN POWER COMPANY
INDIANA SERVICE AREA
MANUFACTURING ENERGY SALES
ENDOGENOUS VARIABLE

Obs	year	month	ei_imi
99	2003	3	564.4867
100	2003	4	555.21
101	2003	5	576.1037
102	2003	6	575.6623
103	2003	7	556.9208
104	2003	8	582.2612
105	2003	9	597.5811
106	2003	10	590.5284
107	2003	11	563.8974
108	2003	12	558.1062
109	2004	1	591.1904
110	2004	2	571.6933
111	2004	3	584.2021
112	2004	4	582.1246
113	2004	5	595.1821
114	2004	6	600.7901
115	2004	7	581.1516
116	2004	8	597.2478
117	2004	9	616.325
118	2004	10	577.2869
119	2004	11	564.9906
120	2004	12	583.0957
121	2005	1	558.5265
122	2005	2	572.8868
123	2005	3	589.6879
124	2005	4	551.5711
125	2005	5	592.4665
126	2005	6	584.8243
127	2005	7	581.8307
128	2005	8	611.8744
129	2005	9	620.5461
130	2005	10	612.1391
131	2005	11	558.0226
132	2005	12	588.3965
133	2006	1	585.8103
134	2006	2	568.0625
135	2006	3	593.1102
136	2006	4	564.774
137	2006	5	601.6685
138	2006	6	589.9968
139	2006	7	591.6418
140	2006	8	614.3286
141	2006	9	604.5194
142	2006	10	569.5298
143	2006	11	561.0125
144	2006	12	571.7102
145	2007	1	554.0955
146	2007	2	552.4443
147	2007	3	580.4356

INDIANA MICHIGAN POWER COMPANY
INDIANA SERVICE AREA
MANUFACTURING ENERGY SALES
ENDOGENOUS VARIABLE

Obs	year	month	ei_imi
148	2007	4	555.1105
149	2007	5	579.5736
150	2007	6	592.4012
151	2007	7	592.7365
152	2007	8	607.259
153	2007	9	614.2926
154	2007	10	584.8136
155	2007	11	542.5132
156	2007	12	571.0556
157	2008	1	572.9256
158	2008	2	559.9062
159	2008	3	581.6669
160	2008	4	564.7042
161	2008	5	583.4742
162	2008	6	591.2739
163	2008	7	572.7185
164	2008	8	592.4687
165	2008	9	559.4872
166	2008	10	479.4442
167	2008	11	449.3421
168	2008	12	480.4226
169	2009	1	480.3961
170	2009	2	450.4962
171	2009	3	450.8111
172	2009	4	452.2333
173	2009	5	463.4872
174	2009	6	499.5121
175	2009	7	522.7519
176	2009	8	546.6993
177	2009	9	552.8066
178	2009	10	532.8112
179	2009	11	504.974
180	2009	12	547.4043
181	2010	1	552.3489
182	2010	2	520.3179
183	2010	3	555.2909
184	2010	4	531.5204
185	2010	5	558.832
186	2010	6	541.3213
187	2010	7	547.2915
188	2010	8	577.0647
189	2010	9	545.7517
190	2010	10	528.1695
191	2010	11	538.4091
192	2010	12	584.1981
193	2011	1	556.5215
194	2011	2	509.029
195	2011	3	570.8447
196	2011	4	537.3576

INDIANA MICHIGAN POWER COMPANY
INDIANA SERVICE AREA
MANUFACTURING ENERGY SALES
ENDOGENOUS VARIABLE

Obs	year	month	ei_imi
197	2011	5	563.3275
198	2011	6	577.2622
199	2011	7	542.0551
200	2011	8	601.6735
201	2011	9	597.7811
202	2011	10	550.3301
203	2011	11	545.8797
204	2011	12	573.0644
205	2012	1	570.4171
206	2012	2	534.0153
207	2012	3	558.0769
208	2012	4	573.1815
209	2012	5	571.3803
210	2012	6	565.2665
211	2012	7	577.1958
212	2012	8	588.7895
213	2012	9	551.9438
214	2012	10	544.6008
215	2012	11	563.5895
216	2012	12	555.4219
217	2013	1	552.1268
218	2013	2	545.1737
219	2013	3	547.9073
220	2013	4	536.9473
221	2013	5	569.2039
222	2013	6	558.789
223	2013	7	577.4297
224	2013	8	562.7971
225	2013	9	589.0043
226	2013	10	559.0491
227	2013	11	561.0187
228	2013	12	562.3288
229	2014	1	535.0116
230	2014	2	533.1196
231	2014	3	573.4851
232	2014	4	567.1311
233	2014	5	585.8228
234	2014	6	581.0288
235	2014	7	591.038
236	2014	8	593.9361
237	2014	9	576.1844
238	2014	10	570.1743
239	2014	11	575.9166
240	2014	12	575.2029
241	2015	1	561.2531
242	2015	2	527.6418
243	2015	3	536.7722
244	2015	4	547.2244
245	2015	5	573.7563

INDIANA MICHIGAN POWER COMPANY
INDIANA SERVICE AREA
MANUFACTURING ENERGY SALES
ENDOGENOUS VARIABLE

Obs	year	month	ei_imi
246	2015	6	594.801
247	2015	7	572.7484
248	2015	8	601.2221
249	2015	9	578.7481
250	2015	10	537.597
251	2015	11	527.4492
252	2015	12	589.8728
253	2016	1	544.5754
254	2016	2	559.7568
255	2016	3	587.4488
256	2016	4	573.3268
257	2016	5	583.1317
258	2016	6	595.2635
259	2016	7	598.789
260	2016	8	607.8734
261	2016	9	585.9521
262	2016	10	534.0034
263	2016	11	570.5345
264	2016	12	583.7737
265	2017	1	585.7369
266	2017	2	559.3046
267	2017	3	586.1146
268	2017	4	563.3794
269	2017	5	557.466
270	2017	6	576.0374
271	2017	7	591.6151
272	2017	8	606.0111
273	2017	9	587.2093
274	2017	10	567.7227
275	2017	11	578.0346
276	2017	12	598.5434
277	2018	1	592.6421
278	2018	2	555.9168
279	2018	3	591.6134
280	2018	4	586.0074
281	2018	5	585.6396
282	2018	6	591.7216
283	2018	7	609.3525
284	2018	8	605.4945
285	2018	9	601.7443
286	2018	10	574.0402
287	2018	11	565.5359
288	2018	12	582.9078
289	2019	1	574.7303
290	2019	2	550.0202
291	2019	3	581.6774
292	2019	4	575.1775
293	2019	5	573.8886
294	2019	6	568.8296

INDIANA MICHIGAN POWER COMPANY
INDIANA SERVICE AREA
MANUFACTURING ENERGY SALES
ENDOGENOUS VARIABLE

Obs	year	month	ei_imi
295	2019	7	583.1765
296	2019	8	580.5804
297	2019	9	579.7264
298	2019	10	547.4396
299	2019	11	547.8022
300	2019	12	559.5783
301	2020	1	552.4036
302	2020	2	543.3627
303	2020	3	557.091
304	2020	4	461.629
305	2020	5	473.4904
306	2020	6	508.8628
307	2020	7	553.3962
308	2020	8	567.0317
309	2020	9	570.0996
310	2020	10	544.1887
311	2020	11	552.8134
312	2020	12	565.6854
313	2021	1	548.4334
314	2021	2	.
315	2021	3	.
316	2021	4	.
317	2021	5	.
318	2021	6	.
319	2021	7	.
320	2021	8	.
321	2021	9	.
322	2021	10	.
323	2021	11	.
324	2021	12	.
325	2022	1	.
326	2022	2	.
327	2022	3	.
328	2022	4	.
329	2022	5	.
330	2022	6	.
331	2022	7	.
332	2022	8	.
333	2022	9	.
334	2022	10	.
335	2022	11	.
336	2022	12	.
337	2023	1	.
338	2023	2	.
339	2023	3	.
340	2023	4	.
341	2023	5	.
342	2023	6	.
343	2023	7	.

INDIANA MICHIGAN POWER COMPANY
INDIANA SERVICE AREA
MANUFACTURING ENERGY SALES
ENDOGENOUS VARIABLE

Obs	year	month	ei_imi
344	2023	8	.
345	2023	9	.
346	2023	10	.
347	2023	11	.
348	2023	12	.
349	2024	1	.
350	2024	2	.
351	2024	3	.
352	2024	4	.
353	2024	5	.
354	2024	6	.
355	2024	7	.
356	2024	8	.
357	2024	9	.
358	2024	10	.
359	2024	11	.
360	2024	12	.
361	2025	1	.
362	2025	2	.
363	2025	3	.
364	2025	4	.
365	2025	5	.
366	2025	6	.
367	2025	7	.
368	2025	8	.
369	2025	9	.
370	2025	10	.
371	2025	11	.
372	2025	12	.
373	2026	1	.
374	2026	2	.
375	2026	3	.
376	2026	4	.
377	2026	5	.
378	2026	6	.
379	2026	7	.
380	2026	8	.
381	2026	9	.
382	2026	10	.
383	2026	11	.
384	2026	12	.
385	2027	1	.
386	2027	2	.
387	2027	3	.
388	2027	4	.
389	2027	5	.
390	2027	6	.
391	2027	7	.
392	2027	8	.

INDIANA MICHIGAN POWER COMPANY
INDIANA SERVICE AREA
MANUFACTURING ENERGY SALES
ENDOGENOUS VARIABLE

Obs	year	month	ei_imi
393	2027	9	.
394	2027	10	.
395	2027	11	.
396	2027	12	.
397	2028	1	.
398	2028	2	.
399	2028	3	.
400	2028	4	.
401	2028	5	.
402	2028	6	.
403	2028	7	.
404	2028	8	.
405	2028	9	.
406	2028	10	.
407	2028	11	.
408	2028	12	.
409	2029	1	.
410	2029	2	.
411	2029	3	.
412	2029	4	.
413	2029	5	.
414	2029	6	.
415	2029	7	.
416	2029	8	.
417	2029	9	.
418	2029	10	.
419	2029	11	.
420	2029	12	.
421	2030	1	.
422	2030	2	.
423	2030	3	.
424	2030	4	.
425	2030	5	.
426	2030	6	.
427	2030	7	.
428	2030	8	.
429	2030	9	.
430	2030	10	.
431	2030	11	.
432	2030	12	.
433	2031	1	.
434	2031	2	.
435	2031	3	.
436	2031	4	.
437	2031	5	.
438	2031	6	.
439	2031	7	.
440	2031	8	.
441	2031	9	.

INDIANA MICHIGAN POWER COMPANY
INDIANA SERVICE AREA
MANUFACTURING ENERGY SALES
ENDOGENOUS VARIABLE

Obs	year	month	ei_imi
442	2031	10	.
443	2031	11	.
444	2031	12	.
445	2032	1	.
446	2032	2	.
447	2032	3	.
448	2032	4	.
449	2032	5	.
450	2032	6	.
451	2032	7	.
452	2032	8	.
453	2032	9	.
454	2032	10	.
455	2032	11	.
456	2032	12	.
457	2033	1	.
458	2033	2	.
459	2033	3	.
460	2033	4	.
461	2033	5	.
462	2033	6	.
463	2033	7	.
464	2033	8	.
465	2033	9	.
466	2033	10	.
467	2033	11	.
468	2033	12	.
469	2034	1	.
470	2034	2	.
471	2034	3	.
472	2034	4	.
473	2034	5	.
474	2034	6	.
475	2034	7	.
476	2034	8	.
477	2034	9	.
478	2034	10	.
479	2034	11	.
480	2034	12	.
481	2035	1	.
482	2035	2	.
483	2035	3	.
484	2035	4	.
485	2035	5	.
486	2035	6	.
487	2035	7	.
488	2035	8	.
489	2035	9	.
490	2035	10	.

INDIANA MICHIGAN POWER COMPANY
INDIANA SERVICE AREA
MANUFACTURING ENERGY SALES
ENDOGENOUS VARIABLE

Obs	year	month	ei_imi
491	2035	11	.
492	2035	12	.
493	2036	1	.
494	2036	2	.
495	2036	3	.
496	2036	4	.
497	2036	5	.
498	2036	6	.
499	2036	7	.
500	2036	8	.
501	2036	9	.
502	2036	10	.
503	2036	11	.
504	2036	12	.
505	2037	1	.
506	2037	2	.
507	2037	3	.
508	2037	4	.
509	2037	5	.
510	2037	6	.
511	2037	7	.
512	2037	8	.
513	2037	9	.
514	2037	10	.
515	2037	11	.
516	2037	12	.
517	2038	1	.
518	2038	2	.
519	2038	3	.
520	2038	4	.
521	2038	5	.
522	2038	6	.
523	2038	7	.
524	2038	8	.
525	2038	9	.
526	2038	10	.
527	2038	11	.
528	2038	12	.
529	2039	1	.
530	2039	2	.
531	2039	3	.
532	2039	4	.
533	2039	5	.
534	2039	6	.
535	2039	7	.
536	2039	8	.
537	2039	9	.
538	2039	10	.
539	2039	11	.

INDIANA MICHIGAN POWER COMPANY
INDIANA SERVICE AREA
MANUFACTURING ENERGY SALES
ENDOGENOUS VARIABLE

Obs	year	month	ei_imi
540	2039	12	.
541	2040	1	.
542	2040	2	.
543	2040	3	.
544	2040	4	.
545	2040	5	.
546	2040	6	.
547	2040	7	.
548	2040	8	.
549	2040	9	.
550	2040	10	.
551	2040	11	.
552	2040	12	.
553	2041	1	.
554	2041	2	.
555	2041	3	.
556	2041	4	.
557	2041	5	.
558	2041	6	.
559	2041	7	.
560	2041	8	.
561	2041	9	.
562	2041	10	.
563	2041	11	.
564	2041	12	.
565	2042	1	.
566	2042	2	.
567	2042	3	.
568	2042	4	.
569	2042	5	.
570	2042	6	.
571	2042	7	.
572	2042	8	.
573	2042	9	.
574	2042	10	.
575	2042	11	.
576	2042	12	.
577	2043	1	.
578	2043	2	.
579	2043	3	.
580	2043	4	.
581	2043	5	.
582	2043	6	.
583	2043	7	.
584	2043	8	.
585	2043	9	.
586	2043	10	.
587	2043	11	.
588	2043	12	.

INDIANA MICHIGAN POWER COMPANY
INDIANA SERVICE AREA
MANUFACTURING ENERGY SALES
ENDOGENOUS VARIABLE

Obs	year	month	ei_imi
589	2044	1	.
590	2044	2	.
591	2044	3	.
592	2044	4	.
593	2044	5	.
594	2044	6	.
595	2044	7	.
596	2044	8	.
597	2044	9	.
598	2044	10	.
599	2044	11	.
600	2044	12	.
601	2045	1	.
602	2045	2	.
603	2045	3	.
604	2045	4	.
605	2045	5	.
606	2045	6	.
607	2045	7	.
608	2045	8	.
609	2045	9	.
610	2045	10	.
611	2045	11	.
612	2045	12	.
613	2046	1	.
614	2046	2	.
615	2046	3	.
616	2046	4	.
617	2046	5	.
618	2046	6	.
619	2046	7	.
620	2046	8	.
621	2046	9	.
622	2046	10	.
623	2046	11	.
624	2046	12	.
625	2047	1	.
626	2047	2	.
627	2047	3	.
628	2047	4	.
629	2047	5	.
630	2047	6	.
631	2047	7	.
632	2047	8	.
633	2047	9	.
634	2047	10	.
635	2047	11	.
636	2047	12	.
637	2048	1	.

INDIANA MICHIGAN POWER COMPANY
INDIANA SERVICE AREA
MANUFACTURING ENERGY SALES
ENDOGENOUS VARIABLE

Obs	year	month	ei_imi
638	2048	2	.
639	2048	3	.
640	2048	4	.
641	2048	5	.
642	2048	6	.
643	2048	7	.
644	2048	8	.
645	2048	9	.
646	2048	10	.
647	2048	11	.
648	2048	12	.
649	2049	1	.
650	2049	2	.
651	2049	3	.
652	2049	4	.
653	2049	5	.
654	2049	6	.
655	2049	7	.
656	2049	8	.
657	2049	9	.
658	2049	10	.
659	2049	11	.
660	2049	12	.
661	2050	1	.
662	2050	2	.
663	2050	3	.
664	2050	4	.
665	2050	5	.
666	2050	6	.
667	2050	7	.
668	2050	8	.
669	2050	9	.
670	2050	10	.
671	2050	11	.
672	2050	12	.
673	2051	1	.
674	2051	2	.
675	2051	3	.
676	2051	4	.
677	2051	5	.
678	2051	6	.
679	2051	7	.
680	2051	8	.
681	2051	9	.
682	2051	10	.
683	2051	11	.
684	2051	12	.
685	2052	1	.
686	2052	2	.

INDIANA MICHIGAN POWER COMPANY
INDIANA SERVICE AREA
MANUFACTURING ENERGY SALES
ENDOGENOUS VARIABLE

Obs	year	month	ei_imi
687	2052	3	.
688	2052	4	.
689	2052	5	.
690	2052	6	.
691	2052	7	.
692	2052	8	.
693	2052	9	.
694	2052	10	.
695	2052	11	.
696	2052	12	.
697	2053	1	.
698	2053	2	.
699	2053	3	.
700	2053	4	.
701	2053	5	.
702	2053	6	.
703	2053	7	.
704	2053	8	.
705	2053	9	.
706	2053	10	.
707	2053	11	.
708	2053	12	.
709	2054	1	.
710	2054	2	.
711	2054	3	.
712	2054	4	.
713	2054	5	.
714	2054	6	.
715	2054	7	.
716	2054	8	.
717	2054	9	.
718	2054	10	.
719	2054	11	.
720	2054	12	.
721	2055	1	.
722	2055	2	.
723	2055	3	.
724	2055	4	.
725	2055	5	.
726	2055	6	.
727	2055	7	.
728	2055	8	.
729	2055	9	.
730	2055	10	.
731	2055	11	.
732	2055	12	.
733	2056	1	.
734	2056	2	.
735	2056	3	.

INDIANA MICHIGAN POWER COMPANY
INDIANA SERVICE AREA
MANUFACTURING ENERGY SALES
ENDOGENOUS VARIABLE

Obs	year	month	ei_imi
736	2056	4	.
737	2056	5	.
738	2056	6	.
739	2056	7	.
740	2056	8	.
741	2056	9	.
742	2056	10	.
743	2056	11	.
744	2056	12	.
745	2057	1	.
746	2057	2	.
747	2057	3	.
748	2057	4	.
749	2057	5	.
750	2057	6	.
751	2057	7	.
752	2057	8	.
753	2057	9	.
754	2057	10	.
755	2057	11	.
756	2057	12	.

INDIANA MICHIGAN POWER COMPANY
INDIANA SERVICE AREA
MANUFACTURING ENERGY SALES
EXOGENOUS VARIABLES

The MEANS Procedure

Variable	Label	Mean
year	year	2026.00
month	month	6.5000000
grpmf_imi	SERVICE AREA GROSS REGIONAL PRODUCT-MANUF.	31504.87
frbmvp	FRB IND. PROD. INDEX, MOTOR VEHICLES	141.6644733
D03ON	BINARY VARIABLE-2003 ON	0.8730159
d1	JANUARY	0.0833333
d2	FEBRUARY	0.0833333
d3	MARCH	0.0833333
d4	APRIL	0.0833333
d5	MAY	0.0833333
d6	JUNE	0.0833333
d7	JULY	0.0833333
d8	AUGUST	0.0833333
d9	SEPTEMBER	0.0833333
d10	OCTOBER	0.0833333
d11	NOVEMBER	0.0833333
d95	BINARY VARIABLE-1995	0.0158730
dsep12on	BINARY VARIABLE-SEPTEMBER 2012 ON	0.7195767
mar01oct01	BINARY VARIABLE-MARCH 2001 THROUGH OCTOBER 2001	0.0105820
jan20on	BINARY VARIABLE-JANUARY 2020 ON	0.6031746

Obs	year	month	grpmf_imi	frbmvp	D030N	d1	d2	d3	d4	d5	d6	d7	d8	d9	d10	d11	d95	dsep12on	mar01oct01	jan20on	PRICE
1	1995	1	17432.58	83.808	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	CONFID.
2	1995	2	17411.40	84.122	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	CONFID.
3	1995	3	17386.49	83.691	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	CONFID.
4	1995	4	17359.37	82.737	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	CONFID.
5	1995	5	17333.37	81.694	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	CONFID.
6	1995	6	17311.04	80.935	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	CONFID.
7	1995	7	17294.84	80.619	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	CONDID.
8	1995	8	17285.51	80.829	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	CONFID.
9	1995	9	17282.47	81.463	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	CONFID.
10	1995	10	17284.53	81.903	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	CONFID.
11	1995	11	17290.63	81.381	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	CONFID.
12	1995	12	17299.75	79.578	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	CONFID.
13	1996	1	17311.06	77.587	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
14	1996	2	17322.94	77.032	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
15	1996	3	17334.76	78.775	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
16	1996	4	17345.71	81.902	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	CONFID.
17	1996	5	17354.55	84.813	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	CONFID.
18	1996	6	17360.27	86.298	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	CONFID.
19	1996	7	17361.93	86.325	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	CONDID.
20	1996	8	17360.01	85.262	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	CONFID.
21	1996	9	17356.58	83.653	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	CONFID.
22	1996	10	17353.76	82.361	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	CONFID.
23	1996	11	17353.68	82.355	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	CONFID.
24	1996	12	17358.51	84.116	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
25	1997	1	17370.59	86.574	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
26	1997	2	17390.78	88.041	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
27	1997	3	17421.66	87.686	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
28	1997	4	17466.57	86.268	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	CONFID.
29	1997	5	17526.99	85.199	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	CONFID.
30	1997	6	17604.89	85.518	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	CONFID.
31	1997	7	17702.38	87.050	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	CONDID.
32	1997	8	17820.51	89.229	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	CONFID.
33	1997	9	17951.60	91.427	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	CONFID.
34	1997	10	18093.39	93.255	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	CONFID.
35	1997	11	18241.65	94.349	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	CONFID.
36	1997	12	18392.30	94.498	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
37	1998	1	18543.58	94.016	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
38	1998	2	18681.98	93.419	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
39	1998	3	18810.92	92.962	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
40	1998	4	18930.60	92.348	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	CONFID.

INDIANA MICHIGAN POWER COMPANY
INDIANA SERVICE AREA
MANUFACTURING ENERGY SALES
EXOGENOUS VARIABLES

Obs	year	month	grpmf_imi	frbmvp	DO30N	d1	d2	d3	d4	d5	d6	d7	d8	d9	d10	d11	d95	dsep12on	mar01oct01	jan20on	PRICE
41	1998	5	19032.11	91.108	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	CONFID.
42	1998	6	19111.54	89.190	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	CONFID.
43	1998	7	19164.84	87.836	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	CONDID.
44	1998	8	19192.76	88.737	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	CONFID.
45	1998	9	19199.21	92.674	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	CONFID.
46	1998	10	19189.92	97.908	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	CONFID.
47	1998	11	19170.24	101.898	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	CONFID.
48	1998	12	19145.33	102.945	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
49	1999	1	19120.04	102.013	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
50	1999	2	19100.90	100.978	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
51	1999	3	19091.60	101.039	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
52	1999	4	19097.04	101.957	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	CONFID.
53	1999	5	19123.20	102.968	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	CONFID.
54	1999	6	19175.04	103.519	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	CONFID.
55	1999	7	19257.63	103.798	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	CONDID.
56	1999	8	19371.88	104.258	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	CONFID.
57	1999	9	19507.02	105.149	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	CONFID.
58	1999	10	19657.11	106.203	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	CONFID.
59	1999	11	19814.35	106.979	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	CONFID.
60	1999	12	19971.11	107.204	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
61	2000	1	20122.06	107.143	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
62	2000	2	20252.65	107.223	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
63	2000	3	20360.26	107.658	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
64	2000	4	20439.06	108.028	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	CONFID.
65	2000	5	20478.93	107.673	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	CONFID.
66	2000	6	20472.67	106.219	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	CONFID.
67	2000	7	20412.71	104.087	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	CONDID.
68	2000	8	20298.00	101.949	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	CONFID.
69	2000	9	20141.16	100.309	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	CONFID.
70	2000	10	19950.18	98.772	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	CONFID.
71	2000	11	19735.04	96.731	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	CONFID.
72	2000	12	19505.22	93.968	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
73	2001	1	19266.69	91.438	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
74	2001	2	19044.15	90.574	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
75	2001	3	18835.19	91.966	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	CONFID.
76	2001	4	18642.31	94.602	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	CONFID.
77	2001	5	18482.92	96.718	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	CONFID.
78	2001	6	18366.31	97.095	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	CONFID.
79	2001	7	18302.10	96.176	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	CONDID.
80	2001	8	18292.14	94.970	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	CONFID.

INDIANA MICHIGAN POWER COMPANY
INDIANA SERVICE AREA
MANUFACTURING ENERGY SALES
EXOGENOUS VARIABLES

Obs	year	month	grpmf_imi	frbmvp	D030N	d1	d2	d3	d4	d5	d6	d7	d8	d9	d10	d11	d95	dsep12on	mar01oct01	jan20on	PRICE
81	2001	9	18330.99	94.310	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	CONFID.
82	2001	10	18411.93	94.299	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	CONFID.
83	2001	11	18528.03	94.834	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	CONFID.
84	2001	12	18673.14	95.818	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
85	2002	1	18843.44	97.164	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
86	2002	2	19020.65	98.665	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
87	2002	3	19206.89	100.291	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
88	2002	4	19402.45	102.025	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	CONFID.
89	2002	5	19594.71	103.740	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	CONFID.
90	2002	6	19777.24	105.321	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	CONFID.
91	2002	7	19943.72	106.505	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	CONDID.
92	2002	8	20094.38	106.993	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	CONFID.
93	2002	9	20226.47	106.680	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	CONFID.
94	2002	10	20345.03	106.116	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	CONFID.
95	2002	11	20452.74	106.038	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	CONFID.
96	2002	12	20552.05	106.834	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
97	2003	1	20647.08	107.823	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
98	2003	2	20734.42	107.962	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
99	2003	3	20821.05	106.766	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
100	2003	4	20912.36	105.032	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	CONFID.
101	2003	5	21007.99	104.148	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	CONFID.
102	2003	6	21110.43	104.976	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	CONFID.
103	2003	7	21222.14	106.856	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	CONDID.
104	2003	8	21344.98	108.621	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	CONFID.
105	2003	9	21472.23	109.403	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	CONFID.
106	2003	10	21602.79	109.554	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	CONFID.
107	2003	11	21733.63	109.758	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	CONFID.
108	2003	12	21861.70	110.436	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
109	2004	1	21985.93	111.216	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
110	2004	2	22097.55	111.437	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
111	2004	3	22197.59	110.718	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
112	2004	4	22284.70	109.321	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	CONFID.
113	2004	5	22353.89	107.753	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	CONFID.
114	2004	6	22402.32	106.457	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	CONFID.
115	2004	7	22426.97	105.645	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	CONDID.
116	2004	8	22427.65	105.452	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	CONFID.
117	2004	9	22406.94	105.930	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	CONFID.
118	2004	10	22367.71	106.857	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	CONFID.
119	2004	11	22312.99	107.933	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	CONFID.
120	2004	12	22245.46	108.877	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.

INDIANA MICHIGAN POWER COMPANY
INDIANA SERVICE AREA
MANUFACTURING ENERGY SALES
EXOGENOUS VARIABLES

Obs	year	month	grpmf_imi	frbmvp	D030N	d1	d2	d3	d4	d5	d6	d7	d8	d9	d10	d11	d95	dsep12on	mar01oct01	jan20on	PRICE
121	2005	1	22166.72	109.462	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
122	2005	2	22085.04	109.470	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
123	2005	3	21999.28	108.860	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
124	2005	4	21909.15	107.939	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	CONFID.
125	2005	5	21820.33	107.212	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	CONFID.
126	2005	6	21735.61	107.045	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	CONFID.
127	2005	7	21657.83	107.435	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	CONDID.
128	2005	8	21588.16	108.253	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	CONFID.
129	2005	9	21530.49	109.275	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	CONFID.
130	2005	10	21485.30	110.139	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	CONFID.
131	2005	11	21454.03	110.425	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	CONFID.
132	2005	12	21438.42	109.936	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
133	2006	1	21440.11	109.182	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
134	2006	2	21459.55	108.920	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
135	2006	3	21498.29	109.474	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
136	2006	4	21559.61	110.181	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	CONFID.
137	2006	5	21644.48	109.952	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	CONFID.
138	2006	6	21754.21	108.195	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	CONFID.
139	2006	7	21890.45	105.785	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	CONDID.
140	2006	8	22054.26	104.083	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	CONFID.
141	2006	9	22235.68	104.010	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	CONFID.
142	2006	10	22432.32	104.869	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	CONFID.
143	2006	11	22639.06	105.512	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	CONFID.
144	2006	12	22851.01	105.241	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
145	2007	1	23066.61	104.760	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
146	2007	2	23267.28	105.190	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
147	2007	3	23458.77	107.097	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
148	2007	4	23642.59	109.594	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	CONFID.
149	2007	5	23806.88	111.093	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	CONFID.
150	2007	6	23946.88	110.581	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	CONFID.
151	2007	7	24057.35	108.644	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	CONDID.
152	2007	8	24134.69	106.398	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	CONFID.
153	2007	9	24171.82	104.752	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	CONFID.
154	2007	10	24165.34	103.582	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	CONFID.
155	2007	11	24111.22	102.499	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	CONFID.
156	2007	12	24004.33	101.169	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
157	2008	1	23837.37	99.405	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
158	2008	2	23615.55	97.205	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
159	2008	3	23329.02	94.494	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
160	2008	4	22968.21	91.456	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	CONFID.

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Obs	year	month	grpmf_imi	frbmvp	D030N	d01	d02	d03	d04	d05	d06	d07	d08	d09	d10	d11	d95	dsep12on	mar01oct01	jan20on	PRICE
161	2008	5	22531.81	88.447	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	CONFID.
162	2008	6	22016.09	85.736	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	CONFID.
163	2008	7	21416.70	83.454	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	CONDID.
164	2008	8	20731.81	81.648	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	CONFID.
165	2008	9	20005.92	80.172	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	CONFID.
166	2008	10	19251.86	77.959	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	CONFID.
167	2008	11	18493.34	73.744	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	CONFID.
168	2008	12	17753.99	66.931	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
169	2009	1	17046.26	59.003	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
170	2009	2	16435.53	52.668	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
171	2009	3	15909.77	49.238	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
172	2009	4	15475.57	48.905	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	CONFID.
173	2009	5	15177.75	51.639	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	CONFID.
174	2009	6	15038.23	56.853	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	CONFID.
175	2009	7	15080.62	63.123	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	CONDID.
176	2009	8	15308.18	68.785	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	CONFID.
177	2009	9	15689.06	72.413	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	CONFID.
178	2009	10	16199.75	74.339	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	CONFID.
179	2009	11	16812.21	75.287	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	CONFID.
180	2009	12	17500.60	75.861	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
181	2010	1	18249.83	76.357	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
182	2010	2	18983.87	76.914	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
183	2010	3	19713.69	77.737	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
184	2010	4	20438.29	79.090	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	CONFID.
185	2010	5	21105.42	81.211	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	CONFID.
186	2010	6	21689.05	84.048	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	CONFID.
187	2010	7	22162.72	86.656	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	CONDID.
188	2010	8	22524.01	87.804	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	CONFID.
189	2010	9	22771.86	86.855	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	CONFID.
190	2010	10	22924.70	85.147	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	CONFID.
191	2010	11	22995.90	84.584	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	CONFID.
192	2010	12	22997.07	86.287	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
193	2011	1	22939.88	88.931	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
194	2011	2	22842.73	90.290	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
195	2011	3	22714.57	89.252	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
196	2011	4	22562.26	86.962	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	CONFID.
197	2011	5	22401.76	85.517	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	CONFID.
198	2011	6	22245.51	86.331	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	CONFID.
199	2011	7	22105.56	88.701	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	CONDID.
200	2011	8	21985.97	91.225	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	CONFID.

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Obs	year	month	grpmf_imi	frbmvp	D30N	d1	d2	d3	d4	d5	d6	d7	d8	d9	d10	d11	d95	dsep12on	mar01oct01	jan20on	PRICE
201	2011	9	21889.99	92.817	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	CONFID.
202	2011	10	21814.38	93.811	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	CONFID.
203	2011	11	21757.68	94.910	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	CONFID.
204	2011	12	21718.80	96.571	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
205	2012	1	21696.10	98.505	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
206	2012	2	21688.99	100.062	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
207	2012	3	21695.49	100.880	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	CONFID.
208	2012	4	21714.55	100.955	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	CONFID.
209	2012	5	21745.08	100.381	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	CONFID.
210	2012	6	21785.67	99.382	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	CONFID.
211	2012	7	21835.19	98.453	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	CONDID.
212	2012	8	21893.63	98.185	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	CONFID.
213	2012	9	21958.44	98.927	1	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	CONFID.
214	2012	10	22029.98	100.273	1	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	CONFID.
215	2012	11	22107.55	101.586	1	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	CONFID.
216	2012	12	22190.62	102.440	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	CONFID.
217	2013	1	22280.01	103.052	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	CONFID.
218	2013	2	22369.13	103.783	1	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	CONFID.
219	2013	3	22461.73	104.876	1	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	CONFID.
220	2013	4	22560.44	106.039	1	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	CONFID.
221	2013	5	22661.63	106.703	1	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	CONFID.
222	2013	6	22764.68	106.614	1	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	CONFID.
223	2013	7	22868.98	106.358	1	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	CONDID.
224	2013	8	22975.60	106.822	1	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	CONFID.
225	2013	9	23080.43	108.454	1	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	CONFID.
226	2013	10	23184.50	110.515	1	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	CONFID.
227	2013	11	23287.13	111.886	1	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	CONFID.
228	2013	12	23387.64	111.889	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	CONFID.
229	2014	1	23486.93	111.248	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	CONFID.
230	2014	2	23578.10	111.140	1	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	CONFID.
231	2014	3	23665.34	112.288	1	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	CONFID.
232	2014	4	23750.84	114.402	1	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	CONFID.
233	2014	5	23830.82	116.724	1	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	CONFID.
234	2014	6	23904.67	118.635	1	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	CONFID.
235	2014	7	23971.68	119.938	1	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	CONDID.
236	2014	8	24032.75	120.594	1	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	CONFID.
237	2014	9	24086.42	120.603	1	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	CONFID.
238	2014	10	24134.25	120.199	1	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	CONFID.
239	2014	11	24176.88	119.671	1	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	CONFID.
240	2014	12	24214.81	119.269	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	CONFID.

Obs	year	month	grpmf_imi	frbmvp	D030N	d1	d2	d3	d4	d5	d6	d7	d8	d9	d10	d11	d95	dsep12on	mar01oct01	jan20on	PRICE
241	2015	1	24249.19	119.131	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	CONFID.
242	2015	2	24278.54	119.347	1	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	CONFID.
243	2015	3	24305.07	120.004	1	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	CONFID.
244	2015	4	24330.16	121.214	1	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	CONFID.
245	2015	5	24353.40	123.048	1	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	CONFID.
246	2015	6	24375.37	125.353	1	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	CONFID.
247	2015	7	24396.62	127.298	1	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	CONDID.
248	2015	8	24418.13	127.830	1	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	CONFID.
249	2015	9	24439.84	126.405	1	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	CONFID.
250	2015	10	24462.74	124.083	1	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	CONFID.
251	2015	11	24487.45	122.398	1	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	CONFID.
252	2015	12	24514.64	122.347	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	CONFID.
253	2016	1	24545.45	123.241	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	CONFID.
254	2016	2	24578.93	123.808	1	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	CONFID.
255	2016	3	24616.69	123.321	1	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	CONFID.
256	2016	4	24660.03	122.432	1	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	CONFID.
257	2016	5	24709.03	122.291	1	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	CONFID.
258	2016	6	24764.30	123.585	1	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	CONFID.
259	2016	7	24826.48	125.625	1	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	CONDID.
260	2016	8	24896.74	127.264	1	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	CONFID.
261	2016	9	24972.27	127.637	1	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	CONFID.
262	2016	10	25053.56	127.013	1	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	CONFID.
263	2016	11	25139.94	125.981	1	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	CONFID.
264	2016	12	25230.86	125.052	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	CONFID.
265	2017	1	25327.25	124.527	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	CONFID.
266	2017	2	25422.11	124.634	1	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	CONFID.
267	2017	3	25519.52	125.371	1	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	CONFID.
268	2017	4	25622.26	126.186	1	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	CONFID.
269	2017	5	25726.48	126.244	1	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	CONFID.
270	2017	6	25831.56	125.100	1	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	CONFID.
271	2017	7	25936.90	123.411	1	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	CONDID.
272	2017	8	26043.69	122.199	1	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	CONFID.
273	2017	9	26148.02	122.259	1	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	CONFID.
274	2017	10	26251.20	123.484	1	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	CONFID.
275	2017	11	26352.80	125.505	1	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	CONFID.
276	2017	12	26452.35	127.869	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	CONFID.
277	2018	1	26551.02	129.847	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	CONFID.
278	2018	2	26642.16	130.544	1	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	CONFID.
279	2018	3	26730.14	129.657	1	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	CONFID.
280	2018	4	26817.46	127.950	1	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	CONFID.

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MANUFACTURING ENERGY SALES
EXOGENOUS VARIABLES

Obs	year	month	grpmf_imi	frbmvp	D030N	d1	d2	d3	d4	d5	d6	d7	d8	d9	d10	d11	d95	dsep12on	mar01oct01	jan20on	PRICE
281	2018	5	26900.56	126.702	1	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	CONFID.
282	2018	6	26979.08	126.821	1	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	CONFID.
283	2018	7	27052.47	128.112	1	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	CONDID.
284	2018	8	27120.81	130.013	1	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	CONFID.
285	2018	9	27180.26	131.864	1	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	CONFID.
286	2018	10	27230.23	133.072	1	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	CONFID.
287	2018	11	27269.15	133.029	1	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	CONFID.
288	2018	12	27295.22	131.439	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	CONFID.
289	2019	1	27306.93	129.009	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	CONFID.
290	2019	2	27302.75	126.940	1	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	CONFID.
291	2019	3	27281.65	125.922	1	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	CONFID.
292	2019	4	27240.95	126.120	1	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	CONFID.
293	2019	5	27179.06	127.572	1	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	CONFID.
294	2019	6	27094.56	129.830	1	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	CONFID.
295	2019	7	26985.76	131.267	1	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	CONDID.
296	2019	8	26852.34	129.834	1	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	CONFID.
297	2019	9	26703.94	125.005	1	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	CONFID.
298	2019	10	26544.11	120.479	1	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	CONFID.
299	2019	11	26378.58	121.227	1	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	CONFID.
300	2019	12	26212.97	128.770	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	CONFID.
301	2020	1	26050.37	133.760	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
302	2020	2	25903.96	123.656	1	0	1	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
303	2020	3	25774.02	93.308	1	0	0	1	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
304	2020	4	25663.96	58.814	1	0	0	0	1	0	0	0	0	0	0	0	0	1	0	1	CONFID.
305	2020	5	25582.08	44.949	1	0	0	0	0	1	0	0	0	0	0	0	0	1	0	1	CONFID.
306	2020	6	25533.68	65.855	1	0	0	0	0	0	1	0	0	0	0	0	0	1	0	1	CONFID.
307	2020	7	25524.39	105.636	1	0	0	0	0	0	0	1	0	0	0	0	0	1	0	1	CONDID.
308	2020	8	25555.33	138.336	1	0	0	0	0	0	0	0	1	0	0	0	0	1	0	1	CONFID.
309	2020	9	25621.27	145.194	1	0	0	0	0	0	0	0	0	1	0	0	0	1	0	1	CONFID.
310	2020	10	25717.94	134.769	1	0	0	0	0	0	0	0	0	0	1	0	0	1	0	1	CONFID.
311	2020	11	25840.35	123.313	1	0	0	0	0	0	0	0	0	0	0	1	0	1	0	1	CONFID.
312	2020	12	25984.05	122.416	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
313	2021	1	26146.93	129.460	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
314	2021	2	26313.20	136.690	1	0	1	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
315	2021	3	26486.29	139.382	1	0	0	1	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
316	2021	4	26667.77	138.416	1	0	0	0	1	0	0	0	0	0	0	0	0	1	0	1	CONFID.
317	2021	5	26847.19	136.522	1	0	0	0	0	1	0	0	0	0	0	0	0	1	0	1	CONFID.
318	2021	6	27019.92	135.902	1	0	0	0	0	0	1	0	0	0	0	0	0	1	0	1	CONFID.
319	2021	7	27181.37	136.356	1	0	0	0	0	0	0	1	0	0	0	0	0	1	0	1	CONDID.
320	2021	8	27331.95	136.874	1	0	0	0	0	0	0	0	1	0	0	0	0	1	0	1	CONFID.

Obs	year	month	grpmf_imi	frbmvp	D030N	d1	d2	d3	d4	d5	d6	d7	d8	d9	d10	d11	d95	dsep12on	mar01oct01	jan20on	PRICE
321	2021	9	27467.54	136.750	1	0	0	0	0	0	0	0	0	1	0	0	0	1	0	1	CONFID.
322	2021	10	27591.54	136.289	1	0	0	0	0	0	0	0	0	0	1	0	0	1	0	1	CONFID.
323	2021	11	27705.09	136.094	1	0	0	0	0	0	0	0	0	0	0	1	0	1	0	1	CONFID.
324	2021	12	27809.05	136.575	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
325	2022	1	27906.00	137.533	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
326	2022	2	27991.06	138.493	1	0	1	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
327	2022	3	28069.87	139.206	1	0	0	1	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
328	2022	4	28145.90	139.683	1	0	0	0	1	0	0	0	0	0	0	0	0	1	0	1	CONFID.
329	2022	5	28217.27	139.989	1	0	0	0	0	1	0	0	0	0	0	0	0	1	0	1	CONFID.
330	2022	6	28285.02	140.204	1	0	0	0	0	0	1	0	0	0	0	0	0	1	0	1	CONFID.
331	2022	7	28350.07	140.358	1	0	0	0	0	0	0	1	0	0	0	0	0	1	0	1	CONDID.
332	2022	8	28414.00	140.466	1	0	0	0	0	0	0	0	1	0	0	0	0	1	0	1	CONFID.
333	2022	9	28474.83	140.528	1	0	0	0	0	0	0	0	0	1	0	0	0	1	0	1	CONFID.
334	2022	10	28533.63	140.517	1	0	0	0	0	0	0	0	0	0	1	0	0	1	0	1	CONFID.
335	2022	11	28590.47	140.400	1	0	0	0	0	0	0	0	0	0	0	1	0	1	0	1	CONFID.
336	2022	12	28645.37	140.160	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
337	2023	1	28699.24	139.848	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
338	2023	2	28748.74	139.556	1	0	1	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
339	2023	3	28796.52	139.319	1	0	0	1	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
340	2023	4	28844.21	139.114	1	0	0	0	1	0	0	0	0	0	0	0	0	1	0	1	CONFID.
341	2023	5	28890.15	138.909	1	0	0	0	0	1	0	0	0	0	0	0	0	1	0	1	CONFID.
342	2023	6	28934.42	138.672	1	0	0	0	0	0	1	0	0	0	0	0	0	1	0	1	CONFID.
343	2023	7	28977.03	138.399	1	0	0	0	0	0	0	1	0	0	0	0	0	1	0	1	CONDID.
344	2023	8	29018.74	138.091	1	0	0	0	0	0	0	0	1	0	0	0	0	1	0	1	CONFID.
345	2023	9	29058.28	137.767	1	0	0	0	0	0	0	0	0	1	0	0	0	1	0	1	CONFID.
346	2023	10	29096.43	137.447	1	0	0	0	0	0	0	0	0	0	1	0	0	1	0	1	CONFID.
347	2023	11	29133.29	137.157	1	0	0	0	0	0	0	0	0	0	0	1	0	1	0	1	CONFID.
348	2023	12	29168.96	136.909	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
349	2024	1	29204.09	136.665	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
350	2024	2	29237.11	136.386	1	0	1	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
351	2024	3	29269.23	136.030	1	0	0	1	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
352	2024	4	29301.11	135.591	1	0	0	0	1	0	0	0	0	0	0	0	0	1	0	1	CONFID.
353	2024	5	29332.25	135.092	1	0	0	0	0	1	0	0	0	0	0	0	0	1	0	1	CONFID.
354	2024	6	29362.78	134.556	1	0	0	0	0	0	1	0	0	0	0	0	0	1	0	1	CONFID.
355	2024	7	29392.78	134.024	1	0	0	0	0	0	0	1	0	0	0	0	0	1	0	1	CONDID.
356	2024	8	29422.75	133.539	1	0	0	0	0	0	0	0	1	0	0	0	0	1	0	1	CONFID.
357	2024	9	29451.65	133.158	1	0	0	0	0	0	0	0	0	1	0	0	0	1	0	1	CONFID.
358	2024	10	29479.92	132.892	1	0	0	0	0	0	0	0	0	0	1	0	0	1	0	1	CONFID.
359	2024	11	29507.48	132.752	1	0	0	0	0	0	0	0	0	0	0	1	0	1	0	1	CONFID.
360	2024	12	29534.27	132.739	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.

INDIANA MICHIGAN POWER COMPANY
INDIANA SERVICE AREA
MANUFACTURING ENERGY SALES
EXOGENOUS VARIABLES

Obs	year	month	grpmf_imi	frbmvp	D030N	d1	d2	d3	d4	d5	d6	d7	d8	d9	d10	d11	d95	dsep12on	mar01oct01	jan20on	PRICE
361	2025	1	29560.63	132.830	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
362	2025	2	29584.86	132.978	1	0	1	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
363	2025	3	29608.17	133.160	1	0	0	1	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
364	2025	4	29631.26	133.376	1	0	0	0	1	0	0	0	0	0	0	0	0	1	0	1	CONFID.
365	2025	5	29653.25	133.621	1	0	0	0	0	1	0	0	0	0	0	0	0	1	0	1	CONFID.
366	2025	6	29674.07	133.888	1	0	0	0	0	0	1	0	0	0	0	0	0	1	0	1	CONFID.
367	2025	7	29693.66	134.147	1	0	0	0	0	0	0	1	0	0	0	0	0	1	0	1	CONDID.
368	2025	8	29712.45	134.369	1	0	0	0	0	0	0	0	1	0	0	0	0	1	0	1	CONFID.
369	2025	9	29730.11	134.513	1	0	0	0	0	0	0	0	0	1	0	0	0	1	0	1	CONFID.
370	2025	10	29747.27	134.561	1	0	0	0	0	0	0	0	0	0	1	0	0	1	0	1	CONFID.
371	2025	11	29764.24	134.496	1	0	0	0	0	0	0	0	0	0	0	1	0	1	0	1	CONFID.
372	2025	12	29781.33	134.309	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
373	2026	1	29799.14	134.029	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
374	2026	2	29816.80	133.719	1	0	1	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
375	2026	3	29835.46	133.406	1	0	0	1	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
376	2026	4	29856.06	133.114	1	0	0	0	1	0	0	0	0	0	0	0	0	1	0	1	CONFID.
377	2026	5	29878.33	132.888	1	0	0	0	0	1	0	0	0	0	0	0	0	1	0	1	CONFID.
378	2026	6	29902.55	132.749	1	0	0	0	0	0	1	0	0	0	0	0	0	1	0	1	CONFID.
379	2026	7	29929.06	132.685	1	0	0	0	0	0	0	1	0	0	0	0	0	1	0	1	CONDID.
380	2026	8	29958.43	132.668	1	0	0	0	0	0	0	0	1	0	0	0	0	1	0	1	CONFID.
381	2026	9	29989.64	132.678	1	0	0	0	0	0	0	0	0	1	0	0	0	1	0	1	CONFID.
382	2026	10	30023.04	132.710	1	0	0	0	0	0	0	0	0	0	1	0	0	1	0	1	CONFID.
383	2026	11	30058.51	132.763	1	0	0	0	0	0	0	0	0	0	0	1	0	1	0	1	CONFID.
384	2026	12	30095.97	132.838	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
385	2027	1	30135.95	132.944	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
386	2027	2	30175.68	133.080	1	0	1	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
387	2027	3	30216.98	133.258	1	0	0	1	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
388	2027	4	30261.20	133.483	1	0	0	0	1	0	0	0	0	0	0	0	0	1	0	1	CONFID.
389	2027	5	30306.88	133.747	1	0	0	0	0	1	0	0	0	0	0	0	0	1	0	1	CONFID.
390	2027	6	30353.90	134.043	1	0	0	0	0	0	1	0	0	0	0	0	0	1	0	1	CONFID.
391	2027	7	30402.16	134.356	1	0	0	0	0	0	0	1	0	0	0	0	0	1	0	1	CONDID.
392	2027	8	30452.35	134.672	1	0	0	0	0	0	0	0	1	0	0	0	0	1	0	1	CONFID.
393	2027	9	30502.70	134.967	1	0	0	0	0	0	0	0	0	1	0	0	0	1	0	1	CONFID.
394	2027	10	30553.87	135.242	1	0	0	0	0	0	0	0	0	0	1	0	0	1	0	1	CONFID.
395	2027	11	30605.71	135.499	1	0	0	0	0	0	0	0	0	0	0	1	0	1	0	1	CONFID.
396	2027	12	30658.07	135.742	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
397	2028	1	30711.68	135.991	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
398	2028	2	30763.78	136.250	1	0	1	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
399	2028	3	30815.95	136.542	1	0	0	1	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
400	2028	4	30868.93	136.869	1	0	0	0	1	0	0	0	0	0	0	0	0	1	0	1	CONFID.

Obs	year	month	grpmf_imi	frbmvp	D030N	d1	d2	d3	d4	d5	d6	d7	d8	d9	d10	d11	d95	dsep12on	mar01oct01	jan20on	PRICE
401	2028	5	30921.70	137.215	1	0	0	0	0	1	0	0	0	0	0	0	0	1	0	1	CONFID.
402	2028	6	30974.10	137.571	1	0	0	0	0	0	1	0	0	0	0	0	0	1	0	1	CONFID.
403	2028	7	31026.01	137.921	1	0	0	0	0	0	0	1	0	0	0	0	0	1	0	1	CONDID.
404	2028	8	31078.20	138.251	1	0	0	0	0	0	0	0	1	0	0	0	0	1	0	1	CONFID.
405	2028	9	31129.06	138.538	1	0	0	0	0	0	0	0	0	1	0	0	0	1	0	1	CONFID.
406	2028	10	31179.51	138.784	1	0	0	0	0	0	0	0	0	0	1	0	0	1	0	1	CONFID.
407	2028	11	31229.60	138.995	1	0	0	0	0	0	0	0	0	0	0	1	0	1	0	1	CONFID.
408	2028	12	31279.40	139.172	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
409	2029	1	31329.80	139.325	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
410	2029	2	31377.61	139.453	1	0	1	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
411	2029	3	31425.34	139.570	1	0	0	1	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
412	2029	4	31474.66	139.697	1	0	0	0	1	0	0	0	0	0	0	0	0	1	0	1	CONFID.
413	2029	5	31524.03	139.850	1	0	0	0	0	1	0	0	0	0	0	0	0	1	0	1	CONFID.
414	2029	6	31573.51	140.039	1	0	0	0	0	0	1	0	0	0	0	0	0	1	0	1	CONFID.
415	2029	7	31623.17	140.243	1	0	0	0	0	0	0	1	0	0	0	0	0	1	0	1	CONDID.
416	2029	8	31673.86	140.439	1	0	0	0	0	0	0	0	1	0	0	0	0	1	0	1	CONFID.
417	2029	9	31723.97	140.600	1	0	0	0	0	0	0	0	0	1	0	0	0	1	0	1	CONFID.
418	2029	10	31774.32	140.740	1	0	0	0	0	0	0	0	0	0	1	0	0	1	0	1	CONFID.
419	2029	11	31824.94	140.876	1	0	0	0	0	0	0	0	0	0	0	1	0	1	0	1	CONFID.
420	2029	12	31875.82	141.024	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
421	2030	1	31927.84	141.191	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
422	2030	2	31977.62	141.365	1	0	1	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
423	2030	3	32027.70	141.556	1	0	0	1	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
424	2030	4	32079.79	141.772	1	0	0	0	1	0	0	0	0	0	0	0	0	1	0	1	CONFID.
425	2030	5	32132.22	142.007	1	0	0	0	0	1	0	0	0	0	0	0	0	1	0	1	CONFID.
426	2030	6	32185.00	142.264	1	0	0	0	0	0	1	0	0	0	0	0	0	1	0	1	CONFID.
427	2030	7	32238.15	142.542	1	0	0	0	0	0	0	1	0	0	0	0	0	1	0	1	CONDID.
428	2030	8	32292.51	142.847	1	0	0	0	0	0	0	0	1	0	0	0	0	1	0	1	CONFID.
429	2030	9	32346.27	143.164	1	0	0	0	0	0	0	0	0	1	0	0	0	1	0	1	CONFID.
430	2030	10	32400.26	143.480	1	0	0	0	0	0	0	0	0	0	1	0	0	1	0	1	CONFID.
431	2030	11	32454.40	143.774	1	0	0	0	0	0	0	0	0	0	0	1	0	1	0	1	CONFID.
432	2030	12	32508.63	144.030	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
433	2031	1	32563.78	144.252	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
434	2031	2	32616.23	144.438	1	0	1	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
435	2031	3	32668.60	144.608	1	0	0	1	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
436	2031	4	32722.59	144.795	1	0	0	0	1	0	0	0	0	0	0	0	0	1	0	1	CONFID.
437	2031	5	32776.36	145.023	1	0	0	0	0	1	0	0	0	0	0	0	0	1	0	1	CONFID.
438	2031	6	32829.85	145.308	1	0	0	0	0	0	1	0	0	0	0	0	0	1	0	1	CONFID.
439	2031	7	32883.01	145.637	1	0	0	0	0	0	0	1	0	0	0	0	0	1	0	1	CONDID.
440	2031	8	32936.69	145.985	1	0	0	0	0	0	0	0	1	0	0	0	0	1	0	1	CONFID.

Obs	year	month	grpmf_imi	frbmvp	D030N	d1	d2	d3	d4	d5	d6	d7	d8	d9	d10	d11	d95	dsep12on	mar01oct01	jan20on	PRICE
441	2031	9	32989.21	146.318	1	0	0	0	0	0	0	0	0	1	0	0	0	1	0	1	CONFID.
442	2031	10	33041.51	146.631	1	0	0	0	0	0	0	0	0	0	1	0	0	1	0	1	CONFID.
443	2031	11	33093.64	146.915	1	0	0	0	0	0	0	0	0	0	0	1	0	1	0	1	CONFID.
444	2031	12	33145.66	147.167	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
445	2032	1	33198.48	147.389	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
446	2032	2	33249.60	147.571	1	0	1	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
447	2032	3	33300.80	147.729	1	0	0	1	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
448	2032	4	33352.96	147.894	1	0	0	0	1	0	0	0	0	0	0	0	0	1	0	1	CONFID.
449	2032	5	33405.33	148.101	1	0	0	0	0	1	0	0	0	0	0	0	0	1	0	1	CONFID.
450	2032	6	33457.93	148.377	1	0	0	0	0	0	1	0	0	0	0	0	0	1	0	1	CONFID.
451	2032	7	33510.83	148.717	1	0	0	0	0	0	0	1	0	0	0	0	0	1	0	1	CONDID.
452	2032	8	33564.94	149.113	1	0	0	0	0	0	0	0	1	0	0	0	0	1	0	1	CONFID.
453	2032	9	33618.53	149.532	1	0	0	0	0	0	0	0	0	1	0	0	0	1	0	1	CONFID.
454	2032	10	33672.46	149.951	1	0	0	0	0	0	0	0	0	0	1	0	0	1	0	1	CONFID.
455	2032	11	33726.74	150.339	1	0	0	0	0	0	0	0	0	0	0	1	0	1	0	1	CONFID.
456	2032	12	33781.38	150.674	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
457	2033	1	33837.29	150.974	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
458	2033	2	33890.84	151.245	1	0	1	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
459	2033	3	33944.74	151.523	1	0	0	1	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
460	2033	4	34000.83	151.831	1	0	0	0	1	0	0	0	0	0	0	0	0	1	0	1	CONFID.
461	2033	5	34057.30	152.172	1	0	0	0	0	1	0	0	0	0	0	0	0	1	0	1	CONFID.
462	2033	6	34114.15	152.551	1	0	0	0	0	0	1	0	0	0	0	0	0	1	0	1	CONFID.
463	2033	7	34171.40	152.954	1	0	0	0	0	0	0	1	0	0	0	0	0	1	0	1	CONDID.
464	2033	8	34229.96	153.366	1	0	0	0	0	0	0	0	1	0	0	0	0	1	0	1	CONFID.
465	2033	9	34287.91	153.754	1	0	0	0	0	0	0	0	0	1	0	0	0	1	0	1	CONFID.
466	2033	10	34346.15	154.118	1	0	0	0	0	0	0	0	0	0	1	0	0	1	0	1	CONFID.
467	2033	11	34404.63	154.455	1	0	0	0	0	0	0	0	0	0	0	1	0	1	0	1	CONFID.
468	2033	12	34463.33	154.763	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
469	2034	1	34523.16	155.050	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
470	2034	2	34580.21	155.305	1	0	1	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
471	2034	3	34637.35	155.552	1	0	0	1	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
472	2034	4	34696.47	155.820	1	0	0	0	1	0	0	0	0	0	0	0	0	1	0	1	CONFID.
473	2034	5	34755.59	156.129	1	0	0	0	0	1	0	0	0	0	0	0	0	1	0	1	CONFID.
474	2034	6	34814.68	156.492	1	0	0	0	0	0	1	0	0	0	0	0	0	1	0	1	CONFID.
475	2034	7	34873.69	156.884	1	0	0	0	0	0	0	1	0	0	0	0	0	1	0	1	CONDID.
476	2034	8	34933.57	157.273	1	0	0	0	0	0	0	0	1	0	0	0	0	1	0	1	CONFID.
477	2034	9	34992.41	157.613	1	0	0	0	0	0	0	0	0	1	0	0	0	1	0	1	CONFID.
478	2034	10	35051.16	157.896	1	0	0	0	0	0	0	0	0	0	1	0	0	1	0	1	CONFID.
479	2034	11	35109.85	158.115	1	0	0	0	0	0	0	0	0	0	0	1	0	1	0	1	CONFID.
480	2034	12	35168.47	158.268	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.

INDIANA MICHIGAN POWER COMPANY
INDIANA SERVICE AREA
MANUFACTURING ENERGY SALES
EXOGENOUS VARIABLES

Obs	year	month	grpmf_imi	frbmvp	D030N	d1	d2	d3	d4	d5	d6	d7	d8	d9	d10	d11	d95	dsep12on	mar01oct01	jan20on	PRICE
481	2035	1	35228.01	158.382	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
482	2035	2	35284.61	158.481	1	0	1	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
483	2035	3	35341.19	158.597	1	0	0	1	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
484	2035	4	35399.65	158.743	1	0	0	0	1	0	0	0	0	0	0	0	0	1	0	1	CONFID.
485	2035	5	35458.10	158.925	1	0	0	0	0	1	0	0	0	0	0	0	0	1	0	1	CONFID.
486	2035	6	35516.53	159.142	1	0	0	0	0	0	1	0	0	0	0	0	0	1	0	1	CONFID.
487	2035	7	35574.96	159.377	1	0	0	0	0	0	0	1	0	0	0	0	0	1	0	1	CONDID.
488	2035	8	35634.32	159.609	1	0	0	0	0	0	0	0	1	0	0	0	0	1	0	1	CONFID.
489	2035	9	35692.65	159.813	1	0	0	0	0	0	0	0	0	1	0	0	0	1	0	1	CONFID.
490	2035	10	35750.87	159.983	1	0	0	0	0	0	0	0	0	0	1	0	0	1	0	1	CONFID.
491	2035	11	35808.93	160.118	1	0	0	0	0	0	0	0	0	0	0	1	0	1	0	1	CONFID.
492	2035	12	35866.79	160.217	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
493	2036	1	35925.33	160.300	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
494	2036	2	35981.69	160.387	1	0	1	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
495	2036	3	36037.71	160.497	1	0	0	1	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
496	2036	4	36094.27	160.636	1	0	0	0	1	0	0	0	0	0	0	0	0	1	0	1	CONFID.
497	2036	5	36150.40	160.803	1	0	0	0	0	1	0	0	0	0	0	0	0	1	0	1	CONFID.
498	2036	6	36206.04	160.993	1	0	0	0	0	0	1	0	0	0	0	0	0	1	0	1	CONFID.
499	2036	7	36261.15	161.198	1	0	0	0	0	0	0	1	0	0	0	0	0	1	0	1	CONDID.
500	2036	8	36316.63	161.410	1	0	0	0	0	0	0	0	1	0	0	0	0	1	0	1	CONFID.
501	2036	9	36370.75	161.614	1	0	0	0	0	0	0	0	0	1	0	0	0	1	0	1	CONFID.
502	2036	10	36424.47	161.808	1	0	0	0	0	0	0	0	0	0	1	0	0	1	0	1	CONFID.
503	2036	11	36477.84	161.986	1	0	0	0	0	0	0	0	0	0	0	1	0	1	0	1	CONFID.
504	2036	12	36530.93	162.145	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
505	2037	1	36584.67	162.279	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
506	2037	2	36635.65	162.371	1	0	1	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
507	2037	3	36686.55	162.431	1	0	0	1	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
508	2037	4	36739.14	162.487	1	0	0	0	1	0	0	0	0	0	0	0	0	1	0	1	CONFID.
509	2037	5	36791.75	162.579	1	0	0	0	0	1	0	0	0	0	0	0	0	1	0	1	CONFID.
510	2037	6	36844.44	162.731	1	0	0	0	0	0	1	0	0	0	0	0	0	1	0	1	CONFID.
511	2037	7	36897.28	162.931	1	0	0	0	0	0	0	1	0	0	0	0	0	1	0	1	CONDID.
512	2037	8	36951.16	163.153	1	0	0	0	0	0	0	0	1	0	0	0	0	1	0	1	CONFID.
513	2037	9	37004.34	163.368	1	0	0	0	0	0	0	0	0	1	0	0	0	1	0	1	CONFID.
514	2037	10	37057.66	163.573	1	0	0	0	0	0	0	0	0	0	1	0	0	1	0	1	CONFID.
515	2037	11	37111.12	163.769	1	0	0	0	0	0	0	0	0	0	0	1	0	1	0	1	CONFID.
516	2037	12	37164.71	163.956	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
517	2038	1	37219.29	164.142	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
518	2038	2	37271.31	164.319	1	0	1	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
519	2038	3	37323.43	164.502	1	0	0	1	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
520	2038	4	37377.37	164.703	1	0	0	0	1	0	0	0	0	0	0	0	0	1	0	1	CONFID.

Obs	year	month	grpmf_imi	frbmvp	D030N	d1	d2	d3	d4	d5	d6	d7	d8	d9	d10	d11	d95	dsep12on	mar01oct01	jan20on	PRICE
521	2038	5	37431.37	164.923	1	0	0	0	0	1	0	0	0	0	0	0	0	1	0	1	CONFID.
522	2038	6	37485.43	165.164	1	0	0	0	0	0	1	0	0	0	0	0	0	1	0	1	CONFID.
523	2038	7	37539.52	165.415	1	0	0	0	0	0	0	1	0	0	0	0	0	1	0	1	CONDID.
524	2038	8	37594.55	165.665	1	0	0	0	0	0	0	0	1	0	0	0	0	1	0	1	CONFID.
525	2038	9	37648.76	165.893	1	0	0	0	0	0	0	0	0	1	0	0	0	1	0	1	CONFID.
526	2038	10	37703.09	166.104	1	0	0	0	0	0	0	0	0	0	1	0	0	1	0	1	CONFID.
527	2038	11	37757.55	166.300	1	0	0	0	0	0	0	0	0	0	0	1	0	1	0	1	CONFID.
528	2038	12	37812.20	166.488	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
529	2039	1	37867.96	166.682	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
530	2039	2	37921.25	166.886	1	0	1	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
531	2039	3	37974.80	167.117	1	0	0	1	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
532	2039	4	38030.48	167.383	1	0	0	0	1	0	0	0	0	0	0	0	0	1	0	1	CONFID.
533	2039	5	38086.50	167.669	1	0	0	0	0	1	0	0	0	0	0	0	0	1	0	1	CONFID.
534	2039	6	38142.89	167.966	1	0	0	0	0	0	1	0	0	0	0	0	0	1	0	1	CONFID.
535	2039	7	38199.69	168.262	1	0	0	0	0	0	0	1	0	0	0	0	0	1	0	1	CONDID.
536	2039	8	38257.81	168.548	1	0	0	0	0	0	0	0	1	0	0	0	0	1	0	1	CONFID.
537	2039	9	38315.30	168.803	1	0	0	0	0	0	0	0	0	1	0	0	0	1	0	1	CONFID.
538	2039	10	38373.01	169.029	1	0	0	0	0	0	0	0	0	0	1	0	0	1	0	1	CONFID.
539	2039	11	38430.84	169.224	1	0	0	0	0	0	0	0	0	0	0	1	0	1	0	1	CONFID.
540	2039	12	38488.70	169.387	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
541	2040	1	38547.48	169.533	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
542	2040	2	38604.22	169.664	1	0	1	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
543	2040	3	38660.75	169.800	1	0	0	1	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
544	2040	4	38717.92	169.953	1	0	0	0	1	0	0	0	0	0	0	0	0	1	0	1	CONFID.
545	2040	5	38774.69	170.133	1	0	0	0	0	1	0	0	0	0	0	0	0	1	0	1	CONFID.
546	2040	6	38830.99	170.344	1	0	0	0	0	0	1	0	0	0	0	0	0	1	0	1	CONFID.
547	2040	7	38886.72	170.568	1	0	0	0	0	0	0	1	0	0	0	0	0	1	0	1	CONDID.
548	2040	8	38942.78	170.782	1	0	0	0	0	0	0	0	1	0	0	0	0	1	0	1	CONFID.
549	2040	9	38997.41	170.960	1	0	0	0	0	0	0	0	0	1	0	0	0	1	0	1	CONFID.
550	2040	10	39051.56	171.107	1	0	0	0	0	0	0	0	0	0	1	0	0	1	0	1	CONFID.
551	2040	11	39105.31	171.233	1	0	0	0	0	0	0	0	0	0	0	1	0	1	0	1	CONFID.
552	2040	12	39158.70	171.343	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
553	2041	1	39212.66	171.445	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
554	2041	2	39263.78	171.535	1	0	1	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
555	2041	3	39314.73	171.623	1	0	0	1	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
556	2041	4	39367.28	171.721	1	0	0	0	1	0	0	0	0	0	0	0	0	1	0	1	CONFID.
557	2041	5	39419.76	171.840	1	0	0	0	0	1	0	0	0	0	0	0	0	1	0	1	CONFID.
558	2041	6	39472.22	171.985	1	0	0	0	0	0	1	0	0	0	0	0	0	1	0	1	CONFID.
559	2041	7	39524.73	172.151	1	0	0	0	0	0	0	1	0	0	0	0	0	1	0	1	CONDID.
560	2041	8	39578.15	172.327	1	0	0	0	0	0	0	0	1	0	0	0	0	1	0	1	CONFID.

INDIANA MICHIGAN POWER COMPANY
INDIANA SERVICE AREA
MANUFACTURING ENERGY SALES
EXOGENOUS VARIABLES

Obs	year	month	grpmf_imi	frbmvp	D030N	d1	d2	d3	d4	d5	d6	d7	d8	d9	d10	d11	d95	dsep12on	mar01oct01	jan20on	PRICE
561	2041	9	39630.76	172.501	1	0	0	0	0	0	0	0	0	1	0	0	0	1	0	1	CONFID.
562	2041	10	39683.39	172.691	1	0	0	0	0	0	0	0	0	0	1	0	0	1	0	1	CONFID.
563	2041	11	39736.03	172.920	1	0	0	0	0	0	0	0	0	0	0	1	0	1	0	1	CONFID.
564	2041	12	39788.64	173.196	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
565	2042	1	39842.07	173.492	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
566	2042	2	39892.86	173.746	1	0	1	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
567	2042	3	39943.57	173.943	1	0	0	1	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
568	2042	4	39995.90	174.092	1	0	0	0	1	0	0	0	0	0	0	0	0	1	0	1	CONFID.
569	2042	5	40048.11	174.204	1	0	0	0	0	1	0	0	0	0	0	0	0	1	0	1	CONFID.
570	2042	6	40100.17	174.298	1	0	0	0	0	0	1	0	0	0	0	0	0	1	0	1	CONFID.
571	2042	7	40152.07	174.404	1	0	0	0	0	0	0	1	0	0	0	0	0	1	0	1	CONDID.
572	2042	8	40204.68	174.554	1	0	0	0	0	0	0	0	1	0	0	0	0	1	0	1	CONFID.
573	2042	9	40256.37	174.761	1	0	0	0	0	0	0	0	0	1	0	0	0	1	0	1	CONFID.
574	2042	10	40308.07	174.999	1	0	0	0	0	0	0	0	0	0	1	0	0	1	0	1	CONFID.
575	2042	11	40359.84	175.230	1	0	0	0	0	0	0	0	0	0	0	1	0	1	0	1	CONFID.
576	2042	12	40411.77	175.424	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
577	2043	1	40464.78	175.594	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
578	2043	2	40515.51	175.750	1	0	1	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
579	2043	3	40566.59	175.916	1	0	0	1	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
580	2043	4	40619.83	176.108	1	0	0	0	1	0	0	0	0	0	0	0	0	1	0	1	CONFID.
581	2043	5	40673.59	176.328	1	0	0	0	0	1	0	0	0	0	0	0	0	1	0	1	CONFID.
582	2043	6	40727.93	176.574	1	0	0	0	0	0	1	0	0	0	0	0	0	1	0	1	CONFID.
583	2043	7	40782.94	176.822	1	0	0	0	0	0	0	1	0	0	0	0	0	1	0	1	CONDID.
584	2043	8	40839.53	177.044	1	0	0	0	0	0	0	0	1	0	0	0	0	1	0	1	CONFID.
585	2043	9	40895.83	177.212	1	0	0	0	0	0	0	0	0	1	0	0	0	1	0	1	CONFID.
586	2043	10	40952.71	177.350	1	0	0	0	0	0	0	0	0	0	1	0	0	1	0	1	CONFID.
587	2043	11	41010.08	177.489	1	0	0	0	0	0	0	0	0	0	0	1	0	1	0	1	CONFID.
588	2043	12	41067.92	177.651	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
589	2044	1	41127.12	177.835	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
590	2044	2	41184.74	178.019	1	0	1	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
591	2044	3	41242.65	178.199	1	0	0	1	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
592	2044	4	41301.76	178.370	1	0	0	0	1	0	0	0	0	0	0	0	0	1	0	1	CONFID.
593	2044	5	41361.04	178.528	1	0	0	0	0	1	0	0	0	0	0	0	0	1	0	1	CONFID.
594	2044	6	41420.46	178.672	1	0	0	0	0	0	1	0	0	0	0	0	0	1	0	1	CONFID.
595	2044	7	41479.95	178.822	1	0	0	0	0	0	0	1	0	0	0	0	0	1	0	1	CONDID.
596	2044	8	41540.47	179.002	1	0	0	0	0	0	0	0	1	0	0	0	0	1	0	1	CONFID.
597	2044	9	41600.07	179.220	1	0	0	0	0	0	0	0	0	1	0	0	0	1	0	1	CONFID.
598	2044	10	41659.76	179.466	1	0	0	0	0	0	0	0	0	0	1	0	0	1	0	1	CONFID.
599	2044	11	41719.53	179.719	1	0	0	0	0	0	0	0	0	0	0	1	0	1	0	1	CONFID.
600	2044	12	41779.40	179.962	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.

Obs	year	month	grpmf_imi	frbmvp	D030N	d1	d2	d3	d4	d5	d6	d7	d8	d9	d10	d11	d95	dsep12on	mar01oct01	jan20on	PRICE
601	2045	1	41840.37	180.199	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
602	2045	2	41898.53	180.421	1	0	1	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
603	2045	3	41956.80	180.645	1	0	0	1	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
604	2045	4	42017.21	180.885	1	0	0	0	1	0	0	0	0	0	0	0	0	1	0	1	CONFID.
605	2045	5	42077.79	181.138	1	0	0	0	0	1	0	0	0	0	0	0	0	1	0	1	CONFID.
606	2045	6	42138.55	181.407	1	0	0	0	0	0	1	0	0	0	0	0	0	1	0	1	CONFID.
607	2045	7	42199.50	181.689	1	0	0	0	0	0	0	1	0	0	0	0	0	1	0	1	CONDID.
608	2045	8	42261.63	181.983	1	0	0	0	0	0	0	0	1	0	0	0	0	1	0	1	CONFID.
609	2045	9	42322.89	182.274	1	0	0	0	0	0	0	0	0	1	0	0	0	1	0	1	CONFID.
610	2045	10	42384.23	182.573	1	0	0	0	0	0	0	0	0	0	1	0	0	1	0	1	CONFID.
611	2045	11	42445.60	182.888	1	0	0	0	0	0	0	0	0	0	0	1	0	1	0	1	CONFID.
612	2045	12	42506.97	183.222	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
613	2046	1	42569.27	183.560	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
614	2046	2	42628.45	183.858	1	0	1	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
615	2046	3	42687.49	184.118	1	0	0	1	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
616	2046	4	42748.32	184.362	1	0	0	0	1	0	0	0	0	0	0	0	0	1	0	1	CONFID.
617	2046	5	42808.91	184.607	1	0	0	0	0	1	0	0	0	0	0	0	0	1	0	1	CONFID.
618	2046	6	42869.19	184.869	1	0	0	0	0	0	1	0	0	0	0	0	0	1	0	1	CONFID.
619	2046	7	42929.13	185.145	1	0	0	0	0	0	0	1	0	0	0	0	0	1	0	1	CONDID.
620	2046	8	42989.67	185.426	1	0	0	0	0	0	0	0	1	0	0	0	0	1	0	1	CONFID.
621	2046	9	43048.85	185.695	1	0	0	0	0	0	0	0	0	1	0	0	0	1	0	1	CONFID.
622	2046	10	43107.64	185.956	1	0	0	0	0	0	0	0	0	0	1	0	0	1	0	1	CONFID.
623	2046	11	43166.05	186.216	1	0	0	0	0	0	0	0	0	0	0	1	0	1	0	1	CONFID.
624	2046	12	43224.07	186.478	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
625	2047	1	43282.63	186.745	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
626	2047	2	43337.98	187.000	1	0	1	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
627	2047	3	43392.95	187.252	1	0	0	1	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
628	2047	4	43449.39	187.511	1	0	0	0	1	0	0	0	0	0	0	0	0	1	0	1	CONFID.
629	2047	5	43505.42	187.767	1	0	0	0	0	1	0	0	0	0	0	0	0	1	0	1	CONFID.
630	2047	6	43561.04	188.020	1	0	0	0	0	0	1	0	0	0	0	0	0	1	0	1	CONFID.
631	2047	7	43616.24	188.270	1	0	0	0	0	0	0	1	0	0	0	0	0	1	0	1	CONDID.
632	2047	8	43671.94	188.524	1	0	0	0	0	0	0	0	1	0	0	0	0	1	0	1	CONFID.
633	2047	9	43726.38	188.774	1	0	0	0	0	0	0	0	0	1	0	0	0	1	0	1	CONFID.
634	2047	10	43780.50	189.025	1	0	0	0	0	0	0	0	0	0	1	0	0	1	0	1	CONFID.
635	2047	11	43834.32	189.277	1	0	0	0	0	0	0	0	0	0	0	1	0	1	0	1	CONFID.
636	2047	12	43887.90	189.529	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
637	2048	1	43942.14	189.787	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
638	2048	2	43994.45	190.037	1	0	1	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
639	2048	3	44046.63	190.288	1	0	0	1	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
640	2048	4	44099.58	190.543	1	0	0	0	1	0	0	0	0	0	0	0	0	1	0	1	CONFID.

Obs	year	month	grpmf_imi	frbmvp	D030N	d1	d2	d3	d4	d5	d6	d7	d8	d9	d10	d11	d95	dsep12on	mar01oct01	jan20on	PRICE
641	2048	5	44152.47	190.798	1	0	0	0	0	1	0	0	0	0	0	0	0	1	0	1	CONFID.
642	2048	6	44205.34	191.052	1	0	0	0	0	0	1	0	0	0	0	0	0	1	0	1	CONFID.
643	2048	7	44258.21	191.304	1	0	0	0	0	0	0	1	0	0	0	0	0	1	0	1	CONDID.
644	2048	8	44311.99	191.559	1	0	0	0	0	0	0	0	1	0	0	0	0	1	0	1	CONFID.
645	2048	9	44364.94	191.807	1	0	0	0	0	0	0	0	0	1	0	0	0	1	0	1	CONFID.
646	2048	10	44417.95	192.055	1	0	0	0	0	0	0	0	0	0	1	0	0	1	0	1	CONFID.
647	2048	11	44471.02	192.303	1	0	0	0	0	0	0	0	0	0	0	1	0	1	0	1	CONFID.
648	2048	12	44524.17	192.553	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
649	2049	1	44578.27	192.808	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
650	2049	2	44629.84	193.050	1	0	1	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
651	2049	3	44681.50	193.291	1	0	0	1	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
652	2049	4	44735.02	193.540	1	0	0	0	1	0	0	0	0	0	0	0	0	1	0	1	CONFID.
653	2049	5	44788.65	193.791	1	0	0	0	0	1	0	0	0	0	0	0	0	1	0	1	CONFID.
654	2049	6	44842.41	194.044	1	0	0	0	0	0	1	0	0	0	0	0	0	1	0	1	CONFID.
655	2049	7	44896.32	194.295	1	0	0	0	0	0	0	1	0	0	0	0	0	1	0	1	CONDID.
656	2049	8	44951.25	194.541	1	0	0	0	0	0	0	0	1	0	0	0	0	1	0	1	CONFID.
657	2049	9	45005.45	194.771	1	0	0	0	0	0	0	0	0	1	0	0	0	1	0	1	CONFID.
658	2049	10	45059.81	194.987	1	0	0	0	0	0	0	0	0	0	1	0	0	1	0	1	CONFID.
659	2049	11	45114.35	195.188	1	0	0	0	0	0	0	0	0	0	0	1	0	1	0	1	CONFID.
660	2049	12	45169.07	195.376	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
661	2050	1	45224.88	195.561	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
662	2050	2	45278.18	195.743	1	0	1	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
663	2050	3	45331.68	195.935	1	0	0	1	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
664	2050	4	45387.21	196.144	1	0	0	0	1	0	0	0	0	0	0	0	0	1	0	1	CONFID.
665	2050	5	45442.96	196.357	1	0	0	0	0	1	0	0	0	0	0	0	0	1	0	1	CONFID.
666	2050	6	45498.95	196.572	1	0	0	0	0	0	1	0	0	0	0	0	0	1	0	1	CONFID.
667	2050	7	45555.18	196.788	1	0	0	0	0	0	0	1	0	0	0	0	0	1	0	1	CONDID.
668	2050	8	45612.60	197.014	1	0	0	0	0	0	0	0	1	0	0	0	0	1	0	1	CONFID.
669	2050	9	45669.36	197.243	1	0	0	0	0	0	0	0	0	1	0	0	0	1	0	1	CONFID.
670	2050	10	45726.39	197.482	1	0	0	0	0	0	0	0	0	0	1	0	0	1	0	1	CONFID.
671	2050	11	45783.70	197.733	1	0	0	0	0	0	0	0	0	0	0	1	0	1	0	1	CONFID.
672	2050	12	45841.30	198.000	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
673	2051	1	45881.71	198.355	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
674	2051	2	45936.79	198.473	1	0	1	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
675	2051	3	45992.17	198.616	1	0	0	1	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
676	2051	4	46049.75	198.783	1	0	0	0	1	0	0	0	0	0	0	0	0	1	0	1	CONFID.
677	2051	5	46107.68	198.957	1	0	0	0	0	1	0	0	0	0	0	0	0	1	0	1	CONFID.
678	2051	6	46165.95	199.132	1	0	0	0	0	0	1	0	0	0	0	0	0	1	0	1	CONFID.
679	2051	7	46224.57	199.314	1	0	0	0	0	0	0	1	0	0	0	0	0	1	0	1	CONDID.
680	2051	8	46284.54	199.518	1	0	0	0	0	0	0	0	1	0	0	0	0	1	0	1	CONFID.

Obs	year	month	grpmf_imi	frbmvp	D030N	d1	d2	d3	d4	d5	d6	d7	d8	d9	d10	d11	d95	dsep12on	mar01oct01	jan20on	PRICE
681	2051	9	46343.92	199.746	1	0	0	0	0	0	0	0	0	1	0	0	0	1	0	1	CONFID.
682	2051	10	46403.68	200.009	1	0	0	0	0	0	0	0	0	0	1	0	0	1	0	1	CONFID.
683	2051	11	46463.83	200.312	1	0	0	0	0	0	0	0	0	0	0	1	0	1	0	1	CONFID.
684	2051	12	46524.40	200.660	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
685	2052	1	46548.93	201.188	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
686	2052	2	46605.83	201.242	1	0	1	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
687	2052	3	46663.13	201.333	1	0	0	1	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
688	2052	4	46722.82	201.457	1	0	0	0	1	0	0	0	0	0	0	0	0	1	0	1	CONFID.
689	2052	5	46782.97	201.592	1	0	0	0	0	1	0	0	0	0	0	0	0	1	0	1	CONFID.
690	2052	6	46843.58	201.726	1	0	0	0	0	0	1	0	0	0	0	0	0	1	0	1	CONFID.
691	2052	7	46904.65	201.873	1	0	0	0	0	0	0	1	0	0	0	0	0	1	0	1	CONDID.
692	2052	8	46967.23	202.054	1	0	0	0	0	0	0	0	1	0	0	0	0	1	0	1	CONFID.
693	2052	9	47029.31	202.280	1	0	0	0	0	0	0	0	0	1	0	0	0	1	0	1	CONFID.
694	2052	10	47091.86	202.568	1	0	0	0	0	0	0	0	0	0	1	0	0	1	0	1	CONFID.
695	2052	11	47154.93	202.924	1	0	0	0	0	0	0	0	0	0	0	1	0	1	0	1	CONFID.
696	2052	12	47218.53	203.355	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
697	2053	1	47226.70	204.061	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
698	2053	2	47285.46	204.050	1	0	1	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
699	2053	3	47344.74	204.088	1	0	0	1	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
700	2053	4	47406.58	204.167	1	0	0	0	1	0	0	0	0	0	0	0	0	1	0	1	CONFID.
701	2053	5	47469.01	204.261	1	0	0	0	0	1	0	0	0	0	0	0	0	1	0	1	CONFID.
702	2053	6	47532.02	204.354	1	0	0	0	0	0	1	0	0	0	0	0	0	1	0	1	CONFID.
703	2053	7	47595.61	204.464	1	0	0	0	0	0	0	1	0	0	0	0	0	1	0	1	CONDID.
704	2053	8	47660.87	204.622	1	0	0	0	0	0	0	0	1	0	0	0	0	1	0	1	CONFID.
705	2053	9	47725.70	204.847	1	0	0	0	0	0	0	0	0	1	0	0	0	1	0	1	CONFID.
706	2053	10	47791.12	205.160	1	0	0	0	0	0	0	0	0	0	1	0	0	1	0	1	CONFID.
707	2053	11	47857.18	205.570	1	0	0	0	0	0	0	0	0	0	0	1	0	1	0	1	CONFID.
708	2053	12	47923.90	206.087	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
709	2054	1	47915.20	206.976	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
710	2054	2	47975.87	206.896	1	0	1	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
711	2054	3	48037.17	206.880	1	0	0	1	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
712	2054	4	48101.22	206.914	1	0	0	0	1	0	0	0	0	0	0	0	0	1	0	1	CONFID.
713	2054	5	48165.99	206.965	1	0	0	0	0	1	0	0	0	0	0	0	0	1	0	1	CONFID.
714	2054	6	48231.46	207.016	1	0	0	0	0	0	1	0	0	0	0	0	0	1	0	1	CONFID.
715	2054	7	48297.61	207.088	1	0	0	0	0	0	0	1	0	0	0	0	0	1	0	1	CONDID.
716	2054	8	48365.62	207.223	1	0	0	0	0	0	0	0	1	0	0	0	0	1	0	1	CONFID.
717	2054	9	48433.28	207.447	1	0	0	0	0	0	0	0	0	1	0	0	0	1	0	1	CONFID.
718	2054	10	48501.64	207.785	1	0	0	0	0	0	0	0	0	0	1	0	0	1	0	1	CONFID.
719	2054	11	48570.77	208.251	1	0	0	0	0	0	0	0	0	0	0	1	0	1	0	1	CONFID.
720	2054	12	48640.69	208.855	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.

INDIANA MICHIGAN POWER COMPANY
INDIANA SERVICE AREA
MANUFACTURING ENERGY SALES
EXOGENOUS VARIABLES

Obs	year	month	grpmf_imi	frbmvp	D030N	d1	d2	d3	d4	d5	d6	d7	d8	d9	d10	d11	d95	dsep12on	mar01oct01	jan20on	PRICE
721	2055	1	48614.60	209.932	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
722	2055	2	48677.23	209.783	1	0	1	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
723	2055	3	48740.60	209.711	1	0	0	1	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
724	2055	4	48806.92	209.697	1	0	0	0	1	0	0	0	0	0	0	0	0	1	0	1	CONFID.
725	2055	5	48874.08	209.706	1	0	0	0	0	1	0	0	0	0	0	0	0	1	0	1	CONFID.
726	2055	6	48942.06	209.713	1	0	0	0	0	0	1	0	0	0	0	0	0	1	0	1	CONFID.
727	2055	7	49010.85	209.747	1	0	0	0	0	0	0	1	0	0	0	0	0	1	0	1	CONDID.
728	2055	8	49081.67	209.856	1	0	0	0	0	0	0	0	1	0	0	0	0	1	0	1	CONFID.
729	2055	9	49152.23	210.080	1	0	0	0	0	0	0	0	0	1	0	0	0	1	0	1	CONFID.
730	2055	10	49223.62	210.444	1	0	0	0	0	0	0	0	0	0	1	0	0	1	0	1	CONFID.
731	2055	11	49295.89	210.967	1	0	0	0	0	0	0	0	0	0	0	1	0	1	0	1	CONFID.
732	2055	12	49369.09	211.661	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
733	2056	1	49325.09	212.930	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
734	2056	2	49389.72	212.709	1	0	1	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
735	2056	3	49455.21	212.580	1	0	0	1	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
736	2056	4	49523.85	212.518	1	0	0	0	1	0	0	0	0	0	0	0	0	1	0	1	CONFID.
737	2056	5	49593.46	212.483	1	0	0	0	0	1	0	0	0	0	0	0	0	1	0	1	CONFID.
738	2056	6	49664.02	212.444	1	0	0	0	0	0	1	0	0	0	0	0	0	1	0	1	CONFID.
739	2056	7	49735.52	212.439	1	0	0	0	0	0	0	1	0	0	0	0	0	1	0	1	CONDID.
740	2056	8	49809.22	212.524	1	0	0	0	0	0	0	0	1	0	0	0	0	1	0	1	CONFID.
741	2056	9	49882.75	212.746	1	0	0	0	0	0	0	0	0	1	0	0	0	1	0	1	CONFID.
742	2056	10	49957.23	213.136	1	0	0	0	0	0	0	0	0	0	1	0	0	1	0	1	CONFID.
743	2056	11	50032.73	213.718	1	0	0	0	0	0	0	0	0	0	0	1	0	1	0	1	CONFID.
744	2056	12	50109.29	214.504	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
745	2057	1	50046.85	215.972	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
746	2057	2	50113.53	215.677	1	0	1	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
747	2057	3	50181.19	215.488	1	0	0	1	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.
748	2057	4	50252.20	215.377	1	0	0	0	1	0	0	0	0	0	0	0	0	1	0	1	CONFID.
749	2057	5	50324.32	215.296	1	0	0	0	0	1	0	0	0	0	0	0	0	1	0	1	CONFID.
750	2057	6	50397.53	215.212	1	0	0	0	0	0	1	0	0	0	0	0	0	1	0	1	CONFID.
751	2057	7	50471.79	215.166	1	0	0	0	0	0	0	1	0	0	0	0	0	1	0	1	CONDID.
752	2057	8	50548.46	215.225	1	0	0	0	0	0	0	0	1	0	0	0	0	1	0	1	CONFID.
753	2057	9	50625.03	215.445	1	0	0	0	0	0	0	0	0	1	0	0	0	1	0	1	CONFID.
754	2057	10	50702.68	215.864	1	0	0	0	0	0	0	0	0	0	1	0	0	1	0	1	CONFID.
755	2057	11	50781.49	216.505	1	0	0	0	0	0	0	0	0	0	0	1	0	1	0	1	CONFID.
756	2057	12	50861.50	217.385	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	CONFID.

INDIANA MICHIGAN POWER COMPANY
INDIANA SERVICE AREA
MANUFACTURING ENERGY SALES
MODEL ESTIMATION

The SYSLIN Procedure
Ordinary Least Squares Estimation

Model	ei_imi
Dependent Variable	ei_imi
Label	BILLED KWH

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	19	357105.6	18795.03	54.10	<.0001
Error	293	101790.3	347.4073		
Corrected Total	312	458895.9			

Root MSE	18.63886	R-Square	0.77818
Dependent Mean	562.86587	Adj R-Sq	0.76380
Coeff Var	3.31142		

Parameter Estimates

Variable	DF	Parameter Estimate	Standard Error	t Value	Pr > |t|	Variable Label
Intercept	1	-357.108	176.6441	-2.02	0.0441	Intercept
lpi36	1	-86.6097	25.18514	-3.44	0.0007	REAL MANUF. ELEC PRICE, 36-MONTH AVE., LOG
lgrpmf	1	77.19525	19.01302	4.06	<.0001	SERVICE AREA GROSS REGIONAL PRODUCT-MANUF., LOG
Lfrbmvp	1	112.9713	10.32342	10.94	<.0001	FRB IND. PROD. INDX, MOTOR VEHICLES, LOG
d1	1	-8.74124	5.131237	-1.70	0.0895	JANUARY
d2	1	-20.0848	5.173341	-3.88	0.0001	FEBRUARY
d3	1	3.007066	5.183982	0.58	0.5623	MARCH
d4	1	-7.30151	5.193382	-1.41	0.1608	APRIL
d5	1	8.861348	5.200361	1.70	0.0894	MAY
d6	1	11.44459	5.187183	2.21	0.0281	JUNE
d7	1	12.22829	5.180760	2.36	0.0189	JULY
d8	1	25.96431	5.182118	5.01	<.0001	AUGUST
d9	1	16.43202	5.177711	3.17	0.0017	SEPTEMBER
d10	1	-3.30786	5.177657	-0.64	0.5234	OCTOBER
d11	1	-17.6005	5.169597	-3.40	0.0008	NOVEMBER
mar01oct01	1	32.60870	7.095049	4.60	<.0001	BINARY VARIABLE-MARCH 2001 THROUGH OCTOBER 2001

INDIANA MICHIGAN POWER COMPANY
INDIANA SERVICE AREA
MANUFACTURING ENERGY SALES
MODEL ESTIMATION

The SYSLIN Procedure
Ordinary Least Squares Estimation

Parameter Estimates

Variable	DF	Parameter Estimate	Standard Error	t Value	Pr > |t|	Variable Label
D03ON	1	-24.3196	5.161607	-4.71	<.0001	BINARY VARIABLE-2003 ON
d95	1	-71.3448	6.210376	-11.49	<.0001	BINARY VARIABLE-1995
dsep12on	1	-19.9965	4.752936	-4.21	<.0001	BINARY VARIABLE-SEPTEMBER 2012 ON
jan20on	1	-9.61749	6.240965	-1.54	0.1244	BINARY VARIABLE-JANUARY 2020 ON

Durbin-Watson	1.50652
Number of Observations	313
First-Order Autocorrelation	0.245842

INDIANA MICHIGAN POWER COMPANY
INDIANA SERVICE AREA
MANUFACTURING ENERGY SALES
MODEL RESIDUALS

time			Residual Values Sum
	|	|	
1995.0000000	| **	|	-12.2399
1995.0833333	| **	|	-11.4634
1995.1666667	|	|***	16.9123
1995.2500000	|	|*	4.5537
1995.3333333	|	|*	4.8697
1995.4166667	|	|**	9.7058
1995.5000000	| ******	|	-28.0644
1995.5833333	| *	|	-6.1910
1995.6666667	| ******	|	-29.3936
1995.7500000	|	|*******	33.2158
1995.8333333	|	|*****	26.0067
1995.9166667	| **	|	-7.9117
1996.0000000	| ***	|	-15.5607
1996.0833333	|	|	0.0966
1996.1666667	| *****	|	-26.6843
1996.2500000	| *	|	-6.7399
1996.3333333	|	|	-0.9326
1996.4166667	| ******	|	-31.2913
1996.5000000	| *****	|	-23.6570
1996.5833333	| *	|	-5.9957
1996.6666667	| *****	|	-23.4618
1996.7500000	|	|*****	22.7634
1996.8333333	| ******	|	-32.0177
1996.9166667	| *****	|	-25.0679
1997.0000000	|	|	1.8867
1997.0833333	| ***	|	-12.9325
1997.1666667	| *******	|	-36.4604
1997.2500000	|	|***	16.2754
1997.3333333	| *****	|	-22.8762
1997.4166667	| *	|	-3.7674
1997.5000000	| *	|	-4.2201
1997.5833333	| *****	|	-23.2114
1997.6666667	| ***	|	-13.0031
1997.7500000	|	|***	15.2550
1997.8333333	| ****	|	-21.4664
1997.9166667	| ***	|	-12.5211
1998.0000000	| ******	|	-30.5682
1998.0833333	| ****	|	-18.3233
1998.1666667	| **	|	-8.4758
1998.2500000	|	|	0.5544
1998.3333333	| **	|	-9.8053
1998.4166667	|	|**	7.7167
1998.5000000	| *******	|	-35.8926
1998.5833333	|	|*******	34.3116
1998.6666667	|	|	1.7283
1998.7500000	|	|********	38.4274
1998.8333333	|	|	2.4762
1998.9166667	|	|*	5.1079

```
1999.0000000   |   *********|                          -45.2049
1999.0833333   |            |****                       19.5480
1999.1666667   |            |*****                      25.0909
1999.2500000   |            |*********                  43.1727
1999.3333333   |            |*                           4.9284
1999.4166667   |            |****                       17.7857
1999.5000000   |            |*                           7.4534
1999.5833333   |            |*****                      24.4854
1999.6666667   |            |*****                      24.1259
1999.7500000   |            |****                       21.5123
1999.8333333   |            |********                   37.5675
1999.9166667   |            |*                           3.9964
2000.0000000   |            |****                       19.4612
2000.0833333   |            |*******                    37.3814
2000.1666667   |            |****                       22.4849
2000.2500000   |            |                            2.2154
2000.3333333   |            |******                     29.3951
2000.4166667   |            |*****                      23.9986
2000.5000000   |            |                           0.8762
2000.5833333   |          *|                           -3.0796
2000.6666667   |            |***                        15.5092
2000.7500000   |            |*                           6.4035
2000.8333333   |        ****|                          -20.6603
2000.9166667   |            |****                       18.8444
2001.0000000   |            |*                           6.6000
2001.0833333   |            |*                           6.1424
2001.1666667   |         ***|                          -13.4202
2001.2500000   |        ****|                          -22.2334
2001.3333333   |         ***|                          -13.4219
2001.4166667   |        ****|                          -19.3538
2001.5000000   |            |**********************    116.6668
2001.5833333   |            |*                           4.7597
2001.6666667   |      ******|                          -27.6963
2001.7500000   |       *****|                          -25.3010
2001.8333333   |         ***|                          -15.3563
2001.9166667   |      ******|                          -28.2828
2002.0000000   |            |                           -0.5691
2002.0833333   |          *|                           -3.3942
2002.1666667   |          *|                           -4.7914
2002.2500000   |            |*                           6.1598
2002.3333333   |            |*                           7.0393
2002.4166667   |          *|                           -6.2233
2002.5000000   |            |                           -0.8186
2002.5833333   |          *|                           -4.3660
2002.6666667   |            |**                          8.0372
2002.7500000   |            |                           1.9126
2002.8333333   |            |*                           3.8353
2002.9166667   |         ***|                          -14.8835
2003.0000000   |            |**                          9.6474
2003.0833333   |            |*                           5.4769
2003.1666667   |          **|                          -10.8905
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2003.2500000   |         **|                                  -8.4747
2003.3333333   |          *|                                  -3.1229
2003.4166667   |          *|                                  -7.4738
2003.5000000   |     ******|                                 -29.6107
2003.5833333   |       ****|                                 -20.2200
2003.6666667   |           |*                                  3.1669
2003.7500000   |           |***                               15.0847
2003.8333333   |           |                                   1.7966
2003.9166667   |      *****|                                 -22.9290
2004.0000000   |           |****                              17.7257
2004.0833333   |           |**                                 8.7001
2004.1666667   |           |                                  -1.6748
2004.2500000   |           |**                                 7.5690
2004.3333333   |           |*                                  5.7032
2004.4166667   |           |**                                 9.7564
2004.5000000   |         **|                                  -9.8160
2004.5833333   |          *|                                  -7.3097
2004.6666667   |           |****                              20.5461
2004.7500000   |           |                                   0.5124
2004.8333333   |           |                                   1.2594
2004.9166667   |           |                                   0.7993
2005.0000000   |        ***|                                 -15.3723
2005.0833333   |           |**                                10.4762
2005.1666667   |           |*                                  4.8768
2005.2500000   |       ****|                                 -21.7984
2005.3333333   |           |*                                  3.9437
2005.4166667   |          *|                                  -6.0173
2005.5000000   |         **|                                  -9.9147
2005.5833333   |           |*                                  5.6678
2005.6666667   |           |*****                             22.8490
2005.7500000   |           |*******                           33.2912
2005.8333333   |          *|                                  -6.8016
2005.9166667   |           |*                                  6.2969
2006.0000000   |           |***                               13.2316
2006.0833333   |           |*                                  6.8643
2006.1666667   |           |**                                 7.7604
2006.2500000   |         **|                                 -11.1482
2006.3333333   |           |**                                 9.3038
2006.4166667   |          *|                                  -3.7384
2006.5000000   |           |                                  -0.9162
2006.5833333   |           |**                                 9.2642
2006.6666667   |           |**                                 8.0331
2006.7500000   |         **|                                  -8.7974
2006.8333333   |          *|                                  -4.7677
2006.9166667   |         **|                                 -12.0996
2007.0000000   |       ****|                                 -21.3187
2007.0833333   |        ***|                                 -12.6856
2007.1666667   |         **|                                 -10.6673
2007.2500000   |     ******|                                 -29.0016
2007.3333333   |      *****|                                 -22.8906
2007.4166667   |        ***|                                 -12.8121
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2007.5000000   |          **|                                -11.7542
2007.5833333   |          **|                                 -8.6581
2007.6666667   |            |**                               9.5724
2007.7500000   |            |                                 1.1099
2007.8333333   |       *****|                               -25.5310
2007.9166667   |         ***|                               -12.9314
2008.0000000   |            |                                 0.3045
2008.0833333   |            |                                 1.9781
2008.1666667   |            |*                                4.8755
2008.2500000   |            |*                                3.5140
2008.3333333   |            |**                              11.3609
2008.4166667   |            |****                            22.0642
2008.5000000   |            |**                               7.9600
2008.5833333   |            |****                            19.3705
2008.6666667   |            |                                 0.8853
2008.7500000   | ***********|                               -52.7299
2008.8333333   |************|                               -58.5337
2008.9166667   |      ******|                               -30.8005
2009.0000000   |           *|                                -4.3698
2009.0833333   |           *|                                -6.7440
2009.1666667   |        ****|                               -18.9648
2009.2500000   |           *|                                -4.0641
2009.3333333   |         ***|                               -13.0775
2009.4166667   |            |**                              10.4624
2009.5000000   |            |****                            21.0591
2009.5833333   |            |****                            20.5981
2009.6666667   |            |******                          28.6598
2009.7500000   |            |*****                           23.5552
2009.8333333   |            |*                                5.7364
2009.9166667   |            |*****                           26.9503
2010.0000000   |            |*******                         37.0091
2010.0833333   |            |***                             12.7363
2010.1666667   |            |****                            20.6743
2010.2500000   |            |*                                2.9481
2010.3333333   |            |**                               9.1297
2010.4166667   |         ***|                               -16.3785
2010.5000000   |         ***|                               -16.1255
2010.5833333   |           *|                                -2.5590
2010.6666667   |       *****|                               -23.9706
2010.7500000   |        ****|                               -19.2096
2010.8333333   |            |*                                6.1105
2010.9166667   |            |******                          32.4741
2011.0000000   |            |**                              10.6556
2011.0833333   |       *****|                               -26.7600
2011.1666667   |            |***                             13.9524
2011.2500000   |           *|                                -5.9924
2011.3333333   |            |*                                6.3895
2011.4166667   |            |***                             17.2396
2011.5000000   |        ****|                               -21.1397
2011.5833333   |            |****                            21.8946
2011.6666667   |            |*****                           25.9958
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2011.7500000	*|	-2.6446
2011.8333333	|*	5.9633
2011.9166667	|***	13.5524
2012.0000000	|****	17.5758
2012.0833333	**|	-9.2876
2012.1666667	**|	-9.0370
2012.2500000	|***	15.9554
2012.3333333	|	-1.1982
2012.4166667	**|	-9.1320
2012.5000000	|*	2.9808
2012.5833333	|	1.0064
2012.6666667	*|	-7.2637
2012.7500000	|*	3.2934
2012.8333333	|*******	34.9259
2012.9166667	|**	7.8714
2013.0000000	|**	12.4455
2013.0833333	|***	15.7309
2013.1666667	*|	-6.2142
2013.2500000	**|	-7.9713
2013.3333333	|*	7.2343
2013.4166667	*|	-5.9825
2013.5000000	|**	11.8353
2013.5833333	***|	-17.3904
2013.6666667	|***	16.2388
2013.7500000	|*	3.8789
2013.8333333	|****	18.0943
2013.9166667	|	1.4775
2014.0000000	***|	-16.3735
2014.0833333	*|	-6.9454
2014.1666667	|**	8.7505
2014.2500000	|**	10.5066
2014.3333333	|**	10.4953
2014.4166667	|	1.0923
2014.5000000	|**	8.9970
2014.5833333	*|	-2.5542
2014.6666667	**|	-10.9527
2014.7500000	|*	3.2557
2014.8333333	|*****	23.8717
2014.9166667	|*	5.7068
2015.0000000	|	0.7677
2015.0833333	****|	-21.3671
2015.1666667	*******|	-36.2723
2015.2500000	***|	-16.0890
2015.3333333	*|	-7.2427
2015.4166667	|**	9.3565
2015.5000000	***|	-14.8614
2015.5833333	|	-0.2995
2015.6666667	**|	-12.1377
2015.7500000	******|	-31.3623
2015.8333333	*****|	-25.4655
2015.9166667	|****	19.4553

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2016.0000000   |        ****|                    -17.9110
2016.0833333   |            |**                    8.4062
2016.1666667   |            |***                  12.9266
2016.2500000   |            |**                   10.2219
2016.3333333   |            |*                     3.9799
2016.4166667   |            |**                   11.7503
2016.5000000   |            |***                  12.8056
2016.5833333   |            |*                     6.7197
2016.6666667   |          *|                     -6.2927
2016.7500000   |    ********|                    -37.6217
2016.8333333   |            |***                  13.6283
2016.9166667   |            |**                   10.3224
2017.0000000   |            |****                 21.3764
2017.0833333   |            |*                     5.8111
2017.1666667   |            |**                    8.3536
2017.2500000   |          *|                     -4.7663
2017.3333333   |       *****|                    -26.9796
2017.4166667   |         **|                     -10.3503
2017.5000000   |            |*                     5.9530
2017.5833333   |            |**                    7.5192
2017.6666667   |            |                     -2.0618
2017.7500000   |          *|                     -2.6864
2017.8333333   |            |****                 19.7195
2017.9166667   |            |****                 20.3469
2018.0000000   |            |****                 21.3882
2018.0833333   |          *|                     -4.8792
2018.1666667   |            |**                    8.2360
2018.2500000   |            |***                  14.5325
2018.3333333   |            |                     -1.0524
2018.4166667   |            |                      2.1643
2018.5000000   |            |***                  17.3759
2018.5833333   |            |                     -1.6683
2018.6666667   |            |                      2.3394
2018.7500000   |          *|                     -6.6758
2018.8333333   |            |                     -0.8277
2018.9166667   |            |                      0.4065
2019.0000000   |            |*                     3.1469
2019.0833333   |         **|                     -8.3560
2019.1666667   |            |                      1.8393
2019.2500000   |            |*                     5.6356
2019.3333333   |         **|                     -12.3833
2019.4166667   |        ****|                    -21.9037
2019.5000000   |         **|                     -9.0567
2019.5833333   |       *****|                    -23.7493
2019.6666667   |         **|                     -10.1158
2019.7500000   |        ****|                    -17.5065
2019.8333333   |          *|                     -3.1342
2019.9166667   |         ***|                    -15.4631
2020.0000000   |         **|                     -7.9933
2020.0833333   |            |*                     3.7900
2020.1666667   |            |*****                26.8193
```
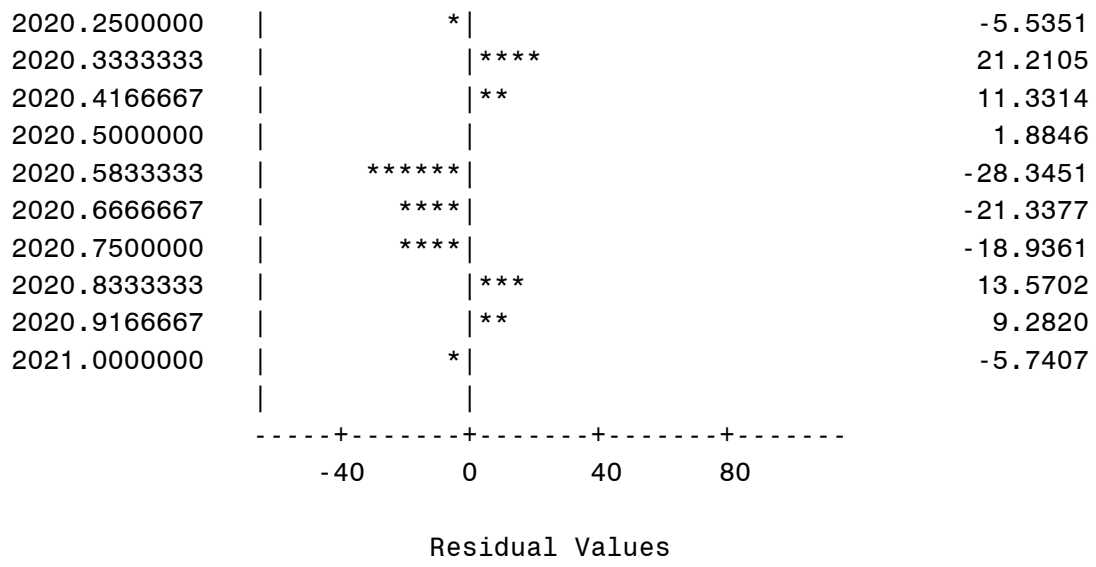

INDIANA MICHIGAN POWER COMPANY
INDIANA SERVICE AREA
MANUFACTURING ENERGY SALES
MODEL RESIDUALS



INDIANA MICHIGAN POWER COMPANY
INDIANA SERVICE AREA
MANUFACTURING ENERGY SALES
ACTUAL AND FORECAST

year	ENERGY SALES	GROWTH SALES	BASE ENERGY	ADDITIONS
1995	5594.15	.	5594.15	0.000
1996	6314.512	12.9	6314.51	0.000
1997	6520.515	3.3	6520.51	0.000
1998	6763.596	3.7	6763.60	0.000
1999	7123.156	5.3	7123.16	0.000
2000	7138.338	0.2	7138.34	0.000
2001	7067.704	-1.0	7067.70	0.000
2002	7065.504	0.0	7065.50	0.000
2003	6852.608	-3.0	6852.61	0.000
2004	7045.28	2.8	7045.28	0.000
2005	7022.773	-0.3	7022.77	0.000
2006	7016.164	-0.1	7016.16	0.000
2007	6926.731	-1.3	6926.73	0.000
2008	6587.834	-4.9	6587.83	0.000
2009	6004.383	-8.9	6004.38	0.000
2010	6580.516	9.6	6580.52	0.000
2011	6725.126	2.2	6725.13	0.000
2012	6753.879	0.4	6753.88	0.000
2013	6721.776	-0.5	6721.78	0.000
2014	6858.051	2.0	6858.05	0.000
2015	6749.086	-1.6	6749.09	0.000
2016	6924.429	2.6	6924.43	0.000
2017	6957.175	0.5	6957.17	0.000
2018	7042.616	1.2	7042.62	0.000
2019	6822.627	-3.1	6822.63	0.000
2020	6450.055	-5.5	6450.05	0.000
2021	6835.052	6.0	6851.68	-16.632
2022	6898.328	0.9	6892.47	5.856
2023	6869.238	-0.4	6863.38	5.856
2024	6829.926	-0.6	6824.07	5.856
2025	6845.547	0.2	6839.69	5.856
2026	6865.759	0.3	6859.90	5.856
2027	6909.759	0.6	6903.90	5.856
2028	6971.168	0.9	6965.31	5.856
2029	7015.546	0.6	7009.69	5.856
2030	7055.695	0.6	7049.84	5.856
2031	7101.233	0.6	7095.38	5.856
2032	7146.583	0.6	7140.73	5.856
2033	7200.426	0.8	7194.57	5.856
2034	7254.072	0.7	7248.22	5.856
2035	7296.256	0.6	7290.40	5.856
2036	7332.094	0.5	7326.24	5.856
2037	7367.508	0.5	7361.65	5.856
2038	7408.209	0.6	7402.35	5.856
2039	7452.708	0.6	7446.85	5.856
2040	7493.477	0.5	7487.62	5.856
2041	7527.354	0.5	7521.50	5.856

INDIANA MICHIGAN POWER COMPANY
INDIANA SERVICE AREA
MANUFACTURING ENERGY SALES
ACTUAL AND FORECAST

year	ENERGY SALES	GROWTH SALES	BASE ENERGY	ADDITIONS
2042	7564.355	0.5	7558.50	5.856
2043	7600.061	0.5	7594.21	5.856
2044	7635.775	0.5	7629.92	5.856
2045	7675.72	0.5	7669.86	5.856
2046	7718.207	0.6	7712.35	5.856
2047	7754.957	0.5	7749.10	5.856
2048	7788.042	0.4	7782.19	5.856
2049	7819.686	0.4	7813.83	5.856
2050	7848.77	0.4	7842.91	5.856
2051	7878.184	0.4	7872.33	5.856
2052	7907.689	0.4	7901.83	5.856
2053	7937.083	0.4	7931.23	5.856
2054	7966.495	0.4	7960.64	5.856
2055	7995.922	0.4	7990.07	5.856
2056	8025.367	0.4	8019.51	5.856
2057	8054.828	0.4	8048.97	5.856

INDIANA MICHIGAN POWER COMPANY
INDIANA SERVICE AREA
MANUFACTURING ENERGY SALES
ACTUAL AND FORECAST

Obs	year	month	ei_imi	SDI
1	1995	1	445.063	CONFID.
2	1995	2	434.885	CONFID.
3	1995	3	485.973	CONFID.
4	1995	4	462.101	CONFID.
5	1995	5	477.43	CONFID.
6	1995	6	484.029	CONFID.
7	1995	7	446.893	CONDID.
8	1995	8	483.124	CONFID.
9	1995	9	451.58	CONFID.
10	1995	10	495.133	CONFID.
11	1995	11	473.149	CONFID.
12	1995	12	454.79	CONFID.
13	1996	1	506.5363	CONFID.
14	1996	2	510.7182	CONFID.
15	1996	3	509.1997	CONFID.
16	1996	4	523.2746	CONFID.
17	1996	5	549.2134	CONFID.
18	1996	6	523.7555	CONFID.
19	1996	7	532.4252	CONDID.
20	1996	8	562.1799	CONFID.
21	1996	9	533.4938	CONFID.
22	1996	10	557.9409	CONFID.
23	1996	11	489.2345	CONFID.
24	1996	12	516.5402	CONFID.
25	1997	1	537.9642	CONFID.
26	1997	2	514.5719	CONFID.
27	1997	3	513.6808	CONFID.
28	1997	4	555.2667	CONFID.
29	1997	5	531.4818	CONFID.
30	1997	6	553.8671	CONFID.
31	1997	7	557.1743	CONDID.
32	1997	8	555.3932	CONFID.
33	1997	9	559.4926	CONFID.
34	1997	10	570.845	CONFID.
35	1997	11	521.8339	CONFID.
36	1997	12	548.9433	CONFID.
37	1998	1	522.1611	CONFID.
38	1998	2	523.2191	CONFID.
39	1998	3	555.7506	CONFID.
40	1998	4	554.6195	CONFID.
41	1998	5	558.8179	CONFID.
42	1998	6	576.8707	CONFID.
43	1998	7	532.5246	CONDID.
44	1998	8	617.8052	CONFID.
45	1998	9	580.4243	CONFID.
46	1998	10	603.798	CONFID.
47	1998	11	558.0011	CONFID.
48	1998	12	579.6036	CONFID.
49	1999	1	519.1415	CONFID.

INDIANA MICHIGAN POWER COMPANY
INDIANA SERVICE AREA
MANUFACTURING ENERGY SALES
ACTUAL AND FORECAST

Obs	year	month	ei_imi	SDI
50	1999	2	571.4783	CONFID.
51	1999	3	600.4029	CONFID.
52	1999	4	609.3566	CONFID.
53	1999	5	588.3993	CONFID.
54	1999	6	604.8096	CONFID.
55	1999	7	595.7039	CONDID.
56	1999	8	627.5208	CONFID.
57	1999	9	619.0776	CONFID.
58	1999	10	598.5051	CONFID.
59	1999	11	601.8821	CONFID.
60	1999	12	586.8782	CONFID.
61	2000	1	593.8731	CONFID.
62	2000	2	601.5177	CONFID.
63	2000	3	610.609	CONFID.
64	2000	4	581.0451	CONFID.
65	2000	5	624.1091	CONFID.
66	2000	6	620.2041	CONFID.
67	2000	7	595.2475	CONDID.
68	2000	8	602.1409	CONFID.
69	2000	9	609.4992	CONFID.
70	2000	10	578.3946	CONFID.
71	2000	11	534.1597	CONFID.
72	2000	12	587.5377	CONFID.
73	2001	1	562.522	CONFID.
74	2001	2	549.0661	CONFID.
75	2001	3	586.6955	CONFID.
76	2001	4	570.2732	CONFID.
77	2001	5	597.5152	CONFID.
78	2001	6	594.6218	CONFID.
79	2001	7	730.9623	CONDID.
80	2001	8	631.9577	CONFID.
81	2001	9	589.4201	CONFID.
82	2001	10	572.8912	CONFID.
83	2001	11	537.5029	CONFID.
84	2001	12	544.2759	CONFID.
85	2002	1	565.8917	CONFID.
86	2002	2	554.4982	CONFID.
87	2002	3	578.8751	CONFID.
88	2002	4	582.4315	CONFID.
89	2002	5	602.319	CONFID.
90	2002	6	594.2844	CONFID.
91	2002	7	602.8749	CONDID.
92	2002	8	614.3839	CONFID.
93	2002	9	617.7006	CONFID.
94	2002	10	591.8831	CONFID.
95	2002	11	580.0996	CONFID.
96	2002	12	580.2616	CONFID.
97	2003	1	573.4895	CONFID.
98	2003	2	558.3607	CONFID.

INDIANA MICHIGAN POWER COMPANY
INDIANA SERVICE AREA
MANUFACTURING ENERGY SALES
ACTUAL AND FORECAST

Obs	year	month	ei_imi	SDI
99	2003	3	564.4867	CONFID.
100	2003	4	555.21	CONFID.
101	2003	5	576.1037	CONFID.
102	2003	6	575.6623	CONFID.
103	2003	7	556.9208	CONDID.
104	2003	8	582.2612	CONFID.
105	2003	9	597.5811	CONFID.
106	2003	10	590.5284	CONFID.
107	2003	11	563.8974	CONFID.
108	2003	12	558.1062	CONFID.
109	2004	1	591.1904	CONFID.
110	2004	2	571.6933	CONFID.
111	2004	3	584.2021	CONFID.
112	2004	4	582.1246	CONFID.
113	2004	5	595.1821	CONFID.
114	2004	6	600.7901	CONFID.
115	2004	7	581.1516	CONDID.
116	2004	8	597.2478	CONFID.
117	2004	9	616.325	CONFID.
118	2004	10	577.2869	CONFID.
119	2004	11	564.9906	CONFID.
120	2004	12	583.0957	CONFID.
121	2005	1	558.5265	CONFID.
122	2005	2	572.8868	CONFID.
123	2005	3	589.6879	CONFID.
124	2005	4	551.5711	CONFID.
125	2005	5	592.4665	CONFID.
126	2005	6	584.8243	CONFID.
127	2005	7	581.8307	CONDID.
128	2005	8	611.8744	CONFID.
129	2005	9	620.5461	CONFID.
130	2005	10	612.1391	CONFID.
131	2005	11	558.0226	CONFID.
132	2005	12	588.3965	CONFID.
133	2006	1	585.8103	CONFID.
134	2006	2	568.0625	CONFID.
135	2006	3	593.1102	CONFID.
136	2006	4	564.774	CONFID.
137	2006	5	601.6685	CONFID.
138	2006	6	589.9968	CONFID.
139	2006	7	591.6418	CONDID.
140	2006	8	614.3286	CONFID.
141	2006	9	604.5194	CONFID.
142	2006	10	569.5298	CONFID.
143	2006	11	561.0125	CONFID.
144	2006	12	571.7102	CONFID.
145	2007	1	554.0955	CONFID.
146	2007	2	552.4443	CONFID.
147	2007	3	580.4356	CONFID.

INDIANA MICHIGAN POWER COMPANY
INDIANA SERVICE AREA
MANUFACTURING ENERGY SALES
ACTUAL AND FORECAST

Obs	year	month	ei_imi	SDI
148	2007	4	555.1105	CONFID.
149	2007	5	579.5736	CONFID.
150	2007	6	592.4012	CONFID.
151	2007	7	592.7365	CONDID.
152	2007	8	607.259	CONFID.
153	2007	9	614.2926	CONFID.
154	2007	10	584.8136	CONFID.
155	2007	11	542.5132	CONFID.
156	2007	12	571.0556	CONFID.
157	2008	1	572.9256	CONFID.
158	2008	2	559.9062	CONFID.
159	2008	3	581.6669	CONFID.
160	2008	4	564.7042	CONFID.
161	2008	5	583.4742	CONFID.
162	2008	6	591.2739	CONFID.
163	2008	7	572.7185	CONDID.
164	2008	8	592.4687	CONFID.
165	2008	9	559.4872	CONFID.
166	2008	10	479.4442	CONFID.
167	2008	11	449.3421	CONFID.
168	2008	12	480.4226	CONFID.
169	2009	1	480.3961	CONFID.
170	2009	2	450.4962	CONFID.
171	2009	3	450.8111	CONFID.
172	2009	4	452.2333	CONFID.
173	2009	5	463.4872	CONFID.
174	2009	6	499.5121	CONFID.
175	2009	7	522.7519	CONDID.
176	2009	8	546.6993	CONFID.
177	2009	9	552.8066	CONFID.
178	2009	10	532.8112	CONFID.
179	2009	11	504.974	CONFID.
180	2009	12	547.4043	CONFID.
181	2010	1	552.3489	CONFID.
182	2010	2	520.3179	CONFID.
183	2010	3	555.2909	CONFID.
184	2010	4	531.5204	CONFID.
185	2010	5	558.832	CONFID.
186	2010	6	541.3213	CONFID.
187	2010	7	547.2915	CONDID.
188	2010	8	577.0647	CONFID.
189	2010	9	545.7517	CONFID.
190	2010	10	528.1695	CONFID.
191	2010	11	538.4091	CONFID.
192	2010	12	584.1981	CONFID.
193	2011	1	556.5215	CONFID.
194	2011	2	509.029	CONFID.
195	2011	3	570.8447	CONFID.
196	2011	4	537.3576	CONFID.

INDIANA MICHIGAN POWER COMPANY
INDIANA SERVICE AREA
MANUFACTURING ENERGY SALES
ACTUAL AND FORECAST

Obs	year	month	ei_imi	SDI
197	2011	5	563.3275	CONFID.
198	2011	6	577.2622	CONFID.
199	2011	7	542.0551	CONDID.
200	2011	8	601.6735	CONFID.
201	2011	9	597.7811	CONFID.
202	2011	10	550.3301	CONFID.
203	2011	11	545.8797	CONFID.
204	2011	12	573.0644	CONFID.
205	2012	1	570.4171	CONFID.
206	2012	2	534.0153	CONFID.
207	2012	3	558.0769	CONFID.
208	2012	4	573.1815	CONFID.
209	2012	5	571.3803	CONFID.
210	2012	6	565.2665	CONFID.
211	2012	7	577.1958	CONDID.
212	2012	8	588.7895	CONFID.
213	2012	9	551.9438	CONFID.
214	2012	10	544.6008	CONFID.
215	2012	11	563.5895	CONFID.
216	2012	12	555.4219	CONFID.
217	2013	1	552.1268	CONFID.
218	2013	2	545.1737	CONFID.
219	2013	3	547.9073	CONFID.
220	2013	4	536.9473	CONFID.
221	2013	5	569.2039	CONFID.
222	2013	6	558.789	CONFID.
223	2013	7	577.4297	CONDID.
224	2013	8	562.7971	CONFID.
225	2013	9	589.0043	CONFID.
226	2013	10	559.0491	CONFID.
227	2013	11	561.0187	CONFID.
228	2013	12	562.3288	CONFID.
229	2014	1	535.0116	CONFID.
230	2014	2	533.1196	CONFID.
231	2014	3	573.4851	CONFID.
232	2014	4	567.1311	CONFID.
233	2014	5	585.8228	CONFID.
234	2014	6	581.0288	CONFID.
235	2014	7	591.038	CONDID.
236	2014	8	593.9361	CONFID.
237	2014	9	576.1844	CONFID.
238	2014	10	570.1743	CONFID.
239	2014	11	575.9166	CONFID.
240	2014	12	575.2029	CONFID.
241	2015	1	561.2531	CONFID.
242	2015	2	527.6418	CONFID.
243	2015	3	536.7722	CONFID.
244	2015	4	547.2244	CONFID.
245	2015	5	573.7563	CONFID.

INDIANA MICHIGAN POWER COMPANY
INDIANA SERVICE AREA
MANUFACTURING ENERGY SALES
ACTUAL AND FORECAST

Obs	year	month	ei_imi	SDI
246	2015	6	594.801	CONFID.
247	2015	7	572.7484	CONDID.
248	2015	8	601.2221	CONFID.
249	2015	9	578.7481	CONFID.
250	2015	10	537.597	CONFID.
251	2015	11	527.4492	CONFID.
252	2015	12	589.8728	CONFID.
253	2016	1	544.5754	CONFID.
254	2016	2	559.7568	CONFID.
255	2016	3	587.4488	CONFID.
256	2016	4	573.3268	CONFID.
257	2016	5	583.1317	CONFID.
258	2016	6	595.2635	CONFID.
259	2016	7	598.789	CONDID.
260	2016	8	607.8734	CONFID.
261	2016	9	585.9521	CONFID.
262	2016	10	534.0034	CONFID.
263	2016	11	570.5345	CONFID.
264	2016	12	583.7737	CONFID.
265	2017	1	585.7369	CONFID.
266	2017	2	559.3046	CONFID.
267	2017	3	586.1146	CONFID.
268	2017	4	563.3794	CONFID.
269	2017	5	557.466	CONFID.
270	2017	6	576.0374	CONFID.
271	2017	7	591.6151	CONDID.
272	2017	8	606.0111	CONFID.
273	2017	9	587.2093	CONFID.
274	2017	10	567.7227	CONFID.
275	2017	11	578.0346	CONFID.
276	2017	12	598.5434	CONFID.
277	2018	1	592.6421	CONFID.
278	2018	2	555.9168	CONFID.
279	2018	3	591.6134	CONFID.
280	2018	4	586.0074	CONFID.
281	2018	5	585.6396	CONFID.
282	2018	6	591.7216	CONFID.
283	2018	7	609.3525	CONDID.
284	2018	8	605.4945	CONFID.
285	2018	9	601.7443	CONFID.
286	2018	10	574.0402	CONFID.
287	2018	11	565.5359	CONFID.
288	2018	12	582.9078	CONFID.
289	2019	1	574.7303	CONFID.
290	2019	2	550.0202	CONFID.
291	2019	3	581.6774	CONFID.
292	2019	4	575.1775	CONFID.
293	2019	5	573.8886	CONFID.
294	2019	6	568.8296	CONFID.

INDIANA MICHIGAN POWER COMPANY
INDIANA SERVICE AREA
MANUFACTURING ENERGY SALES
ACTUAL AND FORECAST

Obs	year	month	ei_imi	SDI
295	2019	7	583.1765	CONDID.
296	2019	8	580.5804	CONFID.
297	2019	9	579.7264	CONFID.
298	2019	10	547.4396	CONFID.
299	2019	11	547.8022	CONFID.
300	2019	12	559.5783	CONFID.
301	2020	1	552.4036	CONFID.
302	2020	2	543.3627	CONFID.
303	2020	3	557.091	CONFID.
304	2020	4	461.629	CONFID.
305	2020	5	473.4904	CONFID.
306	2020	6	508.8628	CONFID.
307	2020	7	553.3962	CONDID.
308	2020	8	567.0317	CONFID.
309	2020	9	570.0996	CONFID.
310	2020	10	544.1887	CONFID.
311	2020	11	552.8134	CONFID.
312	2020	12	565.6854	CONFID.
313	2021	1	548.4334	CONFID.
314	2021	2	547.7146	CONFID.
315	2021	3	573.6337	CONFID.
316	2021	4	562.516	CONFID.
317	2021	5	577.059	CONFID.
318	2021	6	579.4051	CONFID.
319	2021	7	580.7374	CONDID.
320	2021	8	594.9957	CONFID.
321	2021	9	585.8176	CONFID.
322	2021	10	565.0961	CONFID.
323	2021	11	550.8429	CONFID.
324	2021	12	568.8003	CONFID.
325	2022	1	562.8364	CONFID.
326	2022	2	552.4464	CONFID.
327	2022	3	576.0393	CONFID.
328	2022	4	566.0404	CONFID.
329	2022	5	582.3133	CONFID.
330	2022	6	584.9895	CONFID.
331	2022	7	585.9144	CONDID.
332	2022	8	599.4326	CONFID.
333	2022	9	589.8184	CONFID.
334	2022	10	569.9381	CONFID.
335	2022	11	555.6956	CONFID.
336	2022	12	572.8636	CONFID.
337	2023	1	563.7164	CONFID.
338	2023	2	552.0553	CONFID.
339	2023	3	574.5745	CONFID.
340	2023	4	564.0343	CONFID.
341	2023	5	579.9837	CONFID.
342	2023	6	582.4271	CONFID.
343	2023	7	582.9176	CONDID.

INDIANA MICHIGAN POWER COMPANY
INDIANA SERVICE AREA
MANUFACTURING ENERGY SALES
ACTUAL AND FORECAST

Obs	year	month	ei_imi	SDI
344	2023	8	596.2476	CONFID.
345	2023	9	586.4599	CONFID.
346	2023	10	566.2097	CONFID.
347	2023	11	551.7038	CONFID.
348	2023	12	568.9085	CONFID.
349	2024	1	559.9699	CONFID.
350	2024	2	548.6268	CONFID.
351	2024	3	571.4136	CONFID.
352	2024	4	560.7759	CONFID.
353	2024	5	576.6322	CONFID.
354	2024	6	578.9078	CONFID.
355	2024	7	579.4191	CONDID.
356	2024	8	592.7651	CONFID.
357	2024	9	583.0986	CONFID.
358	2024	10	563.0621	CONFID.
359	2024	11	548.838	CONFID.
360	2024	12	566.4167	CONFID.
361	2025	1	557.9632	CONFID.
362	2025	2	547.085	CONFID.
363	2025	3	570.4305	CONFID.
364	2025	4	560.4527	CONFID.
365	2025	5	577.0401	CONFID.
366	2025	6	580.0653	CONFID.
367	2025	7	581.3811	CONDID.
368	2025	8	595.4263	CONFID.
369	2025	9	586.3121	CONFID.
370	2025	10	566.6525	CONFID.
371	2025	11	552.5997	CONFID.
372	2025	12	570.1384	CONFID.
373	2026	1	561.3506	CONFID.
374	2026	2	550.0682	CONFID.
375	2026	3	572.9825	CONFID.
376	2026	4	562.5668	CONFID.
377	2026	5	578.7542	CONFID.
378	2026	6	581.421	CONFID.
379	2026	7	582.4982	CONDID.
380	2026	8	596.3664	CONFID.
381	2026	9	587.1683	CONFID.
382	2026	10	567.5333	CONFID.
383	2026	11	553.6211	CONFID.
384	2026	12	571.4281	CONFID.
385	2027	1	562.9844	CONFID.
386	2027	2	552.0938	CONFID.
387	2027	3	575.4418	CONFID.
388	2027	4	565.4824	CONFID.
389	2027	5	582.1021	CONFID.
390	2027	6	585.2057	CONFID.
391	2027	7	586.5579	CONDID.
392	2027	8	600.7144	CONFID.

INDIANA MICHIGAN POWER COMPANY
INDIANA SERVICE AREA
MANUFACTURING ENERGY SALES
ACTUAL AND FORECAST

Obs	year	month	ei_imi	SDI
393	2027	9	591.7581	CONFID.
394	2027	10	572.3237	CONFID.
395	2027	11	558.5784	CONFID.
396	2027	12	576.5166	CONFID.
397	2028	1	568.1485	CONFID.
398	2028	2	557.3129	CONFID.
399	2028	3	580.7021	CONFID.
400	2028	4	570.7639	CONFID.
401	2028	5	587.3868	CONFID.
402	2028	6	590.4672	CONFID.
403	2028	7	591.7775	CONDID.
404	2028	8	605.8688	CONFID.
405	2028	9	596.8238	CONFID.
406	2028	10	577.2822	CONFID.
407	2028	11	563.4158	CONFID.
408	2028	12	581.2183	CONFID.
409	2029	1	572.7351	CONFID.
410	2029	2	561.751	CONFID.
411	2029	3	584.958	CONFID.
412	2029	4	574.8198	CONFID.
413	2029	5	591.2484	CONFID.
414	2029	6	594.1658	CONFID.
415	2029	7	595.3165	CONDID.
416	2029	8	609.2689	CONFID.
417	2029	9	600.0952	CONFID.
418	2029	10	580.4419	CONFID.
419	2029	11	566.4934	CONFID.
420	2029	12	584.2521	CONFID.
421	2030	1	575.7656	CONFID.
422	2030	2	564.8057	CONFID.
423	2030	3	588.0589	CONFID.
424	2030	4	577.9784	CONFID.
425	2030	5	594.461	CONFID.
426	2030	6	597.4323	CONFID.
427	2030	7	598.6189	CONDID.
428	2030	8	612.6469	CONFID.
429	2030	9	603.5855	CONFID.
430	2030	10	584.0601	CONFID.
431	2030	11	570.2251	CONFID.
432	2030	12	588.0567	CONFID.
433	2031	1	579.6075	CONFID.
434	2031	2	568.6489	CONFID.
435	2031	3	591.8776	CONFID.
436	2031	4	581.7644	CONFID.
437	2031	5	598.229	CONFID.
438	2031	6	601.2035	CONFID.
439	2031	7	602.4197	CONDID.
440	2031	8	616.4638	CONFID.
441	2031	9	607.3952	CONFID.

INDIANA MICHIGAN POWER COMPANY
INDIANA SERVICE AREA
MANUFACTURING ENERGY SALES
ACTUAL AND FORECAST

Obs	year	month	ei_imi	SDI
442	2031	10	587.8465	CONFID.
443	2031	11	573.9838	CONFID.
444	2031	12	591.7926	CONFID.
445	2032	1	583.3403	CONFID.
446	2032	2	572.3798	CONFID.
447	2032	3	595.5997	CONFID.
448	2032	4	585.4695	CONFID.
449	2032	5	601.9182	CONFID.
450	2032	6	604.8882	CONFID.
451	2032	7	606.1099	CONDID.
452	2032	8	620.1908	CONFID.
453	2032	9	611.1901	CONFID.
454	2032	10	591.7264	CONFID.
455	2032	11	577.9466	CONFID.
456	2032	12	595.824	CONFID.
457	2033	1	587.4407	CONFID.
458	2033	2	576.5566	CONFID.
459	2033	3	599.8764	CONFID.
460	2033	4	589.8656	CONFID.
461	2033	5	606.4263	CONFID.
462	2033	6	609.4781	CONFID.
463	2033	7	610.7626	CONDID.
464	2033	8	624.8638	CONFID.
465	2033	9	615.8488	CONFID.
466	2033	10	596.3525	CONFID.
467	2033	11	582.5438	CONFID.
468	2033	12	600.4102	CONFID.
469	2034	1	592.0247	CONFID.
470	2034	2	581.1362	CONFID.
471	2034	3	604.4399	CONFID.
472	2034	4	594.4061	CONFID.
473	2034	5	610.9475	CONFID.
474	2034	6	613.9816	CONFID.
475	2034	7	615.2674	CONDID.
476	2034	8	629.3523	CONFID.
477	2034	9	620.3023	CONFID.
478	2034	10	600.7482	CONFID.
479	2034	11	586.8545	CONFID.
480	2034	12	604.6107	CONFID.
481	2035	1	596.0959	CONFID.
482	2035	2	585.0911	CONFID.
483	2035	3	608.2968	CONFID.
484	2035	4	598.1721	CONFID.
485	2035	5	614.6182	CONFID.
486	2035	6	617.5491	CONFID.
487	2035	7	618.7132	CONDID.
488	2035	8	632.6835	CONFID.
489	2035	9	623.5342	CONFID.
490	2035	10	603.8983	CONFID.

INDIANA MICHIGAN POWER COMPANY
INDIANA SERVICE AREA
MANUFACTURING ENERGY SALES
ACTUAL AND FORECAST

Obs	year	month	ei_imi	SDI
491	2035	11	589.9434	CONFID.
492	2035	12	607.6601	CONFID.
493	2036	1	599.125	CONFID.
494	2036	2	588.1149	CONFID.
495	2036	3	611.3196	CONFID.
496	2036	4	601.1895	CONFID.
497	2036	5	617.6234	CONFID.
498	2036	6	620.5323	CONFID.
499	2036	7	621.6724	CONDID.
500	2036	8	635.6234	CONFID.
501	2036	9	626.4693	CONFID.
502	2036	10	606.8436	CONFID.
503	2036	11	592.9142	CONFID.
504	2036	12	610.6668	CONFID.
505	2037	1	602.1668	CONFID.
506	2037	2	591.1608	CONFID.
507	2037	3	614.3298	CONFID.
508	2037	4	604.1446	CONFID.
509	2037	5	620.5295	CONFID.
510	2037	6	623.406	CONFID.
511	2037	7	624.5587	CONDID.
512	2037	8	638.5233	CONFID.
513	2037	9	629.3854	CONFID.
514	2037	10	609.7783	CONFID.
515	2037	11	595.871	CONFID.
516	2037	12	613.654	CONFID.
517	2038	1	605.1966	CONFID.
518	2038	2	594.256	CONFID.
519	2038	3	617.5183	CONFID.
520	2038	4	607.441	CONFID.
521	2038	5	623.9223	CONFID.
522	2038	6	626.8663	CONFID.
523	2038	7	628.061	CONDID.
524	2038	8	642.05	CONFID.
525	2038	9	632.9267	CONFID.
526	2038	10	613.3287	CONFID.
527	2038	11	599.4268	CONFID.
528	2038	12	617.2154	CONFID.
529	2039	1	608.7602	CONFID.
530	2039	2	597.8335	CONFID.
531	2039	3	621.1251	CONFID.
532	2039	4	611.0879	CONFID.
533	2039	5	627.6101	CONFID.
534	2039	6	630.593	CONFID.
535	2039	7	631.8113	CONDID.
536	2039	8	645.8229	CONFID.
537	2039	9	636.7168	CONFID.
538	2039	10	617.1278	CONFID.
539	2039	11	603.2239	CONFID.

INDIANA MICHIGAN POWER COMPANY
INDIANA SERVICE AREA
MANUFACTURING ENERGY SALES
ACTUAL AND FORECAST

Obs	year	month	ei_imi	SDI
540	2039	12	620.9957	CONFID.
541	2040	1	612.5071	CONFID.
542	2040	2	601.5334	CONFID.
543	2040	3	624.7603	CONFID.
544	2040	4	614.6438	CONFID.
545	2040	5	631.0901	CONFID.
546	2040	6	634.007	CONFID.
547	2040	7	635.17	CONDID.
548	2040	8	649.1228	CONFID.
549	2040	9	639.9528	CONFID.
550	2040	10	620.2983	CONFID.
551	2040	11	606.3346	CONFID.
552	2040	12	624.0567	CONFID.
553	2041	1	615.5269	CONFID.
554	2041	2	604.5115	CONFID.
555	2041	3	627.6927	CONFID.
556	2041	4	617.5279	CONFID.
557	2041	5	633.9217	CONFID.
558	2041	6	636.7826	CONFID.
559	2041	7	637.8987	CONDID.
560	2041	8	651.8174	CONFID.
561	2041	9	642.6373	CONFID.
562	2041	10	623.005	CONFID.
563	2041	11	609.1036	CONFID.
564	2041	12	626.929	CONFID.
565	2042	1	618.5169	CONFID.
566	2042	2	607.5998	CONFID.
567	2042	3	630.8435	CONFID.
568	2042	4	620.7031	CONFID.
569	2042	5	637.0835	CONFID.
570	2042	6	639.9037	CONFID.
571	2042	7	640.9693	CONDID.
572	2042	8	654.8617	CONFID.
573	2042	9	645.6921	CONFID.
574	2042	10	626.0802	CONFID.
575	2042	11	612.1693	CONFID.
576	2042	12	629.9317	CONFID.
577	2043	1	621.4299	CONFID.
578	2043	2	610.4417	CONFID.
579	2043	3	633.6601	CONFID.
580	2043	4	623.5425	CONFID.
581	2043	5	639.9894	CONFID.
582	2043	6	642.908	CONFID.
583	2043	7	644.0615	CONDID.
584	2043	8	658.0002	CONFID.
585	2043	9	648.8082	CONFID.
586	2043	10	629.1348	CONFID.
587	2043	11	615.1693	CONFID.
588	2043	12	632.9159	CONFID.

INDIANA MICHIGAN POWER COMPANY
INDIANA SERVICE AREA
MANUFACTURING ENERGY SALES
ACTUAL AND FORECAST

Obs	year	month	ei_imi	SDI
589	2044	1	624.4293	CONFID.
590	2044	2	613.4674	CONFID.
591	2044	3	636.7014	CONFID.
592	2044	4	626.5763	CONFID.
593	2044	5	642.9883	CONFID.
594	2044	6	645.8433	CONFID.
595	2044	7	646.9402	CONDID.
596	2044	8	660.8547	CONFID.
597	2044	9	651.6952	CONFID.
598	2044	10	632.0904	CONFID.
599	2044	11	618.1962	CONFID.
600	2044	12	635.9924	CONFID.
601	2045	1	627.5331	CONFID.
602	2045	2	616.5863	CONFID.
603	2045	3	639.8397	CONFID.
604	2045	4	629.7495	CONFID.
605	2045	5	646.2139	CONFID.
606	2045	6	649.1409	CONFID.
607	2045	7	650.3123	CONDID.
608	2045	8	664.2904	CONFID.
609	2045	9	655.1686	CONFID.
610	2045	10	635.589	CONFID.
611	2045	11	621.7256	CONFID.
612	2045	12	639.57	CONFID.
613	2046	1	631.1559	CONFID.
614	2046	2	620.2377	CONFID.
615	2046	3	643.4947	CONFID.
616	2046	4	633.3878	CONFID.
617	2046	5	649.8266	CONFID.
618	2046	6	652.7347	CONFID.
619	2046	7	653.8724	CONDID.
620	2046	8	667.8194	CONFID.
621	2046	9	658.6588	CONFID.
622	2046	10	639.0304	CONFID.
623	2046	11	625.1072	CONFID.
624	2046	12	642.8815	CONFID.
625	2047	1	634.3997	CONFID.
626	2047	2	623.4303	CONFID.
627	2047	3	646.6582	CONFID.
628	2047	4	636.5342	CONFID.
629	2047	5	652.9542	CONFID.
630	2047	6	655.8357	CONFID.
631	2047	7	656.9264	CONDID.
632	2047	8	670.8308	CONFID.
633	2047	9	661.6331	CONFID.
634	2047	10	641.9722	CONFID.
635	2047	11	628.0189	CONFID.
636	2047	12	645.7629	CONFID.
637	2048	1	637.2553	CONFID.

INDIANA MICHIGAN POWER COMPANY
INDIANA SERVICE AREA
MANUFACTURING ENERGY SALES
ACTUAL AND FORECAST

Obs	year	month	ei_imi	SDI
638	2048	2	626.2659	CONFID.
639	2048	3	649.4755	CONFID.
640	2048	4	639.3306	CONFID.
641	2048	5	655.7319	CONFID.
642	2048	6	658.5957	CONFID.
643	2048	7	659.6721	CONDID.
644	2048	8	673.5614	CONFID.
645	2048	9	664.3479	CONFID.
646	2048	10	644.671	CONFID.
647	2048	11	630.7025	CONFID.
648	2048	12	648.4324	CONFID.
649	2049	1	639.9219	CONFID.
650	2049	2	628.9257	CONFID.
651	2049	3	652.1283	CONFID.
652	2049	4	641.9806	CONFID.
653	2049	5	658.3807	CONFID.
654	2049	6	661.2479	CONFID.
655	2049	7	662.3218	CONDID.
656	2049	8	676.2079	CONFID.
657	2049	9	666.9856	CONFID.
658	2049	10	647.2921	CONFID.
659	2049	11	633.2986	CONFID.
660	2049	12	650.995	CONFID.
661	2050	1	642.4446	CONFID.
662	2050	2	631.4137	CONFID.
663	2050	3	654.5884	CONFID.
664	2050	4	644.4176	CONFID.
665	2050	5	660.7968	CONFID.
666	2050	6	663.6379	CONFID.
667	2050	7	664.6989	CONDID.
668	2050	8	678.5743	CONFID.
669	2050	9	669.3531	CONFID.
670	2050	10	649.6752	CONFID.
671	2050	11	635.7127	CONFID.
672	2050	12	653.4569	CONFID.
673	2051	1	644.9774	CONFID.
674	2051	2	633.9146	CONFID.
675	2051	3	657.0648	CONFID.
676	2051	4	646.8743	CONFID.
677	2051	5	663.2357	CONFID.
678	2051	6	666.0604	CONFID.
679	2051	7	667.1046	CONDID.
680	2051	8	680.9723	CONFID.
681	2051	9	671.7554	CONFID.
682	2051	10	652.0957	CONFID.
683	2051	11	638.1672	CONFID.
684	2051	12	655.9617	CONFID.
685	2052	1	647.5478	CONFID.
686	2052	2	636.4478	CONFID.

INDIANA MICHIGAN POWER COMPANY
INDIANA SERVICE AREA
MANUFACTURING ENERGY SALES
ACTUAL AND FORECAST

Obs	year	month	ei_imi	SDI
687	2052	3	659.568	CONFID.
688	2052	4	649.3522	CONFID.
689	2052	5	665.6903	CONFID.
690	2052	6	668.4913	CONFID.
691	2052	7	669.5152	CONDID.
692	2052	8	683.3697	CONFID.
693	2052	9	674.1516	CONFID.
694	2052	10	654.5048	CONFID.
695	2052	11	640.6051	CONFID.
696	2052	12	658.445	CONFID.
697	2053	1	650.0985	CONFID.
698	2053	2	638.9631	CONFID.
699	2053	3	662.0552	CONFID.
700	2053	4	651.816	CONFID.
701	2053	5	668.1327	CONFID.
702	2053	6	670.912	CONFID.
703	2053	7	671.9175	CONDID.
704	2053	8	685.7609	CONFID.
705	2053	9	676.5435	CONFID.
706	2053	10	656.9116	CONFID.
707	2053	11	643.0426	CONFID.
708	2053	12	660.9296	CONFID.
709	2054	1	652.6505	CONFID.
710	2054	2	641.4798	CONFID.
711	2054	3	664.5438	CONFID.
712	2054	4	654.2812	CONFID.
713	2054	5	670.5765	CONFID.
714	2054	6	673.3341	CONFID.
715	2054	7	674.3212	CONDID.
716	2054	8	688.1535	CONFID.
717	2054	9	678.9368	CONFID.
718	2054	10	659.3199	CONFID.
719	2054	11	645.4815	CONFID.
720	2054	12	663.4157	CONFID.
721	2055	1	655.2039	CONFID.
722	2055	2	643.9979	CONFID.
723	2055	3	667.0338	CONFID.
724	2055	4	656.7478	CONFID.
725	2055	5	673.0218	CONFID.
726	2055	6	675.7576	CONFID.
727	2055	7	676.7264	CONDID.
728	2055	8	690.5474	CONFID.
729	2055	9	681.3315	CONFID.
730	2055	10	661.7295	CONFID.
731	2055	11	647.9218	CONFID.
732	2055	12	665.9031	CONFID.
733	2056	1	657.7587	CONFID.
734	2056	2	646.5173	CONFID.
735	2056	3	669.5252	CONFID.

INDIANA MICHIGAN POWER COMPANY
INDIANA SERVICE AREA
MANUFACTURING ENERGY SALES
ACTUAL AND FORECAST

Obs	year	month	ei_imi	SDI
736	2056	4	659.2157	CONFID.
737	2056	5	675.4684	CONFID.
738	2056	6	678.1825	CONFID.
739	2056	7	679.1329	CONDID.
740	2056	8	692.9428	CONFID.
741	2056	9	683.7276	CONFID.
742	2056	10	664.1404	CONFID.
743	2056	11	650.3634	CONFID.
744	2056	12	668.3919	CONFID.
745	2057	1	660.3148	CONFID.
746	2057	2	649.0381	CONFID.
747	2057	3	672.0179	CONFID.
748	2057	4	661.6851	CONFID.
749	2057	5	677.9163	CONFID.
750	2057	6	680.6088	CONFID.
751	2057	7	681.5407	CONDID.
752	2057	8	695.3395	CONFID.
753	2057	9	686.1251	CONFID.
754	2057	10	666.5528	CONFID.
755	2057	11	652.8064	CONFID.
756	2057	12	670.8821	CONFID.

(REDACTED)

Volume 3, Exhibit D

LONG-TERM
RETAIL AND WHOLESALE
FORECAST MODELS PRICE DATA

Indiana Michigan Power Company - Indiana

Real Average Electric Prices

Obs	Year	Month	Real Residential Electric Price - Indiana	Real Commercial Electric Price - Indiana	Real Industrial Electric Price - Indiana	Real Other Retail Electric Price - Indiana	Real Wholesale Electric Price -Indiana
1	1990	1	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
2	1990	2	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
3	1990	3	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
4	1990	4	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
5	1990	5	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
6	1990	6	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
7	1990	7	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
8	1990	8	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
9	1990	9	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
10	1990	10	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
11	1990	11	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
12	1990	12	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
13	1991	1	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
14	1991	2	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
15	1991	3	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
16	1991	4	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
17	1991	5	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
18	1991	6	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
19	1991	7	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
20	1991	8	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
21	1991	9	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
22	1991	10	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
23	1991	11	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
24	1991	12	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
25	1992	1	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
26	1992	2	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
27	1992	3	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
28	1992	4	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
29	1992	5	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
30	1992	6	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
31	1992	7	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
32	1992	8	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
33	1992	9	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
34	1992	10	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
35	1992	11	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
36	1992	12	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
37	1993	1	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
38	1993	2	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
39	1993	3	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
40	1993	4	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
41	1993	5	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
42	1993	6	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
43	1993	7	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
44	1993	8	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
45	1993	9	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
46	1993	10	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
47	1993	11	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL

Indiana Michigan Power Company - Indiana
Real Average Electric Prices

Obs	Year	Month	Real Residential Electric Price - Indiana	Real Commercial Electric Price - Indiana	Real Industrial Electric Price - Indiana	Real Other Retail Electric Price - Indiana	Real Wholesale Electric Price -Indiana
48	1993	12	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
49	1994	1	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
50	1994	2	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
51	1994	3	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
52	1994	4	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
53	1994	5	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
54	1994	6	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
55	1994	7	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
56	1994	8	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
57	1994	9	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
58	1994	10	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
59	1994	11	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
60	1994	12	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
61	1995	1	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
62	1995	2	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
63	1995	3	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
64	1995	4	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
65	1995	5	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
66	1995	6	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
67	1995	7	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
68	1995	8	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
69	1995	9	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
70	1995	10	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
71	1995	11	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
72	1995	12	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
73	1996	1	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
74	1996	2	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
75	1996	3	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
76	1996	4	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
77	1996	5	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
78	1996	6	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
79	1996	7	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
80	1996	8	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
81	1996	9	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
82	1996	10	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
83	1996	11	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
84	1996	12	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
85	1997	1	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
86	1997	2	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
87	1997	3	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
88	1997	4	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
89	1997	5	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
90	1997	6	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
91	1997	7	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
92	1997	8	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
93	1997	9	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
94	1997	10	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL

Indiana Michigan Power Company - Indiana
Real Average Electric Prices

Obs	Year	Month	Real Residential Electric Price - Indiana	Real Commercial Electric Price - Indiana	Real Industrial Electric Price - Indiana	Real Other Retail Electric Price - Indiana	Real Wholesale Electric Price -Indiana
95	1997	11	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
96	1997	12	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
97	1998	1	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
98	1998	2	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
99	1998	3	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
100	1998	4	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
101	1998	5	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
102	1998	6	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
103	1998	7	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
104	1998	8	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
105	1998	9	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
106	1998	10	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
107	1998	11	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
108	1998	12	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
109	1999	1	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
110	1999	2	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
111	1999	3	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
112	1999	4	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
113	1999	5	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
114	1999	6	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
115	1999	7	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
116	1999	8	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
117	1999	9	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
118	1999	10	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
119	1999	11	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
120	1999	12	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
121	2000	1	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
122	2000	2	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
123	2000	3	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
124	2000	4	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
125	2000	5	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
126	2000	6	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
127	2000	7	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
128	2000	8	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
129	2000	9	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
130	2000	10	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
131	2000	11	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
132	2000	12	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
133	2001	1	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
134	2001	2	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
135	2001	3	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
136	2001	4	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
137	2001	5	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
138	2001	6	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
139	2001	7	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
140	2001	8	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
141	2001	9	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL

Indiana Michigan Power Company - Indiana
Real Average Electric Prices

Obs	Year	Month	Real Residential Electric Price - Indiana	Real Commercial Electric Price - Indiana	Real Industrial Electric Price - Indiana	Real Other Retail Electric Price - Indiana	Real Wholesale Electric Price -Indiana
142	2001	10	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
143	2001	11	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
144	2001	12	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
145	2002	1	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
146	2002	2	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
147	2002	3	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
148	2002	4	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
149	2002	5	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
150	2002	6	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
151	2002	7	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
152	2002	8	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
153	2002	9	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
154	2002	10	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
155	2002	11	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
156	2002	12	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
157	2003	1	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
158	2003	2	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
159	2003	3	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
160	2003	4	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
161	2003	5	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
162	2003	6	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
163	2003	7	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
164	2003	8	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
165	2003	9	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
166	2003	10	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
167	2003	11	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
168	2003	12	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
169	2004	1	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
170	2004	2	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
171	2004	3	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
172	2004	4	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
173	2004	5	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
174	2004	6	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
175	2004	7	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
176	2004	8	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
177	2004	9	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
178	2004	10	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
179	2004	11	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
180	2004	12	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
181	2005	1	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
182	2005	2	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
183	2005	3	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
184	2005	4	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
185	2005	5	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
186	2005	6	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
187	2005	7	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
188	2005	8	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL

Indiana Michigan Power Company - Indiana
Real Average Electric Prices

Obs	Year	Month	Real Residential Electric Price - Indiana	Real Commercial Electric Price - Indiana	Real Industrial Electric Price - Indiana	Real Other Retail Electric Price - Indiana	Real Wholesale Electric Price -Indiana
189	2005	9	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
190	2005	10	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
191	2005	11	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
192	2005	12	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
193	2006	1	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
194	2006	2	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
195	2006	3	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
196	2006	4	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
197	2006	5	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
198	2006	6	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
199	2006	7	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
200	2006	8	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
201	2006	9	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
202	2006	10	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
203	2006	11	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
204	2006	12	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
205	2007	1	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
206	2007	2	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
207	2007	3	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
208	2007	4	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
209	2007	5	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
210	2007	6	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
211	2007	7	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
212	2007	8	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
213	2007	9	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
214	2007	10	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
215	2007	11	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
216	2007	12	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
217	2008	1	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
218	2008	2	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
219	2008	3	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
220	2008	4	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
221	2008	5	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
222	2008	6	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
223	2008	7	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
224	2008	8	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
225	2008	9	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
226	2008	10	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
227	2008	11	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
228	2008	12	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
229	2009	1	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
230	2009	2	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
231	2009	3	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
232	2009	4	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
233	2009	5	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
234	2009	6	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
235	2009	7	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL

Indiana Michigan Power Company - Indiana
Real Average Electric Prices

Obs	Year	Month	Real Residential Electric Price - Indiana	Real Commercial Electric Price - Indiana	Real Industrial Electric Price - Indiana	Real Other Retail Electric Price - Indiana	Real Wholesale Electric Price -Indiana
236	2009	8	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
237	2009	9	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
238	2009	10	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
239	2009	11	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
240	2009	12	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
241	2010	1	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
242	2010	2	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
243	2010	3	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
244	2010	4	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
245	2010	5	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
246	2010	6	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
247	2010	7	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
248	2010	8	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
249	2010	9	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
250	2010	10	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
251	2010	11	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
252	2010	12	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
253	2011	1	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
254	2011	2	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
255	2011	3	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
256	2011	4	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
257	2011	5	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
258	2011	6	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
259	2011	7	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
260	2011	8	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
261	2011	9	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
262	2011	10	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
263	2011	11	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
264	2011	12	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
265	2012	1	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
266	2012	2	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
267	2012	3	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
268	2012	4	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
269	2012	5	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
270	2012	6	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
271	2012	7	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
272	2012	8	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
273	2012	9	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
274	2012	10	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
275	2012	11	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
276	2012	12	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
277	2013	1	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
278	2013	2	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
279	2013	3	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
280	2013	4	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
281	2013	5	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
282	2013	6	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL

Indiana Michigan Power Company - Indiana

Real Average Electric Prices

Obs	Year	Month	Real Residential Electric Price - Indiana	Real Commercial Electric Price - Indiana	Real Industrial Electric Price - Indiana	Real Other Retail Electric Price - Indiana	Real Wholesale Electric Price -Indiana
283	2013	7	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
284	2013	8	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
285	2013	9	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
286	2013	10	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
287	2013	11	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
288	2013	12	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
289	2014	1	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
290	2014	2	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
291	2014	3	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
292	2014	4	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
293	2014	5	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
294	2014	6	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
295	2014	7	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
296	2014	8	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
297	2014	9	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
298	2014	10	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
299	2014	11	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
300	2014	12	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
301	2015	1	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
302	2015	2	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
303	2015	3	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
304	2015	4	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
305	2015	5	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
306	2015	6	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
307	2015	7	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
308	2015	8	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
309	2015	9	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
310	2015	10	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
311	2015	11	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
312	2015	12	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
313	2016	1	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
314	2016	2	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
315	2016	3	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
316	2016	4	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
317	2016	5	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
318	2016	6	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
319	2016	7	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
320	2016	8	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
321	2016	9	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
322	2016	10	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
323	2016	11	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
324	2016	12	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
325	2017	1	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
326	2017	2	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
327	2017	3	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
328	2017	4	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
329	2017	5	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL

Indiana Michigan Power Company - Indiana

Real Average Electric Prices

Obs	Year	Month	Real Residential Electric Price - Indiana	Real Commercial Electric Price - Indiana	Real Industrial Electric Price - Indiana	Real Other Retail Electric Price - Indiana	Real Wholesale Electric Price -Indiana
330	2017	6	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
331	2017	7	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
332	2017	8	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
333	2017	9	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
334	2017	10	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
335	2017	11	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
336	2017	12	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
337	2018	1	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
338	2018	2	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
339	2018	3	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
340	2018	4	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
341	2018	5	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
342	2018	6	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
343	2018	7	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
344	2018	8	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
345	2018	9	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
346	2018	10	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
347	2018	11	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
348	2018	12	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
349	2019	1	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
350	2019	2	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
351	2019	3	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
352	2019	4	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
353	2019	5	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
354	2019	6	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
355	2019	7	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
356	2019	8	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
357	2019	9	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
358	2019	10	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
359	2019	11	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
360	2019	12	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
361	2020	1	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
362	2020	2	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
363	2020	3	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
364	2020	4	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
365	2020	5	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
366	2020	6	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
367	2020	7	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
368	2020	8	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
369	2020	9	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
370	2020	10	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
371	2020	11	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
372	2020	12	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
373	2021	1	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
374	2021	2	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
375	2021	3	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
376	2021	4	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL

Indiana Michigan Power Company - Indiana
Real Average Electric Prices

Obs	Year	Month	Real Residential Electric Price - Indiana	Real Commercial Electric Price - Indiana	Real Industrial Electric Price - Indiana	Real Other Retail Electric Price - Indiana	Real Wholesale Electric Price -Indiana
377	2021	5	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
378	2021	6	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
379	2021	7	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
380	2021	8	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
381	2021	9	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
382	2021	10	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
383	2021	11	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
384	2021	12	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
385	2022	1	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
386	2022	2	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
387	2022	3	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
388	2022	4	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
389	2022	5	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
390	2022	6	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
391	2022	7	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
392	2022	8	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
393	2022	9	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
394	2022	10	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
395	2022	11	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
396	2022	12	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
397	2023	1	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
398	2023	2	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
399	2023	3	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
400	2023	4	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
401	2023	5	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
402	2023	6	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
403	2023	7	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
404	2023	8	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
405	2023	9	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
406	2023	10	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
407	2023	11	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
408	2023	12	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
409	2024	1	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
410	2024	2	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
411	2024	3	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
412	2024	4	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
413	2024	5	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
414	2024	6	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
415	2024	7	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
416	2024	8	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
417	2024	9	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
418	2024	10	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
419	2024	11	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
420	2024	12	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
421	2025	1	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
422	2025	2	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
423	2025	3	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL

Indiana Michigan Power Company - Indiana
Real Average Electric Prices

Obs	Year	Month	Real Residential Electric Price - Indiana	Real Commercial Electric Price - Indiana	Real Industrial Electric Price - Indiana	Real Other Retail Electric Price - Indiana	Real Wholesale Electric Price -Indiana
424	2025	4	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
425	2025	5	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
426	2025	6	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
427	2025	7	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
428	2025	8	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
429	2025	9	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
430	2025	10	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
431	2025	11	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
432	2025	12	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
433	2026	1	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
434	2026	2	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
435	2026	3	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
436	2026	4	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
437	2026	5	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
438	2026	6	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
439	2026	7	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
440	2026	8	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
441	2026	9	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
442	2026	10	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
443	2026	11	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
444	2026	12	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
445	2027	1	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
446	2027	2	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
447	2027	3	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
448	2027	4	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
449	2027	5	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
450	2027	6	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
451	2027	7	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
452	2027	8	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
453	2027	9	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
454	2027	10	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
455	2027	11	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
456	2027	12	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
457	2028	1	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
458	2028	2	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
459	2028	3	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
460	2028	4	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
461	2028	5	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
462	2028	6	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
463	2028	7	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
464	2028	8	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
465	2028	9	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
466	2028	10	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
467	2028	11	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
468	2028	12	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
469	2029	1	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
470	2029	2	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL

Indiana Michigan Power Company - Indiana
Real Average Electric Prices

Obs	Year	Month	Real Residential Electric Price - Indiana	Real Commercial Electric Price - Indiana	Real Industrial Electric Price - Indiana	Real Other Retail Electric Price - Indiana	Real Wholesale Electric Price -Indiana
471	2029	3	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
472	2029	4	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
473	2029	5	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
474	2029	6	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
475	2029	7	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
476	2029	8	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
477	2029	9	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
478	2029	10	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
479	2029	11	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
480	2029	12	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
481	2030	1	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
482	2030	2	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
483	2030	3	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
484	2030	4	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
485	2030	5	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
486	2030	6	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
487	2030	7	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
488	2030	8	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
489	2030	9	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
490	2030	10	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
491	2030	11	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
492	2030	12	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
493	2031	1	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
494	2031	2	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
495	2031	3	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
496	2031	4	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
497	2031	5	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
498	2031	6	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
499	2031	7	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
500	2031	8	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
501	2031	9	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
502	2031	10	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
503	2031	11	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
504	2031	12	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
505	2032	1	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
506	2032	2	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
507	2032	3	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
508	2032	4	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
509	2032	5	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
510	2032	6	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
511	2032	7	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
512	2032	8	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
513	2032	9	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
514	2032	10	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
515	2032	11	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
516	2032	12	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
517	2033	1	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL

Indiana Michigan Power Company - Indiana
Real Average Electric Prices

Obs	Year	Month	Real Residential Electric Price - Indiana	Real Commercial Electric Price - Indiana	Real Industrial Electric Price - Indiana	Real Other Retail Electric Price - Indiana	Real Wholesale Electric Price -Indiana
518	2033	2	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
519	2033	3	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
520	2033	4	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
521	2033	5	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
522	2033	6	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
523	2033	7	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
524	2033	8	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
525	2033	9	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
526	2033	10	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
527	2033	11	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
528	2033	12	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
529	2034	1	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
530	2034	2	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
531	2034	3	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
532	2034	4	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
533	2034	5	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
534	2034	6	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
535	2034	7	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
536	2034	8	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
537	2034	9	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
538	2034	10	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
539	2034	11	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
540	2034	12	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
541	2035	1	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
542	2035	2	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
543	2035	3	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
544	2035	4	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
545	2035	5	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
546	2035	6	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
547	2035	7	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
548	2035	8	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
549	2035	9	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
550	2035	10	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
551	2035	11	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
552	2035	12	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
553	2036	1	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
554	2036	2	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
555	2036	3	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
556	2036	4	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
557	2036	5	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
558	2036	6	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
559	2036	7	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
560	2036	8	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
561	2036	9	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
562	2036	10	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
563	2036	11	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
564	2036	12	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL

Indiana Michigan Power Company - Indiana
Real Average Electric Prices

Obs	Year	Month	Real Residential Electric Price - Indiana	Real Commercial Electric Price - Indiana	Real Industrial Electric Price - Indiana	Real Other Retail Electric Price - Indiana	Real Wholesale Electric Price -Indiana
565	2037	1	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
566	2037	2	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
567	2037	3	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
568	2037	4	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
569	2037	5	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
570	2037	6	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
571	2037	7	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
572	2037	8	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
573	2037	9	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
574	2037	10	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
575	2037	11	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
576	2037	12	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
577	2038	1	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
578	2038	2	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
579	2038	3	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
580	2038	4	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
581	2038	5	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
582	2038	6	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
583	2038	7	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
584	2038	8	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
585	2038	9	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
586	2038	10	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
587	2038	11	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
588	2038	12	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
589	2039	1	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
590	2039	2	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
591	2039	3	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
592	2039	4	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
593	2039	5	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
594	2039	6	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
595	2039	7	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
596	2039	8	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
597	2039	9	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
598	2039	10	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
599	2039	11	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
600	2039	12	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
601	2040	1	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
602	2040	2	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
603	2040	3	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
604	2040	4	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
605	2040	5	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
606	2040	6	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
607	2040	7	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
608	2040	8	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
609	2040	9	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
610	2040	10	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
611	2040	11	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL

Indiana Michigan Power Company - Indiana
Real Average Electric Prices

Attachment MAB-6 PUBLIC

Obs	Year	Month	Real Residential Electric Price - Indiana	Real Commercial Electric Price - Indiana	Real Industrial Electric Price - Indiana	Real Other Retail Electric Price - Indiana	Real Wholesale Electric Price -Indiana
612	2040	12	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
613	2041	1	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
614	2041	2	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
615	2041	3	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
616	2041	4	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
617	2041	5	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
618	2041	6	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
619	2041	7	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
620	2041	8	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
621	2041	9	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
622	2041	10	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
623	2041	11	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
624	2041	12	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
625	2042	1	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
626	2042	2	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
627	2042	3	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
628	2042	4	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
629	2042	5	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
630	2042	6	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
631	2042	7	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
632	2042	8	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
633	2042	9	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
634	2042	10	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
635	2042	11	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
636	2042	12	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
637	2043	1	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
638	2043	2	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
639	2043	3	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
640	2043	4	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
641	2043	5	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
642	2043	6	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
643	2043	7	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
644	2043	8	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
645	2043	9	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
646	2043	10	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
647	2043	11	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
648	2043	12	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
649	2044	1	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
650	2044	2	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
651	2044	3	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
652	2044	4	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
653	2044	5	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
654	2044	6	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
655	2044	7	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
656	2044	8	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
657	2044	9	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
658	2044	10	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL

Indiana Michigan Power Company - Indiana
Real Average Electric Prices

Obs	Year	Month	Real Residential Electric Price - Indiana	Real Commercial Electric Price - Indiana	Real Industrial Electric Price - Indiana	Real Other Retail Electric Price - Indiana	Real Wholesale Electric Price -Indiana
659	2044	11	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
660	2044	12	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
661	2045	1	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
662	2045	2	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
663	2045	3	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
664	2045	4	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
665	2045	5	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
666	2045	6	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
667	2045	7	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
668	2045	8	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
669	2045	9	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
670	2045	10	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
671	2045	11	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
672	2045	12	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
673	2046	1	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
674	2046	2	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
675	2046	3	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
676	2046	4	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
677	2046	5	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
678	2046	6	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
679	2046	7	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
680	2046	8	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
681	2046	9	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
682	2046	10	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
683	2046	11	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
684	2046	12	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
685	2047	1	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
686	2047	2	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
687	2047	3	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
688	2047	4	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
689	2047	5	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
690	2047	6	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
691	2047	7	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
692	2047	8	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
693	2047	9	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
694	2047	10	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
695	2047	11	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
696	2047	12	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
697	2048	1	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
698	2048	2	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
699	2048	3	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
700	2048	4	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
701	2048	5	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
702	2048	6	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
703	2048	7	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
704	2048	8	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
705	2048	9	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL

Indiana Michigan Power Company - Indiana
Real Average Electric Prices

Obs	Year	Month	Real Residential Electric Price - Indiana	Real Commercial Electric Price - Indiana	Real Industrial Electric Price - Indiana	Real Other Retail Electric Price - Indiana	Real Wholesale Electric Price -Indiana
706	2048	10	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
707	2048	11	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
708	2048	12	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
709	2049	1	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
710	2049	2	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
711	2049	3	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
712	2049	4	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
713	2049	5	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
714	2049	6	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
715	2049	7	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
716	2049	8	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
717	2049	9	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
718	2049	10	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
719	2049	11	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
720	2049	12	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
721	2050	1	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
722	2050	2	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
723	2050	3	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
724	2050	4	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
725	2050	5	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
726	2050	6	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
727	2050	7	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
728	2050	8	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
729	2050	9	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
730	2050	10	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
731	2050	11	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
732	2050	12	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
733	2051	1	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
734	2051	2	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
735	2051	3	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
736	2051	4	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
737	2051	5	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
738	2051	6	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
739	2051	7	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
740	2051	8	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
741	2051	9	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
742	2051	10	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
743	2051	11	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
744	2051	12	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
745	2052	1	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
746	2052	2	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
747	2052	3	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
748	2052	4	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
749	2052	5	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
750	2052	6	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
751	2052	7	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
752	2052	8	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL

Indiana Michigan Power Company - Indiana
Real Average Electric Prices

Obs	Year	Month	Real Residential Electric Price - Indiana	Real Commercial Electric Price - Indiana	Real Industrial Electric Price - Indiana	Real Other Retail Electric Price - Indiana	Real Wholesale Electric Price -Indiana
753	2052	9	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
754	2052	10	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
755	2052	11	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
756	2052	12	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
757	2053	1	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
758	2053	2	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
759	2053	3	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
760	2053	4	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
761	2053	5	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
762	2053	6	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
763	2053	7	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
764	2053	8	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
765	2053	9	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
766	2053	10	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
767	2053	11	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
768	2053	12	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
769	2054	1	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
770	2054	2	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
771	2054	3	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
772	2054	4	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
773	2054	5	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
774	2054	6	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
775	2054	7	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
776	2054	8	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
777	2054	9	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
778	2054	10	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
779	2054	11	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
780	2054	12	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
781	2055	1	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
782	2055	2	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
783	2055	3	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
784	2055	4	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
785	2055	5	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
786	2055	6	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
787	2055	7	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
788	2055	8	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
789	2055	9	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
790	2055	10	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
791	2055	11	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
792	2055	12	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
793	2056	1	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
794	2056	2	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
795	2056	3	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
796	2056	4	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
797	2056	5	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
798	2056	6	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
799	2056	7	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL

Indiana Michigan Power Company - Indiana
Real Average Electric Prices

Obs	Year	Month	Real Residential Electric Price - Indiana	Real Commercial Electric Price - Indiana	Real Industrial Electric Price - Indiana	Real Other Retail Electric Price - Indiana	Real Wholesale Electric Price -Indiana
800	2056	8	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
801	2056	9	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
802	2056	10	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
803	2056	11	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
804	2056	12	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
805	2057	1	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
806	2057	2	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
807	2057	3	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
808	2057	4	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
809	2057	5	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
810	2057	6	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
811	2057	7	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
812	2057	8	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
813	2057	9	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
814	2057	10	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
815	2057	11	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
816	2057	12	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL

Indiana Michigan Power Company - Michigan
Real Average Electric Prices

Obs	Year	Month	Real Residential Electric Price - Michigan	Real Commercial Electric Price - Michigan	Real Industrial Electric Price - Michigan	Real Other Retail Electric Price - Michigan	Real Wholesale Electric Price -Michigan
1	1990	1	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
2	1990	2	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
3	1990	3	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
4	1990	4	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
5	1990	5	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
6	1990	6	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
7	1990	7	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
8	1990	8	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
9	1990	9	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
10	1990	10	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
11	1990	11	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
12	1990	12	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
13	1991	1	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
14	1991	2	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
15	1991	3	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
16	1991	4	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
17	1991	5	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
18	1991	6	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
19	1991	7	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
20	1991	8	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
21	1991	9	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
22	1991	10	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
23	1991	11	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
24	1991	12	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
25	1992	1	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
26	1992	2	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
27	1992	3	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
28	1992	4	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
29	1992	5	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
30	1992	6	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
31	1992	7	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
32	1992	8	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
33	1992	9	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
34	1992	10	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
35	1992	11	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
36	1992	12	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
37	1993	1	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
38	1993	2	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
39	1993	3	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
40	1993	4	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
41	1993	5	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
42	1993	6	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
43	1993	7	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
44	1993	8	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
45	1993	9	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
46	1993	10	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
47	1993	11	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL

Indiana Michigan Power Company - Michigan
Real Average Electric Prices

Obs	Year	Month	Real Residential Electric Price - Michigan	Real Commercial Electric Price - Michigan	Real Industrial Electric Price - Michigan	Real Other Retail Electric Price - Michigan	Real Wholesale Electric Price -Michigan
48	1993	12	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
49	1994	1	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
50	1994	2	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
51	1994	3	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
52	1994	4	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
53	1994	5	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
54	1994	6	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
55	1994	7	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
56	1994	8	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
57	1994	9	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
58	1994	10	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
59	1994	11	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
60	1994	12	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
61	1995	1	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
62	1995	2	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
63	1995	3	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
64	1995	4	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
65	1995	5	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
66	1995	6	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
67	1995	7	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
68	1995	8	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
69	1995	9	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
70	1995	10	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
71	1995	11	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
72	1995	12	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
73	1996	1	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
74	1996	2	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
75	1996	3	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
76	1996	4	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
77	1996	5	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
78	1996	6	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
79	1996	7	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
80	1996	8	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
81	1996	9	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
82	1996	10	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
83	1996	11	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
84	1996	12	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
85	1997	1	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
86	1997	2	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
87	1997	3	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
88	1997	4	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
89	1997	5	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
90	1997	6	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
91	1997	7	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
92	1997	8	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
93	1997	9	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
94	1997	10	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL

Indiana Michigan Power Company - Michigan
Real Average Electric Prices

Obs	Year	Month	Real Residential Electric Price - Michigan	Real Commercial Electric Price - Michigan	Real Industrial Electric Price - Michigan	Real Other Retail Electric Price - Michigan	Real Wholesale Electric Price -Michigan
95	1997	11	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
96	1997	12	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
97	1998	1	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
98	1998	2	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
99	1998	3	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
100	1998	4	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
101	1998	5	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
102	1998	6	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
103	1998	7	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
104	1998	8	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
105	1998	9	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
106	1998	10	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
107	1998	11	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
108	1998	12	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
109	1999	1	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
110	1999	2	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
111	1999	3	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
112	1999	4	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
113	1999	5	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
114	1999	6	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
115	1999	7	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
116	1999	8	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
117	1999	9	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
118	1999	10	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
119	1999	11	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
120	1999	12	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
121	2000	1	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
122	2000	2	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
123	2000	3	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
124	2000	4	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
125	2000	5	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
126	2000	6	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
127	2000	7	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
128	2000	8	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
129	2000	9	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
130	2000	10	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
131	2000	11	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
132	2000	12	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
133	2001	1	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
134	2001	2	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
135	2001	3	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
136	2001	4	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
137	2001	5	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
138	2001	6	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
139	2001	7	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
140	2001	8	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
141	2001	9	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL

Indiana Michigan Power Company - Michigan
Real Average Electric Prices

Obs	Year	Month	Real Residential Electric Price - Michigan	Real Commercial Electric Price - Michigan	Real Industrial Electric Price - Michigan	Real Other Retail Electric Price - Michigan	Real Wholesale Electric Price -Michigan
142	2001	10	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
143	2001	11	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
144	2001	12	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
145	2002	1	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
146	2002	2	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
147	2002	3	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
148	2002	4	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
149	2002	5	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
150	2002	6	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
151	2002	7	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
152	2002	8	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
153	2002	9	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
154	2002	10	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
155	2002	11	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
156	2002	12	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
157	2003	1	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
158	2003	2	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
159	2003	3	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
160	2003	4	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
161	2003	5	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
162	2003	6	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
163	2003	7	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
164	2003	8	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
165	2003	9	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
166	2003	10	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
167	2003	11	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
168	2003	12	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
169	2004	1	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
170	2004	2	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
171	2004	3	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
172	2004	4	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
173	2004	5	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
174	2004	6	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
175	2004	7	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
176	2004	8	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
177	2004	9	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
178	2004	10	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
179	2004	11	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
180	2004	12	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
181	2005	1	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
182	2005	2	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
183	2005	3	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
184	2005	4	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
185	2005	5	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
186	2005	6	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
187	2005	7	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
188	2005	8	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL

Indiana Michigan Power Company - Michigan
Real Average Electric Prices

Obs	Year	Month	Real Residential Electric Price - Michigan	Real Commercial Electric Price - Michigan	Real Industrial Electric Price - Michigan	Real Other Retail Electric Price - Michigan	Real Wholesale Electric Price -Michigan
189	2005	9	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
190	2005	10	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
191	2005	11	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
192	2005	12	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
193	2006	1	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
194	2006	2	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
195	2006	3	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
196	2006	4	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
197	2006	5	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
198	2006	6	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
199	2006	7	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
200	2006	8	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
201	2006	9	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
202	2006	10	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
203	2006	11	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
204	2006	12	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
205	2007	1	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
206	2007	2	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
207	2007	3	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
208	2007	4	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
209	2007	5	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
210	2007	6	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
211	2007	7	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
212	2007	8	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
213	2007	9	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
214	2007	10	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
215	2007	11	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
216	2007	12	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
217	2008	1	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
218	2008	2	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
219	2008	3	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
220	2008	4	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
221	2008	5	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
222	2008	6	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
223	2008	7	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
224	2008	8	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
225	2008	9	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
226	2008	10	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
227	2008	11	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
228	2008	12	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
229	2009	1	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
230	2009	2	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
231	2009	3	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
232	2009	4	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
233	2009	5	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
234	2009	6	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
235	2009	7	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL

Indiana Michigan Power Company - Michigan
Real Average Electric Prices

Obs	Year	Month	Real Residential Electric Price - Michigan	Real Commercial Electric Price - Michigan	Real Industrial Electric Price - Michigan	Real Other Retail Electric Price - Michigan	Real Wholesale Electric Price -Michigan
236	2009	8	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
237	2009	9	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
238	2009	10	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
239	2009	11	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
240	2009	12	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
241	2010	1	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
242	2010	2	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
243	2010	3	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
244	2010	4	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
245	2010	5	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
246	2010	6	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
247	2010	7	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
248	2010	8	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
249	2010	9	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
250	2010	10	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
251	2010	11	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
252	2010	12	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
253	2011	1	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
254	2011	2	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
255	2011	3	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
256	2011	4	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
257	2011	5	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
258	2011	6	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
259	2011	7	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
260	2011	8	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
261	2011	9	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
262	2011	10	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
263	2011	11	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
264	2011	12	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
265	2012	1	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
266	2012	2	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
267	2012	3	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
268	2012	4	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
269	2012	5	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
270	2012	6	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
271	2012	7	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
272	2012	8	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
273	2012	9	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
274	2012	10	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
275	2012	11	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
276	2012	12	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
277	2013	1	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
278	2013	2	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
279	2013	3	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
280	2013	4	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
281	2013	5	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
282	2013	6	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL

Indiana Michigan Power Company - Michigan
Real Average Electric Prices

Obs	Year	Month	Real Residential Electric Price - Michigan	Real Commercial Electric Price - Michigan	Real Industrial Electric Price - Michigan	Real Other Retail Electric Price - Michigan	Real Wholesale Electric Price -Michigan
283	2013	7	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
284	2013	8	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
285	2013	9	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
286	2013	10	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
287	2013	11	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
288	2013	12	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
289	2014	1	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
290	2014	2	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
291	2014	3	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
292	2014	4	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
293	2014	5	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
294	2014	6	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
295	2014	7	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
296	2014	8	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
297	2014	9	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
298	2014	10	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
299	2014	11	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
300	2014	12	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
301	2015	1	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
302	2015	2	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
303	2015	3	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
304	2015	4	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
305	2015	5	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
306	2015	6	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
307	2015	7	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
308	2015	8	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
309	2015	9	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
310	2015	10	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
311	2015	11	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
312	2015	12	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
313	2016	1	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
314	2016	2	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
315	2016	3	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
316	2016	4	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
317	2016	5	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
318	2016	6	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
319	2016	7	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
320	2016	8	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
321	2016	9	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
322	2016	10	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
323	2016	11	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
324	2016	12	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
325	2017	1	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
326	2017	2	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
327	2017	3	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
328	2017	4	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
329	2017	5	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL

Indiana Michigan Power Company - Michigan
Real Average Electric Prices

Obs	Year	Month	Real Residential Electric Price - Michigan	Real Commercial Electric Price - Michigan	Real Industrial Electric Price - Michigan	Real Other Retail Electric Price - Michigan	Real Wholesale Electric Price -Michigan
330	2017	6	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
331	2017	7	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
332	2017	8	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
333	2017	9	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
334	2017	10	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
335	2017	11	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
336	2017	12	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
337	2018	1	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
338	2018	2	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
339	2018	3	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
340	2018	4	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
341	2018	5	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
342	2018	6	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
343	2018	7	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
344	2018	8	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
345	2018	9	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
346	2018	10	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
347	2018	11	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
348	2018	12	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
349	2019	1	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
350	2019	2	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
351	2019	3	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
352	2019	4	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
353	2019	5	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
354	2019	6	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
355	2019	7	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
356	2019	8	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
357	2019	9	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
358	2019	10	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
359	2019	11	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
360	2019	12	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
361	2020	1	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
362	2020	2	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
363	2020	3	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
364	2020	4	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
365	2020	5	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
366	2020	6	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
367	2020	7	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
368	2020	8	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
369	2020	9	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
370	2020	10	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
371	2020	11	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
372	2020	12	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
373	2021	1	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
374	2021	2	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
375	2021	3	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
376	2021	4	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL

Indiana Michigan Power Company - Michigan
Real Average Electric Prices

Obs	Year	Month	Real Residential Electric Price - Michigan	Real Commercial Electric Price - Michigan	Real Industrial Electric Price - Michigan	Real Other Retail Electric Price - Michigan	Real Wholesale Electric Price -Michigan
377	2021	5	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
378	2021	6	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
379	2021	7	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
380	2021	8	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
381	2021	9	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
382	2021	10	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
383	2021	11	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
384	2021	12	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
385	2022	1	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
386	2022	2	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
387	2022	3	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
388	2022	4	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
389	2022	5	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
390	2022	6	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
391	2022	7	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
392	2022	8	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
393	2022	9	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
394	2022	10	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
395	2022	11	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
396	2022	12	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
397	2023	1	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
398	2023	2	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
399	2023	3	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
400	2023	4	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
401	2023	5	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
402	2023	6	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
403	2023	7	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
404	2023	8	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
405	2023	9	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
406	2023	10	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
407	2023	11	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
408	2023	12	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
409	2024	1	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
410	2024	2	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
411	2024	3	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
412	2024	4	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
413	2024	5	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
414	2024	6	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
415	2024	7	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
416	2024	8	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
417	2024	9	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
418	2024	10	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
419	2024	11	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
420	2024	12	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
421	2025	1	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
422	2025	2	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
423	2025	3	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL

Indiana Michigan Power Company - Michigan
Real Average Electric Prices

Obs	Year	Month	Real Residential Electric Price - Michigan	Real Commercial Electric Price - Michigan	Real Industrial Electric Price - Michigan	Real Other Retail Electric Price - Michigan	Real Wholesale Electric Price -Michigan
424	2025	4	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
425	2025	5	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
426	2025	6	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
427	2025	7	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
428	2025	8	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
429	2025	9	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
430	2025	10	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
431	2025	11	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
432	2025	12	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
433	2026	1	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
434	2026	2	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
435	2026	3	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
436	2026	4	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
437	2026	5	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
438	2026	6	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
439	2026	7	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
440	2026	8	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
441	2026	9	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
442	2026	10	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
443	2026	11	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
444	2026	12	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
445	2027	1	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
446	2027	2	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
447	2027	3	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
448	2027	4	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
449	2027	5	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
450	2027	6	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
451	2027	7	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
452	2027	8	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
453	2027	9	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
454	2027	10	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
455	2027	11	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
456	2027	12	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
457	2028	1	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
458	2028	2	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
459	2028	3	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
460	2028	4	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
461	2028	5	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
462	2028	6	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
463	2028	7	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
464	2028	8	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
465	2028	9	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
466	2028	10	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
467	2028	11	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
468	2028	12	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
469	2029	1	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
470	2029	2	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL

Indiana Michigan Power Company - Michigan
Real Average Electric Prices

Obs	Year	Month	Real Residential Electric Price - Michigan	Real Commercial Electric Price - Michigan	Real Industrial Electric Price - Michigan	Real Other Retail Electric Price - Michigan	Real Wholesale Electric Price -Michigan
471	2029	3	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
472	2029	4	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
473	2029	5	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
474	2029	6	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
475	2029	7	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
476	2029	8	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
477	2029	9	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
478	2029	10	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
479	2029	11	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
480	2029	12	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
481	2030	1	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
482	2030	2	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
483	2030	3	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
484	2030	4	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
485	2030	5	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
486	2030	6	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
487	2030	7	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
488	2030	8	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
489	2030	9	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
490	2030	10	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
491	2030	11	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
492	2030	12	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
493	2031	1	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
494	2031	2	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
495	2031	3	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
496	2031	4	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
497	2031	5	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
498	2031	6	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
499	2031	7	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
500	2031	8	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
501	2031	9	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
502	2031	10	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
503	2031	11	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
504	2031	12	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
505	2032	1	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
506	2032	2	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
507	2032	3	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
508	2032	4	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
509	2032	5	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
510	2032	6	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
511	2032	7	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
512	2032	8	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
513	2032	9	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
514	2032	10	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
515	2032	11	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
516	2032	12	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
517	2033	1	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL

Indiana Michigan Power Company - Michigan
Real Average Electric Prices

Obs	Year	Month	Real Residential Electric Price - Michigan	Real Commercial Electric Price - Michigan	Real Industrial Electric Price - Michigan	Real Other Retail Electric Price - Michigan	Real Wholesale Electric Price -Michigan
518	2033	2	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
519	2033	3	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
520	2033	4	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
521	2033	5	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
522	2033	6	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
523	2033	7	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
524	2033	8	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
525	2033	9	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
526	2033	10	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
527	2033	11	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
528	2033	12	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
529	2034	1	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
530	2034	2	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
531	2034	3	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
532	2034	4	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
533	2034	5	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
534	2034	6	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
535	2034	7	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
536	2034	8	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
537	2034	9	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
538	2034	10	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
539	2034	11	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
540	2034	12	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
541	2035	1	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
542	2035	2	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
543	2035	3	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
544	2035	4	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
545	2035	5	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
546	2035	6	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
547	2035	7	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
548	2035	8	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
549	2035	9	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
550	2035	10	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
551	2035	11	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
552	2035	12	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
553	2036	1	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
554	2036	2	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
555	2036	3	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
556	2036	4	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
557	2036	5	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
558	2036	6	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
559	2036	7	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
560	2036	8	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
561	2036	9	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
562	2036	10	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
563	2036	11	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
564	2036	12	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL

Indiana Michigan Power Company - Michigan
Real Average Electric Prices

Obs	Year	Month	Real Residential Electric Price - Michigan	Real Commercial Electric Price - Michigan	Real Industrial Electric Price - Michigan	Real Other Retail Electric Price - Michigan	Real Wholesale Electric Price -Michigan
565	2037	1	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
566	2037	2	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
567	2037	3	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
568	2037	4	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
569	2037	5	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
570	2037	6	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
571	2037	7	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
572	2037	8	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
573	2037	9	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
574	2037	10	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
575	2037	11	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
576	2037	12	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
577	2038	1	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
578	2038	2	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
579	2038	3	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
580	2038	4	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
581	2038	5	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
582	2038	6	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
583	2038	7	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
584	2038	8	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
585	2038	9	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
586	2038	10	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
587	2038	11	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
588	2038	12	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
589	2039	1	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
590	2039	2	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
591	2039	3	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
592	2039	4	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
593	2039	5	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
594	2039	6	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
595	2039	7	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
596	2039	8	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
597	2039	9	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
598	2039	10	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
599	2039	11	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
600	2039	12	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
601	2040	1	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
602	2040	2	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
603	2040	3	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
604	2040	4	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
605	2040	5	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
606	2040	6	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
607	2040	7	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
608	2040	8	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
609	2040	9	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
610	2040	10	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
611	2040	11	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL

Indiana Michigan Power Company - Michigan
Real Average Electric Prices

Obs	Year	Month	Real Residential Electric Price - Michigan	Real Commercial Electric Price - Michigan	Real Industrial Electric Price - Michigan	Real Other Retail Electric Price - Michigan	Real Wholesale Electric Price -Michigan
612	2040	12	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
613	2041	1	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
614	2041	2	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
615	2041	3	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
616	2041	4	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
617	2041	5	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
618	2041	6	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
619	2041	7	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
620	2041	8	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
621	2041	9	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
622	2041	10	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
623	2041	11	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
624	2041	12	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
625	2042	1	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
626	2042	2	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
627	2042	3	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
628	2042	4	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
629	2042	5	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
630	2042	6	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
631	2042	7	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
632	2042	8	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
633	2042	9	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
634	2042	10	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
635	2042	11	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
636	2042	12	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
637	2043	1	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
638	2043	2	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
639	2043	3	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
640	2043	4	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
641	2043	5	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
642	2043	6	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
643	2043	7	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
644	2043	8	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
645	2043	9	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
646	2043	10	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
647	2043	11	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
648	2043	12	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
649	2044	1	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
650	2044	2	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
651	2044	3	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
652	2044	4	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
653	2044	5	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
654	2044	6	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
655	2044	7	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
656	2044	8	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
657	2044	9	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
658	2044	10	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL

Indiana Michigan Power Company - Michigan
Real Average Electric Prices

Obs	Year	Month	Real Residential Electric Price - Michigan	Real Commercial Electric Price - Michigan	Real Industrial Electric Price - Michigan	Real Other Retail Electric Price - Michigan	Real Wholesale Electric Price -Michigan
659	2044	11	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
660	2044	12	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
661	2045	1	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
662	2045	2	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
663	2045	3	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
664	2045	4	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
665	2045	5	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
666	2045	6	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
667	2045	7	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
668	2045	8	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
669	2045	9	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
670	2045	10	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
671	2045	11	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
672	2045	12	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
673	2046	1	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
674	2046	2	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
675	2046	3	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
676	2046	4	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
677	2046	5	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
678	2046	6	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
679	2046	7	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
680	2046	8	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
681	2046	9	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
682	2046	10	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
683	2046	11	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
684	2046	12	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
685	2047	1	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
686	2047	2	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
687	2047	3	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
688	2047	4	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
689	2047	5	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
690	2047	6	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
691	2047	7	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
692	2047	8	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
693	2047	9	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
694	2047	10	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
695	2047	11	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
696	2047	12	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
697	2048	1	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
698	2048	2	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
699	2048	3	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
700	2048	4	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
701	2048	5	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
702	2048	6	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
703	2048	7	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
704	2048	8	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
705	2048	9	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL

Indiana Michigan Power Company - Michigan
Real Average Electric Prices

Obs	Year	Month	Real Residential Electric Price - Michigan	Real Commercial Electric Price - Michigan	Real Industrial Electric Price - Michigan	Real Other Retail Electric Price - Michigan	Real Wholesale Electric Price -Michigan
706	2048	10	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
707	2048	11	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
708	2048	12	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
709	2049	1	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
710	2049	2	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
711	2049	3	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
712	2049	4	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
713	2049	5	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
714	2049	6	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
715	2049	7	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
716	2049	8	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
717	2049	9	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
718	2049	10	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
719	2049	11	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
720	2049	12	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
721	2050	1	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
722	2050	2	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
723	2050	3	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
724	2050	4	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
725	2050	5	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
726	2050	6	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
727	2050	7	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
728	2050	8	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
729	2050	9	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
730	2050	10	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
731	2050	11	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
732	2050	12	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
733	2051	1	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
734	2051	2	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
735	2051	3	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
736	2051	4	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
737	2051	5	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
738	2051	6	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
739	2051	7	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
740	2051	8	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
741	2051	9	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
742	2051	10	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
743	2051	11	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
744	2051	12	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
745	2052	1	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
746	2052	2	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
747	2052	3	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
748	2052	4	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
749	2052	5	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
750	2052	6	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
751	2052	7	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
752	2052	8	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL

Indiana Michigan Power Company - Michigan
Real Average Electric Prices

Obs	Year	Month	Real Residential Electric Price - Michigan	Real Commercial Electric Price - Michigan	Real Industrial Electric Price - Michigan	Real Other Retail Electric Price - Michigan	Real Wholesale Electric Price -Michigan
753	2052	9	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
754	2052	10	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
755	2052	11	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
756	2052	12	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
757	2053	1	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
758	2053	2	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
759	2053	3	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
760	2053	4	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
761	2053	5	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
762	2053	6	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
763	2053	7	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
764	2053	8	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
765	2053	9	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
766	2053	10	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
767	2053	11	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
768	2053	12	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
769	2054	1	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
770	2054	2	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
771	2054	3	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
772	2054	4	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
773	2054	5	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
774	2054	6	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
775	2054	7	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
776	2054	8	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
777	2054	9	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
778	2054	10	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
779	2054	11	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
780	2054	12	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
781	2055	1	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
782	2055	2	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
783	2055	3	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
784	2055	4	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
785	2055	5	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
786	2055	6	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
787	2055	7	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
788	2055	8	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
789	2055	9	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
790	2055	10	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
791	2055	11	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
792	2055	12	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
793	2056	1	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
794	2056	2	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
795	2056	3	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
796	2056	4	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
797	2056	5	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
798	2056	6	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
799	2056	7	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL

Indiana Michigan Power Company - Michigan
Real Average Electric Prices

Obs	Year	Month	Real Residential Electric Price - Michigan	Real Commercial Electric Price - Michigan	Real Industrial Electric Price - Michigan	Real Other Retail Electric Price - Michigan	Real Wholesale Electric Price -Michigan
800	2056	8	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
801	2056	9	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
802	2056	10	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
803	2056	11	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
804	2056	12	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
805	2057	1	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
806	2057	2	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
807	2057	3	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
808	2057	4	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
809	2057	5	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
810	2057	6	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
811	2057	7	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
812	2057	8	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
813	2057	9	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
814	2057	10	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
815	2057	11	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
816	2057	12	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL

(REDACTED)

Volume 3, Exhibit E

WHOLESALE ENERGY MODELS

Indiana Michigan Power Company
City of Auburn
Endogenous Variables

The MEANS Procedure

Variable	Label	Mean
YEAR	Year	2029.50
MONTH	Month	6.5000000

Indiana Michigan Power Company
City of Auburn
Endogenous Variables

YEAR	MONTH	Energy
2002	1	CONFID.
2002	2	CONFID.
2002	3	CONFID.
2002	4	CONFID.
2002	5	CONFID.
2002	6	CONFID.
2002	7	CONDID.
2002	8	CONFID.
2002	9	CONFID.
2002	10	CONFID.
2002	11	CONFID.
2002	12	CONFID.
2003	1	CONFID.
2003	2	CONFID.
2003	3	CONFID.
2003	4	CONFID.
2003	5	CONFID.
2003	6	CONFID.
2003	7	CONDID.
2003	8	CONFID.
2003	9	CONFID.
2003	10	CONFID.
2003	11	CONFID.
2003	12	CONFID.
2004	1	CONFID.
2004	2	CONFID.
2004	3	CONFID.
2004	4	CONFID.
2004	5	CONFID.
2004	6	CONFID.
2004	7	CONDID.
2004	8	CONFID.
2004	9	CONFID.
2004	10	CONFID.
2004	11	CONFID.
2004	12	CONFID.
2005	1	CONFID.
2005	2	CONFID.
2005	3	CONFID.
2005	4	CONFID.
2005	5	CONFID.
2005	6	CONFID.
2005	7	CONDID.
2005	8	CONFID.
2005	9	CONFID.
2005	10	CONFID.
2005	11	CONFID.
2005	12	CONFID.
2006	1	CONFID.
2006	2	CONFID.

Indiana Michigan Power Company
City of Auburn
Endogenous Variables

YEAR	MONTH	Energy
2006	3	CONFID.
2006	4	CONFID.
2006	5	CONFID.
2006	6	CONFID.
2006	7	CONDID.
2006	8	CONFID.
2006	9	CONFID.
2006	10	CONFID.
2006	11	CONFID.
2006	12	CONFID.
2007	1	CONFID.
2007	2	CONFID.
2007	3	CONFID.
2007	4	CONFID.
2007	5	CONFID.
2007	6	CONFID.
2007	7	CONDID.
2007	8	CONFID.
2007	9	CONFID.
2007	10	CONFID.
2007	11	CONFID.
2007	12	CONFID.
2008	1	CONFID.
2008	2	CONFID.
2008	3	CONFID.
2008	4	CONFID.
2008	5	CONFID.
2008	6	CONFID.
2008	7	CONDID.
2008	8	CONFID.
2008	9	CONFID.
2008	10	CONFID.
2008	11	CONFID.
2008	12	CONFID.
2009	1	CONFID.
2009	2	CONFID.
2009	3	CONFID.
2009	4	CONFID.
2009	5	CONFID.
2009	6	CONFID.
2009	7	CONDID.
2009	8	CONFID.
2009	9	CONFID.
2009	10	CONFID.
2009	11	CONFID.
2009	12	CONFID.
2010	1	CONFID.
2010	2	CONFID.
2010	3	CONFID.
2010	4	CONFID.

Indiana Michigan Power Company
City of Auburn
Endogenous Variables

YEAR	MONTH	Energy
2010	5	CONFID.
2010	6	CONFID.
2010	7	CONDID.
2010	8	CONFID.
2010	9	CONFID.
2010	10	CONFID.
2010	11	CONFID.
2010	12	CONFID.
2011	1	CONFID.
2011	2	CONFID.
2011	3	CONFID.
2011	4	CONFID.
2011	5	CONFID.
2011	6	CONFID.
2011	7	CONDID.
2011	8	CONFID.
2011	9	CONFID.
2011	10	CONFID.
2011	11	CONFID.
2011	12	CONFID.
2012	1	CONFID.
2012	2	CONFID.
2012	3	CONFID.
2012	4	CONFID.
2012	5	CONFID.
2012	6	CONFID.
2012	7	CONDID.
2012	8	CONFID.
2012	9	CONFID.
2012	10	CONFID.
2012	11	CONFID.
2012	12	CONFID.
2013	1	CONFID.
2013	2	CONFID.
2013	3	CONFID.
2013	4	CONFID.
2013	5	CONFID.
2013	6	CONFID.
2013	7	CONDID.
2013	8	CONFID.
2013	9	CONFID.
2013	10	CONFID.
2013	11	CONFID.
2013	12	CONFID.
2014	1	CONFID.
2014	2	CONFID.
2014	3	CONFID.
2014	4	CONFID.
2014	5	CONFID.
2014	6	CONFID.

Indiana Michigan Power Company
City of Auburn
Endogenous Variables

YEAR	MONTH	Energy
2014	7	CONDID.
2014	8	CONFID.
2014	9	CONFID.
2014	10	CONFID.
2014	11	CONFID.
2014	12	CONFID.
2015	1	CONFID.
2015	2	CONFID.
2015	3	CONFID.
2015	4	CONFID.
2015	5	CONFID.
2015	6	CONFID.
2015	7	CONDID.
2015	8	CONFID.
2015	9	CONFID.
2015	10	CONFID.
2015	11	CONFID.
2015	12	CONFID.
2016	1	CONFID.
2016	2	CONFID.
2016	3	CONFID.
2016	4	CONFID.
2016	5	CONFID.
2016	6	CONFID.
2016	7	CONDID.
2016	8	CONFID.
2016	9	CONFID.
2016	10	CONFID.
2016	11	CONFID.
2016	12	CONFID.
2017	1	CONFID.
2017	2	CONFID.
2017	3	CONFID.
2017	4	CONFID.
2017	5	CONFID.
2017	6	CONFID.
2017	7	CONDID.
2017	8	CONFID.
2017	9	CONFID.
2017	10	CONFID.
2017	11	CONFID.
2017	12	CONFID.
2018	1	CONFID.
2018	2	CONFID.
2018	3	CONFID.
2018	4	CONFID.
2018	5	CONFID.
2018	6	CONFID.
2018	7	CONDID.
2018	8	CONFID.

Indiana Michigan Power Company
City of Auburn
Endogenous Variables

YEAR	MONTH	Energy
2018	9	CONFID.
2018	10	CONFID.
2018	11	CONFID.
2018	12	CONFID.
2019	1	CONFID.
2019	2	CONFID.
2019	3	CONFID.
2019	4	CONFID.
2019	5	CONFID.
2019	6	CONFID.
2019	7	CONDID.
2019	8	CONFID.
2019	9	CONFID.
2019	10	CONFID.
2019	11	CONFID.
2019	12	CONFID.
2020	1	CONFID.
2020	2	CONFID.
2020	3	CONFID.
2020	4	CONFID.
2020	5	CONFID.
2020	6	CONFID.
2020	7	CONDID.
2020	8	CONFID.
2020	9	CONFID.
2020	10	CONFID.
2020	11	CONFID.
2020	12	CONFID.
2021	1	CONFID.
2021	2	CONFID.
2021	3	CONFID.
2021	4	CONFID.
2021	5	CONFID.
2021	6	CONFID.
2021	7	CONDID.
2021	8	CONFID.
2021	9	CONFID.
2021	10	CONFID.
2021	11	CONFID.
2021	12	CONFID.
2022	1	CONFID.
2022	2	CONFID.
2022	3	CONFID.
2022	4	CONFID.
2022	5	CONFID.
2022	6	CONFID.
2022	7	CONDID.
2022	8	CONFID.
2022	9	CONFID.
2022	10	CONFID.

Indiana Michigan Power Company
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YEAR	MONTH	Energy
2022	11	CONFID.
2022	12	CONFID.
2023	1	CONFID.
2023	2	CONFID.
2023	3	CONFID.
2023	4	CONFID.
2023	5	CONFID.
2023	6	CONFID.
2023	7	CONDID.
2023	8	CONFID.
2023	9	CONFID.
2023	10	CONFID.
2023	11	CONFID.
2023	12	CONFID.
2024	1	CONFID.
2024	2	CONFID.
2024	3	CONFID.
2024	4	CONFID.
2024	5	CONFID.
2024	6	CONFID.
2024	7	CONDID.
2024	8	CONFID.
2024	9	CONFID.
2024	10	CONFID.
2024	11	CONFID.
2024	12	CONFID.
2025	1	CONFID.
2025	2	CONFID.
2025	3	CONFID.
2025	4	CONFID.
2025	5	CONFID.
2025	6	CONFID.
2025	7	CONDID.
2025	8	CONFID.
2025	9	CONFID.
2025	10	CONFID.
2025	11	CONFID.
2025	12	CONFID.
2026	1	CONFID.
2026	2	CONFID.
2026	3	CONFID.
2026	4	CONFID.
2026	5	CONFID.
2026	6	CONFID.
2026	7	CONDID.
2026	8	CONFID.
2026	9	CONFID.
2026	10	CONFID.
2026	11	CONFID.
2026	12	CONFID.

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YEAR	MONTH	Energy
2027	1	CONFID.
2027	2	CONFID.
2027	3	CONFID.
2027	4	CONFID.
2027	5	CONFID.
2027	6	CONFID.
2027	7	CONDID.
2027	8	CONFID.
2027	9	CONFID.
2027	10	CONFID.
2027	11	CONFID.
2027	12	CONFID.
2028	1	CONFID.
2028	2	CONFID.
2028	3	CONFID.
2028	4	CONFID.
2028	5	CONFID.
2028	6	CONFID.
2028	7	CONDID.
2028	8	CONFID.
2028	9	CONFID.
2028	10	CONFID.
2028	11	CONFID.
2028	12	CONFID.
2029	1	CONFID.
2029	2	CONFID.
2029	3	CONFID.
2029	4	CONFID.
2029	5	CONFID.
2029	6	CONFID.
2029	7	CONDID.
2029	8	CONFID.
2029	9	CONFID.
2029	10	CONFID.
2029	11	CONFID.
2029	12	CONFID.
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2030	2	CONFID.
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2030	4	CONFID.
2030	5	CONFID.
2030	6	CONFID.
2030	7	CONDID.
2030	8	CONFID.
2030	9	CONFID.
2030	10	CONFID.
2030	11	CONFID.
2030	12	CONFID.
2031	1	CONFID.
2031	2	CONFID.

Indiana Michigan Power Company
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YEAR	MONTH	Energy
2031	3	CONFID.
2031	4	CONFID.
2031	5	CONFID.
2031	6	CONFID.
2031	7	CONDID.
2031	8	CONFID.
2031	9	CONFID.
2031	10	CONFID.
2031	11	CONFID.
2031	12	CONFID.
2032	1	CONFID.
2032	2	CONFID.
2032	3	CONFID.
2032	4	CONFID.
2032	5	CONFID.
2032	6	CONFID.
2032	7	CONDID.
2032	8	CONFID.
2032	9	CONFID.
2032	10	CONFID.
2032	11	CONFID.
2032	12	CONFID.
2033	1	CONFID.
2033	2	CONFID.
2033	3	CONFID.
2033	4	CONFID.
2033	5	CONFID.
2033	6	CONFID.
2033	7	CONDID.
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2033	9	CONFID.
2033	10	CONFID.
2033	11	CONFID.
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2034	1	CONFID.
2034	2	CONFID.
2034	3	CONFID.
2034	4	CONFID.
2034	5	CONFID.
2034	6	CONFID.
2034	7	CONDID.
2034	8	CONFID.
2034	9	CONFID.
2034	10	CONFID.
2034	11	CONFID.
2034	12	CONFID.
2035	1	CONFID.
2035	2	CONFID.
2035	3	CONFID.
2035	4	CONFID.

Indiana Michigan Power Company
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YEAR	MONTH	Energy
2035	5	CONFID.
2035	6	CONFID.
2035	7	CONDID.
2035	8	CONFID.
2035	9	CONFID.
2035	10	CONFID.
2035	11	CONFID.
2035	12	CONFID.
2036	1	CONFID.
2036	2	CONFID.
2036	3	CONFID.
2036	4	CONFID.
2036	5	CONFID.
2036	6	CONFID.
2036	7	CONDID.
2036	8	CONFID.
2036	9	CONFID.
2036	10	CONFID.
2036	11	CONFID.
2036	12	CONFID.
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2037	4	CONFID.
2037	5	CONFID.
2037	6	CONFID.
2037	7	CONDID.
2037	8	CONFID.
2037	9	CONFID.
2037	10	CONFID.
2037	11	CONFID.
2037	12	CONFID.
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2038	3	CONFID.
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2038	5	CONFID.
2038	6	CONFID.
2038	7	CONDID.
2038	8	CONFID.
2038	9	CONFID.
2038	10	CONFID.
2038	11	CONFID.
2038	12	CONFID.
2039	1	CONFID.
2039	2	CONFID.
2039	3	CONFID.
2039	4	CONFID.
2039	5	CONFID.
2039	6	CONFID.

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YEAR	MONTH	Energy
2039	7	CONDID.
2039	8	CONFID.
2039	9	CONFID.
2039	10	CONFID.
2039	11	CONFID.
2039	12	CONFID.
2040	1	CONFID.
2040	2	CONFID.
2040	3	CONFID.
2040	4	CONFID.
2040	5	CONFID.
2040	6	CONFID.
2040	7	CONDID.
2040	8	CONFID.
2040	9	CONFID.
2040	10	CONFID.
2040	11	CONFID.
2040	12	CONFID.
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2041	2	CONFID.
2041	3	CONFID.
2041	4	CONFID.
2041	5	CONFID.
2041	6	CONFID.
2041	7	CONDID.
2041	8	CONFID.
2041	9	CONFID.
2041	10	CONFID.
2041	11	CONFID.
2041	12	CONFID.
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2042	2	CONFID.
2042	3	CONFID.
2042	4	CONFID.
2042	5	CONFID.
2042	6	CONFID.
2042	7	CONDID.
2042	8	CONFID.
2042	9	CONFID.
2042	10	CONFID.
2042	11	CONFID.
2042	12	CONFID.
2043	1	CONFID.
2043	2	CONFID.
2043	3	CONFID.
2043	4	CONFID.
2043	5	CONFID.
2043	6	CONFID.
2043	7	CONDID.
2043	8	CONFID.

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YEAR	MONTH	Energy
2043	9	CONFID.
2043	10	CONFID.
2043	11	CONFID.
2043	12	CONFID.
2044	1	CONFID.
2044	2	CONFID.
2044	3	CONFID.
2044	4	CONFID.
2044	5	CONFID.
2044	6	CONFID.
2044	7	CONDID.
2044	8	CONFID.
2044	9	CONFID.
2044	10	CONFID.
2044	11	CONFID.
2044	12	CONFID.
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2045	2	CONFID.
2045	3	CONFID.
2045	4	CONFID.
2045	5	CONFID.
2045	6	CONFID.
2045	7	CONDID.
2045	8	CONFID.
2045	9	CONFID.
2045	10	CONFID.
2045	11	CONFID.
2045	12	CONFID.
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2046	2	CONFID.
2046	3	CONFID.
2046	4	CONFID.
2046	5	CONFID.
2046	6	CONFID.
2046	7	CONDID.
2046	8	CONFID.
2046	9	CONFID.
2046	10	CONFID.
2046	11	CONFID.
2046	12	CONFID.
2047	1	CONFID.
2047	2	CONFID.
2047	3	CONFID.
2047	4	CONFID.
2047	5	CONFID.
2047	6	CONFID.
2047	7	CONDID.
2047	8	CONFID.
2047	9	CONFID.
2047	10	CONFID.

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YEAR	MONTH	Energy
2047	11	CONFID.
2047	12	CONFID.
2048	1	CONFID.
2048	2	CONFID.
2048	3	CONFID.
2048	4	CONFID.
2048	5	CONFID.
2048	6	CONFID.
2048	7	CONDID.
2048	8	CONFID.
2048	9	CONFID.
2048	10	CONFID.
2048	11	CONFID.
2048	12	CONFID.
2049	1	CONFID.
2049	2	CONFID.
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2049	4	CONFID.
2049	5	CONFID.
2049	6	CONFID.
2049	7	CONDID.
2049	8	CONFID.
2049	9	CONFID.
2049	10	CONFID.
2049	11	CONFID.
2049	12	CONFID.
2050	1	CONFID.
2050	2	CONFID.
2050	3	CONFID.
2050	4	CONFID.
2050	5	CONFID.
2050	6	CONFID.
2050	7	CONDID.
2050	8	CONFID.
2050	9	CONFID.
2050	10	CONFID.
2050	11	CONFID.
2050	12	CONFID.
2051	1	CONFID.
2051	2	CONFID.
2051	3	CONFID.
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2051	5	CONFID.
2051	6	CONFID.
2051	7	CONDID.
2051	8	CONFID.
2051	9	CONFID.
2051	10	CONFID.
2051	11	CONFID.
2051	12	CONFID.

Indiana Michigan Power Company
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YEAR	MONTH	Energy
2052	1	CONFID.
2052	2	CONFID.
2052	3	CONFID.
2052	4	CONFID.
2052	5	CONFID.
2052	6	CONFID.
2052	7	CONDID.
2052	8	CONFID.
2052	9	CONFID.
2052	10	CONFID.
2052	11	CONFID.
2052	12	CONFID.
2053	1	CONFID.
2053	2	CONFID.
2053	3	CONFID.
2053	4	CONFID.
2053	5	CONFID.
2053	6	CONFID.
2053	7	CONDID.
2053	8	CONFID.
2053	9	CONFID.
2053	10	CONFID.
2053	11	CONFID.
2053	12	CONFID.
2054	1	CONFID.
2054	2	CONFID.
2054	3	CONFID.
2054	4	CONFID.
2054	5	CONFID.
2054	6	CONFID.
2054	7	CONDID.
2054	8	CONFID.
2054	9	CONFID.
2054	10	CONFID.
2054	11	CONFID.
2054	12	CONFID.
2055	1	CONFID.
2055	2	CONFID.
2055	3	CONFID.
2055	4	CONFID.
2055	5	CONFID.
2055	6	CONFID.
2055	7	CONDID.
2055	8	CONFID.
2055	9	CONFID.
2055	10	CONFID.
2055	11	CONFID.
2055	12	CONFID.
2056	1	CONFID.
2056	2	CONFID.

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YEAR	MONTH	Energy
2056	3	CONFID.
2056	4	CONFID.
2056	5	CONFID.
2056	6	CONFID.
2056	7	CONDID.
2056	8	CONFID.
2056	9	CONFID.
2056	10	CONFID.
2056	11	CONFID.
2056	12	CONFID.
2057	1	CONFID.
2057	2	CONFID.
2057	3	CONFID.
2057	4	CONFID.
2057	5	CONFID.
2057	6	CONFID.
2057	7	CONDID.
2057	8	CONFID.
2057	9	CONFID.
2057	10	CONFID.
2057	11	CONFID.
2057	12	CONFID.

Indiana Michigan Power Company
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Exogenous Variables

The MEANS Procedure

Variable	Label	Mean
YEAR	Year	2029.50
MONTH	Month	6.5000000
bcdd65	Cooling Degree Days	72.5384066
bhdd55	Heating Degree Days	311.3482457
LM_IMI	Service Area Manufacturing Employment	172.0398399
frbmvp	FRB Index-Motor Vehichles and Parts	147.7862292
d1	Binary Variable - January	0.0833333
d2	Binary Variable - February	0.0833333
d3	Binary Variable - March	0.0833333
d4	Binary Variable - April	0.0833333
d5	Binary Variable - May	0.0833333
d6	Binary Variable - June	0.0833333
d7	Binary Variable - July	0.0833333
d8	Binary Varaible - August	0.0833333
d9	Binary Variable - September	0.0833333
d10	Binary Variable - October	0.0833333
d11	Binary Variable - November	0.0833333
jan04	Binary Variable - January 2004	0.0014881
sep04	Binary Variable - September 2004	0.0014881
d05on	Binary Variable 2005 On	0.9464286
d11on	Binary Variable 2011 on	0.8392857
nov15on	Binary Variable - November 2015 On	0.7529762
apr20	Binary Variable - April 2020	0.0014881
may20	Binary Variable - May 2020	0.0014881

Indiana Michigan Power Company
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YEAR	MONTH	bcdd65	bhdd55	LM_IMI	frbmvp	dd1	dd2	dd3	dd4	dd5	dd6	dd7	dd8	dd9	dd10	dd11	jan04	sep04	d05on	d11on	nov15on	apr20	may20
2002	1	0.000	712.60	202.485	97.164	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2002	2	0.000	607.72	202.283	98.665	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2002	3	0.000	599.08	202.126	100.291	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2002	4	13.189	455.02	201.970	102.025	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2002	5	30.991	144.03	201.782	103.740	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
2002	6	75.498	53.77	201.528	105.321	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
2002	7	295.645	0.00	201.176	106.505	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
2002	8	327.454	0.00	200.710	106.993	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
2002	9	210.296	0.23	200.157	106.680	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
2002	10	81.749	48.66	199.538	106.116	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
2002	11	5.302	329.06	198.877	106.038	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
2002	12	0.000	660.73	198.194	106.834	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2003	1	0.000	832.87	197.504	107.823	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2003	2	0.000	1075.66	196.869	107.962	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2003	3	0.000	910.73	196.277	106.766	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2003	4	0.360	370.95	195.732	105.032	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2003	5	3.731	134.04	195.275	104.148	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
2003	6	20.781	15.81	194.930	104.976	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
2003	7	169.749	0.16	194.723	106.856	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
2003	8	196.748	0.00	194.650	108.621	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
2003	9	173.610	0.03	194.698	109.403	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
2003	10	18.686	81.09	194.849	109.554	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
2003	11	0.851	223.98	195.079	109.758	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
2003	12	0.131	512.16	195.368	110.436	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2004	1	0.000	760.38	195.709	111.216	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
2004	2	0.000	1073.21	196.060	111.437	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2004	3	0.000	684.92	196.415	110.718	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2004	4	3.567	344.28	196.766	109.321	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2004	5	39.762	103.41	197.081	107.753	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
2004	6	98.177	9.03	197.340	106.457	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
2004	7	153.779	0.00	197.529	105.645	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
2004	8	138.234	0.00	197.645	105.452	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
2004	9	123.147	0.00	197.690	105.930	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0
2004	10	43.100	47.55	197.675	106.857	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
2004	11	2.749	161.21	197.607	107.933	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
2004	12	0.196	469.29	197.499	108.877	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	1	0.000	831.69	197.356	109.462	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
2005	2	0.000	940.34	197.196	109.470	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
2005	3	0.000	749.98	197.021	108.860	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
2005	4	0.949	401.40	196.835	107.939	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0
2005	5	11.110	165.99	196.650	107.212	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0
2005	6	86.396	27.64	196.472	107.045	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0
2005	7	278.235	0.00	196.321	107.435	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0
2005	8	313.415	0.00	196.185	108.253	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0

Indiana Michigan Power Company
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Exogenous Variables

YEAR	MONTH	bcdd65	bhdd55	LM_IMI	frbmvp	dd1	dd2	dd3	dd4	dd5	dd6	dd7	dd8	dd9	dd10	dd11	jan04	sep04	d05on	d11on	nov15on	apr20	may20
2005	9	191.839	0.00	196.063	109.275	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0
2005	10	89.145	22.68	195.944	110.139	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0
2005	11	7.216	199.84	195.823	110.425	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0
2005	12	0.000	704.59	195.686	109.936	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
2006	1	0.000	744.12	195.528	109.182	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
2006	2	0.000	611.25	195.347	108.920	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
2006	3	0.000	682.58	195.132	109.474	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
2006	4	0.982	384.33	194.861	110.181	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0
2006	5	1.898	81.99	194.538	109.952	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0
2006	6	85.218	31.61	194.151	108.195	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0
2006	7	197.075	0.00	193.694	105.785	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0
2006	8	294.680	0.00	193.154	104.083	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0
2006	9	122.362	1.80	192.563	104.010	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0
2006	10	11.290	62.18	191.924	104.869	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0
2006	11	1.031	324.30	191.247	105.512	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0
2006	12	0.000	475.62	190.547	105.241	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
2007	1	0.000	544.00	189.816	104.760	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
2007	2	0.000	987.17	189.117	105.190	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
2007	3	0.065	906.10	188.423	107.097	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
2007	4	4.123	340.81	187.723	109.594	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0
2007	5	20.781	129.43	187.053	111.093	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0
2007	6	146.203	8.82	186.422	110.581	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0
2007	7	215.090	0.00	185.842	108.644	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0
2007	8	255.523	0.00	185.285	106.398	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0
2007	9	213.732	1.57	184.739	104.752	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0
2007	10	105.017	15.82	184.144	103.582	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0
2007	11	22.286	192.89	183.468	102.499	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0
2007	12	0.000	608.47	182.663	101.169	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
2008	1	0.000	753.95	181.675	99.405	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
2008	2	0.000	903.12	180.514	97.205	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
2008	3	0.000	857.69	179.112	94.494	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
2008	4	0.245	453.22	177.402	91.456	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0
2008	5	9.654	109.89	175.358	88.447	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0
2008	6	95.641	25.40	172.949	85.736	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0
2008	7	185.375	0.03	170.130	83.454	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0
2008	8	234.333	0.00	166.874	81.648	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0
2008	9	174.134	0.00	163.381	80.172	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0
2008	10	47.354	29.14	159.690	77.959	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0
2008	11	3.076	234.86	155.898	73.744	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0
2008	12	0.000	702.59	152.103	66.931	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
2009	1	0.000	910.79	148.335	59.003	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
2009	2	0.000	1077.43	144.929	52.668	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
2009	3	0.000	650.77	141.785	49.238	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
2009	4	0.540	336.81	138.896	48.905	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0

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YEAR	MONTH	bcdd65	bhdd55	LM_IMI	frbmvp	dd1	dd2	dd3	dd4	dd5	dd6	dd7	dd8	dd9	dd10	dd11	jan04	sep04	d05on	d11on	nov15on	apr20	may20
2009	5	27.032	129.99	136.481	51.639	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0
2009	6	68.135	14.02	134.620	56.853	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0
2009	7	192.559	0.00	133.413	63.123	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0
2009	8	154.679	0.00	132.863	68.785	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0
2009	9	111.039	0.00	132.910	72.413	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0
2009	10	33.609	74.96	133.470	74.339	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0
2009	11	0.000	203.93	134.445	75.287	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0
2009	12	0.000	475.47	135.767	75.861	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
2010	1	0.000	901.58	137.378	76.357	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
2010	2	0.000	924.24	139.076	76.914	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
2010	3	0.000	702.20	140.873	77.737	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
2010	4	8.492	235.85	142.737	79.090	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0
2010	5	19.652	55.26	144.547	81.211	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0
2010	6	180.237	11.26	146.209	84.048	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0
2010	7	323.478	0.00	147.644	86.656	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0
2010	8	363.780	0.00	148.848	87.804	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0
2010	9	222.143	0.00	149.806	86.855	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0
2010	10	64.813	25.89	150.565	85.147	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0
2010	11	5.809	200.35	151.159	84.584	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0
2010	12	0.000	650.98	151.623	86.287	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
2011	1	0.000	958.16	151.985	88.931	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0
2011	2	0.000	1033.91	152.264	90.290	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0
2011	3	0.000	705.44	152.502	89.252	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0
2011	4	2.094	408.52	152.734	86.962	0	0	0	1	0	0	0	0	0	0	0	0	0	1	1	0	0	0
2011	5	17.099	126.11	152.989	85.517	0	0	0	0	1	0	0	0	0	0	0	0	0	1	1	0	0	0
2011	6	154.744	17.62	153.288	86.331	0	0	0	0	0	1	0	0	0	0	0	0	0	1	1	0	0	0
2011	7	286.318	0.00	153.669	88.701	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1	0	0	0
2011	8	410.578	0.00	154.147	91.225	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1	0	0	0
2011	9	193.115	2.70	154.692	92.817	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	0	0	0
2011	10	25.984	32.45	155.299	93.811	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0	0
2011	11	0.802	182.58	155.957	94.910	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	0	0	0
2011	12	0.000	432.00	156.649	96.571	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0
2012	1	0.000	648.72	157.373	98.505	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0
2012	2	0.000	741.32	158.080	100.062	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0
2012	3	6.578	523.17	158.783	100.880	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0
2012	4	21.239	138.41	159.476	100.955	0	0	0	1	0	0	0	0	0	0	0	0	0	1	1	0	0	0
2012	5	27.097	104.26	160.134	100.381	0	0	0	0	1	0	0	0	0	0	0	0	0	1	1	0	0	0
2012	6	153.615	3.47	160.746	99.382	0	0	0	0	0	1	0	0	0	0	0	0	0	1	1	0	0	0
2012	7	370.603	0.33	161.295	98.453	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1	0	0	0
2012	8	322.644	0.00	161.789	98.185	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1	0	0	0
2012	9	158.442	2.24	162.220	98.927	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	0	0	0
2012	10	23.415	74.66	162.602	100.273	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0	0
2012	11	2.291	276.53	162.952	101.586	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	0	0	0
2012	12	0.000	467.80	163.267	102.440	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0

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YEAR	MONTH	bcdd65	bhdd55	LM_IMI	frbmvp	d1	d2	d3	d4	d5	d6	d7	d8	d9	d10	d11	jan04	sep04	d05on	d11on	nov15on	apr20	may20
2013	1	0.000	736.04	163.572	103.052	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0
2013	2	0.000	846.44	163.854	103.783	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0
2013	3	0.000	763.23	164.133	104.876	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0
2013	4	0.000	522.37	164.430	106.039	0	0	0	1	0	0	0	0	0	0	0	0	0	1	1	0	0	0
2013	5	22.057	134.27	164.742	106.703	0	0	0	0	1	0	0	0	0	0	0	0	0	1	1	0	0	0
2013	6	117.142	13.76	165.084	106.614	0	0	0	0	0	1	0	0	0	0	0	0	0	1	1	0	0	0
2013	7	237.671	0.00	165.459	106.358	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1	0	0	0
2013	8	187.421	0.00	165.878	106.822	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1	0	0	0
2013	9	183.968	0.64	166.329	108.454	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	0	0	0
2013	10	67.350	21.66	166.808	110.515	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0	0
2013	11	6.005	267.71	167.318	111.886	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	0	0	0
2013	12	0.000	668.46	167.853	111.889	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0
2014	1	0.000	955.41	168.422	111.248	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0
2014	2	0.000	1173.96	168.976	111.140	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0
2014	3	0.000	1016.01	169.551	112.288	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0
2014	4	0.000	524.45	170.155	114.402	0	0	0	1	0	0	0	0	0	0	0	0	0	1	1	0	0	0
2014	5	15.561	128.47	170.765	116.724	0	0	0	0	1	0	0	0	0	0	0	0	0	1	1	0	0	0
2014	6	119.646	26.03	171.384	118.635	0	0	0	0	0	1	0	0	0	0	0	0	0	1	1	0	0	0
2014	7	223.779	0.00	172.006	119.938	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1	0	0	0
2014	8	143.601	0.00	172.634	120.594	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1	0	0	0
2014	9	179.452	1.67	173.241	120.603	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	0	0	0
2014	10	18.752	46.68	173.843	120.199	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0	0
2014	11	0.360	283.93	174.426	119.671	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	0	0	0
2014	12	0.000	669.60	174.979	119.269	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0
2015	1	0.000	832.76	175.519	119.131	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0
2015	2	0.000	1002.44	175.997	119.347	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0
2015	3	0.000	1039.32	176.441	120.004	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0
2015	4	0.000	429.08	176.854	121.214	0	0	0	1	0	0	0	0	0	0	0	0	0	1	1	0	0	0
2015	5	30.664	113.38	177.219	123.048	0	0	0	0	1	0	0	0	0	0	0	0	0	1	1	0	0	0
2015	6	127.042	11.49	177.531	125.353	0	0	0	0	0	1	0	0	0	0	0	0	0	1	1	0	0	0
2015	7	166.165	0.08	177.780	127.298	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1	0	0	0
2015	8	232.173	0.00	177.976	127.830	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1	0	0	0
2015	9	181.628	0.00	178.123	126.405	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	0	0	0
2015	10	60.166	21.81	178.232	124.083	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0	0
2015	11	1.587	140.82	178.316	122.398	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	1	0	0
2015	12	0.000	394.07	178.387	122.347	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2016	1	0.000	597.23	178.455	123.241	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2016	2	0.000	829.99	178.528	123.808	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2016	3	0.000	567.38	178.623	123.321	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2016	4	0.000	306.12	178.746	122.432	0	0	0	1	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2016	5	1.849	123.43	178.911	122.291	0	0	0	0	1	0	0	0	0	0	0	0	0	1	1	1	0	0
2016	6	134.029	21.81	179.126	123.585	0	0	0	0	0	1	0	0	0	0	0	0	0	1	1	1	0	0
2016	7	224.924	0.00	179.407	125.625	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1	1	0	0
2016	8	332.380	0.00	179.756	127.264	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1	1	0	0

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YEAR	MONTH	bcdd65	bhdd55	LM_IMI	frbmvp	dd1	dd2	dd3	dd4	dd5	dd6	dd7	dd8	dd9	dd10	dd11	jan04	sep04	d05on	d11on	nov15on	apr20	may20
2016	9	249.976	0.00	180.155	127.637	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	1	0	0
2016	10	97.539	7.45	180.604	127.013	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	0	0
2016	11	16.412	122.21	181.095	125.981	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	1	0	0
2016	12	0.655	543.87	181.621	125.052	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2017	1	0.000	805.30	182.183	124.527	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2017	2	0.000	615.97	182.733	124.634	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2017	3	0.000	470.74	183.295	125.371	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2017	4	4.173	332.02	183.880	126.186	0	0	0	1	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2017	5	27.571	86.59	184.457	126.244	0	0	0	0	1	0	0	0	0	0	0	0	0	1	1	1	0	0
2017	6	105.426	16.97	185.026	125.100	0	0	0	0	0	1	0	0	0	0	0	0	0	1	1	1	0	0
2017	7	230.946	0.00	185.573	123.411	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1	1	0	0
2017	8	215.761	0.00	186.109	122.199	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1	1	0	0
2017	9	104.052	0.00	186.613	122.259	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	1	0	0
2017	10	109.402	3.99	187.094	123.484	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	0	0
2017	11	11.798	238.29	187.558	125.505	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	1	0	0
2017	12	0.000	506.33	188.001	127.869	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2018	1	0.000	1011.93	188.429	129.847	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2018	2	0.000	845.60	188.819	130.544	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2018	3	0.000	583.35	189.194	129.657	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2018	4	0.425	514.84	189.564	127.950	0	0	0	1	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2018	5	23.612	176.70	189.922	126.702	0	0	0	0	1	0	0	0	0	0	0	0	0	1	1	1	0	0
2018	6	187.339	1.87	190.263	126.821	0	0	0	0	0	1	0	0	0	0	0	0	0	1	1	1	0	0
2018	7	299.899	0.00	190.590	128.112	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1	1	0	0
2018	8	251.580	0.00	190.898	130.013	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1	1	0	0
2018	9	259.663	0.00	191.157	131.864	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	1	0	0
2018	10	129.398	38.89	191.353	133.072	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	0	0
2018	11	18.277	302.93	191.466	133.029	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	1	0	0
2018	12	0.000	601.89	191.473	131.439	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2019	1	0.000	614.13	191.357	129.009	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2019	2	0.000	901.60	191.109	126.940	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2019	3	0.000	750.78	190.706	125.922	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2019	4	0.000	390.24	190.110	126.120	0	0	0	1	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2019	5	6.251	114.51	189.311	127.572	0	0	0	0	1	0	0	0	0	0	0	0	0	1	1	1	0	0
2019	6	99.748	19.24	188.289	129.830	0	0	0	0	0	1	0	0	0	0	0	0	0	1	1	1	0	0
2019	7	305.266	0.00	187.024	131.267	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1	1	0	0
2019	8	289.885	0.00	185.508	129.834	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1	1	0	0
2019	9	160.946	0.00	183.834	125.005	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	1	0	0
2019	10	102.170	22.53	182.032	120.479	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	0	0
2019	11	5.956	297.95	180.153	121.227	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	1	0	0
2019	12	0.000	607.70	178.245	128.770	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2020	1	0.000	605.26	176.328	133.760	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2020	2	0.000	701.28	174.549	123.656	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2020	3	0.000	655.79	172.890	93.308	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2020	4	0.000	354.86	171.376	58.814	0	0	0	1	0	0	0	0	0	0	0	0	0	1	1	1	1	0

Indiana Michigan Power Company
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Exogenous Variables

YEAR	MONTH	bcdd65	bhdd55	LM_IMI	frbmvp	dd1	dd2	dd3	dd4	dd5	dd6	dd7	dd8	dd9	dd10	dd11	jan04	sep04	d05on	d11on	nov15on	apr20	may20
2020	5	3.845	204.782	170.086	44.949	0	0	0	0	1	0	0	0	0	0	0	0	0	1	1	1	0	1
2020	6	127.696	34.788	169.072	65.855	0	0	0	0	0	1	0	0	0	0	0	0	0	1	1	1	0	0
2020	7	297.919	0.000	168.382	105.636	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1	1	0	0
2020	8	278.218	0.000	168.016	138.336	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1	1	0	0
2020	9	179.763	0.802	167.950	145.194	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	1	0	0
2020	10	22.810	48.009	168.141	134.769	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	0	0
2020	11	2.324	212.980	168.542	123.313	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	1	0	0
2020	12	0.916	461.598	169.116	122.416	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2021	1	0.000	689.156	169.836	129.460	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2021	2	0.000	885.309	170.608	136.690	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2021	3	0.221	703.560	171.429	139.382	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2021	4	2.548	389.426	172.289	138.416	0	0	0	1	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2021	5	18.512	124.656	173.126	136.522	0	0	0	0	1	0	0	0	0	0	0	0	0	1	1	1	0	0
2021	6	106.676	17.782	173.898	135.902	0	0	0	0	0	1	0	0	0	0	0	0	0	1	1	1	0	0
2021	7	243.038	0.189	174.562	136.356	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1	1	0	0
2021	8	254.533	0.000	175.115	136.874	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1	1	0	0
2021	9	176.959	0.696	175.550	136.750	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	1	0	0
2021	10	54.558	41.135	175.892	136.289	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	0	0
2021	11	4.977	232.738	176.152	136.094	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	1	0	0
2021	12	0.063	545.497	176.346	136.575	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2022	1	0.000	792.471	176.487	137.533	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2022	2	0.000	885.309	176.581	138.493	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2022	3	0.221	703.560	176.654	139.206	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2022	4	2.548	389.426	176.713	139.683	0	0	0	1	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2022	5	18.512	124.656	176.774	139.989	0	0	0	0	1	0	0	0	0	0	0	0	0	1	1	1	0	0
2022	6	106.676	17.782	176.849	140.204	0	0	0	0	0	1	0	0	0	0	0	0	0	1	1	1	0	0
2022	7	243.038	0.189	176.950	140.358	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1	1	0	0
2022	8	254.533	0.000	177.084	140.466	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1	1	0	0
2022	9	176.959	0.696	177.241	140.528	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	1	0	0
2022	10	54.558	41.135	177.419	140.517	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	0	0
2022	11	4.977	232.738	177.610	140.400	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	1	0	0
2022	12	0.063	545.497	177.812	140.160	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2023	1	0.000	792.471	178.019	139.848	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2023	2	0.000	885.309	178.210	139.556	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2023	3	0.221	703.560	178.395	139.319	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2023	4	2.548	389.426	178.568	139.114	0	0	0	1	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2023	5	18.512	124.656	178.720	138.909	0	0	0	0	1	0	0	0	0	0	0	0	0	1	1	1	0	0
2023	6	106.676	17.782	178.846	138.672	0	0	0	0	0	1	0	0	0	0	0	0	0	1	1	1	0	0
2023	7	243.038	0.189	178.940	138.399	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1	1	0	0
2023	8	254.533	0.000	178.999	138.091	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1	1	0	0
2023	9	176.959	0.696	179.023	137.767	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	1	0	0
2023	10	54.558	41.135	179.022	137.447	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	0	0
2023	11	4.977	232.738	178.995	137.157	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	1	0	0
2023	12	0.063	545.497	178.947	136.909	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0

Indiana Michigan Power Company
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Exogenous Variables

YEAR	MONTH	bcdd65	bhdd55	LM_IMI	frbmvp	d1	d2	d3	d4	d5	d6	d7	d8	d9	d10	d11	jan04	sep04	d05on	d11on	nov15on	apr20	may20
2024	1	0.000	792.471	178.878	136.665	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2024	2	0.000	885.309	178.801	136.386	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2024	3	0.221	703.560	178.708	136.030	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2024	4	2.548	389.426	178.608	135.591	0	0	0	1	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2024	5	18.512	124.656	178.503	135.092	0	0	0	0	1	0	0	0	0	0	0	0	0	1	1	1	0	0
2024	6	106.676	17.782	178.396	134.556	0	0	0	0	0	1	0	0	0	0	0	0	0	1	1	1	0	0
2024	7	243.038	0.189	178.291	134.024	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1	1	0	0
2024	8	254.533	0.000	178.189	133.539	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1	1	0	0
2024	9	176.959	0.696	178.094	133.158	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	1	0	0
2024	10	54.558	41.135	177.996	132.892	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	0	0
2024	11	4.977	232.738	177.905	132.752	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	1	0	0
2024	12	0.063	545.497	177.814	132.739	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2025	1	0.000	792.471	177.725	132.830	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2025	2	0.000	885.309	177.643	132.978	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2025	3	0.221	703.560	177.558	133.160	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2025	4	2.548	389.426	177.474	133.376	0	0	0	1	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2025	5	18.512	124.656	177.388	133.621	0	0	0	0	1	0	0	0	0	0	0	0	0	1	1	1	0	0
2025	6	106.676	17.782	177.301	133.888	0	0	0	0	0	1	0	0	0	0	0	0	0	1	1	1	0	0
2025	7	243.038	0.189	177.219	134.147	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1	1	0	0
2025	8	254.533	0.000	177.132	134.369	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1	1	0	0
2025	9	176.959	0.696	177.044	134.513	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	1	0	0
2025	10	54.558	41.135	176.957	134.561	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	0	0
2025	11	4.977	232.738	176.869	134.496	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	1	0	0
2025	12	0.063	545.497	176.786	134.309	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2026	1	0.000	792.471	176.697	134.029	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2026	2	0.000	885.309	176.614	133.719	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2026	3	0.221	703.560	176.531	133.406	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2026	4	2.548	389.426	176.451	133.114	0	0	0	1	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2026	5	18.512	124.656	176.369	132.888	0	0	0	0	1	0	0	0	0	0	0	0	0	1	1	1	0	0
2026	6	106.676	17.782	176.289	132.749	0	0	0	0	0	1	0	0	0	0	0	0	0	1	1	1	0	0
2026	7	243.038	0.189	176.209	132.685	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1	1	0	0
2026	8	254.533	0.000	176.131	132.668	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1	1	0	0
2026	9	176.959	0.696	176.055	132.678	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	1	0	0
2026	10	54.558	41.135	175.986	132.710	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	0	0
2026	11	4.977	232.738	175.912	132.763	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	1	0	0
2026	12	0.063	545.497	175.845	132.838	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2027	1	0.000	792.471	175.775	132.944	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2027	2	0.000	885.309	175.713	133.080	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2027	3	0.221	703.560	175.646	133.258	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2027	4	2.548	389.426	175.584	133.483	0	0	0	1	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2027	5	18.512	124.656	175.521	133.747	0	0	0	0	1	0	0	0	0	0	0	0	0	1	1	1	0	0
2027	6	106.676	17.782	175.463	134.043	0	0	0	0	0	1	0	0	0	0	0	0	0	1	1	1	0	0
2027	7	243.038	0.189	175.401	134.356	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1	1	0	0
2027	8	254.533	0.000	175.342	134.672	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1	1	0	0

Indiana Michigan Power Company
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Exogenous Variables

YEAR	MONTH	bcdd65	bhdd55	LM_IMI	frbmvp	dd1	dd2	dd3	dd4	dd5	dd6	dd7	dd8	dd9	dd10	dd11	jan04	sep04	d05on	d11on	nov15on	apr20	may20
2027	9	176.959	0.696	175.288	134.967	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	1	0	0
2027	10	54.558	41.135	175.231	135.242	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	0	0
2027	11	4.977	232.738	175.176	135.499	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	1	0	0
2027	12	0.063	545.497	175.126	135.742	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2028	1	0.000	792.471	175.071	135.991	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2028	2	0.000	885.309	175.019	136.250	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2028	3	0.221	703.560	174.972	136.542	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2028	4	2.548	389.426	174.922	136.869	0	0	0	1	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2028	5	18.512	124.656	174.875	137.215	0	0	0	0	1	0	0	0	0	0	0	0	0	1	1	1	0	0
2028	6	106.676	17.782	174.828	137.571	0	0	0	0	0	1	0	0	0	0	0	0	0	1	1	1	0	0
2028	7	243.038	0.189	174.781	137.921	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1	1	0	0
2028	8	254.533	0.000	174.736	138.251	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1	1	0	0
2028	9	176.959	0.696	174.691	138.538	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	1	0	0
2028	10	54.558	41.135	174.649	138.784	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	0	0
2028	11	4.977	232.738	174.603	138.995	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	1	0	0
2028	12	0.063	545.497	174.561	139.172	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2029	1	0.000	792.471	174.517	139.325	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2029	2	0.000	885.309	174.475	139.453	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2029	3	0.221	703.560	174.438	139.570	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2029	4	2.548	389.426	174.396	139.697	0	0	0	1	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2029	5	18.512	124.656	174.356	139.850	0	0	0	0	1	0	0	0	0	0	0	0	0	1	1	1	0	0
2029	6	106.676	17.782	174.311	140.039	0	0	0	0	0	1	0	0	0	0	0	0	0	1	1	1	0	0
2029	7	243.038	0.189	174.270	140.243	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1	1	0	0
2029	8	254.533	0.000	174.228	140.439	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1	1	0	0
2029	9	176.959	0.696	174.187	140.600	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	1	0	0
2029	10	54.558	41.135	174.145	140.740	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	0	0
2029	11	4.977	232.738	174.105	140.876	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	1	0	0
2029	12	0.063	545.497	174.062	141.024	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2030	1	0.000	792.471	174.021	141.191	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2030	2	0.000	885.309	173.984	141.365	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2030	3	0.221	703.560	173.944	141.556	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2030	4	2.548	389.426	173.906	141.772	0	0	0	1	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2030	5	18.512	124.656	173.867	142.007	0	0	0	0	1	0	0	0	0	0	0	0	0	1	1	1	0	0
2030	6	106.676	17.782	173.831	142.264	0	0	0	0	0	1	0	0	0	0	0	0	0	1	1	1	0	0
2030	7	243.038	0.189	173.794	142.542	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1	1	0	0
2030	8	254.533	0.000	173.759	142.847	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1	1	0	0
2030	9	176.959	0.696	173.724	143.164	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	1	0	0
2030	10	54.558	41.135	173.688	143.480	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	0	0
2030	11	4.977	232.738	173.659	143.774	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	1	0	0
2030	12	0.063	545.497	173.625	144.030	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2031	1	0.000	792.471	173.591	144.252	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2031	2	0.000	885.309	173.559	144.438	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2031	3	0.221	703.560	173.529	144.608	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2031	4	2.548	389.426	173.496	144.795	0	0	0	1	0	0	0	0	0	0	0	0	0	1	1	1	0	0

Indiana Michigan Power Company
City of Auburn
Exogenous Variables

YEAR	MONTH	bcdd65	bhdd55	LM_IMI	frbmvp	dd1	dd2	dd3	dd4	dd5	dd6	dd7	dd8	dd9	dd10	dd11	jan04	sep04	d05on	d11on	nov15on	apr20	may20
2031	5	18.512	124.656	173.464	145.023	0	0	0	0	1	0	0	0	0	0	0	0	0	1	1	1	0	0
2031	6	106.676	17.782	173.430	145.308	0	0	0	0	0	1	0	0	0	0	0	0	0	1	1	1	0	0
2031	7	243.038	0.189	173.398	145.637	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1	1	0	0
2031	8	254.533	0.000	173.362	145.985	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1	1	0	0
2031	9	176.959	0.696	173.329	146.318	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	1	0	0
2031	10	54.558	41.135	173.294	146.631	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	0	0
2031	11	4.977	232.738	173.260	146.915	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	1	0	0
2031	12	0.063	545.497	173.226	147.167	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2032	1	0.000	792.471	173.191	147.389	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2032	2	0.000	885.309	173.159	147.571	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2032	3	0.221	703.560	173.129	147.729	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2032	4	2.548	389.426	173.096	147.894	0	0	0	1	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2032	5	18.512	124.656	173.063	148.101	0	0	0	0	1	0	0	0	0	0	0	0	0	1	1	1	0	0
2032	6	106.676	17.782	173.036	148.377	0	0	0	0	0	1	0	0	0	0	0	0	0	1	1	1	0	0
2032	7	243.038	0.189	173.009	148.717	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1	1	0	0
2032	8	254.533	0.000	172.980	149.113	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1	1	0	0
2032	9	176.959	0.696	172.954	149.532	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	1	0	0
2032	10	54.558	41.135	172.927	149.951	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	0	0
2032	11	4.977	232.738	172.902	150.339	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	1	0	0
2032	12	0.063	545.497	172.877	150.674	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2033	1	0.000	792.471	172.855	150.974	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2033	2	0.000	885.309	172.834	151.245	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2033	3	0.221	703.560	172.814	151.523	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2033	4	2.548	389.426	172.789	151.831	0	0	0	1	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2033	5	18.512	124.656	172.769	152.172	0	0	0	0	1	0	0	0	0	0	0	0	0	1	1	1	0	0
2033	6	106.676	17.782	172.746	152.551	0	0	0	0	0	1	0	0	0	0	0	0	0	1	1	1	0	0
2033	7	243.038	0.189	172.723	152.954	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1	1	0	0
2033	8	254.533	0.000	172.701	153.366	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1	1	0	0
2033	9	176.959	0.696	172.679	153.754	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	1	0	0
2033	10	54.558	41.135	172.655	154.118	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	0	0
2033	11	4.977	232.738	172.635	154.455	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	1	0	0
2033	12	0.063	545.497	172.609	154.763	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2034	1	0.000	792.471	172.585	155.050	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2034	2	0.000	885.309	172.564	155.305	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2034	3	0.221	703.560	172.536	155.552	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2034	4	2.548	389.426	172.511	155.820	0	0	0	1	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2034	5	18.512	124.656	172.487	156.129	0	0	0	0	1	0	0	0	0	0	0	0	0	1	1	1	0	0
2034	6	106.676	17.782	172.462	156.492	0	0	0	0	0	1	0	0	0	0	0	0	0	1	1	1	0	0
2034	7	243.038	0.189	172.434	156.884	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1	1	0	0
2034	8	254.533	0.000	172.406	157.273	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1	1	0	0
2034	9	176.959	0.696	172.382	157.613	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	1	0	0
2034	10	54.558	41.135	172.349	157.896	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	0	0
2034	11	4.977	232.738	172.323	158.115	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	1	0	0
2034	12	0.063	545.497	172.297	158.268	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0

YEAR	MONTH	bcdd65	bhdd55	LM_IMI	frbmvp	d01	d02	d03	d04	d05	d06	d07	d08	d09	d10	d11	jan04	sep04	dd05on	dd11on	nov15on	apr20	may20
2035	1	0.000	792.471	172.270	158.382	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2035	2	0.000	885.309	172.242	158.481	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2035	3	0.221	703.560	172.215	158.597	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2035	4	2.548	389.426	172.191	158.743	0	0	0	1	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2035	5	18.512	124.656	172.160	158.925	0	0	0	0	1	0	0	0	0	0	0	0	0	1	1	1	0	0
2035	6	106.676	17.782	172.139	159.142	0	0	0	0	0	1	0	0	0	0	0	0	0	1	1	1	0	0
2035	7	243.038	0.189	172.113	159.377	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1	1	0	0
2035	8	254.533	0.000	172.088	159.609	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1	1	0	0
2035	9	176.959	0.696	172.063	159.813	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	1	0	0
2035	10	54.558	41.135	172.043	159.983	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	0	0
2035	11	4.977	232.738	172.020	160.118	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	1	0	0
2035	12	0.063	545.497	171.996	160.217	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2036	1	0.000	792.471	171.974	160.300	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2036	2	0.000	885.309	171.954	160.387	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2036	3	0.221	703.560	171.931	160.497	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2036	4	2.548	389.426	171.910	160.636	0	0	0	1	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2036	5	18.512	124.656	171.885	160.803	0	0	0	0	1	0	0	0	0	0	0	0	0	1	1	1	0	0
2036	6	106.676	17.782	171.861	160.993	0	0	0	0	0	1	0	0	0	0	0	0	0	1	1	1	0	0
2036	7	243.038	0.189	171.839	161.198	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1	1	0	0
2036	8	254.533	0.000	171.814	161.410	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1	1	0	0
2036	9	176.959	0.696	171.790	161.614	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	1	0	0
2036	10	54.558	41.135	171.764	161.808	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	0	0
2036	11	4.977	232.738	171.736	161.986	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	1	0	0
2036	12	0.063	545.497	171.713	162.145	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2037	1	0.000	792.471	171.687	162.279	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2037	2	0.000	885.309	171.662	162.371	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2037	3	0.221	703.560	171.635	162.431	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2037	4	2.548	389.426	171.610	162.487	0	0	0	1	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2037	5	18.512	124.656	171.583	162.579	0	0	0	0	1	0	0	0	0	0	0	0	0	1	1	1	0	0
2037	6	106.676	17.782	171.559	162.731	0	0	0	0	0	1	0	0	0	0	0	0	0	1	1	1	0	0
2037	7	243.038	0.189	171.536	162.931	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1	1	0	0
2037	8	254.533	0.000	171.511	163.153	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1	1	0	0
2037	9	176.959	0.696	171.488	163.368	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	1	0	0
2037	10	54.558	41.135	171.464	163.573	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	0	0
2037	11	4.977	232.738	171.440	163.769	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	1	0	0
2037	12	0.063	545.497	171.416	163.956	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2038	1	0.000	792.471	171.393	164.142	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2038	2	0.000	885.309	171.371	164.319	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2038	3	0.221	703.560	171.348	164.502	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2038	4	2.548	389.426	171.326	164.703	0	0	0	1	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2038	5	18.512	124.656	171.302	164.923	0	0	0	0	1	0	0	0	0	0	0	0	0	1	1	1	0	0
2038	6	106.676	17.782	171.279	165.164	0	0	0	0	0	1	0	0	0	0	0	0	0	1	1	1	0	0
2038	7	243.038	0.189	171.253	165.415	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1	1	0	0
2038	8	254.533	0.000	171.232	165.665	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1	1	0	0

Indiana Michigan Power Company
City of Auburn
Exogenous Variables

YEAR	MONTH	bcdd65	bhdd55	LM_IMI	frbmvp	dd1	dd2	dd3	dd4	dd5	dd6	dd7	dd8	dd9	dd10	dd11	jan04	sep04	d05on	d11on	nov15on	apr20	may20
2038	9	176.959	0.696	171.205	165.893	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	1	0	0
2038	10	54.558	41.135	171.181	166.104	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	0	0
2038	11	4.977	232.738	171.155	166.300	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	1	0	0
2038	12	0.063	545.497	171.128	166.488	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2039	1	0.000	792.471	171.100	166.682	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2039	2	0.000	885.309	171.074	166.886	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2039	3	0.221	703.560	171.048	167.117	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2039	4	2.548	389.426	171.020	167.383	0	0	0	1	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2039	5	18.512	124.656	170.995	167.669	0	0	0	0	1	0	0	0	0	0	0	0	0	1	1	1	0	0
2039	6	106.676	17.782	170.967	167.966	0	0	0	0	0	1	0	0	0	0	0	0	0	1	1	1	0	0
2039	7	243.038	0.189	170.937	168.262	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1	1	0	0
2039	8	254.533	0.000	170.909	168.548	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1	1	0	0
2039	9	176.959	0.696	170.881	168.803	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	1	0	0
2039	10	54.558	41.135	170.852	169.029	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	0	0
2039	11	4.977	232.738	170.820	169.224	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	1	0	0
2039	12	0.063	545.497	170.790	169.387	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2040	1	0.000	792.471	170.761	169.533	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2040	2	0.000	885.309	170.729	169.664	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2040	3	0.221	703.560	170.698	169.800	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2040	4	2.548	389.426	170.664	169.953	0	0	0	1	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2040	5	18.512	124.656	170.633	170.133	0	0	0	0	1	0	0	0	0	0	0	0	0	1	1	1	0	0
2040	6	106.676	17.782	170.599	170.344	0	0	0	0	0	1	0	0	0	0	0	0	0	1	1	1	0	0
2040	7	243.038	0.189	170.563	170.568	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1	1	0	0
2040	8	254.533	0.000	170.529	170.782	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1	1	0	0
2040	9	176.959	0.696	170.493	170.960	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	1	0	0
2040	10	54.558	41.135	170.457	171.107	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	0	0
2040	11	4.977	232.738	170.418	171.233	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	1	0	0
2040	12	0.063	545.497	170.381	171.343	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2041	1	0.000	792.471	170.341	171.445	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2041	2	0.000	885.309	170.303	171.535	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2041	3	0.221	703.560	170.263	171.623	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2041	4	2.548	389.426	170.222	171.721	0	0	0	1	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2041	5	18.512	124.656	170.178	171.840	0	0	0	0	1	0	0	0	0	0	0	0	0	1	1	1	0	0
2041	6	106.676	17.782	170.138	171.985	0	0	0	0	0	1	0	0	0	0	0	0	0	1	1	1	0	0
2041	7	243.038	0.189	170.094	172.151	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1	1	0	0
2041	8	254.533	0.000	170.051	172.327	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1	1	0	0
2041	9	176.959	0.696	170.003	172.501	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	1	0	0
2041	10	54.558	41.135	169.960	172.691	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	0	0
2041	11	4.977	232.738	169.912	172.920	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	1	0	0
2041	12	0.063	545.497	169.866	173.196	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2042	1	0.000	792.471	169.818	173.492	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2042	2	0.000	885.309	169.770	173.746	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2042	3	0.221	703.560	169.722	173.943	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2042	4	2.548	389.426	169.670	174.092	0	0	0	1	0	0	0	0	0	0	0	0	0	1	1	1	0	0

Indiana Michigan Power Company
City of Auburn
Exogenous Variables

YEAR	MONTH	bcdd65	bhdd55	LM_IMI	frbmvp	dd1	dd2	dd3	dd4	dd5	dd6	dd7	dd8	dd9	dd10	dd11	jan04	sep04	d05on	d11on	nov15on	apr20	may20
2042	5	18.512	124.656	169.618	174.204	0	0	0	0	1	0	0	0	0	0	0	0	0	1	1	1	0	0
2042	6	106.676	17.782	169.567	174.298	0	0	0	0	0	1	0	0	0	0	0	0	0	1	1	1	0	0
2042	7	243.038	0.189	169.513	174.404	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1	1	0	0
2042	8	254.533	0.000	169.457	174.554	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1	1	0	0
2042	9	176.959	0.696	169.403	174.761	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	1	0	0
2042	10	54.558	41.135	169.347	174.999	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	0	0
2042	11	4.977	232.738	169.290	175.230	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	1	0	0
2042	12	0.063	545.497	169.229	175.424	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2043	1	0.000	792.471	169.170	175.594	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2043	2	0.000	885.309	169.110	175.750	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2043	3	0.221	703.560	169.054	175.916	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2043	4	2.548	389.426	168.994	176.108	0	0	0	1	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2043	5	18.512	124.656	168.930	176.328	0	0	0	0	1	0	0	0	0	0	0	0	0	1	1	1	0	0
2043	6	106.676	17.782	168.868	176.574	0	0	0	0	0	1	0	0	0	0	0	0	0	1	1	1	0	0
2043	7	243.038	0.189	168.803	176.822	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1	1	0	0
2043	8	254.533	0.000	168.738	177.044	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1	1	0	0
2043	9	176.959	0.696	168.673	177.212	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	1	0	0
2043	10	54.558	41.135	168.608	177.350	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	0	0
2043	11	4.977	232.738	168.543	177.489	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	1	0	0
2043	12	0.063	545.497	168.476	177.651	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2044	1	0.000	792.471	168.411	177.835	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2044	2	0.000	885.309	168.344	178.019	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2044	3	0.221	703.560	168.281	178.199	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2044	4	2.548	389.426	168.217	178.370	0	0	0	1	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2044	5	18.512	124.656	168.147	178.528	0	0	0	0	1	0	0	0	0	0	0	0	0	1	1	1	0	0
2044	6	106.676	17.782	168.085	178.672	0	0	0	0	0	1	0	0	0	0	0	0	0	1	1	1	0	0
2044	7	243.038	0.189	168.023	178.822	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1	1	0	0
2044	8	254.533	0.000	167.959	179.002	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1	1	0	0
2044	9	176.959	0.696	167.897	179.220	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	1	0	0
2044	10	54.558	41.135	167.834	179.466	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	0	0
2044	11	4.977	232.738	167.777	179.719	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	1	0	0
2044	12	0.063	545.497	167.718	179.962	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2045	1	0.000	792.471	167.655	180.199	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2045	2	0.000	885.309	167.599	180.421	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2045	3	0.221	703.560	167.546	180.645	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2045	4	2.548	389.426	167.488	180.885	0	0	0	1	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2045	5	18.512	124.656	167.430	181.138	0	0	0	0	1	0	0	0	0	0	0	0	0	1	1	1	0	0
2045	6	106.676	17.782	167.369	181.407	0	0	0	0	0	1	0	0	0	0	0	0	0	1	1	1	0	0
2045	7	243.038	0.189	167.316	181.689	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1	1	0	0
2045	8	254.533	0.000	167.258	181.983	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1	1	0	0
2045	9	176.959	0.696	167.198	182.274	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	1	0	0
2045	10	54.558	41.135	167.145	182.573	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	0	0
2045	11	4.977	232.738	167.087	182.888	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	1	0	0
2045	12	0.063	545.497	167.029	183.222	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0

YEAR	MONTH	bcdd65	bhdd55	LM_IMI	frbmvp	dd1	dd2	dd3	dd4	dd5	dd6	dd7	dd8	dd9	dd10	dd11	jan04	sep04	d05on	d11on	nov15on	apr20	may20
2046	1	0.000	792.471	166.973	183.560	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2046	2	0.000	885.309	166.914	183.858	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2046	3	0.221	703.560	166.858	184.118	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2046	4	2.548	389.426	166.799	184.362	0	0	0	1	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2046	5	18.512	124.656	166.740	184.607	0	0	0	0	1	0	0	0	0	0	0	0	0	1	1	1	0	0
2046	6	106.676	17.782	166.681	184.869	0	0	0	0	0	1	0	0	0	0	0	0	0	1	1	1	0	0
2046	7	243.038	0.189	166.618	185.145	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1	1	0	0
2046	8	254.533	0.000	166.557	185.426	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1	1	0	0
2046	9	176.959	0.696	166.492	185.695	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	1	0	0
2046	10	54.558	41.135	166.426	185.956	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	0	0
2046	11	4.977	232.738	166.364	186.216	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	1	0	0
2046	12	0.063	545.497	166.300	186.478	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2047	1	0.000	792.471	166.233	186.745	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2047	2	0.000	885.309	166.168	187.000	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2047	3	0.221	703.560	166.105	187.252	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2047	4	2.548	389.426	166.038	187.511	0	0	0	1	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2047	5	18.512	124.656	165.969	187.767	0	0	0	0	1	0	0	0	0	0	0	0	0	1	1	1	0	0
2047	6	106.676	17.782	165.902	188.020	0	0	0	0	0	1	0	0	0	0	0	0	0	1	1	1	0	0
2047	7	243.038	0.189	165.832	188.270	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1	1	0	0
2047	8	254.533	0.000	165.763	188.524	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1	1	0	0
2047	9	176.959	0.696	165.694	188.774	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	1	0	0
2047	10	54.558	41.135	165.623	189.025	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	0	0
2047	11	4.977	232.738	165.554	189.277	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	1	0	0
2047	12	0.063	545.497	165.483	189.529	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2048	1	0.000	792.471	165.414	189.787	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2048	2	0.000	885.309	165.344	190.037	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2048	3	0.221	703.560	165.278	190.288	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2048	4	2.548	389.426	165.207	190.543	0	0	0	1	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2048	5	18.512	124.656	165.135	190.798	0	0	0	0	1	0	0	0	0	0	0	0	0	1	1	1	0	0
2048	6	106.676	17.782	165.066	191.052	0	0	0	0	0	1	0	0	0	0	0	0	0	1	1	1	0	0
2048	7	243.038	0.189	164.998	191.304	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1	1	0	0
2048	8	254.533	0.000	164.927	191.559	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1	1	0	0
2048	9	176.959	0.696	164.858	191.807	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	1	0	0
2048	10	54.558	41.135	164.788	192.055	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	0	0
2048	11	4.977	232.738	164.722	192.303	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	1	0	0
2048	12	0.063	545.497	164.653	192.553	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2049	1	0.000	792.471	164.589	192.808	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2049	2	0.000	885.309	164.520	193.050	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2049	3	0.221	703.560	164.455	193.291	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2049	4	2.548	389.426	164.387	193.540	0	0	0	1	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2049	5	18.512	124.656	164.320	193.791	0	0	0	0	1	0	0	0	0	0	0	0	0	1	1	1	0	0
2049	6	106.676	17.782	164.256	194.044	0	0	0	0	0	1	0	0	0	0	0	0	0	1	1	1	0	0
2049	7	243.038	0.189	164.187	194.295	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1	1	0	0
2049	8	254.533	0.000	164.120	194.541	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1	1	0	0

Indiana Michigan Power Company
City of Auburn
Exogenous Variables

YEAR	MONTH	bcdd65	bhdd55	LM_IMI	frbmvp	dd1	dd2	dd3	dd4	dd5	dd6	dd7	dd8	dd9	dd10	dd11	jan04	sep04	d05on	d11on	nov15on	apr20	may20
2049	9	176.959	0.696	164.054	194.771	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	1	0	0
2049	10	54.558	41.135	163.985	194.987	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	0	0
2049	11	4.977	232.738	163.921	195.188	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	1	0	0
2049	12	0.063	545.497	163.852	195.376	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2050	1	0.000	792.471	163.786	195.561	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2050	2	0.000	885.309	163.721	195.743	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2050	3	0.221	703.560	163.655	195.935	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2050	4	2.548	389.426	163.592	196.144	0	0	0	1	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2050	5	18.512	124.656	163.524	196.357	0	0	0	0	1	0	0	0	0	0	0	0	0	1	1	1	0	0
2050	6	106.676	17.782	163.455	196.572	0	0	0	0	0	1	0	0	0	0	0	0	0	1	1	1	0	0
2050	7	243.038	0.189	163.391	196.788	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1	1	0	0
2050	8	254.533	0.000	163.322	197.014	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1	1	0	0
2050	9	176.959	0.696	163.253	197.243	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	1	0	0
2050	10	54.558	41.135	163.184	197.482	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	0	0
2050	11	4.977	232.738	163.116	197.733	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	1	0	0
2050	12	0.063	545.497	163.049	198.000	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2051	1	0.000	792.471	162.989	198.355	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2051	2	0.000	885.309	162.928	198.473	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2051	3	0.221	703.560	162.861	198.616	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2051	4	2.548	389.426	162.803	198.783	0	0	0	1	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2051	5	18.512	124.656	162.734	198.957	0	0	0	0	1	0	0	0	0	0	0	0	0	1	1	1	0	0
2051	6	106.676	17.782	162.660	199.132	0	0	0	0	0	1	0	0	0	0	0	0	0	1	1	1	0	0
2051	7	243.038	0.189	162.601	199.314	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1	1	0	0
2051	8	254.533	0.000	162.530	199.518	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1	1	0	0
2051	9	176.959	0.696	162.458	199.746	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	1	0	0
2051	10	54.558	41.135	162.389	200.009	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	0	0
2051	11	4.977	232.738	162.317	200.312	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	1	0	0
2051	12	0.063	545.497	162.252	200.660	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2052	1	0.000	792.471	162.198	201.188	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2052	2	0.000	885.309	162.141	201.242	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2052	3	0.221	703.560	162.073	201.333	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2052	4	2.548	389.426	162.020	201.457	0	0	0	1	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2052	5	18.512	124.656	161.950	201.592	0	0	0	0	1	0	0	0	0	0	0	0	0	1	1	1	0	0
2052	6	106.676	17.782	161.871	201.726	0	0	0	0	0	1	0	0	0	0	0	0	0	1	1	1	0	0
2052	7	243.038	0.189	161.817	201.873	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1	1	0	0
2052	8	254.533	0.000	161.744	202.054	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1	1	0	0
2052	9	176.959	0.696	161.669	202.280	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	1	0	0
2052	10	54.558	41.135	161.600	202.568	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	0	0
2052	11	4.977	232.738	161.524	202.924	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	1	0	0
2052	12	0.063	545.497	161.461	203.355	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2053	1	0.000	792.471	161.413	204.061	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2053	2	0.000	885.309	161.359	204.050	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2053	3	0.221	703.560	161.290	204.088	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2053	4	2.548	389.426	161.242	204.167	0	0	0	1	0	0	0	0	0	0	0	0	0	1	1	1	0	0

Indiana Michigan Power Company
City of Auburn
Exogenous Variables

YEAR	MONTH	bcdd65	bhdd55	LM_IMI	frbmvp	dd1	dd2	dd3	dd4	dd5	dd6	dd7	dd8	dd9	dd10	dd11	jan04	sep04	d05on	d11on	nov15on	apr20	may20
2053	5	18.512	124.656	161.171	204.261	0	0	0	0	1	0	0	0	0	0	0	0	0	1	1	1	0	0
2053	6	106.676	17.782	161.088	204.354	0	0	0	0	0	1	0	0	0	0	0	0	0	1	1	1	0	0
2053	7	243.038	0.189	161.038	204.464	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1	1	0	0
2053	8	254.533	0.000	160.963	204.622	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1	1	0	0
2053	9	176.959	0.696	160.886	204.847	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	1	0	0
2053	10	54.558	41.135	160.816	205.160	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	0	0
2053	11	4.977	232.738	160.737	205.570	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	1	0	0
2053	12	0.063	545.497	160.675	206.087	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2054	1	0.000	792.471	160.633	206.976	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2054	2	0.000	885.309	160.584	206.896	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2054	3	0.221	703.560	160.514	206.880	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2054	4	2.548	389.426	160.470	206.914	0	0	0	1	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2054	5	18.512	124.656	160.398	206.965	0	0	0	0	1	0	0	0	0	0	0	0	0	1	1	1	0	0
2054	6	106.676	17.782	160.310	207.016	0	0	0	0	0	1	0	0	0	0	0	0	0	1	1	1	0	0
2054	7	243.038	0.189	160.265	207.088	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1	1	0	0
2054	8	254.533	0.000	160.189	207.223	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1	1	0	0
2054	9	176.959	0.696	160.108	207.447	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	1	0	0
2054	10	54.558	41.135	160.039	207.785	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	0	0
2054	11	4.977	232.738	159.955	208.251	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	1	0	0
2054	12	0.063	545.497	159.896	208.855	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2055	1	0.000	792.471	159.859	209.932	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2055	2	0.000	885.309	159.814	209.783	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2055	3	0.221	703.560	159.743	209.711	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2055	4	2.548	389.426	159.704	209.697	0	0	0	1	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2055	5	18.512	124.656	159.631	209.706	0	0	0	0	1	0	0	0	0	0	0	0	0	1	1	1	0	0
2055	6	106.676	17.782	159.539	209.713	0	0	0	0	0	1	0	0	0	0	0	0	0	1	1	1	0	0
2055	7	243.038	0.189	159.498	209.747	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1	1	0	0
2055	8	254.533	0.000	159.420	209.856	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1	1	0	0
2055	9	176.959	0.696	159.336	210.080	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	1	0	0
2055	10	54.558	41.135	159.267	210.444	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	0	0
2055	11	4.977	232.738	159.180	210.967	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	1	0	0
2055	12	0.063	545.497	159.122	211.661	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2056	1	0.000	792.471	159.091	212.930	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2056	2	0.000	885.309	159.050	212.709	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2056	3	0.221	703.560	158.978	212.580	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2056	4	2.548	389.426	158.943	212.518	0	0	0	1	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2056	5	18.512	124.656	158.869	212.483	0	0	0	0	1	0	0	0	0	0	0	0	0	1	1	1	0	0
2056	6	106.676	17.782	158.773	212.444	0	0	0	0	0	1	0	0	0	0	0	0	0	1	1	1	0	0
2056	7	243.038	0.189	158.737	212.439	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1	1	0	0
2056	8	254.533	0.000	158.656	212.524	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1	1	0	0
2056	9	176.959	0.696	158.570	212.746	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	1	0	0
2056	10	54.558	41.135	158.501	213.136	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	0	0
2056	11	4.977	232.738	158.410	213.718	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	1	0	0
2056	12	0.063	545.497	158.354	214.504	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0

Indiana Michigan Power Company
City of Auburn
Exogenous Variables

YEAR	MONTH	bcd65	bhd55	LM_IMI	frbmvp	dd1	dd2	dd3	dd4	dd5	dd6	dd7	dd8	dd9	dd10	dd11	jan04	sep04	d05on	d11on	nov15on	apr20	may20
2057	1	0.000	792.471	158.329	215.972	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2057	2	0.000	885.309	158.291	215.677	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2057	3	0.221	703.560	158.218	215.488	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2057	4	2.548	389.426	158.188	215.377	0	0	0	1	0	0	0	0	0	0	0	0	0	1	1	1	0	0
2057	5	18.512	124.656	158.113	215.296	0	0	0	0	1	0	0	0	0	0	0	0	0	1	1	1	0	0
2057	6	106.676	17.782	158.012	215.212	0	0	0	0	0	1	0	0	0	0	0	0	0	1	1	1	0	0
2057	7	243.038	0.189	157.981	215.166	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1	1	0	0
2057	8	254.533	0.000	157.899	215.225	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1	1	0	0
2057	9	176.959	0.696	157.810	215.445	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	1	0	0
2057	10	54.558	41.135	157.740	215.864	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	0	0
2057	11	4.977	232.738	157.646	216.505	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	1	0	0
2057	12	0.063	545.497	157.591	217.385	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0

Indiana Michigan Power Company
City of Auburn
Model Estimation

The SYSLIN Procedure
Ordinary Least Squares Estimation

Model	KWH
Dependent Variable	KWH
Label	Energy

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	22	7.767E15	3.531E14	65.67	<.0001
Error	206	1.107E15	5.376E12		
Corrected Total	228	8.875E15			

Root MSE	2318602.68	R-Square	0.87522
Dependent Mean	37723142.8	Adj R-Sq	0.86189
Coeff Var	6.14637		

Parameter Estimates

Variable	DF	Parameter Estimate	Standard Error	t Value	Pr > |t|	Variable Label
Intercept	1	-2.739E7	10723709	-2.55	0.0114	Intercept
lfrbmvp	1	4490916	1888394	2.38	0.0183	FRB Index-Motor Vehichles and Parts, Log
llm	1	9402048	3190773	2.95	0.0036	Service Area Manufacturing Employment, Log
bhdd55	1	-114.451	1798.481	-0.06	0.9493	Heating Degree Days
bcdd65	1	6734.816	4625.506	1.46	0.1469	Cooling Degree Days
d05on	1	-7308191	563554.8	-12.97	<.0001	Binary Variable 2005 On
d11on	1	2238283	569999.1	3.93	0.0001	Binary Variable 2011 on
jan04	1	39183460	2413868	16.23	<.0001	Binary Variable - January 2004
sep04	1	41464450	2423474	17.11	<.0001	Binary Variable - September 2004
apr20	1	-8758368	2692214	-3.25	0.0013	Binary Variable - April 2020
may20	1	-7348032	2955363	-2.49	0.0137	Binary Variable - May 2020
d1	1	2196271	844941.7	2.60	0.0100	Binary Variable - January

Indiana Michigan Power Company
City of Auburn
Model Estimation

The SYSLIN Procedure
Ordinary Least Squares Estimation

Parameter Estimates

Variable	DF	Parameter Estimate	Standard Error	t Value	Pr > |t|	Variable Label
d2	1	-524707	955825.2	-0.55	0.5836	Binary Variable - February
d3	1	900822.0	813321.9	1.11	0.2693	Binary Variable - March
d4	1	-474200	834904.8	-0.57	0.5707	Binary Variable - April
d5	1	734956.9	1111258	0.66	0.5091	Binary Variable - May
d6	1	915798.9	1344301	0.68	0.4965	Binary Variable - June
d7	1	-204820	1688380	-0.12	0.9036	Binary Variable - July
d8	1	2085866	1735069	1.20	0.2307	Binary Varaible - August
d9	1	-220018	1511009	-0.15	0.8844	Binary Variable - September
d10	1	339695.2	1235144	0.28	0.7836	Binary Variable - October
d11	1	-200880	955388.8	-0.21	0.8337	Binary Variable - November
nov15on	1	-2256521	474441.3	-4.76	<.0001	Binary Variable - November 2015 On

Durbin-Watson	1.701453
Number of Observations	229
First-Order Autocorrelation	0.144269

Indiana Michigan Power Company
City of Auburn
Model Residuals

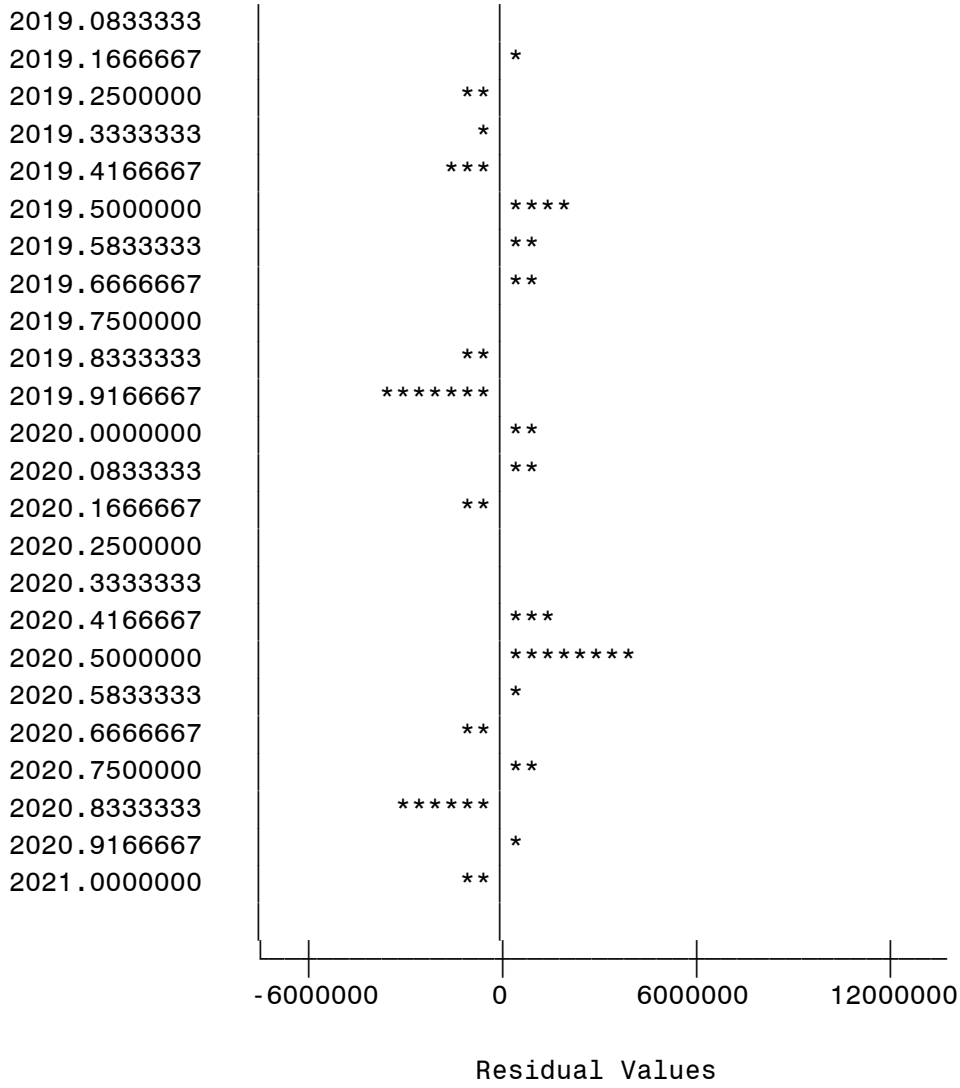
time	Residual Values	Sum
2002.0000000	******	3236049
2002.0833333	**********	-6800187
2002.1666667	******	-3159457
2002.2500000	*******	-3425574
2002.3333333	**********	13666374
2002.4166667	*	427395
2002.5000000	***	1620144
2002.5833333	******	3027278
2002.6666667	**	-1030978
2002.7500000	***	1352867
2002.8333333	****	-1981627
2002.9166667	********	-3917701
2003.0000000	****	1801206
2003.0833333	***	-1691386
2003.1666667	*****	-2342415
2003.2500000	*	-594941
2003.3333333	*	-699951
2003.4166667	****	-2037912
2003.5000000	****	-2159455
2003.5833333	*	-664761
2003.6666667	*******	-3369287
2003.7500000	*****	2375692
2003.8333333	****	-1969045
2003.9166667	**	1193467
2004.0000000		0
2004.0833333	*	-566207
2004.1666667	*******	3358701
2004.2500000	*****	2610570
2004.3333333	***	-1606062
2004.4166667	*****	2602583
2004.5000000		-158167
2004.5833333		-148256
2004.6666667		0
2004.7500000	***	-1695542
2004.8333333	*	-323759
2004.9166667	******	3070345
2005.0000000	****	-2052725
2005.0833333	**********	4892140
2005.1666667	*	-305433
2005.2500000	*	-528111
2005.3333333	**********	-6123350
2005.4166667	******	-2984401
2005.5000000	*******	-3504956
2005.5833333	***	-1319493
2005.6666667	*******	3504572
2005.7500000		-51135
2005.8333333	**	1015113
2005.9166667	****	2039881
2006.0000000	***	-1542348

2006.0833333		*	614659
2006.1666667			132036
2006.2500000			-230818
2006.3333333		*	646780
2006.4166667		**********	5162968
2006.5000000	*		-446886
2006.5833333		*	318353
2006.6666667		****	1802866
2006.7500000	*		-365849
2006.8333333		*****	2426075
2006.9166667		***	1620116
2007.0000000	*****		-2697439
2007.0833333		*******	3580227
2007.1666667		**	796554
2007.2500000		***	1546327
2007.3333333		**	1223952
2007.4166667		*	324959
2007.5000000	**		-973414
2007.5833333			159804
2007.6666667		***	1331920
2007.7500000	****		-1816892
2007.8333333		**	939047
2007.9166667		***	1284089
2008.0000000	****		-1865422
2008.0833333		****	2187149
2008.1666667		**	819636
2008.2500000		*	282835
2008.3333333	**		-1106442
2008.4166667		*	621332
2008.5000000		***	1327576
2008.5833333	***		-1351623
2008.6666667		*	506172
2008.7500000	****		-1840611
2008.8333333	*		-586039
2008.9166667		***	1343480
2009.0000000	********		-3771876
2009.0833333			73978
2009.1666667	****		-1857812
2009.2500000		**	1217402
2009.3333333	***		-1577095
2009.4166667	***		-1510955
2009.5000000	***		-1739106
2009.5833333	***		-1519304
2009.6666667		**	1101631
2009.7500000		**	955542
2009.8333333		**********	6899384
2009.9166667		**********	7567628
2010.0000000		**********	5171796
2010.0833333	**		-1112761
2010.1666667	*******		-3725201
2010.2500000	**		-824817
2010.3333333	******		-2859127

2010.4166667	********		-3896210
2010.5000000	********		-3887670
2010.5833333	********		-4076227
2010.6666667		*	353040
2010.7500000			225555
2010.8333333	**		-787754
2010.9166667	**		-1177270
2011.0000000	****		-1881630
2011.0833333	**		-782319
2011.1666667			146779
2011.2500000		***	1506161
2011.3333333		*	398172
2011.4166667	**		-968999
2011.5000000	*		-275500
2011.5833333	****		-2235244
2011.6666667		***	1667628
2011.7500000		**	856282
2011.8333333		**	1019570
2011.9166667		*	656088
2012.0000000			-18786
2012.0833333		**	782222
2012.1666667		****	1937136
2012.2500000		*****	2526102
2012.3333333		******	2803493
2012.4166667		*	256114
2012.5000000		****	1821097
2012.5833333			-35150
2012.6666667			14037
2012.7500000		*****	2657210
2012.8333333		*****	2419492
2012.9166667		***	1433208
2013.0000000			151330
2013.0833333	**		-826991
2013.1666667		*	738897
2013.2500000		******	3101825
2013.3333333		***	1715843
2013.4166667		*	536605
2013.5000000		**	913848
2013.5833333		**	966069
2013.6666667	***		-1332533
2013.7500000			131663
2013.8333333	***		-1438947
2013.9166667	*********		-4392732
2014.0000000	*		-348052
2014.0833333	*		-475031
2014.1666667		****	1832082
2014.2500000	**		-948327
2014.3333333	***		-1611820
2014.4166667	**		-971855
2014.5000000		*	326783
2014.5833333	*		-558097
2014.6666667	********		-3955376

2014.7500000			-104020
2014.8333333	**		-1069413
2014.9166667	**		-1184456
2015.0000000	*		-297058
2015.0833333	**		-1203651
2015.1666667			56273
2015.2500000	***		-1656513
2015.3333333	********		-4148643
2015.4166667	*		-560295
2015.5000000		***	1311100
2015.5833333	*		-684068
2015.6666667			60850
2015.7500000	**		-778456
2015.8333333		*	398917
2015.9166667	***		-1512010
2016.0000000		*	578551
2016.0833333		**	934740
2016.1666667		**	777514
2016.2500000		***	1277125
2016.3333333			-206970
2016.4166667		***	1645251
2016.5000000			-179479
2016.5833333		********	3787547
2016.6666667		**	813772
2016.7500000	*		-657183
2016.8333333	****		-2146705
2016.9166667	**		-956776
2017.0000000		*	603659
2017.0833333	**		-1229754
2017.1666667		****	2074938
2017.2500000	********		-3964048
2017.3333333	**		-783455
2017.4166667		*	363183
2017.5000000	**		-835603
2017.5833333	*		-531292
2017.6666667	**		-894190
2017.7500000			-95430
2017.8333333	***		-1468746
2017.9166667	****		-1811530
2018.0000000		****	1784325
2018.0833333		*	478325
2018.1666667	*		-507436
2018.2500000	*		-691028
2018.3333333		**	767221
2018.4166667		*	700830
2018.5000000		**	1200600
2018.5833333		******	3148118
2018.6666667	*		-639498
2018.7500000	****		-2153115
2018.8333333		*	256991
2018.9166667	*****		-2261720
2019.0000000		**	1164809

Indiana Michigan Power Company
City of Auburn
Model Residuals



Indiana Michigan Power Company
City of Auburn
Actual and Forecast

Year	Energy	Growth Rate
2002	CONFID.	N/A
2003	CONFID.	N/A
2004	CONFID.	N/A
2005	CONFID.	N/A
2006	CONFID.	N/A
2007	CONFID.	N/A
2008	CONFID.	N/A
2009	CONFID.	N/A
2010	CONFID.	N/A
2011	CONFID.	N/A
2012	CONFID.	N/A
2013	CONFID.	N/A
2014	CONFID.	N/A
2015	CONFID.	N/A
2016	CONFID.	N/A
2017	CONFID.	N/A
2018	CONFID.	N/A
2019	CONFID.	N/A
2020	CONFID.	N/A
2021	CONFID.	N/A
2022	CONFID.	N/A
2023	CONFID.	N/A
2024	CONFID.	N/A
2025	CONFID.	N/A
2026	CONFID.	N/A
2027	CONFID.	N/A
2028	CONFID.	N/A
2029	CONFID.	N/A
2030	CONFID.	N/A
2031	CONFID.	N/A
2032	CONFID.	N/A
2033	CONFID.	N/A
2034	CONFID.	N/A
2035	CONFID.	N/A
2036	CONFID.	N/A
2037	CONFID.	N/A
2038	CONFID.	N/A
2039	CONFID.	N/A
2040	CONFID.	N/A
2041	CONFID.	N/A
2042	CONFID.	N/A
2043	CONFID.	N/A
2044	CONFID.	N/A
2045	CONFID.	N/A
2046	CONFID.	N/A
2047	CONFID.	N/A
2048	CONFID.	N/A
2049	CONFID.	N/A
2050	CONFID.	N/A

Indiana Michigan Power Company
City of Auburn
Actual and Forecast

Year	Energy	Growth Rate
2051	CONFID.	N/A
2052	CONFID.	N/A
2053	CONFID.	N/A
2054	CONFID.	N/A
2055	CONFID.	N/A
2056	CONFID.	N/A
2057	CONFID.	N/A

Indiana Michigan Power Company
Cooperative Energy Sales
Endogenous Variable

The MEANS Procedure

Variable	Label	Mean
YEAR	Year	2032.00
MONTH	Month	6.5000000

Indiana Michigan Power Company
Cooperative Energy Sales
Endogenous Variable

YEAR	MONTH	Energy
2007	1	CONFID.
2007	2	CONFID.
2007	3	CONFID.
2007	4	CONFID.
2007	5	CONFID.
2007	6	CONFID.
2007	7	CONDID.
2007	8	CONFID.
2007	9	CONFID.
2007	10	CONFID.
2007	11	CONFID.
2007	12	CONFID.
2008	1	CONFID.
2008	2	CONFID.
2008	3	CONFID.
2008	4	CONFID.
2008	5	CONFID.
2008	6	CONFID.
2008	7	CONDID.
2008	8	CONFID.
2008	9	CONFID.
2008	10	CONFID.
2008	11	CONFID.
2008	12	CONFID.
2009	1	CONFID.
2009	2	CONFID.
2009	3	CONFID.
2009	4	CONFID.
2009	5	CONFID.
2009	6	CONFID.
2009	7	CONDID.
2009	8	CONFID.
2009	9	CONFID.
2009	10	CONFID.
2009	11	CONFID.
2009	12	CONFID.
2010	1	CONFID.
2010	2	CONFID.
2010	3	CONFID.
2010	4	CONFID.
2010	5	CONFID.
2010	6	CONFID.
2010	7	CONDID.
2010	8	CONFID.
2010	9	CONFID.
2010	10	CONFID.
2010	11	CONFID.
2010	12	CONFID.
2011	1	CONFID.
2011	2	CONFID.

Indiana Michigan Power Company
Cooperative Energy Sales
Endogenous Variable

YEAR	MONTH	Energy
2011	3	CONFID.
2011	4	CONFID.
2011	5	CONFID.
2011	6	CONFID.
2011	7	CONDID.
2011	8	CONFID.
2011	9	CONFID.
2011	10	CONFID.
2011	11	CONFID.
2011	12	CONFID.
2012	1	CONFID.
2012	2	CONFID.
2012	3	CONFID.
2012	4	CONFID.
2012	5	CONFID.
2012	6	CONFID.
2012	7	CONDID.
2012	8	CONFID.
2012	9	CONFID.
2012	10	CONFID.
2012	11	CONFID.
2012	12	CONFID.
2013	1	CONFID.
2013	2	CONFID.
2013	3	CONFID.
2013	4	CONFID.
2013	5	CONFID.
2013	6	CONFID.
2013	7	CONDID.
2013	8	CONFID.
2013	9	CONFID.
2013	10	CONFID.
2013	11	CONFID.
2013	12	CONFID.
2014	1	CONFID.
2014	2	CONFID.
2014	3	CONFID.
2014	4	CONFID.
2014	5	CONFID.
2014	6	CONFID.
2014	7	CONDID.
2014	8	CONFID.
2014	9	CONFID.
2014	10	CONFID.
2014	11	CONFID.
2014	12	CONFID.
2015	1	CONFID.
2015	2	CONFID.
2015	3	CONFID.
2015	4	CONFID.

Indiana Michigan Power Company
Cooperative Energy Sales
Endogenous Variable

YEAR	MONTH	Energy
2015	5	CONFID.
2015	6	CONFID.
2015	7	CONDID.
2015	8	CONFID.
2015	9	CONFID.
2015	10	CONFID.
2015	11	CONFID.
2015	12	CONFID.
2016	1	CONFID.
2016	2	CONFID.
2016	3	CONFID.
2016	4	CONFID.
2016	5	CONFID.
2016	6	CONFID.
2016	7	CONDID.
2016	8	CONFID.
2016	9	CONFID.
2016	10	CONFID.
2016	11	CONFID.
2016	12	CONFID.
2017	1	CONFID.
2017	2	CONFID.
2017	3	CONFID.
2017	4	CONFID.
2017	5	CONFID.
2017	6	CONFID.
2017	7	CONDID.
2017	8	CONFID.
2017	9	CONFID.
2017	10	CONFID.
2017	11	CONFID.
2017	12	CONFID.
2018	1	CONFID.
2018	2	CONFID.
2018	3	CONFID.
2018	4	CONFID.
2018	5	CONFID.
2018	6	CONFID.
2018	7	CONDID.
2018	8	CONFID.
2018	9	CONFID.
2018	10	CONFID.
2018	11	CONFID.
2018	12	CONFID.
2019	1	CONFID.
2019	2	CONFID.
2019	3	CONFID.
2019	4	CONFID.
2019	5	CONFID.
2019	6	CONFID.

Indiana Michigan Power Company
Cooperative Energy Sales
Endogenous Variable

YEAR	MONTH	Energy
2019	7	CONDID.
2019	8	CONFID.
2019	9	CONFID.
2019	10	CONFID.
2019	11	CONFID.
2019	12	CONFID.
2020	1	CONFID.
2020	2	CONFID.
2020	3	CONFID.
2020	4	CONFID.
2020	5	CONFID.
2020	6	CONFID.
2020	7	CONDID.
2020	8	CONFID.
2020	9	CONFID.
2020	10	CONFID.
2020	11	CONFID.
2020	12	CONFID.
2021	1	CONFID.
2021	2	CONFID.
2021	3	CONFID.
2021	4	CONFID.
2021	5	CONFID.
2021	6	CONFID.
2021	7	CONDID.
2021	8	CONFID.
2021	9	CONFID.
2021	10	CONFID.
2021	11	CONFID.
2021	12	CONFID.
2022	1	CONFID.
2022	2	CONFID.
2022	3	CONFID.
2022	4	CONFID.
2022	5	CONFID.
2022	6	CONFID.
2022	7	CONDID.
2022	8	CONFID.
2022	9	CONFID.
2022	10	CONFID.
2022	11	CONFID.
2022	12	CONFID.
2023	1	CONFID.
2023	2	CONFID.
2023	3	CONFID.
2023	4	CONFID.
2023	5	CONFID.
2023	6	CONFID.
2023	7	CONDID.
2023	8	CONFID.

Indiana Michigan Power Company
Cooperative Energy Sales
Endogenous Variable

YEAR	MONTH	Energy
2023	9	CONFID.
2023	10	CONFID.
2023	11	CONFID.
2023	12	CONFID.
2024	1	CONFID.
2024	2	CONFID.
2024	3	CONFID.
2024	4	CONFID.
2024	5	CONFID.
2024	6	CONFID.
2024	7	CONDID.
2024	8	CONFID.
2024	9	CONFID.
2024	10	CONFID.
2024	11	CONFID.
2024	12	CONFID.
2025	1	CONFID.
2025	2	CONFID.
2025	3	CONFID.
2025	4	CONFID.
2025	5	CONFID.
2025	6	CONFID.
2025	7	CONDID.
2025	8	CONFID.
2025	9	CONFID.
2025	10	CONFID.
2025	11	CONFID.
2025	12	CONFID.
2026	1	CONFID.
2026	2	CONFID.
2026	3	CONFID.
2026	4	CONFID.
2026	5	CONFID.
2026	6	CONFID.
2026	7	CONDID.
2026	8	CONFID.
2026	9	CONFID.
2026	10	CONFID.
2026	11	CONFID.
2026	12	CONFID.
2027	1	CONFID.
2027	2	CONFID.
2027	3	CONFID.
2027	4	CONFID.
2027	5	CONFID.
2027	6	CONFID.
2027	7	CONDID.
2027	8	CONFID.
2027	9	CONFID.
2027	10	CONFID.

Indiana Michigan Power Company
Cooperative Energy Sales
Endogenous Variable

YEAR	MONTH	Energy
2027	11	CONFID.
2027	12	CONFID.
2028	1	CONFID.
2028	2	CONFID.
2028	3	CONFID.
2028	4	CONFID.
2028	5	CONFID.
2028	6	CONFID.
2028	7	CONDID.
2028	8	CONFID.
2028	9	CONFID.
2028	10	CONFID.
2028	11	CONFID.
2028	12	CONFID.
2029	1	CONFID.
2029	2	CONFID.
2029	3	CONFID.
2029	4	CONFID.
2029	5	CONFID.
2029	6	CONFID.
2029	7	CONDID.
2029	8	CONFID.
2029	9	CONFID.
2029	10	CONFID.
2029	11	CONFID.
2029	12	CONFID.
2030	1	CONFID.
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2030	3	CONFID.
2030	4	CONFID.
2030	5	CONFID.
2030	6	CONFID.
2030	7	CONDID.
2030	8	CONFID.
2030	9	CONFID.
2030	10	CONFID.
2030	11	CONFID.
2030	12	CONFID.
2031	1	CONFID.
2031	2	CONFID.
2031	3	CONFID.
2031	4	CONFID.
2031	5	CONFID.
2031	6	CONFID.
2031	7	CONDID.
2031	8	CONFID.
2031	9	CONFID.
2031	10	CONFID.
2031	11	CONFID.
2031	12	CONFID.

Indiana Michigan Power Company
Cooperative Energy Sales
Endogenous Variable

YEAR	MONTH	Energy
2032	1	CONFID.
2032	2	CONFID.
2032	3	CONFID.
2032	4	CONFID.
2032	5	CONFID.
2032	6	CONFID.
2032	7	CONDID.
2032	8	CONFID.
2032	9	CONFID.
2032	10	CONFID.
2032	11	CONFID.
2032	12	CONFID.
2033	1	CONFID.
2033	2	CONFID.
2033	3	CONFID.
2033	4	CONFID.
2033	5	CONFID.
2033	6	CONFID.
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2033	8	CONFID.
2033	9	CONFID.
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2033	11	CONFID.
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2035	10	CONFID.
2035	11	CONFID.
2035	12	CONFID.
2036	1	CONFID.
2036	2	CONFID.

Indiana Michigan Power Company
Cooperative Energy Sales
Endogenous Variable

YEAR	MONTH	Energy
2036	3	CONFID.
2036	4	CONFID.
2036	5	CONFID.
2036	6	CONFID.
2036	7	CONDID.
2036	8	CONFID.
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2037	6	CONFID.
2037	7	CONDID.
2037	8	CONFID.
2037	9	CONFID.
2037	10	CONFID.
2037	11	CONFID.
2037	12	CONFID.
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2038	2	CONFID.
2038	3	CONFID.
2038	4	CONFID.
2038	5	CONFID.
2038	6	CONFID.
2038	7	CONDID.
2038	8	CONFID.
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2038	10	CONFID.
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2038	12	CONFID.
2039	1	CONFID.
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2039	3	CONFID.
2039	4	CONFID.
2039	5	CONFID.
2039	6	CONFID.
2039	7	CONDID.
2039	8	CONFID.
2039	9	CONFID.
2039	10	CONFID.
2039	11	CONFID.
2039	12	CONFID.
2040	1	CONFID.
2040	2	CONFID.
2040	3	CONFID.
2040	4	CONFID.

Indiana Michigan Power Company
Cooperative Energy Sales
Endogenous Variable

YEAR	MONTH	Energy
2040	5	CONFID.
2040	6	CONFID.
2040	7	CONDID.
2040	8	CONFID.
2040	9	CONFID.
2040	10	CONFID.
2040	11	CONFID.
2040	12	CONFID.
2041	1	CONFID.
2041	2	CONFID.
2041	3	CONFID.
2041	4	CONFID.
2041	5	CONFID.
2041	6	CONFID.
2041	7	CONDID.
2041	8	CONFID.
2041	9	CONFID.
2041	10	CONFID.
2041	11	CONFID.
2041	12	CONFID.
2042	1	CONFID.
2042	2	CONFID.
2042	3	CONFID.
2042	4	CONFID.
2042	5	CONFID.
2042	6	CONFID.
2042	7	CONDID.
2042	8	CONFID.
2042	9	CONFID.
2042	10	CONFID.
2042	11	CONFID.
2042	12	CONFID.
2043	1	CONFID.
2043	2	CONFID.
2043	3	CONFID.
2043	4	CONFID.
2043	5	CONFID.
2043	6	CONFID.
2043	7	CONDID.
2043	8	CONFID.
2043	9	CONFID.
2043	10	CONFID.
2043	11	CONFID.
2043	12	CONFID.
2044	1	CONFID.
2044	2	CONFID.
2044	3	CONFID.
2044	4	CONFID.
2044	5	CONFID.
2044	6	CONFID.

Indiana Michigan Power Company
Cooperative Energy Sales
Endogenous Variable

YEAR	MONTH	Energy
2044	7	CONDID.
2044	8	CONFID.
2044	9	CONFID.
2044	10	CONFID.
2044	11	CONFID.
2044	12	CONFID.
2045	1	CONFID.
2045	2	CONFID.
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2045	6	CONFID.
2045	7	CONDID.
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2045	9	CONFID.
2045	10	CONFID.
2045	11	CONFID.
2045	12	CONFID.
2046	1	CONFID.
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2046	5	CONFID.
2046	6	CONFID.
2046	7	CONDID.
2046	8	CONFID.
2046	9	CONFID.
2046	10	CONFID.
2046	11	CONFID.
2046	12	CONFID.
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2047	2	CONFID.
2047	3	CONFID.
2047	4	CONFID.
2047	5	CONFID.
2047	6	CONFID.
2047	7	CONDID.
2047	8	CONFID.
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2047	10	CONFID.
2047	11	CONFID.
2047	12	CONFID.
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2048	4	CONFID.
2048	5	CONFID.
2048	6	CONFID.
2048	7	CONDID.
2048	8	CONFID.

Indiana Michigan Power Company
Cooperative Energy Sales
Endogenous Variable

YEAR	MONTH	Energy
2048	9	CONFID.
2048	10	CONFID.
2048	11	CONFID.
2048	12	CONFID.
2049	1	CONFID.
2049	2	CONFID.
2049	3	CONFID.
2049	4	CONFID.
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2049	6	CONFID.
2049	7	CONDID.
2049	8	CONFID.
2049	9	CONFID.
2049	10	CONFID.
2049	11	CONFID.
2049	12	CONFID.
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2050	2	CONFID.
2050	3	CONFID.
2050	4	CONFID.
2050	5	CONFID.
2050	6	CONFID.
2050	7	CONDID.
2050	8	CONFID.
2050	9	CONFID.
2050	10	CONFID.
2050	11	CONFID.
2050	12	CONFID.
2051	1	CONFID.
2051	2	CONFID.
2051	3	CONFID.
2051	4	CONFID.
2051	5	CONFID.
2051	6	CONFID.
2051	7	CONDID.
2051	8	CONFID.
2051	9	CONFID.
2051	10	CONFID.
2051	11	CONFID.
2051	12	CONFID.
2052	1	CONFID.
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2052	3	CONFID.
2052	4	CONFID.
2052	5	CONFID.
2052	6	CONFID.
2052	7	CONDID.
2052	8	CONFID.
2052	9	CONFID.
2052	10	CONFID.

Indiana Michigan Power Company
Cooperative Energy Sales
Endogenous Variable

YEAR	MONTH	Energy
2052	11	CONFID.
2052	12	CONFID.
2053	1	CONFID.
2053	2	CONFID.
2053	3	CONFID.
2053	4	CONFID.
2053	5	CONFID.
2053	6	CONFID.
2053	7	CONDID.
2053	8	CONFID.
2053	9	CONFID.
2053	10	CONFID.
2053	11	CONFID.
2053	12	CONFID.
2054	1	CONFID.
2054	2	CONFID.
2054	3	CONFID.
2054	4	CONFID.
2054	5	CONFID.
2054	6	CONFID.
2054	7	CONDID.
2054	8	CONFID.
2054	9	CONFID.
2054	10	CONFID.
2054	11	CONFID.
2054	12	CONFID.
2055	1	CONFID.
2055	2	CONFID.
2055	3	CONFID.
2055	4	CONFID.
2055	5	CONFID.
2055	6	CONFID.
2055	7	CONDID.
2055	8	CONFID.
2055	9	CONFID.
2055	10	CONFID.
2055	11	CONFID.
2055	12	CONFID.
2056	1	CONFID.
2056	2	CONFID.
2056	3	CONFID.
2056	4	CONFID.
2056	5	CONFID.
2056	6	CONFID.
2056	7	CONDID.
2056	8	CONFID.
2056	9	CONFID.
2056	10	CONFID.
2056	11	CONFID.
2056	12	CONFID.

Indiana Michigan Power Company
Cooperative Energy Sales
Endogenous Variable

YEAR	MONTH	Energy
2057	1	CONFID.
2057	2	CONFID.
2057	3	CONFID.
2057	4	CONFID.
2057	5	CONFID.
2057	6	CONFID.
2057	7	CONDID.
2057	8	CONFID.
2057	9	CONFID.
2057	10	CONFID.
2057	11	CONFID.
2057	12	CONFID.

Indiana Michigan Power Company
Cooperative Energy Sales
Exogenous Variables

The MEANS Procedure

Variable	Label	Mean
YEAR	Year	2032.00
MONTH	Month	6.5000000
gdp_imi	Service Area Gross Regional Product	106423.50
jand07on	Binary Variable - January 2007 On	0.0833333
febd07on	Binary Variable - February 2007 On	0.0833333
mard07on	Binary Variable - March 2007 On	0.0833333
aprd07on	Binary Variable - April 2007 On	0.0833333
mayd07on	Binary Variable - May 2007 On	0.0833333
jund07on	Binary Variable - June 2007 On	0.0833333
juld07on	Binary Variable - July 2007 On	0.0833333
augd07on	Binary Variable - August 2007 On	0.0833333
sepd07on	Binary Variable - September 2007 On	0.0833333
octd07on	Binary Variable - October 2007 On	0.0833333
novd07on	Binary Variable - November 2007 On	0.0833333
d16on	Binary Variable - 2016 On	0.8235294
bhdd55d70	Heating Degree Days 2007 On	311.0464513
bcdd65d70	Cooling Degree Days 2007 On	73.2442593
d18on	Binary Variable - 2018 On	0.7843137
dec17	Binary Variable - December 2017	0.0016340
jan18	Binary Variable - January 2018	0.0016340

YEAR	MONTH	gdp_im	jan0707	feb0707	mar0707	apr0707	may0707	jun0707	jul0707	aug0707	sep0707	oct0707	nov0707	d161	bhdd55d70	bcdd65d70	d18on	dec17	jan18
2007	1	72503.88	1	0	0	0	0	0	0	0	0	0	0	0	544.00	0.000	0	0	0
2007	2	72514.07	0	1	0	0	0	0	0	0	0	0	0	0	987.17	0.000	0	0	0
2007	3	72525.82	0	0	1	0	0	0	0	0	0	0	0	0	906.10	0.065	0	0	0
2007	4	72543.89	0	0	0	1	0	0	0	0	0	0	0	0	340.81	4.123	0	0	0
2007	5	72572.58	0	0	0	0	1	0	0	0	0	0	0	0	129.43	20.781	0	0	0
2007	6	72616.27	0	0	0	0	0	1	0	0	0	0	0	0	8.82	146.203	0	0	0
2007	7	72678.99	0	0	0	0	0	0	1	0	0	0	0	0	0.00	215.090	0	0	0
2007	8	72757.34	0	0	0	0	0	0	0	1	0	0	0	0	0.00	255.523	0	0	0
2007	9	72834.91	0	0	0	0	0	0	0	0	1	0	0	0	1.57	213.732	0	0	0
2007	10	72898.08	0	0	0	0	0	0	0	0	0	1	0	0	15.82	105.017	0	0	0
2007	11	72932.36	0	0	0	0	0	0	0	0	0	0	1	0	192.89	22.286	0	0	0
2007	12	72922.65	0	0	0	0	0	0	0	0	0	0	0	0	608.47	0.000	0	0	0
2008	1	72852.92	1	0	0	0	0	0	0	0	0	0	0	0	753.95	0.000	0	0	0
2008	2	72713.87	0	1	0	0	0	0	0	0	0	0	0	0	903.12	0.000	0	0	0
2008	3	72488.87	0	0	1	0	0	0	0	0	0	0	0	0	857.69	0.000	0	0	0
2008	4	72159.34	0	0	0	1	0	0	0	0	0	0	0	0	453.22	0.245	0	0	0
2008	5	71712.13	0	0	0	0	1	0	0	0	0	0	0	0	109.89	9.654	0	0	0
2008	6	71133.89	0	0	0	0	0	1	0	0	0	0	0	0	25.40	95.641	0	0	0
2008	7	70410.32	0	0	0	0	0	0	1	0	0	0	0	0	0.03	185.375	0	0	0
2008	8	69537.04	0	0	0	0	0	0	0	1	0	0	0	0	0.00	234.333	0	0	0
2008	9	68575.44	0	0	0	0	0	0	0	0	1	0	0	0	0.00	174.134	0	0	0
2008	10	67547.15	0	0	0	0	0	0	0	0	0	1	0	0	29.14	47.354	0	0	0
2008	11	66487.98	0	0	0	0	0	0	0	0	0	0	1	0	234.86	3.076	0	0	0
2008	12	65433.02	0	0	0	0	0	0	0	0	0	0	0	0	702.59	0.000	0	0	0
2009	1	64401.38	1	0	0	0	0	0	0	0	0	0	0	0	910.79	0.000	0	0	0
2009	2	63490.46	0	1	0	0	0	0	0	0	0	0	0	0	1077.43	0.000	0	0	0
2009	3	62683.60	0	0	1	0	0	0	0	0	0	0	0	0	650.77	0.000	0	0	0
2009	4	61989.53	0	0	0	1	0	0	0	0	0	0	0	0	336.81	0.540	0	0	0
2009	5	61475.17	0	0	0	0	1	0	0	0	0	0	0	0	129.99	27.032	0	0	0
2009	6	61173.64	0	0	0	0	0	1	0	0	0	0	0	0	14.02	68.135	0	0	0
2009	7	61120.18	0	0	0	0	0	0	1	0	0	0	0	0	0.00	192.559	0	0	0
2009	8	61319.39	0	0	0	0	0	0	0	1	0	0	0	0	0.00	154.679	0	0	0
2009	9	61732.10	0	0	0	0	0	0	0	0	1	0	0	0	0.00	111.039	0	0	0
2009	10	62325.04	0	0	0	0	0	0	0	0	0	1	0	0	74.96	33.609	0	0	0
2009	11	63060.46	0	0	0	0	0	0	0	0	0	0	1	0	203.93	0.000	0	0	0
2009	12	63903.75	0	0	0	0	0	0	0	0	0	0	0	0	475.47	0.000	0	0	0
2010	1	64833.43	1	0	0	0	0	0	0	0	0	0	0	0	901.58	0.000	0	0	0
2010	2	65752.00	0	1	0	0	0	0	0	0	0	0	0	0	924.24	0.000	0	0	0
2010	3	66670.48	0	0	1	0	0	0	0	0	0	0	0	0	702.20	0.000	0	0	0
2010	4	67585.59	0	0	0	1	0	0	0	0	0	0	0	0	235.85	8.492	0	0	0
2010	5	68429.44	0	0	0	0	1	0	0	0	0	0	0	0	55.26	19.652	0	0	0
2010	6	69167.01	0	0	0	0	0	1	0	0	0	0	0	0	11.26	180.237	0	0	0

Indiana Michigan Power Company
Cooperative Energy Sales
Exogenous Variables

YEAR	MONTH	gdp_im	jan0	feb0	mar0	apr0	may0	jun0	jul0	aug0	sep0	oct0	nov0	dd1	bhdd55d70	bcdd65d70	dd18	dec1	jan1
2010	7	69762.87	0	0	0	0	0	0	1	0	0	0	0	0	0.00	323.478	0	0	0
2010	8	70213.44	0	0	0	0	0	0	0	1	0	0	0	0	0.00	363.780	0	0	0
2010	9	70518.93	0	0	0	0	0	0	0	0	1	0	0	0	0.00	222.143	0	0	0
2010	10	70704.04	0	0	0	0	0	0	0	0	0	1	0	0	25.89	64.813	0	0	0
2010	11	70787.20	0	0	0	0	0	0	0	0	0	0	1	0	200.35	5.809	0	0	0
2010	12	70784.59	0	0	0	0	0	0	0	0	0	0	0	0	650.98	0.000	0	0	0
2011	1	70712.49	1	0	0	0	0	0	0	0	0	0	0	0	958.16	0.000	0	0	0
2011	2	70595.32	0	1	0	0	0	0	0	0	0	0	0	0	1033.91	0.000	0	0	0
2011	3	70445.84	0	0	1	0	0	0	0	0	0	0	0	0	705.44	0.000	0	0	0
2011	4	70274.71	0	0	0	1	0	0	0	0	0	0	0	0	408.52	2.094	0	0	0
2011	5	70103.46	0	0	0	0	1	0	0	0	0	0	0	0	126.11	17.099	0	0	0
2011	6	69949.21	0	0	0	0	0	1	0	0	0	0	0	0	17.62	154.744	0	0	0
2011	7	69828.66	0	0	0	0	0	0	1	0	0	0	0	0	0.00	286.318	0	0	0
2011	8	69747.50	0	0	0	0	0	0	0	1	0	0	0	0	0.00	410.578	0	0	0
2011	9	69704.90	0	0	0	0	0	0	0	0	1	0	0	0	2.70	193.115	0	0	0
2011	10	69695.02	0	0	0	0	0	0	0	0	0	1	0	0	32.45	25.984	0	0	0
2011	11	69713.07	0	0	0	0	0	0	0	0	0	0	1	0	182.58	0.802	0	0	0
2011	12	69754.86	0	0	0	0	0	0	0	0	0	0	0	0	432.00	0.000	0	0	0
2012	1	69816.86	1	0	0	0	0	0	0	0	0	0	0	0	648.72	0.000	0	0	0
2012	2	69891.23	0	1	0	0	0	0	0	0	0	0	0	0	741.32	0.000	0	0	0
2012	3	69975.59	0	0	1	0	0	0	0	0	0	0	0	0	523.17	6.578	0	0	0
2012	4	70067.04	0	0	0	1	0	0	0	0	0	0	0	0	138.41	21.239	0	0	0
2012	5	70159.85	0	0	0	0	1	0	0	0	0	0	0	0	104.26	27.097	0	0	0
2012	6	70249.58	0	0	0	0	0	1	0	0	0	0	0	0	3.47	153.615	0	0	0
2012	7	70331.95	0	0	0	0	0	0	1	0	0	0	0	0	0.33	370.603	0	0	0
2012	8	70407.15	0	0	0	0	0	0	0	1	0	0	0	0	0.00	322.644	0	0	0
2012	9	70475.04	0	0	0	0	0	0	0	0	1	0	0	0	2.24	158.442	0	0	0
2012	10	70539.48	0	0	0	0	0	0	0	0	0	1	0	0	74.66	23.415	0	0	0
2012	11	70603.10	0	0	0	0	0	0	0	0	0	0	1	0	276.53	2.291	0	0	0
2012	12	70668.51	0	0	0	0	0	0	0	0	0	0	0	0	467.80	0.000	0	0	0
2013	1	70739.49	1	0	0	0	0	0	0	0	0	0	0	0	736.04	0.000	0	0	0
2013	2	70813.66	0	1	0	0	0	0	0	0	0	0	0	0	846.44	0.000	0	0	0
2013	3	70896.91	0	0	1	0	0	0	0	0	0	0	0	0	763.23	0.000	0	0	0
2013	4	70994.76	0	0	0	1	0	0	0	0	0	0	0	0	522.37	0.000	0	0	0
2013	5	71107.36	0	0	0	0	1	0	0	0	0	0	0	0	134.27	22.057	0	0	0
2013	6	71237.14	0	0	0	0	0	1	0	0	0	0	0	0	13.76	117.142	0	0	0
2013	7	71386.70	0	0	0	0	0	0	1	0	0	0	0	0	0.00	237.671	0	0	0
2013	8	71558.48	0	0	0	0	0	0	0	1	0	0	0	0	0.00	187.421	0	0	0
2013	9	71743.72	0	0	0	0	0	0	0	0	1	0	0	0	0.64	183.968	0	0	0
2013	10	71941.64	0	0	0	0	0	0	0	0	0	1	0	0	21.66	67.350	0	0	0
2013	11	72148.61	0	0	0	0	0	0	0	0	0	0	1	0	267.71	6.005	0	0	0
2013	12	72361.20	0	0	0	0	0	0	0	0	0	0	0	0	668.46	0.000	0	0	0

Indiana Michigan Power Company
Cooperative Energy Sales
Exogenous Variables

YEAR	MONTH	gdp_im	jan0717on	feb0717on	mar0717on	apr0717on	may0717on	jun0717on	jul0717on	aug0717on	sep0717on	oct0717on	nov0717on	dd0161on	bhdd5570	bcdd6570	dec1817on	jan17on
2014	1	72579.39	1	0	0	0	0	0	0	0	0	0	0	0	955.41	0.000	0	0	0
2014	2	72785.70	0	1	0	0	0	0	0	0	0	0	0	0	1173.96	0.000	0	0	0
2014	3	72987.38	0	0	1	0	0	0	0	0	0	0	0	0	1016.01	0.000	0	0	0
2014	4	73187.80	0	0	0	1	0	0	0	0	0	0	0	0	524.45	0.000	0	0	0
2014	5	73376.39	0	0	0	0	1	0	0	0	0	0	0	0	128.47	15.561	0	0	0
2014	6	73549.80	0	0	0	0	0	1	0	0	0	0	0	0	26.03	119.646	0	0	0
2014	7	73704.51	0	0	0	0	0	0	1	0	0	0	0	0	0.00	223.779	0	0	0
2014	8	73841.75	0	0	0	0	0	0	0	1	0	0	0	0	0.00	143.601	0	0	0
2014	9	73958.65	0	0	0	0	0	0	0	0	1	0	0	0	1.67	179.452	0	0	0
2014	10	74059.24	0	0	0	0	0	0	0	0	0	1	0	0	46.68	18.752	0	0	0
2014	11	74145.50	0	0	0	0	0	0	0	0	0	0	1	0	283.93	0.360	0	0	0
2014	12	74219.07	0	0	0	0	0	0	0	0	0	0	0	0	669.60	0.000	0	0	0
2015	1	74282.81	1	0	0	0	0	0	0	0	0	0	0	0	832.76	0.000	0	0	0
2015	2	74334.88	0	1	0	0	0	0	0	0	0	0	0	0	1002.44	0.000	0	0	0
2015	3	74380.06	0	0	1	0	0	0	0	0	0	0	0	0	1039.32	0.000	0	0	0
2015	4	74421.45	0	0	0	1	0	0	0	0	0	0	0	0	429.08	0.000	0	0	0
2015	5	74459.13	0	0	0	0	1	0	0	0	0	0	0	0	113.38	30.664	0	0	0
2015	6	74494.91	0	0	0	0	0	1	0	0	0	0	0	0	11.49	127.042	0	0	0
2015	7	74530.58	0	0	0	0	0	0	1	0	0	0	0	0	0.08	166.165	0	0	0
2015	8	74568.29	0	0	0	0	0	0	0	1	0	0	0	0	0.00	232.173	0	0	0
2015	9	74608.07	0	0	0	0	0	0	0	0	1	0	0	0	0.00	181.628	0	0	0
2015	10	74651.77	0	0	0	0	0	0	0	0	0	1	0	0	21.81	60.166	0	0	0
2015	11	74700.57	0	0	0	0	0	0	0	0	0	0	1	0	140.82	1.587	0	0	0
2015	12	74755.73	0	0	0	0	0	0	0	0	0	0	0	0	394.07	0.000	0	0	0
2016	1	74819.53	1	0	0	0	0	0	0	0	0	0	0	1	597.23	0.000	0	0	0
2016	2	74889.86	0	1	0	0	0	0	0	0	0	0	0	1	829.99	0.000	0	0	0
2016	3	74969.97	0	0	1	0	0	0	0	0	0	0	0	1	567.38	0.000	0	0	0
2016	4	75062.44	0	0	0	1	0	0	0	0	0	0	0	1	306.12	0.000	0	0	0
2016	5	75167.39	0	0	0	0	1	0	0	0	0	0	0	1	123.43	1.849	0	0	0
2016	6	75285.90	0	0	0	0	0	1	0	0	0	0	0	1	21.81	134.029	0	0	0
2016	7	75419.24	0	0	0	0	0	0	1	0	0	0	0	1	0.00	224.924	0	0	0
2016	8	75569.74	0	0	0	0	0	0	0	1	0	0	0	1	0.00	332.380	0	0	0
2016	9	75731.14	0	0	0	0	0	0	0	0	1	0	0	1	0.00	249.976	0	0	0
2016	10	75904.35	0	0	0	0	0	0	0	0	0	1	0	1	7.45	97.539	0	0	0
2016	11	76087.73	0	0	0	0	0	0	0	0	0	0	1	1	122.21	16.412	0	0	0
2016	12	76279.90	0	0	0	0	0	0	0	0	0	0	0	1	543.87	0.655	0	0	0
2017	1	76482.59	1	0	0	0	0	0	0	0	0	0	0	1	805.30	0.000	0	0	0
2017	2	76680.91	0	1	0	0	0	0	0	0	0	0	0	1	615.97	0.000	0	0	0
2017	3	76883.27	0	0	1	0	0	0	0	0	0	0	0	1	470.74	0.000	0	0	0
2017	4	77095.17	0	0	0	1	0	0	0	0	0	0	0	1	332.02	4.173	0	0	0
2017	5	77308.34	0	0	0	0	1	0	0	0	0	0	0	1	86.59	27.571	0	0	0
2017	6	77521.28	0	0	0	0	0	1	0	0	0	0	0	1	16.97	105.426	0	0	0

Indiana Michigan Power Company
Cooperative Energy Sales
Exogenous Variables

YEAR	MONTH	gdp_im	jan0717	feb0717	mar0717	apr0717	may0717	jun0717	jul0717	aug0717	sep0717	oct0717	nov0717	d16	bhdd55d70	bcdd65d70	d18	dec17	jan18
2017	7	77732.54	0	0	0	0	0	0	1	0	0	0	0	1	0.00	230.946	0	0	0
2017	8	77944.80	0	0	0	0	0	0	0	1	0	0	0	1	0.00	215.761	0	0	0
2017	9	78151.31	0	0	0	0	0	0	0	0	1	0	0	1	0.00	104.052	0	0	0
2017	10	78355.67	0	0	0	0	0	0	0	0	0	1	0	1	3.99	109.402	0	0	0
2017	11	78558.06	0	0	0	0	0	0	0	0	0	0	1	1	238.29	11.798	0	0	0
2017	12	78758.61	0	0	0	0	0	0	0	0	0	0	0	1	506.33	0.000	0	1	0
2018	1	78960.77	1	0	0	0	0	0	0	0	0	0	0	1	1011.93	0.000	1	0	1
2018	2	79151.73	0	1	0	0	0	0	0	0	0	0	0	1	845.60	0.000	1	0	0
2018	3	79341.43	0	0	1	0	0	0	0	0	0	0	0	1	583.35	0.000	1	0	0
2018	4	79536.43	0	0	0	1	0	0	0	0	0	0	0	1	514.84	0.425	1	0	0
2018	5	79730.42	0	0	0	0	1	0	0	0	0	0	0	1	176.70	23.612	1	0	0
2018	6	79923.58	0	0	0	0	0	1	0	0	0	0	0	1	1.87	187.339	1	0	0
2018	7	80115.85	0	0	0	0	0	0	1	0	0	0	0	1	0.00	299.899	1	0	0
2018	8	80307.71	0	0	0	0	0	0	0	1	0	0	0	1	0.00	251.580	1	0	0
2018	9	80487.58	0	0	0	0	0	0	0	0	1	0	0	1	0.00	259.663	1	0	0
2018	10	80652.83	0	0	0	0	0	0	0	0	0	1	0	1	38.89	129.398	1	0	0
2018	11	80798.03	0	0	0	0	0	0	0	0	0	0	1	1	302.93	18.277	1	0	0
2018	12	80917.29	0	0	0	0	0	0	0	0	0	0	0	1	601.89	0.000	1	0	0
2019	1	81006.32	1	0	0	0	0	0	0	0	0	0	0	1	614.13	0.000	1	0	0
2019	2	81055.83	0	1	0	0	0	0	0	0	0	0	0	1	901.60	0.000	1	0	0
2019	3	81064.79	0	0	1	0	0	0	0	0	0	0	0	1	750.78	0.000	1	0	0
2019	4	81027.22	0	0	0	1	0	0	0	0	0	0	0	1	390.24	0.000	1	0	0
2019	5	80935.66	0	0	0	0	1	0	0	0	0	0	0	1	114.51	6.251	1	0	0
2019	6	80785.09	0	0	0	0	0	1	0	0	0	0	0	1	19.24	99.748	1	0	0
2019	7	80569.92	0	0	0	0	0	0	1	0	0	0	0	1	0.00	305.266	1	0	0
2019	8	80289.58	0	0	0	0	0	0	0	1	0	0	0	1	0.00	289.885	1	0	0
2019	9	79966.66	0	0	0	0	0	0	0	0	1	0	0	1	0.00	160.946	1	0	0
2019	10	79611.27	0	0	0	0	0	0	0	0	0	1	0	1	22.53	102.170	1	0	0
2019	11	79238.12	0	0	0	0	0	0	0	0	0	0	1	1	297.95	5.956	1	0	0
2019	12	78861.52	0	0	0	0	0	0	0	0	0	0	0	1	607.70	0.000	1	0	0
2020	1	78490.10	1	0	0	0	0	0	0	0	0	0	0	1	605.26	0.000	1	0	0
2020	2	78155.54	0	1	0	0	0	0	0	0	0	0	0	1	701.28	0.000	1	0	0
2020	3	77859.98	0	0	1	0	0	0	0	0	0	0	0	1	655.79	0.000	1	0	0
2020	4	77612.78	0	0	0	1	0	0	0	0	0	0	0	1	354.86	0.000	1	0	0
2020	5	77434.43	0	0	0	0	1	0	0	0	0	0	0	1	204.78	3.845	1	0	0
2020	6	77338.55	0	0	0	0	0	1	0	0	0	0	0	1	34.79	127.696	1	0	0
2020	7	77339.56	0	0	0	0	0	0	1	0	0	0	0	1	0.00	297.919	1	0	0
2020	8	77440.92	0	0	0	0	0	0	0	1	0	0	0	1	0.00	278.218	1	0	0
2020	9	77628.98	0	0	0	0	0	0	0	0	1	0	0	1	0.80	179.763	1	0	0
2020	10	77893.71	0	0	0	0	0	0	0	0	0	1	0	1	48.01	22.810	1	0	0
2020	11	78222.83	0	0	0	0	0	0	0	0	0	0	1	1	212.98	2.324	1	0	0
2020	12	78605.47	0	0	0	0	0	0	0	0	0	0	0	1	461.60	0.916	1	0	0

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YEAR	MONTH	gdp_im	jan0n	feb0n	mar0n	apr0n	may0n	jun0n	jul0n	aug0n	sep0n	oct0n	nov0n	dd16	bhdd55d70	bcdd65d70	dd18on	dec17	jan18
2021	1	79036.95	1	0	0	0	0	0	0	0	0	0	0	1	689.156	0.000	1	0	0
2021	2	79476.39	0	1	0	0	0	0	0	0	0	0	0	1	885.309	0.000	1	0	0
2021	3	79933.83	0	0	1	0	0	0	0	0	0	0	0	1	703.560	0.221	1	0	0
2021	4	80414.16	0	0	0	1	0	0	0	0	0	0	0	1	389.426	2.548	1	0	0
2021	5	80890.75	0	0	0	0	1	0	0	0	0	0	0	1	124.656	18.512	1	0	0
2021	6	81352.20	0	0	0	0	0	1	0	0	0	0	0	1	17.782	106.676	1	0	0
2021	7	81787.28	0	0	0	0	0	0	1	0	0	0	0	1	0.189	243.038	1	0	0
2021	8	82197.85	0	0	0	0	0	0	0	1	0	0	0	1	0.000	254.533	1	0	0
2021	9	82572.80	0	0	0	0	0	0	0	0	1	0	0	1	0.696	176.959	1	0	0
2021	10	82921.58	0	0	0	0	0	0	0	0	0	1	0	1	41.135	54.558	1	0	0
2021	11	83247.26	0	0	0	0	0	0	0	0	0	0	1	1	232.738	4.977	1	0	0
2021	12	83552.42	0	0	0	0	0	0	0	0	0	0	0	1	545.497	0.063	1	0	0
2022	1	83844.59	1	0	0	0	0	0	0	0	0	0	0	1	792.471	0.000	1	0	0
2022	2	84108.50	0	1	0	0	0	0	0	0	0	0	0	1	885.309	0.000	1	0	0
2022	3	84360.93	0	0	1	0	0	0	0	0	0	0	0	1	703.560	0.221	1	0	0
2022	4	84612.86	0	0	0	1	0	0	0	0	0	0	0	1	389.426	2.548	1	0	0
2022	5	84858.20	0	0	0	0	1	0	0	0	0	0	0	1	124.656	18.512	1	0	0
2022	6	85099.81	0	0	0	0	0	1	0	0	0	0	0	1	17.782	106.676	1	0	0
2022	7	85340.32	0	0	0	0	0	0	1	0	0	0	0	1	0.189	243.038	1	0	0
2022	8	85584.82	0	0	0	0	0	0	0	1	0	0	0	1	0.000	254.533	1	0	0
2022	9	85824.84	0	0	0	0	0	0	0	0	1	0	0	1	0.696	176.959	1	0	0
2022	10	86063.55	0	0	0	0	0	0	0	0	0	1	0	1	41.135	54.558	1	0	0
2022	11	86300.24	0	0	0	0	0	0	0	0	0	0	1	1	232.738	4.977	1	0	0
2022	12	86534.12	0	0	0	0	0	0	0	0	0	0	0	1	545.497	0.063	1	0	0
2023	1	86768.21	1	0	0	0	0	0	0	0	0	0	0	1	792.471	0.000	1	0	0
2023	2	86986.91	0	1	0	0	0	0	0	0	0	0	0	1	885.309	0.000	1	0	0
2023	3	87200.82	0	0	1	0	0	0	0	0	0	0	0	1	703.560	0.221	1	0	0
2023	4	87416.38	0	0	0	1	0	0	0	0	0	0	0	1	389.426	2.548	1	0	0
2023	5	87625.42	0	0	0	0	1	0	0	0	0	0	0	1	124.656	18.512	1	0	0
2023	6	87827.25	0	0	0	0	0	1	0	0	0	0	0	1	17.782	106.676	1	0	0
2023	7	88021.09	0	0	0	0	0	0	1	0	0	0	0	1	0.189	243.038	1	0	0
2023	8	88209.93	0	0	0	0	0	0	0	1	0	0	0	1	0.000	254.533	1	0	0
2023	9	88388.31	0	0	0	0	0	0	0	0	1	0	0	1	0.696	176.959	1	0	0
2023	10	88559.98	0	0	0	0	0	0	0	0	0	1	0	1	41.135	54.558	1	0	0
2023	11	88725.68	0	0	0	0	0	0	0	0	0	0	1	1	232.738	4.977	1	0	0
2023	12	88886.07	0	0	0	0	0	0	0	0	0	0	0	1	545.497	0.063	1	0	0
2024	1	89044.39	1	0	0	0	0	0	0	0	0	0	0	1	792.471	0.000	1	0	0
2024	2	89193.78	0	1	0	0	0	0	0	0	0	0	0	1	885.309	0.000	1	0	0
2024	3	89340.03	0	0	1	0	0	0	0	0	0	0	0	1	703.560	0.221	1	0	0
2024	4	89486.24	0	0	0	1	0	0	0	0	0	0	0	1	389.426	2.548	1	0	0
2024	5	89630.60	0	0	0	0	1	0	0	0	0	0	0	1	124.656	18.512	1	0	0
2024	6	89773.82	0	0	0	0	0	1	0	0	0	0	0	1	17.782	106.676	1	0	0

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YEAR	MONTH	gdp_im	jan0n	feb0n	mar0n	apr0n	may0n	jun0n	jul0n	aug0n	sep0n	oct0n	nov0n	d16	bhdd55d70	bcdd65d70	d18on	dec17	jan18
2024	7	89916.56	0	0	0	0	0	0	1	0	0	0	0	1	0.189	243.038	1	0	0
2024	8	90061.39	0	0	0	0	0	0	0	1	0	0	0	1	0.000	254.533	1	0	0
2024	9	90203.45	0	0	0	0	0	0	0	0	1	0	0	1	0.696	176.959	1	0	0
2024	10	90344.82	0	0	0	0	0	0	0	0	0	1	0	1	41.135	54.558	1	0	0
2024	11	90485.29	0	0	0	0	0	0	0	0	0	0	1	1	232.738	4.977	1	0	0
2024	12	90624.60	0	0	0	0	0	0	0	0	0	0	0	1	545.497	0.063	1	0	0
2025	1	90764.78	1	0	0	0	0	0	0	0	0	0	0	1	792.471	0.000	1	0	0
2025	2	90896.63	0	1	0	0	0	0	0	0	0	0	0	1	885.309	0.000	1	0	0
2025	3	91026.72	0	0	1	0	0	0	0	0	0	0	0	1	703.560	0.221	1	0	0
2025	4	91159.18	0	0	0	1	0	0	0	0	0	0	0	1	389.426	2.548	1	0	0
2025	5	91289.30	0	0	0	0	1	0	0	0	0	0	0	1	124.656	18.512	1	0	0
2025	6	91416.88	0	0	0	0	0	1	0	0	0	0	0	1	17.782	106.676	1	0	0
2025	7	91541.68	0	0	0	0	0	0	1	0	0	0	0	1	0.189	243.038	1	0	0
2025	8	91665.78	0	0	0	0	0	0	0	1	0	0	0	1	0.000	254.533	1	0	0
2025	9	91785.63	0	0	0	0	0	0	0	0	1	0	0	1	0.696	176.959	1	0	0
2025	10	91903.69	0	0	0	0	0	0	0	0	0	1	0	1	41.135	54.558	1	0	0
2025	11	92020.46	0	0	0	0	0	0	0	0	0	0	1	1	232.738	4.977	1	0	0
2025	12	92136.38	0	0	0	0	0	0	0	0	0	0	0	1	545.497	0.063	1	0	0
2026	1	92253.82	1	0	0	0	0	0	0	0	0	0	0	1	792.471	0.000	1	0	0
2026	2	92365.67	0	1	0	0	0	0	0	0	0	0	0	1	885.309	0.000	1	0	0
2026	3	92478.03	0	0	1	0	0	0	0	0	0	0	0	1	703.560	0.221	1	0	0
2026	4	92595.18	0	0	0	1	0	0	0	0	0	0	0	1	389.426	2.548	1	0	0
2026	5	92713.80	0	0	0	0	1	0	0	0	0	0	0	1	124.656	18.512	1	0	0
2026	6	92834.35	0	0	0	0	0	1	0	0	0	0	0	1	17.782	106.676	1	0	0
2026	7	92957.28	0	0	0	0	0	0	1	0	0	0	0	1	0.189	243.038	1	0	0
2026	8	93084.93	0	0	0	0	0	0	0	1	0	0	0	1	0.000	254.533	1	0	0
2026	9	93213.21	0	0	0	0	0	0	0	0	1	0	0	1	0.696	176.959	1	0	0
2026	10	93344.20	0	0	0	0	0	0	0	0	0	1	0	1	41.135	54.558	1	0	0
2026	11	93477.91	0	0	0	0	0	0	0	0	0	0	1	1	232.738	4.977	1	0	0
2026	12	93614.37	0	0	0	0	0	0	0	0	0	0	0	1	545.497	0.063	1	0	0
2027	1	93755.89	1	0	0	0	0	0	0	0	0	0	0	1	792.471	0.000	1	0	0
2027	2	93893.21	0	1	0	0	0	0	0	0	0	0	0	1	885.309	0.000	1	0	0
2027	3	94033.20	0	0	1	0	0	0	0	0	0	0	0	1	703.560	0.221	1	0	0
2027	4	94180.69	0	0	0	1	0	0	0	0	0	0	0	1	389.426	2.548	1	0	0
2027	5	94331.03	0	0	0	0	1	0	0	0	0	0	0	1	124.656	18.512	1	0	0
2027	6	94484.24	0	0	0	0	0	1	0	0	0	0	0	1	17.782	106.676	1	0	0
2027	7	94640.33	0	0	0	0	0	0	1	0	0	0	0	1	0.189	243.038	1	0	0
2027	8	94801.75	0	0	0	0	0	0	0	1	0	0	0	1	0.000	254.533	1	0	0
2027	9	94962.94	0	0	0	0	0	0	0	0	1	0	0	1	0.696	176.959	1	0	0
2027	10	95126.13	0	0	0	0	0	0	0	0	0	1	0	1	41.135	54.558	1	0	0
2027	11	95290.95	0	0	0	0	0	0	0	0	0	0	1	1	232.738	4.977	1	0	0
2027	12	95457.03	0	0	0	0	0	0	0	0	0	0	0	1	545.497	0.063	1	0	0

YEAR	MONTH	gdp_im	jan0	feb0	mar0	apr0	may0	jun0	jul0	aug0	sep0	oct0	nov0	d16	bhdd55d70	bcdd65d70	d18on	dec17	jan18
2028	1	95626.74	1	0	0	0	0	0	0	0	0	0	0	1	792.471	0.000	1	0	0
2028	2	95791.49	0	1	0	0	0	0	0	0	0	0	0	1	885.309	0.000	1	0	0
2028	3	95956.40	0	0	1	0	0	0	0	0	0	0	0	1	703.560	0.221	1	0	0
2028	4	96123.86	0	0	0	1	0	0	0	0	0	0	0	1	389.426	2.548	1	0	0
2028	5	96290.74	0	0	0	0	1	0	0	0	0	0	0	1	124.656	18.512	1	0	0
2028	6	96456.70	0	0	0	0	0	1	0	0	0	0	0	1	17.782	106.676	1	0	0
2028	7	96621.37	0	0	0	0	0	0	1	0	0	0	0	1	0.189	243.038	1	0	0
2028	8	96787.29	0	0	0	0	0	0	0	1	0	0	0	1	0.000	254.533	1	0	0
2028	9	96949.23	0	0	0	0	0	0	0	0	1	0	0	1	0.696	176.959	1	0	0
2028	10	97109.97	0	0	0	0	0	0	0	0	0	1	0	1	41.135	54.558	1	0	0
2028	11	97269.65	0	0	0	0	0	0	0	0	0	0	1	1	232.738	4.977	1	0	0
2028	12	97428.39	0	0	0	0	0	0	0	0	0	0	0	1	545.497	0.063	1	0	0
2029	1	97588.90	1	0	0	0	0	0	0	0	0	0	0	1	792.471	0.000	1	0	0
2029	2	97740.99	0	1	0	0	0	0	0	0	0	0	0	1	885.309	0.000	1	0	0
2029	3	97892.53	0	0	1	0	0	0	0	0	0	0	0	1	703.560	0.221	1	0	0
2029	4	98048.77	0	0	0	1	0	0	0	0	0	0	0	1	389.426	2.548	1	0	0
2029	5	98204.68	0	0	0	0	1	0	0	0	0	0	0	1	124.656	18.512	1	0	0
2029	6	98360.39	0	0	0	0	0	1	0	0	0	0	0	1	17.782	106.676	1	0	0
2029	7	98516.01	0	0	0	0	0	0	1	0	0	0	0	1	0.189	243.038	1	0	0
2029	8	98674.15	0	0	0	0	0	0	0	1	0	0	0	1	0.000	254.533	1	0	0
2029	9	98829.70	0	0	0	0	0	0	0	0	1	0	0	1	0.696	176.959	1	0	0
2029	10	98985.21	0	0	0	0	0	0	0	0	0	1	0	1	41.135	54.558	1	0	0
2029	11	99140.64	0	0	0	0	0	0	0	0	0	0	1	1	232.738	4.977	1	0	0
2029	12	99296.00	0	0	0	0	0	0	0	0	0	0	0	1	545.497	0.063	1	0	0
2030	1	99453.80	1	0	0	0	0	0	0	0	0	0	0	1	792.471	0.000	1	0	0
2030	2	99603.86	0	1	0	0	0	0	0	0	0	0	0	1	885.309	0.000	1	0	0
2030	3	99753.81	0	0	1	0	0	0	0	0	0	0	0	1	703.560	0.221	1	0	0
2030	4	99908.69	0	0	0	1	0	0	0	0	0	0	0	1	389.426	2.548	1	0	0
2030	5	100063.43	0	0	0	0	1	0	0	0	0	0	0	1	124.656	18.512	1	0	0
2030	6	100217.99	0	0	0	0	0	1	0	0	0	0	0	1	17.782	106.676	1	0	0
2030	7	100372.37	0	0	0	0	0	0	1	0	0	0	0	1	0.189	243.038	1	0	0
2030	8	100529.10	0	0	0	0	0	0	0	1	0	0	0	1	0.000	254.533	1	0	0
2030	9	100683.16	0	0	0	0	0	0	0	0	1	0	0	1	0.696	176.959	1	0	0
2030	10	100837.09	0	0	0	0	0	0	0	0	0	1	0	1	41.135	54.558	1	0	0
2030	11	100990.93	0	0	0	0	0	0	0	0	0	0	1	1	232.738	4.977	1	0	0
2030	12	101144.70	0	0	0	0	0	0	0	0	0	0	0	1	545.497	0.063	1	0	0
2031	1	101300.97	1	0	0	0	0	0	0	0	0	0	0	1	792.471	0.000	1	0	0
2031	2	101449.66	0	1	0	0	0	0	0	0	0	0	0	1	885.309	0.000	1	0	0
2031	3	101598.38	0	0	1	0	0	0	0	0	0	0	0	1	703.560	0.221	1	0	0
2031	4	101752.19	0	0	0	1	0	0	0	0	0	0	0	1	389.426	2.548	1	0	0
2031	5	101906.09	0	0	0	0	1	0	0	0	0	0	0	1	124.656	18.512	1	0	0
2031	6	102060.09	0	0	0	0	0	1	0	0	0	0	0	1	17.782	106.676	1	0	0

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YEAR	MONTH	gdp_im	jan0	feb0	mar0	apr0	may0	jun0	jul0	aug0	sep0	oct0	nov0	d16	bhdd55d70	bcdd65d70	d18on	dec17	jan18
2031	7	102214.23	0	0	0	0	0	0	1	0	0	0	0	1	0.189	243.038	1	0	0
2031	8	102371.06	0	0	0	0	0	0	0	1	0	0	0	1	0.000	254.533	1	0	0
2031	9	102525.52	0	0	0	0	0	0	0	0	1	0	0	1	0.696	176.959	1	0	0
2031	10	102680.17	0	0	0	0	0	0	0	0	0	1	0	1	41.135	54.558	1	0	0
2031	11	102835.00	0	0	0	0	0	0	0	0	0	0	1	1	232.738	4.977	1	0	0
2031	12	102990.03	0	0	0	0	0	0	0	0	0	0	0	1	545.497	0.063	1	0	0
2032	1	103147.82	1	0	0	0	0	0	0	0	0	0	0	1	792.471	0.000	1	0	0
2032	2	103300.73	0	1	0	0	0	0	0	0	0	0	0	1	885.309	0.000	1	0	0
2032	3	103453.86	0	0	1	0	0	0	0	0	0	0	0	1	703.560	0.221	1	0	0
2032	4	103609.77	0	0	0	1	0	0	0	0	0	0	0	1	389.426	2.548	1	0	0
2032	5	103765.93	0	0	0	0	1	0	0	0	0	0	0	1	124.656	18.512	1	0	0
2032	6	103922.35	0	0	0	0	0	1	0	0	0	0	0	1	17.782	106.676	1	0	0
2032	7	104079.04	0	0	0	0	0	0	1	0	0	0	0	1	0.189	243.038	1	0	0
2032	8	104238.60	0	0	0	0	0	0	0	1	0	0	0	1	0.000	254.533	1	0	0
2032	9	104395.94	0	0	0	0	0	0	0	0	1	0	0	1	0.696	176.959	1	0	0
2032	10	104553.70	0	0	0	0	0	0	0	0	0	1	0	1	41.135	54.558	1	0	0
2032	11	104711.93	0	0	0	0	0	0	0	0	0	0	1	1	232.738	4.977	1	0	0
2032	12	104870.69	0	0	0	0	0	0	0	0	0	0	0	1	545.497	0.063	1	0	0
2033	1	105032.65	1	0	0	0	0	0	0	0	0	0	0	1	792.471	0.000	1	0	0
2033	2	105187.39	0	1	0	0	0	0	0	0	0	0	0	1	885.309	0.000	1	0	0
2033	3	105342.79	0	0	1	0	0	0	0	0	0	0	0	1	703.560	0.221	1	0	0
2033	4	105504.20	0	0	0	1	0	0	0	0	0	0	0	1	389.426	2.548	1	0	0
2033	5	105666.42	0	0	0	0	1	0	0	0	0	0	0	1	124.656	18.512	1	0	0
2033	6	105829.52	0	0	0	0	0	1	0	0	0	0	0	1	17.782	106.676	1	0	0
2033	7	105993.53	0	0	0	0	0	0	1	0	0	0	0	1	0.189	243.038	1	0	0
2033	8	106161.16	0	0	0	0	0	0	0	1	0	0	0	1	0.000	254.533	1	0	0
2033	9	106326.89	0	0	0	0	0	0	0	0	1	0	0	1	0.696	176.959	1	0	0
2033	10	106493.31	0	0	0	0	0	0	0	0	0	1	0	1	41.135	54.558	1	0	0
2033	11	106660.31	0	0	0	0	0	0	0	0	0	0	1	1	232.738	4.977	1	0	0
2033	12	106827.79	0	0	0	0	0	0	0	0	0	0	0	1	545.497	0.063	1	0	0
2034	1	106998.38	1	0	0	0	0	0	0	0	0	0	0	1	792.471	0.000	1	0	0
2034	2	107160.96	0	1	0	0	0	0	0	0	0	0	0	1	885.309	0.000	1	0	0
2034	3	107323.69	0	0	1	0	0	0	0	0	0	0	0	1	703.560	0.221	1	0	0
2034	4	107491.97	0	0	0	1	0	0	0	0	0	0	0	1	389.426	2.548	1	0	0
2034	5	107660.19	0	0	0	0	1	0	0	0	0	0	0	1	124.656	18.512	1	0	0
2034	6	107828.24	0	0	0	0	0	1	0	0	0	0	0	1	17.782	106.676	1	0	0
2034	7	107996.01	0	0	0	0	0	0	1	0	0	0	0	1	0.189	243.038	1	0	0
2034	8	108166.22	0	0	0	0	0	0	0	1	0	0	0	1	0.000	254.533	1	0	0
2034	9	108333.41	0	0	0	0	0	0	0	0	1	0	0	1	0.696	176.959	1	0	0
2034	10	108500.38	0	0	0	0	0	0	0	0	0	1	0	1	41.135	54.558	1	0	0
2034	11	108667.18	0	0	0	0	0	0	0	0	0	0	1	1	232.738	4.977	1	0	0
2034	12	108833.85	0	0	0	0	0	0	0	0	0	0	0	1	545.497	0.063	1	0	0

Indiana Michigan Power Company
Cooperative Energy Sales
Exogenous Variables

YEAR	MONTH	gdp_im	jan0	feb0	mar0	apr0	may0	jun0	jul0	aug0	sep0	oct0	nov0	d16	bhdd55d70	bcdd65d70	d18on	dec17	jan18
2035	1	109003.18	1	0	0	0	0	0	0	0	0	0	0	1	792.471	0.000	1	0	0
2035	2	109164.29	0	1	0	0	0	0	0	0	0	0	0	1	885.309	0.000	1	0	0
2035	3	109325.42	0	0	1	0	0	0	0	0	0	0	0	1	703.560	0.221	1	0	0
2035	4	109492.08	0	0	0	1	0	0	0	0	0	0	0	1	389.426	2.548	1	0	0
2035	5	109658.85	0	0	0	0	1	0	0	0	0	0	0	1	124.656	18.512	1	0	0
2035	6	109825.79	0	0	0	0	0	1	0	0	0	0	0	1	17.782	106.676	1	0	0
2035	7	109992.93	0	0	0	0	0	0	1	0	0	0	0	1	0.189	243.038	1	0	0
2035	8	110163.00	0	0	0	0	0	0	0	1	0	0	0	1	0.000	254.533	1	0	0
2035	9	110330.42	0	0	0	0	0	0	0	0	1	0	0	1	0.696	176.959	1	0	0
2035	10	110497.82	0	0	0	0	0	0	0	0	0	1	0	1	41.135	54.558	1	0	0
2035	11	110665.11	0	0	0	0	0	0	0	0	0	0	1	1	232.738	4.977	1	0	0
2035	12	110832.18	0	0	0	0	0	0	0	0	0	0	0	1	545.497	0.063	1	0	0
2036	1	111001.66	1	0	0	0	0	0	0	0	0	0	0	1	792.471	0.000	1	0	0
2036	2	111165.27	0	1	0	0	0	0	0	0	0	0	0	1	885.309	0.000	1	0	0
2036	3	111328.37	0	0	1	0	0	0	0	0	0	0	0	1	703.560	0.221	1	0	0
2036	4	111493.58	0	0	0	1	0	0	0	0	0	0	0	1	389.426	2.548	1	0	0
2036	5	111658.06	0	0	0	0	1	0	0	0	0	0	0	1	124.656	18.512	1	0	0
2036	6	111821.71	0	0	0	0	0	1	0	0	0	0	0	1	17.782	106.676	1	0	0
2036	7	111984.45	0	0	0	0	0	0	1	0	0	0	0	1	0.189	243.038	1	0	0
2036	8	112148.93	0	0	0	0	0	0	0	1	0	0	0	1	0.000	254.533	1	0	0
2036	9	112309.93	0	0	0	0	0	0	0	0	1	0	0	1	0.696	176.959	1	0	0
2036	10	112470.24	0	0	0	0	0	0	0	0	0	1	0	1	41.135	54.558	1	0	0
2036	11	112629.97	0	0	0	0	0	0	0	0	0	0	1	1	232.738	4.977	1	0	0
2036	12	112789.24	0	0	0	0	0	0	0	0	0	0	0	1	545.497	0.063	1	0	0
2037	1	112950.77	1	0	0	0	0	0	0	0	0	0	0	1	792.471	0.000	1	0	0
2037	2	113104.25	0	1	0	0	0	0	0	0	0	0	0	1	885.309	0.000	1	0	0
2037	3	113257.61	0	0	1	0	0	0	0	0	0	0	0	1	703.560	0.221	1	0	0
2037	4	113416.17	0	0	0	1	0	0	0	0	0	0	0	1	389.426	2.548	1	0	0
2037	5	113574.83	0	0	0	0	1	0	0	0	0	0	0	1	124.656	18.512	1	0	0
2037	6	113733.70	0	0	0	0	0	1	0	0	0	0	0	1	17.782	106.676	1	0	0
2037	7	113892.90	0	0	0	0	0	0	1	0	0	0	0	1	0.189	243.038	1	0	0
2037	8	114055.10	0	0	0	0	0	0	0	1	0	0	0	1	0.000	254.533	1	0	0
2037	9	114215.05	0	0	0	0	0	0	0	0	1	0	0	1	0.696	176.959	1	0	0
2037	10	114375.35	0	0	0	0	0	0	0	0	0	1	0	1	41.135	54.558	1	0	0
2037	11	114535.98	0	0	0	0	0	0	0	0	0	0	1	1	232.738	4.977	1	0	0
2037	12	114696.91	0	0	0	0	0	0	0	0	0	0	0	1	545.497	0.063	1	0	0
2038	1	114860.78	1	0	0	0	0	0	0	0	0	0	0	1	792.471	0.000	1	0	0
2038	2	115016.98	0	1	0	0	0	0	0	0	0	0	0	1	885.309	0.000	1	0	0
2038	3	115173.41	0	0	1	0	0	0	0	0	0	0	0	1	703.560	0.221	1	0	0
2038	4	115335.38	0	0	0	1	0	0	0	0	0	0	0	1	389.426	2.548	1	0	0
2038	5	115497.56	0	0	0	0	1	0	0	0	0	0	0	1	124.656	18.512	1	0	0
2038	6	115659.93	0	0	0	0	0	1	0	0	0	0	0	1	17.782	106.676	1	0	0

YEAR	MONTH	gdp_im	jandd	febdd	mardd	aprdd	maydd	jundd	juldd	augdd	sepdd	octdd	novdd	d16	bhdd55d70	bcdd65d70	d18on	dec17	jan18
2038	7	115822.49	0	0	0	0	0	0	1	0	0	0	0	1	0.189	243.038	1	0	0
2038	8	115987.92	0	0	0	0	0	0	0	1	0	0	0	1	0.000	254.533	1	0	0
2038	9	116150.95	0	0	0	0	0	0	0	0	1	0	0	1	0.696	176.959	1	0	0
2038	10	116314.33	0	0	0	0	0	0	0	0	0	1	0	1	41.135	54.558	1	0	0
2038	11	116478.11	0	0	0	0	0	0	0	0	0	0	1	1	232.738	4.977	1	0	0
2038	12	116642.38	0	0	0	0	0	0	0	0	0	0	0	1	545.497	0.063	1	0	0
2039	1	116809.91	1	0	0	0	0	0	0	0	0	0	0	1	792.471	0.000	1	0	0
2039	2	116969.93	0	1	0	0	0	0	0	0	0	0	0	1	885.309	0.000	1	0	0
2039	3	117130.61	0	0	1	0	0	0	0	0	0	0	0	1	703.560	0.221	1	0	0
2039	4	117297.48	0	0	0	1	0	0	0	0	0	0	0	1	389.426	2.548	1	0	0
2039	5	117465.19	0	0	0	0	1	0	0	0	0	0	0	1	124.656	18.512	1	0	0
2039	6	117633.80	0	0	0	0	0	1	0	0	0	0	0	1	17.782	106.676	1	0	0
2039	7	117803.39	0	0	0	0	0	0	1	0	0	0	0	1	0.189	243.038	1	0	0
2039	8	117976.71	0	0	0	0	0	0	0	1	0	0	0	1	0.000	254.533	1	0	0
2039	9	118148.07	0	0	0	0	0	0	0	0	1	0	0	1	0.696	176.959	1	0	0
2039	10	118320.11	0	0	0	0	0	0	0	0	0	1	0	1	41.135	54.558	1	0	0
2039	11	118492.69	0	0	0	0	0	0	0	0	0	0	1	1	232.738	4.977	1	0	0
2039	12	118665.69	0	0	0	0	0	0	0	0	0	0	0	1	545.497	0.063	1	0	0
2040	1	118841.80	1	0	0	0	0	0	0	0	0	0	0	1	792.471	0.000	1	0	0
2040	2	119012.38	0	1	0	0	0	0	0	0	0	0	0	1	885.309	0.000	1	0	0
2040	3	119182.97	0	0	1	0	0	0	0	0	0	0	0	1	703.560	0.221	1	0	0
2040	4	119356.27	0	0	0	1	0	0	0	0	0	0	0	1	389.426	2.548	1	0	0
2040	5	119529.32	0	0	0	0	1	0	0	0	0	0	0	1	124.656	18.512	1	0	0
2040	6	119701.98	0	0	0	0	0	1	0	0	0	0	0	1	17.782	106.676	1	0	0
2040	7	119874.11	0	0	0	0	0	0	1	0	0	0	0	1	0.189	243.038	1	0	0
2040	8	120048.48	0	0	0	0	0	0	0	1	0	0	0	1	0.000	254.533	1	0	0
2040	9	120219.52	0	0	0	0	0	0	0	0	1	0	0	1	0.696	176.959	1	0	0
2040	10	120390.06	0	0	0	0	0	0	0	0	0	1	0	1	41.135	54.558	1	0	0
2040	11	120560.18	0	0	0	0	0	0	0	0	0	0	1	1	232.738	4.977	1	0	0
2040	12	120729.90	0	0	0	0	0	0	0	0	0	0	0	1	545.497	0.063	1	0	0
2041	1	120902.05	1	0	0	0	0	0	0	0	0	0	0	1	792.471	0.000	1	0	0
2041	2	121065.59	0	1	0	0	0	0	0	0	0	0	0	1	885.309	0.000	1	0	0
2041	3	121228.89	0	0	1	0	0	0	0	0	0	0	0	1	703.560	0.221	1	0	0
2041	4	121397.53	0	0	0	1	0	0	0	0	0	0	0	1	389.426	2.548	1	0	0
2041	5	121566.00	0	0	0	0	1	0	0	0	0	0	0	1	124.656	18.512	1	0	0
2041	6	121734.37	0	0	0	0	0	1	0	0	0	0	0	1	17.782	106.676	1	0	0
2041	7	121902.66	0	0	0	0	0	0	1	0	0	0	0	1	0.189	243.038	1	0	0
2041	8	122073.66	0	0	0	0	0	0	0	1	0	0	0	1	0.000	254.533	1	0	0
2041	9	122241.87	0	0	0	0	0	0	0	0	1	0	0	1	0.696	176.959	1	0	0
2041	10	122410.05	0	0	0	0	0	0	0	0	0	1	0	1	41.135	54.558	1	0	0
2041	11	122578.19	0	0	0	0	0	0	0	0	0	0	1	1	232.738	4.977	1	0	0
2041	12	122746.31	0	0	0	0	0	0	0	0	0	0	0	1	545.497	0.063	1	0	0

Indiana Michigan Power Company
Cooperative Energy Sales
Exogenous Variables

YEAR	MONTH	gdp_im	jan0	feb0	mar0	apr0	may0	jun0	jul0	aug0	sep0	oct0	nov0	d16	bhdd55d70	bcdd65d70	d18on	dec17	jan18
2042	1	122917.16	1	0	0	0	0	0	0	0	0	0	0	1	792.471	0.000	1	0	0
2042	2	123079.72	0	1	0	0	0	0	0	0	0	0	0	1	885.309	0.000	1	0	0
2042	3	123242.27	0	0	1	0	0	0	0	0	0	0	0	1	703.560	0.221	1	0	0
2042	4	123410.31	0	0	0	1	0	0	0	0	0	0	0	1	389.426	2.548	1	0	0
2042	5	123578.34	0	0	0	0	1	0	0	0	0	0	0	1	124.656	18.512	1	0	0
2042	6	123746.37	0	0	0	0	0	1	0	0	0	0	0	1	17.782	106.676	1	0	0
2042	7	123914.40	0	0	0	0	0	0	1	0	0	0	0	1	0.189	243.038	1	0	0
2042	8	124085.23	0	0	0	0	0	0	0	1	0	0	0	1	0.000	254.533	1	0	0
2042	9	124253.45	0	0	0	0	0	0	0	0	1	0	0	1	0.696	176.959	1	0	0
2042	10	124421.93	0	0	0	0	0	0	0	0	0	1	0	1	41.135	54.558	1	0	0
2042	11	124590.74	0	0	0	0	0	0	0	0	0	0	1	1	232.738	4.977	1	0	0
2042	12	124760.01	0	0	0	0	0	0	0	0	0	0	0	1	545.497	0.063	1	0	0
2043	1	124932.63	1	0	0	0	0	0	0	0	0	0	0	1	792.471	0.000	1	0	0
2043	2	125097.50	0	1	0	0	0	0	0	0	0	0	0	1	885.309	0.000	1	0	0
2043	3	125263.08	0	0	1	0	0	0	0	0	0	0	0	1	703.560	0.221	1	0	0
2043	4	125435.11	0	0	0	1	0	0	0	0	0	0	0	1	389.426	2.548	1	0	0
2043	5	125608.08	0	0	0	0	1	0	0	0	0	0	0	1	124.656	18.512	1	0	0
2043	6	125782.10	0	0	0	0	0	1	0	0	0	0	0	1	17.782	106.676	1	0	0
2043	7	125957.26	0	0	0	0	0	0	1	0	0	0	0	1	0.189	243.038	1	0	0
2043	8	126136.46	0	0	0	0	0	0	0	1	0	0	0	1	0.000	254.533	1	0	0
2043	9	126313.80	0	0	0	0	0	0	0	0	1	0	0	1	0.696	176.959	1	0	0
2043	10	126492.05	0	0	0	0	0	0	0	0	0	1	0	1	41.135	54.558	1	0	0
2043	11	126671.09	0	0	0	0	0	0	0	0	0	0	1	1	232.738	4.977	1	0	0
2043	12	126850.79	0	0	0	0	0	0	0	0	0	0	0	1	545.497	0.063	1	0	0
2044	1	127034.00	1	0	0	0	0	0	0	0	0	0	0	1	792.471	0.000	1	0	0
2044	2	127211.72	0	1	0	0	0	0	0	0	0	0	0	1	885.309	0.000	1	0	0
2044	3	127389.74	0	0	1	0	0	0	0	0	0	0	0	1	703.560	0.221	1	0	0
2044	4	127570.92	0	0	0	1	0	0	0	0	0	0	0	1	389.426	2.548	1	0	0
2044	5	127752.17	0	0	0	0	1	0	0	0	0	0	0	1	124.656	18.512	1	0	0
2044	6	127933.37	0	0	0	0	0	1	0	0	0	0	0	1	17.782	106.676	1	0	0
2044	7	128114.41	0	0	0	0	0	0	1	0	0	0	0	1	0.189	243.038	1	0	0
2044	8	128298.23	0	0	0	0	0	0	0	1	0	0	0	1	0.000	254.533	1	0	0
2044	9	128478.95	0	0	0	0	0	0	0	0	1	0	0	1	0.696	176.959	1	0	0
2044	10	128659.62	0	0	0	0	0	0	0	0	0	1	0	1	41.135	54.558	1	0	0
2044	11	128840.30	0	0	0	0	0	0	0	0	0	0	1	1	232.738	4.977	1	0	0
2044	12	129021.06	0	0	0	0	0	0	0	0	0	0	0	1	545.497	0.063	1	0	0
2045	1	129204.94	1	0	0	0	0	0	0	0	0	0	0	1	792.471	0.000	1	0	0
2045	2	129380.12	0	1	0	0	0	0	0	0	0	0	0	1	885.309	0.000	1	0	0
2045	3	129555.58	0	0	1	0	0	0	0	0	0	0	0	1	703.560	0.221	1	0	0
2045	4	129737.33	0	0	0	1	0	0	0	0	0	0	0	1	389.426	2.548	1	0	0
2045	5	129919.51	0	0	0	0	1	0	0	0	0	0	0	1	124.656	18.512	1	0	0
2045	6	130102.18	0	0	0	0	0	1	0	0	0	0	0	1	17.782	106.676	1	0	0

YEAR	MONTH	gdp_im	jandd0	febdd0	mardd0	aprdd0	maydd0	jundd0	juldd0	augdd0	sepdd0	octdd0	novdd0	d16	bhdd55d70	bcdd65d70	d18on	dec17	jan18
2045	7	130285.41	0	0	0	0	0	0	1	0	0	0	0	1	0.189	243.038	1	0	0
2045	8	130472.23	0	0	0	0	0	0	0	1	0	0	0	1	0.000	254.533	1	0	0
2045	9	130656.61	0	0	0	0	0	0	0	0	1	0	0	1	0.696	176.959	1	0	0
2045	10	130841.51	0	0	0	0	0	0	0	0	0	1	0	1	41.135	54.558	1	0	0
2045	11	131026.91	0	0	0	0	0	0	0	0	0	0	1	1	232.738	4.977	1	0	0
2045	12	131212.79	0	0	0	0	0	0	0	0	0	0	0	1	545.497	0.063	1	0	0
2046	1	131402.16	1	0	0	0	0	0	0	0	0	0	0	1	792.471	0.000	1	0	0
2046	2	131582.77	0	1	0	0	0	0	0	0	0	0	0	1	885.309	0.000	1	0	0
2046	3	131763.75	0	0	1	0	0	0	0	0	0	0	0	1	703.560	0.221	1	0	0
2046	4	131951.22	0	0	0	1	0	0	0	0	0	0	0	1	389.426	2.548	1	0	0
2046	5	132139.01	0	0	0	0	1	0	0	0	0	0	0	1	124.656	18.512	1	0	0
2046	6	132327.11	0	0	0	0	0	1	0	0	0	0	0	1	17.782	106.676	1	0	0
2046	7	132515.49	0	0	0	0	0	0	1	0	0	0	0	1	0.189	243.038	1	0	0
2046	8	132707.19	0	0	0	0	0	0	0	1	0	0	0	1	0.000	254.533	1	0	0
2046	9	132895.96	0	0	0	0	0	0	0	0	1	0	0	1	0.696	176.959	1	0	0
2046	10	133084.83	0	0	0	0	0	0	0	0	0	1	0	1	41.135	54.558	1	0	0
2046	11	133273.72	0	0	0	0	0	0	0	0	0	0	1	1	232.738	4.977	1	0	0
2046	12	133462.57	0	0	0	0	0	0	0	0	0	0	0	1	545.497	0.063	1	0	0
2047	1	133654.41	1	0	0	0	0	0	0	0	0	0	0	1	792.471	0.000	1	0	0
2047	2	133836.81	0	1	0	0	0	0	0	0	0	0	0	1	885.309	0.000	1	0	0
2047	3	134018.97	0	0	1	0	0	0	0	0	0	0	0	1	703.560	0.221	1	0	0
2047	4	134207.01	0	0	0	1	0	0	0	0	0	0	0	1	389.426	2.548	1	0	0
2047	5	134394.68	0	0	0	0	1	0	0	0	0	0	0	1	124.656	18.512	1	0	0
2047	6	134581.91	0	0	0	0	0	1	0	0	0	0	0	1	17.782	106.676	1	0	0
2047	7	134768.64	0	0	0	0	0	0	1	0	0	0	0	1	0.189	243.038	1	0	0
2047	8	134957.93	0	0	0	0	0	0	0	1	0	0	0	1	0.000	254.533	1	0	0
2047	9	135143.76	0	0	0	0	0	0	0	0	1	0	0	1	0.696	176.959	1	0	0
2047	10	135329.30	0	0	0	0	0	0	0	0	0	1	0	1	41.135	54.558	1	0	0
2047	11	135514.64	0	0	0	0	0	0	0	0	0	0	1	1	232.738	4.977	1	0	0
2047	12	135699.88	0	0	0	0	0	0	0	0	0	0	0	1	545.497	0.063	1	0	0
2048	1	135888.16	1	0	0	0	0	0	0	0	0	0	0	1	792.471	0.000	1	0	0
2048	2	136070.46	0	1	0	0	0	0	0	0	0	0	0	1	885.309	0.000	1	0	0
2048	3	136252.94	0	0	1	0	0	0	0	0	0	0	0	1	703.560	0.221	1	0	0
2048	4	136438.76	0	0	0	1	0	0	0	0	0	0	0	1	389.426	2.548	1	0	0
2048	5	136624.97	0	0	0	0	1	0	0	0	0	0	0	1	124.656	18.512	1	0	0
2048	6	136811.67	0	0	0	0	0	1	0	0	0	0	0	1	17.782	106.676	1	0	0
2048	7	136998.96	0	0	0	0	0	0	1	0	0	0	0	1	0.189	243.038	1	0	0
2048	8	137189.97	0	0	0	0	0	0	0	1	0	0	0	1	0.000	254.533	1	0	0
2048	9	137378.53	0	0	0	0	0	0	0	0	1	0	0	1	0.696	176.959	1	0	0
2048	10	137567.71	0	0	0	0	0	0	0	0	0	1	0	1	41.135	54.558	1	0	0
2048	11	137757.50	0	0	0	0	0	0	0	0	0	0	1	1	232.738	4.977	1	0	0
2048	12	137947.89	0	0	0	0	0	0	0	0	0	0	0	1	545.497	0.063	1	0	0

YEAR	MONTH	gdp_im	jandd	febdd	mardd	aprdd	maydd	jundd	juldd	augdd	sepdd	octdd	novdd	d16	bhdd55d70	bcdd65d70	d18on	dec17	jan18
2049	1	138142.02	1	0	0	0	0	0	0	0	0	0	0	1	792.471	0.000	1	0	0
2049	2	138327.32	0	1	0	0	0	0	0	0	0	0	0	1	885.309	0.000	1	0	0
2049	3	138513.16	0	0	1	0	0	0	0	0	0	0	0	1	703.560	0.221	1	0	0
2049	4	138705.86	0	0	0	1	0	0	0	0	0	0	0	1	389.426	2.548	1	0	0
2049	5	138899.13	0	0	0	0	1	0	0	0	0	0	0	1	124.656	18.512	1	0	0
2049	6	139092.94	0	0	0	0	0	1	0	0	0	0	0	1	17.782	106.676	1	0	0
2049	7	139287.31	0	0	0	0	0	0	1	0	0	0	0	1	0.189	243.038	1	0	0
2049	8	139485.42	0	0	0	0	0	0	0	1	0	0	0	1	0.000	254.533	1	0	0
2049	9	139680.86	0	0	0	0	0	0	0	0	1	0	0	1	0.696	176.959	1	0	0
2049	10	139876.83	0	0	0	0	0	0	0	0	0	1	0	1	41.135	54.558	1	0	0
2049	11	140073.30	0	0	0	0	0	0	0	0	0	0	1	1	232.738	4.977	1	0	0
2049	12	140270.29	0	0	0	0	0	0	0	0	0	0	0	1	545.497	0.063	1	0	0
2050	1	140471.01	1	0	0	0	0	0	0	0	0	0	0	1	792.471	0.000	1	0	0
2050	2	140662.49	0	1	0	0	0	0	0	0	0	0	0	1	885.309	0.000	1	0	0
2050	3	140854.43	0	0	1	0	0	0	0	0	0	0	0	1	703.560	0.221	1	0	0
2050	4	141053.32	0	0	0	1	0	0	0	0	0	0	0	1	389.426	2.548	1	0	0
2050	5	141252.69	0	0	0	0	1	0	0	0	0	0	0	1	124.656	18.512	1	0	0
2050	6	141452.52	0	0	0	0	0	1	0	0	0	0	0	1	17.782	106.676	1	0	0
2050	7	141652.79	0	0	0	0	0	0	1	0	0	0	0	1	0.189	243.038	1	0	0
2050	8	141856.79	0	0	0	0	0	0	0	1	0	0	0	1	0.000	254.533	1	0	0
2050	9	142057.94	0	0	0	0	0	0	0	0	1	0	0	1	0.696	176.959	1	0	0
2050	10	142259.52	0	0	0	0	0	0	0	0	0	1	0	1	41.135	54.558	1	0	0
2050	11	142461.50	0	0	0	0	0	0	0	0	0	0	1	1	232.738	4.977	1	0	0
2050	12	142663.90	0	0	0	0	0	0	0	0	0	0	0	1	545.497	0.063	1	0	0
2051	1	142840.78	1	0	0	0	0	0	0	0	0	0	0	1	792.471	0.000	1	0	0
2051	2	143038.60	0	1	0	0	0	0	0	0	0	0	0	1	885.309	0.000	1	0	0
2051	3	143236.79	0	0	1	0	0	0	0	0	0	0	0	1	703.560	0.221	1	0	0
2051	4	143442.05	0	0	0	1	0	0	0	0	0	0	0	1	389.426	2.548	1	0	0
2051	5	143647.68	0	0	0	0	1	0	0	0	0	0	0	1	124.656	18.512	1	0	0
2051	6	143853.66	0	0	0	0	0	1	0	0	0	0	0	1	17.782	106.676	1	0	0
2051	7	144059.98	0	0	0	0	0	0	1	0	0	0	0	1	0.189	243.038	1	0	0
2051	8	144270.03	0	0	0	0	0	0	0	1	0	0	0	1	0.000	254.533	1	0	0
2051	9	144477.03	0	0	0	0	0	0	0	0	1	0	0	1	0.696	176.959	1	0	0
2051	10	144684.35	0	0	0	0	0	0	0	0	0	1	0	1	41.135	54.558	1	0	0
2051	11	144891.99	0	0	0	0	0	0	0	0	0	0	1	1	232.738	4.977	1	0	0
2051	12	145099.93	0	0	0	0	0	0	0	0	0	0	0	1	545.497	0.063	1	0	0
2052	1	145252.07	1	0	0	0	0	0	0	0	0	0	0	1	792.471	0.000	1	0	0
2052	2	145456.40	0	1	0	0	0	0	0	0	0	0	0	1	885.309	0.000	1	0	0
2052	3	145661.00	0	0	1	0	0	0	0	0	0	0	0	1	703.560	0.221	1	0	0
2052	4	145872.79	0	0	0	1	0	0	0	0	0	0	0	1	389.426	2.548	1	0	0
2052	5	146084.83	0	0	0	0	1	0	0	0	0	0	0	1	124.656	18.512	1	0	0
2052	6	146297.13	0	0	0	0	0	1	0	0	0	0	0	1	17.782	106.676	1	0	0

YEAR	MONTH	gdp_im	jandd0	febdd0	mardd0	aprdd0	maydd0	jundd0	juldd0	augdd0	sepdd0	octdd0	novdd0	d16	bhdd55d70	bcdd65d70	d18on	dec17	jan18
2052	7	146509.66	0	0	0	0	0	0	1	0	0	0	0	1	0.189	243.038	1	0	0
2052	8	146725.90	0	0	0	0	0	0	0	1	0	0	0	1	0.000	254.533	1	0	0
2052	9	146938.89	0	0	0	0	0	0	0	0	1	0	0	1	0.696	176.959	1	0	0
2052	10	147152.11	0	0	0	0	0	0	0	0	0	1	0	1	41.135	54.558	1	0	0
2052	11	147365.53	0	0	0	0	0	0	0	0	0	0	1	1	232.738	4.977	1	0	0
2052	12	147579.15	0	0	0	0	0	0	0	0	0	0	0	1	545.497	0.063	1	0	0
2053	1	147705.61	1	0	0	0	0	0	0	0	0	0	0	1	792.471	0.000	1	0	0
2053	2	147916.62	0	1	0	0	0	0	0	0	0	0	0	1	885.309	0.000	1	0	0
2053	3	148127.81	0	0	1	0	0	0	0	0	0	0	0	1	703.560	0.221	1	0	0
2053	4	148346.28	0	0	0	1	0	0	0	0	0	0	0	1	389.426	2.548	1	0	0
2053	5	148564.91	0	0	0	0	1	0	0	0	0	0	0	1	124.656	18.512	1	0	0
2053	6	148783.69	0	0	0	0	0	1	0	0	0	0	0	1	17.782	106.676	1	0	0
2053	7	149002.58	0	0	0	0	0	0	1	0	0	0	0	1	0.189	243.038	1	0	0
2053	8	149225.18	0	0	0	0	0	0	0	1	0	0	0	1	0.000	254.533	1	0	0
2053	9	149444.31	0	0	0	0	0	0	0	0	1	0	0	1	0.696	176.959	1	0	0
2053	10	149663.56	0	0	0	0	0	0	0	0	0	1	0	1	41.135	54.558	1	0	0
2053	11	149882.91	0	0	0	0	0	0	0	0	0	0	1	1	232.738	4.977	1	0	0
2053	12	150102.34	0	0	0	0	0	0	0	0	0	0	0	1	545.497	0.063	1	0	0
2054	1	150202.18	1	0	0	0	0	0	0	0	0	0	0	1	792.471	0.000	1	0	0
2054	2	150420.05	0	1	0	0	0	0	0	0	0	0	0	1	885.309	0.000	1	0	0
2054	3	150637.98	0	0	1	0	0	0	0	0	0	0	0	1	703.560	0.221	1	0	0
2054	4	150863.32	0	0	0	1	0	0	0	0	0	0	0	1	389.426	2.548	1	0	0
2054	5	151088.70	0	0	0	0	1	0	0	0	0	0	0	1	124.656	18.512	1	0	0
2054	6	151314.12	0	0	0	0	0	1	0	0	0	0	0	1	17.782	106.676	1	0	0
2054	7	151539.54	0	0	0	0	0	0	1	0	0	0	0	1	0.189	243.038	1	0	0
2054	8	151768.64	0	0	0	0	0	0	0	1	0	0	0	1	0.000	254.533	1	0	0
2054	9	151994.07	0	0	0	0	0	0	0	0	1	0	0	1	0.696	176.959	1	0	0
2054	10	152219.51	0	0	0	0	0	0	0	0	0	1	0	1	41.135	54.558	1	0	0
2054	11	152444.93	0	0	0	0	0	0	0	0	0	0	1	1	232.738	4.977	1	0	0
2054	12	152670.32	0	0	0	0	0	0	0	0	0	0	0	1	545.497	0.063	1	0	0
2055	1	152742.55	1	0	0	0	0	0	0	0	0	0	0	1	792.471	0.000	1	0	0
2055	2	152967.45	0	1	0	0	0	0	0	0	0	0	0	1	885.309	0.000	1	0	0
2055	3	153192.31	0	0	1	0	0	0	0	0	0	0	0	1	703.560	0.221	1	0	0
2055	4	153424.69	0	0	0	1	0	0	0	0	0	0	0	1	389.426	2.548	1	0	0
2055	5	153657.00	0	0	0	0	1	0	0	0	0	0	0	1	124.656	18.512	1	0	0
2055	6	153889.22	0	0	0	0	0	1	0	0	0	0	0	1	17.782	106.676	1	0	0
2055	7	154121.33	0	0	0	0	0	0	1	0	0	0	0	1	0.189	243.038	1	0	0
2055	8	154357.10	0	0	0	0	0	0	0	1	0	0	0	1	0.000	254.533	1	0	0
2055	9	154588.99	0	0	0	0	0	0	0	0	1	0	0	1	0.696	176.959	1	0	0
2055	10	154820.77	0	0	0	0	0	0	0	0	0	1	0	1	41.135	54.558	1	0	0
2055	11	155052.40	0	0	0	0	0	0	0	0	0	0	1	1	232.738	4.977	1	0	0
2055	12	155283.89	0	0	0	0	0	0	0	0	0	0	0	1	545.497	0.063	1	0	0

Indiana Michigan Power Company
Cooperative Energy Sales
Exogenous Variables

YEAR	MONTH	gdp_imi	jan07on	feb07on	mar07on	apr07on	may07on	jun07on	jul07on	aug07on	sep07on	oct07on	nov07on	d16on	bhdd55d70	bcdd65d70	d18on	dec17	jan18
2056	1	155327.51	1	0	0	0	0	0	0	0	0	0	0	1	792.471	0.000	1	0	0
2056	2	155559.62	0	1	0	0	0	0	0	0	0	0	0	1	885.309	0.000	1	0	0
2056	3	155791.59	0	0	1	0	0	0	0	0	0	0	0	1	703.560	0.221	1	0	0
2056	4	156031.19	0	0	0	1	0	0	0	0	0	0	0	1	389.426	2.548	1	0	0
2056	5	156270.60	0	0	0	0	1	0	0	0	0	0	0	1	124.656	18.512	1	0	0
2056	6	156509.81	0	0	0	0	0	1	0	0	0	0	0	1	17.782	106.676	1	0	0
2056	7	156748.76	0	0	0	0	0	0	1	0	0	0	0	1	0.189	243.038	1	0	0
2056	8	156991.38	0	0	0	0	0	0	0	1	0	0	0	1	0.000	254.533	1	0	0
2056	9	157229.88	0	0	0	0	0	0	0	0	1	0	0	1	0.696	176.959	1	0	0
2056	10	157468.15	0	0	0	0	0	0	0	0	0	1	0	1	41.135	54.558	1	0	0
2056	11	157706.16	0	0	0	0	0	0	0	0	0	0	1	1	232.738	4.977	1	0	0
2056	12	157943.90	0	0	0	0	0	0	0	0	0	0	0	1	545.497	0.063	1	0	0
2057	1	157957.87	1	0	0	0	0	0	0	0	0	0	0	1	792.471	0.000	1	0	0
2057	2	158197.37	0	1	0	0	0	0	0	0	0	0	0	1	885.309	0.000	1	0	0
2057	3	158436.63	0	0	1	0	0	0	0	0	0	0	0	1	703.560	0.221	1	0	0
2057	4	158683.64	0	0	0	1	0	0	0	0	0	0	0	1	389.426	2.548	1	0	0
2057	5	158930.33	0	0	0	0	1	0	0	0	0	0	0	1	124.656	18.512	1	0	0
2057	6	159176.69	0	0	0	0	0	1	0	0	0	0	0	1	17.782	106.676	1	0	0
2057	7	159422.68	0	0	0	0	0	0	1	0	0	0	0	1	0.189	243.038	1	0	0
2057	8	159672.31	0	0	0	0	0	0	0	1	0	0	0	1	0.000	254.533	1	0	0
2057	9	159917.58	0	0	0	0	0	0	0	0	1	0	0	1	0.696	176.959	1	0	0
2057	10	160162.50	0	0	0	0	0	0	0	0	0	1	0	1	41.135	54.558	1	0	0
2057	11	160407.04	0	0	0	0	0	0	0	0	0	0	1	1	232.738	4.977	1	0	0
2057	12	160651.18	0	0	0	0	0	0	0	0	0	0	0	1	545.497	0.063	1	0	0

Indiana Michigan Power Company
Cooperative Energy Sales
Model Estimation

The SYSLIN Procedure
Ordinary Least Squares Estimation

Model	KWH
Dependent Variable	KWH
Label	Energy

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	18	4.863E16	2.702E15	54.79	<.0001
Error	150	7.397E15	4.931E13		
Corrected Total	168	5.603E16			

Root MSE	7022131.85	R-Square	0.86799
Dependent Mean	93051194.1	Adj R-Sq	0.85215
Coeff Var	7.54653		

Parameter Estimates

Variable	DF	Parameter Estimate	Standard Error	t Value	Pr > |t|	Variable Label
Intercept	1	69385133	13481465	5.15	<.0001	Intercept
gdp_imi	1	359.6111	187.3059	1.92	0.0568	Service Area Gross Regional Product
bhdd55d70	1	23631.22	6385.759	3.70	0.0003	Heating Degree Days 2007 On
bcdd65d70	1	54075.30	16589.02	3.26	0.0014	Cooling Degree Days 2007 On
jand07on	1	-3440917	2988018	-1.15	0.2513	Binary Variable - January 2007 On
febd07on	1	-1.269E7	3482831	-3.64	0.0004	Binary Variable - February 2007 On
mard07on	1	-1.641E7	2921870	-5.62	<.0001	Binary Variable - March 2007 On
aprd07on	1	-1.701E7	2936140	-5.79	<.0001	Binary Variable - April 2007 On
mayd07on	1	-8605587	3869334	-2.22	0.0276	Binary Variable - May 2007 On
jund07on	1	-3829813	4835807	-0.79	0.4296	Binary Variable - June 2007 On
juld07on	1	1430717	6066098	0.24	0.8139	Binary Variable - July 2007 On
augd07on	1	5310908	6157211	0.86	0.3898	Binary Variable - August 2007 On

Indiana Michigan Power Company
Cooperative Energy Sales
Model Estimation

The SYSLIN Procedure
Ordinary Least Squares Estimation

Parameter Estimates

Variable	DF	Parameter Estimate	Standard Error	t Value	Pr > |t|	Variable Label
sepd07on	1	-1.268E7	5340803	-2.38	0.0188	Binary Variable - September 2007 On
octd07on	1	-8076811	4407488	-1.83	0.0689	Binary Variable - October 2007 On
novd07on	1	-7192887	3434476	-2.09	0.0379	Binary Variable - November 2007 On
d16on	1	2869811	2036461	1.41	0.1608	Binary Variable - 2016 On
d18on	1	-3.876E7	1966988	-19.70	<.0001	Binary Variable - 2018 On
dec17	1	29071191	7443409	3.91	0.0001	Binary Variable - December 2017
jan18	1	-5671896	7542188	-0.75	0.4532	Binary Variable - January 2018

Durbin-Watson	1.94693
Number of Observations	169
First-Order Autocorrelation	0.024957

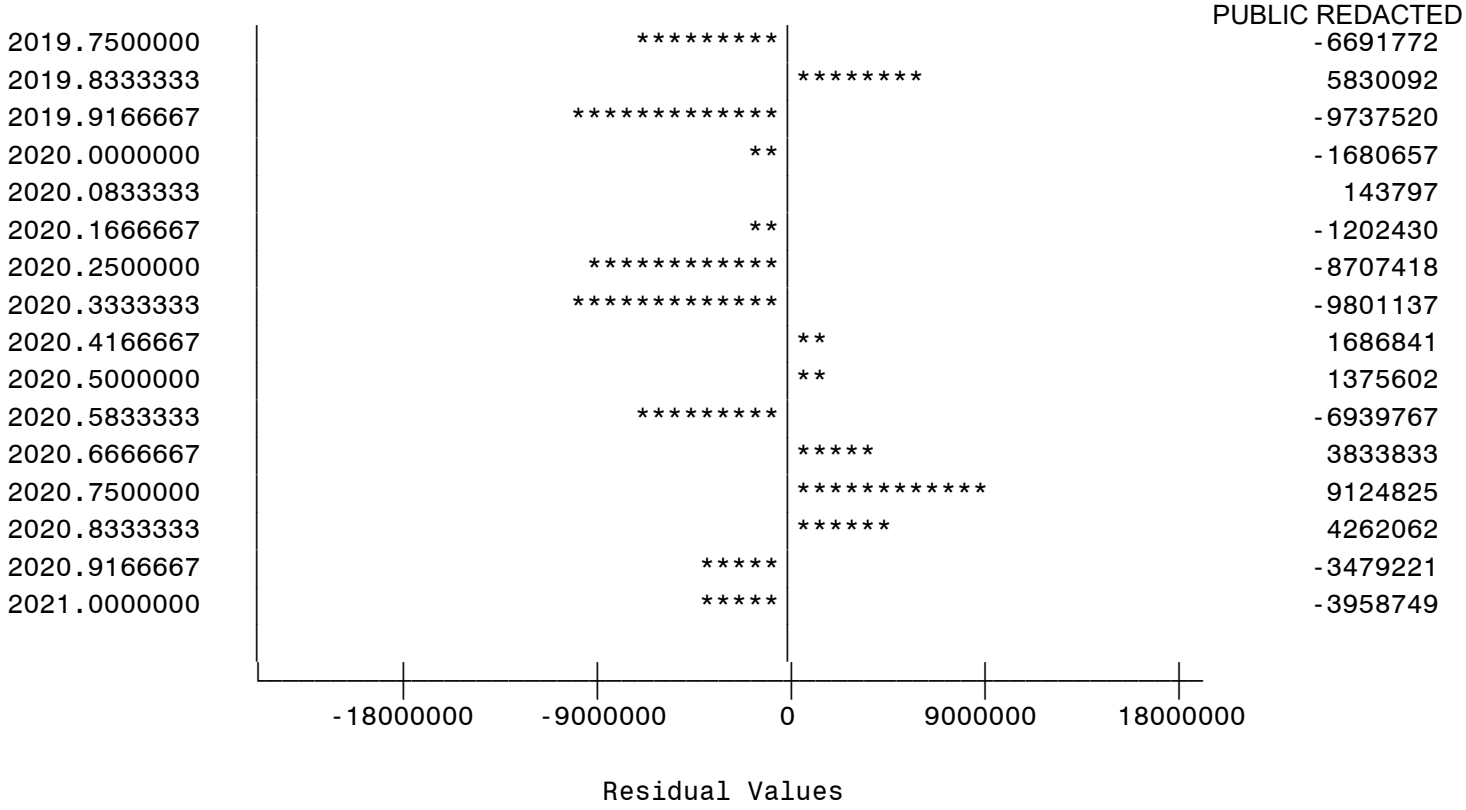
Indiana Michigan Power Company
Cooperative Energy Sales
Model Residuals

time	Residual Values	Sum
2007.0000000	****	-2770248
2007.0833333	**********	-7171932
2007.1666667	**********	-7836588
2007.2500000	******	-4702934
2007.3333333	**********	-7470233
2007.4166667	*****	-3778368
2007.5000000	*********	-7106642
2007.5833333		-368777
2007.6666667	****	-2807023
2007.7500000	***	-2442614
2007.8333333		-349904
2007.9166667	****	-2702945
2008.0000000	**	-1674560
2008.0833333	*	959387
2008.1666667	*********	-6468483
2008.2500000	********	-5896440
2008.3333333	*********	-7006045
2008.4166667	***	-2191883
2008.5000000	*	-753461
2008.5833333	**********	-8540157
2008.6666667	**	-1558057
2008.7500000	***	-2131268
2008.8333333	**	1362860
2008.9166667	**********	9159179
2009.0000000	******	4825573
2009.0833333	**********	-8190447
2009.1666667		240799
2009.2500000	****	3225554
2009.3333333	**********	-11885644
2009.4166667	*********	-6928753
2009.5000000	**********	-7691925
2009.5833333	*	-919324
2009.6666667	****	3355908
2009.7500000	*	-691474
2009.8333333	***	-2507029
2009.9166667	**********	14204183
2010.0000000	******	4690359
2010.0833333	****	-3254291
2010.1666667	*	-470386
2010.2500000	*****	-3828285
2010.3333333	****	3276516
2010.4166667	*	659779
2010.5000000	**********	-9322320
2010.5833333	**********	18771498
2010.6666667	**********	-12974411
2010.7500000	****	-3208457
2010.8333333	**********	7252475
2010.9166667	*******	5458983
2011.0000000	*******	-4879516

2011.0833333	**********		-8411766
2011.1666667	****		-2893861
2011.2500000		*********	7106712
2011.3333333		*	746464
2011.4166667		***	2017891
2011.5000000		*******************	14474475
2011.5833333	*********		-6836722
2011.6666667	***************		-10937094
2011.7500000		**	1385528
2011.8333333	**		-1293901
2011.9166667		**************	10786697
2012.0000000		***	2422044
2012.0833333			-81462
2012.1666667		**	1608364
2012.2500000			-172448
2012.3333333		*******	5493055
2012.4166667		***************	11207303
2012.5000000	**********		-7713077
2012.5833333		************************	17152092
2012.6666667	*		-742545
2012.7500000	*		-861358
2012.8333333	*		-1046117
2012.9166667		***	2394287
2013.0000000	****		-3158110
2013.0833333		***	2292408
2013.1666667		******	4238444
2013.2500000		************	9196976
2013.3333333		********	6044595
2013.4166667	*		-764189
2013.5000000		*******	5227711
2013.5833333		**********	8492576
2013.6666667		*********	6883788
2013.7500000	*		-1083151
2013.8333333		*******	5410455
2013.9166667		**	1763425
2014.0000000		*****************	12644141
2014.0833333		*****************	12318288
2014.1666667		*****************	12991873
2014.2500000			48290
2014.3333333			296553
2014.4166667	**********		-8823705
2014.5000000			6881
2014.5833333		*	948506
2014.6666667	*****		-4043073
2014.7500000	*		-614436
2014.8333333		******	4178765
2014.9166667	*********		-6987397
2015.0000000		*	640993
2015.0833333		*	896073
2015.1666667	*******		-5071133
2015.2500000	**********		-8547574
2015.3333333	******		-4379739

2015.4166667		***	-2159093
2015.5000000			**** 2932415
2015.5833333		***	-2462614
2015.6666667			********** 8487218
2015.7500000			243212
2015.8333333		**	-1683749
2015.9166667		**********	-7172408
2016.0000000			** 1179689
2016.0833333		***	-2070114
2016.1666667			77719
2016.2500000			15728
2016.3333333		****	-2666103
2016.4166667			* 400049
2016.5000000			********** 10743484
2016.5833333			*** 1948538
2016.6666667			*** 2420791
2016.7500000		******	-4784231
2016.8333333		*	-434902
2016.9166667		********	-5961610
2017.0000000		**********	-14017248
2017.0833333			********** 18426241
2017.1666667		**********	-12411795
2017.2500000			**** 3133574
2017.3333333			********** 14890255
2017.4166667			******* 5366187
2017.5000000			******** 6157530
2017.5833333		**********	-7609450
2017.6666667			******** 6176173
2017.7500000			**** 2763381
2017.8333333	**********		-23743884
2017.9166667			0
2018.0000000			0
2018.0833333		******	-4551480
2018.1666667			********** 9596408
2018.2500000			**** 3216128
2018.3333333			********** 7348724
2018.4166667			** 1176704
2018.5000000		**********	-8468193
2018.5833333		******	-4652529
2018.6666667			** 1512443
2018.7500000			********** 8991814
2018.8333333			**** 2762777
2018.9166667		**********	-7725653
2019.0000000			******** 5736290
2019.0833333		**	-1304701
2019.1666667			********** 7601068
2019.2500000			******** 5912138
2019.3333333			******* 5112740
2019.4166667			*** 2131238
2019.5000000			137520
2019.5833333		**********	-8983869
2019.6666667			* 392051

Indiana Michigan Power Company
Cooperative Energy Sales
Model Residuals



Indiana Michigan Power Company
Cooperative Energy Sales
Actual and Forecast

Year	Energy	Growth* Rate
2007	CONFID.	N/A
2008	CONFID.	N/A
2009	CONFID.	N/A
2010	CONFID.	N/A
2011	CONFID.	N/A
2012	CONFID.	N/A
2013	CONFID.	N/A
2014	CONFID.	N/A
2015	CONFID.	N/A
2016	CONFID.	N/A
2017	CONFID.	N/A
2018	CONFID.	N/A
2019	CONFID.	N/A
2020	CONFID.	N/A
2021	CONFID.	N/A
2022	CONFID.	N/A
2023	CONFID.	N/A
2024	CONFID.	N/A
2025	CONFID.	N/A
2026	CONFID.	N/A
2027	CONFID.	N/A
2028	CONFID.	N/A
2029	CONFID.	N/A
2030	CONFID.	N/A
2031	CONFID.	N/A
2032	CONFID.	N/A
2033	CONFID.	N/A
2034	CONFID.	N/A
2035	CONFID.	N/A
2036	CONFID.	N/A
2037	CONFID.	N/A
2038	CONFID.	N/A
2039	CONFID.	N/A
2040	CONFID.	N/A
2041	CONFID.	N/A
2042	CONFID.	N/A
2043	CONFID.	N/A
2044	CONFID.	N/A
2045	CONFID.	N/A
2046	CONFID.	N/A
2047	CONFID.	N/A
2048	CONFID.	N/A
2049	CONFID.	N/A
2050	CONFID.	N/A
2051	CONFID.	N/A
2052	CONFID.	N/A
2053	CONFID.	N/A
2054	CONFID.	N/A
2055	CONFID.	N/A

Indiana Michigan Power Company
Cooperative Energy Sales
Actual and Forecast

Year	Energy	Growth* Rate
2056	CONFID.	N/A
2057	CONFID.	N/A

Indiana Michigan Power Company
I.M.P.A.
Endogenous Variables

The MEANS Procedure

Variable	Label	Mean
YEAR	Year	2022.00
MONTH	Month	6.5000000

Indiana Michigan Power Company
I.M.P.A.
Endogenous Variables

Obs	YEAR	MONTH	Energy
1	1987	1	CONFID.
2	1987	2	CONFID.
3	1987	3	CONFID.
4	1987	4	CONFID.
5	1987	5	CONFID.
6	1987	6	CONFID.
7	1987	7	CONDID.
8	1987	8	CONFID.
9	1987	9	CONFID.
10	1987	10	CONFID.
11	1987	11	CONFID.
12	1987	12	CONFID.
13	1988	1	CONFID.
14	1988	2	CONFID.
15	1988	3	CONFID.
16	1988	4	CONFID.
17	1988	5	CONFID.
18	1988	6	CONFID.
19	1988	7	CONDID.
20	1988	8	CONFID.
21	1988	9	CONFID.
22	1988	10	CONFID.
23	1988	11	CONFID.
24	1988	12	CONFID.
25	1989	1	CONFID.
26	1989	2	CONFID.
27	1989	3	CONFID.
28	1989	4	CONFID.
29	1989	5	CONFID.
30	1989	6	CONFID.
31	1989	7	CONDID.
32	1989	8	CONFID.
33	1989	9	CONFID.
34	1989	10	CONFID.
35	1989	11	CONFID.
36	1989	12	CONFID.
37	1990	1	CONFID.
38	1990	2	CONFID.
39	1990	3	CONFID.
40	1990	4	CONFID.
41	1990	5	CONFID.
42	1990	6	CONFID.
43	1990	7	CONDID.
44	1990	8	CONFID.
45	1990	9	CONFID.
46	1990	10	CONFID.
47	1990	11	CONFID.
48	1990	12	CONFID.
49	1991	1	CONFID.
50	1991	2	CONFID.

Indiana Michigan Power Company
I.M.P.A.
Endogenous Variables

Obs	YEAR	MONTH	Energy
51	1991	3	CONFID.
52	1991	4	CONFID.
53	1991	5	CONFID.
54	1991	6	CONFID.
55	1991	7	CONDID.
56	1991	8	CONFID.
57	1991	9	CONFID.
58	1991	10	CONFID.
59	1991	11	CONFID.
60	1991	12	CONFID.
61	1992	1	CONFID.
62	1992	2	CONFID.
63	1992	3	CONFID.
64	1992	4	CONFID.
65	1992	5	CONFID.
66	1992	6	CONFID.
67	1992	7	CONDID.
68	1992	8	CONFID.
69	1992	9	CONFID.
70	1992	10	CONFID.
71	1992	11	CONFID.
72	1992	12	CONFID.
73	1993	1	CONFID.
74	1993	2	CONFID.
75	1993	3	CONFID.
76	1993	4	CONFID.
77	1993	5	CONFID.
78	1993	6	CONFID.
79	1993	7	CONDID.
80	1993	8	CONFID.
81	1993	9	CONFID.
82	1993	10	CONFID.
83	1993	11	CONFID.
84	1993	12	CONFID.
85	1994	1	CONFID.
86	1994	2	CONFID.
87	1994	3	CONFID.
88	1994	4	CONFID.
89	1994	5	CONFID.
90	1994	6	CONFID.
91	1994	7	CONDID.
92	1994	8	CONFID.
93	1994	9	CONFID.
94	1994	10	CONFID.
95	1994	11	CONFID.
96	1994	12	CONFID.
97	1995	1	CONFID.
98	1995	2	CONFID.
99	1995	3	CONFID.
100	1995	4	CONFID.

Indiana Michigan Power Company
I.M.P.A.
Endogenous Variables

Obs	YEAR	MONTH	Energy
101	1995	5	CONFID.
102	1995	6	CONFID.
103	1995	7	CONDID.
104	1995	8	CONFID.
105	1995	9	CONFID.
106	1995	10	CONFID.
107	1995	11	CONFID.
108	1995	12	CONFID.
109	1996	1	CONFID.
110	1996	2	CONFID.
111	1996	3	CONFID.
112	1996	4	CONFID.
113	1996	5	CONFID.
114	1996	6	CONFID.
115	1996	7	CONDID.
116	1996	8	CONFID.
117	1996	9	CONFID.
118	1996	10	CONFID.
119	1996	11	CONFID.
120	1996	12	CONFID.
121	1997	1	CONFID.
122	1997	2	CONFID.
123	1997	3	CONFID.
124	1997	4	CONFID.
125	1997	5	CONFID.
126	1997	6	CONFID.
127	1997	7	CONDID.
128	1997	8	CONFID.
129	1997	9	CONFID.
130	1997	10	CONFID.
131	1997	11	CONFID.
132	1997	12	CONFID.
133	1998	1	CONFID.
134	1998	2	CONFID.
135	1998	3	CONFID.
136	1998	4	CONFID.
137	1998	5	CONFID.
138	1998	6	CONFID.
139	1998	7	CONDID.
140	1998	8	CONFID.
141	1998	9	CONFID.
142	1998	10	CONFID.
143	1998	11	CONFID.
144	1998	12	CONFID.
145	1999	1	CONFID.
146	1999	2	CONFID.
147	1999	3	CONFID.
148	1999	4	CONFID.
149	1999	5	CONFID.
150	1999	6	CONFID.

Indiana Michigan Power Company
I.M.P.A.
Endogenous Variables

Obs	YEAR	MONTH	Energy
151	1999	7	CONDID.
152	1999	8	CONFID.
153	1999	9	CONFID.
154	1999	10	CONFID.
155	1999	11	CONFID.
156	1999	12	CONFID.
157	2000	1	CONFID.
158	2000	2	CONFID.
159	2000	3	CONFID.
160	2000	4	CONFID.
161	2000	5	CONFID.
162	2000	6	CONFID.
163	2000	7	CONDID.
164	2000	8	CONFID.
165	2000	9	CONFID.
166	2000	10	CONFID.
167	2000	11	CONFID.
168	2000	12	CONFID.
169	2001	1	CONFID.
170	2001	2	CONFID.
171	2001	3	CONFID.
172	2001	4	CONFID.
173	2001	5	CONFID.
174	2001	6	CONFID.
175	2001	7	CONDID.
176	2001	8	CONFID.
177	2001	9	CONFID.
178	2001	10	CONFID.
179	2001	11	CONFID.
180	2001	12	CONFID.
181	2002	1	CONFID.
182	2002	2	CONFID.
183	2002	3	CONFID.
184	2002	4	CONFID.
185	2002	5	CONFID.
186	2002	6	CONFID.
187	2002	7	CONDID.
188	2002	8	CONFID.
189	2002	9	CONFID.
190	2002	10	CONFID.
191	2002	11	CONFID.
192	2002	12	CONFID.
193	2003	1	CONFID.
194	2003	2	CONFID.
195	2003	3	CONFID.
196	2003	4	CONFID.
197	2003	5	CONFID.
198	2003	6	CONFID.
199	2003	7	CONDID.
200	2003	8	CONFID.

Indiana Michigan Power Company
I.M.P.A.
Endogenous Variables

Obs	YEAR	MONTH	Energy
201	2003	9	CONFID.
202	2003	10	CONFID.
203	2003	11	CONFID.
204	2003	12	CONFID.
205	2004	1	CONFID.
206	2004	2	CONFID.
207	2004	3	CONFID.
208	2004	4	CONFID.
209	2004	5	CONFID.
210	2004	6	CONFID.
211	2004	7	CONDID.
212	2004	8	CONFID.
213	2004	9	CONFID.
214	2004	10	CONFID.
215	2004	11	CONFID.
216	2004	12	CONFID.
217	2005	1	CONFID.
218	2005	2	CONFID.
219	2005	3	CONFID.
220	2005	4	CONFID.
221	2005	5	CONFID.
222	2005	6	CONFID.
223	2005	7	CONDID.
224	2005	8	CONFID.
225	2005	9	CONFID.
226	2005	10	CONFID.
227	2005	11	CONFID.
228	2005	12	CONFID.
229	2006	1	CONFID.
230	2006	2	CONFID.
231	2006	3	CONFID.
232	2006	4	CONFID.
233	2006	5	CONFID.
234	2006	6	CONFID.
235	2006	7	CONDID.
236	2006	8	CONFID.
237	2006	9	CONFID.
238	2006	10	CONFID.
239	2006	11	CONFID.
240	2006	12	CONFID.
241	2007	1	CONFID.
242	2007	2	CONFID.
243	2007	3	CONFID.
244	2007	4	CONFID.
245	2007	5	CONFID.
246	2007	6	CONFID.
247	2007	7	CONDID.
248	2007	8	CONFID.
249	2007	9	CONFID.
250	2007	10	CONFID.

Indiana Michigan Power Company
I.M.P.A.
Endogenous Variables

Obs	YEAR	MONTH	Energy
251	2007	11	CONFID.
252	2007	12	CONFID.
253	2008	1	CONFID.
254	2008	2	CONFID.
255	2008	3	CONFID.
256	2008	4	CONFID.
257	2008	5	CONFID.
258	2008	6	CONFID.
259	2008	7	CONDID.
260	2008	8	CONFID.
261	2008	9	CONFID.
262	2008	10	CONFID.
263	2008	11	CONFID.
264	2008	12	CONFID.
265	2009	1	CONFID.
266	2009	2	CONFID.
267	2009	3	CONFID.
268	2009	4	CONFID.
269	2009	5	CONFID.
270	2009	6	CONFID.
271	2009	7	CONDID.
272	2009	8	CONFID.
273	2009	9	CONFID.
274	2009	10	CONFID.
275	2009	11	CONFID.
276	2009	12	CONFID.
277	2010	1	CONFID.
278	2010	2	CONFID.
279	2010	3	CONFID.
280	2010	4	CONFID.
281	2010	5	CONFID.
282	2010	6	CONFID.
283	2010	7	CONDID.
284	2010	8	CONFID.
285	2010	9	CONFID.
286	2010	10	CONFID.
287	2010	11	CONFID.
288	2010	12	CONFID.
289	2011	1	CONFID.
290	2011	2	CONFID.
291	2011	3	CONFID.
292	2011	4	CONFID.
293	2011	5	CONFID.
294	2011	6	CONFID.
295	2011	7	CONDID.
296	2011	8	CONFID.
297	2011	9	CONFID.
298	2011	10	CONFID.
299	2011	11	CONFID.
300	2011	12	CONFID.

Indiana Michigan Power Company
I.M.P.A.
Endogenous Variables

Obs	YEAR	MONTH	Energy
301	2012	1	CONFID.
302	2012	2	CONFID.
303	2012	3	CONFID.
304	2012	4	CONFID.
305	2012	5	CONFID.
306	2012	6	CONFID.
307	2012	7	CONDID.
308	2012	8	CONFID.
309	2012	9	CONFID.
310	2012	10	CONFID.
311	2012	11	CONFID.
312	2012	12	CONFID.
313	2013	1	CONFID.
314	2013	2	CONFID.
315	2013	3	CONFID.
316	2013	4	CONFID.
317	2013	5	CONFID.
318	2013	6	CONFID.
319	2013	7	CONDID.
320	2013	8	CONFID.
321	2013	9	CONFID.
322	2013	10	CONFID.
323	2013	11	CONFID.
324	2013	12	CONFID.
325	2014	1	CONFID.
326	2014	2	CONFID.
327	2014	3	CONFID.
328	2014	4	CONFID.
329	2014	5	CONFID.
330	2014	6	CONFID.
331	2014	7	CONDID.
332	2014	8	CONFID.
333	2014	9	CONFID.
334	2014	10	CONFID.
335	2014	11	CONFID.
336	2014	12	CONFID.
337	2015	1	CONFID.
338	2015	2	CONFID.
339	2015	3	CONFID.
340	2015	4	CONFID.
341	2015	5	CONFID.
342	2015	6	CONFID.
343	2015	7	CONDID.
344	2015	8	CONFID.
345	2015	9	CONFID.
346	2015	10	CONFID.
347	2015	11	CONFID.
348	2015	12	CONFID.
349	2016	1	CONFID.
350	2016	2	CONFID.

Indiana Michigan Power Company
I.M.P.A.
Endogenous Variables

Obs	YEAR	MONTH	Energy
351	2016	3	CONFID.
352	2016	4	CONFID.
353	2016	5	CONFID.
354	2016	6	CONFID.
355	2016	7	CONDID.
356	2016	8	CONFID.
357	2016	9	CONFID.
358	2016	10	CONFID.
359	2016	11	CONFID.
360	2016	12	CONFID.
361	2017	1	CONFID.
362	2017	2	CONFID.
363	2017	3	CONFID.
364	2017	4	CONFID.
365	2017	5	CONFID.
366	2017	6	CONFID.
367	2017	7	CONDID.
368	2017	8	CONFID.
369	2017	9	CONFID.
370	2017	10	CONFID.
371	2017	11	CONFID.
372	2017	12	CONFID.
373	2018	1	CONFID.
374	2018	2	CONFID.
375	2018	3	CONFID.
376	2018	4	CONFID.
377	2018	5	CONFID.
378	2018	6	CONFID.
379	2018	7	CONDID.
380	2018	8	CONFID.
381	2018	9	CONFID.
382	2018	10	CONFID.
383	2018	11	CONFID.
384	2018	12	CONFID.
385	2019	1	CONFID.
386	2019	2	CONFID.
387	2019	3	CONFID.
388	2019	4	CONFID.
389	2019	5	CONFID.
390	2019	6	CONFID.
391	2019	7	CONDID.
392	2019	8	CONFID.
393	2019	9	CONFID.
394	2019	10	CONFID.
395	2019	11	CONFID.
396	2019	12	CONFID.
397	2020	1	CONFID.
398	2020	2	CONFID.
399	2020	3	CONFID.
400	2020	4	CONFID.

Indiana Michigan Power Company
I.M.P.A.
Endogenous Variables

Obs	YEAR	MONTH	Energy
401	2020	5	CONFID.
402	2020	6	CONFID.
403	2020	7	CONDID.
404	2020	8	CONFID.
405	2020	9	CONFID.
406	2020	10	CONFID.
407	2020	11	CONFID.
408	2020	12	CONFID.
409	2021	1	CONFID.
410	2021	2	CONFID.
411	2021	3	CONFID.
412	2021	4	CONFID.
413	2021	5	CONFID.
414	2021	6	CONFID.
415	2021	7	CONDID.
416	2021	8	CONFID.
417	2021	9	CONFID.
418	2021	10	CONFID.
419	2021	11	CONFID.
420	2021	12	CONFID.
421	2022	1	CONFID.
422	2022	2	CONFID.
423	2022	3	CONFID.
424	2022	4	CONFID.
425	2022	5	CONFID.
426	2022	6	CONFID.
427	2022	7	CONDID.
428	2022	8	CONFID.
429	2022	9	CONFID.
430	2022	10	CONFID.
431	2022	11	CONFID.
432	2022	12	CONFID.
433	2023	1	CONFID.
434	2023	2	CONFID.
435	2023	3	CONFID.
436	2023	4	CONFID.
437	2023	5	CONFID.
438	2023	6	CONFID.
439	2023	7	CONDID.
440	2023	8	CONFID.
441	2023	9	CONFID.
442	2023	10	CONFID.
443	2023	11	CONFID.
444	2023	12	CONFID.
445	2024	1	CONFID.
446	2024	2	CONFID.
447	2024	3	CONFID.
448	2024	4	CONFID.
449	2024	5	CONFID.
450	2024	6	CONFID.

Indiana Michigan Power Company
I.M.P.A.
Endogenous Variables

Obs	YEAR	MONTH	Energy
451	2024	7	CONDID.
452	2024	8	CONFID.
453	2024	9	CONFID.
454	2024	10	CONFID.
455	2024	11	CONFID.
456	2024	12	CONFID.
457	2025	1	CONFID.
458	2025	2	CONFID.
459	2025	3	CONFID.
460	2025	4	CONFID.
461	2025	5	CONFID.
462	2025	6	CONFID.
463	2025	7	CONDID.
464	2025	8	CONFID.
465	2025	9	CONFID.
466	2025	10	CONFID.
467	2025	11	CONFID.
468	2025	12	CONFID.
469	2026	1	CONFID.
470	2026	2	CONFID.
471	2026	3	CONFID.
472	2026	4	CONFID.
473	2026	5	CONFID.
474	2026	6	CONFID.
475	2026	7	CONDID.
476	2026	8	CONFID.
477	2026	9	CONFID.
478	2026	10	CONFID.
479	2026	11	CONFID.
480	2026	12	CONFID.
481	2027	1	CONFID.
482	2027	2	CONFID.
483	2027	3	CONFID.
484	2027	4	CONFID.
485	2027	5	CONFID.
486	2027	6	CONFID.
487	2027	7	CONDID.
488	2027	8	CONFID.
489	2027	9	CONFID.
490	2027	10	CONFID.
491	2027	11	CONFID.
492	2027	12	CONFID.
493	2028	1	CONFID.
494	2028	2	CONFID.
495	2028	3	CONFID.
496	2028	4	CONFID.
497	2028	5	CONFID.
498	2028	6	CONFID.
499	2028	7	CONDID.
500	2028	8	CONFID.

Indiana Michigan Power Company
I.M.P.A.
Endogenous Variables

Obs	YEAR	MONTH	Energy
501	2028	9	CONFID.
502	2028	10	CONFID.
503	2028	11	CONFID.
504	2028	12	CONFID.
505	2029	1	CONFID.
506	2029	2	CONFID.
507	2029	3	CONFID.
508	2029	4	CONFID.
509	2029	5	CONFID.
510	2029	6	CONFID.
511	2029	7	CONDID.
512	2029	8	CONFID.
513	2029	9	CONFID.
514	2029	10	CONFID.
515	2029	11	CONFID.
516	2029	12	CONFID.
517	2030	1	CONFID.
518	2030	2	CONFID.
519	2030	3	CONFID.
520	2030	4	CONFID.
521	2030	5	CONFID.
522	2030	6	CONFID.
523	2030	7	CONDID.
524	2030	8	CONFID.
525	2030	9	CONFID.
526	2030	10	CONFID.
527	2030	11	CONFID.
528	2030	12	CONFID.
529	2031	1	CONFID.
530	2031	2	CONFID.
531	2031	3	CONFID.
532	2031	4	CONFID.
533	2031	5	CONFID.
534	2031	6	CONFID.
535	2031	7	CONDID.
536	2031	8	CONFID.
537	2031	9	CONFID.
538	2031	10	CONFID.
539	2031	11	CONFID.
540	2031	12	CONFID.
541	2032	1	CONFID.
542	2032	2	CONFID.
543	2032	3	CONFID.
544	2032	4	CONFID.
545	2032	5	CONFID.
546	2032	6	CONFID.
547	2032	7	CONDID.
548	2032	8	CONFID.
549	2032	9	CONFID.
550	2032	10	CONFID.

Indiana Michigan Power Company
I.M.P.A.
Endogenous Variables

Obs	YEAR	MONTH	Energy
551	2032	11	CONFID.
552	2032	12	CONFID.
553	2033	1	CONFID.
554	2033	2	CONFID.
555	2033	3	CONFID.
556	2033	4	CONFID.
557	2033	5	CONFID.
558	2033	6	CONFID.
559	2033	7	CONDID.
560	2033	8	CONFID.
561	2033	9	CONFID.
562	2033	10	CONFID.
563	2033	11	CONFID.
564	2033	12	CONFID.
565	2034	1	CONFID.
566	2034	2	CONFID.
567	2034	3	CONFID.
568	2034	4	CONFID.
569	2034	5	CONFID.
570	2034	6	CONFID.
571	2034	7	CONDID.
572	2034	8	CONFID.
573	2034	9	CONFID.
574	2034	10	CONFID.
575	2034	11	CONFID.
576	2034	12	CONFID.
577	2035	1	CONFID.
578	2035	2	CONFID.
579	2035	3	CONFID.
580	2035	4	CONFID.
581	2035	5	CONFID.
582	2035	6	CONFID.
583	2035	7	CONDID.
584	2035	8	CONFID.
585	2035	9	CONFID.
586	2035	10	CONFID.
587	2035	11	CONFID.
588	2035	12	CONFID.
589	2036	1	CONFID.
590	2036	2	CONFID.
591	2036	3	CONFID.
592	2036	4	CONFID.
593	2036	5	CONFID.
594	2036	6	CONFID.
595	2036	7	CONDID.
596	2036	8	CONFID.
597	2036	9	CONFID.
598	2036	10	CONFID.
599	2036	11	CONFID.
600	2036	12	CONFID.

Indiana Michigan Power Company
I.M.P.A.
Endogenous Variables

Obs	YEAR	MONTH	Energy
601	2037	1	CONFID.
602	2037	2	CONFID.
603	2037	3	CONFID.
604	2037	4	CONFID.
605	2037	5	CONFID.
606	2037	6	CONFID.
607	2037	7	CONDID.
608	2037	8	CONFID.
609	2037	9	CONFID.
610	2037	10	CONFID.
611	2037	11	CONFID.
612	2037	12	CONFID.
613	2038	1	CONFID.
614	2038	2	CONFID.
615	2038	3	CONFID.
616	2038	4	CONFID.
617	2038	5	CONFID.
618	2038	6	CONFID.
619	2038	7	CONDID.
620	2038	8	CONFID.
621	2038	9	CONFID.
622	2038	10	CONFID.
623	2038	11	CONFID.
624	2038	12	CONFID.
625	2039	1	CONFID.
626	2039	2	CONFID.
627	2039	3	CONFID.
628	2039	4	CONFID.
629	2039	5	CONFID.
630	2039	6	CONFID.
631	2039	7	CONDID.
632	2039	8	CONFID.
633	2039	9	CONFID.
634	2039	10	CONFID.
635	2039	11	CONFID.
636	2039	12	CONFID.
637	2040	1	CONFID.
638	2040	2	CONFID.
639	2040	3	CONFID.
640	2040	4	CONFID.
641	2040	5	CONFID.
642	2040	6	CONFID.
643	2040	7	CONDID.
644	2040	8	CONFID.
645	2040	9	CONFID.
646	2040	10	CONFID.
647	2040	11	CONFID.
648	2040	12	CONFID.
649	2041	1	CONFID.
650	2041	2	CONFID.

Indiana Michigan Power Company
I.M.P.A.
Endogenous Variables

Obs	YEAR	MONTH	Energy
651	2041	3	CONFID.
652	2041	4	CONFID.
653	2041	5	CONFID.
654	2041	6	CONFID.
655	2041	7	CONDID.
656	2041	8	CONFID.
657	2041	9	CONFID.
658	2041	10	CONFID.
659	2041	11	CONFID.
660	2041	12	CONFID.
661	2042	1	CONFID.
662	2042	2	CONFID.
663	2042	3	CONFID.
664	2042	4	CONFID.
665	2042	5	CONFID.
666	2042	6	CONFID.
667	2042	7	CONDID.
668	2042	8	CONFID.
669	2042	9	CONFID.
670	2042	10	CONFID.
671	2042	11	CONFID.
672	2042	12	CONFID.
673	2043	1	CONFID.
674	2043	2	CONFID.
675	2043	3	CONFID.
676	2043	4	CONFID.
677	2043	5	CONFID.
678	2043	6	CONFID.
679	2043	7	CONDID.
680	2043	8	CONFID.
681	2043	9	CONFID.
682	2043	10	CONFID.
683	2043	11	CONFID.
684	2043	12	CONFID.
685	2044	1	CONFID.
686	2044	2	CONFID.
687	2044	3	CONFID.
688	2044	4	CONFID.
689	2044	5	CONFID.
690	2044	6	CONFID.
691	2044	7	CONDID.
692	2044	8	CONFID.
693	2044	9	CONFID.
694	2044	10	CONFID.
695	2044	11	CONFID.
696	2044	12	CONFID.
697	2045	1	CONFID.
698	2045	2	CONFID.
699	2045	3	CONFID.
700	2045	4	CONFID.

Indiana Michigan Power Company
I.M.P.A.
Endogenous Variables

Obs	YEAR	MONTH	Energy
701	2045	5	CONFID.
702	2045	6	CONFID.
703	2045	7	CONDID.
704	2045	8	CONFID.
705	2045	9	CONFID.
706	2045	10	CONFID.
707	2045	11	CONFID.
708	2045	12	CONFID.
709	2046	1	CONFID.
710	2046	2	CONFID.
711	2046	3	CONFID.
712	2046	4	CONFID.
713	2046	5	CONFID.
714	2046	6	CONFID.
715	2046	7	CONDID.
716	2046	8	CONFID.
717	2046	9	CONFID.
718	2046	10	CONFID.
719	2046	11	CONFID.
720	2046	12	CONFID.
721	2047	1	CONFID.
722	2047	2	CONFID.
723	2047	3	CONFID.
724	2047	4	CONFID.
725	2047	5	CONFID.
726	2047	6	CONFID.
727	2047	7	CONDID.
728	2047	8	CONFID.
729	2047	9	CONFID.
730	2047	10	CONFID.
731	2047	11	CONFID.
732	2047	12	CONFID.
733	2048	1	CONFID.
734	2048	2	CONFID.
735	2048	3	CONFID.
736	2048	4	CONFID.
737	2048	5	CONFID.
738	2048	6	CONFID.
739	2048	7	CONDID.
740	2048	8	CONFID.
741	2048	9	CONFID.
742	2048	10	CONFID.
743	2048	11	CONFID.
744	2048	12	CONFID.
745	2049	1	CONFID.
746	2049	2	CONFID.
747	2049	3	CONFID.
748	2049	4	CONFID.
749	2049	5	CONFID.
750	2049	6	CONFID.

Indiana Michigan Power Company
I.M.P.A.
Endogenous Variables

Obs	YEAR	MONTH	Energy
751	2049	7	CONDID.
752	2049	8	CONFID.
753	2049	9	CONFID.
754	2049	10	CONFID.
755	2049	11	CONFID.
756	2049	12	CONFID.
757	2050	1	CONFID.
758	2050	2	CONFID.
759	2050	3	CONFID.
760	2050	4	CONFID.
761	2050	5	CONFID.
762	2050	6	CONFID.
763	2050	7	CONDID.
764	2050	8	CONFID.
765	2050	9	CONFID.
766	2050	10	CONFID.
767	2050	11	CONFID.
768	2050	12	CONFID.
769	2051	1	CONFID.
770	2051	2	CONFID.
771	2051	3	CONFID.
772	2051	4	CONFID.
773	2051	5	CONFID.
774	2051	6	CONFID.
775	2051	7	CONDID.
776	2051	8	CONFID.
777	2051	9	CONFID.
778	2051	10	CONFID.
779	2051	11	CONFID.
780	2051	12	CONFID.
781	2052	1	CONFID.
782	2052	2	CONFID.
783	2052	3	CONFID.
784	2052	4	CONFID.
785	2052	5	CONFID.
786	2052	6	CONFID.
787	2052	7	CONDID.
788	2052	8	CONFID.
789	2052	9	CONFID.
790	2052	10	CONFID.
791	2052	11	CONFID.
792	2052	12	CONFID.
793	2053	1	CONFID.
794	2053	2	CONFID.
795	2053	3	CONFID.
796	2053	4	CONFID.
797	2053	5	CONFID.
798	2053	6	CONFID.
799	2053	7	CONDID.
800	2053	8	CONFID.

Indiana Michigan Power Company
I.M.P.A.
Endogenous Variables

Obs	YEAR	MONTH	Energy
801	2053	9	CONFID.
802	2053	10	CONFID.
803	2053	11	CONFID.
804	2053	12	CONFID.
805	2054	1	CONFID.
806	2054	2	CONFID.
807	2054	3	CONFID.
808	2054	4	CONFID.
809	2054	5	CONFID.
810	2054	6	CONFID.
811	2054	7	CONDID.
812	2054	8	CONFID.
813	2054	9	CONFID.
814	2054	10	CONFID.
815	2054	11	CONFID.
816	2054	12	CONFID.
817	2055	1	CONFID.
818	2055	2	CONFID.
819	2055	3	CONFID.
820	2055	4	CONFID.
821	2055	5	CONFID.
822	2055	6	CONFID.
823	2055	7	CONDID.
824	2055	8	CONFID.
825	2055	9	CONFID.
826	2055	10	CONFID.
827	2055	11	CONFID.
828	2055	12	CONFID.
829	2056	1	CONFID.
830	2056	2	CONFID.
831	2056	3	CONFID.
832	2056	4	CONFID.
833	2056	5	CONFID.
834	2056	6	CONFID.
835	2056	7	CONDID.
836	2056	8	CONFID.
837	2056	9	CONFID.
838	2056	10	CONFID.
839	2056	11	CONFID.
840	2056	12	CONFID.
841	2057	1	CONFID.
842	2057	2	CONFID.
843	2057	3	CONFID.
844	2057	4	CONFID.
845	2057	5	CONFID.
846	2057	6	CONFID.
847	2057	7	CONDID.
848	2057	8	CONFID.
849	2057	9	CONFID.
850	2057	10	CONFID.

Indiana Michigan Power Company
I.M.P.A.
Endogenous Variables

Obs	YEAR	MONTH	Energy
851	2057	11	CONFID.
852	2057	12	CONFID.

Indiana Michigan Power Company
I.M.P.A. Energy Sales
Actual and Forecast

Year	Energy	Growth* Rate
2000	CONFID.	N/A
2001	CONFID.	N/A
2002	CONFID.	N/A
2003	CONFID.	N/A
2004	CONFID.	N/A
2005	CONFID.	N/A
2006	CONFID.	N/A
2007	CONFID.	N/A
2008	CONFID.	N/A
2009	CONFID.	N/A
2010	CONFID.	N/A
2011	CONFID.	N/A
2012	CONFID.	N/A
2013	CONFID.	N/A
2014	CONFID.	N/A
2015	CONFID.	N/A
2016	CONFID.	N/A
2017	CONFID.	N/A
2018	CONFID.	N/A
2019	CONFID.	N/A
2020	CONFID.	N/A
2021	CONFID.	N/A
2022	CONFID.	N/A
2023	CONFID.	N/A
2024	CONFID.	N/A
2025	CONFID.	N/A
2026	CONFID.	N/A
2027	CONFID.	N/A
2028	CONFID.	N/A
2029	CONFID.	N/A
2030	CONFID.	N/A
2031	CONFID.	N/A
2032	CONFID.	N/A
2033	CONFID.	N/A
2034	CONFID.	N/A
2035	CONFID.	N/A
2036	CONFID.	N/A
2037	CONFID.	N/A
2038	CONFID.	N/A
2039	CONFID.	N/A
2040	CONFID.	N/A
2041	CONFID.	N/A
2042	CONFID.	N/A
2043	CONFID.	N/A
2044	CONFID.	N/A
2045	CONFID.	N/A
2046	CONFID.	N/A
2047	CONFID.	N/A
2048	CONFID.	N/A

Indiana Michigan Power Company
I.M.P.A. Energy Sales
Actual and Forecast

Year	Energy	Growth* Rate
2049	CONFID.	N/A
2050	CONFID.	N/A
2051	CONFID.	N/A
2052	CONFID.	N/A
2053	CONFID.	N/A
2054	CONFID.	N/A
2055	CONFID.	N/A
2056	CONFID.	N/A
2057	CONFID.	N/A

The SAS System
City of Dowagiac
Endogenous Variables

The MEANS Procedure

Variable	Label	Mean
YEAR	Year	2027.50
MONTH	Month	6.5000000

The SAS System

City of Dowagiac

Endogenous Variables

Obs	YEAR	MONTH	Energy
1	1998	1	CONFID.
2	1998	2	CONFID.
3	1998	3	CONFID.
4	1998	4	CONFID.
5	1998	5	CONFID.
6	1998	6	CONFID.
7	1998	7	CONDID.
8	1998	8	CONFID.
9	1998	9	CONFID.
10	1998	10	CONFID.
11	1998	11	CONFID.
12	1998	12	CONFID.
13	1999	1	CONFID.
14	1999	2	CONFID.
15	1999	3	CONFID.
16	1999	4	CONFID.
17	1999	5	CONFID.
18	1999	6	CONFID.
19	1999	7	CONDID.
20	1999	8	CONFID.
21	1999	9	CONFID.
22	1999	10	CONFID.
23	1999	11	CONFID.
24	1999	12	CONFID.
25	2000	1	CONFID.
26	2000	2	CONFID.
27	2000	3	CONFID.
28	2000	4	CONFID.
29	2000	5	CONFID.
30	2000	6	CONFID.
31	2000	7	CONDID.
32	2000	8	CONFID.
33	2000	9	CONFID.
34	2000	10	CONFID.
35	2000	11	CONFID.
36	2000	12	CONFID.
37	2001	1	CONFID.
38	2001	2	CONFID.
39	2001	3	CONFID.
40	2001	4	CONFID.
41	2001	5	CONFID.
42	2001	6	CONFID.
43	2001	7	CONDID.
44	2001	8	CONFID.
45	2001	9	CONFID.
46	2001	10	CONFID.
47	2001	11	CONFID.
48	2001	12	CONFID.
49	2002	1	CONFID.
50	2002	2	CONFID.

The SAS System
City of Dowagiac
Endogenous Variables

Obs	YEAR	MONTH	Energy
51	2002	3	CONFID.
52	2002	4	CONFID.
53	2002	5	CONFID.
54	2002	6	CONFID.
55	2002	7	CONDID.
56	2002	8	CONFID.
57	2002	9	CONFID.
58	2002	10	CONFID.
59	2002	11	CONFID.
60	2002	12	CONFID.
61	2003	1	CONFID.
62	2003	2	CONFID.
63	2003	3	CONFID.
64	2003	4	CONFID.
65	2003	5	CONFID.
66	2003	6	CONFID.
67	2003	7	CONDID.
68	2003	8	CONFID.
69	2003	9	CONFID.
70	2003	10	CONFID.
71	2003	11	CONFID.
72	2003	12	CONFID.
73	2004	1	CONFID.
74	2004	2	CONFID.
75	2004	3	CONFID.
76	2004	4	CONFID.
77	2004	5	CONFID.
78	2004	6	CONFID.
79	2004	7	CONDID.
80	2004	8	CONFID.
81	2004	9	CONFID.
82	2004	10	CONFID.
83	2004	11	CONFID.
84	2004	12	CONFID.
85	2005	1	CONFID.
86	2005	2	CONFID.
87	2005	3	CONFID.
88	2005	4	CONFID.
89	2005	5	CONFID.
90	2005	6	CONFID.
91	2005	7	CONDID.
92	2005	8	CONFID.
93	2005	9	CONFID.
94	2005	10	CONFID.
95	2005	11	CONFID.
96	2005	12	CONFID.
97	2006	1	CONFID.
98	2006	2	CONFID.
99	2006	3	CONFID.
100	2006	4	CONFID.

The SAS System
City of Dowagiac
Endogenous Variables

Obs	YEAR	MONTH	Energy
101	2006	5	CONFID.
102	2006	6	CONFID.
103	2006	7	CONDID.
104	2006	8	CONFID.
105	2006	9	CONFID.
106	2006	10	CONFID.
107	2006	11	CONFID.
108	2006	12	CONFID.
109	2007	1	CONFID.
110	2007	2	CONFID.
111	2007	3	CONFID.
112	2007	4	CONFID.
113	2007	5	CONFID.
114	2007	6	CONFID.
115	2007	7	CONDID.
116	2007	8	CONFID.
117	2007	9	CONFID.
118	2007	10	CONFID.
119	2007	11	CONFID.
120	2007	12	CONFID.
121	2008	1	CONFID.
122	2008	2	CONFID.
123	2008	3	CONFID.
124	2008	4	CONFID.
125	2008	5	CONFID.
126	2008	6	CONFID.
127	2008	7	CONDID.
128	2008	8	CONFID.
129	2008	9	CONFID.
130	2008	10	CONFID.
131	2008	11	CONFID.
132	2008	12	CONFID.
133	2009	1	CONFID.
134	2009	2	CONFID.
135	2009	3	CONFID.
136	2009	4	CONFID.
137	2009	5	CONFID.
138	2009	6	CONFID.
139	2009	7	CONDID.
140	2009	8	CONFID.
141	2009	9	CONFID.
142	2009	10	CONFID.
143	2009	11	CONFID.
144	2009	12	CONFID.
145	2010	1	CONFID.
146	2010	2	CONFID.
147	2010	3	CONFID.
148	2010	4	CONFID.
149	2010	5	CONFID.
150	2010	6	CONFID.

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City of Dowagiac
Endogenous Variables

Obs	YEAR	MONTH	Energy
151	2010	7	CONDID.
152	2010	8	CONFID.
153	2010	9	CONFID.
154	2010	10	CONFID.
155	2010	11	CONFID.
156	2010	12	CONFID.
157	2011	1	CONFID.
158	2011	2	CONFID.
159	2011	3	CONFID.
160	2011	4	CONFID.
161	2011	5	CONFID.
162	2011	6	CONFID.
163	2011	7	CONDID.
164	2011	8	CONFID.
165	2011	9	CONFID.
166	2011	10	CONFID.
167	2011	11	CONFID.
168	2011	12	CONFID.
169	2012	1	CONFID.
170	2012	2	CONFID.
171	2012	3	CONFID.
172	2012	4	CONFID.
173	2012	5	CONFID.
174	2012	6	CONFID.
175	2012	7	CONDID.
176	2012	8	CONFID.
177	2012	9	CONFID.
178	2012	10	CONFID.
179	2012	11	CONFID.
180	2012	12	CONFID.
181	2013	1	CONFID.
182	2013	2	CONFID.
183	2013	3	CONFID.
184	2013	4	CONFID.
185	2013	5	CONFID.
186	2013	6	CONFID.
187	2013	7	CONDID.
188	2013	8	CONFID.
189	2013	9	CONFID.
190	2013	10	CONFID.
191	2013	11	CONFID.
192	2013	12	CONFID.
193	2014	1	CONFID.
194	2014	2	CONFID.
195	2014	3	CONFID.
196	2014	4	CONFID.
197	2014	5	CONFID.
198	2014	6	CONFID.
199	2014	7	CONDID.
200	2014	8	CONFID.

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City of Dowagiac

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Obs	YEAR	MONTH	Energy
201	2014	9	CONFID.
202	2014	10	CONFID.
203	2014	11	CONFID.
204	2014	12	CONFID.
205	2015	1	CONFID.
206	2015	2	CONFID.
207	2015	3	CONFID.
208	2015	4	CONFID.
209	2015	5	CONFID.
210	2015	6	CONFID.
211	2015	7	CONDID.
212	2015	8	CONFID.
213	2015	9	CONFID.
214	2015	10	CONFID.
215	2015	11	CONFID.
216	2015	12	CONFID.
217	2016	1	CONFID.
218	2016	2	CONFID.
219	2016	3	CONFID.
220	2016	4	CONFID.
221	2016	5	CONFID.
222	2016	6	CONFID.
223	2016	7	CONDID.
224	2016	8	CONFID.
225	2016	9	CONFID.
226	2016	10	CONFID.
227	2016	11	CONFID.
228	2016	12	CONFID.
229	2017	1	CONFID.
230	2017	2	CONFID.
231	2017	3	CONFID.
232	2017	4	CONFID.
233	2017	5	CONFID.
234	2017	6	CONFID.
235	2017	7	CONDID.
236	2017	8	CONFID.
237	2017	9	CONFID.
238	2017	10	CONFID.
239	2017	11	CONFID.
240	2017	12	CONFID.
241	2018	1	CONFID.
242	2018	2	CONFID.
243	2018	3	CONFID.
244	2018	4	CONFID.
245	2018	5	CONFID.
246	2018	6	CONFID.
247	2018	7	CONDID.
248	2018	8	CONFID.
249	2018	9	CONFID.
250	2018	10	CONFID.

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City of Dowagiac

Endogenous Variables

Obs	YEAR	MONTH	Energy
251	2018	11	CONFID.
252	2018	12	CONFID.
253	2019	1	CONFID.
254	2019	2	CONFID.
255	2019	3	CONFID.
256	2019	4	CONFID.
257	2019	5	CONFID.
258	2019	6	CONFID.
259	2019	7	CONDID.
260	2019	8	CONFID.
261	2019	9	CONFID.
262	2019	10	CONFID.
263	2019	11	CONFID.
264	2019	12	CONFID.
265	2020	1	CONFID.
266	2020	2	CONFID.
267	2020	3	CONFID.
268	2020	4	CONFID.
269	2020	5	CONFID.
270	2020	6	CONFID.
271	2020	7	CONDID.
272	2020	8	CONFID.
273	2020	9	CONFID.
274	2020	10	CONFID.
275	2020	11	CONFID.
276	2020	12	CONFID.
277	2021	1	CONFID.
278	2021	2	CONFID.
279	2021	3	CONFID.
280	2021	4	CONFID.
281	2021	5	CONFID.
282	2021	6	CONFID.
283	2021	7	CONDID.
284	2021	8	CONFID.
285	2021	9	CONFID.
286	2021	10	CONFID.
287	2021	11	CONFID.
288	2021	12	CONFID.
289	2022	1	CONFID.
290	2022	2	CONFID.
291	2022	3	CONFID.
292	2022	4	CONFID.
293	2022	5	CONFID.
294	2022	6	CONFID.
295	2022	7	CONDID.
296	2022	8	CONFID.
297	2022	9	CONFID.
298	2022	10	CONFID.
299	2022	11	CONFID.
300	2022	12	CONFID.

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Endogenous Variables

Obs	YEAR	MONTH	Energy
301	2023	1	CONFID.
302	2023	2	CONFID.
303	2023	3	CONFID.
304	2023	4	CONFID.
305	2023	5	CONFID.
306	2023	6	CONFID.
307	2023	7	CONDID.
308	2023	8	CONFID.
309	2023	9	CONFID.
310	2023	10	CONFID.
311	2023	11	CONFID.
312	2023	12	CONFID.
313	2024	1	CONFID.
314	2024	2	CONFID.
315	2024	3	CONFID.
316	2024	4	CONFID.
317	2024	5	CONFID.
318	2024	6	CONFID.
319	2024	7	CONDID.
320	2024	8	CONFID.
321	2024	9	CONFID.
322	2024	10	CONFID.
323	2024	11	CONFID.
324	2024	12	CONFID.
325	2025	1	CONFID.
326	2025	2	CONFID.
327	2025	3	CONFID.
328	2025	4	CONFID.
329	2025	5	CONFID.
330	2025	6	CONFID.
331	2025	7	CONDID.
332	2025	8	CONFID.
333	2025	9	CONFID.
334	2025	10	CONFID.
335	2025	11	CONFID.
336	2025	12	CONFID.
337	2026	1	CONFID.
338	2026	2	CONFID.
339	2026	3	CONFID.
340	2026	4	CONFID.
341	2026	5	CONFID.
342	2026	6	CONFID.
343	2026	7	CONDID.
344	2026	8	CONFID.
345	2026	9	CONFID.
346	2026	10	CONFID.
347	2026	11	CONFID.
348	2026	12	CONFID.
349	2027	1	CONFID.
350	2027	2	CONFID.

Obs	YEAR	MONTH	Energy
351	2027	3	CONFID.
352	2027	4	CONFID.
353	2027	5	CONFID.
354	2027	6	CONFID.
355	2027	7	CONDID.
356	2027	8	CONFID.
357	2027	9	CONFID.
358	2027	10	CONFID.
359	2027	11	CONFID.
360	2027	12	CONFID.
361	2028	1	CONFID.
362	2028	2	CONFID.
363	2028	3	CONFID.
364	2028	4	CONFID.
365	2028	5	CONFID.
366	2028	6	CONFID.
367	2028	7	CONDID.
368	2028	8	CONFID.
369	2028	9	CONFID.
370	2028	10	CONFID.
371	2028	11	CONFID.
372	2028	12	CONFID.
373	2029	1	CONFID.
374	2029	2	CONFID.
375	2029	3	CONFID.
376	2029	4	CONFID.
377	2029	5	CONFID.
378	2029	6	CONFID.
379	2029	7	CONDID.
380	2029	8	CONFID.
381	2029	9	CONFID.
382	2029	10	CONFID.
383	2029	11	CONFID.
384	2029	12	CONFID.
385	2030	1	CONFID.
386	2030	2	CONFID.
387	2030	3	CONFID.
388	2030	4	CONFID.
389	2030	5	CONFID.
390	2030	6	CONFID.
391	2030	7	CONDID.
392	2030	8	CONFID.
393	2030	9	CONFID.
394	2030	10	CONFID.
395	2030	11	CONFID.
396	2030	12	CONFID.
397	2031	1	CONFID.
398	2031	2	CONFID.
399	2031	3	CONFID.
400	2031	4	CONFID.

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Endogenous Variables

Obs	YEAR	MONTH	Energy
401	2031	5	CONFID.
402	2031	6	CONFID.
403	2031	7	CONDID.
404	2031	8	CONFID.
405	2031	9	CONFID.
406	2031	10	CONFID.
407	2031	11	CONFID.
408	2031	12	CONFID.
409	2032	1	CONFID.
410	2032	2	CONFID.
411	2032	3	CONFID.
412	2032	4	CONFID.
413	2032	5	CONFID.
414	2032	6	CONFID.
415	2032	7	CONDID.
416	2032	8	CONFID.
417	2032	9	CONFID.
418	2032	10	CONFID.
419	2032	11	CONFID.
420	2032	12	CONFID.
421	2033	1	CONFID.
422	2033	2	CONFID.
423	2033	3	CONFID.
424	2033	4	CONFID.
425	2033	5	CONFID.
426	2033	6	CONFID.
427	2033	7	CONDID.
428	2033	8	CONFID.
429	2033	9	CONFID.
430	2033	10	CONFID.
431	2033	11	CONFID.
432	2033	12	CONFID.
433	2034	1	CONFID.
434	2034	2	CONFID.
435	2034	3	CONFID.
436	2034	4	CONFID.
437	2034	5	CONFID.
438	2034	6	CONFID.
439	2034	7	CONDID.
440	2034	8	CONFID.
441	2034	9	CONFID.
442	2034	10	CONFID.
443	2034	11	CONFID.
444	2034	12	CONFID.
445	2035	1	CONFID.
446	2035	2	CONFID.
447	2035	3	CONFID.
448	2035	4	CONFID.
449	2035	5	CONFID.
450	2035	6	CONFID.

The SAS System
City of Dowagiac
Endogenous Variables

Obs	YEAR	MONTH	Energy
451	2035	7	CONDID.
452	2035	8	CONFID.
453	2035	9	CONFID.
454	2035	10	CONFID.
455	2035	11	CONFID.
456	2035	12	CONFID.
457	2036	1	CONFID.
458	2036	2	CONFID.
459	2036	3	CONFID.
460	2036	4	CONFID.
461	2036	5	CONFID.
462	2036	6	CONFID.
463	2036	7	CONDID.
464	2036	8	CONFID.
465	2036	9	CONFID.
466	2036	10	CONFID.
467	2036	11	CONFID.
468	2036	12	CONFID.
469	2037	1	CONFID.
470	2037	2	CONFID.
471	2037	3	CONFID.
472	2037	4	CONFID.
473	2037	5	CONFID.
474	2037	6	CONFID.
475	2037	7	CONDID.
476	2037	8	CONFID.
477	2037	9	CONFID.
478	2037	10	CONFID.
479	2037	11	CONFID.
480	2037	12	CONFID.
481	2038	1	CONFID.
482	2038	2	CONFID.
483	2038	3	CONFID.
484	2038	4	CONFID.
485	2038	5	CONFID.
486	2038	6	CONFID.
487	2038	7	CONDID.
488	2038	8	CONFID.
489	2038	9	CONFID.
490	2038	10	CONFID.
491	2038	11	CONFID.
492	2038	12	CONFID.
493	2039	1	CONFID.
494	2039	2	CONFID.
495	2039	3	CONFID.
496	2039	4	CONFID.
497	2039	5	CONFID.
498	2039	6	CONFID.
499	2039	7	CONDID.
500	2039	8	CONFID.

The SAS System
City of Dowagiac
Endogenous Variables

Obs	YEAR	MONTH	Energy
501	2039	9	CONFID.
502	2039	10	CONFID.
503	2039	11	CONFID.
504	2039	12	CONFID.
505	2040	1	CONFID.
506	2040	2	CONFID.
507	2040	3	CONFID.
508	2040	4	CONFID.
509	2040	5	CONFID.
510	2040	6	CONFID.
511	2040	7	CONDID.
512	2040	8	CONFID.
513	2040	9	CONFID.
514	2040	10	CONFID.
515	2040	11	CONFID.
516	2040	12	CONFID.
517	2041	1	CONFID.
518	2041	2	CONFID.
519	2041	3	CONFID.
520	2041	4	CONFID.
521	2041	5	CONFID.
522	2041	6	CONFID.
523	2041	7	CONDID.
524	2041	8	CONFID.
525	2041	9	CONFID.
526	2041	10	CONFID.
527	2041	11	CONFID.
528	2041	12	CONFID.
529	2042	1	CONFID.
530	2042	2	CONFID.
531	2042	3	CONFID.
532	2042	4	CONFID.
533	2042	5	CONFID.
534	2042	6	CONFID.
535	2042	7	CONDID.
536	2042	8	CONFID.
537	2042	9	CONFID.
538	2042	10	CONFID.
539	2042	11	CONFID.
540	2042	12	CONFID.
541	2043	1	CONFID.
542	2043	2	CONFID.
543	2043	3	CONFID.
544	2043	4	CONFID.
545	2043	5	CONFID.
546	2043	6	CONFID.
547	2043	7	CONDID.
548	2043	8	CONFID.
549	2043	9	CONFID.
550	2043	10	CONFID.

Obs	YEAR	MONTH	Energy
551	2043	11	CONFID.
552	2043	12	CONFID.
553	2044	1	CONFID.
554	2044	2	CONFID.
555	2044	3	CONFID.
556	2044	4	CONFID.
557	2044	5	CONFID.
558	2044	6	CONFID.
559	2044	7	CONDID.
560	2044	8	CONFID.
561	2044	9	CONFID.
562	2044	10	CONFID.
563	2044	11	CONFID.
564	2044	12	CONFID.
565	2045	1	CONFID.
566	2045	2	CONFID.
567	2045	3	CONFID.
568	2045	4	CONFID.
569	2045	5	CONFID.
570	2045	6	CONFID.
571	2045	7	CONDID.
572	2045	8	CONFID.
573	2045	9	CONFID.
574	2045	10	CONFID.
575	2045	11	CONFID.
576	2045	12	CONFID.
577	2046	1	CONFID.
578	2046	2	CONFID.
579	2046	3	CONFID.
580	2046	4	CONFID.
581	2046	5	CONFID.
582	2046	6	CONFID.
583	2046	7	CONDID.
584	2046	8	CONFID.
585	2046	9	CONFID.
586	2046	10	CONFID.
587	2046	11	CONFID.
588	2046	12	CONFID.
589	2047	1	CONFID.
590	2047	2	CONFID.
591	2047	3	CONFID.
592	2047	4	CONFID.
593	2047	5	CONFID.
594	2047	6	CONFID.
595	2047	7	CONDID.
596	2047	8	CONFID.
597	2047	9	CONFID.
598	2047	10	CONFID.
599	2047	11	CONFID.
600	2047	12	CONFID.

The SAS System

City of Dowagiac

Endogenous Variables

Obs	YEAR	MONTH	Energy
601	2048	1	CONFID.
602	2048	2	CONFID.
603	2048	3	CONFID.
604	2048	4	CONFID.
605	2048	5	CONFID.
606	2048	6	CONFID.
607	2048	7	CONDID.
608	2048	8	CONFID.
609	2048	9	CONFID.
610	2048	10	CONFID.
611	2048	11	CONFID.
612	2048	12	CONFID.
613	2049	1	CONFID.
614	2049	2	CONFID.
615	2049	3	CONFID.
616	2049	4	CONFID.
617	2049	5	CONFID.
618	2049	6	CONFID.
619	2049	7	CONDID.
620	2049	8	CONFID.
621	2049	9	CONFID.
622	2049	10	CONFID.
623	2049	11	CONFID.
624	2049	12	CONFID.
625	2050	1	CONFID.
626	2050	2	CONFID.
627	2050	3	CONFID.
628	2050	4	CONFID.
629	2050	5	CONFID.
630	2050	6	CONFID.
631	2050	7	CONDID.
632	2050	8	CONFID.
633	2050	9	CONFID.
634	2050	10	CONFID.
635	2050	11	CONFID.
636	2050	12	CONFID.
637	2051	1	CONFID.
638	2051	2	CONFID.
639	2051	3	CONFID.
640	2051	4	CONFID.
641	2051	5	CONFID.
642	2051	6	CONFID.
643	2051	7	CONDID.
644	2051	8	CONFID.
645	2051	9	CONFID.
646	2051	10	CONFID.
647	2051	11	CONFID.
648	2051	12	CONFID.
649	2052	1	CONFID.
650	2052	2	CONFID.

The SAS System
City of Dowagiac
Endogenous Variables

Obs	YEAR	MONTH	Energy
651	2052	3	CONFID.
652	2052	4	CONFID.
653	2052	5	CONFID.
654	2052	6	CONFID.
655	2052	7	CONDID.
656	2052	8	CONFID.
657	2052	9	CONFID.
658	2052	10	CONFID.
659	2052	11	CONFID.
660	2052	12	CONFID.
661	2053	1	CONFID.
662	2053	2	CONFID.
663	2053	3	CONFID.
664	2053	4	CONFID.
665	2053	5	CONFID.
666	2053	6	CONFID.
667	2053	7	CONDID.
668	2053	8	CONFID.
669	2053	9	CONFID.
670	2053	10	CONFID.
671	2053	11	CONFID.
672	2053	12	CONFID.
673	2054	1	CONFID.
674	2054	2	CONFID.
675	2054	3	CONFID.
676	2054	4	CONFID.
677	2054	5	CONFID.
678	2054	6	CONFID.
679	2054	7	CONDID.
680	2054	8	CONFID.
681	2054	9	CONFID.
682	2054	10	CONFID.
683	2054	11	CONFID.
684	2054	12	CONFID.
685	2055	1	CONFID.
686	2055	2	CONFID.
687	2055	3	CONFID.
688	2055	4	CONFID.
689	2055	5	CONFID.
690	2055	6	CONFID.
691	2055	7	CONDID.
692	2055	8	CONFID.
693	2055	9	CONFID.
694	2055	10	CONFID.
695	2055	11	CONFID.
696	2055	12	CONFID.
697	2056	1	CONFID.
698	2056	2	CONFID.
699	2056	3	CONFID.
700	2056	4	CONFID.

The SAS System
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Endogenous Variables

Obs	YEAR	MONTH	Energy
701	2056	5	CONFID.
702	2056	6	CONFID.
703	2056	7	CONDID.
704	2056	8	CONFID.
705	2056	9	CONFID.
706	2056	10	CONFID.
707	2056	11	CONFID.
708	2056	12	CONFID.
709	2057	1	CONFID.
710	2057	2	CONFID.
711	2057	3	CONFID.
712	2057	4	CONFID.
713	2057	5	CONFID.
714	2057	6	CONFID.
715	2057	7	CONDID.
716	2057	8	CONFID.
717	2057	9	CONFID.
718	2057	10	CONFID.
719	2057	11	CONFID.
720	2057	12	CONFID.

The SAS System
City of Dowagiac
Exogenous Variables

The MEANS Procedure

Variable	Label	Mean
YEAR	Year	2027.50
MONTH	Month	6.5000000
bcdd65	Service Area Cooling Degree Days	68.7267366
bhdd55	Service Area Heating Degree Days	324.1321879
N_imm	Service Area Population	328.8923694
lcom_imm	Service Area Commercial Employment	88.4052285
d04on	Binary Variable - 2004 On	0.9000000
d08on	Binary Variable - 2008 On	0.8333333
djun10on	Binary Variable - June 2010 On	0.7930556
jan17on	Binary Variable - January 2017 On	0.6833333
apr19on	Binary Variable - April 2019 On	0.6458333
apr20	Binary Variable - April 2020	0.0013889
may20	Binary Variable - May 2020	0.0013889

Obs	YEAR	MONTH	bcdd65	bhdd55	N_imm	lcom_imm	d04on	d08on	djun10on	jan17on	apr19on	apr20	may20
1	1998	1	0.000	699.51	349.866	83.516	0	0	0	0	0	0	0
2	1998	2	0.000	713.49	349.903	83.605	0	0	0	0	0	0	0
3	1998	3	0.000	581.64	349.939	83.712	0	0	0	0	0	0	0
4	1998	4	8.247	387.31	349.980	83.829	0	0	0	0	0	0	0
5	1998	5	16.003	89.31	350.022	83.961	0	0	0	0	0	0	0
6	1998	6	84.825	10.44	350.064	84.106	0	0	0	0	0	0	0
7	1998	7	244.527	4.12	350.105	84.269	0	0	0	0	0	0	0
8	1998	8	245.444	0.00	350.148	84.448	0	0	0	0	0	0	0
9	1998	9	206.729	0.20	350.191	84.637	0	0	0	0	0	0	0
10	1998	10	88.425	31.51	350.238	84.849	0	0	0	0	0	0	0
11	1998	11	4.516	204.50	350.290	85.075	0	0	0	0	0	0	0
12	1998	12	0.000	337.83	350.346	85.321	0	0	0	0	0	0	0
13	1999	1	0.000	934.39	350.411	85.589	0	0	0	0	0	0	0
14	1999	2	0.000	794.71	350.482	85.857	0	0	0	0	0	0	0
15	1999	3	0.000	728.44	350.562	86.150	0	0	0	0	0	0	0
16	1999	4	0.000	426.52	350.658	86.471	0	0	0	0	0	0	0
17	1999	5	17.017	100.01	350.766	86.805	0	0	0	0	0	0	0
18	1999	6	135.910	7.07	350.888	87.164	0	0	0	0	0	0	0
19	1999	7	272.606	0.00	351.029	87.543	0	0	0	0	0	0	0
20	1999	8	340.708	0.00	351.184	87.941	0	0	0	0	0	0	0
21	1999	9	156.593	0.62	351.349	88.341	0	0	0	0	0	0	0
22	1999	10	44.540	50.76	351.519	88.742	0	0	0	0	0	0	0
23	1999	11	3.469	175.44	351.689	89.134	0	0	0	0	0	0	0
24	1999	12	0.196	396.87	351.856	89.511	0	0	0	0	0	0	0
25	2000	1	0.000	757.11	352.018	89.862	0	0	0	0	0	0	0
26	2000	2	0.000	931.70	352.161	90.176	0	0	0	0	0	0	0
27	2000	3	2.520	465.03	352.286	90.447	0	0	0	0	0	0	0
28	2000	4	1.538	333.77	352.390	90.669	0	0	0	0	0	0	0
29	2000	5	34.526	153.55	352.470	90.833	0	0	0	0	0	0	0
30	2000	6	77.789	18.75	352.517	90.928	0	0	0	0	0	0	0
31	2000	7	158.524	1.83	352.527	90.952	0	0	0	0	0	0	0
32	2000	8	162.680	0.00	352.501	90.893	0	0	0	0	0	0	0
33	2000	9	190.890	2.85	352.444	90.772	0	0	0	0	0	0	0
34	2000	10	47.682	66.17	352.360	90.605	0	0	0	0	0	0	0
35	2000	11	3.240	178.52	352.255	90.391	0	0	0	0	0	0	0
36	2000	12	0.000	773.18	352.135	90.146	0	0	0	0	0	0	0
37	2001	1	0.000	1113.56	351.999	89.883	0	0	0	0	0	0	0
38	2001	2	0.000	892.11	351.865	89.619	0	0	0	0	0	0	0
39	2001	3	0.000	736.85	351.728	89.359	0	0	0	0	0	0	0
40	2001	4	3.240	468.54	351.590	89.103	0	0	0	0	0	0	0
41	2001	5	39.107	84.14	351.461	88.874	0	0	0	0	0	0	0
42	2001	6	65.877	28.60	351.345	88.677	0	0	0	0	0	0	0
43	2001	7	184.115	3.24	351.248	88.529	0	0	0	0	0	0	0
44	2001	8	306.084	0.00	351.169	88.427	0	0	0	0	0	0	0
45	2001	9	173.381	0.98	351.108	88.367	0	0	0	0	0	0	0
46	2001	10	25.395	54.49	351.066	88.342	0	0	0	0	0	0	0
47	2001	11	1.342	174.13	351.038	88.345	0	0	0	0	0	0	0
48	2001	12	0.000	287.53	351.022	88.360	0	0	0	0	0	0	0
49	2002	1	0.000	754.66	351.018	88.392	0	0	0	0	0	0	0
50	2002	2	0.000	648.89	351.023	88.426	0	0	0	0	0	0	0

Obs	YEAR	MONTH	bcdd65	bhdd55	N_imm	lcom_imm	d04on	d08on	djun10on	jan17on	apr19on	apr20	may20
51	2002	3	0.000	653.01	351.035	88.449	0	0	0	0	0	0	0
52	2002	4	12.469	509.15	351.053	88.464	0	0	0	0	0	0	0
53	2002	5	26.802	187.78	351.076	88.456	0	0	0	0	0	0	0
54	2002	6	66.139	71.37	351.100	88.427	0	0	0	0	0	0	0
55	2002	7	306.804	0.00	351.126	88.355	0	0	0	0	0	0	0
56	2002	8	331.283	0.00	351.152	88.250	0	0	0	0	0	0	0
57	2002	9	219.132	0.00	351.176	88.111	0	0	0	0	0	0	0
58	2002	10	93.269	46.67	351.201	87.947	0	0	0	0	0	0	0
59	2002	11	5.792	339.10	351.227	87.757	0	0	0	0	0	0	0
60	2002	12	0.000	671.50	351.255	87.552	0	0	0	0	0	0	0
61	2003	1	0.000	823.87	351.283	87.328	0	0	0	0	0	0	0
62	2003	2	0.000	1037.67	351.312	87.111	0	0	0	0	0	0	0
63	2003	3	0.000	881.44	351.342	86.890	0	0	0	0	0	0	0
64	2003	4	4.025	367.74	351.375	86.667	0	0	0	0	0	0	0
65	2003	5	9.752	145.40	351.411	86.446	0	0	0	0	0	0	0
66	2003	6	18.196	38.13	351.451	86.241	0	0	0	0	0	0	0
67	2003	7	176.556	2.00	351.492	86.053	0	0	0	0	0	0	0
68	2003	8	190.006	0.00	351.538	85.881	0	0	0	0	0	0	0
69	2003	9	201.166	0.13	351.581	85.734	0	0	0	0	0	0	0
70	2003	10	32.955	86.66	351.626	85.607	0	0	0	0	0	0	0
71	2003	11	0.982	220.64	351.664	85.505	0	0	0	0	0	0	0
72	2003	12	0.000	501.98	351.698	85.423	0	0	0	0	0	0	0
73	2004	1	0.000	745.79	351.724	85.363	1	0	0	0	0	0	0
74	2004	2	0.000	1059.60	351.740	85.326	1	0	0	0	0	0	0
75	2004	3	0.000	678.05	351.745	85.316	1	0	0	0	0	0	0
76	2004	4	5.989	364.01	351.737	85.327	1	0	0	0	0	0	0
77	2004	5	54.947	128.65	351.712	85.363	1	0	0	0	0	0	0
78	2004	6	102.792	14.46	351.671	85.420	1	0	0	0	0	0	0
79	2004	7	153.746	0.13	351.610	85.506	1	0	0	0	0	0	0
80	2004	8	154.204	0.00	351.528	85.617	1	0	0	0	0	0	0
81	2004	9	129.005	0.00	351.430	85.745	1	0	0	0	0	0	0
82	2004	10	46.143	51.97	351.318	85.881	1	0	0	0	0	0	0
83	2004	11	2.749	182.02	351.195	86.025	1	0	0	0	0	0	0
84	2004	12	0.196	494.26	351.060	86.173	1	0	0	0	0	0	0
85	2005	1	0.000	839.71	350.917	86.312	1	0	0	0	0	0	0
86	2005	2	0.000	914.16	350.774	86.435	1	0	0	0	0	0	0
87	2005	3	0.000	766.63	350.630	86.544	1	0	0	0	0	0	0
88	2005	4	2.127	444.15	350.481	86.638	1	0	0	0	0	0	0
89	2005	5	13.107	157.38	350.332	86.698	1	0	0	0	0	0	0
90	2005	6	90.863	23.12	350.189	86.724	1	0	0	0	0	0	0
91	2005	7	291.832	0.00	350.052	86.722	1	0	0	0	0	0	0
92	2005	8	308.424	0.00	349.920	86.671	1	0	0	0	0	0	0
93	2005	9	203.505	0.00	349.799	86.593	1	0	0	0	0	0	0
94	2005	10	97.294	31.19	349.686	86.495	1	0	0	0	0	0	0
95	2005	11	8.149	206.78	349.581	86.379	1	0	0	0	0	0	0
96	2005	12	0.000	703.83	349.482	86.253	1	0	0	0	0	0	0
97	2006	1	0.000	760.11	349.391	86.127	1	0	0	0	0	0	0
98	2006	2	0.000	640.67	349.310	86.009	1	0	0	0	0	0	0
99	2006	3	0.000	717.25	349.238	85.905	1	0	0	0	0	0	0
100	2006	4	1.178	415.59	349.170	85.819	1	0	0	0	0	0	0

Obs	YEAR	MONTH	bcdd65	bhdd55	N_imm	lcom_imm	d04on	d08on	djun10on	jan17on	apr19on	apr20	may20
101	2006	5	2.127	99.14	349.110	85.763	1	0	0	0	0	0	0
102	2006	6	82.502	51.00	349.057	85.748	1	0	0	0	0	0	0
103	2006	7	175.443	0.00	349.012	85.766	1	0	0	0	0	0	0
104	2006	8	289.067	0.00	348.973	85.837	1	0	0	0	0	0	0
105	2006	9	123.671	2.08	348.943	85.942	1	0	0	0	0	0	0
106	2006	10	14.072	73.08	348.917	86.085	1	0	0	0	0	0	0
107	2006	11	0.540	332.10	348.897	86.259	1	0	0	0	0	0	0
108	2006	12	0.000	481.54	348.884	86.455	1	0	0	0	0	0	0
109	2007	1	0.000	565.53	348.874	86.671	1	0	0	0	0	0	0
110	2007	2	0.000	990.30	348.868	86.894	1	0	0	0	0	0	0
111	2007	3	0.327	890.94	348.866	87.122	1	0	0	0	0	0	0
112	2007	4	8.623	355.86	348.866	87.358	1	0	0	0	0	0	0
113	2007	5	21.190	138.76	348.870	87.601	1	0	0	0	0	0	0
114	2007	6	134.176	8.49	348.876	87.832	1	0	0	0	0	0	0
115	2007	7	228.492	0.00	348.882	88.048	1	0	0	0	0	0	0
116	2007	8	242.989	0.00	348.890	88.252	1	0	0	0	0	0	0
117	2007	9	208.758	1.78	348.896	88.432	1	0	0	0	0	0	0
118	2007	10	110.564	18.23	348.901	88.587	1	0	0	0	0	0	0
119	2007	11	22.614	198.66	348.905	88.706	1	0	0	0	0	0	0
120	2007	12	0.000	615.95	348.903	88.792	1	0	0	0	0	0	0
121	2008	1	0.000	771.59	348.896	88.841	1	1	0	0	0	0	0
122	2008	2	0.000	953.25	348.884	88.843	1	1	0	0	0	0	0
123	2008	3	0.000	873.73	348.863	88.791	1	1	0	0	0	0	0
124	2008	4	0.213	488.63	348.833	88.694	1	1	0	0	0	0	0
125	2008	5	5.416	146.17	348.794	88.536	1	1	0	0	0	0	0
126	2008	6	87.394	42.84	348.745	88.314	1	1	0	0	0	0	0
127	2008	7	180.565	0.02	348.682	88.023	1	1	0	0	0	0	0
128	2008	8	226.790	0.00	348.607	87.664	1	1	0	0	0	0	0
129	2008	9	145.401	0.00	348.521	87.261	1	1	0	0	0	0	0
130	2008	10	44.785	32.97	348.427	86.819	1	1	0	0	0	0	0
131	2008	11	4.893	253.07	348.322	86.348	1	1	0	0	0	0	0
132	2008	12	0.000	734.63	348.211	85.863	1	1	0	0	0	0	0
133	2009	1	0.000	964.90	348.093	85.365	1	1	0	0	0	0	0
134	2009	2	0.000	1101.80	347.976	84.901	1	1	0	0	0	0	0
135	2009	3	0.000	706.91	347.854	84.462	1	1	0	0	0	0	0
136	2009	4	0.425	391.96	347.728	84.034	1	1	0	0	0	0	0
137	2009	5	13.221	150.02	347.600	83.654	1	1	0	0	0	0	0
138	2009	6	54.554	22.74	347.474	83.327	1	1	0	0	0	0	0
139	2009	7	162.385	0.02	347.349	83.076	1	1	0	0	0	0	0
140	2009	8	158.213	0.00	347.225	82.889	1	1	0	0	0	0	0
141	2009	9	109.746	0.00	347.107	82.770	1	1	0	0	0	0	0
142	2009	10	24.872	94.66	346.993	82.711	1	1	0	0	0	0	0
143	2009	11	0.000	223.45	346.885	82.699	1	1	0	0	0	0	0
144	2009	12	0.000	523.92	346.784	82.733	1	1	0	0	0	0	0
145	2010	1	0.000	921.64	346.689	82.797	1	1	0	0	0	0	0
146	2010	2	0.000	930.36	346.608	82.884	1	1	0	0	0	0	0
147	2010	3	0.000	727.48	346.534	82.990	1	1	0	0	0	0	0
148	2010	4	11.912	270.95	346.469	83.115	1	1	0	0	0	0	0
149	2010	5	12.567	100.58	346.415	83.237	1	1	0	0	0	0	0
150	2010	6	124.816	21.50	346.372	83.360	1	1	1	0	0	0	0

Obs	YEAR	MONTH	bcdd65	bhdd55	N_imm	lcom_imm	d04on	d08on	djun10on	jan17on	apr19on	apr20	may20
151	2010	7	249.943	0.00	346.344	83.466	1	1	1	0	0	0	0
152	2010	8	329.958	0.00	346.329	83.563	1	1	1	0	0	0	0
153	2010	9	220.097	0.00	346.323	83.647	1	1	1	0	0	0	0
154	2010	10	51.641	39.58	346.323	83.708	1	1	1	0	0	0	0
155	2010	11	5.007	209.61	346.327	83.763	1	1	1	0	0	0	0
156	2010	12	0.000	639.56	346.332	83.799	1	1	1	0	0	0	0
157	2011	1	0.000	932.31	346.336	83.823	1	1	1	0	0	0	0
158	2011	2	0.000	1020.75	346.335	83.827	1	1	1	0	0	0	0
159	2011	3	0.000	731.00	346.325	83.827	1	1	1	0	0	0	0
160	2011	4	3.403	457.33	346.307	83.812	1	1	1	0	0	0	0
161	2011	5	17.083	163.12	346.273	83.782	1	1	1	0	0	0	0
162	2011	6	126.665	21.53	346.225	83.746	1	1	1	0	0	0	0
163	2011	7	237.098	0.00	346.157	83.694	1	1	1	0	0	0	0
164	2011	8	357.039	0.00	346.068	83.636	1	1	1	0	0	0	0
165	2011	9	180.761	3.73	345.965	83.565	1	1	1	0	0	0	0
166	2011	10	29.273	43.57	345.847	83.489	1	1	1	0	0	0	0
167	2011	11	4.843	193.88	345.717	83.414	1	1	1	0	0	0	0
168	2011	12	0.000	446.77	345.580	83.339	1	1	1	0	0	0	0
169	2012	1	0.000	663.11	345.434	83.260	1	1	1	0	0	0	0
170	2012	2	0.000	754.80	345.288	83.191	1	1	1	0	0	0	0
171	2012	3	10.996	536.49	345.143	83.129	1	1	1	0	0	0	0
172	2012	4	33.168	157.00	344.999	83.074	1	1	1	0	0	0	0
173	2012	5	22.663	130.23	344.858	83.030	1	1	1	0	0	0	0
174	2012	6	143.748	8.62	344.725	83.002	1	1	1	0	0	0	0
175	2012	7	363.796	0.77	344.601	82.990	1	1	1	0	0	0	0
176	2012	8	321.597	0.00	344.489	82.995	1	1	1	0	0	0	0
177	2012	9	165.674	1.49	344.389	83.015	1	1	1	0	0	0	0
178	2012	10	27.555	72.73	344.299	83.053	1	1	1	0	0	0	0
179	2012	11	6.414	288.97	344.221	83.101	1	1	1	0	0	0	0
180	2012	12	0.000	446.63	344.154	83.162	1	1	1	0	0	0	0
181	2013	1	0.000	721.18	344.098	83.236	1	1	1	0	0	0	0
182	2013	2	0.000	856.24	344.054	83.316	1	1	1	0	0	0	0
183	2013	3	0.000	774.08	344.019	83.402	1	1	1	0	0	0	0
184	2013	4	0.000	559.53	343.994	83.496	1	1	1	0	0	0	0
185	2013	5	23.988	160.91	343.978	83.593	1	1	1	0	0	0	0
186	2013	6	99.143	30.73	343.973	83.699	1	1	1	0	0	0	0
187	2013	7	218.707	0.44	343.979	83.806	1	1	1	0	0	0	0
188	2013	8	178.061	0.00	343.992	83.920	1	1	1	0	0	0	0
189	2013	9	200.871	0.05	344.011	84.029	1	1	1	0	0	0	0
190	2013	10	75.368	21.62	344.033	84.139	1	1	1	0	0	0	0
191	2013	11	6.791	261.61	344.053	84.249	1	1	1	0	0	0	0
192	2013	12	0.000	671.37	344.070	84.358	1	1	1	0	0	0	0
193	2014	1	0.000	990.40	344.082	84.469	1	1	1	0	0	0	0
194	2014	2	0.000	1159.72	344.084	84.568	1	1	1	0	0	0	0
195	2014	3	0.000	1006.09	344.075	84.665	1	1	1	0	0	0	0
196	2014	4	0.638	542.99	344.049	84.760	1	1	1	0	0	0	0
197	2014	5	18.588	147.59	344.007	84.853	1	1	1	0	0	0	0
198	2014	6	119.842	33.69	343.944	84.943	1	1	1	0	0	0	0
199	2014	7	205.060	0.00	343.858	85.025	1	1	1	0	0	0	0
200	2014	8	153.631	0.00	343.745	85.105	1	1	1	0	0	0	0

Obs	YEAR	MONTH	bcdd65	bhdd55	N_imm	lcom_imm	d04on	d08on	djun10on	jan17on	apr19on	apr20	may20
201	2014	9	210.067	3.22	343.615	85.176	1	1	1	0	0	0	0
202	2014	10	31.760	46.68	343.469	85.249	1	1	1	0	0	0	0
203	2014	11	0.835	275.47	343.311	85.318	1	1	1	0	0	0	0
204	2014	12	0.000	673.82	343.145	85.388	1	1	1	0	0	0	0
205	2015	1	0.000	814.71	342.970	85.466	1	1	1	0	0	0	0
206	2015	2	0.000	983.39	342.805	85.541	1	1	1	0	0	0	0
207	2015	3	0.000	1023.65	342.643	85.623	1	1	1	0	0	0	0
208	2015	4	0.262	423.11	342.483	85.719	1	1	1	0	0	0	0
209	2015	5	24.332	128.83	342.332	85.822	1	1	1	0	0	0	0
210	2015	6	108.552	21.32	342.196	85.938	1	1	1	0	0	0	0
211	2015	7	151.226	0.20	342.080	86.071	1	1	1	0	0	0	0
212	2015	8	242.433	0.00	341.981	86.221	1	1	1	0	0	0	0
213	2015	9	183.526	0.21	341.902	86.373	1	1	1	0	0	0	0
214	2015	10	54.161	32.63	341.839	86.537	1	1	1	0	0	0	0
215	2015	11	1.276	162.24	341.790	86.715	1	1	1	0	0	0	0
216	2015	12	0.000	422.90	341.752	86.896	1	1	1	0	0	0	0
217	2016	1	0.000	660.96	341.724	87.091	1	1	1	0	0	0	0
218	2016	2	0.000	893.73	341.706	87.281	1	1	1	0	0	0	0
219	2016	3	0.000	644.78	341.692	87.479	1	1	1	0	0	0	0
220	2016	4	0.115	363.03	341.683	87.674	1	1	1	0	0	0	0
221	2016	5	4.631	161.37	341.677	87.879	1	1	1	0	0	0	0
222	2016	6	111.448	32.15	341.671	88.077	1	1	1	0	0	0	0
223	2016	7	197.762	0.00	341.664	88.277	1	1	1	0	0	0	0
224	2016	8	291.391	0.00	341.654	88.476	1	1	1	0	0	0	0
225	2016	9	224.499	0.00	341.642	88.657	1	1	1	0	0	0	0
226	2016	10	78.722	13.60	341.631	88.832	1	1	1	0	0	0	0
227	2016	11	7.560	149.62	341.617	88.994	1	1	1	0	0	0	0
228	2016	12	0.098	563.49	341.606	89.132	1	1	1	0	0	0	0
229	2017	1	0.000	877.82	341.597	89.257	1	1	1	1	0	0	0
230	2017	2	0.000	705.85	341.588	89.352	1	1	1	1	0	0	0
231	2017	3	0.000	532.60	341.583	89.418	1	1	1	1	0	0	0
232	2017	4	2.045	408.09	341.580	89.462	1	1	1	1	0	0	0
233	2017	5	17.508	130.05	341.583	89.472	1	1	1	1	0	0	0
234	2017	6	82.469	29.13	341.589	89.441	1	1	1	1	0	0	0
235	2017	7	185.261	0.00	341.600	89.379	1	1	1	1	0	0	0
236	2017	8	182.446	0.00	341.617	89.277	1	1	1	1	0	0	0
237	2017	9	92.925	0.00	341.640	89.146	1	1	1	1	0	0	0
238	2017	10	106.392	6.43	341.665	89.008	1	1	1	1	0	0	0
239	2017	11	6.087	274.81	341.695	88.861	1	1	1	1	0	0	0
240	2017	12	0.000	570.67	341.725	88.719	1	1	1	1	0	0	0
241	2018	1	0.000	1049.27	341.760	88.593	1	1	1	1	0	0	0
242	2018	2	0.000	920.50	341.791	88.495	1	1	1	1	0	0	0
243	2018	3	0.000	692.07	341.823	88.440	1	1	1	1	0	0	0
244	2018	4	0.000	590.18	341.856	88.425	1	1	1	1	0	0	0
245	2018	5	17.214	242.42	341.886	88.463	1	1	1	1	0	0	0
246	2018	6	126.109	5.19	341.914	88.579	1	1	1	1	0	0	0
247	2018	7	231.601	0.00	341.938	88.760	1	1	1	1	0	0	0
248	2018	8	227.592	0.00	341.960	89.031	1	1	1	1	0	0	0
249	2018	9	217.954	0.00	341.976	89.340	1	1	1	1	0	0	0
250	2018	10	87.002	52.20	341.988	89.677	1	1	1	1	0	0	0

Obs	YEAR	MONTH	bcdd65	bhdd55	N_imm	lcom_imm	d04on	d08on	djun10on	jan17on	apr19on	apr20	may20
251	2018	11	9.392	368.84	341.994	90.016	1	1	1	1	0	0	0
252	2018	12	0.000	689.29	341.997	90.340	1	1	1	1	0	0	0
253	2019	1	0.000	702.49	341.993	90.622	1	1	1	1	0	0	0
254	2019	2	0.000	1023.34	341.985	90.828	1	1	1	1	0	0	0
255	2019	3	0.000	850.59	341.970	90.948	1	1	1	1	0	0	0
256	2019	4	0.000	476.70	341.949	90.963	1	1	1	1	1	0	0
257	2019	5	1.784	172.76	341.922	90.843	1	1	1	1	1	0	0
258	2019	6	39.762	35.52	341.886	90.566	1	1	1	1	1	0	0
259	2019	7	224.172	0.00	341.845	90.103	1	1	1	1	1	0	0
260	2019	8	246.671	0.00	341.796	89.459	1	1	1	1	1	0	0
261	2019	9	143.748	0.00	341.742	88.673	1	1	1	1	1	0	0
262	2019	10	104.853	23.97	341.684	87.776	1	1	1	1	1	0	0
263	2019	11	4.942	313.69	341.623	86.795	1	1	1	1	1	0	0
264	2019	12	0.000	608.06	341.560	85.765	1	1	1	1	1	0	0
265	2020	1	0.000	594.04	341.495	84.699	1	1	1	1	1	0	0
266	2020	2	0.000	726.69	341.435	83.687	1	1	1	1	1	0	0
267	2020	3	0.000	666.30	341.374	82.725	1	1	1	1	1	0	0
268	2020	4	0.622	368.61	341.318	81.819	1	1	1	1	1	1	0
269	2020	5	4.434	242.09	341.267	81.030	1	1	1	1	1	0	1
270	2020	6	125.258	39.65	341.219	80.388	1	1	1	1	1	0	0
271	2020	7	289.656	0.00	341.179	79.917	1	1	1	1	1	0	0
272	2020	8	281.524	0.00	341.146	79.630	1	1	1	1	1	0	0
273	2020	9	210.116	1.06	341.120	79.508	1	1	1	1	1	0	0
274	2020	10	27.948	43.69	341.098	79.529	1	1	1	1	1	0	0
275	2020	11	2.029	222.24	341.078	79.672	1	1	1	1	1	0	0
276	2020	12	1.080	470.16	341.061	79.912	1	1	1	1	1	0	0
277	2021	1	0.000	727.56	341.043	80.234	1	1	1	1	1	0	0
278	2021	2	0.000	903.95	341.027	80.592	1	1	1	1	1	0	0
279	2021	3	0.461	730.81	341.008	80.992	1	1	1	1	1	0	0
280	2021	4	3.580	423.80	340.983	81.413	1	1	1	1	1	0	0
281	2021	5	17.783	152.67	340.957	81.829	1	1	1	1	1	0	0
282	2021	6	93.219	27.93	340.922	82.213	1	1	1	1	1	0	0
283	2021	7	222.622	0.74	340.881	82.552	1	1	1	1	1	0	0
284	2021	8	245.155	0.00	340.831	82.836	1	1	1	1	1	0	0
285	2021	9	177.218	0.96	340.775	83.069	1	1	1	1	1	0	0
286	2021	10	54.320	47.16	340.712	83.256	1	1	1	1	1	0	0
287	2021	11	4.678	245.32	340.646	83.408	1	1	1	1	1	0	0
288	2021	12	0.052	562.05	340.574	83.534	1	1	1	1	1	0	0
289	2022	1	0.000	810.89	340.500	83.638	1	1	1	1	1	0	0
290	2022	2	0.000	903.95	340.426	83.721	1	1	1	1	1	0	0
291	2022	3	0.461	730.81	340.350	83.799	1	1	1	1	1	0	0
292	2022	4	3.580	423.80	340.270	83.880	1	1	1	1	1	0	0
293	2022	5	17.783	152.67	340.192	83.968	1	1	1	1	1	0	0
294	2022	6	93.219	27.93	340.114	84.074	1	1	1	1	1	0	0
295	2022	7	222.622	0.74	340.037	84.196	1	1	1	1	1	0	0
296	2022	8	245.155	0.00	339.962	84.348	1	1	1	1	1	0	0
297	2022	9	177.218	0.96	339.889	84.515	1	1	1	1	1	0	0
298	2022	10	54.320	47.16	339.820	84.696	1	1	1	1	1	0	0
299	2022	11	4.678	245.32	339.751	84.893	1	1	1	1	1	0	0
300	2022	12	0.052	562.05	339.682	85.094	1	1	1	1	1	0	0

Obs	YEAR	MONTH	bcdd65	bhdd55	N_imm	lcom_imm	d04on	d08on	djun10on	jan17on	apr19on	apr20	may20
301	2023	1	0.000	810.894	339.614	85.310	1	1	1	1	1	0	0
302	2023	2	0.000	903.951	339.549	85.509	1	1	1	1	1	0	0
303	2023	3	0.461	730.812	339.482	85.706	1	1	1	1	1	0	0
304	2023	4	3.580	423.797	339.414	85.904	1	1	1	1	1	0	0
305	2023	5	17.783	152.675	339.345	86.088	1	1	1	1	1	0	0
306	2023	6	93.219	27.926	339.274	86.253	1	1	1	1	1	0	0
307	2023	7	222.622	0.742	339.202	86.407	1	1	1	1	1	0	0
308	2023	8	245.155	0.000	339.127	86.543	1	1	1	1	1	0	0
309	2023	9	177.218	0.963	339.053	86.649	1	1	1	1	1	0	0
310	2023	10	54.320	47.158	338.976	86.743	1	1	1	1	1	0	0
311	2023	11	4.678	245.317	338.899	86.820	1	1	1	1	1	0	0
312	2023	12	0.052	562.054	338.820	86.888	1	1	1	1	1	0	0
313	2024	1	0.000	810.894	338.740	86.943	1	1	1	1	1	0	0
314	2024	2	0.000	903.951	338.663	86.988	1	1	1	1	1	0	0
315	2024	3	0.461	730.812	338.584	87.030	1	1	1	1	1	0	0
316	2024	4	3.580	423.797	338.506	87.065	1	1	1	1	1	0	0
317	2024	5	17.783	152.675	338.426	87.095	1	1	1	1	1	0	0
318	2024	6	93.219	27.926	338.348	87.125	1	1	1	1	1	0	0
319	2024	7	222.622	0.742	338.269	87.158	1	1	1	1	1	0	0
320	2024	8	245.155	0.000	338.191	87.188	1	1	1	1	1	0	0
321	2024	9	177.218	0.963	338.113	87.221	1	1	1	1	1	0	0
322	2024	10	54.320	47.158	338.035	87.264	1	1	1	1	1	0	0
323	2024	11	4.678	245.317	337.960	87.296	1	1	1	1	1	0	0
324	2024	12	0.052	562.054	337.884	87.333	1	1	1	1	1	0	0
325	2025	1	0.000	810.894	337.807	87.376	1	1	1	1	1	0	0
326	2025	2	0.000	903.951	337.733	87.407	1	1	1	1	1	0	0
327	2025	3	0.461	730.812	337.661	87.447	1	1	1	1	1	0	0
328	2025	4	3.580	423.797	337.585	87.493	1	1	1	1	1	0	0
329	2025	5	17.783	152.675	337.511	87.530	1	1	1	1	1	0	0
330	2025	6	93.219	27.926	337.436	87.572	1	1	1	1	1	0	0
331	2025	7	222.622	0.742	337.361	87.610	1	1	1	1	1	0	0
332	2025	8	245.155	0.000	337.285	87.653	1	1	1	1	1	0	0
333	2025	9	177.218	0.963	337.210	87.694	1	1	1	1	1	0	0
334	2025	10	54.320	47.158	337.134	87.737	1	1	1	1	1	0	0
335	2025	11	4.678	245.317	337.058	87.774	1	1	1	1	1	0	0
336	2025	12	0.052	562.054	336.982	87.818	1	1	1	1	1	0	0
337	2026	1	0.000	810.894	336.904	87.855	1	1	1	1	1	0	0
338	2026	2	0.000	903.951	336.829	87.891	1	1	1	1	1	0	0
339	2026	3	0.461	730.812	336.755	87.935	1	1	1	1	1	0	0
340	2026	4	3.580	423.797	336.677	87.972	1	1	1	1	1	0	0
341	2026	5	17.783	152.675	336.596	88.015	1	1	1	1	1	0	0
342	2026	6	93.219	27.926	336.517	88.055	1	1	1	1	1	0	0
343	2026	7	222.622	0.742	336.435	88.095	1	1	1	1	1	0	0
344	2026	8	245.155	0.000	336.352	88.139	1	1	1	1	1	0	0
345	2026	9	177.218	0.963	336.270	88.178	1	1	1	1	1	0	0
346	2026	10	54.320	47.158	336.187	88.219	1	1	1	1	1	0	0
347	2026	11	4.678	245.317	336.103	88.259	1	1	1	1	1	0	0
348	2026	12	0.052	562.054	336.017	88.300	1	1	1	1	1	0	0
349	2027	1	0.000	810.894	335.931	88.340	1	1	1	1	1	0	0
350	2027	2	0.000	903.951	335.850	88.373	1	1	1	1	1	0	0

Obs	YEAR	MONTH	bcdd65	bhdd55	N_imm	lcom_imm	d04on	d08on	djun10on	jan17on	apr19on	apr20	may20
351	2027	3	0.461	730.812	335.765	88.414	1	1	1	1	1	0	0
352	2027	4	3.580	423.797	335.680	88.446	1	1	1	1	1	0	0
353	2027	5	17.783	152.675	335.593	88.478	1	1	1	1	1	0	0
354	2027	6	93.219	27.926	335.506	88.513	1	1	1	1	1	0	0
355	2027	7	222.622	0.742	335.420	88.544	1	1	1	1	1	0	0
356	2027	8	245.155	0.000	335.332	88.571	1	1	1	1	1	0	0
357	2027	9	177.218	0.963	335.246	88.601	1	1	1	1	1	0	0
358	2027	10	54.320	47.158	335.160	88.627	1	1	1	1	1	0	0
359	2027	11	4.678	245.317	335.073	88.651	1	1	1	1	1	0	0
360	2027	12	0.052	562.054	334.987	88.678	1	1	1	1	1	0	0
361	2028	1	0.000	810.894	334.898	88.702	1	1	1	1	1	0	0
362	2028	2	0.000	903.951	334.814	88.725	1	1	1	1	1	0	0
363	2028	3	0.461	730.812	334.728	88.748	1	1	1	1	1	0	0
364	2028	4	3.580	423.797	334.641	88.770	1	1	1	1	1	0	0
365	2028	5	17.783	152.675	334.553	88.790	1	1	1	1	1	0	0
366	2028	6	93.219	27.926	334.466	88.813	1	1	1	1	1	0	0
367	2028	7	222.622	0.742	334.378	88.841	1	1	1	1	1	0	0
368	2028	8	245.155	0.000	334.289	88.865	1	1	1	1	1	0	0
369	2028	9	177.218	0.963	334.201	88.888	1	1	1	1	1	0	0
370	2028	10	54.320	47.158	334.111	88.917	1	1	1	1	1	0	0
371	2028	11	4.678	245.317	334.024	88.944	1	1	1	1	1	0	0
372	2028	12	0.052	562.054	333.935	88.970	1	1	1	1	1	0	0
373	2029	1	0.000	810.894	333.844	88.998	1	1	1	1	1	0	0
374	2029	2	0.000	903.951	333.758	89.025	1	1	1	1	1	0	0
375	2029	3	0.461	730.812	333.672	89.052	1	1	1	1	1	0	0
376	2029	4	3.580	423.797	333.583	89.079	1	1	1	1	1	0	0
377	2029	5	17.783	152.675	333.494	89.104	1	1	1	1	1	0	0
378	2029	6	93.219	27.926	333.405	89.131	1	1	1	1	1	0	0
379	2029	7	222.622	0.742	333.315	89.161	1	1	1	1	1	0	0
380	2029	8	245.155	0.000	333.225	89.190	1	1	1	1	1	0	0
381	2029	9	177.218	0.963	333.137	89.216	1	1	1	1	1	0	0
382	2029	10	54.320	47.158	333.048	89.243	1	1	1	1	1	0	0
383	2029	11	4.678	245.317	332.959	89.266	1	1	1	1	1	0	0
384	2029	12	0.052	562.054	332.870	89.290	1	1	1	1	1	0	0
385	2030	1	0.000	810.894	332.780	89.318	1	1	1	1	1	0	0
386	2030	2	0.000	903.951	332.696	89.340	1	1	1	1	1	0	0
387	2030	3	0.461	730.812	332.610	89.365	1	1	1	1	1	0	0
388	2030	4	3.580	423.797	332.522	89.385	1	1	1	1	1	0	0
389	2030	5	17.783	152.675	332.435	89.410	1	1	1	1	1	0	0
390	2030	6	93.219	27.926	332.348	89.429	1	1	1	1	1	0	0
391	2030	7	222.622	0.742	332.260	89.450	1	1	1	1	1	0	0
392	2030	8	245.155	0.000	332.173	89.473	1	1	1	1	1	0	0
393	2030	9	177.218	0.963	332.087	89.491	1	1	1	1	1	0	0
394	2030	10	54.320	47.158	332.002	89.512	1	1	1	1	1	0	0
395	2030	11	4.678	245.317	331.914	89.526	1	1	1	1	1	0	0
396	2030	12	0.052	562.054	331.828	89.546	1	1	1	1	1	0	0
397	2031	1	0.000	810.894	331.740	89.562	1	1	1	1	1	0	0
398	2031	2	0.000	903.951	331.656	89.577	1	1	1	1	1	0	0
399	2031	3	0.461	730.812	331.570	89.586	1	1	1	1	1	0	0
400	2031	4	3.580	423.797	331.482	89.605	1	1	1	1	1	0	0

Obs	YEAR	MONTH	bcdd65	bhdd55	N_imm	lcom_imm	d04on	d08on	djun10on	jan17on	apr19on	apr20	may20
401	2031	5	17.783	152.675	331.393	89.618	1	1	1	1	1	0	0
402	2031	6	93.219	27.926	331.303	89.629	1	1	1	1	1	0	0
403	2031	7	222.622	0.742	331.212	89.641	1	1	1	1	1	0	0
404	2031	8	245.155	0.000	331.119	89.654	1	1	1	1	1	0	0
405	2031	9	177.218	0.963	331.027	89.662	1	1	1	1	1	0	0
406	2031	10	54.320	47.158	330.932	89.669	1	1	1	1	1	0	0
407	2031	11	4.678	245.317	330.836	89.681	1	1	1	1	1	0	0
408	2031	12	0.052	562.054	330.741	89.690	1	1	1	1	1	0	0
409	2032	1	0.000	810.894	330.643	89.699	1	1	1	1	1	0	0
410	2032	2	0.000	903.951	330.548	89.704	1	1	1	1	1	0	0
411	2032	3	0.461	730.812	330.453	89.714	1	1	1	1	1	0	0
412	2032	4	3.580	423.797	330.355	89.722	1	1	1	1	1	0	0
413	2032	5	17.783	152.675	330.255	89.730	1	1	1	1	1	0	0
414	2032	6	93.219	27.926	330.158	89.736	1	1	1	1	1	0	0
415	2032	7	222.622	0.742	330.059	89.747	1	1	1	1	1	0	0
416	2032	8	245.155	0.000	329.958	89.758	1	1	1	1	1	0	0
417	2032	9	177.218	0.963	329.859	89.765	1	1	1	1	1	0	0
418	2032	10	54.320	47.158	329.759	89.776	1	1	1	1	1	0	0
419	2032	11	4.678	245.317	329.660	89.785	1	1	1	1	1	0	0
420	2032	12	0.052	562.054	329.559	89.797	1	1	1	1	1	0	0
421	2033	1	0.000	810.894	329.457	89.805	1	1	1	1	1	0	0
422	2033	2	0.000	903.951	329.359	89.811	1	1	1	1	1	0	0
423	2033	3	0.461	730.812	329.260	89.823	1	1	1	1	1	0	0
424	2033	4	3.580	423.797	329.157	89.831	1	1	1	1	1	0	0
425	2033	5	17.783	152.675	329.054	89.842	1	1	1	1	1	0	0
426	2033	6	93.219	27.926	328.950	89.850	1	1	1	1	1	0	0
427	2033	7	222.622	0.742	328.845	89.859	1	1	1	1	1	0	0
428	2033	8	245.155	0.000	328.737	89.867	1	1	1	1	1	0	0
429	2033	9	177.218	0.963	328.630	89.874	1	1	1	1	1	0	0
430	2033	10	54.320	47.158	328.524	89.877	1	1	1	1	1	0	0
431	2033	11	4.678	245.317	328.415	89.889	1	1	1	1	1	0	0
432	2033	12	0.052	562.054	328.307	89.891	1	1	1	1	1	0	0
433	2034	1	0.000	810.894	328.197	89.900	1	1	1	1	1	0	0
434	2034	2	0.000	903.951	328.089	89.905	1	1	1	1	1	0	0
435	2034	3	0.461	730.812	327.983	89.913	1	1	1	1	1	0	0
436	2034	4	3.580	423.797	327.872	89.917	1	1	1	1	1	0	0
437	2034	5	17.783	152.675	327.762	89.923	1	1	1	1	1	0	0
438	2034	6	93.219	27.926	327.650	89.927	1	1	1	1	1	0	0
439	2034	7	222.622	0.742	327.538	89.930	1	1	1	1	1	0	0
440	2034	8	245.155	0.000	327.424	89.937	1	1	1	1	1	0	0
441	2034	9	177.218	0.963	327.311	89.941	1	1	1	1	1	0	0
442	2034	10	54.320	47.158	327.198	89.944	1	1	1	1	1	0	0
443	2034	11	4.678	245.317	327.085	89.950	1	1	1	1	1	0	0
444	2034	12	0.052	562.054	326.970	89.955	1	1	1	1	1	0	0
445	2035	1	0.000	810.894	326.855	89.959	1	1	1	1	1	0	0
446	2035	2	0.000	903.951	326.744	89.966	1	1	1	1	1	0	0
447	2035	3	0.461	730.812	326.632	89.970	1	1	1	1	1	0	0
448	2035	4	3.580	423.797	326.517	89.973	1	1	1	1	1	0	0
449	2035	5	17.783	152.675	326.400	89.978	1	1	1	1	1	0	0
450	2035	6	93.219	27.926	326.285	89.985	1	1	1	1	1	0	0

Obs	YEAR	MONTH	bcdd65	bhdd55	N_imm	lcom_imm	d04on	d08on	djun10on	jan17on	apr19on	apr20	may20
451	2035	7	222.622	0.742	326.169	89.987	1	1	1	1	1	0	0
452	2035	8	245.155	0.000	326.050	89.995	1	1	1	1	1	0	0
453	2035	9	177.218	0.963	325.931	89.997	1	1	1	1	1	0	0
454	2035	10	54.320	47.158	325.813	90.002	1	1	1	1	1	0	0
455	2035	11	4.678	245.317	325.694	90.008	1	1	1	1	1	0	0
456	2035	12	0.052	562.054	325.576	90.013	1	1	1	1	1	0	0
457	2036	1	0.000	810.894	325.454	90.016	1	1	1	1	1	0	0
458	2036	2	0.000	903.951	325.338	90.023	1	1	1	1	1	0	0
459	2036	3	0.461	730.812	325.219	90.025	1	1	1	1	1	0	0
460	2036	4	3.580	423.797	325.100	90.032	1	1	1	1	1	0	0
461	2036	5	17.783	152.675	324.980	90.035	1	1	1	1	1	0	0
462	2036	6	93.219	27.926	324.859	90.041	1	1	1	1	1	0	0
463	2036	7	222.622	0.742	324.739	90.047	1	1	1	1	1	0	0
464	2036	8	245.155	0.000	324.617	90.050	1	1	1	1	1	0	0
465	2036	9	177.218	0.963	324.495	90.055	1	1	1	1	1	0	0
466	2036	10	54.320	47.158	324.374	90.059	1	1	1	1	1	0	0
467	2036	11	4.678	245.317	324.253	90.063	1	1	1	1	1	0	0
468	2036	12	0.052	562.054	324.131	90.067	1	1	1	1	1	0	0
469	2037	1	0.000	810.894	324.008	90.076	1	1	1	1	1	0	0
470	2037	2	0.000	903.951	323.889	90.078	1	1	1	1	1	0	0
471	2037	3	0.461	730.812	323.769	90.078	1	1	1	1	1	0	0
472	2037	4	3.580	423.797	323.646	90.088	1	1	1	1	1	0	0
473	2037	5	17.783	152.675	323.523	90.090	1	1	1	1	1	0	0
474	2037	6	93.219	27.926	323.398	90.090	1	1	1	1	1	0	0
475	2037	7	222.622	0.742	323.272	90.093	1	1	1	1	1	0	0
476	2037	8	245.155	0.000	323.145	90.102	1	1	1	1	1	0	0
477	2037	9	177.218	0.963	323.019	90.104	1	1	1	1	1	0	0
478	2037	10	54.320	47.158	322.893	90.107	1	1	1	1	1	0	0
479	2037	11	4.678	245.317	322.763	90.110	1	1	1	1	1	0	0
480	2037	12	0.052	562.054	322.636	90.111	1	1	1	1	1	0	0
481	2038	1	0.000	810.894	322.506	90.118	1	1	1	1	1	0	0
482	2038	2	0.000	903.951	322.379	90.122	1	1	1	1	1	0	0
483	2038	3	0.461	730.812	322.254	90.120	1	1	1	1	1	0	0
484	2038	4	3.580	423.797	322.124	90.127	1	1	1	1	1	0	0
485	2038	5	17.783	152.675	321.994	90.128	1	1	1	1	1	0	0
486	2038	6	93.219	27.926	321.863	90.132	1	1	1	1	1	0	0
487	2038	7	222.622	0.742	321.730	90.134	1	1	1	1	1	0	0
488	2038	8	245.155	0.000	321.598	90.136	1	1	1	1	1	0	0
489	2038	9	177.218	0.963	321.463	90.137	1	1	1	1	1	0	0
490	2038	10	54.320	47.158	321.331	90.137	1	1	1	1	1	0	0
491	2038	11	4.678	245.317	321.198	90.136	1	1	1	1	1	0	0
492	2038	12	0.052	562.054	321.063	90.137	1	1	1	1	1	0	0
493	2039	1	0.000	810.894	320.928	90.144	1	1	1	1	1	0	0
494	2039	2	0.000	903.951	320.799	90.146	1	1	1	1	1	0	0
495	2039	3	0.461	730.812	320.667	90.148	1	1	1	1	1	0	0
496	2039	4	3.580	423.797	320.533	90.147	1	1	1	1	1	0	0
497	2039	5	17.783	152.675	320.397	90.150	1	1	1	1	1	0	0
498	2039	6	93.219	27.926	320.261	90.152	1	1	1	1	1	0	0
499	2039	7	222.622	0.742	320.123	90.150	1	1	1	1	1	0	0
500	2039	8	245.155	0.000	319.984	90.156	1	1	1	1	1	0	0

Obs	YEAR	MONTH	bcdd65	bhdd55	N_imm	lcom_imm	d04on	d08on	djun10on	jan17on	apr19on	apr20	may20
501	2039	9	177.218	0.963	319.847	90.157	1	1	1	1	1	0	0
502	2039	10	54.320	47.158	319.709	90.158	1	1	1	1	1	0	0
503	2039	11	4.678	245.317	319.571	90.161	1	1	1	1	1	0	0
504	2039	12	0.052	562.054	319.432	90.164	1	1	1	1	1	0	0
505	2040	1	0.000	810.894	319.290	90.169	1	1	1	1	1	0	0
506	2040	2	0.000	903.951	319.152	90.170	1	1	1	1	1	0	0
507	2040	3	0.461	730.812	319.016	90.173	1	1	1	1	1	0	0
508	2040	4	3.580	423.797	318.877	90.176	1	1	1	1	1	0	0
509	2040	5	17.783	152.675	318.736	90.181	1	1	1	1	1	0	0
510	2040	6	93.219	27.926	318.596	90.181	1	1	1	1	1	0	0
511	2040	7	222.622	0.742	318.456	90.189	1	1	1	1	1	0	0
512	2040	8	245.155	0.000	318.312	90.194	1	1	1	1	1	0	0
513	2040	9	177.218	0.963	318.171	90.197	1	1	1	1	1	0	0
514	2040	10	54.320	47.158	318.030	90.201	1	1	1	1	1	0	0
515	2040	11	4.678	245.317	317.888	90.207	1	1	1	1	1	0	0
516	2040	12	0.052	562.054	317.746	90.211	1	1	1	1	1	0	0
517	2041	1	0.000	810.894	317.602	90.222	1	1	1	1	1	0	0
518	2041	2	0.000	903.951	317.464	90.224	1	1	1	1	1	0	0
519	2041	3	0.461	730.812	317.326	90.232	1	1	1	1	1	0	0
520	2041	4	3.580	423.797	317.184	90.242	1	1	1	1	1	0	0
521	2041	5	17.783	152.675	317.039	90.245	1	1	1	1	1	0	0
522	2041	6	93.219	27.926	316.895	90.252	1	1	1	1	1	0	0
523	2041	7	222.622	0.742	316.751	90.260	1	1	1	1	1	0	0
524	2041	8	245.155	0.000	316.604	90.270	1	1	1	1	1	0	0
525	2041	9	177.218	0.963	316.459	90.279	1	1	1	1	1	0	0
526	2041	10	54.320	47.158	316.314	90.291	1	1	1	1	1	0	0
527	2041	11	4.678	245.317	316.168	90.298	1	1	1	1	1	0	0
528	2041	12	0.052	562.054	316.022	90.304	1	1	1	1	1	0	0
529	2042	1	0.000	810.894	315.872	90.316	1	1	1	1	1	0	0
530	2042	2	0.000	903.951	315.731	90.323	1	1	1	1	1	0	0
531	2042	3	0.461	730.812	315.588	90.335	1	1	1	1	1	0	0
532	2042	4	3.580	423.797	315.439	90.344	1	1	1	1	1	0	0
533	2042	5	17.783	152.675	315.291	90.351	1	1	1	1	1	0	0
534	2042	6	93.219	27.926	315.140	90.360	1	1	1	1	1	0	0
535	2042	7	222.622	0.742	314.992	90.371	1	1	1	1	1	0	0
536	2042	8	245.155	0.000	314.839	90.378	1	1	1	1	1	0	0
537	2042	9	177.218	0.963	314.688	90.391	1	1	1	1	1	0	0
538	2042	10	54.320	47.158	314.538	90.393	1	1	1	1	1	0	0
539	2042	11	4.678	245.317	314.386	90.405	1	1	1	1	1	0	0
540	2042	12	0.052	562.054	314.234	90.413	1	1	1	1	1	0	0
541	2043	1	0.000	810.894	314.080	90.421	1	1	1	1	1	0	0
542	2043	2	0.000	903.951	313.933	90.431	1	1	1	1	1	0	0
543	2043	3	0.461	730.812	313.786	90.439	1	1	1	1	1	0	0
544	2043	4	3.580	423.797	313.633	90.448	1	1	1	1	1	0	0
545	2043	5	17.783	152.675	313.483	90.457	1	1	1	1	1	0	0
546	2043	6	93.219	27.926	313.330	90.467	1	1	1	1	1	0	0
547	2043	7	222.622	0.742	313.179	90.475	1	1	1	1	1	0	0
548	2043	8	245.155	0.000	313.025	90.486	1	1	1	1	1	0	0
549	2043	9	177.218	0.963	312.874	90.493	1	1	1	1	1	0	0
550	2043	10	54.320	47.158	312.723	90.503	1	1	1	1	1	0	0

Obs	YEAR	MONTH	bcdd65	bhdd55	N_imm	lcom_imm	d04on	d08on	djun10on	jan17on	apr19on	apr20	may20
551	2043	11	4.678	245.317	312.571	90.513	1	1	1	1	1	0	0
552	2043	12	0.052	562.054	312.419	90.523	1	1	1	1	1	0	0
553	2044	1	0.000	810.894	312.266	90.536	1	1	1	1	1	0	0
554	2044	2	0.000	903.951	312.117	90.545	1	1	1	1	1	0	0
555	2044	3	0.461	730.812	311.967	90.555	1	1	1	1	1	0	0
556	2044	4	3.580	423.797	311.815	90.564	1	1	1	1	1	0	0
557	2044	5	17.783	152.675	311.663	90.578	1	1	1	1	1	0	0
558	2044	6	93.219	27.926	311.510	90.583	1	1	1	1	1	0	0
559	2044	7	222.622	0.742	311.358	90.595	1	1	1	1	1	0	0
560	2044	8	245.155	0.000	311.201	90.608	1	1	1	1	1	0	0
561	2044	9	177.218	0.963	311.047	90.618	1	1	1	1	1	0	0
562	2044	10	54.320	47.158	310.892	90.626	1	1	1	1	1	0	0
563	2044	11	4.678	245.317	310.738	90.641	1	1	1	1	1	0	0
564	2044	12	0.052	562.054	310.583	90.649	1	1	1	1	1	0	0
565	2045	1	0.000	810.894	310.425	90.662	1	1	1	1	1	0	0
566	2045	2	0.000	903.951	310.276	90.667	1	1	1	1	1	0	0
567	2045	3	0.461	730.812	310.126	90.679	1	1	1	1	1	0	0
568	2045	4	3.580	423.797	309.970	90.684	1	1	1	1	1	0	0
569	2045	5	17.783	152.675	309.817	90.698	1	1	1	1	1	0	0
570	2045	6	93.219	27.926	309.663	90.708	1	1	1	1	1	0	0
571	2045	7	222.622	0.742	309.509	90.718	1	1	1	1	1	0	0
572	2045	8	245.155	0.000	309.352	90.727	1	1	1	1	1	0	0
573	2045	9	177.218	0.963	309.198	90.739	1	1	1	1	1	0	0
574	2045	10	54.320	47.158	309.045	90.749	1	1	1	1	1	0	0
575	2045	11	4.678	245.317	308.892	90.756	1	1	1	1	1	0	0
576	2045	12	0.052	562.054	308.737	90.766	1	1	1	1	1	0	0
577	2046	1	0.000	810.894	308.581	90.776	1	1	1	1	1	0	0
578	2046	2	0.000	903.951	308.431	90.790	1	1	1	1	1	0	0
579	2046	3	0.461	730.812	308.281	90.794	1	1	1	1	1	0	0
580	2046	4	3.580	423.797	308.125	90.804	1	1	1	1	1	0	0
581	2046	5	17.783	152.675	307.968	90.814	1	1	1	1	1	0	0
582	2046	6	93.219	27.926	307.810	90.818	1	1	1	1	1	0	0
583	2046	7	222.622	0.742	307.651	90.831	1	1	1	1	1	0	0
584	2046	8	245.155	0.000	307.487	90.841	1	1	1	1	1	0	0
585	2046	9	177.218	0.963	307.325	90.851	1	1	1	1	1	0	0
586	2046	10	54.320	47.158	307.163	90.856	1	1	1	1	1	0	0
587	2046	11	4.678	245.317	306.999	90.863	1	1	1	1	1	0	0
588	2046	12	0.052	562.054	306.834	90.874	1	1	1	1	1	0	0
589	2047	1	0.000	810.894	306.668	90.883	1	1	1	1	1	0	0
590	2047	2	0.000	903.951	306.508	90.891	1	1	1	1	1	0	0
591	2047	3	0.461	730.812	306.349	90.898	1	1	1	1	1	0	0
592	2047	4	3.580	423.797	306.185	90.906	1	1	1	1	1	0	0
593	2047	5	17.783	152.675	306.022	90.914	1	1	1	1	1	0	0
594	2047	6	93.219	27.926	305.857	90.924	1	1	1	1	1	0	0
595	2047	7	222.622	0.742	305.695	90.933	1	1	1	1	1	0	0
596	2047	8	245.155	0.000	305.530	90.939	1	1	1	1	1	0	0
597	2047	9	177.218	0.963	305.369	90.948	1	1	1	1	1	0	0
598	2047	10	54.320	47.158	305.208	90.956	1	1	1	1	1	0	0
599	2047	11	4.678	245.317	305.048	90.964	1	1	1	1	1	0	0
600	2047	12	0.052	562.054	304.888	90.976	1	1	1	1	1	0	0

Obs	YEAR	MONTH	bcdd65	bhdd55	N_imm	lcom_imm	d04on	d08on	djun10on	jan17on	apr19on	apr20	may20
601	2048	1	0.000	810.894	304.726	90.9840	1	1	1	1	1	0	0
602	2048	2	0.000	903.951	304.568	90.9910	1	1	1	1	1	0	0
603	2048	3	0.461	730.812	304.412	91.0030	1	1	1	1	1	0	0
604	2048	4	3.580	423.797	304.253	91.0110	1	1	1	1	1	0	0
605	2048	5	17.783	152.675	304.095	91.0150	1	1	1	1	1	0	0
606	2048	6	93.219	27.926	303.935	91.0280	1	1	1	1	1	0	0
607	2048	7	222.622	0.742	303.777	91.0300	1	1	1	1	1	0	0
608	2048	8	245.155	0.000	303.614	91.0470	1	1	1	1	1	0	0
609	2048	9	177.218	0.963	303.455	91.0570	1	1	1	1	1	0	0
610	2048	10	54.320	47.158	303.295	91.0630	1	1	1	1	1	0	0
611	2048	11	4.678	245.317	303.135	91.0750	1	1	1	1	1	0	0
612	2048	12	0.052	562.054	302.976	91.0770	1	1	1	1	1	0	0
613	2049	1	0.000	810.894	302.815	91.0890	1	1	1	1	1	0	0
614	2049	2	0.000	903.951	302.660	91.0990	1	1	1	1	1	0	0
615	2049	3	0.461	730.812	302.506	91.1060	1	1	1	1	1	0	0
616	2049	4	3.580	423.797	302.346	91.1150	1	1	1	1	1	0	0
617	2049	5	17.783	152.675	302.188	91.1230	1	1	1	1	1	0	0
618	2049	6	93.219	27.926	302.027	91.1290	1	1	1	1	1	0	0
619	2049	7	222.622	0.742	301.869	91.1400	1	1	1	1	1	0	0
620	2049	8	245.155	0.000	301.708	91.1490	1	1	1	1	1	0	0
621	2049	9	177.218	0.963	301.549	91.1570	1	1	1	1	1	0	0
622	2049	10	54.320	47.158	301.390	91.1620	1	1	1	1	1	0	0
623	2049	11	4.678	245.317	301.232	91.1700	1	1	1	1	1	0	0
624	2049	12	0.052	562.054	301.074	91.1800	1	1	1	1	1	0	0
625	2050	1	0.000	810.894	300.914	91.1860	1	1	1	1	1	0	0
626	2050	2	0.000	903.951	300.761	91.1930	1	1	1	1	1	0	0
627	2050	3	0.461	730.812	300.608	91.1960	1	1	1	1	1	0	0
628	2050	4	3.580	423.797	300.451	91.2060	1	1	1	1	1	0	0
629	2050	5	17.783	152.675	300.295	91.2070	1	1	1	1	1	0	0
630	2050	6	93.219	27.926	300.140	91.2130	1	1	1	1	1	0	0
631	2050	7	222.622	0.742	299.984	91.2210	1	1	1	1	1	0	0
632	2050	8	245.155	0.000	299.827	91.2270	1	1	1	1	1	0	0
633	2050	9	177.218	0.963	299.671	91.2300	1	1	1	1	1	0	0
634	2050	10	54.320	47.158	299.518	91.2360	1	1	1	1	1	0	0
635	2050	11	4.678	245.317	299.364	91.2400	1	1	1	1	1	0	0
636	2050	12	0.052	562.054	299.211	91.2400	1	1	1	1	1	0	0
637	2051	1	0.000	810.894	299.026	91.2851	1	1	1	1	1	0	0
638	2051	2	0.000	903.951	298.875	91.2890	1	1	1	1	1	0	0
639	2051	3	0.461	730.812	298.723	91.2880	1	1	1	1	1	0	0
640	2051	4	3.580	423.797	298.569	91.2990	1	1	1	1	1	0	0
641	2051	5	17.783	152.675	298.415	91.2930	1	1	1	1	1	0	0
642	2051	6	93.219	27.926	298.266	91.2989	1	1	1	1	1	0	0
643	2051	7	222.622	0.742	298.112	91.3039	1	1	1	1	1	0	0
644	2051	8	245.155	0.000	297.959	91.3069	1	1	1	1	1	0	0
645	2051	9	177.218	0.963	297.806	91.3049	1	1	1	1	1	0	0
646	2051	10	54.320	47.158	297.659	91.3119	1	1	1	1	1	0	0
647	2051	11	4.678	245.317	297.509	91.3118	1	1	1	1	1	0	0
648	2051	12	0.052	562.054	297.361	91.3019	1	1	1	1	1	0	0
649	2052	1	0.000	810.894	297.152	91.3862	1	1	1	1	1	0	0
650	2052	2	0.000	903.951	297.003	91.3870	1	1	1	1	1	0	0

Obs	YEAR	MONTH	bcdd65	bhdd55	N_imm	lcom_imm	d04on	d08on	djun10on	jan17on	apr19on	apr20	may20
651	2052	3	0.461	730.812	296.852	91.3819	1	1	1	1	1	0	0
652	2052	4	3.580	423.797	296.701	91.3939	1	1	1	1	1	0	0
653	2052	5	17.783	152.675	296.549	91.3809	1	1	1	1	1	0	0
654	2052	6	93.219	27.926	296.406	91.3867	1	1	1	1	1	0	0
655	2052	7	222.622	0.742	296.254	91.3887	1	1	1	1	1	0	0
656	2052	8	245.155	0.000	296.104	91.3886	1	1	1	1	1	0	0
657	2052	9	177.218	0.963	295.954	91.3817	1	1	1	1	1	0	0
658	2052	10	54.320	47.158	295.813	91.3896	1	1	1	1	1	0	0
659	2052	11	4.678	245.317	295.667	91.3855	1	1	1	1	1	0	0
660	2052	12	0.052	562.054	295.524	91.3656	1	1	1	1	1	0	0
661	2053	1	0.000	810.894	295.291	91.4895	1	1	1	1	1	0	0
662	2053	2	0.000	903.951	295.144	91.4869	1	1	1	1	1	0	0
663	2053	3	0.461	730.812	294.994	91.4779	1	1	1	1	1	0	0
664	2053	4	3.580	423.797	294.846	91.4908	1	1	1	1	1	0	0
665	2053	5	17.783	152.675	294.695	91.4707	1	1	1	1	1	0	0
666	2053	6	93.219	27.926	294.558	91.4763	1	1	1	1	1	0	0
667	2053	7	222.622	0.742	294.408	91.4755	1	1	1	1	1	0	0
668	2053	8	245.155	0.000	294.263	91.4721	1	1	1	1	1	0	0
669	2053	9	177.218	0.963	294.116	91.4604	1	1	1	1	1	0	0
670	2053	10	54.320	47.158	293.980	91.4693	1	1	1	1	1	0	0
671	2053	11	4.678	245.317	293.838	91.4610	1	1	1	1	1	0	0
672	2053	12	0.052	562.054	293.700	91.4312	1	1	1	1	1	0	0
673	2054	1	0.000	810.894	293.443	91.5948	1	1	1	1	1	0	0
674	2054	2	0.000	903.951	293.298	91.5889	1	1	1	1	1	0	0
675	2054	3	0.461	730.812	293.149	91.5758	1	1	1	1	1	0	0
676	2054	4	3.580	423.797	293.003	91.5898	1	1	1	1	1	0	0
677	2054	5	17.783	152.675	292.855	91.5626	1	1	1	1	1	0	0
678	2054	6	93.219	27.926	292.723	91.5679	1	1	1	1	1	0	0
679	2054	7	222.622	0.742	292.575	91.5641	1	1	1	1	1	0	0
680	2054	8	245.155	0.000	292.434	91.5575	1	1	1	1	1	0	0
681	2054	9	177.218	0.963	292.290	91.5411	1	1	1	1	1	0	0
682	2054	10	54.320	47.158	292.160	91.5508	1	1	1	1	1	0	0
683	2054	11	4.678	245.317	292.022	91.5383	1	1	1	1	1	0	0
684	2054	12	0.052	562.054	291.888	91.4987	1	1	1	1	1	0	0
685	2055	1	0.000	810.894	291.608	91.7022	1	1	1	1	1	0	0
686	2055	2	0.000	903.951	291.465	91.6928	1	1	1	1	1	0	0
687	2055	3	0.461	730.812	291.316	91.6757	1	1	1	1	1	0	0
688	2055	4	3.580	423.797	291.174	91.6907	1	1	1	1	1	0	0
689	2055	5	17.783	152.675	291.028	91.6564	1	1	1	1	1	0	0
690	2055	6	93.219	27.926	290.902	91.6614	1	1	1	1	1	0	0
691	2055	7	222.622	0.742	290.756	91.6547	1	1	1	1	1	0	0
692	2055	8	245.155	0.000	290.618	91.6448	1	1	1	1	1	0	0
693	2055	9	177.218	0.963	290.476	91.6236	1	1	1	1	1	0	0
694	2055	10	54.320	47.158	290.353	91.6342	1	1	1	1	1	0	0
695	2055	11	4.678	245.317	290.218	91.6175	1	1	1	1	1	0	0
696	2055	12	0.052	562.054	290.089	91.5680	1	1	1	1	1	0	0
697	2056	1	0.000	810.894	289.786	91.8117	1	1	1	1	1	0	0
698	2056	2	0.000	903.951	289.644	91.7988	1	1	1	1	1	0	0
699	2056	3	0.461	730.812	289.497	91.7776	1	1	1	1	1	0	0
700	2056	4	3.580	423.797	289.357	91.7936	1	1	1	1	1	0	0

Obs	YEAR	MONTH	bcdd65	bhdd55	N_imm	lcom_imm	d04on	d08on	djun10on	jan17on	apr19on	apr20	may20
701	2056	5	17.783	152.675	289.213	91.7521	1	1	1	1	1	0	0
702	2056	6	93.219	27.926	289.093	91.7568	1	1	1	1	1	0	0
703	2056	7	222.622	0.742	288.948	91.7472	1	1	1	1	1	0	0
704	2056	8	245.155	0.000	288.814	91.7340	1	1	1	1	1	0	0
705	2056	9	177.218	0.963	288.676	91.7081	1	1	1	1	1	0	0
706	2056	10	54.320	47.158	288.558	91.7196	1	1	1	1	1	0	0
707	2056	11	4.678	245.317	288.427	91.6985	1	1	1	1	1	0	0
708	2056	12	0.052	562.054	288.303	91.6392	1	1	1	1	1	0	0
709	2057	1	0.000	810.894	287.976	91.9233	1	1	1	1	1	0	0
710	2057	2	0.000	903.951	287.837	91.9067	1	1	1	1	1	0	0
711	2057	3	0.461	730.812	287.691	91.8814	1	1	1	1	1	0	0
712	2057	4	3.580	423.797	287.554	91.8985	1	1	1	1	1	0	0
713	2057	5	17.783	152.675	287.411	91.8499	1	1	1	1	1	0	0
714	2057	6	93.219	27.926	287.296	91.8541	1	1	1	1	1	0	0
715	2057	7	222.622	0.742	287.154	91.8416	1	1	1	1	1	0	0
716	2057	8	245.155	0.000	287.024	91.8250	1	1	1	1	1	0	0
717	2057	9	177.218	0.963	286.888	91.7945	1	1	1	1	1	0	0
718	2057	10	54.320	47.158	286.775	91.8068	1	1	1	1	1	0	0
719	2057	11	4.678	245.317	286.648	91.7813	1	1	1	1	1	0	0
720	2057	12	0.052	562.054	286.529	91.7123	1	1	1	1	1	0	0

The SAS System
City of Dowagiac
Model Estimation

The SYSLIN Procedure
Ordinary Least Squares Estimation

Model	KWH
Dependent Variable	KWH
Label	Energy

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	10	1.252E14	1.252E13	100.90	<.0001
Error	244	3.027E13	1.24E11		
Corrected Total	254	1.554E14			

Root MSE	352198.952	R-Square	0.80527
Dependent Mean	6048501.20	Adj R-Sq	0.79729
Coeff Var	5.82291		

Parameter Estimates

Variable	DF	Parameter Estimate	Standard Error	t Value	Pr > |t|	Variable Label
Intercept	1	-1155660	1844243	-0.63	0.5315	Intercept
nlcomindxy	1	7096735	1815479	3.91	0.0001	Service Area Population and Commercial Employment Index
bhdd55	1	590.7799	86.43156	6.84	<.0001	Service Area Heating Degree Days
bcdd65	1	3580.176	313.4071	11.42	<.0001	Service Area Cooling Degree Days
d04on	1	698761.3	76468.32	9.14	<.0001	Binary Variable - 2004 On
d08on	1	-1319434	85457.32	-15.44	<.0001	Binary Variable - 2008 On
djun10on	1	150888.0	78003.53	1.93	0.0542	Binary Variable - June 2010 On
jan17on	1	-368434	91307.62	-4.04	<.0001	Binary Variable - January 2017 On
apr19on	1	-384261	118027.8	-3.26	0.0013	Binary Variable - April 2019 On
apr20	1	-1031843	363205.4	-2.84	0.0049	Binary Variable - April 2020
may20	1	-918692	364546.7	-2.52	0.0124	Binary Variable - May 2020

The SAS System
City of Dowagiac
Model Estimation

The SYSLIN Procedure
Ordinary Least Squares Estimation

Durbin-Watson	1.61372
Number of Observations	255
First-Order Autocorrelation	0.191145

time	Residual Values	Sum
1999.6666667	*****	-268751
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1999.9166667	****	189109
2000.0000000	*******	360081
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2000.1666667	******	302060
2000.2500000	********	-394765
2000.3333333		24953
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2000.5000000	*	-41665
2000.5833333	**********	678811
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2002.3333333	****	177063
2002.4166667	*********	-450130
2002.5000000	**********	-478121
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2002.7500000	**********	-605428
2002.8333333	******	-291808
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2003.3333333		-380
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2003.5833333	**********	1023481
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2003.7500000	**********	604101
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2004.0000000		*****	234139
2004.0833333	*********		-467539
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2009.4166667	******		-300182
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2010.3333333		***	174755
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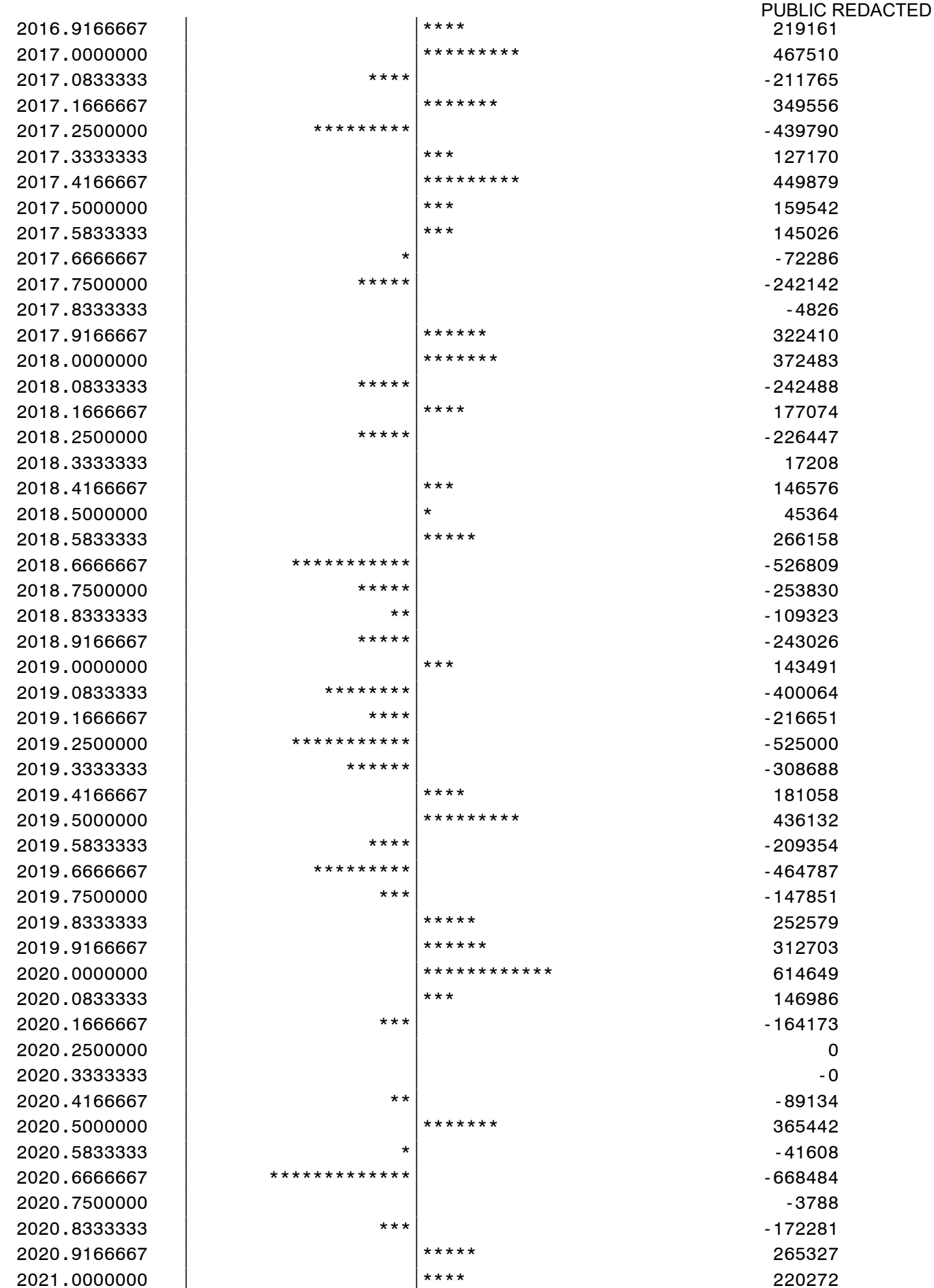
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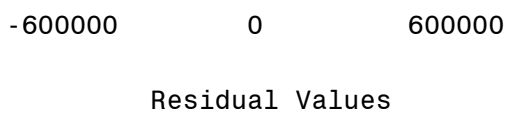
The SAS System
City of Dowagiac
Model Residuals



The SAS System
City of Dowagiac
Actual and Forecast

Year	Energy	Growth Rate
1998	CONFID.	N/A
1999	CONFID.	N/A
2000	CONFID.	N/A
2001	CONFID.	N/A
2002	CONFID.	N/A
2003	CONFID.	N/A
2004	CONFID.	N/A
2005	CONFID.	N/A
2006	CONFID.	N/A
2007	CONFID.	N/A
2008	CONFID.	N/A
2009	CONFID.	N/A
2010	CONFID.	N/A
2011	CONFID.	N/A
2012	CONFID.	N/A
2013	CONFID.	N/A
2014	CONFID.	N/A
2015	CONFID.	N/A
2016	CONFID.	N/A
2017	CONFID.	N/A
2018	CONFID.	N/A
2019	CONFID.	N/A
2020	CONFID.	N/A
2021	CONFID.	N/A
2022	CONFID.	N/A
2023	CONFID.	N/A
2024	CONFID.	N/A
2025	CONFID.	N/A
2026	CONFID.	N/A
2027	CONFID.	N/A
2028	CONFID.	N/A
2029	CONFID.	N/A
2030	CONFID.	N/A
2031	CONFID.	N/A
2032	CONFID.	N/A
2033	CONFID.	N/A
2034	CONFID.	N/A
2035	CONFID.	N/A
2036	CONFID.	N/A
2037	CONFID.	N/A
2038	CONFID.	N/A
2039	CONFID.	N/A
2040	CONFID.	N/A
2041	CONFID.	N/A
2042	CONFID.	N/A
2043	CONFID.	N/A
2044	CONFID.	N/A
2045	CONFID.	N/A
2046	CONFID.	N/A

The SAS System
City of Dowagiac
Actual and Forecast

Year	Energy	Growth Rate
2047	CONFID.	N/A
2048	CONFID.	N/A
2049	CONFID.	N/A
2050	CONFID.	N/A
2051	CONFID.	N/A
2052	CONFID.	N/A
2053	CONFID.	N/A
2054	CONFID.	N/A
2055	CONFID.	N/A
2056	CONFID.	N/A
2057	CONFID.	N/A

2030 Termination Scenario 1 - only allowing I&M to exit the contract
OVEC Costs Removed as of Jan 1, 2030
All Costs are I&M Total Company
All Dollars are Nominal ($,000)

	A1	A2	A	B	C = B - A	D	E	F = C + D + E
	Preferred Plan			No OVEC Plan	No OVEC Plan Less Preferred Plan	On-Going ICPA Obligation Costs		Total Impact of Termination Scenario
	Utility Cost	OVEC Demand Charge	Total	Utility Cost	Cost/(Benefit)	Debt Repayment	Other Fixed Cost Responsibility	Cost/(Benefit)
2022	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
2023	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
2024	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
2025	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
2026	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
2027	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
2028	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
2029	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
2030	$ 644,723	$ 26,333	$ 671,056	$ 665,814	$ (5,242)	$ 4,277	[redacted]	[redacted]
2031	$ 639,672	$ 21,314	$ 660,986	$ 663,307	$ 2,321	$ 4,106	[redacted]	[redacted]
2032	$ 616,113	$ 21,689	$ 637,802	$ 639,184	$ 1,382	$ 3,934	[redacted]	[redacted]
2033	$ 610,540	$ 22,014	$ 632,554	$ 634,414	$ 1,860	$ 3,762	[redacted]	[redacted]
2034	$ 569,685	$ 22,312	$ 591,996	$ 593,219	$ 1,223	$ 3,590	[redacted]	[redacted]
2035	$ 751,582	$ 22,607	$ 774,188	$ 775,483	$ 1,294	$ 3,419	[redacted]	[redacted]
2036	$ 783,507	$ 22,712	$ 806,219	$ 807,177	$ 958	$ 3,247	[redacted]	[redacted]
2037	$ 858,069	$ 17,836	$ 875,906	$ 881,060	$ 5,155	$ 3,075	[redacted]	[redacted]
2038	$ 1,041,190	$ 16,023	$ 1,057,213	$ 1,065,121	$ 7,908	$ 2,904	[redacted]	[redacted]
2039	$ 1,032,392	$ 14,473	$ 1,046,865	$ 1,057,391	$ 10,526	$ 2,732	[redacted]	[redacted]
2040	$ 1,019,322	$ 16,269	$ 1,035,591	$ 1,040,083	$ 4,492	$ 2,560	[redacted]	[redacted]

Net Present Value **$102,013**
Net Benefit to Customers

2030 Termination Scenario 2 - allowing all owners to exit the contract
OVEC Costs Removed as of Jan 1, 2030
All Costs are I&M Total Company
All Dollars are Nominal ($,000)

	A1	A2	A		B		C = B - A		D	E		F = C + D + E
	Preferred Plan				No OVEC Plan		No OVEC Plan Less Preferred Plan		On-Going ICPA Obligation Costs			Total Impact of Termination Scenario
	Utility Cost	OVEC Demand Charge	Total		Utility Cost		Cost/(Benefit)		Debt Repayment	Other Fixed Cost Responsibility		Cost/(Benefit)
2022	$ -	$ -	$ -		$ -		$ -		$ -	$ -		$ -
2023	$ -	$ -	$ -		$ -		$ -		$ -	$ -		$ -
2024	$ -	$ -	$ -		$ -		$ -		$ -	$ -		$ -
2025	$ -	$ -	$ -		$ -		$ -		$ -	$ -		$ -
2026	$ -	$ -	$ -		$ -		$ -		$ -	$ -		$ -
2027	$ -	$ -	$ -		$ -		$ -		$ -	$ -		$ -
2028	$ -	$ -	$ -		$ -		$ -		$ -	$ -		$ -
2029	$ -	$ -	$ -		$ -		$ -		$ -	$ -		$ -
2030	$ 644,723	$ 26,333	$ 671,056		$ 665,814		$ (5,242)		$ 4,277	[redacted]		[redacted]
2031	$ 639,672	$ 21,314	$ 660,986		$ 663,307		$ 2,321		$ 4,106	[redacted]		[redacted]
2032	$ 616,113	$ 21,689	$ 637,802		$ 639,184		$ 1,382		$ 3,934	[redacted]		[redacted]
2033	$ 610,540	$ 22,014	$ 632,554		$ 634,414		$ 1,860		$ 3,762	[redacted]		[redacted]
2034	$ 569,685	$ 22,312	$ 591,996		$ 593,219		$ 1,223		$ 3,590	[redacted]		[redacted]
2035	$ 751,582	$ 22,607	$ 774,188		$ 775,483		$ 1,294		$ 3,419	[redacted]		[redacted]
2036	$ 783,507	$ 22,712	$ 806,219		$ 807,177		$ 958		$ 3,247	[redacted]		[redacted]
2037	$ 858,069	$ 17,836	$ 875,906		$ 881,060		$ 5,155		$ 3,075	[redacted]		[redacted]
2038	$ 1,041,190	$ 16,023	$ 1,057,213		$ 1,065,121		$ 7,908		$ 2,904	[redacted]		[redacted]
2039	$ 1,032,392	$ 14,473	$ 1,046,865		$ 1,057,391		$ 10,526		$ 2,732	[redacted]		[redacted]
2040	$ 1,019,322	$ 16,269	$ 1,035,591		$ 1,040,083		$ 4,492		$ 2,560	[redacted]		[redacted]

Net Present Value **$27,891**
Net Cost to Customers

INTEGRATED RESOURCE PLANNING REPORT

to the:
Indiana Utility Regulatory Commission

Appendix – Volume 4

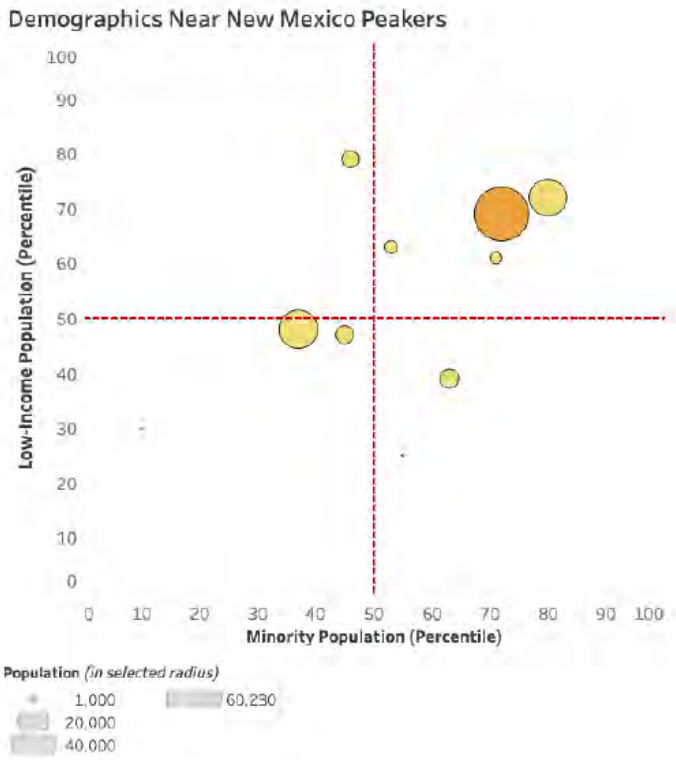
Submitted Pursuant to:
Commission Rule 170 IAC 4-7

January 31, 2022

2021 I&M IRP Website Stakeholder Comment Summary				
	Stakeholder	Topic	Comment	I&M Response
CAC and Earth Justice submitted comments on Friday, March 26, 2021 7:39 PM; for tracking purposes Day 1 of the 15 working day clock begins on MARCH 29TH. The comments are due on April 16.				
1.	Citizens Action Coalition of Indiana ("CAC") and Earthjustice	Metrics/balanced scorecard	the proposed metrics are too narrow, arbitrarily limited to the "balanced scorecard" framework, and do not always capture the variables they intend. The "balanced scorecard" framework is arbitrary for several reasons. First, because it is a table, the metrics that populate it have to be presented as a single value. This would result in CO2 emissions in a single year or in total, for example, being the single measure of "sustainability impact". But the impact of CO2 emissions on climate change or as an economic risk to I&M and its customers is not the same in any given year. It would be far more informative to present a visualization of emissions for each simulated portfolio throughout the planning period. And the same is true for many of the other metrics, e.g. spot purchases and sales. We should be far more concerned with a proposal to sell large quantities of energy in the near-term than a portfolio that shows that happening in the late 2030s because the results that far out are far less certain than the near-term results. These important details cannot be shared in a scorecard framework. Using a scorecard prioritizes brevity of information over utility of information.	General Note: Please review the responses to these questions in total, as they will provide additional clarity for each individual question. The Balanced Scorecard provides many benefits to decision makers and consumers of the IRP analysis. A principle benefit of the Balanced Scorecard is that it can be used to communicate the balanced nature of the ultimate preferred portfolio. By displaying relevant metrics for sustainability, affordability and reliability, the Balanced Scorecard shows the manner in which these important portfolio attributes are balanced to best meet the needs of all of I&M's stakeholders. The Company plans to use Time Series metrics in addition to those used in the Balanced Scorecard and will consider the weighting methodologies that could be used within these metrics to address short-term vs. long-term impacts.
2.	Citizens Action Coalition of Indiana ("CAC") and Earthjustice	Scorecard Color Coding	Second, the scorecard is arbitrary because of the color coding.1 During the IRP workshop, Siemens and I&M both stated that the color coding is intended to make the scorecard easier to digest, but this is exactly the problem with color coding. Rather than allowing the reader to draw his/her own conclusions about the metrics, the color coding is effectively telling the reader which portfolio is preferable. We have observed in prior Siemens scorecards that the red, green, and yellow coding is sometimes assigned based on trivial differences, for example. So the color coding is not providing neutral guidance about what is important, rather it is a product of the totally subjective color coding that Siemens and I&M choose.	As with most visualization methods, colors provide another method of consumption for the information presented but it doesn't prevent readers from drawing their own conclusions. I&M continues to promote broad and diverse access to its publically available information. We will include in the report, the opportunity for those with disabilities to receive an alternative format.

2021 I&M IRP Website Stakeholder Comment Summary				
	Stakeholder	Topic	Comment	I&M Response
			1 It is also important to note that a color-coded scorecard does not communicate anything additional to those who are color blind.	
3.	Citizens Action Coalition of Indiana ("CAC") and Earthjustice	Metrics	Finally, the metrics proposed do not necessarily capture the concern they purport to. Rate stability is much more of a near-term concern in the sense that cost and rate impacts are more known in the near term. Testing portfolios stochastically and particularly in the manner proposed by Siemens, does not differentiate between near and long-term concerns. Nor do we think this methodology is actually representing revenue requirements. It is our understanding that Aurora is incapable of calculating revenue requirements, all capital costs are represented as a carrying charge (levelized charge) rather than as assets with depreciation schedules, which can have a very different rate impact. We also do not believe measuring reserve margin captures reliability concerns, all portfolios will have to meet that constraint. It would be much more informative to measure how resilient the system would be to a major contingency like a long-duration generation outage and/or to think about other points of weakness such as reliance on a single gas pipeline. Lastly, we do not believe "mix of adequate resources" is a good measure of Resource Diversity. Where fuel supply is not at issue, diversity by resource type has little meaning. A better indicator would be number of unique generators relied upon.	As part of our continuous improvement in IRP's, new metrics are being considered to which, many different attributes could be considered as part of the evaluation. The Company will continue to consider additional metrics associated with this IRP throughout the process to support the stated objectives. Detailed production cost modeling issues will be addressed in more context during the Aurora Technical Conference scheduled to occur in late May.
4.	Citizens Action Coalition of Indiana ("CAC") and Earthjustice	Metrics/Score card	**Our top-level recommendation as it relates to metrics would be to skip the scorecard altogether and talk about each metric qualitatively supplemented with quantitative data that captures the objective of the metric.** For example, a discussion of off-system sales and purchases in each portfolio with a chart showing how those change over time. It is much more informative, though no more subjective for I&M to then discuss how it balances these data into the selection of a preferred plan rather than simply color coding the "winning" portfolio.	See response to item 1 pertaining to the use of a scorecard. However, for metrics that change over the planning period, the Company is considering supplemental analysis methods to inform the relative value between portfolios.
5.	Citizens Action Coalition of Indiana		As it relates to a diversity, equity and inclusion ("DE&I") metric, because this metric should be reflective of the preferences of affected communities, it makes the most sense to solicit the feedback of those communities. Since those preferences may vary amongst different	Good feedback regarding our impact on communities. We are committed to working with the communities in which we work, live and locate resources. We have a team of

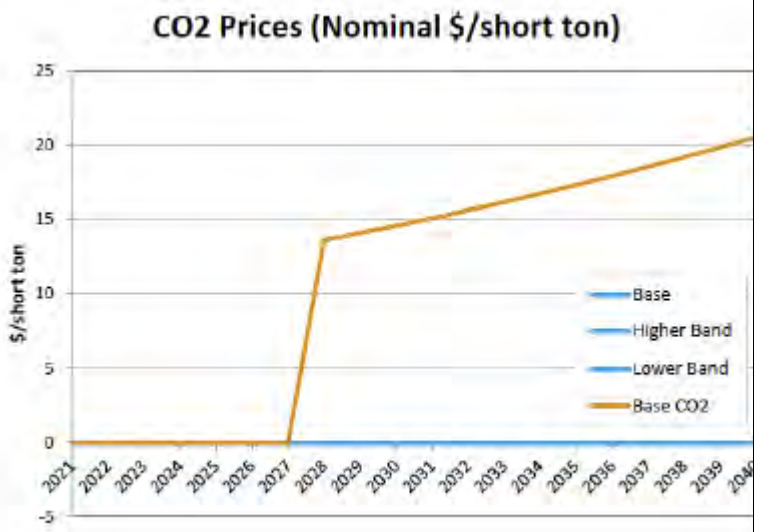
2021 I&M IRP Website Stakeholder Comment Summary

	Stakeholder	Topic	Comment	I&M Response
	("CAC") and Earthjustice		service territories, we would propose the following as interim metrics. First, a metric that measures whether emitting units in each portfolio are located in low-income and/or communities of color. An example of this as it relates to peaker plants in New Mexico is given below. See comment package for example) .  The circle size indicates the population within a given radius of the plant and the color, in this case, distinguishes between peakers at their own	external affairs representatives that engage customers, officials, and community leaders and organizations to understand their interests and concerns and to help them understand our goals and objectives in meeting their needs. For this IRP, we also value the feedback we receive through the stakeholder process and are pleased that it is a diverse group of interests that includes communities we serve, customer groups and individual customers. We are also aware of the demographics of the communities in which we have existing resources and can discuss those as appropriate. The location of new resources is generally not known or specified when developing an IRP and the impact on communities of new resources may be better discussed as part of the review of a specific resource action. For more information regarding I&M's and AEP's commitment to a Just Transition within the communities we serve, please reference our recently issued Climate Impact Analysis. http://www.aepsustainability.com/performance/report/docs/AEPs-Climate-Impact-Analysis.pdf

2021 I&M IRP Website Stakeholder Comment Summary				
	Stakeholder	Topic	Comment	I&M Response
			site versus those co-located with a combined cycle plant. We would also note that this is another example of useful information that cannot easily be included in a scorecard. For I&M's purposes, we would recommend keeping the low-income and community of color axes, but changing the color coding to reflect the fuel burned at emitting units. We would note that a similar graph, but for all fuel types, could be used to identify some of the positive and negative impacts as well as the equity of those impacts of replacement generation once those locations are identified.	
6.	Citizens Action Coalition of Indiana ("CAC") and Earthjustice	metrics	We would also propose a second DE&I metric that attempts to capture the potential for benefits of new resources (both supply and demand-side) to low-income and communities of color in I&M's service territory by quantifying the total investment that has potential to be located in these communities. That investment could include dollars spent on energy efficiency, dollars spent on solar, etc. This is a metric that will need future refinement, but should be accompanied by consideration of programs that will directly address the objective of the metric. Ideally, I&M would also be evaluating programs that directly impact affected communities as part of its IRP, e.g., low-income community solar, low-income electric vehicle incentives, investment in "green zones" in communities located near I&M's power plants, etc. 3 *3 Clearly, there is an implementation component to this that is important and complementary. And that is to weigh where to invest those dollars also using these metrics (and other metrics) once I&M moves from the generic resources modeled in the IRP to the specific resources it would seek to implement. At that stage, I&M could also supplement this analysis by considering whether historic investment has gone equitably towards affected communities.*	We appreciate this feedback and input. DE&I considerations are very important to our business goals and objectives. The IRP process typically is focused on a more macro resource plan level, however, consideration will be given to programs similar to what is described in the feedback. For example, IRP modeling could specifically capture some of the factors mentioned as they would be location and situation specific. That said, renewables and demand-side resources will continue to be key elements of the IRP and I&M will be incorporating DE&I considerations into future resource decisions and new customer programs. As an example, I&M recently proposed and received Commission approval of new programs in Michigan that expand opportunities for low-income and customers without broadband access to customize their electric service and manage their electric bill. I&M plans to seek approval of similar programs in Indiana. Also, see response to 5.

2021 I&M IRP Website Stakeholder Comment Summary				
	Stakeholder	Topic	Comment	I&M Response
7	Citizens Action Coalition of Indiana ("CAC") and Earthjustice	Scenarios	We believe the carbon reduction goal for Net Zero by 2050 should be at least a 95% reduction from a baseline year. Because we would have to transition so many end-uses to electricity to meet an economy wide climate goal, there will be extremely limited options to offset electric sector GHG emissions, and the modeled goal should reflect that reality. 4. *A common baseline year is 2005, but we recognize that AEP's corporate goal is relative to a year 2000 baseline.*	The Company agrees that a substantial reduction is necessary and is consistent with its recently released Climate Impact Analysis report.
8	Citizens Action Coalition of Indiana ("CAC") and Earthjustice	Scenarios	Furthermore, because a plan to achieve this goal would most reasonably result in system emissions reductions over time, it will likely make sense to model one or more interim goals. An annual constraint is probably overly limiting, but a 2030 goal could be reasonable. AEP's corporate goal of an 80% reduction from 2000 emissions by 2030, as applied to I&M's system, may be a good choice though it's unclear if this would be achieved by already contemplated reductions such as the retirement of Rockport. And because this magnitude of decarbonization will have to happen system-wide, we recommend two scenarios that include this goal: one with I&M's base case load forecast as proposed, and the other reflecting I&M's best estimate of the load impacts of large scale electrification (likely more electrification than would be reflected in the "market electrification" scenario).	The Company expects the final IRP scenarios will address a variety of alternative futures including increased ambitions around climate and scenarios around higher electrification. Further analysis related to the suggested additional high electrification scenario will be considered and reviewed through the stochastics analysis.
9.	Citizens Action Coalition of Indiana ("CAC") and Earthjustice	Scenarios	We also concur with Emily Medine's recommendation that gas assets should be modeled as fully depreciated, ideally by 2040, in at least this scenario. Finally, we note that in evaluating and modeling resource options, I&M should factor in the lifecycle GHG impacts of each option, rather than considering only the CO2 directly emitted by the resource. This is especially important with regards to gas-fired resources given the significant GHG impacts from the extraction and transport of natural gas.	The Company does not plan to modify the asset lives of its non-CCS fossil resources due to the expectation of the availability of low carbon fuels. Furthermore, the Company may constrain energy production from non-CCS fossil resources to support a "Net Zero by 2050" objective. The Company plans to review GHG impacts from the resource perspective and the lifecycle perspective.

2021 I&M IRP Website Stakeholder Comment Summary				
	Stakeholder	Topic	Comment	I&M Response
10.	Citizens Action Coalition of Indiana ("CAC") and Earthjustice	Scenarios	We understand that I&M wishes to keep its scenarios to a manageable number, so we would recommend the following: Reference Net Zero by 2050 Net Zero by 2050 with Electrification Rapid Technology Advancement	We appreciate the suggestion for a reduced number of scenarios and are considering the final set of scenarios and their inputs based on all the Stakeholder feedback. The Company intends to make adjustments to the proposed scenarios discussed in the Stakeholder Meeting #1 and will share these during Stakeholder Meeting #3.
11.	Citizens Action Coalition of Indiana ("CAC") and Earthjustice	Scenarios	We are uncertain about the value of the Market Electrification scenario. I&M's stakeholder presentation implied that High Load is merely reflective of more optimistic economic assumptions, which would not necessarily be reflective of electrification because the shape of load may not reflect the realities of electrification. If that is the case, we think high load is better reflected as a sensitivity than a scenario.	See response to 10.
12.	Citizens Action Coalition of Indiana ("CAC") and Earthjustice	Scenarios	We are also uncertain about the value of the Enhanced Regulation Case. Slide 48, pasted below, does not include the High CO2 price, so it is not clear what I&M would model.5 Indeed, this graph raises the question of whether "Base" CO2 means no CO2 price at all, which would raise other concerns about the remaining scenarios.	The Chart shown illustrates only the Base CO2 price in the current fundamentals of $15/metric ton starting in 2028. The Enhanced Regulation case assumes a higher CO2 burden, as noted in slide 37 of the presentation. The charts will be updated as the Company continues through the process

2021 I&M IRP Website Stakeholder Comment Summary				
	Stakeholder	Topic	Comment	I&M Response
			 *5. We note that AEP's Climate Impact Analysis has a "Fast Transition" CO2 price of $30 per ton escalating at 3.5% per year, but it's not clear if this is what AEP intends as the High value. http://www.aepsustainability.com/performance/report/docs/AEPs-Climate-Impact-Analysis.pdf*	
13.	Citizens Action Coalition of Indiana ("CAC") and Earthjustice	Capital Cost Curves and Stochastics	As we stated during the IRP workshop, we do not believe it is appropriate to test capital costs stochastically. Capital costs, particularly those for renewables and battery storage, do not increase in one year, then decrease in the next, and then increase in the subsequent year, a situation that is entirely possible with the probability bands given. Renewable and battery storage capital costs are uncertain, but their overall trend is downward, a dynamic that makes scenario analysis the more appropriate way to examine their uncertainty.	While it may be correct that capital cost recovery for existing units does not vary from year-to-year, this is not the case for overnight costs or financing costs that are applicable for new units in Siemens PTI's analysis. Perhaps more importantly, capital cost uncertainty is not typically applied to candidate portfolios Capital cost uncertainty is most frequently applied to the dynamic build logic that is used to add or retire capacity in neighboring energy market areas in response to varying supply-demand

2021 I&M IRP Website Stakeholder Comment Summary				
	Stakeholder	Topic	Comment	I&M Response
				conditions across the stochastic simulations. This is necessary to ensure that the simulated inter-tied areas maintain a reasonable supply-demand balance while capturing the uncertainty regarding the technologies that neighboring regions might add.
14.	Citizens Action Coalition of Indiana ("CAC") and Earthjustice	Resource cost estimates	The proposed solar, wind, and storage costs appear to be roughly similar to National Renewable Energy Laboratory's Annual Technology Baseline (NREL ATB), which is often used to characterize generic pricing of these resources. However, we've found that the NREL ATB often overstates storage costs in particular. A possible solution to this may be to use I&M's RFP responses rather than Siemens' capital cost curve (similar to the approach that Vectren and Siemens used in preparing Vectren's 2019 IRP), and then apply the ATB's cost curves going forward	The capital costs depicted in the initial slide deck were still in development. The Siemens team will be incorporating the results of I&M's RFP responses.
15.	Citizens Action Coalition of Indiana ("CAC") and Earthjustice	Load Forecast	The presentation of I&M's load forecasts raised several questions. First, it is not clear why the extreme weather forecast would have the same compound average growth rate ("CAGR") as the Base forecast. If the extreme weather forecast is intended to account for significant climate impacts, it would seem likely that both the air conditioning loads and line losses would grow significantly. We also are not clear why the loss of wholesale customers in approximately 2034 would have such an outsized impact on the CAGR calculated over the entire period from 2020 – 2035. Finally, we renew our request that I&M not use "degradation" to adjust incentivized energy efficiency either in its load forecast or in the modeling of energy efficiency. This is a critical issue to the accurate modeling of energy efficiency in the IRP.	The extreme weather scenario had a neutralizing impact on overall load growth. In other words, the higher loads it created during the summer months (due to warmer temperatures) was offset by the lower heating loads during the winter (also caused by warmer temperatures). The load impact of wholesale contracts ending in 2034 has a significant impact on the compound average growth rates computed for the period between 2020-2035. You could exclude the wholesale load from the comparison, but it would no longer represent I&M's projected load growth. The Company is committed to accurately modeling the impact of energy efficiency in the IRP and is actively working with our Market Potential Study (MPS) Consultant, GDS, to ensure these resources are included appropriately.

2021 I&M IRP Website Stakeholder Comment Summary				
	Stakeholder	Topic	Comment	I&M Response
16.	Citizens Action Coalition of Indiana ("CAC") and Earthjustice	Stakeholder Engagement –define limits of renewables that will be modeled	We would also request that I&M work with stakeholders to define the limits on renewables that it will model consistent with Section 6(d) of the settlement regarding I&M's 2019 IRP that was filed with the Michigan Public Service Commission, which states, "I&M will work with stakeholders to define the modeling inputs for the IRP, including scenarios for […] renewable generation resources".	The Company has invited all Stakeholders to be part of the process that includes an open and transparent discussion on modeling inputs and scenarios.
17.	Citizens Action Coalition of Indiana ("CAC") and Earthjustice	Stakeholder Engagement – Rockport 1 5/31/25 scenario	Pursuant to Section 6(c) of the Michigan settlement, we urge I&M to work with stakeholders in establishing the inputs to be used in modeling a scenario that includes a May 31, 2025 retirement of Rockport Unit 1.	See response to item 16
18.	Citizens Action Coalition of Indiana ("CAC") and Earthjustice	Stakeholder Engagement – OVEC	We also urge I&M to include on the agenda for the next stakeholder meeting discussion of the approach to evaluating the costs to customers of the Inter Company Power Agreement and the economics of terminating the operation of the OVEC units under the ICPA by the end of 2030, as required by Section 10(k) and 12 of the Michigan settlement.	As discussed in I&M's first stakeholder meeting, I&M has a contractual obligation to purchase power from OVEC until 2040. The OVEC purchase is part of I&M's diversified resource portfolio and will be modeled as a going-in resource consistent with the term of the agreement and other I&M resources that are owned or under long-term purchase agreements. Given this, Section 10(k) and 12 of the referenced settlement agreement were specifically written to provide supplemental information and testimony that I&M will prepare and file in support of I&M's Preferred Plan as part of its next Michigan IRP filing.
Posted Q1-Q18 on April 16, 2021				
19.	Jennifer A. Washburn, Counsel Citizens Action Coalition of Indiana, Inc. 4/7/21	Request Stakeholder Presentation at Meeting #2	Could we please do a stakeholder presentation at the April I&M IRP meeting next week? Follow up: Thanks for the confirmation. We'll work to get you a presentation as soon as we can but we are unlikely to be able to meet the COB on Friday deadline. We'll be in touch. Follow-up on 4/12/21 : Here is our stakeholder presentation for Wednesday. Thanks!	Jennifer, thank you for the note. Interested stakeholders will have an opportunity to speak at the April 14th meeting. To ensure we are able to balance the amount of materials to be covered and allow multiple interested parties an opportunity to speak, I&M is making the following arrangements: • 30 minutes will be allotted for stakeholder presentations/comments

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				• Each presenter is asked to limit their presentation/comments to 15 minutes • Any presentation to be used during the stakeholder comments will need to be presented to I&M by COB this Friday, April 9, 2021 Presentation was provided on 4/12/21. Anna Sommer presented Modeling EE in I&M's IRP at stakeholder meeting #2.
20.	Gould, Karen (LARA) 4/15/21	GDS MPS	One other question, could you follow up with the question I think Dan posed to have GDS benchmark your average incentive as a % of incremental cost compared to other areas? I&M's numbers were fairly low which could be a great indicator why you've been unable to achieve the levels of other utilities in MI. Other utilities in Michigan are usually around 50 and can go as high as 100% (even for non-low income programs such as hard-to-reach commercial customers).	I&M has tasked GDS with recommending industry best practice measures and programs as part of the MPS deliverables. Part of the expected work product from GDS is to benchmark incremental costs for each EWR measure and recommend incentive pricing levels that are economic so that I&M can be aligned with industry best practice but analyzed under I&M's specific avoided costs. From GDS' MPS work product, I&M plans to implement EWR programs consistent with IRP selection and GDS' recommended program delivery models and pricing structures.
21.	Jennifer Washburn 4/14/21	Aurora Workshop	Just a note per Jay's request to let you know that my colleagues cc-ed here and I are interested in attending the late May Aurora technical workshop. (cc: Kerwin Olson, Reagan Kurtz, Anna Sommer , Chelsea Hotaling, Sameer Doshi . 4/15/21 follow-up: Our IRP expert, Anna Sommer, will be out May 10-28. Is there any way we can do a one off meeting with I&M to cover this Aurora subject matter, assuming the meeting may be scheduled when she is out? If so, perhaps sometime during the week of May 3rd?	Thank you for confirming your interest in this technical workshop. We are currently in the process of finalizing details associated with this and plan on providing more information to stakeholders in the near future. Ultimately, we plan on providing access to the model in June and holding the workshop at a later date that better aligns with when we expect to have more of the modeling input data available. Our goal is to make the workshop a meaningful opportunity for our stakeholders.
22.	Wesley Rice-Snow	Rockport	Hello; my home town of Muncie has experienced the many gifts that investing in solar power gives. When I volunteered to film an informative	I&M would like IRP stakeholders to be aware of the plans announced by AEP on April 22, 2021 to add more than

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	April 14, 2021		video about the local Unitarian Universalist church's solar installation, I talked with the many congregation members proud of their contribution to fighting climate change. I also saw first-hand the well-paying and meaningful jobs the process provided to a town where most factory jobs have disappeared. As the disastrous weather effects of climate change shake our country, I worry that renewable energy will not be implemented swiftly enough by I&M. I also think about the many low-income communities who would benefit greatly from solar initiatives. I ask if I&M will commit to not buying power from Rockport Unit 2 when the current lease ends. I also ask if I&M will commit to quickly implementing solar power, including in Muncie.	16,500 MWs of renewable energy across AEP's service area by 2030 (see below). I&M intends to engage stakeholders in the current IRP process to assist in the evaluation of the plan for I&M. AEP also announced that I&M and AEP Generating Company have agreed to acquire Rockport Unit 2 as a capacity resource to help bridge I&M's capacity needs as I&M continues its orderly transition to more renewable resources. I&M expects the inclusion of Rockport 2 in I&M's generation portfolio used to serve customers will be reviewed with state commissions and stakeholders in filings before the commissions and as part of the IRP process. The Rockport 2 agreement was reached after I&M decided to not renew the lease and began confidential discussions with the owners about how the unit would be operated after the lease ended. As those discussions progressed, I&M recognized that it would be beneficial to all concerned if I&M controlled the unit after the lease expired. The generation changes at AEP will help grow renewable generation to 51 percent of AEP's total capacity by 2030, as the company works to achieve its goal of net zero carbon emissions by 2050. Please refer to I&M's IRP webpage for additional information.
23.	Anna Sommer – Energy Futures Group April 14, 2021 8:26 PM; 4/15/21 for business purposes	G, T, and D modeling	I also wanted to follow up with my question for Bob and Carlos. We were part of a team that recently wrapped up a study looking at meeting up to 75% of Puerto Rico's energy needs from rooftop solar and battery storage. For that work our team did nodal simulations in Plexos, grid stability analysis in PSS/E, and distribution modeling using OpenDSS. So we can directly relate to the challenge of aligning these functions across different platforms that you were all describing. I had two big takeaways from that work that I think apply to the discussion today. First, it's really not tractable to perform G, T, and D modeling together with a lot of frequency. There is so much iteration	In response to the first comment related to the frequency of performing G, T and D planning together, we would agree that it can be highly iterative and complex, and therefore requires a tenor reflective of the nature of the work involved. What will be important is that all three processes have the same set of goals and objectives. Establishing this up front will influence what happens in each of the planning processes. The conceptual example described in the question highlights this need for a common set of goals and objectives. When the non-wires

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			that takes a lot of time. Second, we saw some counterintuitive results in our study, particularly as it relates to the distribution system. A relatively modest number of mitigations were needed on the distribution system to achieve 75% solar/storage penetration. This was in part because those systems were spread out across lines rather than concentrated. And so I wonder if what I&M might aim for, likely in the next IRP, is to bookend a heavy buildout of DERs throughout its distribution system but particularly on all lines that are or are likely to become overloaded? It seems like the main way we can get distribution planning results to interface with generation planning (for the moment) is if we can better evaluate and isolate the deferral benefit of DERs. And I worry that doing this on a piecemeal basis as is typically done in non-wires alternatives analysis leaves much to be desired in terms of optimizing the total value of DERs. I realize that is a super conceptual suggestion, but it also seems like having an analytical goal to aim for is the only way to start doing this work and figure out how to align these planning processes. So I'd be interested to hear what Bob and Carlos think about that?	alternatives analysis is approached from the perspective of distribution planning, it is done with the objective to resolve an emerging need on the distribution system more so than trying to address a more holistic concern that might involve G and T. If the perspective is changed to where the need is more broadly defined to include G and T requirements, then the analysis, solutions and economics all begin to look very different. This is the perspective the newly formed Grid Solutions organization is expected to bring to our planning efforts going forward – a holistic view of our customers' and/or system's needs and an array of solutions to best address those needs. Relative to the specific analytics being described in the question, there are likely steps we could take in the short-term. For example, distribution station transformers or feeder exits out of substations may be an area where we could focus our initial efforts. We would need to spend some time working out criteria, assumptions, assessment of benefits and costs and process details that don't exist today. For example, developing a set of assumptions around the type/sizing/performance expectations of the DERs would be extremely important. In addition, our planning criteria will need to be enhanced to be more inclusive of the types of solutions we would deploy and when and how we would deploy them. There are other challenges we would need to address, especially if we want to take this type of analysis to the broader reaches of the distribution system, including more detailed load forecasting, enhanced information technology to drive process efficiencies given the potential volume of work,

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				and the new tools and analytics required to develop solutions. All that said, this is a great aspirational goal to put in front of us and we agree that having the goal is a necessary requirement if we ever hope to get there.
24.	Jennifer A. Washburn, Counsel Citizens Action Coalition of Indiana, Inc. April 29, 2021	Aurora Meeting	Just touching base about our email below re: the Aurora meeting. "My pleasure. Our IRP expert, Anna Sommer, will be out May 10-28. Is there any way we can do a one off meeting with I&M to cover this Aurora subject matter, assuming the meeting may be scheduled when she is out? If so, perhaps sometime during the week of May 3rd? "	See response to Q 21.
25.	Jennifer A. Washburn, Counsel Citizens Action Coalition of Indiana, Inc. April 29, 2021	RFP	When will I&M be releasing the RFP and sharing that with the I&M IRP listserv?	I&M issued an All Source Informational Request for Proposal (RFP) on April 23, 2021. Additional information is available at: All-Source Informational RFP (indianamichiganpower.com)
Questions 26 - 30 were submitted on May 19, 2021 by the CAC and Earthjustice (comments on IRP Stakeholder Workshop 2)				
26.	CAC and Earthjustice	Stakeholder Workshop #2 and Feedback on stakeholder Questions	Citizens Action Coalition of Indiana ("CAC") and Earthjustice submit these comments on the materials presented during Indiana Michigan Power Company's ("I&M") April 14th stakeholder workshop for its 2021 Integrated Resource Plan ("IRP"). While we appreciate I&M's emphasis that stakeholder feedback is key and needed, we hope I&M will not just consider this feedback but use it to modify the analysis that it intends to undertake, and will provide written responses that includes descriptions of how the analysis was modified, or explanations of why it was not, in response to feedback. The responses given to our comments so far	The Company continues to develop inputs to the IRP informed by the feedback received by all stakeholders in the previous Stakeholder meetings and correspondences. The IRP is an extensive process that spans many months and represents the compilation of a vast amount of inputs, assumptions and modeling. As I&M receives questions from stakeholders we answer those based on the best information we have at the time. If I&M were to continually evaluate and update its responses to past

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			generally did not make clear whether I&M will actually use any of the feedback we have given to date. Even if I&M is not prepared to say one way or another at this juncture, we do think it is very important that I&M clearly state what stakeholder feedback it is incorporating into its IRP and, if not, give a clear explanation for why it is not utilizing that feedback. We also would appreciate actual dialogue with I&M, wherein I&M meets with us to discuss our comments, collaborate, and problem-solve like other Indiana utilities do. Thus far, I&M has simply posted responses to our comments on its website without notifying us.	questions and feedback, that effort would interfere with development of the IRP itself. I&M has been, and continues to be, forthright in its responses to the feedback received from stakeholders, including the CAC. All feedback is incorporated into I&M's IRP, as it is taken into consideration in the development of the IRP itself. For example, as detailed in response to comment 29 below, I&M plans to group EE measures into sector-level portfolios for inclusion in the IRP modeling based upon I&M's consideration of the CAC's input regarding that topic. The Company looks forward to continued collaboration with all stakeholders, including the CAC, during two additional stakeholder meetings intended to be a forum for productive dialogue throughout the IRP. Further insights into more specific decisions currently being analyzed will be shared during the remaining stakeholder meetings.
27.	CAC and Earthjustice	Supplemental Efficiency Adjustment	CAC would like to reiterate the concerns about I&M's supplemental efficiency adjustment that were discussed in Anna Sommer's presentation during the April 14th IRP stakeholder workshop. We continue to recommend that I&M not apply the supplemental efficiency adjustment, because it undervalues the impacts and overstates the cost of energy efficiency and does not arise from a legitimate concern about increasing codes and standards. The supplemental energy efficiency adjustment (Figure 1) results in a modeled lifetime that is condensed or expanded for many measures and a shape of savings that declines every year, which is completely divorced from how those savings actually accrue and how I&M is actually compensated for lost revenues associated with those savings.	I&M appreciates the CAC's interest in this element of the IRP process and we understand the CAC's recommendation. This matter has been discussed in multiple IRP's and other I&M regulatory proceedings. Most recently, the use of this adjustment was found to be reasonable by the IURC. See, e.g., Cause No. 45285, Order (Feb. 3, 2021). As addressed in that proceeding as well as in this and past IRP's, I&M disagrees with many of the CAC's statements and assertions as they misrepresent this element of the IRP process and the modeling of energy efficiency. That said, I&M appreciates the importance of this matter to the CAC and other stakeholders and shares many of the same interests in ensuring the accuracy of modeling energy efficiency and the alignment of that with I&Ms load forecast. I&M appreciates differing views and approaches to forecasting and is constantly looking for

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			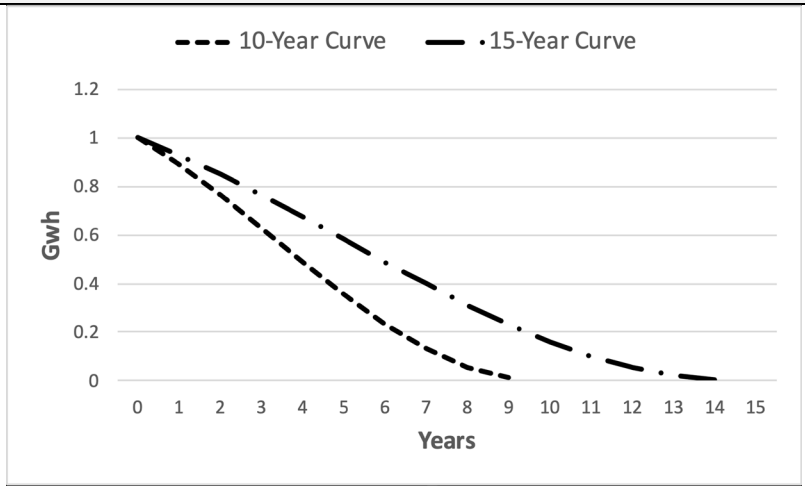 **Figure 1. I&M's Supplemental Efficiency Adjustment** CAC does not believe that a supplemental efficiency adjustment is needed. First, CAC's consultants have evaluated several IRPs from utilities that also utilize Itron's Statistical Adjusted End-Use ("SAE") model, including Duke Energy Indiana, AES Indiana, CenterPoint, NIPSCO, and Xcel. None of these utilities apply any type of "supplemental efficiency" adjustment either in their load forecasts or to their energy efficiency bundles. Second, I&M argues that the supplemental efficiency adjustment is necessary because its forecast has greater efficiency savings. However, AEO documentation of the information upon which that contention is based clearly refutes that. For example, its commercial demand documentation states, "One of the implicit assumptions in the Annual Energy Outlook 2021 (AEO2021) commercial sector Reference case projections is that, through 2050, technology and consumer behavior do not radically change. No new regulations of efficiency beyond current law or new government programs fostering efficiency improvements are assumed."[1]	ways to improve its processes. I&M continues to believe that CAC misunderstands this adjustment and places more emphasis on this adjustment than what is warranted. The Company has reached out to peer utilities in IN and MI including several mentioned and determined the CAC's claim is incorrect. Several of these utilities include adjustments to the forecasted DSM savings to prevent double counting energy efficiency in their load forecast with a net impact of I&M's supplemental efficiency adjustment not that different from the impact other utilities are using with their DSM coefficient adjustment. Furthermore, a discussion with respect to IRP optimization for EE resources should not conflate the way DSM savings are measured for lost revenues as the savings for lost revenue calculations are not dependent on a load forecast. The way DSM savings are measured for lost revenues (based on historical performance) is a completely separate calculation than what energy efficiency is modeled in an IRP optimization (future energy efficiency savings). They are not equivalent. Actual savings computed for the lost revenue calculation (from the EM&V process) does not depend on a load forecast. The IRP does depend on a load forecast and since I&M's load forecast model already includes the impact of future energy efficiency, an adjustment is necessary to prevent double counting energy efficiency in the IRP optimization. Additionally, the suggestion that the AEO documentation clearly refutes a point by I&M forecast has greater efficiency savings built in is not true. For example, the 2021 AEO Residential assumption documentation states,

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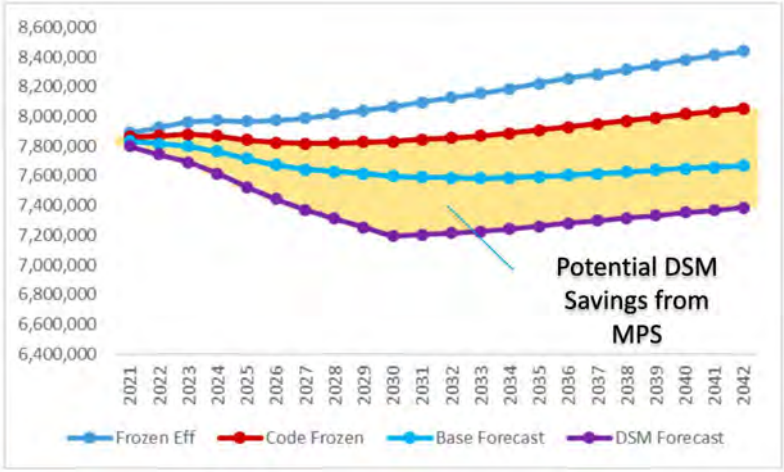
			The increase in end-use efficiency that I&M points to reflects improvements in stock efficiency because of measure turnover primarily and a small amount of incentivized energy efficiency. Figure 2 shows the load forecasts that I&M presented in the April 14th workshop. CAC does not believe that the "Code Frozen" forecast assumes greater efficiency savings in the forecast than the Market Potential Study ("MPS") baseline. I&M reports that the total potential demand-side management ("DSM") / energy waste reduction savings are computed based off the baseline from existing codes. [2] As a result, there should not be a significant difference between the "Code Frozen" (red line) and the "Base Forecast" (teal line).  **Figure 2. Load Forecasts Presented in Second Stakeholder Workshop3** It is CAC's position that continued use of the supplemental efficiency adjustment will radically distort energy efficiency in a way that makes it	"The RDM (Residential Demand Module) accounts for the effects of utility-level energy efficiency programs designed to stimulate investments in more efficient equipment for space heating, air conditioning, lighting, and other select appliances." As I&M has stated on numerous times this adjustment is necessary to ensure I&M's forecast does not overstate EE/DSM efforts that have already been implemented by I&M's customers. I&M worked very closely with GDS on this topic and GDS confirmed that the savings included in I&M's base models were different than the Code Frozen scenario from GDS. AEP uses this methodology in all 11 of the states that it operates in. Without this adjustment, I&M's forecast would overstate load obligations, which over time may lead to unnecessary build or buy decisions that could negatively impact future rates.

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			impossible to select the economically optimal level. It is critical to the accuracy and value of this IRP that I&M stop using this methodology.	
28.	CAC and Earthjustice	Energy Efficiency Recommendations	CAC asks that I&M implement the following recommendations for the modeling of energy efficiency resources for the 2021 IRP:	See responses to Q 28, parts a-e below.
28 a.	CAC and Earthjustice	Energy Efficiency Recommendations	Use the "No DSM" load forecast already created by I&M	The Company is already using a forecast that only accounts for historical and/or approved DSM.
28. b.	CAC and Earthjustice	Energy Efficiency Recommendations	Model energy efficiency savings in magnitude and with measure lives consistent with the GDS 2021 I&M Market Potential Study	The Company plans to model savings consistent with the GDS 2021 I&M Market Potential Study (MPS) and intends to bundle measures into sector-level portfolios for inclusion in the IRP modeling. The measure life of the sector-level portfolio will be developed as a weighted average measure life.
28. c.	CAC and Earthjustice	Energy Efficiency Recommendations	Levelize energy efficiency costs over the MPS life to ensure costs are on equal footing with supply-side resources	The Company does not capitalize Energy efficiency program costs. The costs will be modeled as fixed annual payments over the implementation life of the program/resource. As a result, Siemens PTI will ensure the costs over the life of the asset are placed on an equal footing with other supply side resources.
28. d.	CAC and Earthjustice	Energy Efficiency Recommendations	Use marginal, not average, line losses to convert the MPS savings at the meter to IRP savings at the generator	The 2021 I&M MPS utilized I&M's peak demand line loss factor (LLF), as a proxy for a marginal line loss factor, to adjust both energy and demand savings up to the generator level. The peak demand LLF is roughly 15% higher in the C&I sector, and 9% higher in the residential sector when compared to I&M's average energy LLF. For use in the IRP, the GDS Team will deliver to Siemens energy and capacity savings at the generation level using I&M's peak demand LLF.

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28.e	CAC and Earthjustice	Energy Efficiency Recommendations	Apply the avoided transmission and distribution ("T&D") cost as a reduction in energy efficiency program cost	The MPS included avoided T&D costs in its analysis and this will be applied as a reduction to the EE, DER and DR costs in IRP Modeling.
29	CAC and Earthjustice	Energy Efficiency Bundling	We are skeptical that the value-based approach gives a particularly better result than the cost-based approach, and neither are preferable to grouping measures into sector-level portfolios. It seems very likely that the value-grouped bundles will look similar to the cost-based bundles, which will lead I&M's model to "cream skim" – choosing the cheapest measures regardless of whether they will make a coherent program. And under any of these three approaches, it is highly likely that numerous programs/measures that I&M will actually offer will not be selected by its IRP model, which perpetuates the disconnect between the IRP modeling and DSM plan implementation.	I&M's original proposal for the Value-Based Approach was to recognize time-differentiated savings and the value-based approach would allow I&M to aggregate measures with similar system benefits together. However, based on the comments of the CAC and additional review, I&M intends to group measures into sector-level portfolios for inclusion in the IRP modeling. (Note, income-qualified savings will be included separately due to concerns that these costly program delivery approaches would unfairly impact the remaining residential sector savings). The sector-level portfolios or bundles retain their mix of savings by end-use at the hourly level as identified in the MPS, and are unique relative to the overall I&M system load shape.
30	CAC and Earthjustice	Rockport	In light of the April 22, 2021 announcement that I&M will buy a portion of Rockport 2,[4] we add a sixth recommendation to this slide, which is to add a sensitivity to the MPS that screens the economic potential using a combined-cycle gas generating unit ("CC") as the basis for avoided energy and capacity costs. There will clearly be a lack of capacity on I&M's system in 2028, given the announced retirements of both Rockport Units 1 and 2 that year and given the prior IRP's preference for a combined cycle, which has a much higher cost than the avoided costs I&M uses to screen DSM. Thus, it is much more fair and direct to use a CC as the basis for the avoided costs in the MPS. [4] We expect extensive dialogue and collaboration with stakeholders with regard to this announcement as part of the 2021 IRP stakeholder process, particularly around retirement analyses of Rockport Unit 2 at 2022 (the	The MPS will include a sensitivity analysis, one of which is where technology costs are reduced to support the IRP Emerging Technologies Scenario. The Company's IRP Scenarios are designed to capture a wide range of future market outcomes, i.e. avoided costs, which will influence future resource selection including DSM. This IRP modeling approach provides a comprehensive review of resources over various Scenarios.

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			date by which the lease was supposed to expire and I&M would have been relieved from this obligation) and much earlier dates than 2028 given Rockport's extremely poor capacity factors and other poor operating characteristics.	
Questions 31-36 were submitted by CAC Friday, June 4, 2021				
31.	Citizens Action Coalition of Indiana ("CAC")	Stakeholder Feedback	Please provide unredacted copies of any discovery responses to other interested parties' requests that have not already been provided to CAC. Please continue to provide unredacted copies of any discovery requests to other interested parties' requests through the pendency of this public advisory process.	I&M manages the information sharing components of its IRP Public Advisory Process in accordance with 170 IAC 4-7-2.6. When an interested party requests information related the IRP, I&M typically responds within 15 business days or another agreed upon timeframe. I&M's responses are posted to I&M's IRP webpage and are publicly available to CAC and all other interested parties at the following location: https://www.indianamichiganpower.com/community/projects/irp/.
32.	Citizens Action Coalition of Indiana ("CAC")	Rockport	What are I&M's plans regarding the modeling of possible retirement dates for Rockport Unit 1, as required by paragraph 6(c) of the Settlement Agreement in Michigan Public Service Commission Case No. U-20591 ("Michigan Settlement")?	The Company plans to model multiple scenarios and sensitivities related to the Rockport unit operations in accordance to the settlement agreement. These scenarios will be a topic for review during the upcoming Stakeholder Meeting #3. Scenarios and Sensitivities currently planned include: **Reference Case Scenario:** Rockport Unit 1 Retirement: December 31, 2028 Rockport Unit 2 Retirement: December 31, 2028 **Rockport Sensitivity # 1 (R1):** Rockport Unit 1 Retirement: December 31, 2028 Rockport Unit 2 Retirement: May 31, 2026 **Rockport Sensitivity # 2 (R2):** Rockport Unit 1 Retirement: December 31, 2028 Rockport Unit 2 Retirement: May 31, 2026, 50% I&M Share

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				Rockport Sensitivity # 3 (R3): Rockport Unit 1 Retirement: May 31, 2025 Rockport Unit 2 Retirement: December 31, 2028 **Rockport Sensitivity # 4 (R4)**: Rockport Unit 1 Retirement: May 31, 2025 Rockport Unit 2 Retirement: December 31, 2028, 50% I&M Share
33.	Citizens Action Coalition of Indiana ("CAC")	Rockport	What research and analysis has I&M performed to compare the cost of renewing the Rockport Unit 2 lease with other alternatives, including market purchases or asset acquisitions, as required by paragraph 14 of the Michigan Settlement?	Paragraph 14 of the referenced settlement agreement is specific to actions I&M would take in Michigan if I&M extended the Rockport Unit 2 lease. Late last year, I&M provided formal notice that it would not be extending the lease. On April 22, 2021, I&M advised registered IRP stakeholders of I&M's decision to reacquire Rockport Unit 2. The reacquisition will be incorporated and evaluated in this IRP and I&M will be making separate filings before both state commissions that will allow each state to fully assess the reasonableness of I&M's decision.
34.	Citizens Action Coalition of Indiana ("CAC")	New Resources	Is I&M planning to seek approval in Michigan or Indiana for adding new solar or wind resources prior to the filing of the 2021 IRP, as contemplated by paragraph 17 of the Michigan Settlement?	I&M is still evaluating the potential to add renewable resources prior to the filing of I&M's 2021 IRP but has not made any formal decisions.
35.	Citizens Action Coalition of Indiana ("CAC")	All Source RFP	What is I&M's expected timeline for completing evaluation of the All-Source RFP for which indicative responses were due May 21, 2021? When does I&M expect to publish the results?	A summary of results from the All-Source RFP will be shared with Stakeholders at the upcoming Stakeholder Meeting #3.
36.	Citizens Action Coalition of Indiana ("CAC")	OVEC	What research and analysis has I&M performed relative to the possibility of terminating the Ohio Valley Electric Cooperation ("OVEC") Inter-Company Power Agreement ("ICPA"), as required by paragraph 12(c) of the Michigan Settlement?	Paragraph 12 of the referenced settlement agreement is specific to testimony and supplemental analysis I&M will include in its Michigan IRP filing in mid-December 2021. In Michigan, I&M has an obligation to make a separate filing to seek formal approval of I&M's Total Company IRP. That filing will include the IRP that I&M submits in Indiana as well as additional testimony and supplemental analysis that is specific to requirements in Michigan and set forth in

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				the referenced settlement agreement. I&M has not yet prepared the OVEC analysis described in paragraph 12(c) of the Michigan settlement and will provide as part of the Michigan IRP filing.
37	Citizens Action Coalition of Indiana ("CAC") and Earthjustice	IRP Inputs	What research and analysis has I&M performed to define modeling inputs for the installation of new renewable resources, as required by paragraph 6(d) of the Michigan Settlement?	As stated in paragraph 6(d) of the Michigan settlement, I&M will work with stakeholders to define the modeling inputs for the IRP, including scenarios for renewable generation resources. The inputs for these resources are informed by multiple sources including the AEO2020 report, RFP responses and Siemens subject matter experts. These inputs will be a topic of discussion in the Stakeholder Meeting #3.
38	Emily Medine	IRP Metrics	As indicted on the call, multiple parties are concerned about the economic analysis, specifically because of its failure to consider rates impacts. It is undisputed that the NPV analysis is not a proxy for a rate analysis. As a user of Aurora, I well understand that the NPV results from Aurora cannot be used for this purpose as the costs in Aurora are levelized which is inconsistent with how ratemaking is done. Further, sunk costs cannot be ignored in a rate analysis because of the timing issues. Costs from retired assets will continue to be charged to ratepayers at the same time the costs of new resources are charged. Therefore, the rate analysis must reflect this. Duke Energy Indiana has indicated it is looking at a separate rate impact analysis in its IRP. At a minimum, it is important for IMP to note in the IRP that its economic analysis does not represent customer rate impacts and therefore no conclusions about affordability can be derived from it.	In order to provide information about customer affordability and rate impacts of the resource additions in the Preferred Plan, I&M intends to prepare a traditional, or non-levelized, calculation of the annual cost of service and the change in revenue requirement for the period of the IRP through 2031. This forecast will be prepared in a spreadsheet model outside of the Aurora model, using the underlying capital and O&M costs which were the source of the levelized costs used in Aurora.

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			Should you wish to discuss, please contact Jeff Earl or me.	
39	Ben Inskeep	IRP Inputs	What impact has recent spiking natural gas prices had on I&M's resource planning in the near and longer terms? How is this reflected in your modeling and scenario analysis?	While forward prices for Winter 2022/23 are 40% higher than AEP's forecast, they are only 13% higher in Winter 2023/24, and within 1% of Winter 2024/25 prices. Given the long-term outlook has not changed significantly between the release of the Fundamentals Forecast and now, the gas price assumptions remain reasonable and have not been adjusted for this IRP.
Questions 40- 42were submitted by CAC Friday, November 3, 2021				
40	Citizens Action Coalition of Indiana ("CAC") and Earthjustice		Citizens Action Coalition of Indiana ("CAC") and Earthjustice submit these comments on the materials presented during I&M's October 14th IRP stakeholder workshop. We appreciate I&M's emphasis that stakeholder feedback is key and needed. As we have said throughout this process, we hope I&M will not just consider this feedback but use it to modify the analysis that it intends to undertake before the IRP is finalized, and will provide written responses in response to feedback that includes descriptions of how the analysis was modified or explanations of why it was not.	The Company has actively listened, and where appropriate incorporated feedback provided throughout the Stakeholder process. The feedback received, including Company responses, has been captured and posted on the I&M IRP website and will continue to be addressed throughout the remainder of the IRP process.
41	Citizens Action Coalition of Indiana ("CAC") and Earthjustice		CAC would like to reiterate the concerns we have raised repeatedly, including at the October 14th workshop: I&M is not sharing information with stakeholders in a timely manner that permits feedback on key details before the modeling is finalized. In a September 2nd email, Jay Boggs from Siemens (I&M's Aurora modeling contractor) said: *The assumptions and input data will be provided in Excel format. It will be available for download from a secure site maintained by Siemens PTI.* *We anticipate emailing an announcement during the week of 9/7 when the data is officially posted to the site.* *** *We will also provide an overview of the data in a special session for Technical Stakeholders on September 10 at 11:00am Eastern*	Siemens led I&M through a 4 Step process to systematically identify key inputs and assumptions and to develop associated portfolios for analysis in order to identify a Preferred Plan. This 4 Step process aligned with the Indiana Stakeholder process to allow for a collaborative interaction at each step. In each stakeholder meeting the Company has held, key details have been shared with the Stakeholders, including the additional meetings related to the RFP and the two specific meetings held with the CAC and Energy Futures Group related to EE modeling held to date with an objective to solicit feedback for the Company to consider while proceeding through the process. The Company has

2021 I&M IRP Website Stakeholder Comment Summary				
	Stakeholder	Topic	Comment	I&M Response
			Standard Time. Please look for an invitation from me for this meeting within the next 24hrs. *The following week, we will conduct the I&M IRP Stakeholder Meeting 3B. As part of the agenda for this meeting, we will be reviewing the assumptions and key inputs used in the analysis. You may register for this meeting on I&M's website.* *To complete the review of these IRP Inputs and Key Assumptions, we will be offering a follow up meeting for Technical Stakeholders on 9/24 @ 11:00am Eastern Standard Time to answer any questions and solicit feedback.* *** *On or about the middle of September, we will send Technical Stakeholders an email preparing for the initiation of Stage 3 of this process…* *We anticipate posting the I&M Aurora model on the secure website during the last week of September.* The meetings planned for September 10th and 24th were canceled. The September 10th meeting was rescheduled for October 7th but, to our knowledge, that meeting never happened and has not been rescheduled, nor have the Excel formatted input and assumptions data or the Aurora model been provided either. Furthermore, we have received conflicting feedback from Siemens about whether I&M and Siemens will actually provide the data files to make use of the Aurora licenses provided to stakeholders. We do acknowledge and support that it was necessary to delay the schedule somewhat due to the pending Rockport acquisition settlement in IURC Cause No. 45546 insofar as the settlement changes the manner in which the Rockport units need to be represented throughout I&M's modeling. Our concern, however, is that the schedule still has not been updated and communicated to stakeholders. We still do not know when we will receive the Excel formatted input and assumptions data, when we will	considered all feedback in its journey throughout the process. As noted in this particular feedback, due to the complexities introduced with the pending Rockport acquisition settlement in IURC Cause No. 45546, as well as other requests made to the team, the target dates for data provisioning to the Technical Stakeholders were delayed. This IRP Process Step 4 calibration was completed 11/8. The Reference Case Data and Assumptions Book was offered to the Technical Stakeholders who had a fully executed Non-Disclosure Agreement on 11/18. Stakeholder access to the Aurora model is to allow Technical Stakeholders who were interested in using the Aurora modeling tool the ability to independently review the Company's IRP modeling and results prior to submitting its own comments and assessment of the Company's IRP. It is important for Technical Stakeholders to understand how the inputs and assumptions reviewed over the past 8 months are implemented within the tool. To that end, if Technical Stakeholders have questions regarding the data inputs and assumptions, we are open to additional review discussions of the material. Finally, we will be producing Aurora data model for the Reference Case, as well as the change sets to generate the scenarios and sensitivities to provide the ability for the Technical Stakeholders to analyze alternative dispatch simulation scenarios and sensitivities. We currently anticipate producing this Aurora modeling file in the December 2021 – January 2022 timeframe.

2021 I&M IRP Website Stakeholder Comment Summary				
	Stakeholder	Topic	Comment	I&M Response
			receive the Aurora files, whether those Aurora files will be those necessary to replicate I&M's modeling runs, and whether there will be sufficient time for I&M to incorporate changes and feedbacks from stakeholders as part of the IRP stakeholder process and before the IRP modeling is finalized. Again, as we have continued to articulate, the IRP stakeholder process is intended to help us avoid future disputes by working together before IRP modeling is finalized. It is critical to the IRP stakeholder process that we be allowed the opportunity to adequately review the files and modeling, offer reasonable changes, and collaborate with the utility and its vendors. Please ensure adequate time is provided in the revised schedule for this collaboration.	
42		IRP Metrics	During the 3B workshop, Siemens asked CAC's consultants to provide examples of how other utilities have looked at resource diversity, and CAC consultant, Anna Sommer, responded that her expert consulting firm, EFG, does not typically see other utilities use this metric. Siemens representative, Art Holland, explained that the metric is intended to address a concern regarding adequate generation to supply load. The industry as a whole is taking stock of its resource adequacy methodologies, particularly after the events of Winter Storm Uri in February of 2021. Qualitative analyses without adequate evidence do not give useful insight into the question of whether there is sufficient capacity to meet load, rather that is the very reason that PJM develops a reliability requirement. We fully agree, however, that is a good idea to critically evaluate whether resource adequacy requirements provide the desired level of reliability. We would strongly prefer that I&M take on this issue quantitatively instead. How, for example, does the recent PJM study looking at winter resource adequacy affect I&M's view of this question, (https://insidelines.pjm.com/system-remains-strong-in-stress-test-	Consistent with the feedback, I&M is keenly focused on resource adequacy and providing reliable capacity and energy for our customers and works closely with PJM on these matters The Company is following the PJM RTO guidance for capacity planning, including the use of Effective Load Carrying Capability (ELCC) for intermittent resources for its IRP modeling. The Company also appreciates the inquiry to the PJM Fuel Security Study Update report. As the report concludes "Results from this Study do not indicate a winter reliability concern in the near-term" and goes on to conclude continued monitoring on an annual basis is needed. The Company will continue to monitor this issue in the PJM stakeholder process, including additional PJM assessments, and will make adjustments in future IRPs, as necessary. The Company appreciates the feedback related to resource diversity as a metric. As discussed in Stakeholder meeting 3b, in addition to counting the unique generator types,

2021 I&M IRP Website Stakeholder Comment Summary				
	Stakeholder	Topic	Comment	I&M Response
			examining-future-resource-adequacy/) and how does the move to accreditation through an ELCC approach impact I&M?(https://www.utilitydive.com/news/esa-storage-advocates-applaud-pjms-capacity-market-valuation-proposal/601273/) We ask I&M and Siemens to reconsider their approach and rely on more credible quantitative analyses, rather than qualitative, for this important topic.	these generator type resources will be further defined by the potential for their unique generating sites based on the modeled blocksize used in the model.
43.	Sierra Club, Wendy Bredhold	Plans for future gas plant CPCN	Submitted on December 8, 2021: Can you tell me when I&M plans to file the CPCN for its initial planned gas units, the 1,000 MW of CT in 2028?	I&M does not have any definite plans at this time regarding the 1,000MW of CT's in 2028. I&M's focus up to this point has been to complete the IRP modeling and develop its preferred plan. With the preferred plan now established, I&M's immediate focus is on initiating the RFP for the 2025 and 2026 capacity needs. I&M expects to convene a project team in 2022 to begin formulating a high level timeline associated with the potential gas capacity identified in the preferred plan in 2028. Ultimately, the decisions regarding 2028 capacity will be made based on the results of an all-source RFP and the best information I&M has available at the time.
The OUCC submitted DR set 1, with 4 questions 0n 12.21.22. They are tracked here as stakeholder questions 44-47. Per the request: In connection with our work in the above-referenced Cause, we are submitting the following request(s) for information or documentation. Please identify the person(s) providing each segment of information or each document. Also, please indicate the witness or witnesses to be called in your Case-in-Chief and Rebuttal who can answer questions regarding the substance of or origination of information supplied by the utility in each instance of the responses to this request. Thank you for your prompt assistance in this matter. I. Definitions and Instructions. A. Indiana Michigan Power Company, I&M, Ind-Mich or Petitioner means and refers to Indiana Michigan Power Company, including its officers, directors, employees, agents, attorneys and representatives, and any other entity to the extent acting under the direction or control of Petitioner. B. "Documents" means and includes any and all materials within the scope of Ind. Trial Rule 34(A)(1) and shall be construed broadly to encompass, without limitation, all handwritten, typed, printed or otherwise visually or orally reproduced materials, whether copies or originals and irrespective of whether they are privileged, and includes drafts and translations of any document, microfilm of documents that may have been destroyed, computer tapes, data sheets, punch cards, discs, diskettes, data contained in any computer, information that can be retrieved from any computer, and any information produced or reproduced mechanically, magnetically, electrically, electronically,			

2021 I&M IRP Website Stakeholder Comment Summary				
	Stakeholder	Topic	Comment	I&M Response
photographically, chemically or by any other means. Any original or copy of a document containing thereon or having attached thereto any alterations, notes, comments, or other material not included in the first document shall be deemed a separate document. C. "Identify" means: i. As to an individual, state the individual's name, business address, present occupation, present organizational title, and, where relevant, past occupation and organizational title; ii. As to an entity other than an individual, state its full name, the address of its principal place of business, and its state of incorporation or organization; iii. As to a document, state its author or maker, date, general subject matter, addressees, and recipients, if any; iii. As to a document, state its author or maker, date, general subject matter, addressees, and recipients, if any; iv. As to a meeting or oral communication, state the date and place of such meeting or oral communication, the purpose and subjects of such meeting or oral communication, every person participating in or present at such meeting or oral communication, and every document referring or relating to such meeting or oral communication; v. As to a fact, state the subject and substance of the fact, each meeting, communication, or other event, which constitutes the fact, and each document referring or relating to the fact. D. For each data request, please identify all persons who provided responsive information or materials. Also, please indicate the witness or witnesses to be called in your case-in-chief and rebuttal who can answer questions regarding the substance of or origination of information supplied by Petitioner in each instance of the responses to this request. E. With respect to any document or thing being withheld from production on the basis of privilege, please provide the author, addressee and all recipients of copies of the documents, all other persons to whom the document was shown or discussed, the subject matter of the document and the basis of the claim of privilege. F. Except as otherwise indicated explicitly or by context, these requests shall be deemed to be continuing. Any information or document responsive to these requests which Petitioner acquires, or which becomes known to Petitioner subsequent to the initial response shall be provided within a reasonable time after such information or document is acquired or becomes known to Petitioner. G. This set of data requests requires supplemental or amended responses to the extent required by Ind. Trial Rule 26(E). In addition, these requests shall be deemed to be continuing requests for supplemental responses pursuant to Ind. Trial Rule 26(E)(3). H. Please provide copies of all responses, both formal and informal, to data requests from all other parties in this proceeding.			
44.	OUCC	Modeling, retirements & buildouts	OUCC DR Set 1 Q1: As part of its work in this IRP, did I&M model the build-out and retirement of generation facilities beyond the build-out and retirement of units for I&M itself? If so, please describe: a. The purpose of that modeling; b. The extent of that modeling (e.g. MISO or Eastern Interconnect); and c. The software and methodology used for performing that modeling.	Yes, as part of the candidate portfolio modeling, I&M utilized the Siemens PTI team to model generation facilities beyond the build-out and retirement of units for I&M itself. The results are derived from a dynamic build and retirement process that produces two-hundred variations of build paths that surrounding utilities could undertake.

2021 I&M IRP Website Stakeholder Comment Summary				
	Stakeholder	Topic	Comment	I&M Response
				a. The purpose of the portfolio analysis IRP step is to ensure a realistic surrounding in which I&M will be interacting with in future years that represents the changing dynamics of the electric grid. b. PJM and MISO Zones 3-7. c. The retirement assumptions are a combination of announced retirements derived from EIA 860 as well as a dynamic retirement process for the economic retirement of existing coal units. The buildout for the surrounding regions is created using a dynamic build process that is integrated into the stochastic analysis. A summary of the mean stochastic result of the expansion plan is provided as part of question #2.
45.	OUCC	Modeling, nameplate and UCAP capacity	OUCC DR Set 1 Q2: To the extent modeling was conducted for the build-out and retirement of generation facilities beyond the build-out and retirement of units for I&M itself (as asked in question 1), please provide: a. The nameplate capacity modeled as existing at the end of each year modeled by generation type (e.g. coal, natural gas combustion turbine, natural gas combined cycle, wind, solar, hydro, storage). b. The UCAP value of capacity modeled as existing at the end of each year modeled by generation type (e.g. coal, natural gas combustion turbine, natural gas combined cycle, wind, solar, hydro, storage).	Requested information provided in excel format.
46.	OUCC	Modeling, customer	OUCC DR Set 1 Q3: For each resource planning model run performed by I&M, please respond to the following questions:	Due to the volume of data that would be produced, the Siemens IRP team's stochastic analysis does not output the

2021 I&M IRP Website Stakeholder Comment Summary				
	Stakeholder	Topic	Comment	I&M Response
		demand and resource output	a. Please identify the top ten hours based upon the difference between the level of I&M's customer demand and the output from I&M's generation resources for each year of the planning horizon; b. For each hour identified in part 'a' of this question please provide the following data: i. I&M's modeled customer demand; ii. Modeled output of I&M's generation resources by generation type (e.g. coal, natural gas combustion turbine, natural gas combined cycle, wind, solar, hydro, storage); iii. MISO market price for that hour (to the extent MISO prices are modeled as being different for I&M's generation vs. its load, please provide both prices); iv. Natural gas price forecast for that hour.	required hourly data from the stochastic simulations in order to fulfill this request.
47.	OUCC	ancillary services	4) Regarding ancillary services expected to be provided by MISO over I&M's resource planning horizon: a. Does I&M expect that the level of ancillary services provided by MISO (PJM) and related costs will increase as the level of intermittent resources increases over the planning horizon? Please explain your answer. b.Did I&M's modeling in this IRP incorporate the effects of any expected increases in the level of ancillary services provided by MISO(PJM) and related costs? If so, please explain how this was modeled. If not, why not.	a. The Company is uncertain as to what level of ancillary services provided by PJM might change, although generally, it is anticipated that changes will occur. PJM is expected to undertake an analysis of what additional "reliability services" would be needed in the future, although these discussions have not started at this time. The Company will continue to monitor this issue in the PJM stakeholder process, including additional PJM assessments. b. Because of the uncertainty related to future ancillary services, no assumptions were made to incorporate the effects of any expected increases in the modeling
The CAC submitted the following 4-part question on November 29, 2021.				
48.	CAC	Bundling of DSM Measures	Good evening,	48.1 The inputs template spreadsheet contained SEA bundles. Inputs were provided for both the net to gross and SEA bundles.

2021 I&M IRP Website Stakeholder Comment Summary				
	Stakeholder	Topic	Comment	I&M Response
			I wanted to follow up on our conversation regarding the bundling of DSM measures in I&M's IRP. We had a few questions about the workbooks provided and then one comment. Thanks! Anna. 1. To confirm the spreadsheet "I&M IRP EE - Aurora Inputs Template - Siemens - Final" gives the net to gross bundles not the SEA bundles, correct? 2. Could you provide the peak hour of the Aurora load forecast? 3. Could you provide the spreadsheets used to create the savings shape for each bundle? We wondered if the shapes were based on end-use consumption and not savings? For example, C&I bundle 5 has some daylighting controls in it but peaks in the winter time, when you'd expect summer time daylighting savings to be higher because there is more daylight. 4. The Siemens calculation on of annual persisting savings is problematic in that it assumes the cumulative persisting savings are equally distributed across all years of a bundle vintage. As shown in the example below for RES Vintage 2023-2025 Block 6, the savings associated with 2023 increase in the 2nd and 3rd years of persistence (purple box), which is not possible. This outcome is due to the treatment of cumulative savings, which are simply distributed evenly across all vintage years (red box). Incremental annual savings change year to year due to varying measure lives and adoption rates in the MPS.	48.2 The peak hour in 2021 is 7/9/2021 Hour 19. 48.3 yes, the spreadsheets will be provided via a secure file transfer application due to their size. For the EE shapes, the annual saving for each measure are mapped to a specific end-use load shape. Generally, the end-use load shape used to convert the annual savings value to 8760 reflects end-use consumption patterns. 48.4 The approach to the cumulative energy efficiency savings resulting from the data provided by GDS was applied as a simplifying assumption to allow the Aurora model to select energy efficiency programs annually. This method ensured the total potential savings across the three years in the bundle was equal to the total potential savings identified for the bundle.

2021 I&M IRP Website Stakeholder Comment Summary				
	Stakeholder	Topic	Comment	I&M Response
			Operating Life 7 SOURCE: GDS; SIEMENS Year | DSM MWh | DSM MWh | 2023 Program Annual Savings (MWh) | 2024 Program Annual Savings (MWh) | 2025 Program Annual Savings (MWh) 2021 2022 ↓ 2023 persisting savings *increase* in years 2 and 3 2023 42,904 42,904 42,904 2024 88,841 44,421 44,421 44,421 2025 134,599 44,866 44,866 44,866 44,866 ← Equal savings a 2026 116,203 38,734 38,734 38,734 38,734 2027 96,198 32,066 32,066 32,066 32,066 2028 75,585 25,195 25,195 25,195 25,195 2029 55,529 18,510 18,510 18,510 18,510 2030 31,728 15,864 15,864 15,864 2031 13,084 13,084 13,084 2032 0 0	
The CAC submitted the following 10 part question containing CONFIDENTIAL INFORMATION as CAC DR Set 2 on December 10, 2021				
49.	CAC	Rockport, OVEC, Cook, DR, Resource production profiles, gas and coal prices and stochastics	1. Overall, Rockport O&M values seem low. In 2020, Rockport reported $175 million in non-fuel O&M. At a 50% capacity factor, the 2021 modeled values would be 2620 MW x 50% x 8760 x $1.09 = $12.5 million + $21.3 million in FOM = $33 million, why is there such a difference? 2. Is any capitalized maintenance for any units, new or existing modeled? If so, can you provide that? If not, why not? 3. Can you please provide the Clifty and Kyger Creek contract and exit costs? 4. Minimum up time for Rockport units is 72 hours, why is it so long?	49.1 Without confirming your source, we believe the $175M for 2020 non-fuel O&M includes the Rockport Unit 2 lease payment of $136.5M. 49.2 Capitalized maintenance for existing units is generally considered to the extent it is incrementally or decrementally changed relative to different cases. It is modeled as a part of O&M for new units.

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	Stakeholder	Topic	Comment	I&M Response
			5. Are any thermal units, besides the Cook units assumed to be self-committed? 6. Are the capital charges those that were used for all modeled areas or just non-AEP areas? And if the latter, can you provide the AEP IM assumptions as well? 7. So that these assumptions are fleshed out for all parties, can you please provide DR and EE assumptions including not just savings and costs, but resource parameters such as whether/how these resources were grossed up for line losses or the reserve margin (peak credit assumption), min up time, max hours/energy, etc.? 8. Can you please provide the resource production profiles, FCRs, ILR assumptions, or the battery limits (SoC, roundtrip efficiency, etc.)? 9. Siemens said that it produced its gas and coal price distributions off a reference high and low case give to it by AEP. Can you please provide that high and low case and also explain and show how Siemens transformed those cases into its distributions? 10. Will we able to rerun the stochastic simulations once the .apz files are delivered to stakeholders? On the question of modeling EV load as responsive to at least a TOU rate, here's one study that gives an indication, somewhat accidentally, of the difference between charging with a TOU rate or not. You can see the effect in the charging profiles by metro region. For example, San Diego had a TOU rate for EVs during these time periods, but Phoenix did not.	Due to the late addition of multiple Rockport unit 1 early retirement scenarios, associated capitalized maintenance was not included in the original modeling. However, I&M agrees that some reduction to ongoing capital would occur for these earlier cases relative to the 2028 retirement baseline. The additional maintenance cost savings were incorporated into the Balanced Scorecard CTSL metric results for the early Rockport Unit 1 retirement cases discussed in the IRP. The estimated capitalized maintenance cost assumptions for the different RP1 retirement portfolios will be included with an updated file of the AEP IM Assumptions Book workbook made available to the Technical Stakeholders group. 49.3 The Inter-Company Power Agreement is publicly available on FERC's eTariff website. I&M assumed two scenarios, one assuming I&M only exited and one assuming all Sponsoring Companies exited. In the first scenario I&M assumed that its ongoing costs (costs I&M would be obligated to pay under the contract notwithstanding its exit) would be a total of $45.9M from 2030-2040. In the second scenario, ongoing costs would be a total of $235M from 2030-2040. These include Debt Repayment and Other Fixed Cost Responsibility costs.

2021 I&M IRP Website Stakeholder Comment Summary				
	Stakeholder	Topic	Comment	I&M Response
				49.4 The purpose is to limit the number of thermal cycles on the equipment. The thermal cycles result in thermal stresses in the equipment from the expanding and contracting and reduces the life of the equipment. 49.5 There are no thermal units set to must run for I&M units in the modeling. 49.6 The capital charges that were used for AEP areas was the same capital charge rate applied to non-AEP areas. 49.7 The inputs provided to Siemens were grossed up from the meter up to generation. In the C&I sector, a multiplier of 1.0513 to increase retail meter savings to generation was used. For residential, the multiplier was 1.0869. 49.8 Batteries were modeled using AURORA's storage logic, specifically the demand control setting, in which the shape will target generation for the highest demand hours of the week within the zone that the battery is placed. The roundtrip efficiency is assumed at 90% and SoC at 50%. 49.9 The file will be provided as requested.

2021 I&M IRP Website Stakeholder Comment Summary				
	Stakeholder	Topic	Comment	I&M Response
				49.10 The stochastic inputs will be able to be loaded into the AURORA model and stakeholders will be able to recreate the stochastic simulations in the IRP Report.

Indiana Michigan Power Company

2021 Integrated Resource Plan

Stakeholder Workshop #1 Meeting Minutes

(March 9, 2021)

1. **Welcome and Introductions – Dona Seger-Lawson, Director of Regulatory Services**

Dona began the meeting at 9:30 and covered slides 1-5.

Dona began the meeting and welcomed participants to the 2021 I&M Integrated Resource Plan (IRP) stakeholder workshop. Dona reviewed a safety moment for electrical safety while working from home and introduced the American Electric Power (AEP), Indiana Michigan Power (I&M) and Siemens Power Technologies International (PTI) team members.

Dona introduced Jay Boggs, Siemens Managing Director, and Moderator for the Stakeholder Workshop.

2. **Meeting Guidelines – Jay Boggs, Siemens Managing Director**

Jay covered slides 6-8

Jay presented the Meeting Guidelines portion of the presentation and established the role of Moderator for the Stakeholder Meeting. He stated that the purpose of the presentation is to explain the IRP process and collect feedback from stakeholders and that participants would hear from several individuals today from AEP, I&M and Siemens PTI. He introduced the role of Siemens PTI as part of the 2021 IRP Process and provided an overview of the webinar platform and tools.

Meeting guidelines were discussed.

Jay also provided an overview of the Questions and Feedback process, including directing stakeholders to submit comments and stay informed at the I&M IRP Website: http://www.indianamichiganpower.com/info/projects/IntegratedResourcePlan.

In addition, stakeholders are encouraged to submit questions via email to I&MIRP@aep.com

Jay introduced Toby Thomas, I&M President and Chief Operating Officer (COO), to provide opening remarks.

3. **Opening Remarks – Toby Thomas, I&M President and COO**

Toby covered slides 9-13

Toby welcomed everyone to the meeting and stated that the 2021 IRP will be developed over the next several months and that stakeholder feedback will be critical. He discussed the strategic importance of the 2021 IRP and provided an overview of I&M service territory, reviewing areas served and the Company's generation portfolio. Toby also provided an overview of I&M's energy efficiency and demand response (EE/DR) programs.

Toby went on to discuss the transformation strategy underway at I&M which is focused on generation transmission, modernizing the grid, expanding customer choice, embracing new technology and developing a work force of the future. He explained that the transformation strategy is focused not on generation, but also on the way in which I&M interacted with customers and stakeholders. He also discussed planning for distributed energy resources (DER), electric vehicles (EVs) and expanding customer choices. Toby then discussed the Company's Diversity and Inclusion Strategic Plan Roadmap.

Toby introduced Greg Soller, I&M Resource Planning Analyst.

4. <u>I&M 2021 IRP Process – Greg Soller, I&M Resource Planning Analyst</u>

Greg covered slides 14-16

Greg began this section by reinforcing the objective of the IRP is to provide a roadmap for planning purposes. Greg discussed the major components associated with developing the IRP, including the development of a portfolio of preferred resources and stakeholder engagement.

Greg stated that every year I&M looks at potential IRP enhancement opportunities to implement and provided an overview of the various improvement opportunities I&M has for the 2021 IRP. He mentioned the improvement opportunity to enhance coordination between the distribution and planning teams, which is already underway internally. He also mentioned the new Grid Solutions internal team, which will create enhanced coordination overall among transmission and distribution planning functions.

Greg introduced the Siemens IRP Team, Art Holland, Jay Boggs, and Peter Berini, to present the remainder of the slides in this section.

5. <u>I&M 2021 IRP Process – Art Holland; Siemens Managing Director; Jay Boggs, Siemens Managing Director; Peter Berini, Siemens Project Manager</u>

Siemens IRP Team, including Art Holland, Jay Boggs and Peter Berini, covered slides 17-20

Siemens IRP Team, led by Art Holland, discussed the proposed 2021 IRP Process that will be administered by Siemens PTI. Art discussed the five-step process that Siemens has used to conduct IRP filings across the US. The five steps discussed were: Determine Objectives, Identify Metrics, Create Candidate Portfolios, Analyze Candidate Portfolios and Balanced Scorecard and Report.

Peter Berini provided an overview of Key Vendors anticipated as part of the process.

Jay Boggs provided an overview of the Stakeholder Process. Four stakeholder meetings will be held. There will also be a stakeholder meeting on the all-source RFP and an Aurora technical workshop.

Table 1 Verbal Questions Captured Related to 2021 IRP Process

Question #	Question	Response
Q1	Is there another all-source RFP being issued?	The All-source RFP was agreed upon in the MI IRP settlement and will be used to capture indicative long-term pricing to inform the IRP. It differs from the current Renewable RFP which is designed for a short-term period. The Company will facilitate a Stakeholder Review process for the draft RFP prior to issue.
Q4	How will the All-Source RFP results fit into the process (timing and use)?	
Q6	Why do you have two RFPs?	
Q7	Will you give stakeholders an opportunity to weigh in on all-source RFP?	
Q9	Are you sending the new RFP to all who responded to the first RFP?	
Q11	What are the main differences with the RFPs?	
Q5	Can we get copies of the modeling files as we have in the past?	Yes, we will talk about that in detail at the modeling workshop.
Q10	Where will future workshops be held?	COVID-19 policies prevent us from attending large in person meetings currently.

6. Objectives and Measures – Art Holland, Siemens Managing Director, Jay Boggs, Siemens Managing Director, Peter Berini, Siemens Project Manager

Siemens IRP Team, including Art Holland and Peter Berini, covered slides 21-28

The Siemens IRP Team, led by Peter Berini, discussed the I&M IRP team's approach to establishing objectives and measures for use in the IRP analysis. Peter noted that the critical first step in the IRP Process is the determination of objectives in which portfolios will be evaluated against. Objectives will be assigned Metrics, which will feed directly into the Balanced Scorecard and aid in the selection of the preferred portfolio.

Peter discussed how IRPs are generally centered around three main objectives: Affordability, Reliability, and Sustainability objectives. He also noted that each set of stakeholders may have a different set of priorities when examining IRP objectives and it is important to illustrate and identify the various trade-offs stakeholders may have.

Peter then discussed the proposed Objectives and Metrics for use in the study (slide 24)

He then discussed how the preferred resource portfolio will incorporate each of the objectives and measures through a balanced scorecard that weighs attributes in accordance with stakeholder needs, economic and load growth projections, I&M input and practical

considerations. He stated that the Balanced Scorecard allows for broad comparisons of the Candidate Portfolio's and will align with the Objectives and Metrics.

Peter introduced the Siemens IRP Team, Art Holland, Jay Boggs, and Peter Berini to discuss Proposed Scenarios.

Table 2 Verbal Questions Captured Related to Objectives and Measures

Question #	Question	Response
Q14	How will I&M value resource diversity?	The details related to the Resource diversity metric are still be developed but it is intended to capture in some manner, including technology type, location, and count.
Q18	Will you evaluate diversity of resources?	
Q20	Fuel diversity: one method is to consider geographic diversity and total counted generation	
Q22	Do you mean resource count by technology count as a measure of diversity?	
Q19	Will you provide 5-year and 10-yr NPV?	Yes.
Q23	Are your metrics set in stone?	Our goal for today was to provide a preliminary set of metrics to get your feedback. At the next meeting we will look to finalize.

7. Proposed Scenarios – Art Holland, Siemens Managing Director, Jay Boggs, Siemens Managing Director, Peter Berini, Siemens Project Manager

Siemens IRP Team, including Art Holland, Jay Boggs and Peter Berini, covered slides 29-40.

Once a set of objectives and metrics have been determined, the next step in the process is to define the Scenarios for consideration in the selection of alternative portfolios. In the case of I&M, Art provided an overview of the Reference Scenario and four alternative scenarios envisioned for the 2021 IRP Analysis.

In addition to providing an overview of the scenarios, Art mentioned the importance of input diversity in this process. He also noted that scenarios will inform Candidate Portfolio Development but is not the only means. Sensitivities will be applied to the scenarios as well, which were not discussed on the call.

Art introduced Greg Soller, I&M Resource Planning Analyst, to discuss I&M's Going-in Position.

Table 3 Verbal Questions Captured Related to Proposed Scenarios

Question #	Question	Response
Q15	How do we look at CO2 emissions in the Scenarios?	We will subject the portfolios to a broad range of CO2 costs and sensitivities.
Q33	How will the development of scenarios change as you get more certainty around capital costs?	Expectation is the all-source RFP will provide insight to the market cost, which will influence the portfolios that emerge.
Q34	Will there be a metric for diversity and inclusion?	The Company is interested in considering Stakeholder ideas for this matter; at this time, the Company is considering this to be a qualitative discussion regarding the attributes of the Portfolios.

8. Preliminary Base Case Inputs – Greg Soller, I&M Resource Planning Analyst, Connie Trecazzi, Fundamental Forecasts, Chad Burnett, Load Forecasts

Greg covered slide 41-42

Greg covered the current plans and capacity needs for the I&M portfolio (slide 42). The slide depicts the Company's net unforced capacity (UCAP) and shows I&M position for reserve margins and load. He noted the amount of capacity required at various intervals of the study horizon, all of which coincide with currently planned retirements or contract expirations at existing facilities. He also noted a drop in the total load obligation that occurs in the early 2030's because of wholesale contract expirations.

Greg introduced Connie Trecazzi, Economic Forecast Analyst, to discuss Reference Scenario Inputs.

Connie covered slides 43-48.

Connie introduced the Reference Scenario inputs and discussed the key market drivers and the fundamental forecast process.

Connie discussed the forecasting process for fundamental pricing. The Aurora model is used for projecting long-term energy prices. It uses a wide range of information in developing the forecast – internal and external. The process is iterative to reflect the impact of changes in power generation demand on underlying fuel prices and the subsequent impact on power prices. The process is repeated until an equilibrium has been reached.

Connie explained that the forecast is a baseline forecast covering the entire country. It is used for analysis across AEP's entire service territory.

Connie also indicated that AEP is in the research phase of the process used to update its fundamental forecast and expects to provide updates once that process is completed. She then discussed a few base case inputs, such as gas prices, coal prices and CO2 prices.

Importantly, AEP is working to integrate the transmission and distribution planning teams as part of the IRP process.

Connie introduced Chad Burnett, Director of Economic Forecasting, to discuss the Load Forecast process.

Chad covered slides 49-55

Chad discussed the load forecast process as it relates to the I&M 2021 IRP and reinforced the use of county level economic data. He discussed the process whereby customer forecasts by class are used as an input into monthly sales forecasts, which feed into peak demand. The analysis works in demographics, macroeconomics, and weather, and applies efficiency and adoption of new technologies. He then discussed many of the drivers of load, which are consistent between years. Chad noted the importance of population growth and industrial customers on load growth in I&M's service territory.

Chad also discussed the Company's forecasts by class, including the expiration of wholesale contracts in the early 2030's. He also discussed the load forecast scenarios and the assumptions.

Table 4 Verbal Questions Captured Related to Base Case Inputs

Question #	Question	Response
Q13	How will I&M address the cost of climate change?	The modeling will include a cost for carbon for carbon emitting resources.
Q25	How will the level of electrification be forecast?	The level of electrification is in the load forecast.
Q25	How will the OVEC resource be evaluated?	We have a contract for the OVEC resources and will include this as a going in resource. This resource will be included throughout the study period.
Q27	Are you assuming the OVEC capacity is in every scenario, or are you evaluating if it would be economical to shorten the life?	
	How will I&M incorporate better technology to support solar?	Storage and renewable costs will be critical. We have a robust approach to consider battery storage as part of the IRP.
Q30	Will the load forecast change in the final modeling?	Yes. We issue a new load forecast annually. It will be out before the final modeling.
Q31	How will $0 resources affect market prices?	Electric energy market prices are a function, in part, of short-run marginal costs. Short-run

Question #	Question	Response
		marginal costs are the variable costs of production of the last MWh produced. An increase in zero-variable-cost generating technologies in the mix is likely to apply downward pressure on energy market prices. However, producers will expect to be fully compensated for their capital investments before they will enter the market with needed capacity. Therefore, other means to compensate those producers, possibly capacity prices, will adjust to fill in the void left by falling energy prices.
Q35	Will you commit to retire Rockport U1 by 2025 and not pursue power from Rockport U2 after the lease expires? How much profit did you make last year? Will you commit to debt forgiveness for your low-income customers?	No. We are at the beginning of the IRP process and the process will provide transparency into these types of considerations. We are mindful of our low-income customers and have programs in place to assist them.
Q37	Can you provide your capacity cost forecast?	Yes.
Q38	Do you plan to purchase any power from Rockport U2 after the lease is terminated?	We are at the beginning of the process. We are not ready to commit to anything now.
Q30	Will you look at landfill gas as a DER?	We can look at it.

9. Resource and Technology – Holt Bradshaw, Siemens Managing Director, Jon Walter, Manager EE and Consumer Products

Holt covered slides 56-59.

Holt discussed the process by which Siemens will incorporate new all-source RFP data to inform capital cost and performance characteristics of resource options. He discussed how Siemens regularly estimates generation technology costs and performance for many alternatives (e.g. sizing). The proposed approach is to use the all-source RFP and apply Siemens technology forecast shapes to project capital costs forward.

Jon covered slides 60-62.

Jon provided an update on the market potential study (MPS), including the sampling, response, and response outcome. The MPS stakeholder engagement is currently ongoing, and Jon noted the importance for Siemens and GDS (The vendor engaged to perform the Market Potential Study) to align on model inputs.

Jon noted the second stakeholder workshop is dedicated to review the results of the MPS.

10. Stakeholder Process and Q&A – Jay Boggs, Siemens Managing Director

Jay covered slides 63-65.

Jay reiterated the Stakeholder Process. Four stakeholder meetings will be held. There will also be a workshop on the all-source RFP and an Aurora technical workshop in addition.

Jay introduced Andrew Williamson, Director of Regulatory Services, to provide closing remarks.

11. Closing Remarks

Andrew covered slide 66.

Andrew provided closing remarks for the meeting. He noted this was a great start of dialogue and that I&M is excited to continue the dialogue with stakeholders. He mentioned that over 100 participants attended for most of the day, and he reminded stakeholders to please submit any additional questions or comments on the material covered during the meeting within 10 calendar days.

12. Appendix A: Poll Results

Over 100 attendees joined the 2021 IRP Stakeholder Meeting #1. I&M facilitated three polls during the meeting. The results are displayed below.

Question: Please Rank Order the Top Three Objectives		
Objective	**# of Votes**	**% of Votes**
Affordability	21	43%
Sustainability Impact	18	37%
Rate Stability	15	31%
Market Risk Minimization	10	20%
Resource Diversity	10	20%
Total Responses	49	

Question: Please Identify the Most Important Metric		
Objective	**# of Votes**	**% of Votes**
Affordability	20	43%
Sustainability Impact	15	32%
Rate Stability	6	13%
Market Risk Minimization	6	13%
Resource Diversity		
Total Responses	47	

Question: Opinion on Proposed Scenarios		
Response	**# of Votes**	**% of Votes**
Additional Scenarios	19	39%
Scenarios Sufficient	15	31%
Unknown	9	18%
Total Responses	43	

13. Appendix B: List of Questions Answered on Call

Table 5 List of Questions Addressed on the Call Verbally

Question Asked	Response
Can you elaborate on load growth? What was I&M's load growth prior to COVID-19, prior year (2020), forecasted?	As answered by Chad Burnett
Refer to slide 42. Without data prior to 2021, it appears the trendline of your Load Obligation is increasing. It would help if you can show how I&M load trended prior to 2021 (at least going back 3-5 years).	As answered by Chad Burnett
Contrast Slides 52, 53 against Slide 42. What is the driver that will arrest the load decline trend by 2021?	As answered by Chad Burnett
Refer to Slide 42. What supports the 300 MW short in capacity taking in consideration the load decline trend in prior years.	As answered by Andrew Williams
How does I&M address the cost of climate change as it impacts health, weather disruptions of supply chain, etc. as it pertains to "affordability"?	As answered by Marc Lewis and Scott Fisher
Does I&M ever ask customers or address customer choice?	As answered by Scott Fisher
How does I&M evaluate or rank Indiana-based renewable resources for resource diversity? Including looking at economic impact of giving preference to Indiana-based resources to the local economy?	As answered by Marc Lewis and Scott Fisher
Has I&M specifically asked customers about their interest and willingness to participate in a community solar project?	As answered by Marc Lewis
What is driving downward capital costs for fossil fuel in the reference case?	As answered by Scott Fisher and Holt Bradshaw
What does the energy forecast assume about electric vehicles (and other possible electrification)?	As answered by Chad Burnett
Why do you include reliability when you won't plan a system that doesn't meet reliability metrics?	As answered by Andrew
How does I&M value different resource characteristics when considering the resource diversity of a plan (6th metric)? For example, is diversity measured by fuel source used? Operational characteristics (baseload/peaking)? Or some combination of multiple factors?	As answered by Art Holland

Question Asked	Response
Important to look at annual revenue requirements as well as NPV for first five and first 10 years. Will you provide?	As answered by Scott Fisher
CO2 emissions only make sense for cases with CO2 taxes. Assume you plan to look at alternative cases such as net zero by 2035. Is that the case?	As answered by Art Holland.
How does reliability capture risk of curtailments of natural gas supply due to cyber or physical disruptions or freeze-offs?	As answered by Art Holland and Marc Lewis
Is resource recovery using renewable biogas driven generation being considered as a Distributed Energy Resource	As answered by IRP Team
Mr. Soller stated that I&M "will conduct an all-source RFP." Is he referring to the all-source RFP that was already issued and for which bids were received around mid-January? Or is there another all-source RFP being issued?	As answered by Greg Soller
1. How does the timing of the separate RFP allow for incorporation given that IRP inputs, etc. are already being set? 2. Is the RFP that is currently being evaluated going to play a role in this IRP? If not, why not? 3. Citizen Action Coalition of Indiana would request access, subject to an appropriate NDA, to the results of both the current RFP and separate RFP, just as we have received from other utilities in Indiana during IRP processes.	As answered by Marc Lewis
Why is I&M doing a second all-source RFP, as opposed to relying on the one that they are currently evaluating the results from?	As answered by Marc
For sustainability impacts, will you be factoring in the life-cycle CO2 impacts of different resources? For example, for gas plants, there are significant up stream CO2 impacts from the drilling and transport of gas that could be considered in making resources decisions.	As answered by Scott
On market risk minimization, are there specific percent of spot market exposure that you consider to be too high or too low?	As answered by Scott
On resource diversity, how are you defining a "mix of adequate resources"? Are you factoring in the number of generators that I&M would be relying on in order to reflect the fact that a plan that relies on a mix of smaller resources that can be easily scaled up or down, rather than only a few large centralized generating units, would be more responsive if load ends up being significantly different than projected?	As answered by Toby
When you say that thermal generation retirements are driven by unit age limits and announced retirements, are you saying that retirement dates for thermal units are assumed or input into the model, rather than the modeling being used to identify the least cost retirement date?	As answered by Scott
In what scenario(s) are you evaluating retiring Rockport Unit 1 by May 31, 2025, as required in the settlement in your last IRP process in Michigan?	As answered by Andrew

Question Asked	Response
To what extent do the scenarios you are proposing here match the scenarios that other utilities in Michigan are required to evaluate in IRPs submitted to the Michigan PSC?	As answered by Scott Fisher
Does I&M intend to include in its Indiana filing the analyses of the OVEC units and the Rockport Unit 1 2025 retirement that I&M committed to in its Michigan settlement? If not, why not?	As addressed by Andrew Williamson
If the thermal generation retirement dates are an input into the model, what analyses will I&M provide to show that the retirement dates that are input are the most economic dates?	As addressed by Scott Fisher
Has AEP done any backward-looking analyses of how its projections of capacity prices, energy prices, load, etc. from its Fundamentals Forecasts end up comparing to actual capacity prices, energy prices, load, etc.? If so, is that something that can be shared with stakeholders?	As responded by Connie Trecazzi
If we submit comments regarding today's discussion, will those be responded to in writing? And will the 2021 IRP Update at the April 14 meeting include a discussion of how input received today and in writing have led to modifications of the objectives, metrics, scenarios, and inputs that were discussed today?	As answered by Andrew Williamson
Perhaps I missed it, but I didn't see in the presentation your capacity price forecast. Can you provide that forecast?	As answered by Connie Trecazzi
Are you sending the new RFP to all of the entities that responded to your first RFP?	As answered by Marc Lewis
Besides the temporal aspect, what are the main substantive differences with the RFPs?	As answered by Marc Lewis
How are you going to evaluate the OVEC PPA? Is it going to be a sensitivity for all scenarios?	As answered by Andrew Williamson
It looks like the growth reported for the different load scenarios is negative for both the extreme weather and the EV load scenarios. Can you explain what is driving this negative growth in both scenarios? For the extreme weather scenario, is it the case that the reduction in heating load is not being made up for by the increase in cooling load?	As answered by Chad Burnett
Comment to AEP. Zero-variable-cost resources like solar and wind can be economically chosen in an IRP even when there is no capacity need, or at least when there is no capacity need for several years. Running Aurora in capacity additions mode may fail to select resources that reduce NPV revenue requirements.	*Participant left meeting shortly after asking question*
What is the motivation for having Siemens PTI moderate the stakeholder sessions?	As answered by Marc Lewis
Why is the base case on carbon a tax? And what is the basis of a 2028 start date given that Senator Manchin has made it quite clear a carbon tax would not be considered.	As answered by Connie Trecazzi
Why is Net Zero 2035 not considered?	As answered by Scott Fisher
Will the assumed life of new natural gas CC be adjusted to in Net Zero case?	As answered by Scott Fisher

Question Asked	Response
When the Company answered Anna Sommer's question about the resource count as a way to quantify resource diversity, do you mean the resource count by technology type?	As answered by Scott Fisher
Does this mean that AEP's IRP will be based on Aurora rather than PLEXOS modeling?	As answered by Art Holland
Can we get copies of the modeling files when they are available around July as we did in the prior stakeholder process?	As Answered by Jay Boggs
Will you give stakeholders an opportunity to weigh in on the language in the all-source RFP?	As Answered by Jay Boggs
Which variables are you sampling to do those 200 draws to determine the 95th percentile value of NPV?	As answered by Art Holland
Particularly as you move to a fuel-less resource mix, I don't think resource diversity measured by technology type makes sense. That's based on the antiquated concerns around fuel diversity that don't apply if you're not consuming fuel. A better way to measure resource diversity would be the count of generators relied upon.	As answered by Scott Fisher
On the market risk minimization metric, is this an average over time or a snapshot of a single year? And are you showing just purchases or the net of purchases and sales? And if the former, why?	As answered by Art Holland
What other metrics for reliability are you considering? I agree that "reserve margin" doesn't make sense. It's a binding constraint on the optimization so every portfolio must satisfy it. I could see it as a potential metric for whether a portfolio is overbuilt, i.e. if you had a particularly high RM. But again, over what period would you judge that? The whole planning period, a single year?	As answered by Scott Fisher
How will you be forecasting electrification? Are you doing a bottom up forecast of some kind?	As answered by Chad Burnett
If population is decreasing, what drives the increase in non-farm employment?	As answered by Chad Burnett
What causes the tail-end to drop off in energy and peak in about 2034?	As answered by Chad Burnett
Do these load forecast charts align with your intended planning period, i.e. ending in 2035?	As answered by Chad Burnett
Did/will all-source include EE?	As answered by Jon Walters

An AEP Company

Indiana Michigan Power:
2021 Integrated Resource Plan
Public Stakeholder Meeting #1

March 9, 2021

Presented via GoToWebinar -> https://attendee.gotowebinar.com/register/6179953951330336780

BOUNDLESS ENERGY℠

Agenda

Time		
9:30 a.m.	WELCOME AND INTRODUCTIONS	**Dona Seger-Lawson**, I&M Director of Regulatory Services
9:40 a.m.	MEETING GUIDELINES	**Jay Boggs**, Siemens Managing Director
9:45 a.m.	OPENING REMARKS	**Toby Thomas**, President and COO I&M
10:00 a.m.	I&M 2021 IRP PROCESS	**Greg Soller**, I&M Resource Planning Analyst, **Art Holland**, Siemens Managing Director, **Peter Berini**, Siemens Project Manager
10:45 a.m.	BREAK	
11:00 a.m.	OBJECTIVES AND MEASURES	**Art Holland**, Siemens Managing Director, **Peter Berini**, Siemens Project Manager
12:00 p.m.	LUNCH	
1:00 p.m.	SCENARIOS AND SENSITIVITIES	**Art Holland**, Siemens Managing Director, **Peter Berini**, Siemens Project Manager
2:00 p.m.	BREAK	
2:15 p.m.	BASE CASE INPUTS	**Greg Soller**, I&M Resource Planning Analyst, **Connie Trecazzi**, Fundamental Forecasts, **Chad Burnett**, Load Forecasts
2:45 p.m.	RESOURCE AND TECHNOLOGY UPDATE	**Holt Bradshaw**, Siemens Managing Director, **Jon Walter,** Manager EE & Consumer Programs
3:15 p.m.	STAKEHOLDER QUESTIONS	**Jay Boggs**, Siemens Managing Director
3:30 p.m.	NEXT STEPS AND CLOSING REMARKS	**Andrew Williamson**, I&M Director Regulatory Services
3:45 p.m.	ADJOURN	

WELCOME AND INTRODUCTIONS

Safety Moment

IRP Team Introductions

I&M Leadership Team

Toby Thomas | President and COO

Dave Lucas | Vice President, Regulatory and Finance

Dona Seger-Lawson | Director, Regulatory Services

Andrew Williamson | Director, Regulatory Services

Marci Grossman | Director, Communications

Tammara Avant and Christen Blend | Legal

I&M IRP Planning Team

Kelly Pearce | Managing Director, Resource Planning and Strategy

Scott Fisher | Manager, Resource Planning and Grid Solutions

Greg Soller | Staff, Resource Planning and Grid Solutions

Jon Walter | Manager, EE & Customer Programs

Siemens IRP Planning Team

Arthur Holland | Managing Director, Siemens PTI

Jay Boggs | Managing Director, Siemens PTI

Holt Bradshaw | Managing Director, Siemens PTI

Peter Berini | Project Manager, Siemens PTI

I&M Transmission and Distribution Planning Team

Nick Koehler | Director, Transmission Planning

Carlos Casablanca | Managing Director Distribution Planning & Analysis

Subin Mathew | Director, Reliability and Grid Modernization

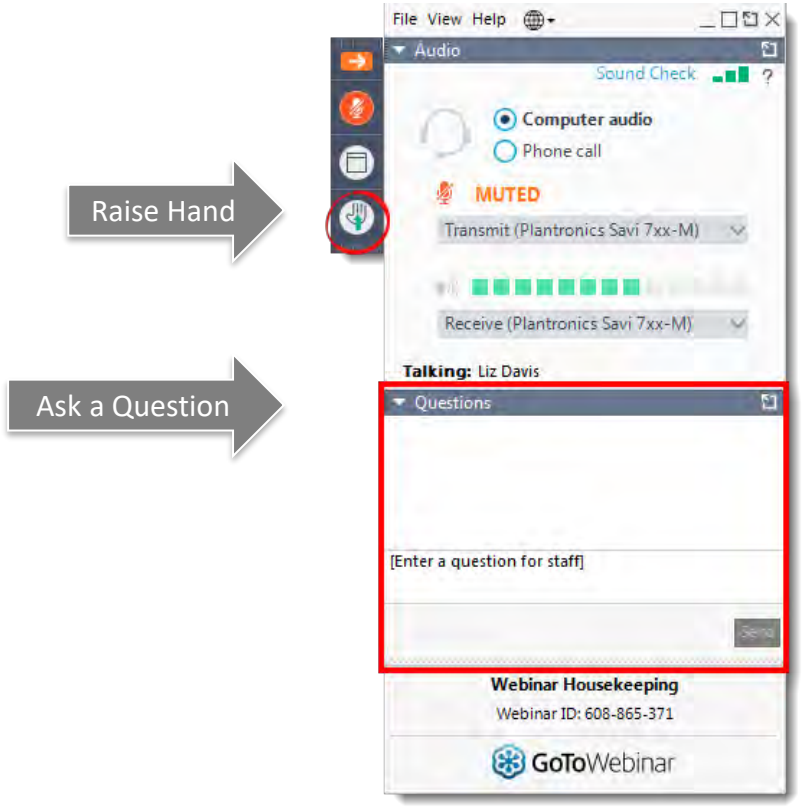
MEETING GUIDELINES

Questions and Feedback

The purpose of today's presentation is to explain the IRP process and collect feedback from stakeholders. Stakeholder feedback will be posted on the I&M website IRP portal and will be considered as part of the Final IRP.

If you have a question about the IRP process during this presentation:

- Type your question in the Questions area of the GoToWebinar panel
- During the feedback and discussion portions of the presentations, please raise your hand via the GoToMeeting tool to be recognized
- Time permitting, we will address all questions and hear from all who wish to be heard
- Any questions that cannot be answered during the call will be addressed and posted on the website above



If you would like to make a comment or ask a question about the IRP process after the presentation has concluded:

- Please send an email to I&MIRP@aep.com
- Stay informed about future events by visiting the I&M IRP Portal located at www.indianamichiganpower.com/info/projects/IntegratedResourcePlan

Guidelines

1. Due to the number of participants scheduled to join today's meeting, all will be in a "listen-only" mode by default.

2. Please enter questions at any time into the GoToWebinar portal. Technical questions related to the GoToWebinar tool and its use will be addressed by the support staff directly via the chat feature.

3. Time has been allotted to answer questions related to the materials presented. Unanswered questions will be addressed after the presentation and posted in accordance with the Questions and Feedback slide.

4. At the end of the presentation, we will open-up the floor for "clarifying questions," thoughts, ideas, and suggestions.

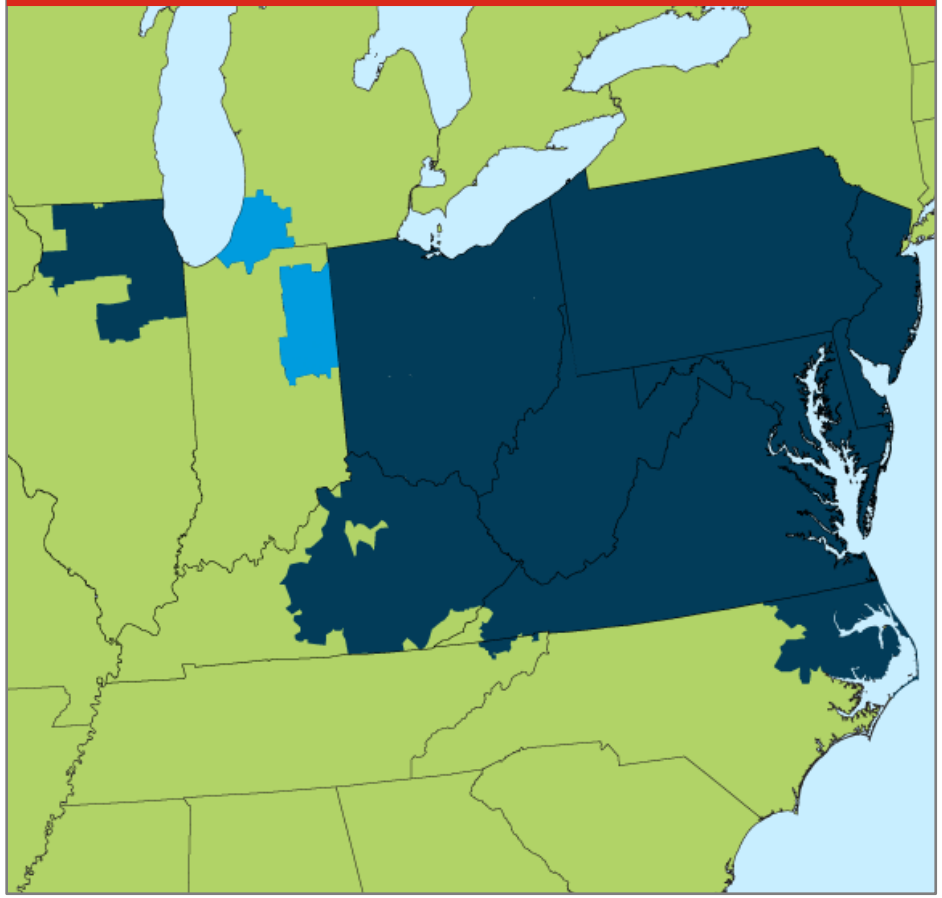
5. Please provide feedback or questions on the Stakeholder Meeting #1 presentation within ten business days of the conclusion of the meeting.

OPENING REMARKS

Indiana Michigan Power Overview

INDIANA MICHIGAN POWER
An AEP Company

PJM Interconnection



Overview of Indiana Michigan Power

Headquartered in Fort Wayne, IN and part of the American Electric Power system

Multi-jurisdictional entity with more than 600,000 retail customers in IN and MI and over 390 MW in long-term wholesale generation contracts

- Indiana: ~470,000 customers
- Michigan: ~130,000 customers

Serves 23 counties and includes cities such as Elkhart, Fort Wayne, Marion, St. Joseph, Muncie & South Bend.

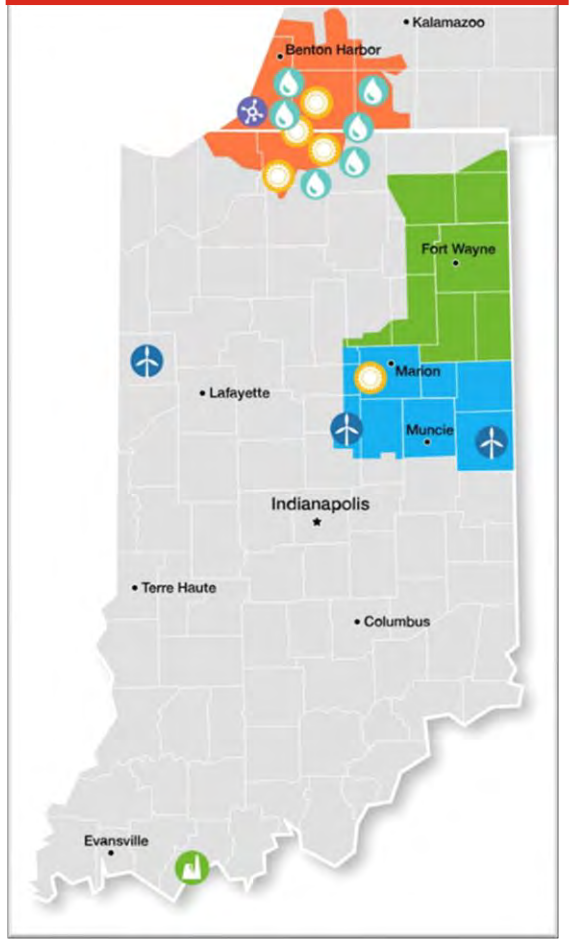
Fully Integrated Electric Service Provider

- Generation ~ 5,400 MW
- Transmission ~ 5,300 Line Miles
- Distribution ~ 20,500 Line Miles

Indiana Michigan Power Resource Diversity

An AEP Company

I&M Service Territory



I&M has a diverse set of Generation Resources and PPAs, including:

- 2,278 MW Cook Nuclear Plant
- 2,223 MW Rockport Coal Plant
- 22 MW of Hydroelectric Power
- 35 MW of Universal Solar
- 450 MW of Wind Power under PPA;
  - 150 MW from the Fowler Ridge Wind Farm in Benton County, IN
  - 100 MW from the Wildcat Wind Farm in Madison County, IN
  - 200 MW from Headwaters Wind Farm in Randolph County, IN

80+%

Carbon-free Generation In 2020

I&M Energy Efficiency and Demand Response Programs:

- Since 2010 I&M sponsored EE programs have saved ~ 1,400 GWh of energy or approx. the annual usage of 10,500 average homes
- During 2020 I&M sponsored EE programs saved ~ 14MW of demand or approx. 2,800 average homes peak usage
- ~ 300 MW of Interruptible and Demand Reduction programs
- Additional AMI-related demand response programs are expected

I&M Transformation Strategy

COMPANY TRANSFORMATION AND CUSTOMER RELATIONSHIPS

Generation Transformation	Modernizing the Grid	Expanding Customer Choices	Embracing New Technology	Developing a Work-force of the Future
Evaluate transition of generation resources to all emission free resources	Deploy smart grid technologies to optimize reliability, operability, and bi-directional grid flow	Implement a portfolio of customer programs that provide a more personalized experience	Identify, develop, and implement new business technologies and deliver customer benefits	Leverage data analytics and mobility to optimize operations for a better employee and customer experience

2021 Integrated Resource Plan

- ❑ Load changes across customer classes
- ❑ Enhanced coordination of generation and energy delivery planning
- ❑ Diversification of resource profiles
- ❑ Updated resource pricing
- ❑ Updated Market Potential Study
- ❑ AMI deployment & technology integration
- ❑ New customer program choices
- ❑ Planning for distributed resources and EV expansion
- ❑ Avoided or deferred T&D cost evaluation

AEP D&I Roadmap to 2025

I&M 2021 IRP PROCESS

IRP Overview

The purpose of the IRP is to provide a roadmap at a point in time that utilities and load serving entities use as a planning tool when evaluating resource decisions necessary to meet forecasted electric energy demand in an approach that balances affordability, reliability, and sustainability for customers and stakeholders.

There are two main components in creating an IRP: **Development of a Portfolio** and **Stakeholder Engagement**

Development of a Portfolio

- The end goal of the IRP is to develop a preferred resource portfolio (set of supply and demand-side resources) that can be used as a roadmap designed to inform future resource actions for electric energy demand to serve load
- I&M has partnered with Siemens PTI to create a set of Candidate Portfolios based on a series of Conditions that are informed by Scenarios and Sensitivities
- The Conditions will be tested, analyzed and used by I&M management to determine the preferred resource portfolio

Stakeholder Engagement

- The IRP will take into consideration stakeholders and public feedback in the analysis that will help inform the preferred resource portfolio recommendation

Enhancement Opportunities

I&M has received excellent feedback and input into its ongoing IRP process from numerous stakeholders, including the Indiana Utility Regulatory Commission (IURC) and Michigan Public Service Commission (MPSC), which will be incorporated into the IRP and/or subsequent IRP filings. As a starting point to the 2021 IRP, we are planning the following:

Stakeholder Engagement:

- Enhance stakeholder process and improve remote accessibility of stakeholder meetings
- Dedicate one stakeholder meeting to energy efficiency and demand response
- Work with stakeholders to review and define new scenarios and modeling inputs for the IRP

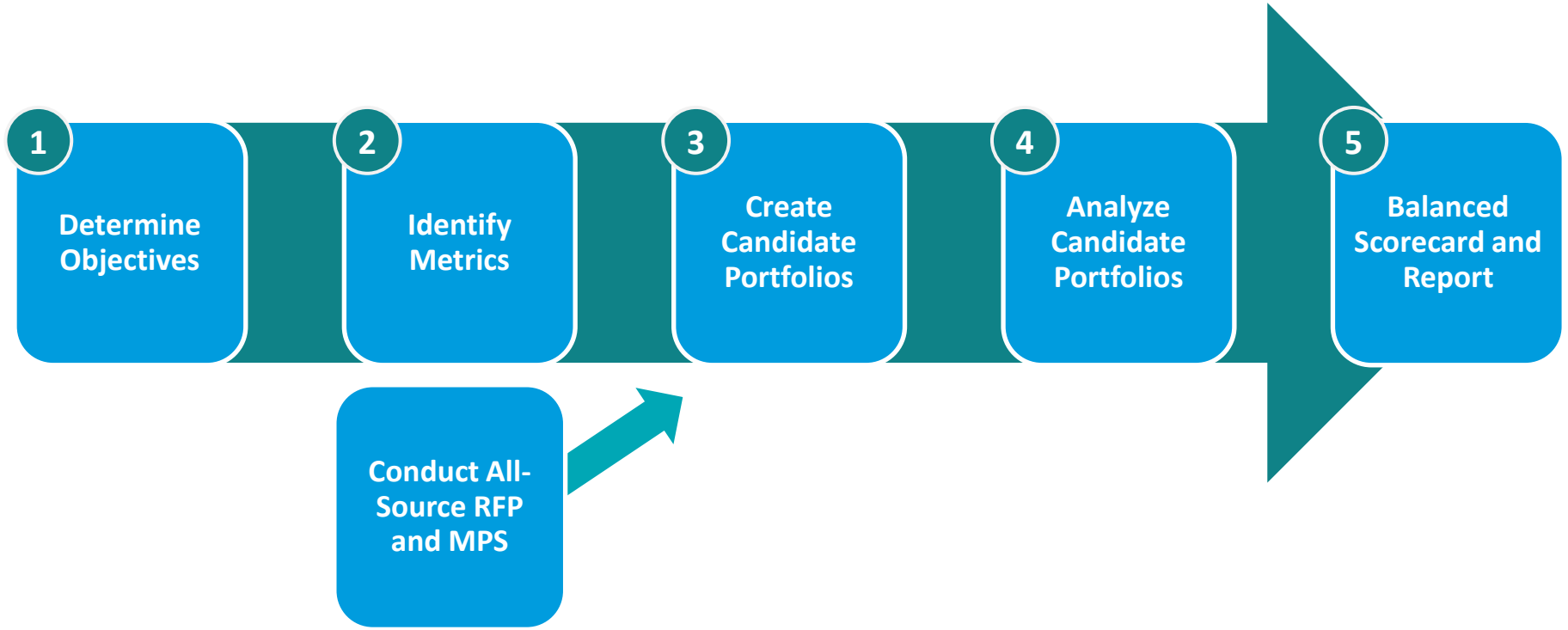
Model Inputs

- Conduct a new Market Potential Study (MPS) specific to each of I&M's retail jurisdictions, including evaluation of demand response (DR) and distributed energy resources (DER)
- Conduct and incorporate an all-source RFP to inform capital cost and performance of all qualifying facilities
- Expand resource options to include both owned and purchased renewable resource options
- Improve coordination among resource, transmission and distribution planning processes

2021 IRP Process

The 2021 IRP Process, detailed below, has been administered by Siemens PTI across the country.

Siemens PTI: Approach to Integrated Resource Plan Modeling

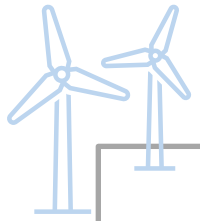


Key Vendors

As part of the 2021 IRP Process, I&M has engaged several vendors.

Integrated Resource Plan

- Siemens PTI IRP Team
  - Moderation of Stakeholder Meetings
  - Management of IRP Modeling and Report
  - Testimony Support



All-source RFP

- Siemens PTI RFP Team
  - Draft RFP Language
  - Solicit Stakeholder Input on RFP Language
  - Management of RFP Process
  - Conversion of results into modeling inputs

Market Potential Study

- GDS Associates
  - Kicked off in Q4 2020
  - Assess EE/EWR, DR, DER and AMI Consumer Programs & Technology
  - I&M Indiana and I&M Michigan over 30-year planning horizon
  - Conversion of results into modeling inputs

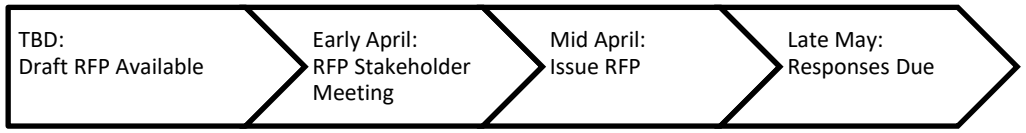
Stakeholder Process

I&M has established a stakeholder engagement process to encourage questions, make suggestions and provide data. As part of the IRP process, I&M will seek stakeholder participation throughout the IRP development process. At the core of the process is a series of four workshops.

March 9, 2021	April 14, 2021	July 14, 2021 (tentative date)	September 14, 2021 (tentative date)
2021 IRP Process	DSM IRP Inputs and Modeling	Draft Candidate Portfolios	Probabilistic Modeling Results
Objectives and Metrics	EE/EWR, DR and DER Results	All-Source RFP Results	Review of Preferred Portfolio
Proposed Scenarios	2021 IRP Update	Stochastic Modeling Approach and Assumptions	Other(s)
Base Case Inputs			

In addition, an Aurora Technical Conference and an invite to provide input on the RFP process will be provided to stakeholders

All-Source RFP Stakeholder Process



Feedback and Discussion

OBJECTIVES AND MEASURES

Determine Objectives

The purpose of the IRP is to develop a preferred resource portfolio that starts with I&M's current resource portfolio and evaluates a range of alternative future portfolios that can meet the customers' capacity and energy needs in an affordable, reliable and sustainable manner.

A critical first step in the IRP Process is the determination of objectives in which portfolios will be evaluated against.

Portfolios are evaluated in terms of Affordability, Reliability and Sustainability objectives.

Metrics are assigned to the objectives to allow the analysis to compare portfolio performance across diverse scenarios

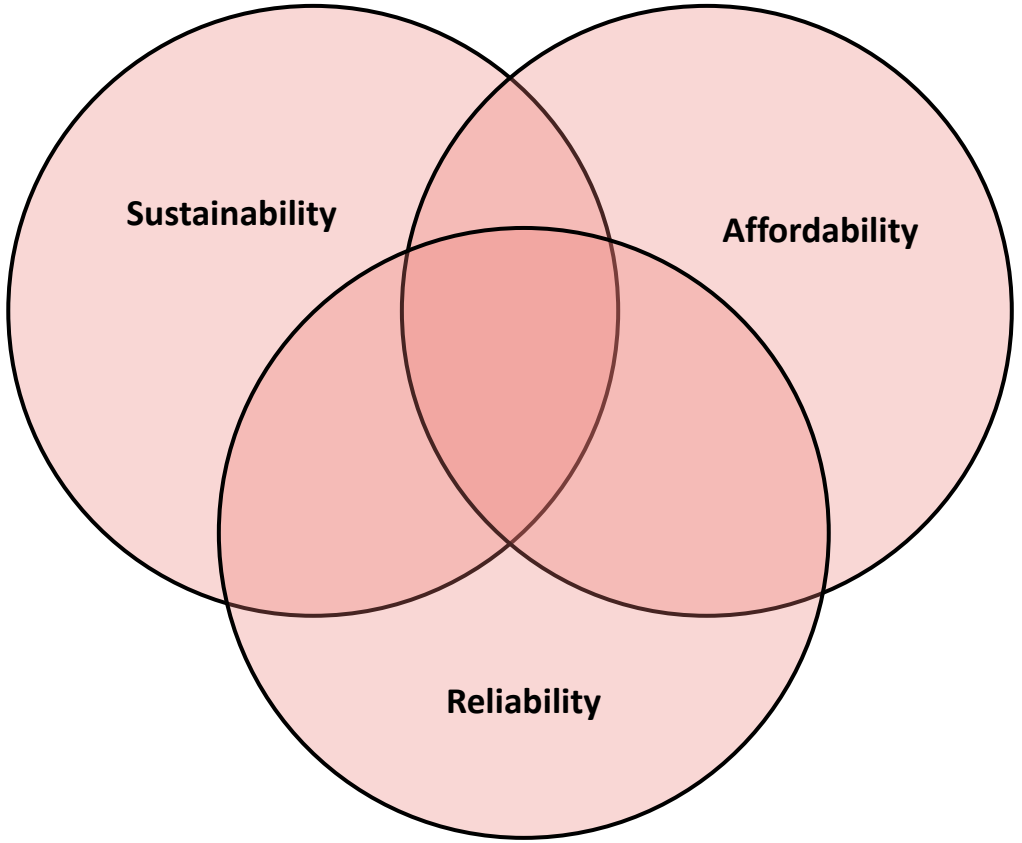
IRP Objectives
Affordability
Rate Stability
Sustainability Impact
Market Risk Minimization
Reliability
Resource Diversity

Identify Tradeoffs

An IRP is centered on providing electric service in a way that balances:

- ***Affordability***: meet energy and demand requirements of our customers at an affordable cost with price stability
- ***Reliability***: effectively meet customer energy and capacity requirements
- ***Sustainability***: meet customer energy requirements in a way that addresses environmental concerns

Each set of stakeholders may have a different set of priorities when examining IRP objectives.



Assign Metrics

For each portfolio, objectives will be tracked through identified metrics that will be used to measure and evaluate performance of the Candidate Portfolios.

IRP Objectives	IRP Metric
Affordability	NPV-RR
Rate Stability	95th percentile value of NPV-RR
Sustainability Impact	CO2 Emissions
Market Risk Minimization	Spot Market Exposure (Purchases/Sales)
Reliability	Reserve Margin
Resource Diversity	Mix of Adequate Resources

Balanced Scorecard (Illustrative)

The preferred resource portfolio will incorporate each of the objectives and measures through a balanced scorecard that weighs attributes in accordance with stakeholder needs, economic and load growth projections, I&M input and practical considerations.

Balanced Scorecard (Illustrative)

	Affordability	Rate Stability	Sustainability Impact	Market Risk Minimization	Reliability	Resource Diversity
Candidate Portfolios	NPV RR	95th Percentile Value of NPV RR	CO2 Emissions	Purchases as % of Generation	Reserve Margin	Mix of Resources
Reference Case	$92.0	$115.0	-62.0%	10.0%	15%	5
Portfolio #1	$94.0	$138.0	-39.0%	15.0%	15%	4
Portfolio #2	$108.0	$145.0	-50.0%	18.0%	15%	6
Portfolio #3	$81.0	$123.0	-38.0%	24.0%	15%	4
Portfolio #4	$97.0	$146.0	-42.0%	42.0%	15%	4
Portfolio #5	$101.0	$167.0	-54.0%	34.0%	15%	5
Portfolio #6	$87.0	$113.0	-64.0%	41.0%	15%	3
Portfolio #8	$102.0	$172.0	-40.0%	34.0%	15%	5
Portfolio #9	$120.0	$198.0	-90.0%	24.0%	15%	6
Portfolio #10	$99.0	$210.0	-84.0%	12.0%	15%	5

Poll Question

Please Rank Order the Proposed Objectives

Feedback and Discussion

LUNCH

PROPOSED SCENARIOS

Scenario Development

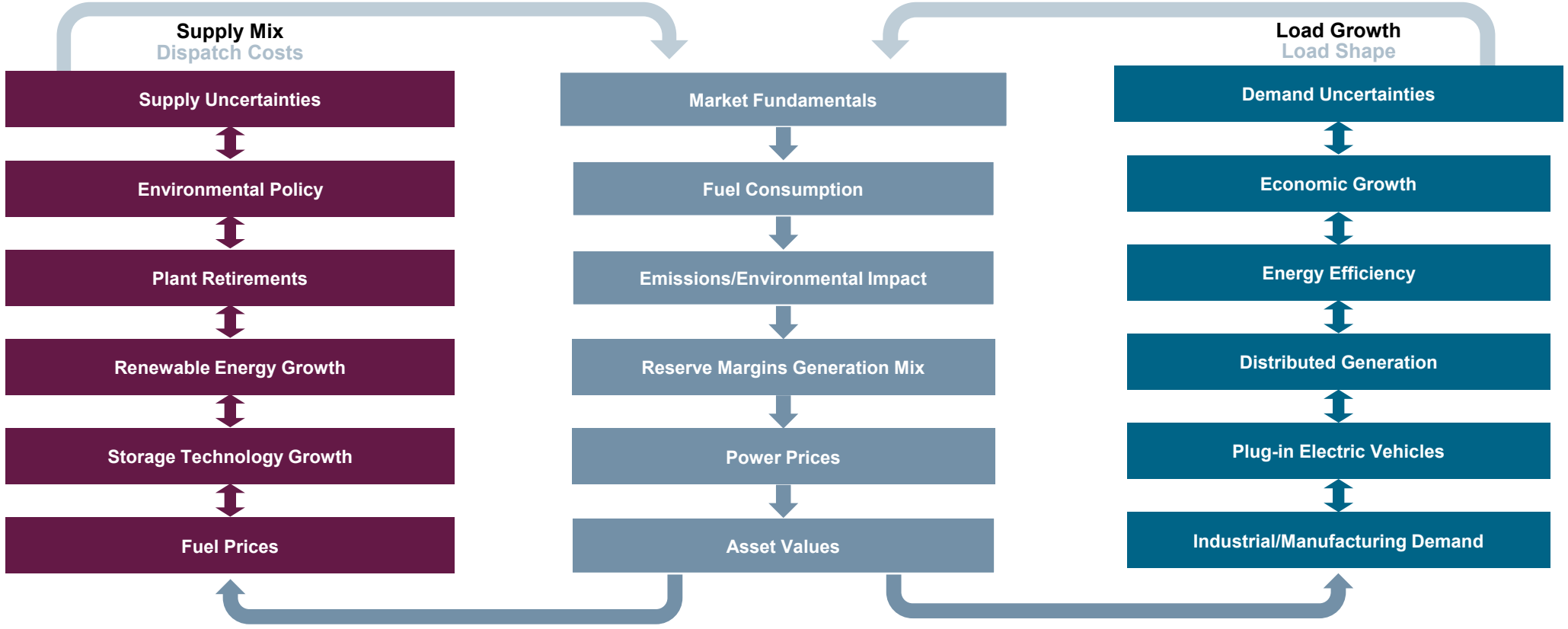
I&M and Siemens have developed **a Reference scenario** and **four alternative scenarios** to implement a scenario- and sensitivity-based approach to create Candidate Portfolios and test which portfolios perform the best over a wide range of future market and regulatory conditions. The development of scenarios considered I&M strategic decisions, stakeholders and Indiana and Michigan filing requirements.

As part of the IRP Development Process:

- Portfolios are constructed based on a range of scenarios to create a series of **Potential Candidate Portfolios** that are important to management and stakeholders alike.
- Each **Potential Candidate Portfolio** will be developed from the Scenarios and will include a selection of sensitivities aimed at providing further depth in the analysis.
- **Candidate Portfolios** are then subjected to stochastic risk analysis to measure performance across many future scenarios. The stochastic process will produce hundreds of internally consistent simulations that can provide a more realistic understanding of the potential variation in future scenarios.
- The Scenarios include a Rapid Technology Advancement scenario, a Net Zero Carbon by 2050 scenario, a Market Driven Electrification scenario, an Enhanced Regulation scenario and other potential Stakeholder scenarios.

Key Market Drivers

In order to frame Scenario Development, it is important to consider how various market drivers impact the supply mix and load growth of I&M and the surrounding region.



Overview of Proposed Scenarios

I&M will use a scenario- and sensitivity-based approach to construct future market and regulatory environments. The Reference scenario is the most expected future scenario and includes the base case inputs described herein. The changes in the alternative scenarios are shown relative to the Reference scenario.

Scenario	Load	Gas Price	Coal Price	CO2	Renewable and Storage Costs	EE / DR Cost
Reference	Base	Base	Base	Base	Base	Base
Net Zero by 2050	Base	Base	Base	Net Zero	Base	Base
Rapid Technology Advancement	Base	Base	Base	Base	Low	Low
Market Driven Electrification	High	High	High	Base	Base	Base
Enhanced Regulation	Base	High	High	High	Base	Base
Other(s)						

The directional basis of the Scenario drivers are as compared to the Reference scenario.

Scenario Narrative: Reference Scenario

Scenario	Load	Gas Price	Coal Price	CO2	Renewable and Storage Costs	EE / DR Cost
Reference Scenario	Base	Base	Base	Base	Base	Base

The Reference Scenario

The Reference scenario is the most expected future scenario that is designed to include a consensus view of key drivers in power and fuel markets. The existing generation fleet is largely unchanged apart from new units planned with firm certainty or under construction. All other scenarios reference the Reference scenario.

In the Reference scenario, major drivers include:

- Coal prices remain relatively flat over the forecast horizon in constant dollars consistent with EIA reference
- Natural gas prices move upward in real dollars to 2050 consistent with EIA reference
- Energy and Demand decrease moderately through 2050
- Capital costs are downward sloping for fossil and wind resources, and decline significantly for solar and storage resources
- Carbon regulations limiting CO2 emissions will commence in 2028 and remain in effect throughout the forecast horizon

Scenario Narrative: Net Zero Carbon by 2050

Scenario	Load	Gas Price	Coal Price	CO2	Renewable and Storage Costs	EE / DR Cost
Net Zero by 2050	Base	Base	Base	Net Zero	Base	Base

Net Zero Carbon by 2050

The Net Zero Carbon by 2050 scenario assumes increased carbon reduction to achieve net zero in electric sector and will highlight incremental goals through the 20-year IRP planning period. Increased renewable and storage additions are driven by renewable portfolio standards and goals, economics, and prevailing best practices to meet carbon regulations while maintaining reliability.

In the Net Zero Carbon by 2050 scenario, major drivers include:

- Non-carbon dioxide emitting resources will be increased to meet Net Zero requirements
- Nuclear units are assumed to have license renewals granted and remain online
- Thermal generation retirements are driven by unit age-limits and announced retirements, consistent with Reference scenario
- Technology costs for thermal units remain consistent with the Reference scenario
- Fundamental drivers (load and commodity prices) remain constant to the Reference scenario

Scenario Narrative: Rapid Technology Advancement

Scenario	Load	Gas Price	Coal Price	CO2	Renewable and Storage Costs	EE / DR Cost
Rapid Technology Advancement	Base	Base	Base	Base	Low	Low

Rapid Technology Advancement

The Rapid Technology Advancement scenario assumes technological advancements, favorable regulation and overall economies of scale that impact renewable resources. The scenario assumes technology costs for supply- and demand-side renewable resources decline over time, resulting in up to 35% reductions in technology costs; significantly faster than in the Reference scenario.

In the Rapid Technology Advancement scenario, major drivers include:

- Technology cost reductions for renewables and storage result in lower capital costs
- Technological advancement and economies of scale contribute to greater potential for energy efficiency and demand response
- Carbon regulations limiting CO2 emissions will commence in 2028 and remain in effect throughout the forecast horizon
- Thermal generation retirements are driven by unit age-limits and announced retirements, consistent with Reference scenario
- Fundamental drivers (load and commodity prices) remain constant to the Reference scenario

Scenario Narrative: Market Driven Electrification

Scenario	Load	Gas Price	Coal Price	CO2	Renewable and Storage Costs	EE / DR Cost
Market Driven Electrification	High	High	High	Base	Base	Base

Market Driven Electrification

The Market Driven Electrification scenario assumes an increase in economic activity drives load and commodity prices higher than the Reference scenario, resulting in increased energy market prices. As a result, commercial and residential customers accelerate the transition to full electrification and continued installation of demand side resources.

In the Market Driven Electrification scenario, major drivers include:

- High energy and demand scenario driven by customers drive to electrification
- Natural gas and coal prices are increased to support economic growth and improve viability of alternative technologies
- Technology costs for thermal and renewable units remain consistent with the Reference scenario
- Thermal generation retirements are driven by unit age-limits and announced retirements, consistent with Reference scenario
- Carbon regulations limiting CO2 emissions will commence in 2028 and remain in effect throughout the forecast horizon

Scenario Narrative: Enhanced Regulation

Scenario	Load	Gas Price	Coal Price	CO2	Renewable and Storage Costs	EE / DR Cost
Enhanced Regulation	Base	High	High	High	Base	Base

Enhanced Regulation

The Enhanced Regulation scenario assumes increased environmental regulations covering natural gas, coal and CO2. Illustrative examples include a potential fracking ban and increases of carbon reduction targets.

In the Enhanced Regulation scenario, major drivers include:

- Natural gas, coal prices and CO2 prices are increased to reflect enhanced regulation
- Technology costs for thermal and renewable units remain consistent with the Reference scenario
- Thermal generation retirements are driven by unit age-limits and announced retirements, consistent with Reference scenario
- Carbon regulations limiting CO2 emissions will commence in 2028 and remain in effect throughout the forecast horizon

Stakeholder Scenarios

Scenario	Load	Gas Price	Coal Price	CO2	Renewable and Storage Costs	EE / DR Cost
Reference	Base	Base	Base	Base	Base	Base
Net Zero by 2050	Base	Base	Base	Net Zero	Base	Base
Rapid Technology Advancement	Base	Base	Base	Base	Low	Low
Market Driven Electrification	High	High	High	Base	Base	Base
Enhanced Regulation	Base	High	High	High	Base	Base
Other(s)						

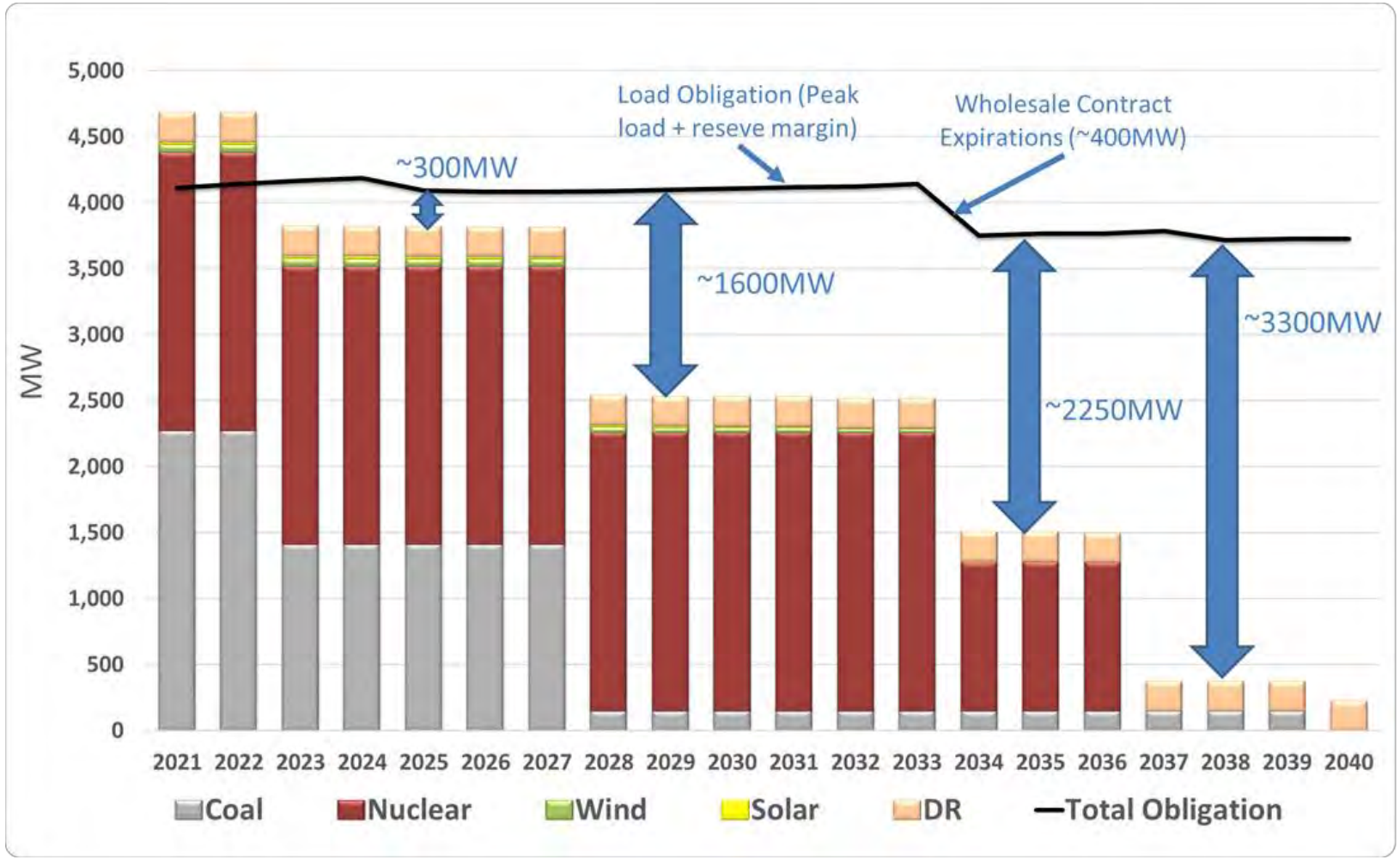
Feedback and Discussion

BREAK

INDIANA MICHIGAN POWER
An AEP Company

PRELIMINARY BASE CASE INPUTS

Going-in PJM Capacity Position – (UCAP MW)



Reference Scenario Inputs

I&M developed a set of base case assumptions, including the following key drivers:

Key Market Drivers:

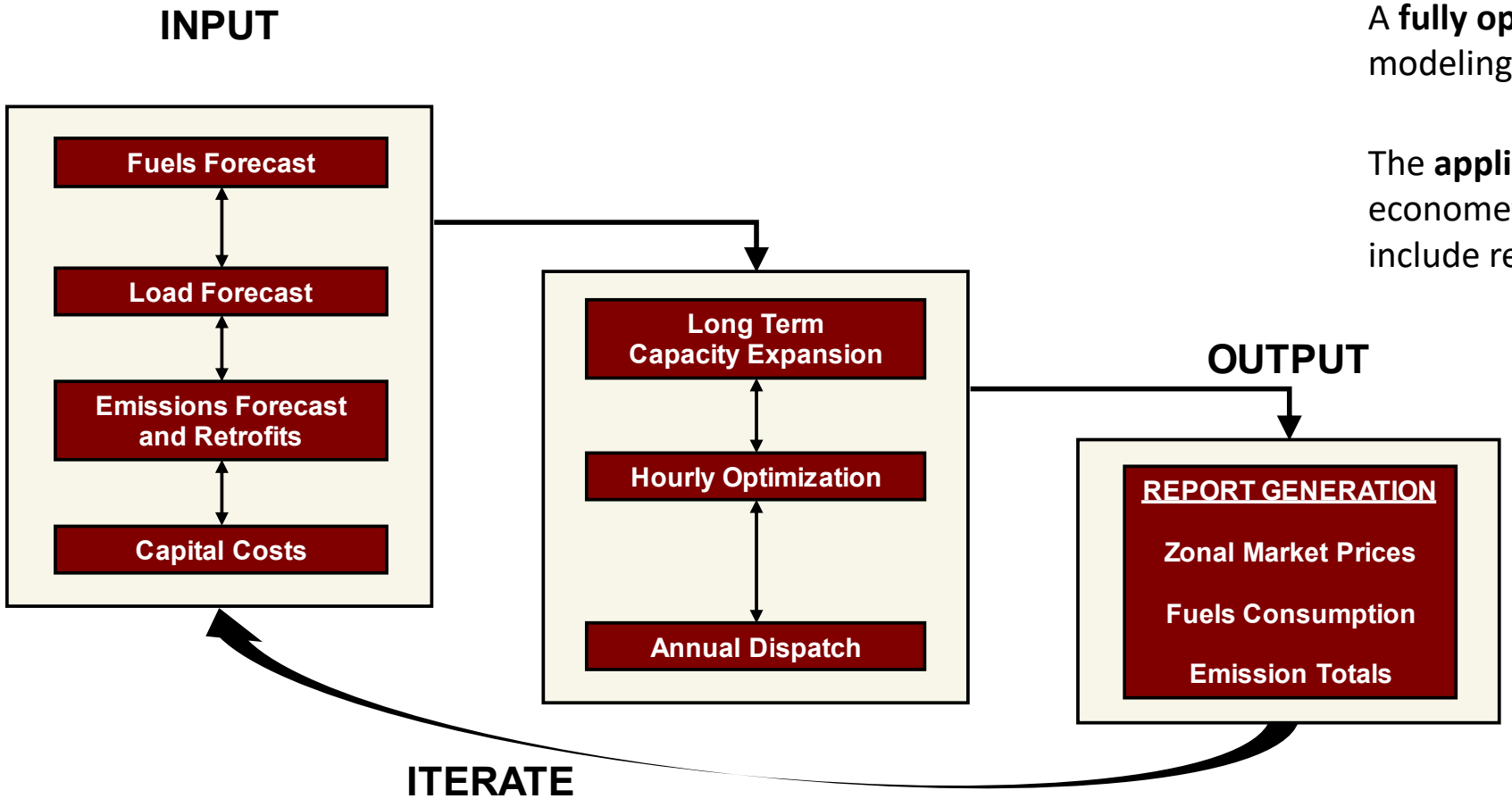
- I&M and PJM energy and demand
- Henry Hub natural gas prices
- PRB Coal Prices
- Capital Costs for various generation technologies

It is important to note that on- and off-peak power prices and capacity prices are an output of the scenario assumptions

Fundamentals Forecast

- Base Case: Reflects EIA Reference scenario with no carbon price assumption
- Base Carbon Case: Includes a $15/metric ton carbon price beginning in 2028, escalating at 3.5% annually thereafter
- High Case: Includes Base Case assumptions with high fuel prices (1 standard deviation) and higher loads
- Low Case: Includes Base Case assumptions with low fuel prices (1 standard deviation) and lower loads

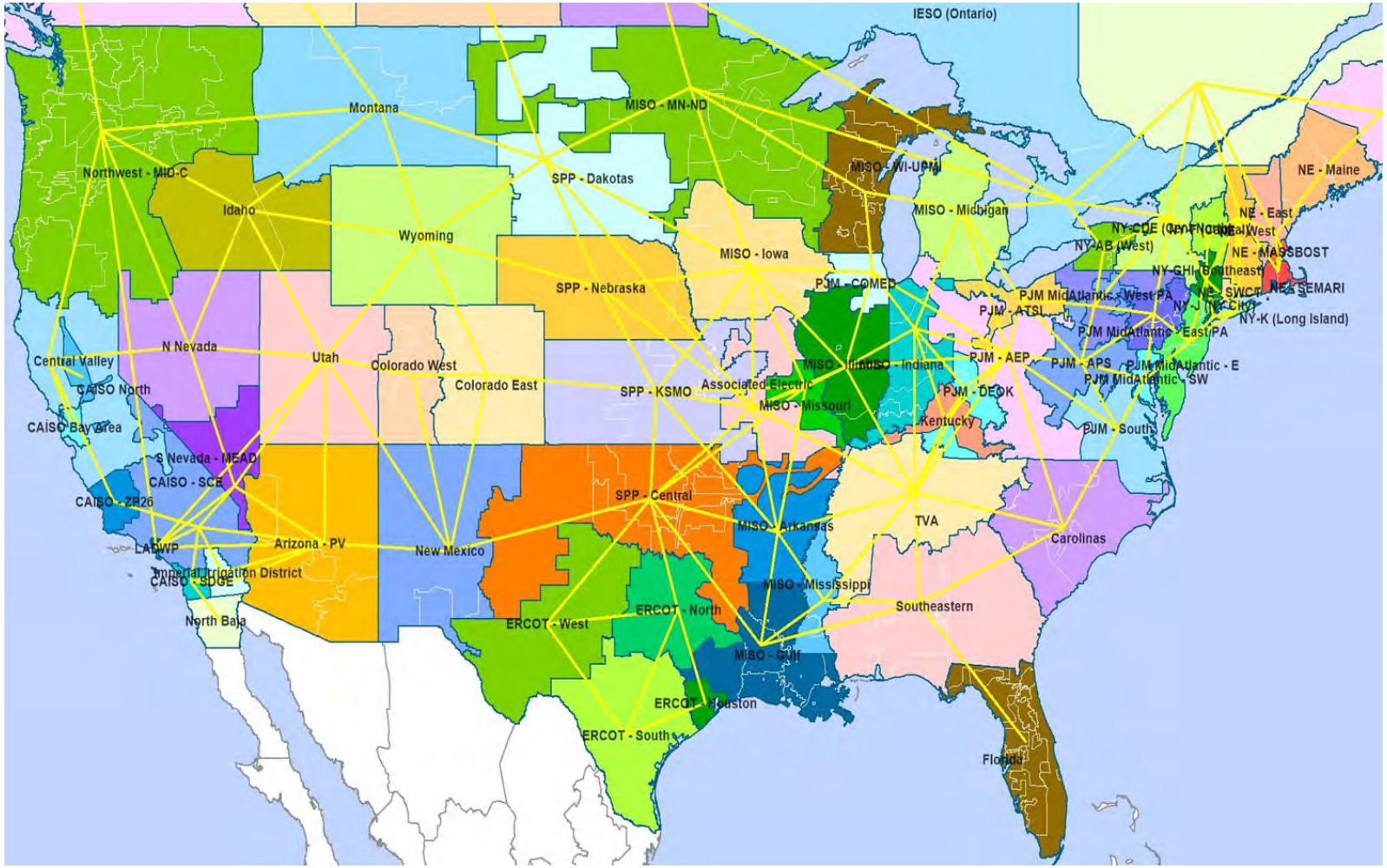
Fundamental Forecast Process



A **fully optimized** forecast requires iterative modeling to satisfy all relationships

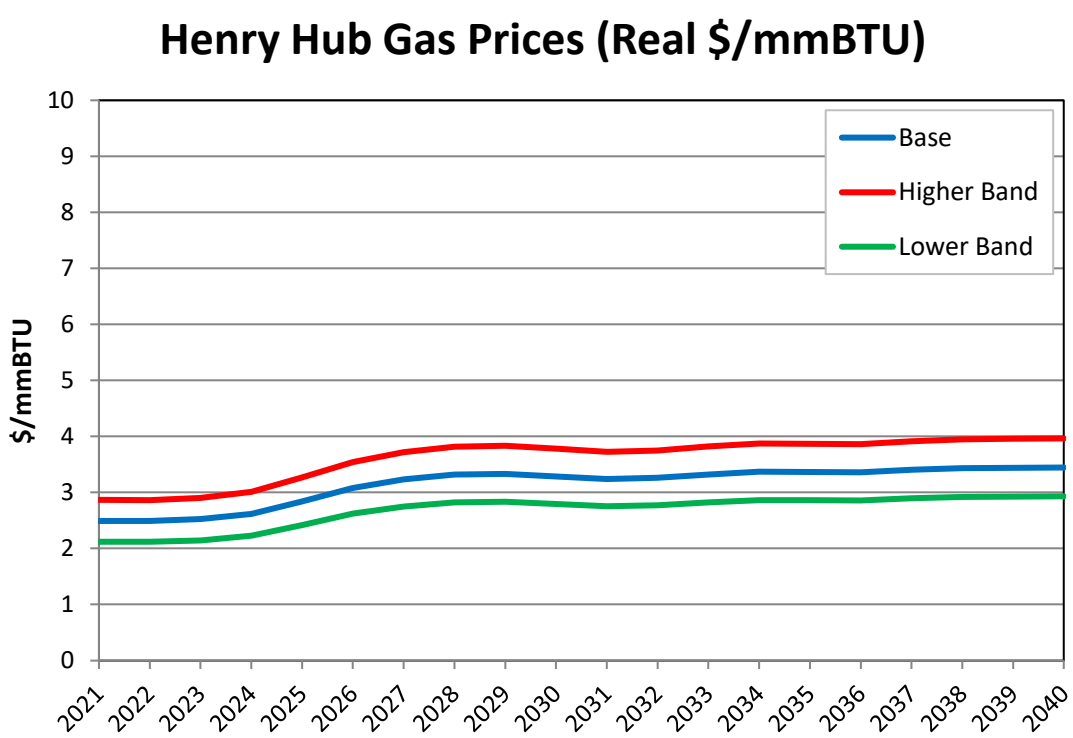
The **application of constraints** takes an econometric model output and shapes it to include real world limitations.

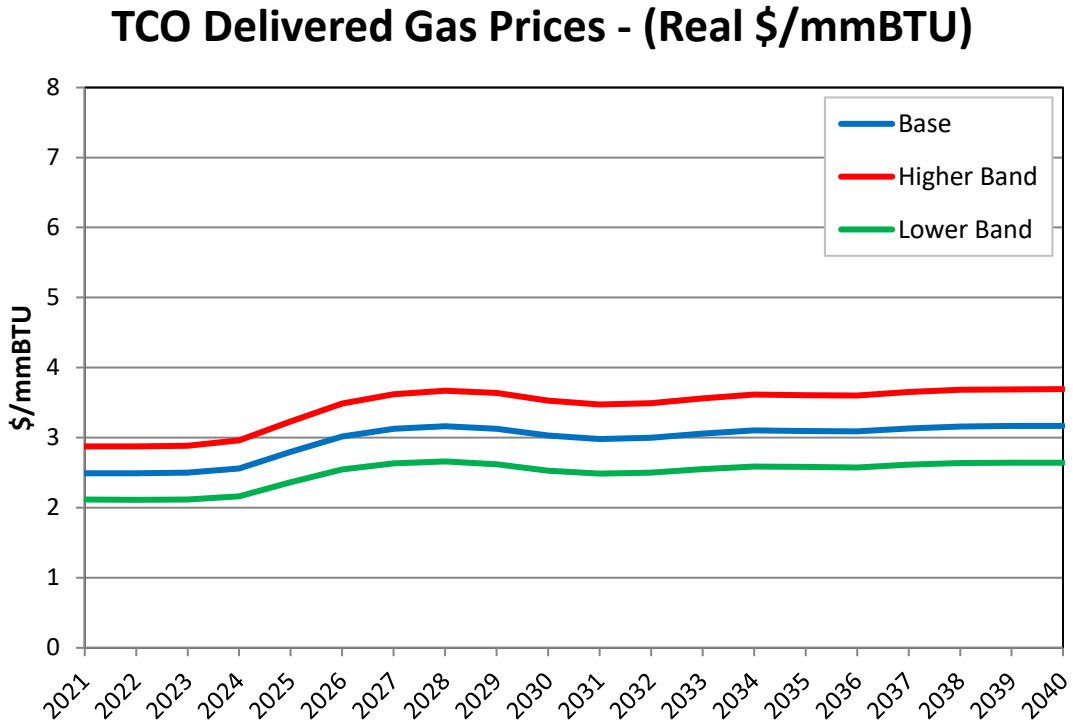
Linkage Between Forecast Zones



Base Case Fuel Forecast: Henry Hub

2020 H2 Fundamental Forecast



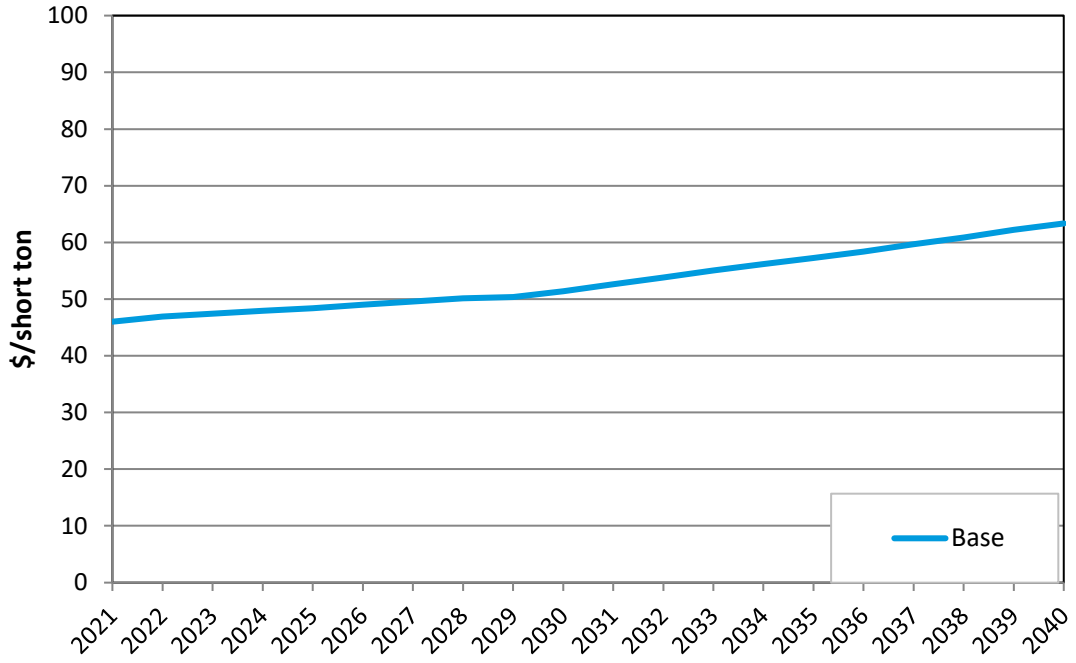


Base Case Coal Forecast: I-Basin and PRB

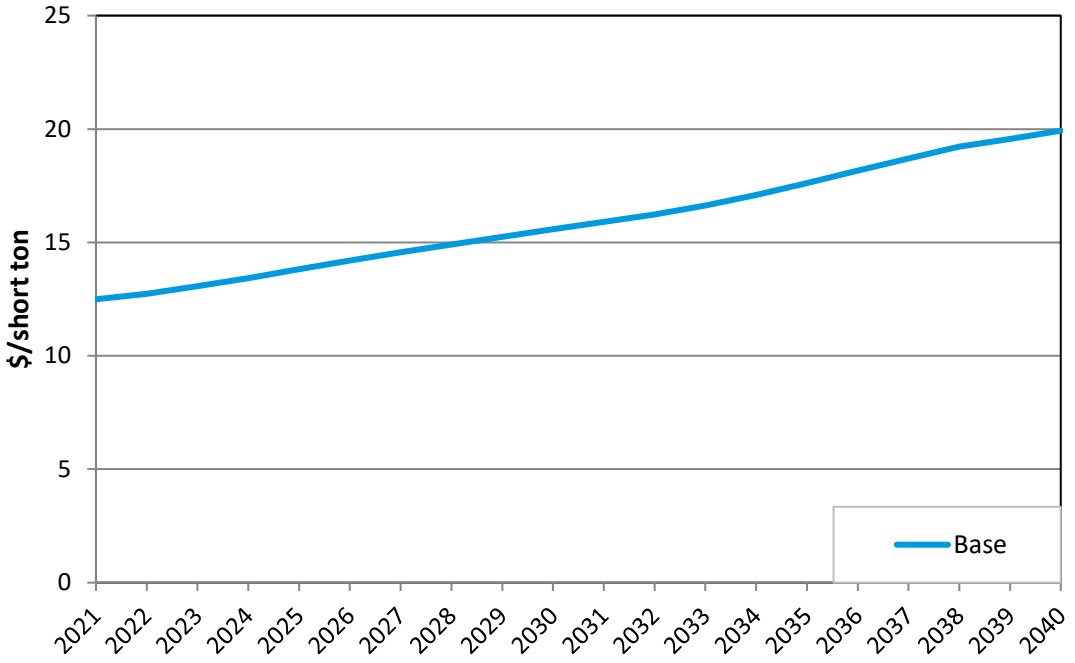
2020 H2 Fundamental Forecast

An AEP Company

I-Basin Prices - (Nominal $/ton, FOB Origin)

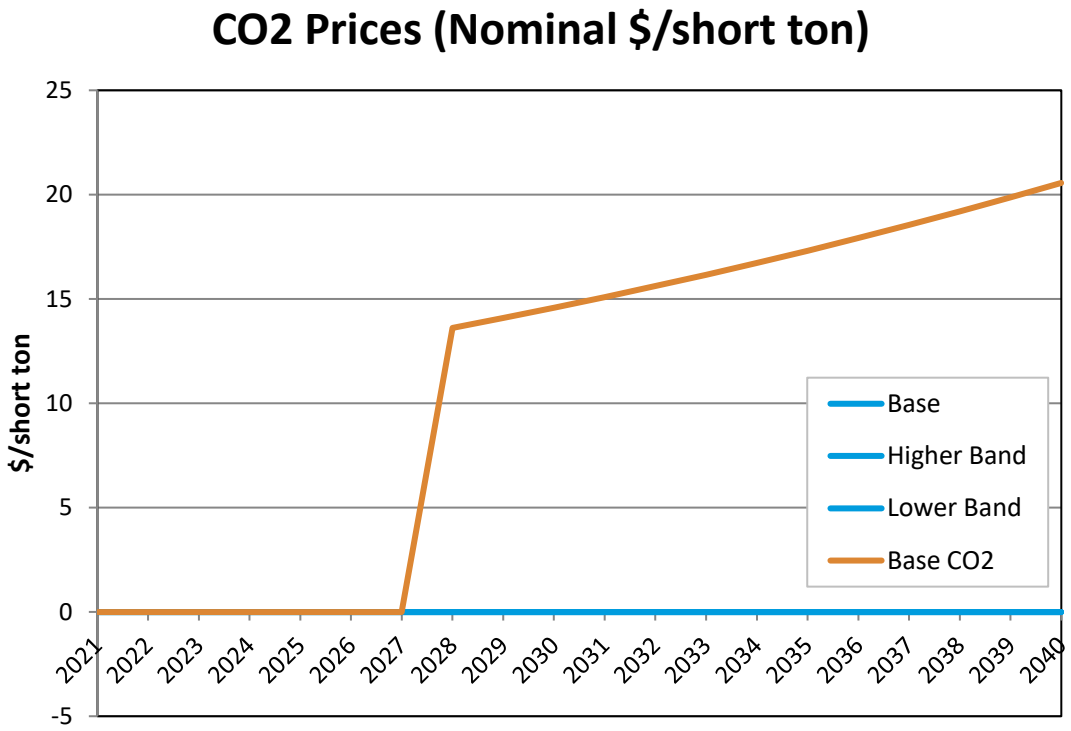


PRB 8800 Prices - (Nominal $/ton, FOB Origin)

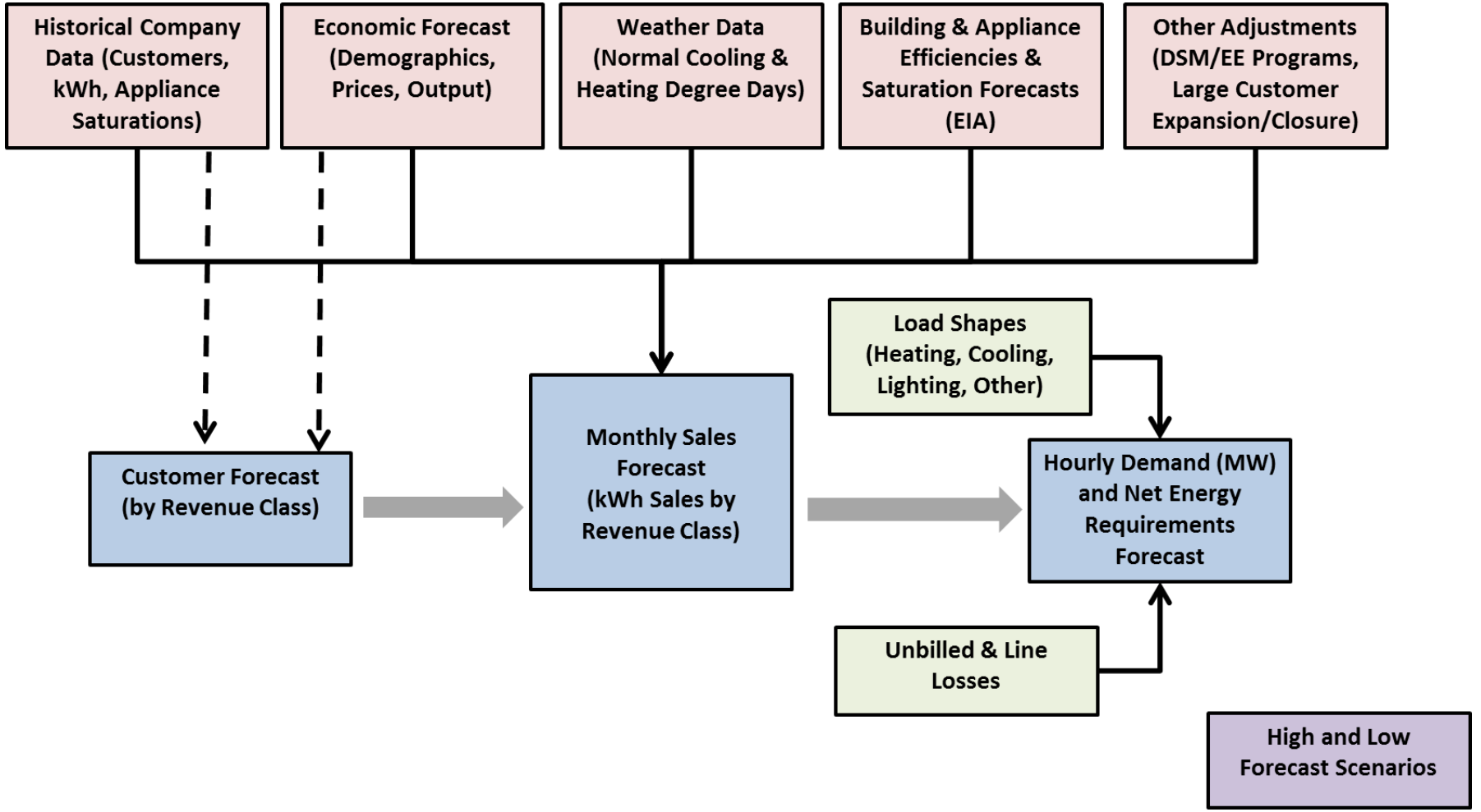


Base Case CO2 Forecast: National CO2 Price

2020 H2 Fundamental Forecast



Load Forecast Process



Load Forecast Drivers

❑ Residential

- Regional Economic Variables (Employment, Income)
- Demographics (Population, Households)
- Gross Regional Product
- Electricity Price
- State Natural Gas Price
- Mortgage Interest Rate
- Heating & Cooling Degree Days
- Prior period kWh and Customer count
- Appliance saturation (surveyed every 3-4 years)
- Appliance efficiency standards & trends
- Building standards & trends

❑ Other Ultimate

- Regional Economic Variables (Employment)
- Heating & Cooling Degree Days
- Prior Period kWh

❑ Commercial

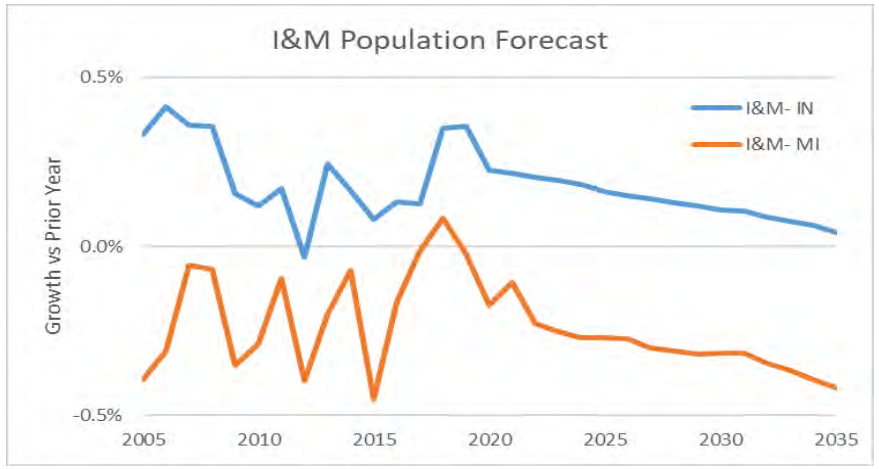
- Regional Economic Variables (Employment, Income)
- Commercial Gross Regional Product
- Electricity Price
- State Natural Gas Price
- Heating & Cooling Degree Days
- Prior period kWh and Customer count
- Appliance saturation
- Appliance efficiency standards & trends
- Building standards & trends

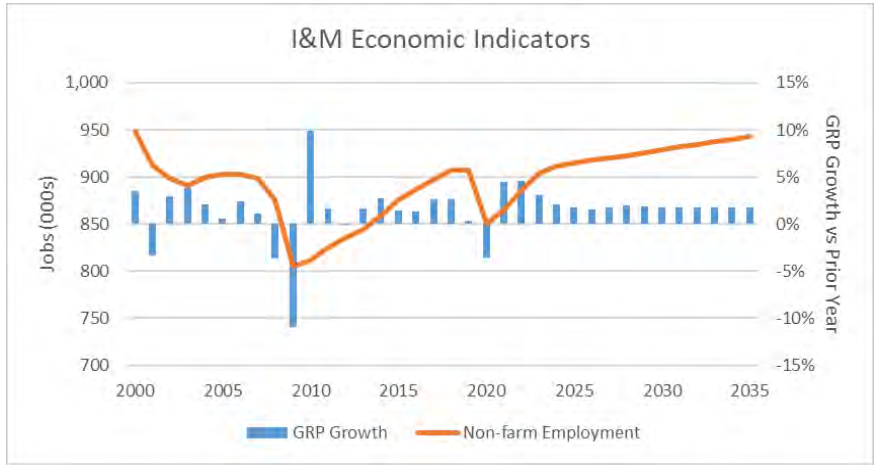
❑ Industrial

- FRB Industrial Production Indices (Selected)
- Regional Economic Variables (Employment)
- Regional Coal Production
- Manufacturing Gross Regional Product
- Electricity & Petroleum Prices
- State Natural Gas Prices
- Prior period kWh

(Economic data is provided by Moody's Analytics)

Economic Forecast Highlights





Economic Forecast Highlights: I&M Service Territory

- I&M service territory population is expected to continue to slow. I&M MI population growth has been declining since the turn of the century.
- The COVID-19 pandemic and recession in 2020 had a significant impact on I&M's regional economy.
- It will take years before the gross regional product and non-farm employment reach their pre-pandemic levels.
- According to Energy Information Administration (EIA) Annual Energy Outlook for 2021, "US energy demand takes until 2029 to return to 2019 levels".

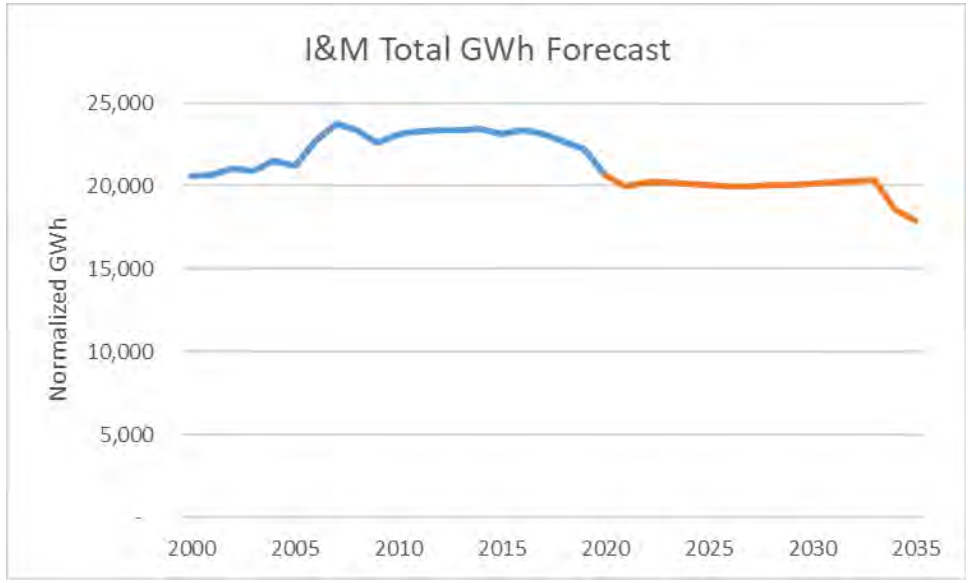
Energy and Peak Demand

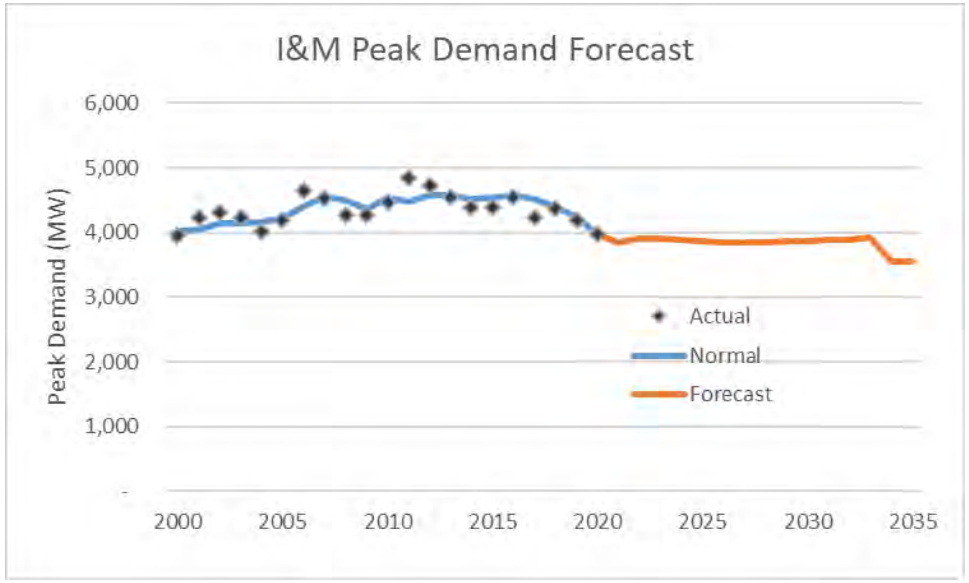
Forecast Currently Being Updated, Expected June 1

INDIANA MICHIGAN POWER
An AEP Company

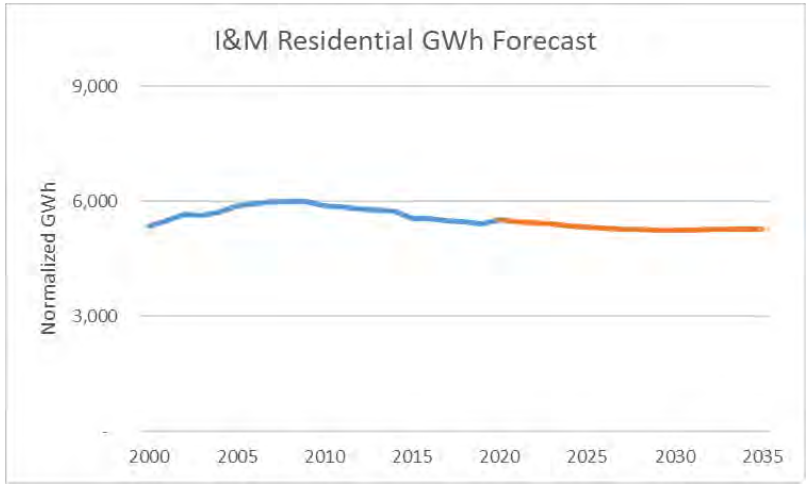
I&M Load and Peak Energy Forecast

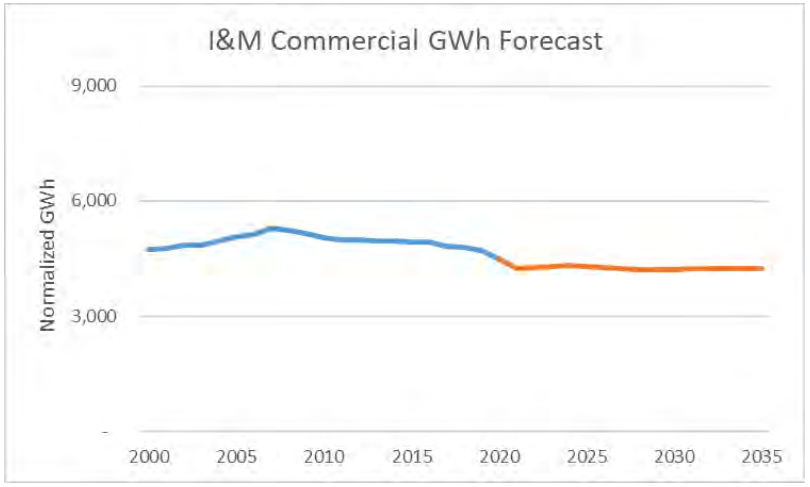
- I&M's weather normalized load never reached its pre-pandemic levels
- I&M's peak demand forecast (and capacity load obligation) is relatively flat for the planning horizon.
- The combination of slower demographics, recovery from a historic pandemic/ recession, increasing saturations of energy efficient technologies, and the expiration of some key wholesale contracts all combine to create significant headwinds for load growth into the future.

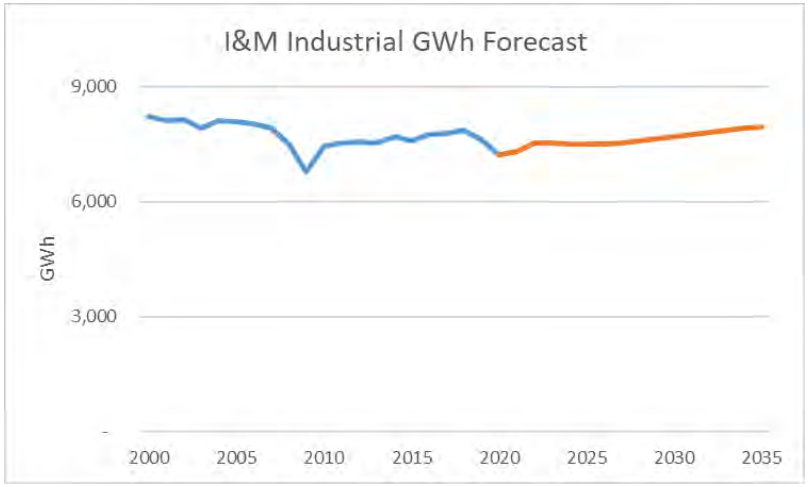




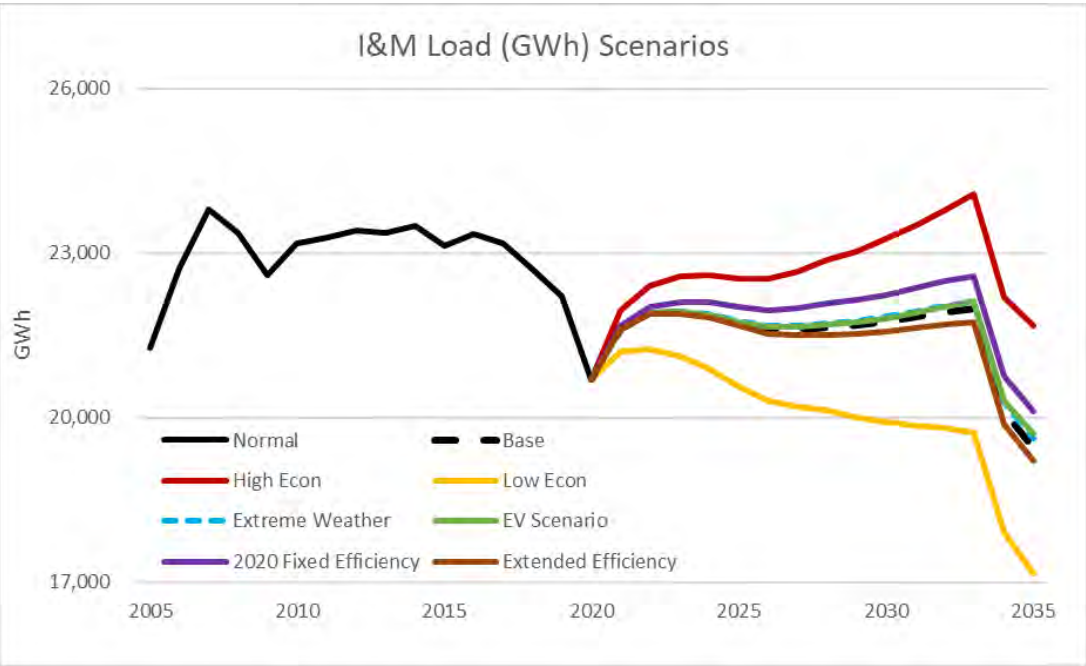
Load Forecast by Class







Load Forecast Scenarios



Compound Annual Growth Rate (2020-2035)

Base	-0.4%	The baseline forecast (highest probability outcome)
High Economic	0.3%	Forecast under much stronger economic conditions than assumed in baseline
Low Economic	-1.2%	Forecast under much weaker economic conditions than assumed in baseline
Extreme Weather	-0.4%	Assuming extreme warming trend in temperatures (Purdue study)
EV Scenario	-0.3%	Base EV adoption scenario assuming 33% average growth per year
2020 Fixed Efficiency	-0.2%	Forecast assuming current technology efficiencies are fixed at current levels.
Extended Efficiency	-0.5%	Assuming additional energy efficiency standards are implemented in future

I&M Load Forecast Scenarios

- In addition to the Base load forecast, a number of additional load scenarios are developed for use in the IRP optimization modeling.
- While multiple load forecast scenarios are developed, only the highest and lowest are generally utilized in the optimization to understand how the optimal resource mix would be impacted by any of the potential load scenarios.

Feedback and Discussion

RESOURCE AND TECHNOLOGY

Available Technologies

Siemens regularly estimates generation technology costs and performance for typical alternatives.

Fuel	Technology	Description
Natural Gas	Advanced 2x1 Combined Cycle	2x1, H/G/J/HA, no DF, wet
	Advanced 1x1 Combined Cycle	1x1, H/G/J/HA, no DF, wet
	Advanced 1x1 Combined Cycle w/ CCS	1x1, H/G/J/HA, no DF, wet
	Advanced Simple Cycle Frame CT	1x0, G/H/J/HA
	Conventional Simple Cycle Frame CT	1x0, F/FA
	Small Aero Simple Cycle CT	1x0, LM6000
	RICE	6x0 Wartsila 18V50SG
	RICE	4x5.6MW
Coal	SCPC w/ CCS	Ultra-Supercritical
Nuclear	Large Nuclear	AP 1000
	Small Modular Reactor	NuScale
Green Hydrogen	Advanced 1x1 Combined Cycle	1x1, H/G/J/HA, no DF, wet
	Conventional Simple Cycle Frame CT	1x0, F/FA
	Fuel – Third Party Purchase	
	Fuel - Derived synthetic natural gas	

Fuel	Technology	Description
Renewable	Utility Solar PV - Single Tracking	100 MW Single Tracking
	Utility Solar PV - Single Tracking + BESS	100 MW Single Tracking, 33 MWx4hr BESS
	BTM Solar PV - Single Tracking	5 MW Single Tracking w/ 1x2 Storage
	BTM Solar PV - Single Tracking	5 MW Single Tracking w/ 1x4 Storage
	BTM Solar PV - Single Tracking	5 MW Single Tracking w/ 1x8 Storage
	Onshore Wind	100-300 MW
	Offshore Wind	Fixed Bottom
Storage	Lithium-Ion Batteries	Li-Ion, Utility Scale, 4 hr
	Pumped Hydro	300-1,200 MW
	Compressed Air Storage	Underground, 16h RTE = 52%
	Flow_Battery Storage	Various Chemistries

Other Requested Technologies: Small CCs, Conventional CCs, Floating OSW, LFG, RNG, Biomass, Cogen, CAES, Fuel Cells, PHES, Hydro, RoR Hydro, Geothermal, Various Fuel/ Technology Conversions, Different Technology Capacities

Overview of Technology Forecasting Approach

Current technology costs and performance based on RFP; forecasted using Siemens' technology shapes.

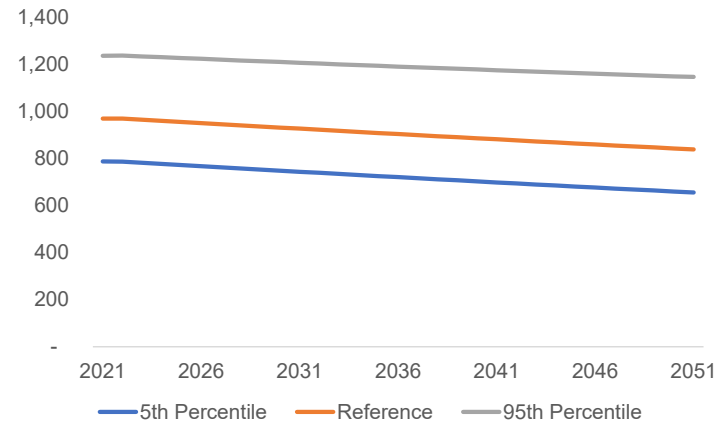
Conduct new all-source RFP → Apply Siemens technology forecast shapes to project capital costs for each year → Review and combine forecasted RFP results → Consider technologies to screen out

Technology metrics may include, but not limited to

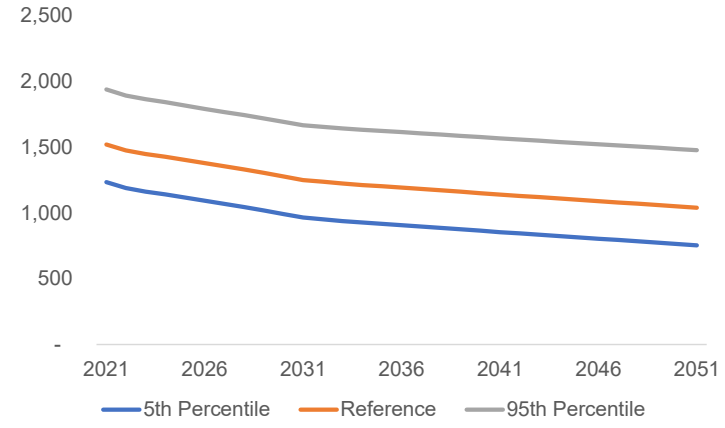
1. Technology Risk (immature)
2. Capital Risk (capex spread)
3. Levelized Cost of Energy (LCOE)
4. Appropriate Capacity (available capacity suits utility load forecast)
5. Support Requirements (land and water needs)

All-in Capital Cost Curves, 2020$/kW (Illustrative)

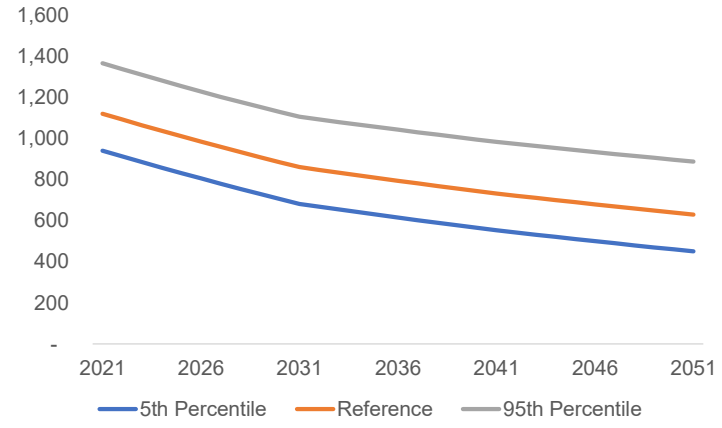
Advanced 2x1 Combined Cycle



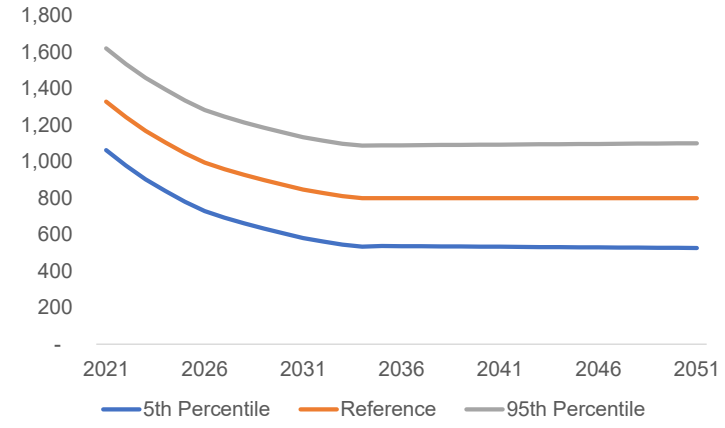
Onshore Wind



Solar PV, Single Axis Tracking



Li-Ion Battery Storage, Utility Scale, 4 hr



Market Potential Study Approach

State	Completes - Baseline Questions
BUSINESS CUSTOMER SURVEY *(Stratification by: state, small / large)*	
Indiana	504
Michigan	218
Total	*722*
RESIDENTIAL CUSTOMER SURVEY *(Stratification by: state, single / multi-family, and income qualified / market rate)*	
Indiana	1,085
Michigan	1,114
Total	*2,199*

Biz WTP Modules	Completes
EE – Refrigeration	102
EE – HVAC	345
EE – Water Heating	126
EE – Lighting	170
DR – Central AC	307
DR – Critical Peak Pricing	477
DER – Solar Purchase	85
DER – Solar Lease	86

Res WTP Module	Completes
EE – HPWH	274
EE – Heating System	1,726
EE – Building Shell	1,351
EE – Appliances	1,316
DR – Central AC	400
DR – Water Heating	403
DR – Electric Vehicles	375
DR – Time of Day Pricing	338
DER – Solar Purchase	1,371

Building/Equipment Baseline Research

Sampling Objective: 90% confidence, 10% relative precision (90/10) at strata-level for all questions

Response Outcome:

- Business survey: 90/10 at strata level for baseline questions; at state level for other questions
- Residential survey: 90/10 for all strata except multi family

Willingness-to-Participate Research

Surveys included “modules” to investigate barriers, awareness, and adoption rates for different EE technologies, DR offerings, and PV.

Response Outcome:

- Biz: 90/10 at the state level across all modules, by strata (state) for others
- Res: 90/10 at state level and income-status for most modules

Market Potential Study Status Update

Stakeholder engagement is currently ongoing

MPS Stakeholder Engagement	Status
Kickoff Meeting	Complete
Market Research Survey Instruments Feedback	Complete
Measure Lists Feedback	Complete
Study Methodological Decision Points Feedback	In Process

I&M and GDS are currently working through MPS load forecast development, stakeholder questions and concerns, and MPS outputs to be used as IRP inputs

May 1, 2021 Study completion with final report

Feedback and Discussion

INDIANA MICHIGAN POWER
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STAKEHOLDER PROCESS AND Q&A

Stakeholder Timeline

March 9, 2021	April 14, 2021	May TDB, 2021 (tentative date)	July 14, 2021 (tentative date)	September 14, 2021 (tentative date)
2021 IRP Process	DSM IRP Inputs and Modeling	AURORA Technical Workshop	Draft Candidate Portfolios	Probabilistic Modeling Results
Objectives and Metrics	EE/EWR, DR and DER Results		All-Source RFP Results	Review of Preferred Portfolio
Proposed Scenarios	2021 IRP Update		Stochastic Modeling Approach and Assumptions	Other(s)
Base Case Inputs				

If you would like to make a comment or ask a question about the IRP process after the presentation has concluded:

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- Stay informed about future events by visiting the I&M IRP Portal located at www.indianamichiganpower.com/info/projects/IntegratedResourcePlan

Feedback and Discussion

CLOSING REMARKS

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APPENDIX

Definitions

Term	Definition
Aurora	Electric modeling forecasting and analysis software. Used for capacity expansion, chronological dispatch, and stochastic functions
Condition	A unique combination of a Scenario and a Sensitivity that is used to inform Candidate Portfolio development
Deterministic Modeling	Simulated dispatch of a portfolio in a pre-determined future
Renewable Portfolio Standards	Renewable Portfolio Standards (RPS) are policies designed to increase the use of renewable energy sources for electricity generation
Portfolio	A group of resources to meet customer load
Preferred Portfolio	The portfolio that management determines will performs the best, with consideration for cost, risk, reliability, and sustainability
Probabilistic modeling	Simulate dispatch of portfolios for several randomly generated potential future states
Reference Scenario	The most expected future scenario that is designed to include a current consensus view of key drivers in power and fuel markets (reference case, consensus case)
Scenario	Potential future State-of-the-World designed to test portfolio performance in key risk areas important to management and stakeholders alike
Sensitivity Analysis	Analysis to determine what risk factors portfolios are most sensitive to

Indiana Michigan Power Company

2021 Integrated Resource Plan

Stakeholder Workshop #2 Meeting Minutes

(April 14, 2021)

1. **Welcome – Toby Thomas, I&M President and COO**

Toby began the meeting at 9:30 and covered slides 1-3.

Toby began the meeting by thanking Stakeholders for their participation and time on the call. He continued to reinforce the importance of this forum to allow AEP I&M to voice the planned approach to the 2021 Integrated Resource Plan (IRP) and to solicit feedback and input from others throughout the process.

Toby introduced Jay Boggs, Siemens Managing Director and Moderator for the Stakeholder Workshops.

2. **Meeting Guidelines – Jay Boggs, Siemens Managing Director**

Jay covered slides 4-6.

Jay presented the Meeting Guidelines portion of the presentation and established the role of Moderator for the Stakeholder Meeting. He stated that the purpose of the presentation is to explain the DSM/EE components of the IRP process and collect feedback from stakeholders. He provided an overview of the webinar platform and tools and discussed meeting guidelines.

Jay also provided an overview of the Questions and Feedback process, including directing stakeholders to submit comments and stay informed at the I&M IRP Website: http://www.indianamichiganpower.com/info/projects/IntegratedResourcePlan.

In addition, stakeholders are encouraged to submit questions via email to I&MIRP@aep.com

Jay introduced Dona Seger-Lawson, Director of Regulatory Services, to provide a safety moment and introductions.

3. **Safety Moment and Introductions – Dona Seger-Lawson, Director of Regulatory Services**

Dona covered slides 7-10.

Dona reviewed a safety moment and introduced the American Electric Power (AEP), Indiana Michigan Power (I&M), Siemens Power Technologies International (PTI) and GDS Associates (GDS) team members.

Dona introduced Andrew Williamson, Director of Regulatory Services, to provide opening remarks.

4. Opening Remarks – Andrew Williamson, Director of Regulatory Services

Andrew covered slide 11

Andrew stressed the importance for feedback and continued participation from Stakeholders and gave an overview of Energy Efficiency (EE), Demand Response (DR) and Distributed Energy Resources (DER) programs in Indiana and Michigan. He mentioned the main topics for today would be the Market Potential Study (MPS) approach, preliminary MPS results, the impact of EE on load forecasting and the selection of EE, DR and DER in the IRP modeling.

In addition, Andrew highlighted that the meeting minutes and presentation from Stakeholder Workshop #1 have been posted.

Andrew introduced Bob Bradish, SVP Regulated Investment Planning, to discuss integrated grid planning at AEP.

Table 1 Verbal Questions Captured Related to 2021 Opening Remarks

Question #	Question	Response
Q1	Are there currently any specific planning activities for community solar projects?	Will continue to be explored by I&M and will be encouraged in the future.
Q2	Who should virtual power producers contact within AEP Indiana and Michigan?	Point them to the "All-source RFP" that will be online next week, this is the best way to get info out there.
Q3	Is there a goal for a date to remove carbon from the portfolio?	AEP just released an analysis. Goal is net zero by 2050.
Q4	Will transmission be part of the resource planning exercise?	Transmission plans will be considered. AEP has made organizational changes to support the alignment of GT and D resource planning.

5. Bob Bradish, SVP Regulated Investment Planning

Bob covered slides 12-17

Bob discussed the evolution of the grid and the way in which AEP as an organization is addressing the changing analytical and planning environment. He characterized the continued evolution of the industry that is driving changes in how utilities plan and operate systems. Common themes are decentralization, digitialization and decarbonization that are driven by active stakeholder engagement and public policy drivers. AEP sees DERs as an emerging and important source of supply to the power system and wants to create further alignment to inform new resource characterization approaches and DER sourcing mechanisms.

Bob discussed how the planning alignment occurs by bringing the processes together from the integrated resource planning and analysis, transmission planning and analysis, distribution planning and analysis and interconnection services groups. Specifically, Bob discussed how the direction would be provided through consistent set of policy objectives, the input assumptions driven would form a common foundation and that decisions would be informed through information exchange.

Bob introduced Carlos Casablanca, Managing Director for Distribution Planning and Analysis, who covered slide 18

Carlos discussed the importance of non-wire alternatives as the future needs of the grid system. He discussed that a major goal of the new alignment is to improve and enhance the internal methodologies used for valuing various transmission and distribution applications, which include updating assumptions and planning tools.

Carlos introduced Kamran Ali, VP of Transmission Planning and Analysis, who covered slide 19-20

Kamran discussed the approach to transmission planning and analysis and highlighted the current activities of the group. He noted that their group is looking to understand and guide interconnection values and opportunities to be utilized in fundamental commodity forecasts, as well as evaluating delivery potential for renewable RPS. The current goal is to understand value streams and benefits that the non-wire alternatives offer to provide a holistic view of the solutions when facing transmission or power delivery issues.

Kamran introduced Jay Boggs, Siemens Managing Director and Moderator to facilitate Stakeholder Feedback / Q&A.

6. <u>GDS Associates, Market Potential Study</u>

Jon Walter from AEP covered slides 21-25

Jon provided an update on the Market Potential Study (MPS), noting that the results are in the development phase. He also provided an expanded overview of the various expected results of the MPS, detailing utility sponsored EE programs, DSM programs, AMI programs and CVR programs. Jon also reiterated important definitions for stakeholder to grasp as part of the GDS presentation, including technical potential, economic potential, maximum achievable potential and realistic achievable potential.

Jeffrey Huber from GDS Associates covered slides 26-55

Jeffrey introduced GDS Associates and the Brightline Group team members that have contributed technically to the MPS. GDS is the prime subcontractor for the MPS and is

leveraging the Brightline groups' expertise in DSM program planning and evaluation. Jeffrey provided an overview of the MPS study tasks and key considerations for the planning study. An important feature is that the MPS study will assess potential for I&M's separate jurisdictions and be customized and tailor-made to each local.

Jeffrey and Patrick Burns then discussed the market research performed to inform the MPS. Patrick discussed how the market research performed for the MPS was used to assemble baseline data and to inform the technology adoption curves used in the modeling. He described the web surveys that were constructed and provided to participants, noting that the results provide insights into current equipment being used in homes and residential and non-residential willingness to participate (WTP) data. Residential WTP Survey Data is used to help estimate the long-term adoption rates that might be expected across various end uses and technologies.

Jeffrey then went into detail on the expected results of the three MPS products being looked at, including EE potential, DR potential and DER potential. EE Potential: Jeffrey provided a flow chart and equation to describe the process by which the study results form from various energy efficiency potentials. He described two potential EE scenarios, including a high case that assumes 75% incentives relative to measure cost and a realistic potential case, which reflects more traditional incentive levels. DR Potential: Regarding DR Jeffrey spoke about the way in which the study will assess and screen load shifting options through incorporating over 20 performance and cost metrics. As part of the MPS, GDS looked at 37 sector and technology permutations for load shifting options. DER Potential: Lastly, Jeffrey noted the DER potential study that is focused on solar PV and combined heat and power and that DER will result from a market adoption based on bass diffusion theory.

Jeffrey concluded by talking about how the MPS study will create program portfolio recommendations and IRP inputs, which include converting achievable potential results into transparent formats and deliverables to the IRP team. More specifically, he noted that the approach includes mapping measures to potential programs and delivery channels, creating delivery streams / measure bundles, and recommending a portfolio of programs for consideration. GDS noted they will work closely with Siemens PTI during the formation of IRP inputs.

Table 2 Verbal Questions Captured Related to Market Potential Study

Question #	Question	Response
Q5	Will it be a rebate program for the EV charger?	Based on the costs associated with installing the charger and acquisition of the EV. Thus, based on the whole package of acquiring an EV.
Q6	Are food Sales for Grocery stores?	Yes

Q7	Were low-income customers included in the survey?	Did target low-income customers. Split up the data as much as possible to capture any difference between customer segments.
Q8	For EV specifically, when researching willingness to participate do you also research the ability to participate?	By giving information about the costs, it also includes the incentive. So given the incentive, are people willing and able to participate? 6 different categories that we questioned for the customer.
Q9	Is there a similar awareness adjustment for residential and is that also adjusted by 78%?	Yes
Q10	Curious about what IM has planned for its AMI data. Other studies looked at correlation between residential type. Was interesting from the standpoint visually of how they should target different consumption. Wondered if I&M would consider doing something like that?	In general, the benefits that I&M can bring is of key interest as we move forward, to get better information and analysis of how customers use energy and approach them about different EE offers. Don't have full AMI yet so cannot deal with that yet. We will be looking to do that as we get the information.
Q11	In looking at the level of awareness and participation in your survey have you reached out the churches and other community centers to increase their participation?	We did not include that in the engagement. Might come out of the analysis that will be done at the end of the market potential study.
Q12	Jacob gave the example of the residential AC. You said that the AEO forecast exceeds 15%. Make sure we are confident with that. Efficiencies that come out of AEO are done on national level not regional level.	We are sure the East North Central efficiency gets up to 14.8 so more than 14 not 15. Interpretation of the forecast is that there is a code and EIA does not project this will change in the future but does allow for customers to operate above code.

7. Impacts on Load Forecasting – Chad Burnett, AEP Load Forecasts

Chad covered slides 56-65

Chad provided an overview of the various methods for accounting for DSM/EWR in load forecasts and the mechanisms by which utility sponsored programs can help accelerate adoption of programs at an earlier date than otherwise. He provided an illustrative example of the impact of recent DSM programs within I&M's service territory but highlighted that there are differences between measuring EE savings within the market potential study and within the load forecast that need to be understood.

Chad went on to discuss the load forecasts provided by GDS and the way in which AEP plans to apply the results of the MPS study.

Table 3 Verbal Questions Captured Related to Impacts on Load Forecasting

Question #	Question	Response

Q13	For future projection on heating and cooling temperatures are the new normal from climate change considered?	The load forecast and the weather we are using is trended normal, so it does account for the warming trend. We are also doing other load scenarios and one of those scenarios where we saw temperatures warming at a much faster pace. It would go up by about 10 degrees over a 10-year period.
Q14	Jacob had agreed that there was no changing codes and standard in the EIA data. Anna understood from Jacob that there may be changes to that and wanted to confirm.	What GDS found is what is in the base SAE is above the baseline that would be provided by SAE.
Q15	Regarding Slide 61 and 62. The lines that we are seeing are illustrative or based on the forecast from the SAE model?	GDS built this graphic, the red line is somewhat illustrative and is back of the envelope calculation. The base and frozen is actual but red is hypothetical.
Q16	How is it estimated what effect the code changes had on the forecast?	Looked at starting efficiency of the HVAC and relative to 2023 code, how much of the change that we are seeing between the top line and the base forecast would be relative to code and above code. Was approximately 50%.
Q17	The lines are based on the change of efficiency level over time. Isn't it is also true that assumed efficiency over time could be due to turn over?	With that stock turnover people could only go to 14, but because the MPS goes above that GDS is trying to back out the stock turnover. EIA data that is being used does not assume new codes and standards. There is a list of codes and standard that is assumed in EIA. All are either already passed or approved.
Q18	Curious to hear if the intend of this approach is to avoid double counting the savings from MPS. Chad is it reasonable to use the method proposed by Anna? Is there a way to compare without double counting anything?	ITRON does not necessarily recommend that and an important consideration is consistency in our load forecast that is used for many purposes, including various regulatory filings where it has been determined to be reasonable and accurate.

8. Preliminary IRP Inputs – Art Holland, Siemens Managing Director

Art covered slides 66-73

Art provided an overview of the approach that will be used within the modeling framework to test energy efficiency, demand response and distributed energy resources. He discussed that for energy efficiency Siemens PTI, GDS and the I&M IRP team will collaborate on the appropriate bundling for the EE measures. The bundles will be tested against other resources and the volume will be optimized for each candidate portfolio. Art then discussed demand response, which he detailed that for each candidate portfolio there will be an assumed quantity of demand response resources defined by the GDS Market Potential Study. Art noted however that volume may vary by candidate portfolio. And lastly, he

discussed that regarding DER the associated volume, costs, and performance characteristics are included equally as a part of all candidate portfolios.

Art introduced Jay Boggs, Siemens Managing Director and Moderator to facilitate Stakeholder Feedback and Timelines.

9. Stakeholder Timelines – Jay Boggs, Siemens Managing Director

Jay covered slides 74-76

Jay reiterated the Stakeholder Process. Four stakeholder meetings will be held. The initial stakeholder meeting about the all-source RFP was held. There will also be an AURORA technical workshop. Additional detail will be released shortly on the AEP I&M IRP website.

Jay introduced Anna Sommer from the energy futures group to provide a stakeholder presentation on modeling EE IRPs.

10. Modeling EE in I&M's IRP – Anna Sommer, Energy Futures Group (Stakeholder Presentation)

Anna covered slide 77 of the Stakeholder Presentation and slides 1-9 of the Stakeholder Provided presentation.

Anna provided an overview of I&M's approach to modeling EE in the current and past IRPs and made requests for I&M to modify approaches used in this IRP cycle.

Anna concluded and Andrew Williams followed to provide closing remarks.

11. Closing Remarks

Andrew covered slide 78-79

Andrew provided closing remarks for the meeting.

12. Appendix A: List of Questions Answered on Call

Table 4 List of Questions Addressed on the Call Verbally

Question Asked	Response
Specifically, for electric vehicles, when researching willingness to participate are you also asking about ability to participate? Many electric vehicles are very expensive, so while someone may be willing, there still may be an economic barrier to actually participating.	As answered by GDS
Will I&M used the responses to its informational RFP to pre-qualify vendors and developers in any future bidding?	As answered by Greg S.
What actions is I&M taking to engage Virtual Power Plant providers into this IRP process?	As answered by Andrew W.

I have been contacted and talked to several virtual power plant companies who are interested in doing business in Indiana. Who should they contact at I&M/AEP?	As answered by Andrew W.
Are there currently any specific planning activities for community solar projects?	As answered by Andrew W.
Will all participants in today's IRP stakeholder meeting receive information about the I&M RFP to be issued on April 23? If not how can I request to receive this information?	As answered by Greg S.
Will I&M consider coupling DER solar incentives with any DSM and EE programs?	As answered by John W.
Does I&M plan to evaluate how expected T&D investments vary under the different scenarios and portfolios that are chosen for review in the IRP?	As answered by Siemens
Is the electric vehicle incentive question based on an incentive for the charger?	As answered by GDS
I would like to add that MI Staff agrees with EFG assessment of the supp. eff. adjustment. No MI utility apply this type of adjustment to EE, and all MI utilities apply a T&D savings to lower EE costs. I think you just missed me raising my hand. Karen Gould	Noted.
For future projections on heating & cooling energy usage, is climate change and the resulting "new normal" temperatures being taken into account? I'm referring to the charts coming up within this presentation on the study.	As answered by Chad B.
Obviously, cost-effectiveness is a consideration in every study and final decision, whether we're talking about generation methods, energy efficiency programs, etc. I imagine that I&M/AEP are always looking for a certain profit margin range. And I know that AEP is a highly profitable company. My concern is that for a sustainable, livable future, the balance needs to move towards a philosophy of People & Planet OVER Profit. Is there ever a conversation about adjusting the profit expectation downward? I'm aware that this may be a hypothetical question aimed at the higher echelon of management, but I'll ask it anyway!!	As answered by Andrew W.
WIs the EV incentive applicable to the car or to the in-home charger?	As answered by GDS
Is there a similar awareness adjustment for non-residential, and if so is that also using the JD Power estimate of 74%	As answered by GDS
How were the incremental measure costs calculated? The values appear to be much lower than the values used/assumed in I&M's most recent DSM plan.	As answered by GDS
Can you please post this correction for others to see? I misspoke regarding non-residential lighting, the incentive % of incremental costs are not 100% in the DSM plan. I had referenced at the wrong table from the DSM plan. Nonetheless, there still appears to be some differences between the DSM plan and what was presented here today. If GDS could share the calculation of incentive % of incremental cost, and benchmark against the DSM plan, that would be appreciated.	As answered by GDS

How was the difference between a code frozen forecast and base forecast calculated? Are the trend lines shown on Jacob's slide illustrative, or are they reflective of actual forecasts?	As answered by Chad B. and GDS
Is there a goal for a date to remove fossil fuels from our energy production? Are there benchmark dates to reach certain percentages of renewable energy to help achieve those goals?	As answered by Andrew W.
What would it take to end coal leases sooner than the leases dictate?	As answered by Andrew W.
I didn't understand whether that was a yes or no on the community solar. Can you clarify?	As answered by Greg S.
Were low-income customers included in the survey? Was community solar asked about?	As answered by GDS
In looking at level of awareness/participation in your survey, have you considered enlisting churches, neighborhood associations, environmental groups, etc. to reach a higher level of participation? Is that a question for a later stage?	As answered by GDS
Jon, Duke did some interesting analysis with its AMI data showing that they could identify correlations between energy consumption and characteristics like housing type (e.g. mobile home vs. single family detached) that seemed to me to hold a lot of potential for better targeting and better EE program design though Duke was not, unfortunately, going to use it for that. Is that something you would consider doing?	As answered by John W.
Jacob, IN IRP rules require consistency between the IRP and the subsequent DSM plan. Because of that, in considering these three bundling approaches, I ask myself, which of these three approaches would be most useful in informing the DSM plan? And I think the answer is "none". There's a fourth option that's not mentioned which is bundling by portfolio and I think that's preferable.	As answered by Greg S.
On slide 60, are these load forecasts that I&M has actually developed or are these just representative examples?	As answered by Chad B. and GDS
Jacob said before the break that he agreed that there was no changing codes and standards in the EIA data that is being in the load forecast. But Chad, you are saying that there is?	As answered by Chad B.
Given this discussion, is I&M doing a hosting capacity analysis?	As answered by John W.
Thanks, Andrew. We hope to hear back from I&M as to our request presented on Anna's last slide. Are your statements, Andrew, that I&M is nonetheless going to continue its methodology?	AEP will respond to the CAC presentation in writing

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INDIANA MICHIGAN POWER
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Indiana Michigan Power:
2021 Integrated Resource Plan
Public Stakeholder Meeting #2

April 14, 2021

Presented via GoToWebinar -> *https://attendee.gotowebinar.com/register/4716397322613361422*

BOUNDLESS ENERGY℠

Agenda

Time		
9:30 a.m.	**WELCOME**	**Toby Thomas,** President & COO
9:35 a.m.	**MEETING GUIDELINES**	**Jay Boggs**, Siemens
9:40 a.m.	**INTRODUCTION** **OPENING REMARKS**	**Dona Seger-Lawson**, I&M Director of Regulatory Services **Andrew Williamson,** I&M Director of Regulatory Services
9:50 a.m.	**GRID SOLUTIONS INTRODUCTION**	**Bob Bradish,** SVP Regulated Investment Planning
Developing DSM/EE/DER Inputs for the Integrated Resource Plan		
10:20 a.m.	**MARKET POTENTIAL STUDY**	**Jon Walter,** Manager EE & Consumer Programs **Jeffrey Huber**, GDS Associates
12:00 p.m.	**LUNCH**	
1:00 p.m.	**IMPACTS ON LOAD FORECAST**	**Chad Burnett**, AEP Load Forecasting
1:30 p.m.	**PRELIMINARY APPROACH FOR IRP**	**Art Holland,** Siemens
2:00 p.m.	**BREAK**	
2:30 p.m.	**STAKEHOLDER ENGAGEMENT**	**Jay Boggs**, Siemens
2:45 p.m.	**STAKEHOLDER PRESENTATION**	
3:00 p.m.	**NEXT STEPS AND CLOSING REMARKS**	**Andrew Williamson,** I&M Director of Regulatory Services
3:30 p.m.	**ADJOURN**	

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WELCOME

TOBY THOMAS | PRESIDENT AND COO

INDIANA MICHIGAN POWER
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MEETING GUIDELINES

JAY BOGGS | SIEMENS PTI

Questions and Feedback

The purpose of today's presentation is to explain the Demand Side Management (DSM) process and collect feedback from stakeholders. Stakeholder feedback will be posted on the I&M website IRP portal and will be considered as part of the Final IRP.

If you have a question about the IRP process during this presentation:

- Type your question in the Questions area of the GoToWebinar panel
- During the feedback and discussion portions of the presentations, please raise your hand via the GoToMeeting tool to be recognized
- Time permitting, we will address all questions and hear from all who wish to be heard
- Any questions that cannot be answered during the call will be addressed and posted on the website below.

If you would like to make a comment or ask a question about the IRP process after the presentation has concluded:

- Please send an email to I&MIRP@aep.com
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Guidelines

1. Due to the number of participants scheduled to join today's meeting, all will be in a "listen-only" mode by default.

2. Please enter questions at any time into the GoToWebinar portal. Technical questions related to the GoToWebinar tool and its use will be addressed by the support staff directly via the chat feature.

3. Time has been allotted to answer questions related to the materials presented. Unanswered questions will be addressed after the presentation and posted in accordance with the Questions and Feedback slide.

4. At the end of the presentation, we will open-up the floor for "clarifying questions," thoughts, ideas, and suggestions.

5. Please provide feedback or questions on the Stakeholder Meeting #2 presentation within ten business days of the conclusion of the meeting.

INDIANA MICHIGAN POWER
An AEP Company

INTRODUCTION AND OPENING REMARKS

DONA SEGER-LAWSON | DIRECTOR, REGULATORY SERVICES
ANDREW WILLIAMSON | DIRECTOR, REGULATORY SERVICES

Safety Moment

BBQ Safety

- Inspect and clean your gas barbecue before using it for the first time each season.
- Clean the grill to ensure there is no grease buildup. Grease fires cannot be easily extinguished.
- If the fittings, flex hose, or burners are worn or rusted, replace them and replace missing or worn ‘O’ rings.
- Use a flexible brush to clean tubes between gas valve and burner.

On the Call Today

I&M Leadership Team

Toby Thomas | President and COO

Dave Lucas | Vice President, Regulatory and Finance

Dona Seger-Lawson | Director, Regulatory Services

Andrew Williamson | Director, Regulatory Services

Marci Grossman | Director, Communications

Tammara Avant and Christen Blend | Legal

I&M IRP Planning Team

Kelly Pearce | Managing Director, Resource Planning and Strategy

Scott Fisher | Manager, Resource Planning and Grid Solutions

Greg Soller | Staff, Resource Planning and Grid Solutions

Jon Walter | Manager, EE & Customer Programs

Siemens IRP Planning Team

Arthur Holland | Managing Director, Siemens PTI

Jay Boggs | Managing Director, Siemens PTI

Holt Bradshaw | Managing Director, Siemens PTI

Peter Berini | Project Manager, Siemens PTI

I&M Transmission and Distribution Planning Team

Nick Koehler | Director, Transmission Planning

Carlos Casablanca | Managing Director Distribution Planning & Analysis

Subin Mathew | Director, Reliability and Grid Modernization

GDS Associates – Market Potential Study Team

Jeffrey Huber | Project Manager, GDS

Patrick Burns | Brightline Group Lead

Jacob Thomas | Load Forecast & Segmentation Lead, GDS

OPENING REMARKS

ANDREW WILLIAMSON | DIRECTOR, REGULATORY SERVICES

Opening Remarks

- Purpose of the meeting
  - Continue Stakeholder Engagement
  - Focus on EE, DR & DER / EWR Opportunities in the IRP
- IRP Updates
- Introduction to Grid Solutions

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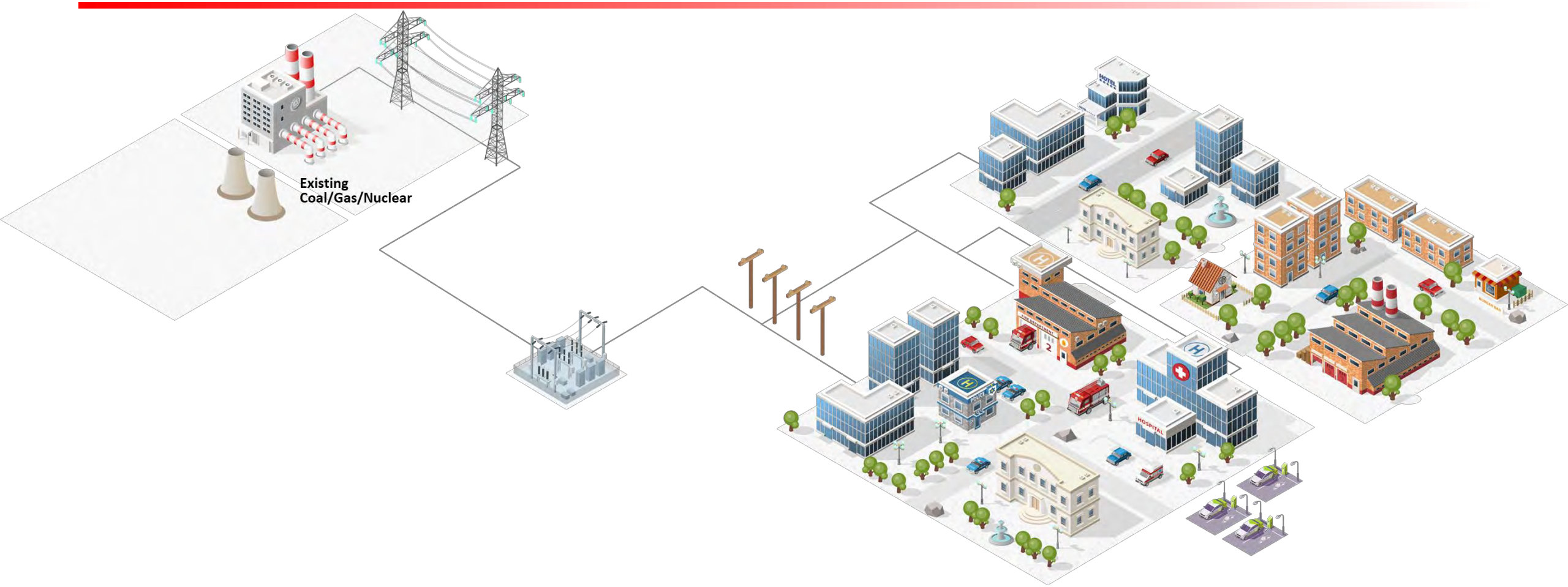
INTEGRATED GRID PLANNING

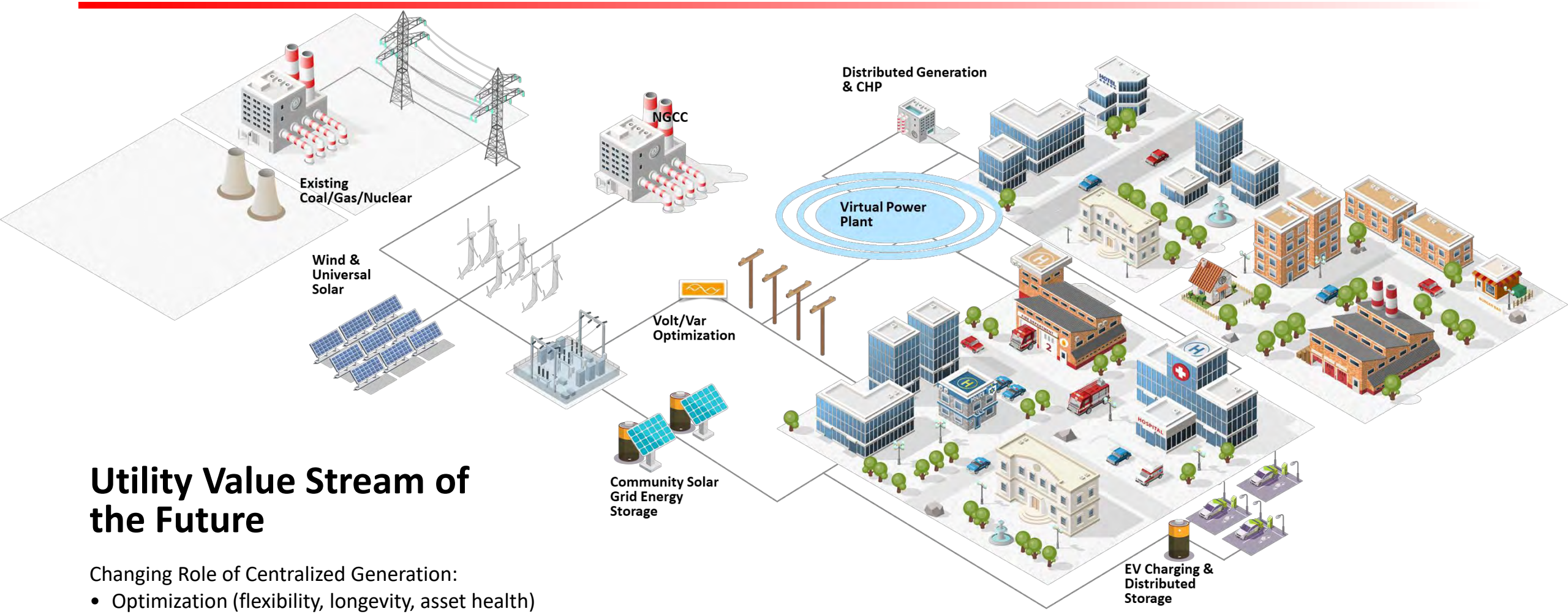
BOB BRADISH | SVP REGULATED INVESTMENT PLANNING

AMERICAN ELECTRIC POWER
BOUNDLESS ENERGY

Evolving Grid – Current State



Evolving Grid – Future State



Utility Value Stream of the Future

Changing Role of Centralized Generation:

- Optimization (flexibility, longevity, asset health)
- Innovation (analytics, technology, operations)
- “Glide Path” (extracting value over remaining life)

Grid Solutions – Regulated Investment Planning (G, T & D)

Organizational and Leadership Overview

Regulated Investment Planning (G, T & D)

Integrated Resource Planning & Analysis

Kelly Pearce, Managing Director

In collaboration with Operating Companies transform the regulated generation fleet to meet all goals -

- Continuing affordable and reliable service for our customers
- Lowering carbon and other emissions for a sustainable Future Forward

Results in greater value to customers and regulators and reducing risks to our business

Transmission Planning & Analysis

Kamran Ali, VP

- In collaboration with Operating Companies and RTOs develop 5-year Transmission plans to enhance customer experience and reliability
- Find integrated solutions to offset and reduce costs to our customers
- Prepare for a seamless grid of the future that will require enhanced alignment, collaboration, data governance, and analytics

Distribution Planning & Analysis

Carlos Casablanca, Managing Director

- In collaboration with Operating Companies develop 5-year Distribution plans to enhance customer experience and reliability across all regions
- Evolve our tools, processes, and standards to thrive in a world with dynamic distributed energy resources and increased electrification of transportation

Interconnection Services

Michele Bair, Director

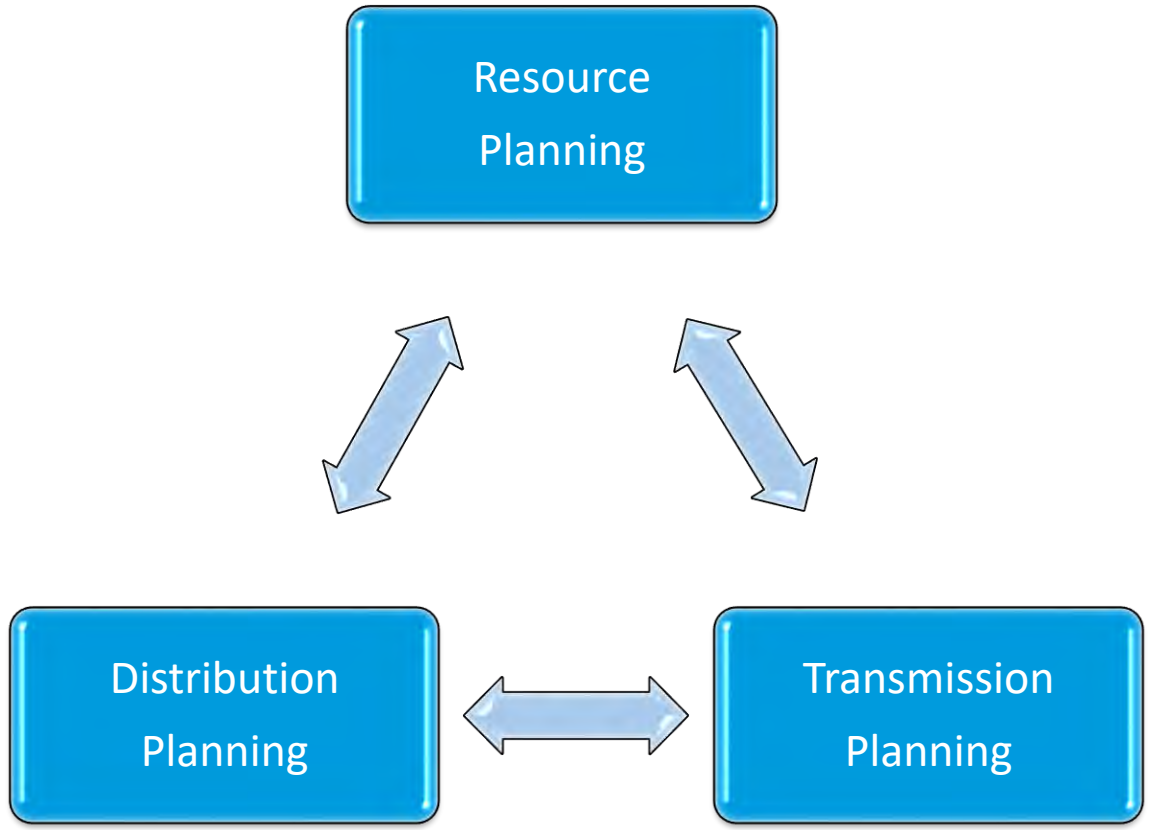
- Facilitate transmission facility interconnection services for interconnecting entities focusing on studies, agreements and performance

Regulated Investment Planning will plan AEP's regulated infrastructure programs across G, T, and D and work with Grid Solutions to commercialize new regulated solutions that best meet the needs of our customers

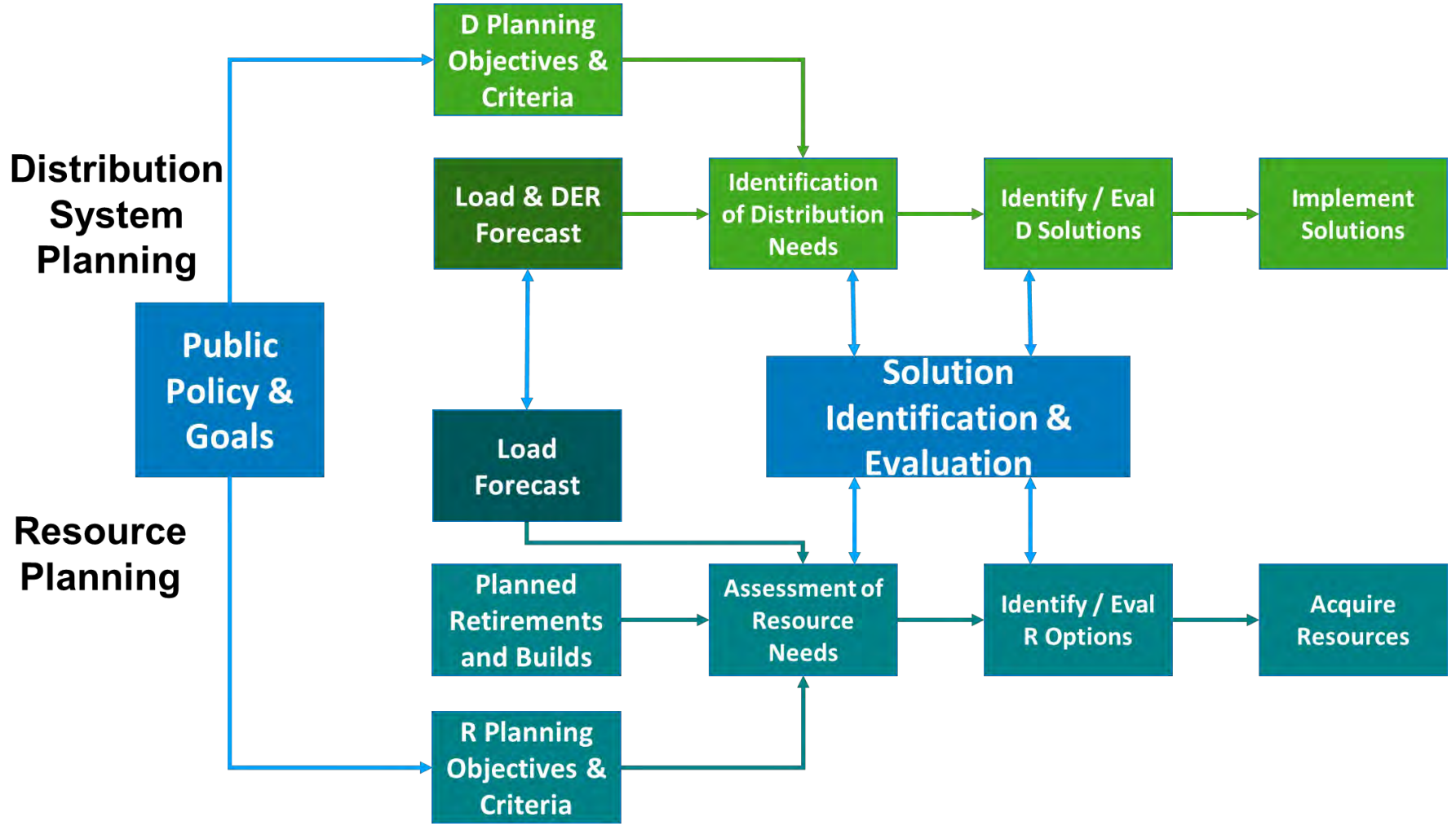
Aligning Planning within AEP

Planning alignment occurs by bringing the processes together

- Direction provided through consistent set of policy objectives
- Input assumptions driven from a common foundation
- Decisions informed through information exchange



Integration of Distribution & Resource Planning



Distribution Planning & Analysis

- Importance of Non-Wires Alternatives as we consider the future needs of the system
- Today we will review key data from our Market Potential Study that will inform our Resource and Distribution plan
- Evolve our tools, processes, and standards to thrive in a world with dynamic distributed energy resources and increased electrification of transportation
- Leverage new technologies, analytics, and automation as needed to deliver value for all stakeholders

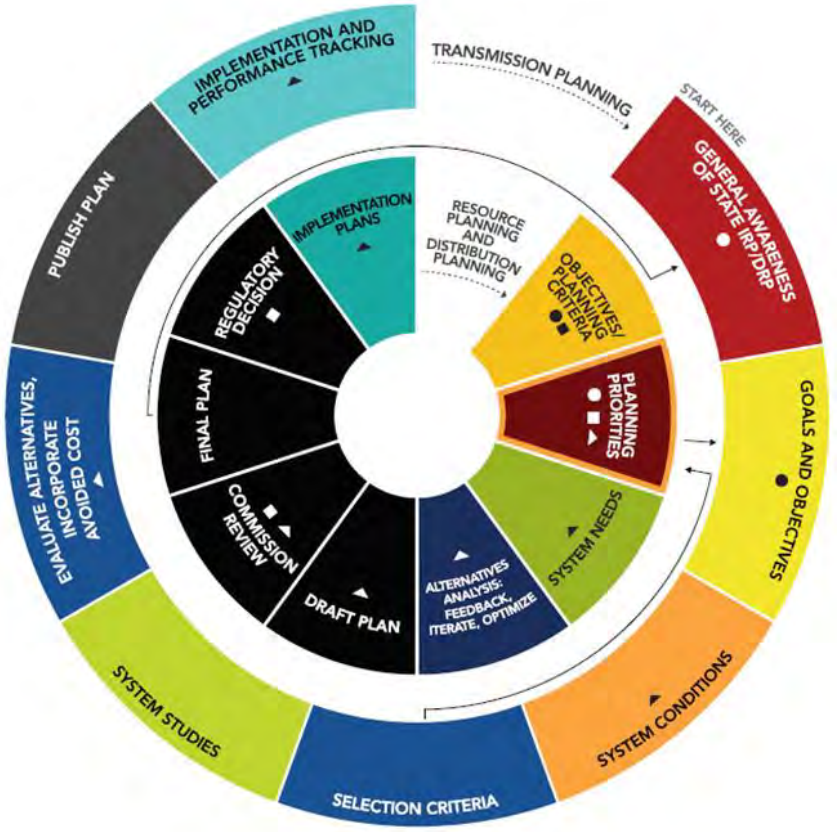
Transmission Planning & Analysis

- Importance of Non-Wires Alternatives as we consider the future needs of the system
- Current Activities:
  - Understanding and guiding Interconnection values and opportunities to be utilized in our Fundamental Commodity Forecast
  - Evaluating delivery potential for the Renewable RFP
- Evolve our tools, models, processes and standards to thrive in a world with dynamic system planning requirements
- Leverage new technologies, analytics, and automation as needed to deliver value for all stakeholders
- Coordination with RTOs

Regulated Investment Planning

Path Forward:

- Continue to work with EPRI and NARUC-NASEO on coordinated utility planning
- Reviewing recommendations from NARUC-NASEO task force, currently considering the Coral and Amber Cohort Roadmaps
- Evolve our tools, processes, and standards to thrive in a world with dynamic system planning requirements



Coral Cohort Roadmap — NARUC-NASEO Task Force on Comprehensive Electricity Planning | 19

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An AEP Company

MARKET POTENTIAL STUDY

JON WALTER | EE & CONSUMER PROGRAMS

I&M Market Potential Study for End-Use Resources

I&M's MPS will develop residential and C&I portfolios containing the following IRP resource models for each I&M jurisdiction (Indiana and Michigan):

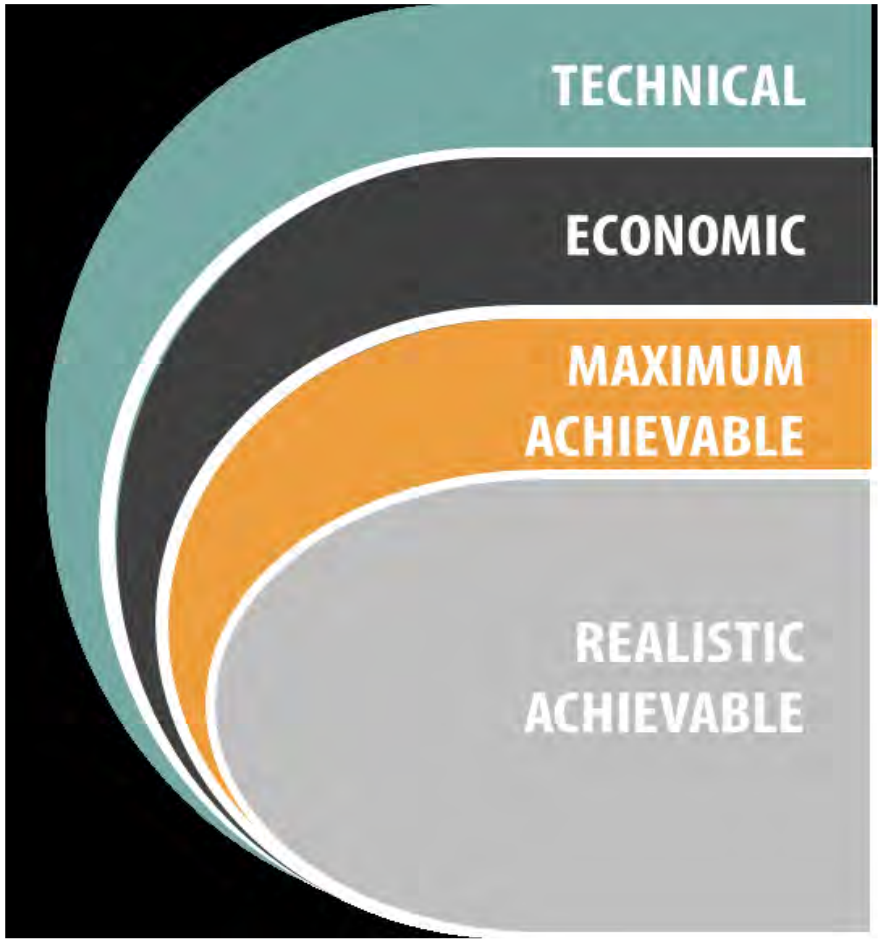
- Utility sponsored Energy Efficiency (EE) Program Potential
- Demand side Management (DSM) Program Potential
  - Demand Response
  - Direct Load Control
  - Tariff-based electricity pricing options potential
  - Customer owned Distributed Energy Resource (DER) Potential
- Automated Metering Infrastructure (AMI) Consumer Program Potential
- Conservation Voltage Reduction (CVR) Potential

I&M Market Potential Study for End-Use Resources

I&M has partnered with GDS & Associates for the development and characterization of consumer end-use resource “inputs” to the IRP.

The MPS will assess Technical, Economic, Maximum Achievable and Realistic Achievable Potential for all MPS resources studied.

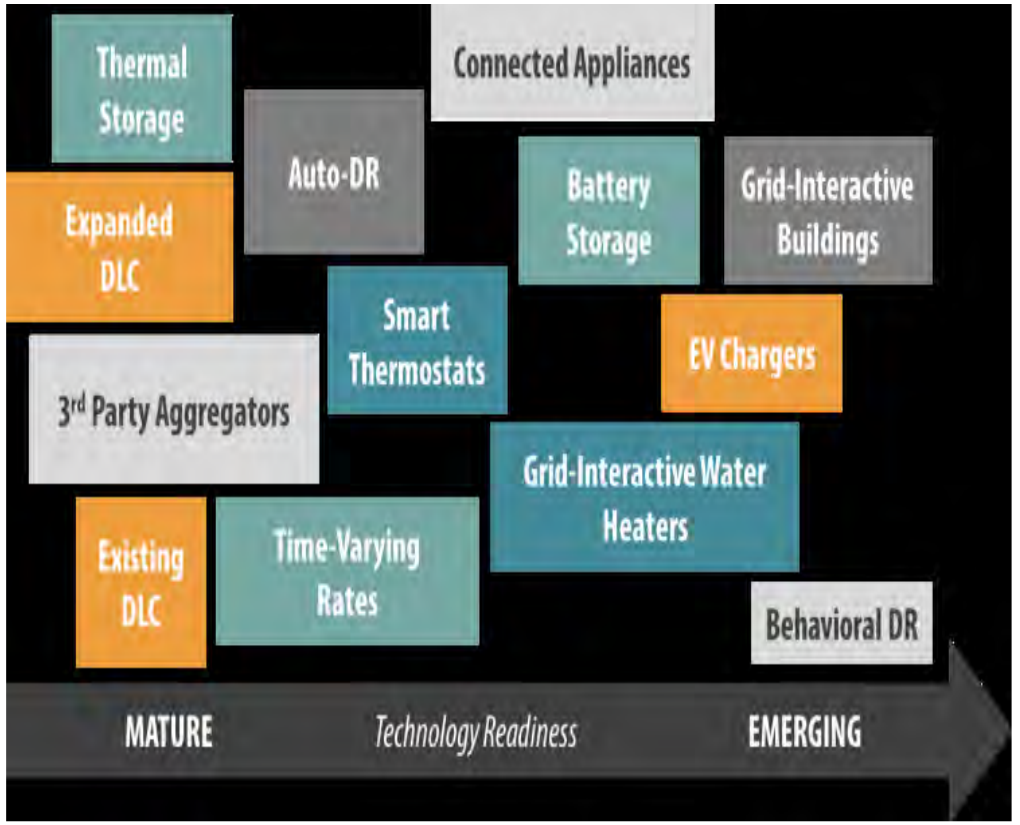
Generally, the MPS “outputs” of achievable potential will be used as IRP “inputs”.



I&M Market Potential Study for End-Use Resources

As an example, demand response (DR) will be assessed for potential using the following:

- System impacts (e.g. generation, transmission, and distribution savings)
- Saturation/applicability
- Effective useful life (EUL)
- Participant Costs (Equipment and Labor)
- Participant Incentives (e.g. per device, per kW, per year)
- Utility Costs (Equipment and Labor)
- Savings (e.g. per device, per premise)
- Program Costs (e.g. development, administration, marketing, consulting, evaluation)



I&M Market Potential Study for End-Use Resources

The MPS is well underway and is in the potential development phase, with (3) stakeholder engagement meetings held to-date.

Current Stage:

MPS Task 5 Deliverables: Fully transparent Excel models demonstrating technical, economic, and achievable potentials by sector.

Final MPS Deliverable for all resources studied:

Task 15: Produce 8,760 hourly inputs that reflect time-differentiated savings for the input into the IRP.

INTRODUCTION TO THE GDS TEAM

GDS will serve as the prime contractor for these studies. GDS is a privately-held multi-service engineering and consulting firm, with more than 175 employees. Our broad range of expertise focuses on clients associated with, or affected by electric, natural gas, water and wastewater utilities. GDS has completed over 75 energy efficiency and demand response potential studies over the last two decades. GDS also has significant experience in: Statistical & Market Research Services, Integrated Resource Planning, Load Forecasting Services, and Regulatory Support Services.

JEFFREY HUBER
Overall Project Manager
GDS Associates

PATRICK BURNS
Brightline Group Lead & Regulatory Compliance/IRP Support
Brightline Group

Woman-owned collective of industry experts in DSM program planning and evaluation, with over 60 years of combined experience in the energy efficiency and engineering industry. Members of the Brightline Group has previously worked for GDS on Ameren Missouri, California POU, and Pennsylvania PUC evaluation and market research projects.

JACOB THOMAS
Load Forecast & Segmentation Lead
GDS Associates

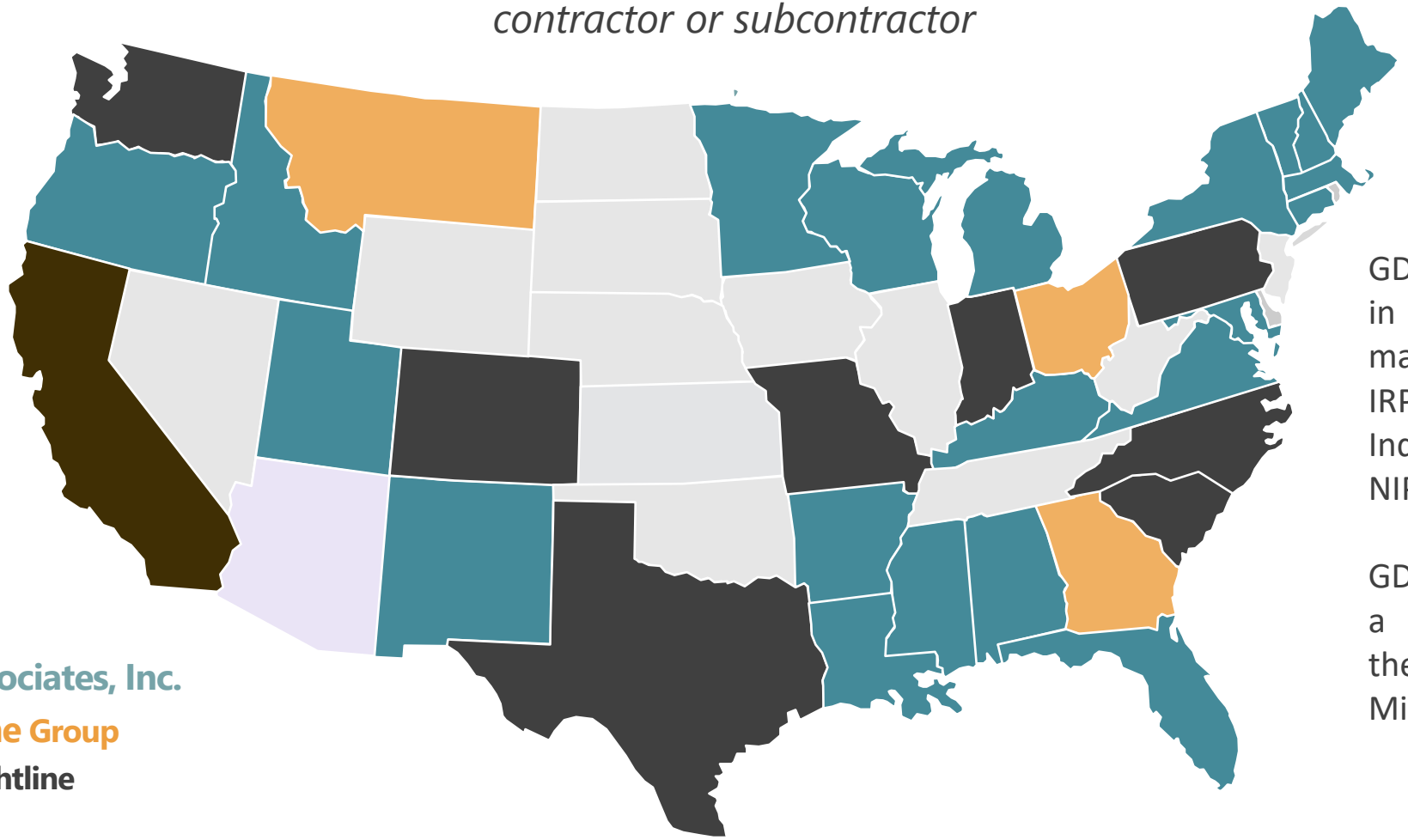
WARREN HIRONS
Residential Sector EE & Reporting Lead
GDS Associates

MARY HALL-JOHNSON
Demand Response/ CVR Lead
Brightline Group

WYLEY HODGSON
Distributed Energy Resources Lead
Brightline Group

PRIOR POTENTIAL STUDY EXPERIENCE

GDS Team members have completed over 85 potential studies completed as either the prime contractor or subcontractor



GDS Associates, Inc.

Brightline Group

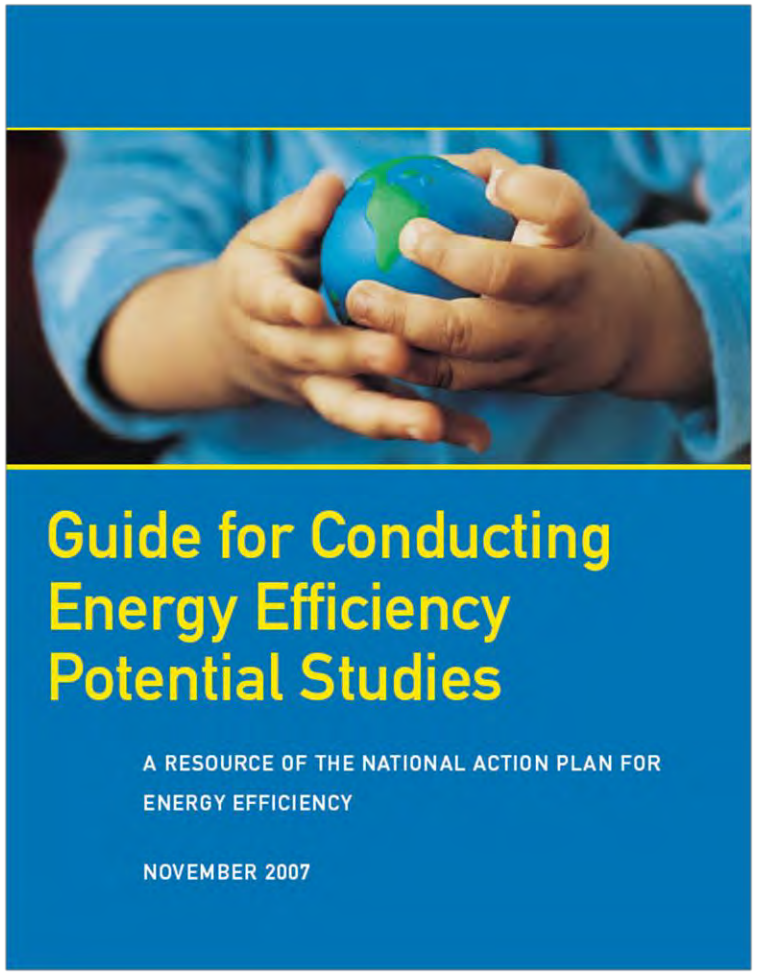
GDS/Brightline

GDS has recently completed or in the process of completing market potential studies and IRP support for Centerpoint, Indianapolis Power & Light, and NIPSCO.

GDS also previously completed a market potential study for the Lower Peninsula in Michigan.

WHAT IS A MARKET POTENTIAL STUDY (MPS)?

Simply put, a potential study is a quantitative analysis of the amount of energy savings that either exists, is cost-effective, or could be realized through the implementation of energy efficiency programs and policies.



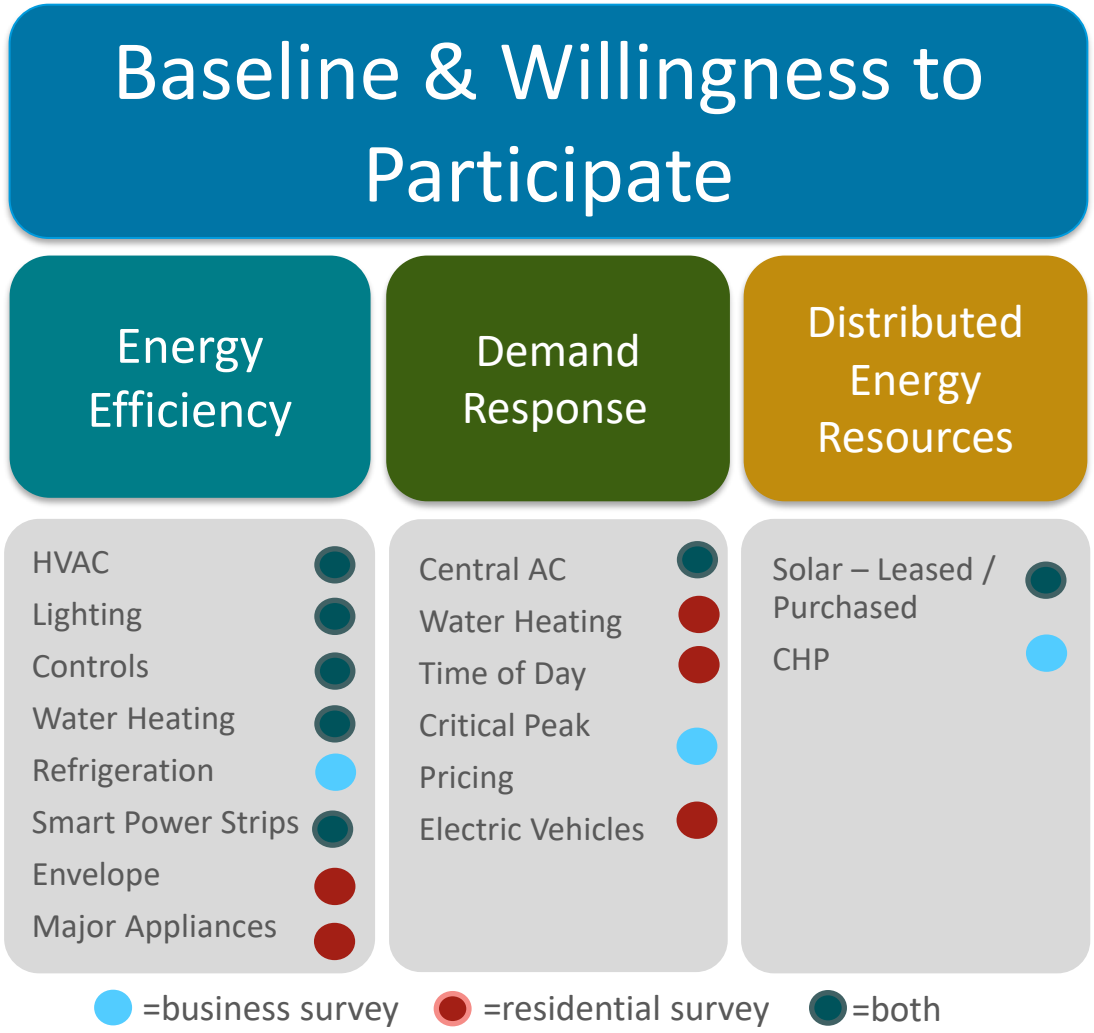
I&M MARKET POTENTIAL STUDY TASKS

I&M MARKET POTENTIAL STUDY KEY CONSIDERATIONS

- The assessments of potential for I&M's separate jurisdictions will be customized and tailor-made to each jurisdiction to the extent possible, though the study will culminate in an overall assessment for I&M that will yield results which can be used in subsequent IRP planning.

- Key differentiating factors across the jurisdictions are expected to include:
  - Unique measure-level savings assumptions as applicable (i.e. weather-sensitive savings estimates)
  - Unique measure-level saturation estimates
  - Incorporation of jurisdictionally separate sales and customer forecasts
  - Recognition of any state-specific regulatory requirements or other Stakeholder concerns

MARKET RESEARCH PERFORMED FOR MPS



Purpose: Assemble baseline data and information to inform technology adoption curves.

Topics:

- Willingness to participate
- Baseline / Saturation data
- Program awareness
- Barriers
- Limited demographic / firmographic information

Audiences:

- Business customers
- Residential customers
- Residential rental property owners / managers

Format: Web survey with recruitment via email.

Timing: Surveys fielded January 26 – February 19

EQUIPMENT CHARACTERISTICS FROM MARKET RESEARCH
(Draft Results)

- Data collection elements limited to items that may be answered accurately
- Nonresidential survey focused on key electric end-uses
  - Ex: Lighting, Cooling, Heating, Ventilation, Water Heating, Refrigeration
  - Key Equipment Penetration
  - Limited Efficiency Saturation Characteristics
- Residential survey collected limited saturation characteristics as well, but most saturation data will come from the most recent Residential Appliance Saturation Survey (RASS)

NONRESIDENTIAL EQUIPMENT CHARACTERISTICS	TOTAL	IN	MI
% of Lighting			
LED Linear	23%	22%	26%
LED Nonlinear	17%	15%	22%
Linear Fluorescent	38%	40%	31%
Incandescent/Halogen	10%	10%	10%
CFL	6%	5%	6%
HID	4%	4%	4%
Lighting Controls (% of all lighting)			
Occupancy Sensors	15%	16%	15%
Daylight Dimming	5%	5%	7%
Timing Controls	11%	11%	10%
Advanced Networked Controls	4%	2%	7%
Exterior Lighting			
LED (% of all Mounted Lighting)	45%	46%	42%
LED (% of all Site Lighting)	40%	41%	40%

RESIDENTIAL WILLINGNESS TO PARTICIPATE (WTP) DATA
(Draft Results)

- Residential WTP Survey Data is used to help estimate the long-term adoption rates that might be expected across various end-uses and technologies.
- Residential consumers were asked about their likelihood to purchase and install measures given a range of incentive scenarios.
- Awareness Adjustment is also applied to reflect non-financial barrier to participation. Based on JD Power survey research, awareness adjustment is estimated at 74%. *(i.e. WTP Factor * Awareness Adjustment = Long Term Adoption Rate)*

EE/EWR/DER End-Use /Technology	Incentive Level				
	0%	25%	50%	75%	100%
Appliances	19%	27%	41%	56%	73%
Water Heating	20%	30%	43%	56%	75%
HVAC Equipment	32%	42%	55%	67%	81%
HVAC Shell					
Solar Panels	6%	14%	28%	45%	72%
Electric Vehicles	5%	12%	24%	36%	56%

Demand Response – Load Control	Incentive Level				
	$0	$15	$25	$35	$50
DR- Central AC	25%	35%	40%	44%	57%
DR- WH	17%	24%	28%	33%	44%

Demand Response – Rate Option	Off Peak Rate ($/kWh)			
	$0.08	$0.06	$0.04	$0.03
Time of Use Rate	26%	31%	40%	49%

NONRESIDENTIAL WILLINGNESS TO PARTICIPATE (WTP) DATA
(Draft Results)

- Similar WTP questions were also posed to nonresidential survey participants to understand their likelihood to purchase and intall energy efficiency equipment and/or DER technologies, as well as participate in demand response programs.
- For nonresidential participants, WTP were typically structured to around measure payback periods in lieu of overall incentive levels.

EE/EWR/DER End-Use /Technology	Payback Period				
	10 yrs	5 yrs	3 yrs	1 yrs	0 yrs
HVAC	43%	53%	62%	70%	76%
Lighting	34%	41%	49%	58%	64%
Refrigeration	46%	56%	67%	48%	83%
Water Heating	40%	49%	57%	68%	73%
Purchased Solar	n/a	37%	50%	65%	71%

DER	Incentive Level				
	$0	MIN	LOW	HIGH	MAX
Leased Solar	16%	24%	33%	42%	49%

Demand Response – Load Control	Incentive Level				
	$0	$15	$25	$35	$50
Leased Solar	29%	33%	37%	40%	46%

Demand Response – Rate Option	On Peak 5X Higher, but Off Peak Rate (% Lower)			
	5%	10%	20%	40%
Critical Peak Pricing	25%	31%	42%	55%

MARKET SEGMENTATION

- Market segmentation is conducted to better understand the make-up of the I&M service area and quantify remaining efficiency opportunities for future programs.
- Market segmentation relies on data underlying I&Ms load forecast and other supporting market data

- ***Residential market segmentation includes analysis by:***
  - Housing Type
  - Income Type
  - End Use
- ***Nonresidential market segmentation includes analysis by:***
  - Building/Industry Type
  - End Use

Residential Segmentation

Housing Type	Indiana	Michigan
Single Family (SF)	84.5%	94.2%
Multifamily (MF)	15.5%	5.8%

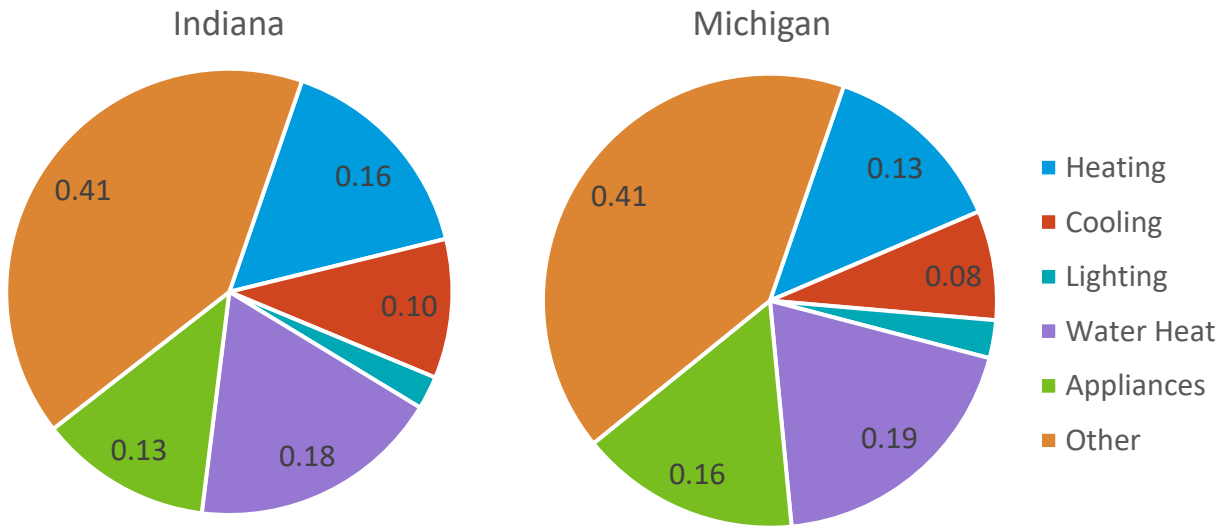
** From I&M Residential Appliance Saturation Survey*

Housing/Income Type	Indiana	Michigan
SF IQ	20.9%	23.8%
SF MR	63.6%	70.4%
MF IQ	7.7%	3.1%
MF MR	7.8%	2.7%

IQ: Income Qualified
MR: Market Rate

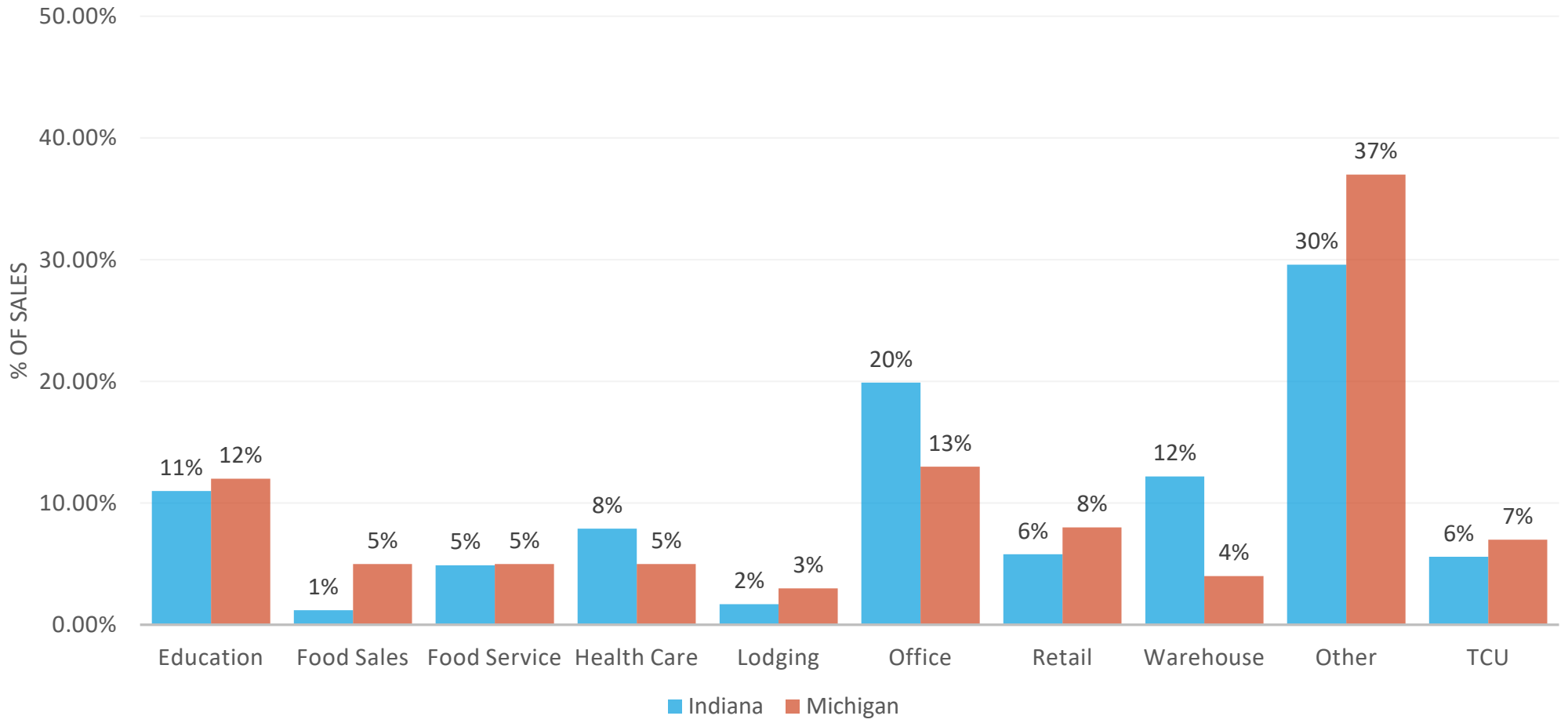
** 2019 5-YR American Community Survey + I&M RASS*

2041 Sales Breakdown by End-Use
(primarily derived from I&M long-term sales forecast data)



COMMERCIAL SECTOR SEGMENTATION

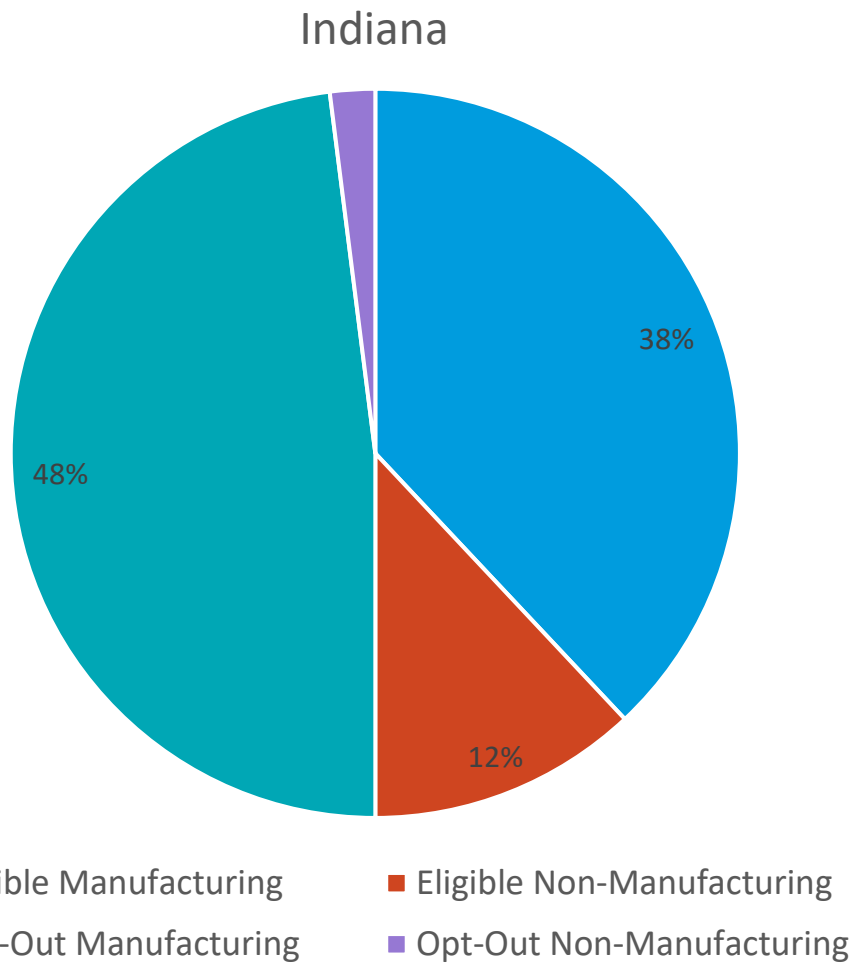
(Percent of Commercial Sales by Building Type)

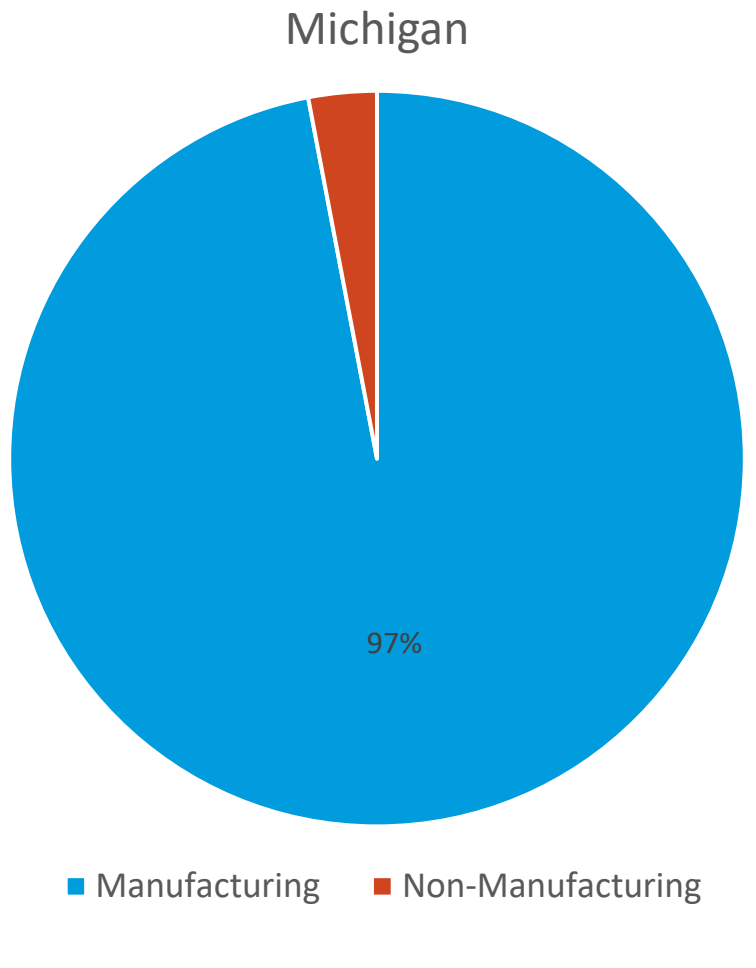


** Commercial segmentation for Indiana excludes current opt-out customers*

INDUSTRIAL MARKET SEGMENTATION

(Percent of Industrial Manuf. Vs. Non-Manuf. Sales)

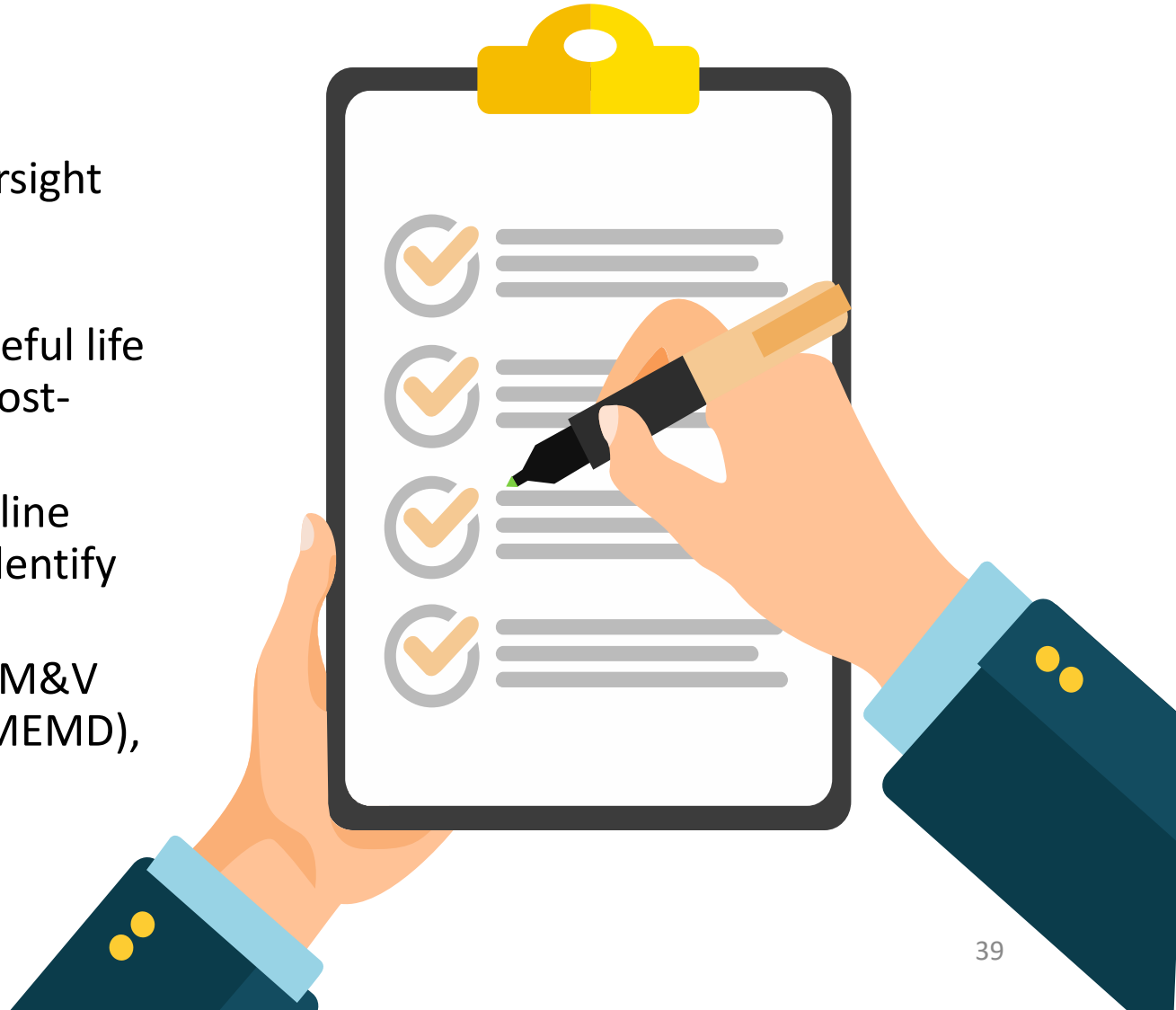




** Eligible refers to industrial load that currently is eligible to participate in I&M's energy efficiency programs*

MEASURE CHARACTERIZATION

- 264 EE/EWR measures will be considered (91 residential, 173 C/I)
- Draft list was shared with I&M, the Indiana Oversight Board, and MPSC Staff
- Key measure data inputs: kWh and savings, incremental and full cost estimates, measure useful life – all of these data will allow for measure-level cost-effectiveness and potential to be calculated
- Measure market data inputs: estimates of baseline saturation and energy efficiency saturation to identify remaining opportunities
- Key data sources: I&M DSM/EWR Filings, I&M EM&V reports, Michigan Energy Measures Database (MEMD), Illinois TRM, and Indiana TRM, market research baseline / saturation data



BENCHMARKING DATA AND RESULTS

Residential	Incentive as a % of Incremental Measure Cost	
	IN	MI
HEP		
Hot Water	31%	31%
HVAC Equipment	29%	28%
Lighting	57%	60%
Other	25%	25%
IQW		
Direct Install	100%	100%
Hot Water	64%	64%
HVAC Equipment	93%	93%

C&I	Incentive as a % of Incremental Measure Cost	
	IN	MI
Prescriptive		
Cooking	31%	31%
HVAC Equipment	11%	11%
Lighting	36%	45%
Other	27%	27%
Refrigeration	25%	25%
VFDs	39%	39%
Custom		
Lighting	$.07/kWh	$.07/kWh
Non-Lighting	$.08/kWh	$.08/kWh

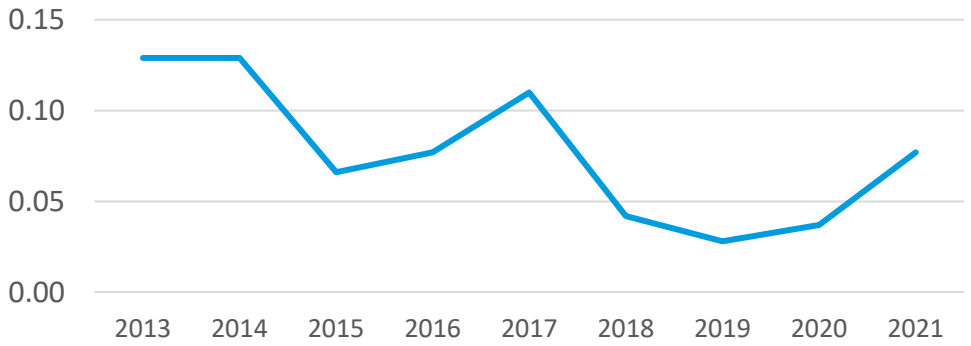
- Initial benchmarking of historical data to understand typical incentive levels offered by I&M as well as historical non-incentive costs.
- Additional benchmarking to understand historical performance (energy and costs) by program for near-term calibration

- ***Final benchmarking*** *will be performed to understand results in relation to other similar studies*

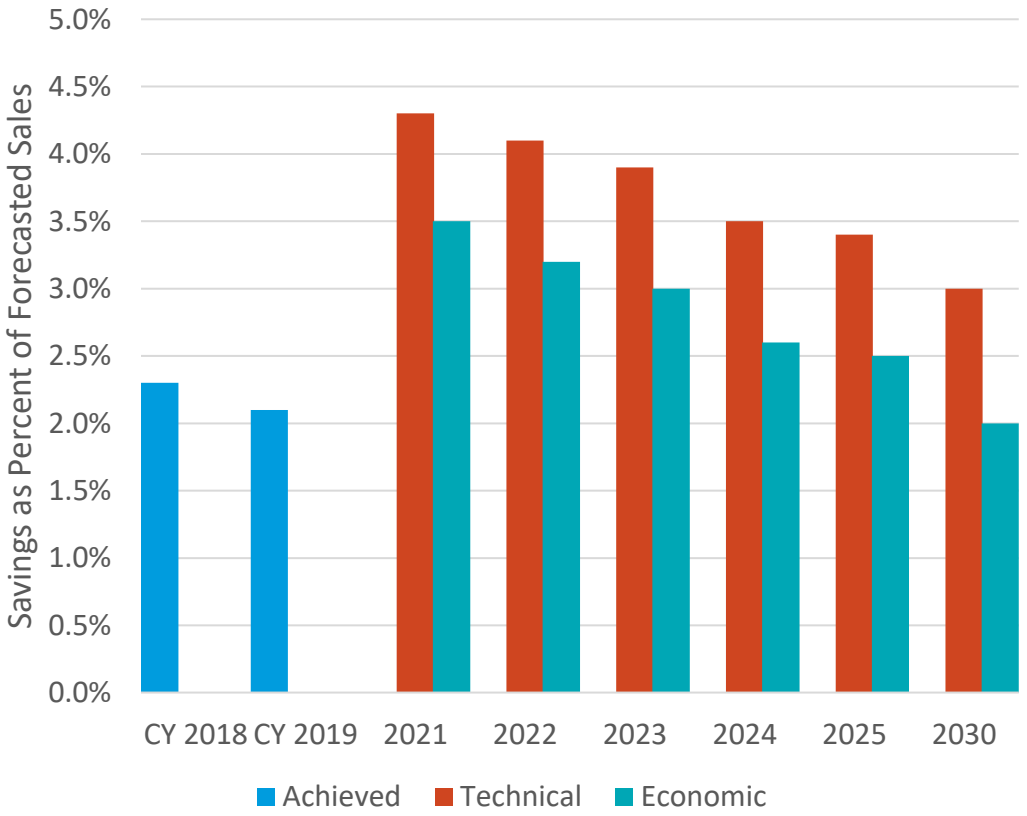
RESULTS BENCHMARKING & TRENDS

- Comparison to other recent market potential study assessments will help understand recent trends.
- Perceptions around the market baseline for lighting can influence the remaining future potential in both the residential and nonresidential sectors.

Average Annual Potential Savings Rate – Economic Potential

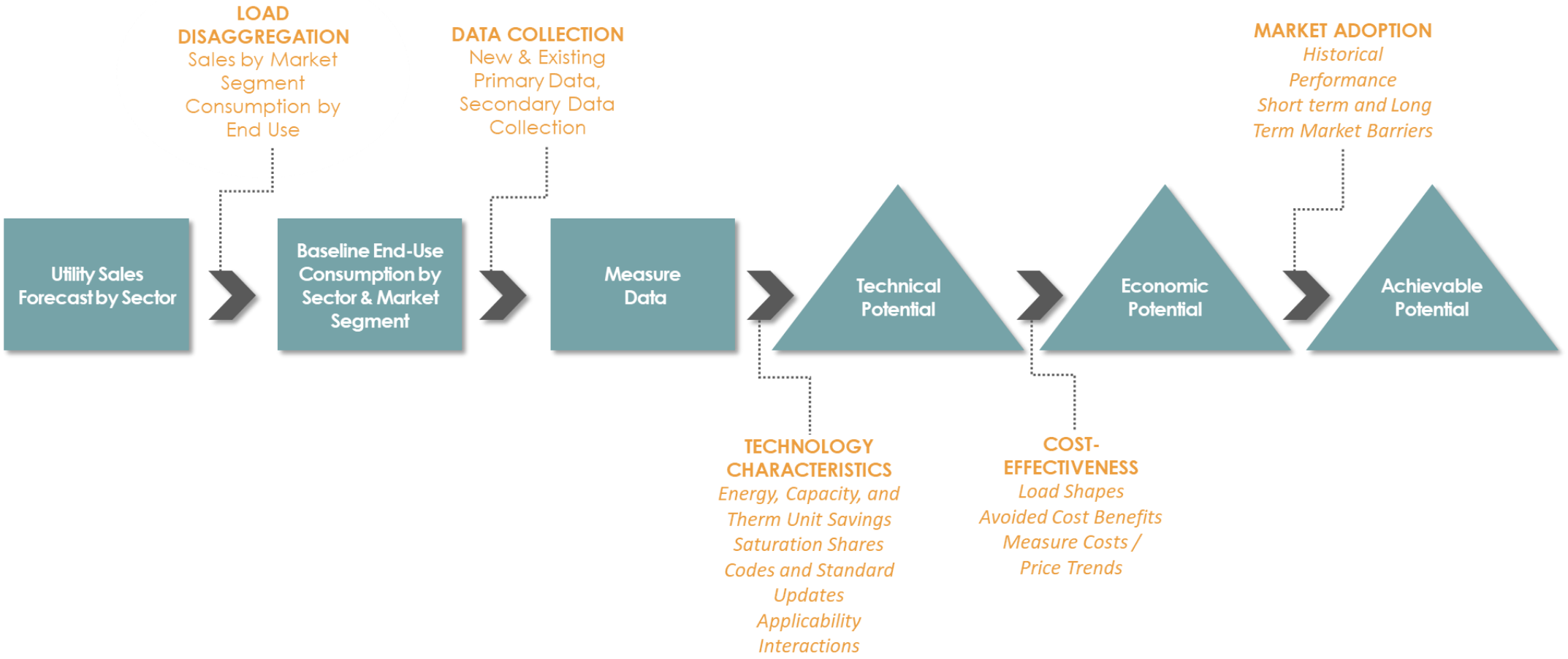


** Data from DOE EE Potential Studies Catalog*



** Reproduced from 2020 ComEd Potential Study*

ENERGY EFFICIENCY POTENTIAL



ENERGY EFFICIENCY POTENTIAL

TECHNICAL POTENTIAL

All technically feasible measures are incorporated to provide a theoretical maximum potential.

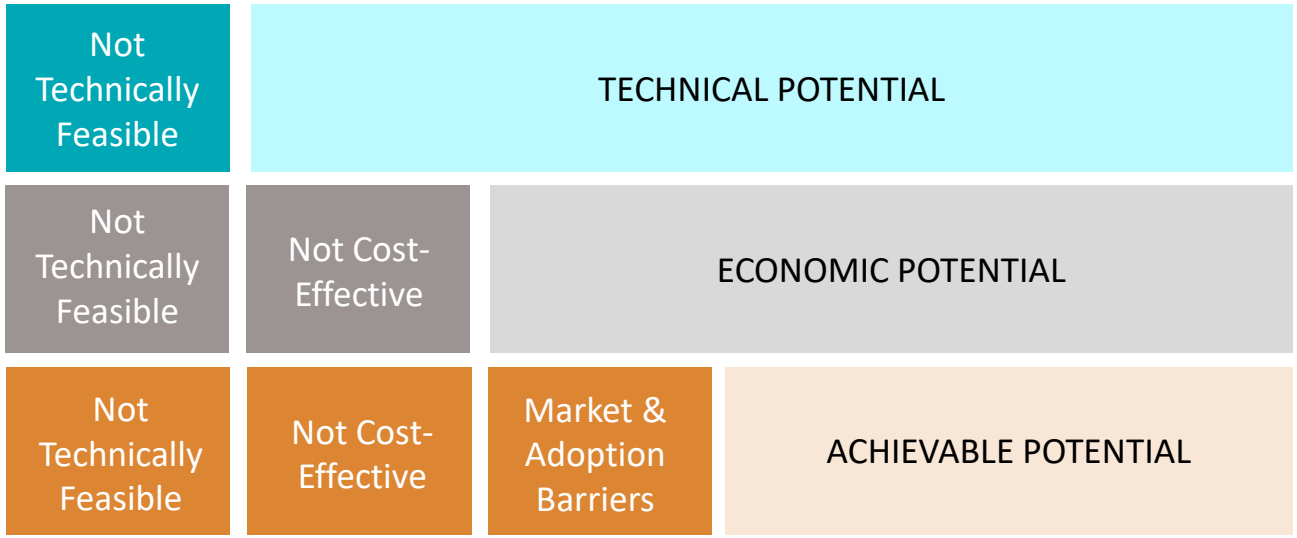
ECONOMIC POTENTIAL

All measures are screened for cost-effectiveness using the UCT Test. Only cost-effective measures are included. Screening includes avoided energy, capacity, and T&D costs.

ACHIEVABLE POTENTIAL

Cost-effective energy efficiency potential that can practically be attained in a real-world program delivery case, assuming that a certain level of market penetration can be attained.

Types of Energy Efficiency Potential



ENERGY EFFICIENCY POTENTIAL

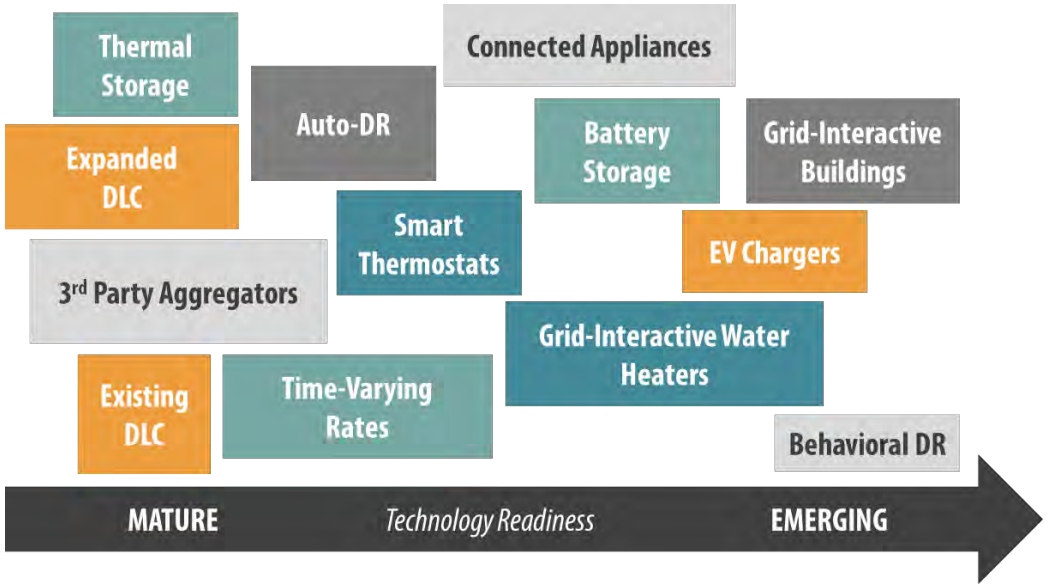
RESIDENTIAL EQUATION

- Technical and Economic Potential utilize the equation shown above, with 100% of eligible measures being converted to the efficient alternative over time.
- Achievable potential includes an assumed long-term adoption rate (derived the WTP primary research noted earlier)

- Two Achievable Potential Scenarios:
  1. High Case Achievable Potential: Assumes 75% incentives (relative to measure cost) and increased program awareness.
  2. Realistic Achievable Potential: will reflect more traditional (i.e., current) incentive levels and program delivery efforts.

DEMAND RESPONSE POTENTIAL

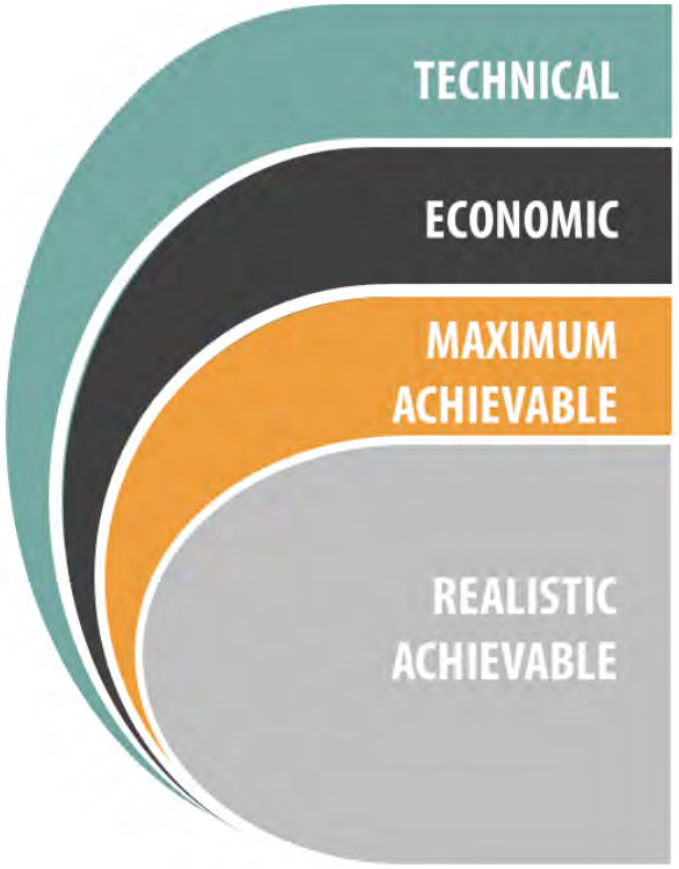
- Characterize Available Technologies
  - Assess and screen load shifting options for IM's territory and customer base
  - Measure List:
    - 37 Sector/Technology Permutations



  - 20 performance and cost metrics researched for each permutation

DEMAND RESPONSE POTENTIAL

- Technical Potential
  - Characterize potential using:
    1. IM current, past, pilot offering results
    2. Other PJM utility offerings
    3. Non-PJM utility offerings aligned to PJM peak definition
  - Measure competition
    - Participation weighted to most impactful option



DISTRIBUTED ENERGY RESOURCES (DER) POTENTIAL

- Study focuses on solar PV and combined heat & power (CHP)
- Measures screened at permutation-level based on TRC
- Sectors modeled include:
  - Solar PV: residential and non-residential
  - CHP: non-residential
- Market adoption based on Bass diffusion theory

DISTRIBUTED ENERGY RESOURCES (DER) POTENTIAL

Solar PV

- Potential area suitable for solar PV
  - Primarily focuses on rooftops but also considers ground systems
  - Rooftop eligible area based on NREL criteria
    - Net of existing systems
- Define solar generation
  - Model using PVWatts
  - Region-specific azimuth based on Google Project Sunroof data
  - System efficiencies based on PVWatts

Combined Heat & Power

- Potential number of available host sites
  - Based on customer electric usage
  - Without natural gas usage data, thermal factor applied to identify eligible sites
    - Screen sites for consistency in thermal and electric loads
    - Net of existing systems
- CHP generation
  - Electricity impacts modeled using system parameters and benchmarked capacity factors

DISTRIBUTED ENERGY RESOURCES (DER) POTENTIAL

Solar PV

- Economic screening based on TRC
  - 1.0 hurdle
  - Costs based on system installation fees inclusive of ITC
    - Cost research based on Solar Sage and NREL studies
- Achievable derived from Bass adoption curves
  - Curves based on market research data as well as NREL adoption research

Combined Heat & Power

- Economic screening based on TRC
  - 1.0 hurdle
  - Costs based on EPA studies
    - ITC cost savings included but are minimal
- Achievable derived from Bass adoption curves
  - Curves based on historic adoption benchmarks

PROGRAM PORTFOLIO RECOMMENDATIONS

- **Purpose**: Convert achievable potential results (measure-level) into a format that reflects program implementation-related considerations (e.g., potential delivery options, and alignment with I&M's program framework) and can serve as inputs to the IRP modeling process.
- **Process**:

Map Measures to Potential Programs & Delivery Channels

- Further characterize measures, adding implementation-related characteristics (e.g., costs of alternative delivery channels).
- Consider potential new program offerings to address market needs.
- Align with existing program structure / framework.

Create Delivery Streams / Measure Bundles to Interface with IRP Model

- Group measures by end use, program, delivery channel / cost characteristics.
- Seek to group measures in a way that aligns with I&M's program framework and would not undermine program infrastructure if "turned off."

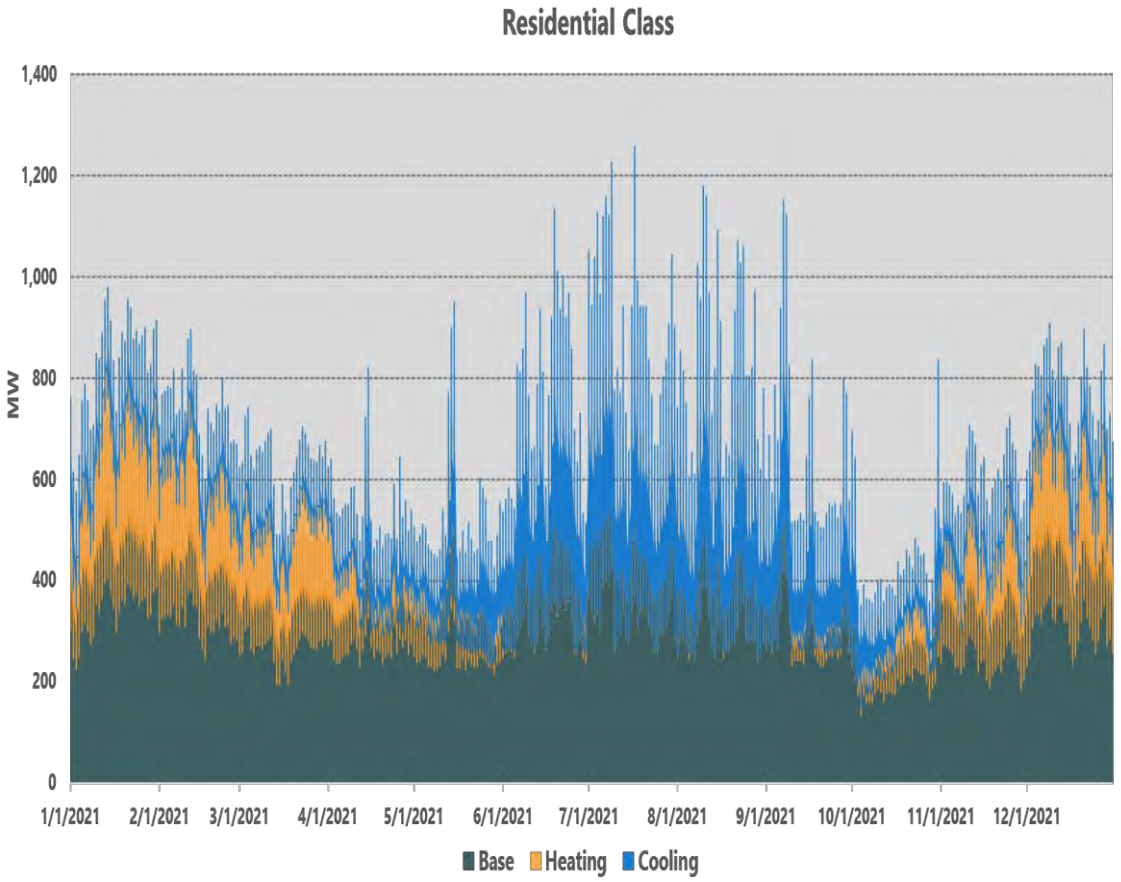
Recommend a Portfolio of Programs for Consideration

- Recommend a cost-effective portfolio that includes measure groupings addressing the range of market needs, and evolving market conditions.
- Optimizing a portfolio is outside the scope.

DSM INPUTS FOR IRP

- DSM Savings identified in MPS (beginning in 2023) will be aggregated for inclusion in the IRP both by vintage (years) as well as measure characteristics
- Vintage groups will be for 2023-2025, 2026-2028, and 2029-2040. 3-year vintage cycles were chosen to algin with current I&M planning cycles.*
- Measure characteristic grouping may include: cost-based, load shape-based, or value based (see next slide)
- Recognizing potential value in time-differentiated savings, GDS will breakout the annual DSM savings into hourly (8760) impacts, typically at the end-use level.
  - Total number of 8760 load shapes is TBD.

*** In accordance with I&M's DSM Plan Order (#45285), I&M will utilize the results of the MPS to examine the potential and estimated cost of additional reasonably achievable potential in 2021 and 2022.*



***Example 8760 load data for I&M.*

DSM INPUTS FOR IRP – "EE BUNDLING"

(Discussion will be continued later in slide deck)

VALUE BASED APPROACH

Bundles in which the avoided cost values are similar (e.g. a bundle of programs designed to reduce summer peak demands might be one bundle)

- PROS: Provides analysis and selection based on value creation; Will likely result in similar bundles as the "load curve" bundle approach ; Provides more detailed analysis of timing of DSM measures and how that relates to avoided costs
- CONS: The tie between load curve, timing of costs, and DSM measures is looser than the load curve approach

LOAD-SHAPE BASED APPROACH

Bundles in which the manner in which the program impacts the load curve are grouped together (e.g., all programs with primary effectiveness during summer on-peak periods bundled together)

- PROS: Provides analysis and selection based on details of load curves ; Programs within a bundle will likely have similar avoided cost characteristics ; Mimics how a generation resource would be included in a model (base DSM bundles would be effective nearly all the time just as a baseload resource runs nearly all the time)
- CONS: May create many different bundles to most effectively achieve the granularity sought by such an approach

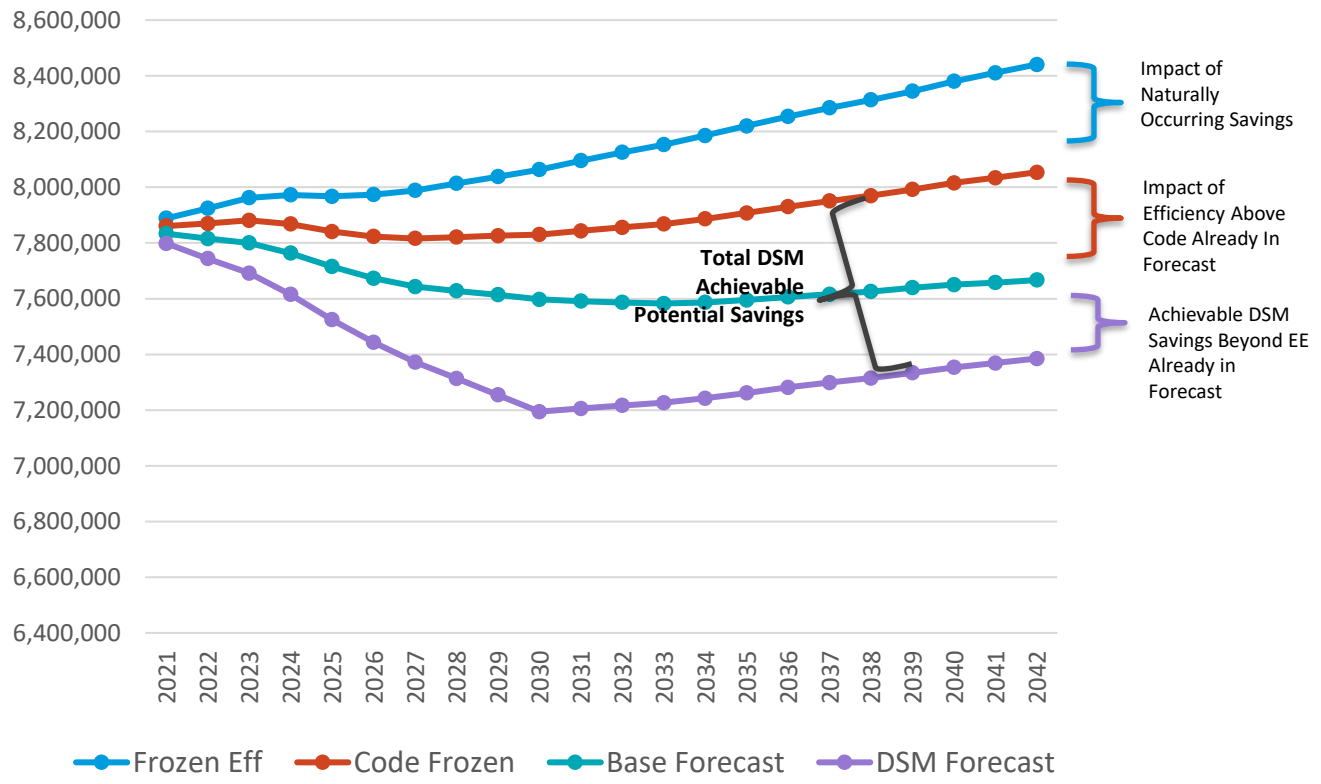
COST-BASED APPROACH

Bundles based lowest cost to highest cost measures (may be on a $/kWh basis)

- PROS: Bundles can be created to likely lead to acceptance of most cost-effective bundles ; Allow for greater differentiation in cost effectiveness relative to single bundle approach ; Easy to define a certain number of bundles
- CONS: No granularity with respect to load curve and timing of costs (on/off peak energy and timing of peak demands) ; Risk of model selecting some bundles that are less cost effective than other bundles that are rejected and having to explain why that happened

DSM INPUTS FOR IRP – SUPPLEMENTAL EFFICIENCY ADJUSTMENT

- DSM Savings are typically quantified relative to federal code versus the market baseline
- I&M's base forecast has an assumed level of increased efficiency (above and beyond federal codes) over time, resulting in average equipment well above current known standards/codes.
  - Ex: the average equipment efficiency of central air conditioning approaches SEER 15 in the East North Central region over the 20-year forecast horizon.
- GDS intends to estimate efficiency impacts first relative to a "frozen code efficiency" forecast and coordinate with I&M to adjust for EE savings already recognized in the base case forecast.



FEEDBACK AND DISCUSSION

An AEP Company

Time	
9:30 a.m.	WELCOME
9:35 a.m.	MEETING GUIDELINES
9:40 a.m.	OPENING REMARKS
9:50 a.m.	GRID SOLUTIONS INTRODUCTION
10:20 a.m.	MARKET POTENTIAL STUDY
12:00 p.m.	LUNCH
1:00 p.m.	IMPACTS ON LOAD FORECAST
1:30 p.m.	PRELIMINARY APPROACH FOR IRP
2:00 p.m.	BREAK
2:30 p.m.	STAKEHOLDER ENGAGEMENT
2:45 p.m.	STAKEHOLDER PRESENTATION
3:00 p.m.	NEXT STEPS AND CLOSING REMARKS
3:30 p.m.	ADJOURN

LUNCH

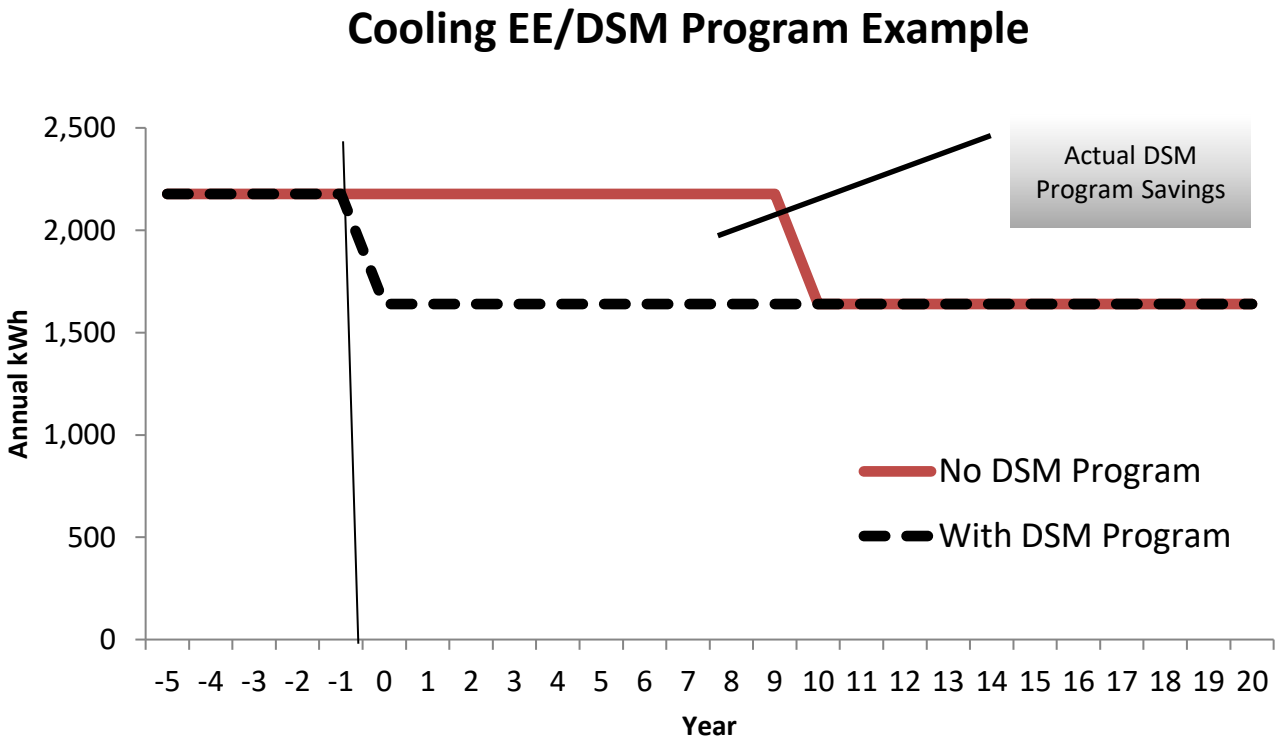
PLEASE PLAN A RETURN BY 1:00PM EST

IMPACTS ON LOAD FORECASTING

CHAD BURNETT | LOAD FORECASTS

Accounting for DSM/EWR in Load Forecast

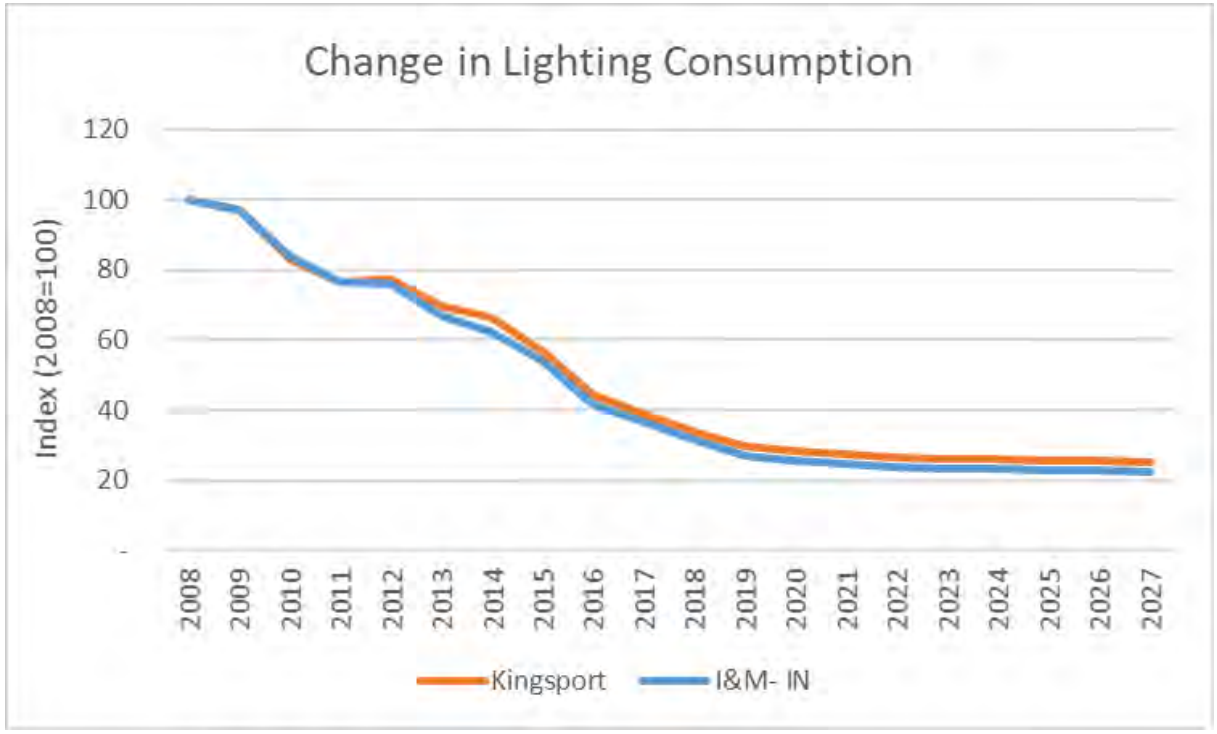
The purpose or effect of the Company's DSM/EE programs is to accelerate the adoption of energy efficient technology to enable our customers to be more efficient consumers of energy.

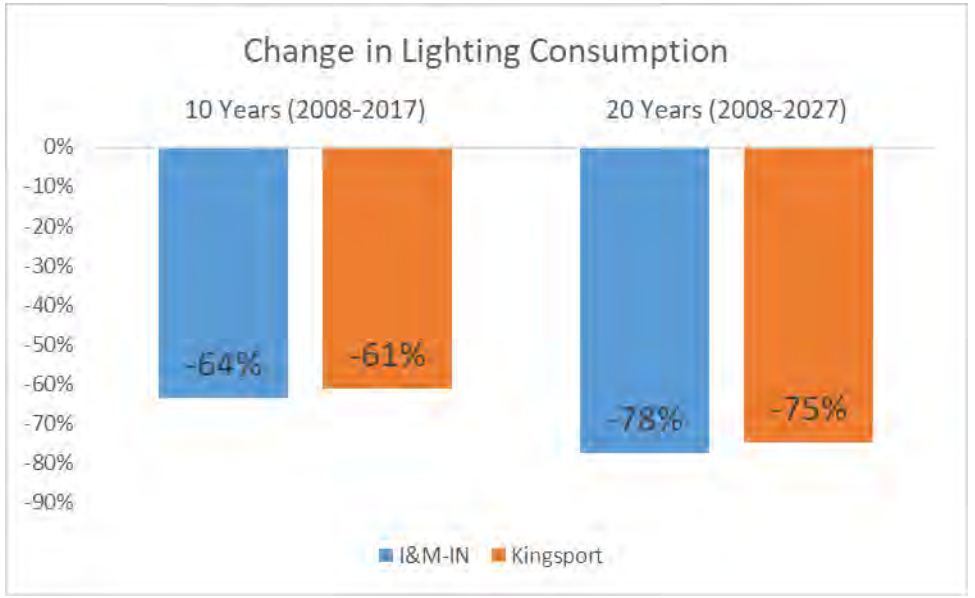


Example: The J Doe family replaced their HVAC system 5 years ago with a SEER 13 system. Since then, the industry has introduced more efficient (SEER 15) units. 10 years from now, J. Doe will have to replace the system with whatever is available in the market at that time (SEER 15). Today, the utility offers an incentive to help J. Doe replace his HVAC system now with a SEER 15 and begin saving energy immediately.

Residential Lighting Example

- I&M started its DSM programs in IN in 2008 with a particular emphasis on lighting programs.
- Kingsport (I&M's affiliate in TN) has yet to implement a DSM program.
- I&M's DSM programs in IN accelerated the adoption of energy efficient lighting faster than Kingsport, where there were no utility sponsored energy efficiency programs.





TRANSLATING MPS SAVINGS INTO THE IRP OPTIMIZATION

- There are benefits to leveraging the market intelligence from the Market Potential Study (MPS) in the Integrated Resource Plan (IRP) optimization.
- The load forecast is a common link between the MPS and IRP.
- However, the way EE savings are measured in a MPS are different than the way EE savings are modeled in the load forecast that is used in the IRP optimization.

Chips

US

UK

Biscuits

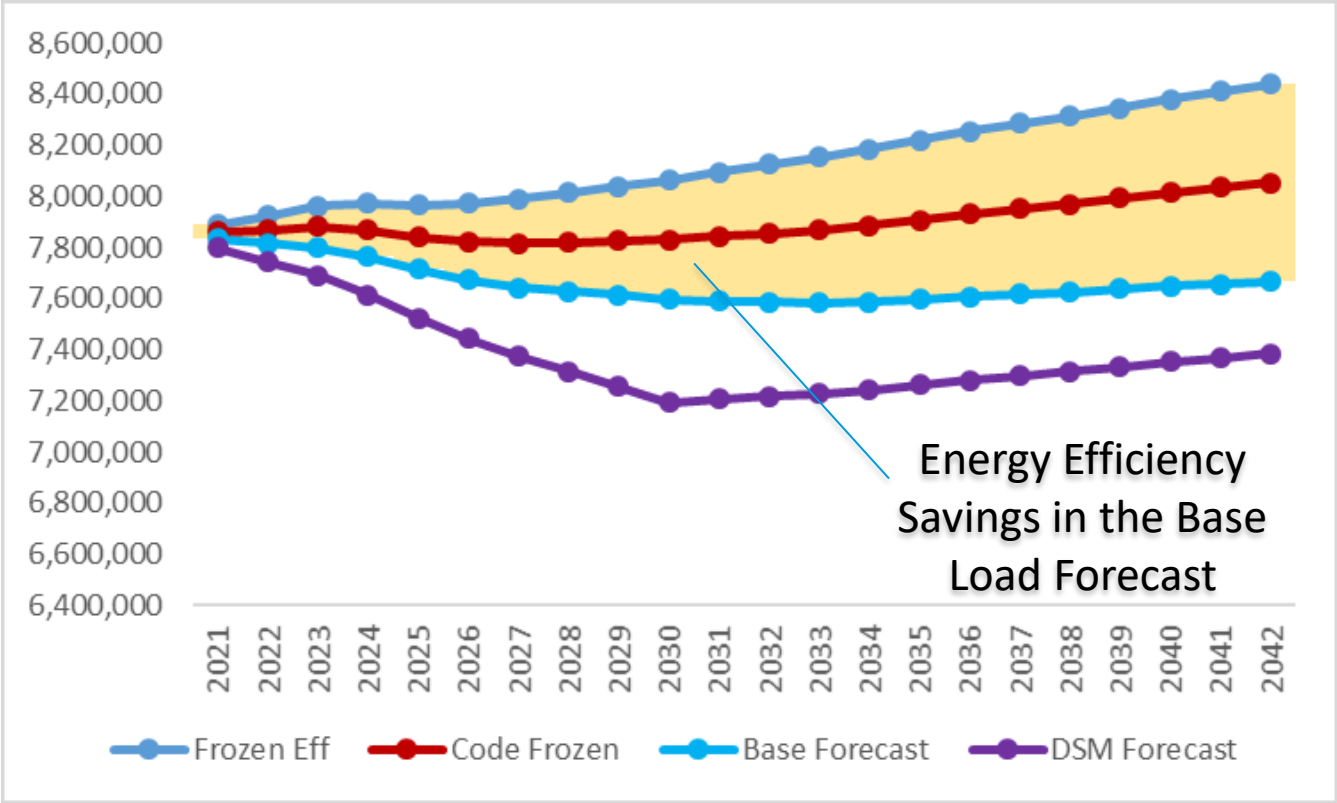
US

UK

DSM/EWR Savings ???

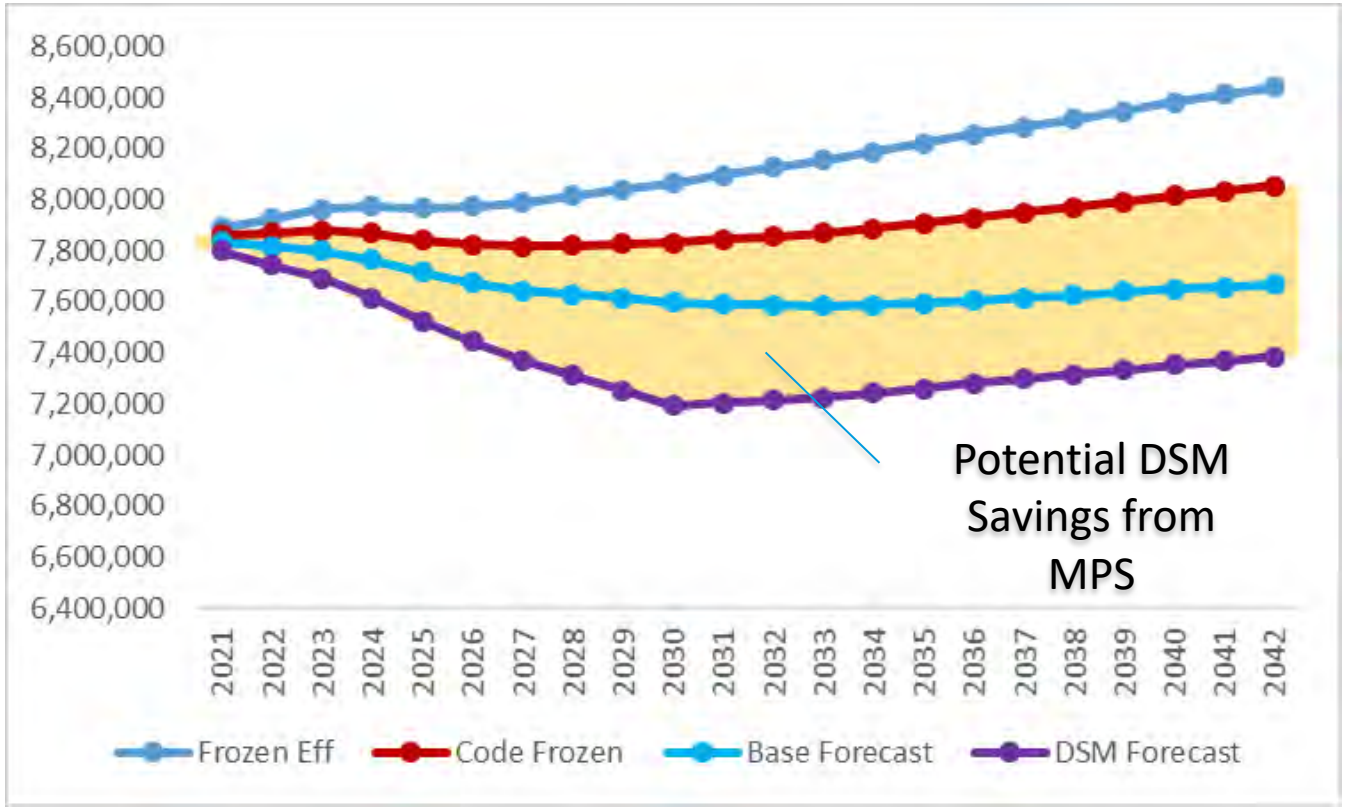
Energy Efficiency in the SAE Load Forecast

- Using the example from slide 52, the total energy efficiency included in the Statistically Adjusted End-Use (SAE) load forecast models is shown as the difference between the frozen efficiency forecast (blue line) and the base forecast (teal line).
- This includes naturally occurring energy efficiency saving.



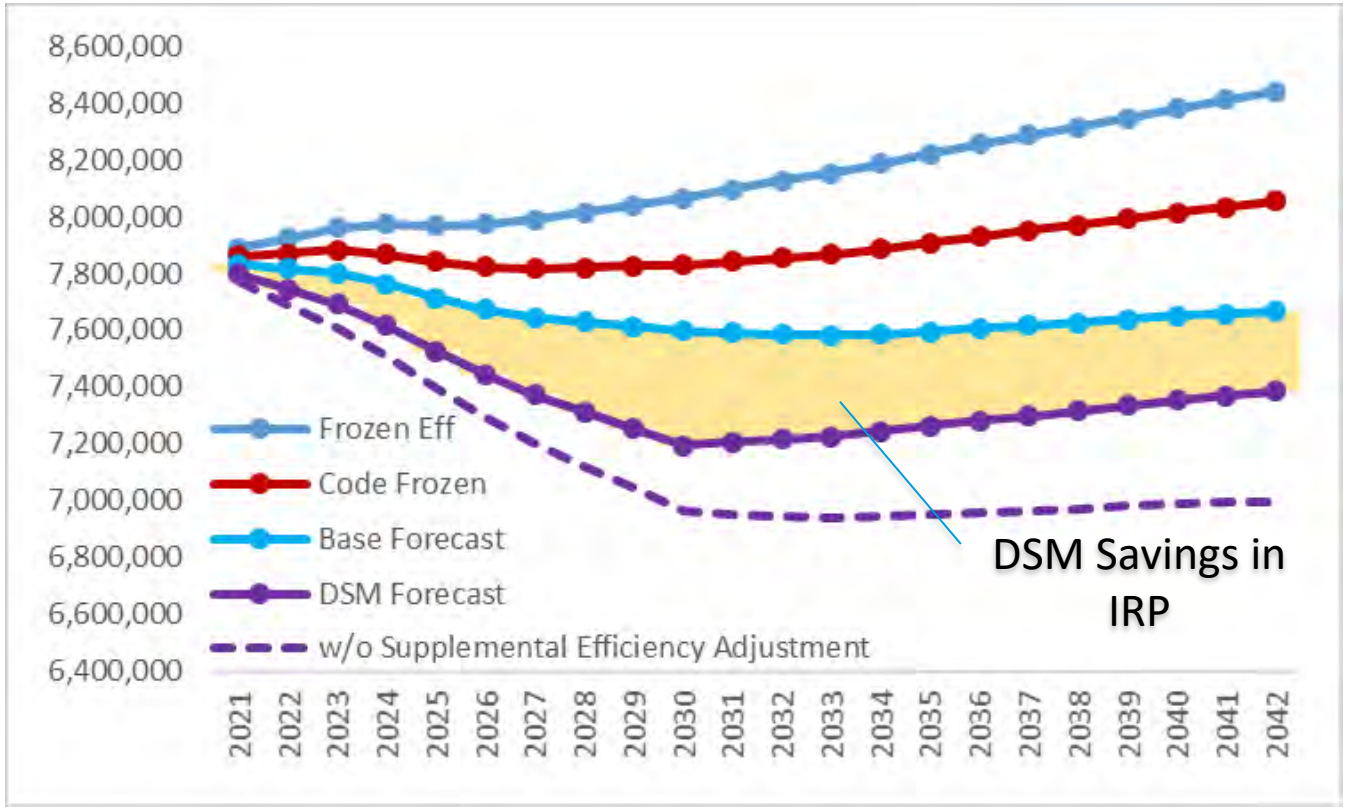
DSM/EWR Savings From Market Potential Study

- In the Market Potential Study, total potential DSM/EWR savings are computed based off the baseline from existing codes (red line).
- Actual DSM/EWR program savings are measured using a similar comparison (to a baseline at a specific point in time).



DSM Saving Used in IRP Optimization

- Since the load forecast models assume greater efficiency savings in the forecast than the MPS baseline, the savings used in the IRP optimization are computed from the teal line.
- A Supplemental Efficiency Adjustment is made to prevent double counting the impact of energy efficiency in the load forecast.
- If the IRP used the same DSM savings from the MPS without the Supplemental Efficiency Adjustment, the total impact of energy efficiency would be overstated in the IRP (purple dashed line).

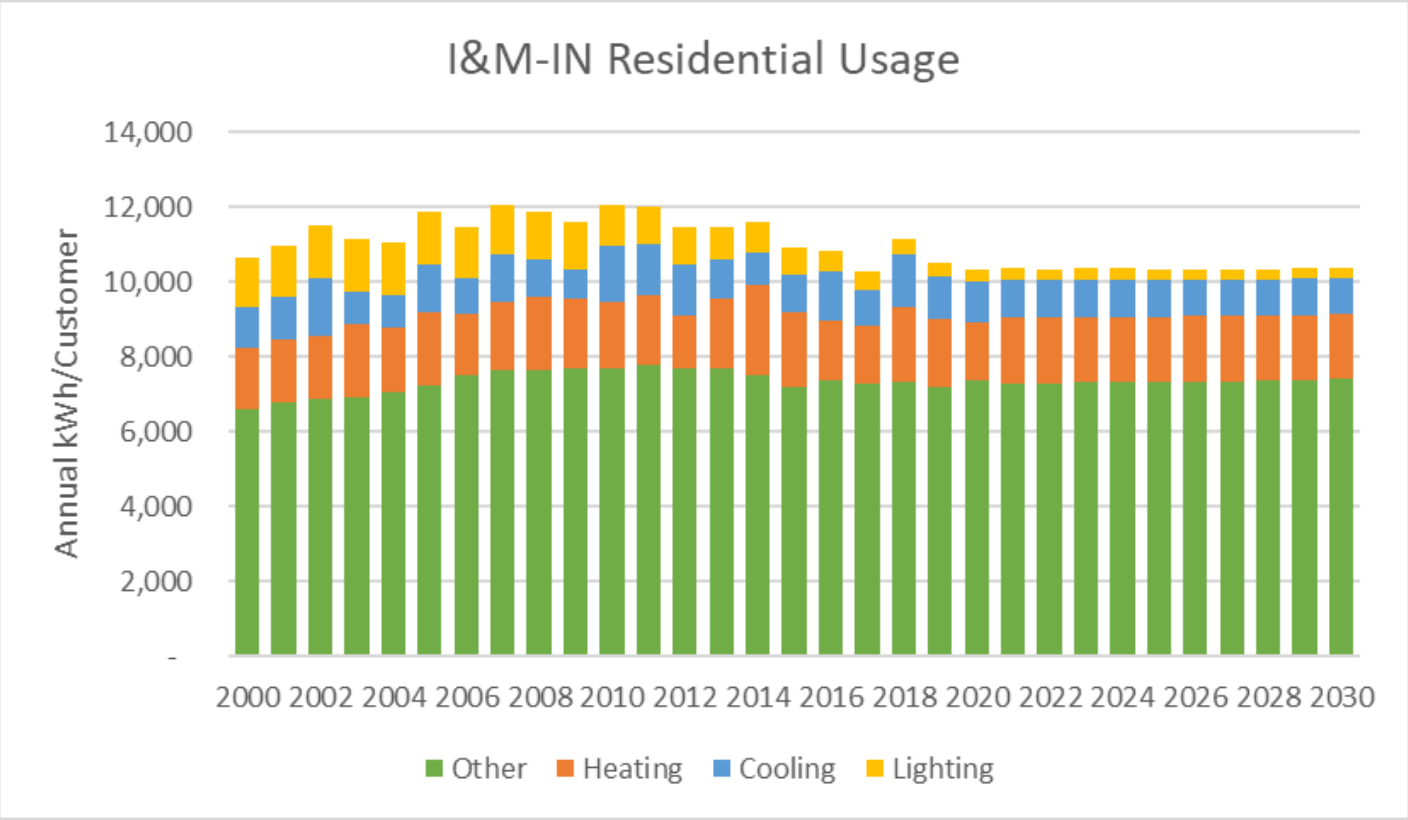


Near-term vs Long-term DSM/EWR Assumptions

- I&M's load forecast has multiple applications:
  - Regulatory (Base Rate Cases, Fuel Filings, Integrated Resource Plans, etc.)
  - Finance (Budgeting, Earnings Guidance, Financing, etc.)
- In every application, the near-term DSM/EWR assumptions come from the most recently filed/approved DSM/EWR portfolio (usually a 3-year cycle).
- Long-term DSM/EWR savings are solved for as part of the IRP optimization modeling. Therefore, the load forecast that goes into the IRP modeling only includes the impact of currently filed programs.
- Long-term financial forecast uses the DSM/EWR savings selected in the most recently completed IRP.

Load Forecast By End Use

- The SAE model provides the ability to dissect the load forecast by end-use type.
- This is important when evaluating DSM/EWR programs that target a specific end-use and it's impact on the I&M system load shape.



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FEEDBACK AND DISCUSSION

PRELIMINARY IRP INPUTS

SIEMENS PTI TEAM

Overview – Demand Side Management

Siemens PTI, GDS and the I&M IRP team will collaborate on developing the forecasted inputs needed to include Demand Side Management (DSM) Resources in the analysis.

The AEP I&M IRP will include the following DSM options:

- Energy Efficiency (EE)
- Demand Response (DR)
- Distributed Energy Resources (DER)

Each DSM Resource option will be treated differently in the IRP approach and will be discussed in more detail later.

- Energy Efficiency → Optimized Approach
- Demand Response → Non-Optimized Approach*
- Distributed Energy Resources → Common Portfolio Approach

*Capacity additions of DR resources will be defined for each scenario. Note, however, that the operation of DR resources will be optimized in commitment and dispatch.

Energy Efficiency Approach

Siemens PTI, GDS and the I&M IRP team will collaborate on the appropriate bundling for the Energy Efficiency measures.

- The bundles are driven by increments of Energy Efficiency value. (breakpoints informed by MPS)

- Demand impacts will be represented on an hourly basis (8760 hours per year for the development of the candidate portfolios).

Demand Response Approach

Each candidate portfolio has an assumed quantity of demand response resources defined by the GDS Market Potential Study.

- Different candidate portfolios may have different volumes and costs for demand response.
- Siemens PTI will use the GDS-defined quantities of Demand Response capacity for the AEP I&M system in select scenarios.
- Siemens PTI will optimize the hourly operation of Demand Response resources in each candidate portfolio.

Distributed Energy Resources

Distributed Energy Resources and their associated volume, costs, and performance characteristics are included as a part of all candidate portfolios.

- Distributed Energy Resources forecast will be identified from the Company's MPS
- Each DER technology will be an individual resource

IRP Inputs – DSM Overview

Siemens PTI, GDS and the I&M IRP team will collaborate and develop a forecast and other input parameters to be implemented into the analysis. Each specific DSM measure will be treated differently based on the predetermined approach.

DSM Measure	Approach
Energy Efficiency	Volume Optimized for each candidate portfolio
Demand Response	Volume may vary by candidate portfolio
Distributed Energy Resources	Volume the same for each candidate portfolio

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FEEDBACK AND DISCUSSION

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3:30 p.m.	ADJOURN

BREAK

PLEASE PLAN A RETURN BY 3:00PM EST

STAKEHOLDER PROCESS AND Q&A

Stakeholder Timelines

March 9, 2021 ✓
- 2021 IRP Process
- Objectives and Metrics
- Proposed Scenarios
- Base Case Inputs

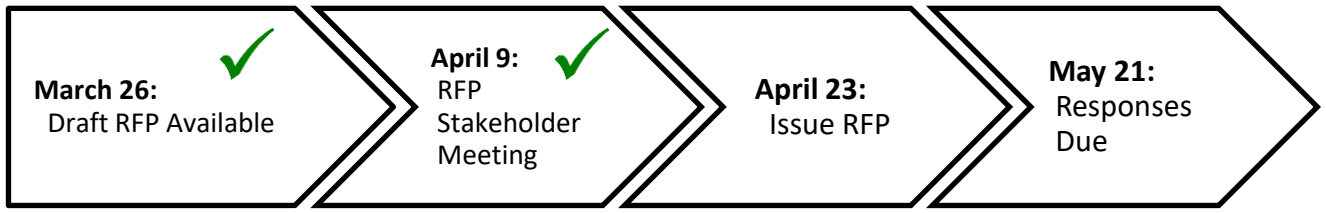
April 14, 2021 (this session)
- DSM IRP Inputs and Modeling
- EE/EWR, DR and DER Results
- 2021 IRP Update

May TDB, 2021 (tentative date)
- AURORA Technical Workshop

July 14, 2021 (tentative date)
- Draft Candidate Portfolios
- All-Source RFP Results
- Stochastic Modeling Approach and Assumptions

September 14, 2021 (tentative date)
- Probabilistic Modeling Results
- Review of Preferred Portfolio
- Other(s)

All-Source RFP Timeline



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STAKEHOLDER PRESENTATION

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CLOSING REMARKS

ANDREW WILLIAMSON | DIRECTOR, REGULATORY SERVICES

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THANK YOU!

Indiana Michigan Power Company

2021 Integrated Resource Plan

Stakeholder Workshop #3A Meeting Minutes

1. Welcome and Safety Moment – Andrew

Andrew kicked off the meeting at 9:30 and covered slides 1-5.

Andrew kicked off the meeting and welcomed participants to the 2021 I&M Integrated Resource Plan (IRP) stakeholder workshop. Andrew reviewed a safety moment for heat safety.

2. Meeting Guidelines – Jay Boggs, Siemens PTI

Jay covered slides 5-8

Jay introduced the Meeting Guidelines section and its content and established the role of Moderator for the Stakeholder Meeting.

Meeting guidelines and agenda were discussed.

Jay also provided an overview of the Questions and Feedback process, including directing stakeholders to submit comments and stay informed at the I&M IRP Website: http://www.indianamichiganpower.com/info/projects/IntegratedResourcePlan.

In addition, stakeholders are encouraged to submit questions via email to I&MIRP@aep.com

3. IRP Process and Tools – Peter Berini, Siemens PTI

Peter covered slides 9-19

Peter covered definitions to be used throughout the presentation, specifically bolded definitions.

Peter covered the IRP overview and explained that the IRP is a roadmap of where the organization (AEP I&M) is going and how AEP I&M is going to get there. I&M partnered with Siemens to create the reference portfolio and set of candidate portfolios with the incorporation of stakeholder feedback. Reference and candidate portfolios will be analyzed to identify the preferred portfolio.

Peter then reviewed the 5-step process of creating, screening, analyzing, and reporting portfolios.

Peter went through each step-in detail on slides 14-19 and pinpointed which step in the 5-step process was completed and where Siemens is currently at in the process (Step 3 “Create Reference & Candidate Portfolios”)

On slide 16, Peter noted the 2 scenarios AEP I&M and Siemens have landed on which include #7-8 (Rapid Technology Advancement & Enhanced Regulation scenarios) and gave high level detail of the assumptions behind each.

Feedback and Discussion

Oral questions from the audience

Comment on Peters comment regarding "metrics and objectives vetted with stakeholders"; The following disagreements were noted: Already submitted comments related to metrics including AURORA not calculating NPV and diversity metric. Think balanced scorecard is biased. Does not believe their comments were considered.

Q: Question about Rockport 50% scenario and what the 50% represents.
A: Peter B clarified 50% was referring to ownership.

Q: Follow up if the selling of the remaining 50% not owned is included in the IRP process.
A: Andrew W responded with IRP only modeling 50% and other 50% is excluded all together from the modeling.

Concern given on capturing the total Rockport economics.

Q: OVEC sensitivity question.
A: Andrew responded with OVEC being a contract obligation incorporated into the modeling consistent with past IRP filings.

Q: Slide 16, concerned this is conflating portfolios and scenarios. 1-6 appear to be constraining resource selection based on items identified in notes. 7-8 appear to be actual changes to scenarios.
A: Peter B specified this is correct, 1-6 are sensitivities based off reference scenario and 7-8 are scenarios which produce more than 1 portfolio for inclusion.

4. Informational RFP's -Angelina Martinez

Angelina covers slides 21-25

Angelina covers the process that Siemens PTI follows for the All-Source Informational RFP

Clarifying questions regarding acronyms including:

PPA- Power purchase agreement
BOT- Build own transfer

Small/local developers not analyzed, international companies included and analyzed (ex: NextEra).

Jay asks Angelina to cover the definition of non-compliant bid. Angelina explains this includes projects not interconnected to PJM, COD not after 2024 and locals without terms or conditions which are considered outliers.

5. I&M 2021 IRP Reference Case, Peter Berini and Thijs Everts

Peter covered slides 28-33

Peter kicks off this section by reviewing the scenario inputs and key drivers on slide 28 as well as a review of AURORAxmp and the way the analysis will be using the model on slide 29.

Peter notes that all inputs seen today will be in 2019$. Reviews input graphs in slides 30-33.

Thijs covered slide 34

Thijs reviews transmission topology on slide 34. Covers the AEP I&M to AEP zonal structure as well as specifying NYISO is running as well but is not shown on slide due to size constraints.

Feedback and Discussion:

Oral questions from the audience

Q: What is basis for 15$/ton CO2 cost in 2028 and the annual increase?
A: Connie T responds saying it was developed internally with environmental team at AEP. She clarified it is not meant to be carbon tax, but a carbon burden. Escalation was reasonable estimate and timing was determined to be reasonable time to implement.

Q: Natural Gas is already above the forecasted price for next 30 years?
A: Connie T responds they do scenarios around base case. Was using EIA at the time this was developed. Stochastic analysis should cover the higher prices we are currently seeing in the market.

Q: Comments on OVEC not considered. I&M should evaluate OVEC sensitivities.
A: Andrew W responds saying I&M will provide supplemental analysis regarding OVEC in I&M's Michigan IRP filing in Dec 2021 as specified in the settlement agreement in I&M's last Michigan IRP filing

Q: Supplemental filing will include modeling that does not include OVEC units?
A: Will provide all information necessary to comply with the settlement agreement and other applicable Michigan orders.

6. Resource Options – Supply Side – Thijs Everts

Thijs covers slides 36-42

Thijs reviews different technologies as well as their advantages and disadvantages. He then covers renewable tax credits.

Feedback and Discussion:

All questions discussed in this section are recorded in the following Questions Section of the minutes.

7. Resource Options – DSM/EWR, Thijs Everts, Siemens PTI, Chad Burnett, AEP Load Forecasting, Huber, GDS Associates

Thijs covered slides 44-46

Thijs discussed a general overview of the various DSM options (EE, DR, DER). Levered info from GDS and Brightline.

Jeffery covered slides 47-52

Thijs passes slides onto Jeffery Huber (GDS) who begins to cover on slide 47 and goes through greater detail on the development of the EE bundle inputs. Cost based approach, end-use based approach and value-based approach were analyzed and ultimately the value-based approach was

decided to be used for the EE inputs. Jeffery goes into deeper detail regarding the clustering approach on creating the bundles.

Question

Q: Slide 49 – What do the cost and benefits metrics measure on slide 49?
A: Actual metric was lifetime NPV. Charts don't show that, they show statistical distribution points to create clusters/ basically how they relate to each other. Actual values don't mean anything, but the relationships are what is important here.

Thijs covered slides 53-55

Thijs covered the way Siemens PTI will be representing each bundle with graphs in slide 53. Solid line represents fixed cost, dotted lines represent O&M for both Indiana and Michigan separately but structured the same way. DR programs only turn on 5 hours a year, most for 2 hours in a day.

Chad Burnett covered slides 56-59

Chad begins with discussion on how AEP I&M reached out to other utilities in Indiana and Michigan to get different approaches as well as Itron for EE approach following stakeholder questions in 2nd stakeholder meeting. Majority use Itron approach across industry, specifically Indiana and Michigan.

Feedback and Discussion:

Q: Difference between Clusters vs Bundles vs Blocks? Different End use measures spread across different blocks or bundles?

A: Clusters like bundles, all relatively synonymous. Possibly a similar end use ends up in different cluster or bundle depending on end net use. It is possible measures occur in separate bundles depending on benefit and cost.

8. Scenarios: Peter Berini

Peter covers slides 62-65

Peter gives brief overview of proposed scenarios and highlights changes. Note's selection of proposed scenarios was selected by regulations and proposals as well as taking stakeholder feedback into account. Peter calls out last bullet on net zero carbon by 2050 on slide 63, specifying it is creating an economic incentive for portfolio to optimize around.

Peter goes into slightly deeper detail regarding the reference case and 2 scenario assumptions.

Feedback and Discussion:

Q: Is there the ability for Natural Gas Combined Cycle 2x1 to be built at smaller increments (allowing partial builds)?

A: Yes, the Natural Gas Combined Cycle 2x1 is only resource that was allowed to be partially build (and EE).

Q: Are there various potential limits on solar, particular to low tier solar costs?

A: The plan is to present any technology limits, incremental and cumulative in stakeholder meeting 3B. These items are still under review.

9. Stakeholder Session

Jay reviews slide 68 and the process for this stakeholder session to take place.

In previous stakeholder meeting, polls were taken to solicit feedback if the proposed scenarios were sufficiently broad and diverse for the IRP analysis. The results of the polling suggested stakeholders were not sure if they were.

As a result of this polling and other stakeholder feedback, it was felt by the I&M IRP Team and I&M leadership that we need to provide the opportunity for stakeholders to comment further, providing guidance on specific strategies that should be analyzed. This can be in the form of scenarios, sensitivities from already identified scenarios, or the designation of specific market, economic, resource-specific, or other not previously identified options.

Once again, key in this process is obtaining feedback from stakeholders. This will only improve the process and end result.

Jay asked for feedback from the stakeholder group. Comments:

Anna Sommer responds – gas prices appear to be assuming stable prices throughout year, not seasonal which could be an important thing to look at. Feb 16 126$/MMBtu as an example. Look at hourly level the value of different resources on those types of assumptions. Jay clarifies are you looking to incorporate black swan event? Anna responds if this becomes frequent event and if prices spike in similar winter events, how would that affect value of resources?

Jennifer Washburn: back to SEA, could they have separate meeting dedicated entirely to SEA discussion.

Doug Jester: Mentions Anna volatility question. Gas prices are volatile in short term even absent extraordinary event. Anything regarding storage is absent when using averages as the idea of storage is to take advantage of those extremes/volatility.

Reliability/resource adequacy is different than customer reliability. Customer reliability issues are largely distribution issues. Micro grids don't affect all but do affect some. Thinking about DG to customers should be accounted for in evaluating those resources. Refers to EE resources as well. We tend to not value customer benefits of those types of generation.

Art responds to Anna and Doug on volatility: we will try to address very high and very low gas prices in step 4. Capture "extremes" and uncertainty is all areas (gas/coal/etc.) in stochastics.

Anna: what do those look like? How do you correlate from day to day? Art: Correlations are considered. Not many strong correlations except for a small one between gas and CO2. Allow for extreme weather events to impact load. Intent is to look at 95th and 99 percentiles.

Anna: still does not capture the volatility this refers to since they are averaged.

Jay reviews slide 71 and stakeholder process timeline. Session 3B in August.

10. Closing Remarks

Andrew Williamson responds regarding EE/SEA questions brought up throughout the presentation. I&M has taken significant steps to thoroughly evaluate the stakeholder feedback we have received, including the benchmarking results that were discussed by Chad Burnett earlier today. I&M is committed to providing customers with options to better manage their electric bills in a cost-effective manner. We will continue to consider this matter as we are completing our modeling and determining our preferred plan. EE is an important component to the IRP for I&M and many of its stakeholders, but it is one component of a much larger IRP that I&M will use to evaluate and support significant near-term resource actions. Given the timing of these resource actions and our regulatory filing requirements it is necessary we maintain our IRP timeline.

11. Appendix A: List of Questions Answered on Call

List of questions addressed on the call:

Question Asked	Answer
Do you ever run R-A Sensitivity and R-B Sensitivity together? Do you ever consider an earlier retirement of the whole Rockport plant?	As answered by Andrew
I have some questions for Peter when he's at a stop pointing.	As answered by Andrew W and Peter B
Does that mean that I&M is considering buying Rockport unit 2 now and then sell it right away	Expectation is that ownership would be consistent with today's structure whereby I&M and AEG have 50% of Rockport 2, respectively, with the difference being Rockport Unit 2 will be owned by both entities, not leased.
What about Anna's OVEC question? Thanks.	As answered by Andrew
Why is resource diversity only baseload resources?	The metric for resource diversity should have been related to the number of distinct resources and technologies in the I&M portfolio (not limited to baseload resources). We will present our proposed approach for calculating this metric in the Stakeholder meeting. .
To follow up on Peter's questions, will you be dispatching to price or load? And if the latter, will you put in a maximum reserve margin constraint?	The analysis will be conducted to ensure that load is served reliably and affordably and with consideration of AEP's sustainability objectives. A maximum reserve margin metric would be inappropriate and produce potentially perverse outcomes, but surplus capacity will be captured in the cost metrics.

Is I&M considering buying Rockport unit 2 and then selling it or a portion of the unit to another AEP subsidiary?	Andrew W responds AEP I&M has no plans to buy Rockport 2 and selling. Expectation is that ownership would be consistent with what it is today at 50% ownership.
What is BOT? Is that Build Transfer?	As answered by Angelina Martinez
One question that I didn't get to ask: Could you please provide more detail as to how you plan to implement what you mentioned as modeling to implement AEP's goal of net zero carbon by 2050? If you don't have time to talk about that today a written response would be fine.	AEP's IRP will consider the requirements for a net 0 carbon by 2050 goal. Since the IRP filing will only be through 2040, actual achievement of that goal will not be reflected in the IRP filing, but the necessary progress toward that goal will be.
To what extent do the renewable prices/LCOEs include federal tax credit availability? Does that vary across the responses?	Renewable cost and performance inputs into the IRP process reflect the benefits of ITCs and PTCs to the extent those credits are available in the years that resources enter commercial operations.
Which companies bid into the RFP?	As answered by Angelina Martinez
Are you considering future stranded asset costs associated with any new CC/CT generation?	Any new CC and CT capacity will be modeled to operate through the Forecast Horizon.
Do you have a list of companies? The other IOUs have been providing a list of those who submitted bids.	As answered by Jessica.
How do these prices for utility scale solar compare to the EDG rate for rooftop solar under HEA 309?	The proposed EDG rate in Cause No. 45506 is $0.02451/kW for nameplate capacities not more than one (1) megawatt. LCOE's for Utility Scale Solar range from $52- $56/MWh.
Why were the smaller bidders not compliant?	A few bidders did not conform to the requirements of the bid and were thus considered non-compliant. Examples include not being in the PJM Zone, proposals missing price and not credit worthy offtakers.
Does I&M have a theory about why this RFP got so few responses? NIPSCO received over 100 renewable bids in response to its last RFP.	No, we do not.
Could you please provide a list of why bidders were eliminated?	As answered by Jessica.
What was the basis for the $15/ ton co2 cost in 2028 and the annual increase?	As answered by Connie
Natural gas prices are already above your forecasted prices for the next 30 years. Does that price forecast need to be changed to reflect the recent large runup in prices?	As answered by Connie

Are you modeling this full topology as part of portfolio optimization? Or is just the topology you are using for market price forecasting?	The topography shown in the stakeholder presentation is used to construct candidate portfolios and to conduct the analysis of the candidate portfolios for any metrics that are determined through computer simulation modeling.
At what point will I&M turn over the documents, workbooks, etc. supporting the reference case assumptions? It's hard to react to these on the fly and in a vacuum of understanding how they were developed.	Once the Reference Case is completed, we will immediately proceed to prepare for stakeholder review the collection of inputs related to the Reference Case. Our goal is to have these items ready for stakeholders to review prior to Stakeholder Meeting #4.
Could you explain your electric vehicle demand? That demand will vary with the rate of charging, won't it? Is it some kind coincident demand?	The electric vehicle demand was derived off the EV energy forecast provided to Siemens PTI. The forecast was used to calculate a MW number and then Siemens applied a typical charging shape to determine the MWs of EV.
Are you also going to relax the integer settings on other resources then?	No. Furthermore, we removed this option for the CC 2x1
Why is CC and CT FOM so low?	As answered by Holt B and Thijs E
Are FOM assumptions that are prepared by AEP IM confidential/proprietary (w/reference to note on slide 39)?	As answered by Greg S
how much of each resource will you let the model pick? This is one of the assumptions that the MI IRP settlement requires I&M to work with stakeholders on.	The MI Settlement includes an agreement to "work with stakeholders to define the modeling inputs for the IRP". During this meeting, we specifically asked for input and feedback related to strategies, scenarios, sensitivities, and the designation of specific market, economic, resource-specific options. Receiving specific stakeholder input around these inputs is very important to the process. We encourage all stakeholders to provide **at any time**, specific feedback so that we can incorporate your comments into the analysis. You can register your feedback on the I&M website, via email, and during stakeholder meetings. We intend to continue to provide specific assumptions related to capital costs, amounts of resources and other inputs during the next stakeholder meeting.
Do the CVR measures represent existing deployments, new deployments, or both?	As answered by John W
Does it make sense to treat CVR for residential customers separately from C&I? They are often on the same circuit.	As answered by John W

The restrictions on hours of DR call seem pretty small compared to what is often used. This would be especially true for residential adjustments such as thermostat adjustments	IRP model inputs for DR were reviewed and modified to be consistent with the I&M summer cooling season DR event-hour opportunity set forth in I&M's DR tariffs, which allows I&M the opportunity to call up to 15 events/year with the typical per-event window at 3 hours/event. The hours modeled exceed the Company's experience of actual DR hours called over the past several years.
What do the "cost" and "benefit" metrics measures on slide 49?	As answered by Jeffrey H
How will costs of EE be modeled, as levelized costs or in as spent dollars?	EE costs will be analyzed as incurred and will not be levelized to ensure a fair comparison to all other competing resources.
Why are there no optimized DR bundles? During the 2nd workshop Jeffrey said that they would also be evaluating new DR measures.	As discussed in the stakeholder presentation, Siemens PTI will use the results of the Market Penetration Studies to determine potentially varying amounts of DR to be included and tested across candidate portfolios. DR will not be optimized in each candidate portfolio to minimize computer resource burdens and ensure that credible results emerge from the optimization process for each candidate portfolio.
Additional questions for slide 49: • Do each of the colors represent bundles?	As answered by Jeffrey H
What does each individual point represent? Is each point a single measure?	As answered by Jeffrey H
Questions for Jeffrey: What is the difference between a cluster, bundle, and block? Is it possible that similar end-use measures will be spread across different blocks/bundles?	As answered by Jeffrey H
You can delay the IRP submission in IN and MI, and we will support you on that. This has shown to be terrible for EE investments.	As answered by Andrew W
But there's only one DR bundle per sector, so how would you test different levels of DR?	Different candidate portfolios can have differing amounts of DR. By comparing the performance characteristics of different candidate portfolios with differing amounts of DR we can assess the relative contribution of varying levels of DR. To take full advantage of this approach, we will need to structure competing candidate portfolios that are largely similar except for their varying levels of DR.
Please allow for good discussion. We are okay running late. This is important.	As answered by Andrew W

We disagree. It will have material change.	As answered by Andrew W
We support you on turning IRP in late	As answered by Andrew W
Please note that I&M can turn in IRP late. This is important to fix now	As answered by Andrew W
Setting aside our disagreement about whether degradation is proper or not, if it doesn't change the load forecast, then leave the forecast alone but remove it for EE. It has a huge impact on EE. And as Chad noted, none of the utilities I&M reviewed making any adjustments to EE bundles. That is what we care about the most and has the biggest impact. And that can be removed easily and without causing a delay to this IRP.	The Company pointed out on slide 56, that the average DSM variable coefficient was within 1% of the total impact over the life of the program from using the Company's Supplemental Efficiency Adjustment matrix. The mix of DSM programs (which classes and end-uses are targeted) would determine the size of the change in the load forecast compared to the SEA approach. As discussed byMr. Burnett during the meeting, the survey of peer utilities confirmed that the majority of utilities that are using Itron's SEA models are making adjustments to the DSM savings amounts, consistent with the Company's approach, to prevent double counting the energy efficiency amounts in the forecast.
We provided feedback on this SEA problem early on and in prior IRPs. Please make the change now in this IRP cycle. It warrants turning in the IRP late. We would like a meeting with IN and MI PUC staff to discuss this ASAP	As answered by Andrew W. The proposed meeting is being taken under consideration.
The fact that we are not talking about those technology limits is symptomatic of our concerns about I&M not utilizing stakeholder feedback. We should be talking about them now and not when they are finalized.	Specific assumptions related to capital costs, amounts of resources and other inputs will be provided in next stakeholder meeting. Furthermore, Stakeholders are also encouraged to submit their questions and comment at any time through the I&M IRP email address at any time.
Just to clarify, when we get a chance to see the specific assumptions around resource capital costs, amounts of resources that the model will be able to select from, etc., we will have additional feedback on whether these scenarios capture a reasonable range of scenarios.	
I believe I mentioned this at the first meeting, but Sierra Club does question the inclusion of reliability as a metric, since you would not plan a system that doesn't meet reliability metrics.	Reliability is considered an **objective** and not a metric of I&M's Integrated Resource Plan, as was explained and affirmed by feedback received in Stakeholder Meeting #1. Correct, AEP I&M would not plan an unreliable system. This does not mean that we would not include reliability as an objective of the IRP process. As AEP I&M continues the process of refining and measuring candidate portfolios for a balance of

	reliability, affordability, and sustainability, additional attention may be required on reliability to ensure a reliable system is maintained. However, there are varying degrees of reliability that may be related to economic risk. We ask all stakeholders to continue to provide recommendations as to what **metrics** (qualitative and quantitative) you believe we should use to properly assess our stated **objectives**.
Jay, I think your tone with Jennifer Washburn was inappropriate - it caught me off guard and made me feel uncomfortable. Additionally, while I appreciate there's been conversations offline on this subject, having you provide some background on what the exchange was about for those who weren't part of those discussions would have been helpful.	We sincerely apologize if the tone was believed to be inappropriate. The intent was to continue to keep the conversations related to the topics being presented. We will arrange for more time for Q&A in Stakeholder Meeting 3B.
It would be helpful to see everyone's questions even if you aren't planning to address them all. Will that be available afterwards at least?	Yes, the questions will be available in the posted Meeting Minutes

Indiana Michigan Power:
2021 Integrated Resource Plan
Public Stakeholder Meeting #3A

July 27, 2021

Presented via GoToWebinar --> https://attendee.gotowebinar.com/register/24556909132799244

BOUNDLESS ENERGY℠

Agenda

Time		
9:30 a.m.	WELCOME AND SAFETY MOMENT	**Toby Thomas**, President and COO I&M, **Andrew Williamson**, I&M Director Regulatory Services
9:40 a.m.	MEETING GUIDELINES AND AGENDA	**Jay Boggs**, Siemens PTI
9:45 a.m.	IRP PROCESS AND TOOLS	**Peter Berini,** Siemens PTI
10:00 a.m.	INFORMATIONAL RFP'S	**Angelina Martinez,** Siemens PTI
10:15 a.m.	REFERENCE CASE DEVELOPMENT	**Peter Berini,** Siemens PTI, **Thijs Everts,** Siemens PTI
10:45 a.m.	BREAK	
11:00 a.m.	RESOURCE OPTIONS – SUPPLY SIDE	**Thijs Everts**, Siemens PTI
11:30 a.m.	LUNCH	
12:30 p.m.	RESOURCE OPTIONS – DSM	**Thijs Everts**, Siemens PTI, **Chad Burnett**, AEP Load Forecasting, **Jeffrey Huber**, GDS Associates
1:15 p.m.	SCENARIOS	**Peter Berini,** Siemens PTI
1:30 p.m.	STAKEHOLDER INTERACTION	**Art Holland**, Siemens PTI, **Jay Boggs**, Siemens PTI
2:00 p.m.	ADJOURN	

WELCOME AND SAFETY MOMENT

Safety Moment

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MEETING GUIDELINES

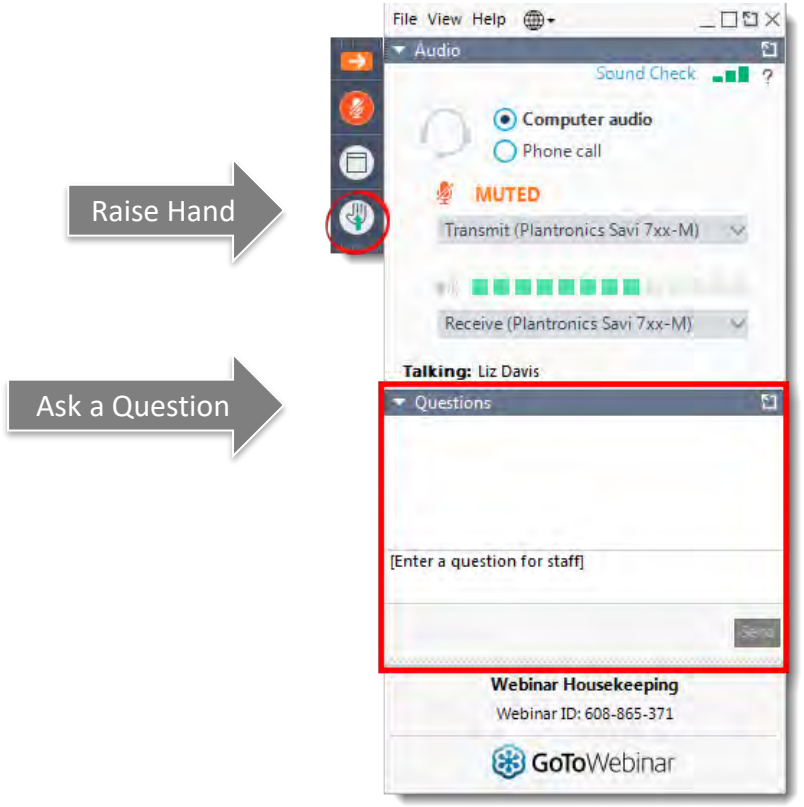
JAY BOGGS | SIEMENS PTI

Questions and Feedback

The purpose of today's presentation is to explain the IRP process and collect feedback from stakeholders. Stakeholder feedback will be posted on the I&M website IRP portal and will be considered as part of the Final IRP.

If you have a question about the IRP process during this presentation:

- Type your question in the Questions area of the GoToWebinar panel
- During the feedback and discussion portions of the presentations, please raise your hand via the GoToMeeting tool to be recognized
- Time permitting, we will address all questions and hear from all who wish to be heard
- Any questions that cannot be answered during the call will be addressed and posted on the website above



If you would like to make a comment or ask a question about the IRP process after the presentation has concluded:

- Please send an email to I&MIRP@aep.com
- Stay informed about future events by visiting the I&M IRP Portal located at www.indianamichiganpower.com/info/projects/IntegratedResourcePlan

Guidelines

1. Due to the number of participants scheduled to join today's meeting, all will be in a "listen-only" mode by default.

2. Please enter questions at any time into the GoToWebinar portal. Technical questions related to the GoToWebinar tool and its use will be addressed by the support staff directly via the chat feature.

3. Time has been allotted to answer questions related to the materials presented. Unanswered questions will be addressed after the presentation and posted in accordance with the Questions and Feedback slide.

4. At the end of the presentation, we will open-up the floor for "clarifying questions," thoughts, ideas, and suggestions.

5. Please provide feedback or questions on the Stakeholder Meeting #3A presentation within ten business days of the conclusion of the meeting.

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I&M 2021 IRP PROCESS AND TOOLS

Definitions

Term	Definition
AURORAxmp	Electric modeling forecasting and analysis software. Used for capacity expansion, chronological dispatch, and stochastic functions
Condition	A unique combination of a Scenario and a Sensitivity that is used to inform Candidate Portfolio development
Deterministic Modeling	Simulated dispatch of a portfolio in a pre-determined future
Renewable Portfolio Standards	Renewable Portfolio Standards (RPS) are policies designed to increase the use of renewable energy sources for electricity generation
Portfolio	A group of resources to meet customer load
Preferred Portfolio	The portfolio that management determines will perform the best, with consideration for cost, risk, reliability, and sustainability
Probabilistic modeling	Simulate dispatch of portfolios for several randomly generated potential future states
Reference Scenario	The most expected future scenario that is designed to include a current consensus view of key drivers in power and fuel markets (reference case, consensus case)
Scenario	Potential future State-of-the-World designed to test portfolio performance in key risk areas important to management and stakeholders alike
Sensitivity Analysis	Analysis to determine the impact of early retirements and other inputs portfolios are most sensitive to

Integrated Resource Plan Overview

The purpose of the IRP is to provide a roadmap at a point in time that AEP I&M can use as a planning tool when evaluating resource decisions necessary to meet forecasted electric energy demand. The approach is meant to balance affordability, reliability, and sustainability for customers and stakeholders in the development and selection of the **Preferred Portfolio**.

Development of Reference and Candidate Portfolio

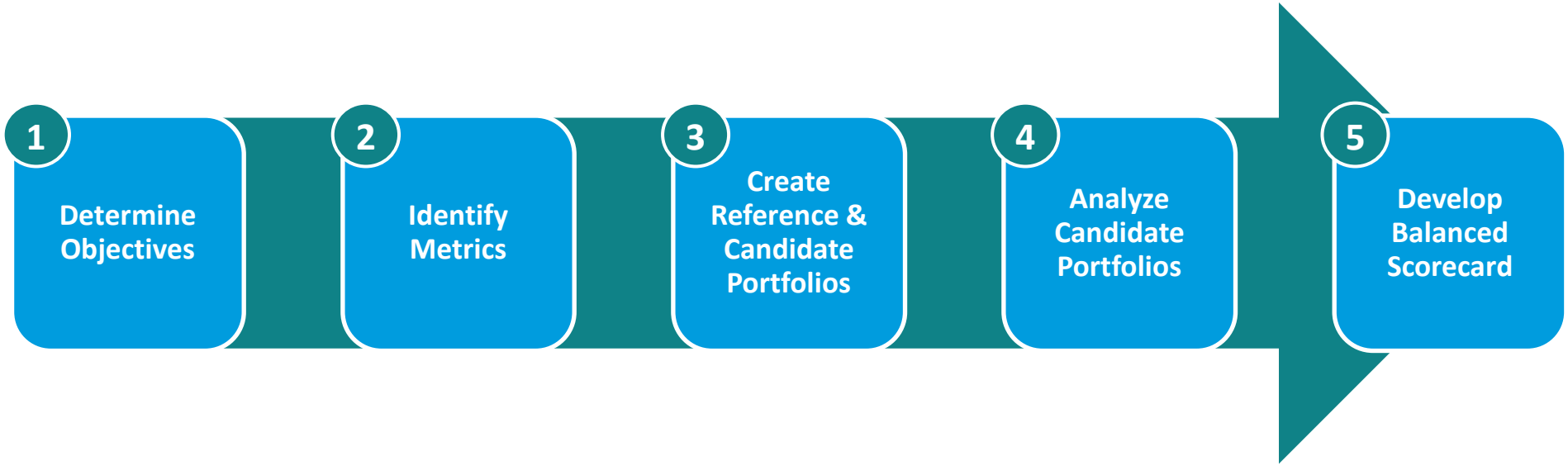
- The end goal of the IRP is to develop a **Preferred Portfolio** (set of supply- and demand-side resources) that can be used as a planning tool to inform future resource actions for electric energy demand to serve load
- I&M has partnered with Siemens PTI to create a **Reference Portfolio** and a set of **Candidate Portfolios** based on a series of inputs that are informed by various **Scenarios** and **Sensitivities**
- The **Reference Portfolio** and the **Candidate Portfolios** will be tested, analyzed and used by I&M management to identify the **Preferred Portfolio**

The discussions today will be focused on the approach and progress for developing the **Reference Portfolio**.

IRP 5-Step Process

Siemens PTI applies the following 5-Step process for modeling, analyzing, and reporting the **Reference Portfolio** and **Candidate Portfolios** related to the AEP I&M IRP. The process, detailed below, provides a holistic approach to identifying the **Preferred Portfolio** that best meets I&M's defined **Objectives** and **Metrics** over a wide range of potential future conditions.

Siemens PTI: Approach to Integrated Resource Plan Modeling



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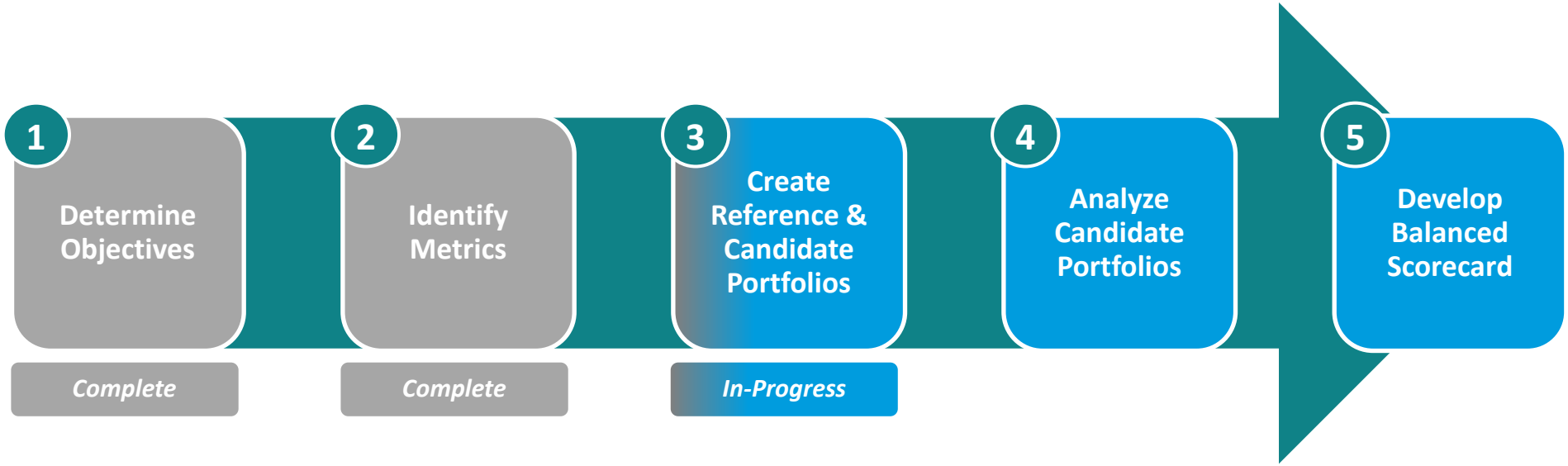


Step 1: Determine Objectives

The purpose of the IRP is to evaluate I&M's current energy resource portfolio and a range of alternative future portfolios to meet customers' electrical energy needs in an affordable and holistic manner. The process evaluates **Candidate Portfolios** in terms of environmental stewardship, market and price risk, reliability, and resource diversity.

IRP Objectives
Affordability
Rate Stability
Sustainability Impact
Market Risk Minimization
Reliability
Resource Diversity

Each **Objective** is important and worthy of balanced consideration in the IRP process

Step 2: Assign Metrics

For each **Candidate Portfolio**, the **Objectives** are tracked and measured through **Metrics** which evaluate portfolio performance across a wide range of possible future market conditions. All measures of portfolio performance are based on probabilistic modeling of 200 futures and addressed in Step 4: Analyze Candidate Portfolios.

IRP Objectives	IRP Metric	Unit
Affordability	NPV-RR	$
Rate Stability	95th percentile value of NPV-RR	$
Sustainability Impact	CO_2 Emissions	tons
Market Risk Minimization	Spot Energy Market Exposure (Purchases/Sales)	%
Reliability	Reserve Margin Exposure	%
Resource Diversity	Mix of Baseload Resources	MW

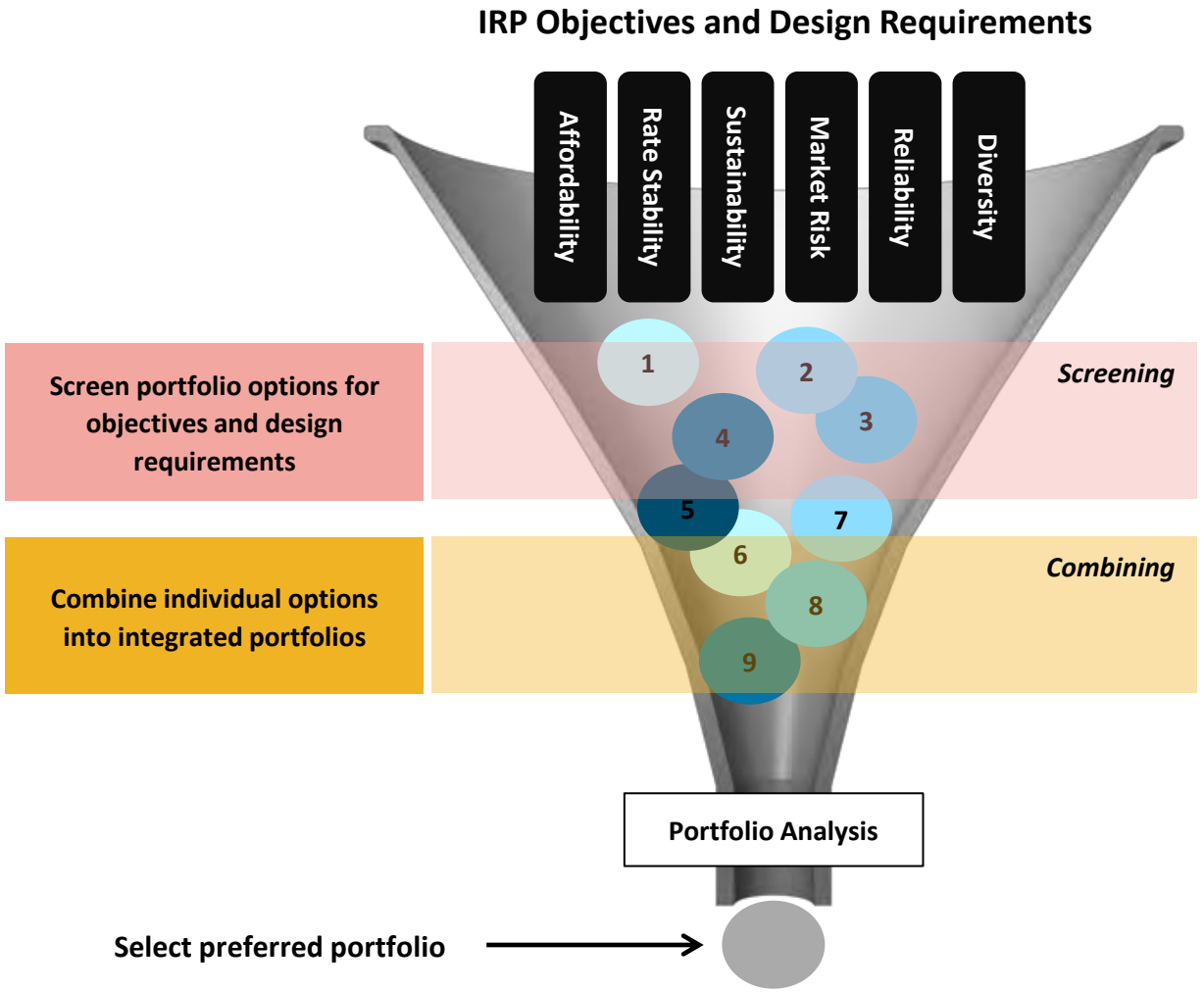
Objectives will be tracked through identified **Metrics** that will be used to measure and evaluate performance of the Candidate Portfolios

Step 3A: Create Reference and Candidate Portfolios

I&M and Siemens have developed **a Reference Case**, two alternative **Scenarios**, and a handful of **Sensitivities** to implement a scenario- and sensitivity-based approach to inform **Candidate Portfolios**. Each **Candidate Portfolio** will be developed from the **Scenarios** and/or the **Sensitivities** below.

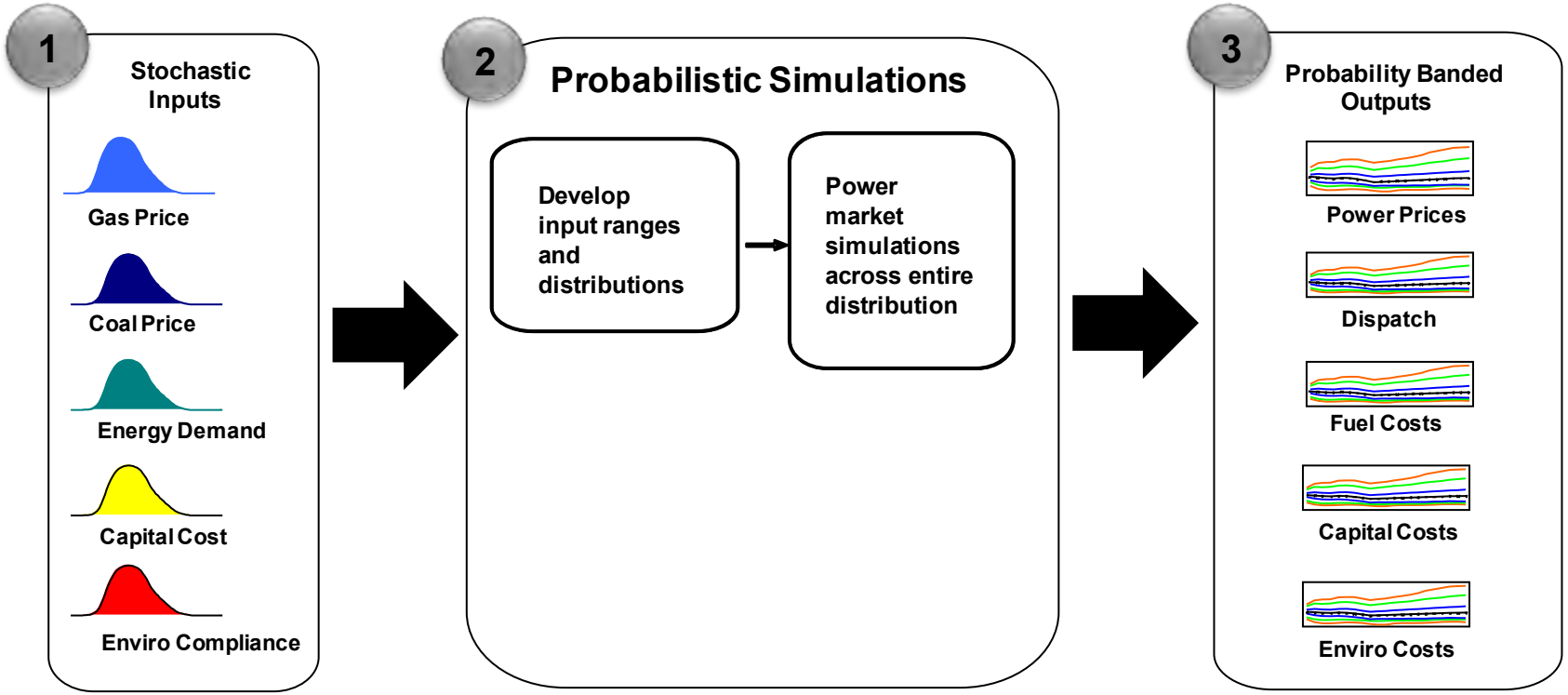
#	Group	Portfolio	Notes
1	Reference	Reference Case	Rockport (2028) and Cook (2034, 2037) Retire as Planned
2	R-A Sensitivity	Reference with Rockport Sensitivity	Rockport Unit 1 Early Retirement (2025)
3	R-B Sensitivity	Reference with Rockport Sensitivity	Rockport Unit 2 Early Retirement (2026)
4	R-C Sensitivity	Reference with Rockport Sensitivity	R-A Sensitivity : 50% of Rockport 2 Capacity
5	R-D Sensitivity	Reference with Rockport Sensitivity	R-B Sensitivity : 50% of Rockport 2 Capacity
6	C-A Sensitivity	Reference with Cook Sensitivity	Cook Unit 1 and Unit 2 License Extensions
7	Scenario	Rapid Technology Advancement	Low Renewable, Storage and EE/DR Costs
8	Scenario	Enhanced Regulation	High Commodity Prices, such as Gas, Coal and CO2

Step 3B: Screen Candidate Portfolios



Step 4: Analyze Candidate Portfolios

Candidate Portfolios are then subjected to **Probabilistic Simulations** (stochastic risk analysis) to measure performance across many future scenarios. The stochastic process will produce hundreds of internally consistent simulations that can provide a more realistic understanding of the potential variation in future scenarios.



Step 5: Develop Balanced Scorecard

Detailed portfolio results will be included for each **Candidate Portfolio** in the report write-up filed with the Commission. The **Candidate Portfolios** will be summarized in terms of each **Objective** and **Metric** through a balanced scorecard.

Balanced Scorecard (Illustrative)

	Affordability	Rate Stability	Sustainability Impact	Market Risk Minimization	Reliability	Resource Diversity
Candidate Portfolios	NPV RR	95th Percentile Value of NPV RR	CO2 Emissions	Purchases as % of Generation	Reserve Margin	Mix of Resources
Reference Case	$92.0	$115.0	-62.0%	10.0%	15%	5
Portfolio #1	$94.0	$138.0	-39.0%	15.0%	15%	4
Portfolio #2	$108.0	$145.0	-50.0%	18.0%	15%	6
Portfolio #3	$81.0	$123.0	-38.0%	24.0%	15%	4
Portfolio #4	$97.0	$146.0	-42.0%	42.0%	15%	4
Portfolio #5	$101.0	$167.0	-54.0%	34.0%	15%	5
Portfolio #6	$87.0	$113.0	-64.0%	41.0%	15%	3
Portfolio #8	$102.0	$172.0	-40.0%	34.0%	15%	5
Portfolio #9	$120.0	$198.0	-90.0%	24.0%	15%	6
Portfolio #10	$99.0	$210.0	-84.0%	12.0%	15%	5

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FEEDBACK AND DISCUSSION

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INFORMATIONAL RFP'S

All-Source Informational RFP Process

Issue All-Source Informational RFP	Collect and Analyze Responses	Evaluate how will the information will Inform the IRP	Provide resource options to Siemens IRP Modeling team
• March 26, 2021: Draft RFP available to Stakeholders • April 9, 2021: Stakeholder review meeting • April 23, 2021: Issue RFP	• May 21, 2021: collect Responses • Siemens' evaluation incl. Q/A with respondents • Receive I&M 2020 Renewables RFP • RFP results review with I&M	• Create price curves for all technologies based on Siemens internal forecasts • Discuss feedback on the use of All-Source data and confirm approach	• Provide resource options to Siemens IRP Modeling team

Responses Visualization

- All responses for the All-Source Informational RFP are for projects located in Indiana or Michigan, interconnected to PJM with a COD between 2024-2025
- The pricing range between the 2021 All-Source Informational RFP and the I&M 2020 Renewables RFP are similar.
- Both RFPs responses were utilized as a key input for I&M's 2021 IRP process.
- Total data points analyzed 66.

Project Type	2021 All-Source Informational RFP	2020 Renewables RFP
Solar PPA	10	13
Solar BOT	8	10
Solar + Storage PPA	4	4
Solar + Storage BOT	3	7
Wind PPA	1	2
Wind BOT	-	2
CCGT/CT Capacity PPA	1	-
CT Energy PPA	1	-
Stand-alone Storage PPA	2	-
Demand Response	1	-
Not compliant	4	-
Total Data Points Analyzed (excluding not compliant)	**31**	**35**

All-Source Informational RFP Results

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RFP Responses Summary

Plant Parameters

Plant Parameters	Renewables									Dispatchable				Demand Response
Technology	Medium Solar 20-yr PPA	Medium Solar 30-yr PPA	Large Solar 20-yr PPA	Large Solar 30-yr PPA	Solar + Storage	Wind	Solar	Solar + Storage	Wind	CCGT/ CT Capacity	CT Energy	Stand-alone Storage 2-hr	Stand-alone Storage 4-hr	Demand Response
Commercial Structure	PPA	PPA	PPA	PPA	PPA	PPA	BOT	BOT	BOT	PPA	PPA	PPA	PPA	PPA
Capacity Range (MW)	50-200	60	300-600	245-350	10-100	200-300	100-350	100/ 20-50	200	100-200	236	200	200	5 MW first year (+3MW/yr)
Storage Hours (hrs)	NA	NA	NA	NA	4 hr	NA	NA	4 hr	NA	NA	NA	2-hr	4-hr	NA
Capacity Factor Average (%)	24%	24%	24%	24%	24%	38%	24%	24%	38%	NA	NA	NA	NA	NA
Capacity Factor Min-Max (%)	23%-25%	21%-25%	24%-24%	24%-25%	23%-25%	34%-43%	21%-25%	24%-25%	34%-43%	NA	NA	NA	NA	NA
COD Range	2024-2025	2024-2025	2024-2025	2024-2025	2024-2025	2024-2025	2024-2025	2024-2025	2024-2025	Operational	Operational	2023	2023	2022
PPA Term	15-25	30	15-25	30	15-30	12	NA	NA	NA	10	10	15	15	20

All-in Capex/ PPA Price, Nominal$/kW	Medium Solar 20-yr PPA	Medium Solar 30-yr PPA	Large Solar 20-yr PPA	Large Solar 30-yr PPA	Solar + Storage PPA ($/kW-m)	Wind PPA	Solar BOT	Solar + Storage BOT	Wind BOT	CCGT/CT Capacity ($/kW-m)	CT Energy ($/kW-m)	Stand-alone Storage 2-hr	Stand-alone Storage 4-hr	Demand Response (Real 2021$/kW-m)
Min	43	43	33	45	6.5	48	1,245	1,674						
Average	48	43	37	46	7.3	48	1,475	1,914		3.95	1.75	5.98	8.96	3.53
Max	54	43	41	47	8.5	48	1,600	2,310						
Data Points	5	1	2	2	4	1	8	3	0	1	1	1	1	1

Renewable RFP Results

Renewable RFP Responses Summary

Plant Parameters

Plant Parameters	Renewables						
Technology	Medium Solar	Large Solar	Solar + Storage	Wind	Solar	Solar + Storage	Wind
Commercial Structure	PPA	PPA	PPA	PPA	BOT	BOT	BOT
Capacity Range (MW)	85-163	200-353	120-183/ 24-32	200	100-353	100-163/ 20-32	200
Storage Hours (hrs)	NA	NA	4 hr	NA	NA	4 hr	NA
COD Range	2023	2023	2023	2023	2023	2023	2023
PPA Term	30	30	15-30	12-30	NA	NA	NA

All-in Capex/ PPA Price, Nominal$/kW	Medium Solar 30-yr PPA	Large Solar 30-yr PPA	Solar + Storage PPA ($/kW-m)	Wind PPA	Solar BOT	Solar + Storage BOT	Wind BOT
Min	43	41	8.6	45	1,431	1,666	1,953
Average	50	44	8.7	45	1,525	1,781	2,060
Max	59	50	9.0	46	1,592	1,842	2,168
Data Points	10	3	4	2	10	7	2

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FEEDBACK AND DISCUSSION

I&M 2021 IRP REFERENCE CASE

Reference Scenario Inputs

I&M and Siemens PTI developed a set of base case assumptions. In Stakeholder Workshop #1, the team presented illustrative inputs. The inputs included herein are meant to represent the planned reference case inputs being used to construct the Reference Case, including the following key drivers:

Key Market Drivers:

- I&M and PJM energy and demand
- Henry Hub natural gas prices
- PRB Coal Prices
- Capital Costs for various generation technologies

Fundamentals Forecast

- Base Case: Reflects EIA Reference scenario
- Base Carbon Case: Includes a $15/metric ton carbon price beginning in 2028, escalating at 3.5% annually thereafter

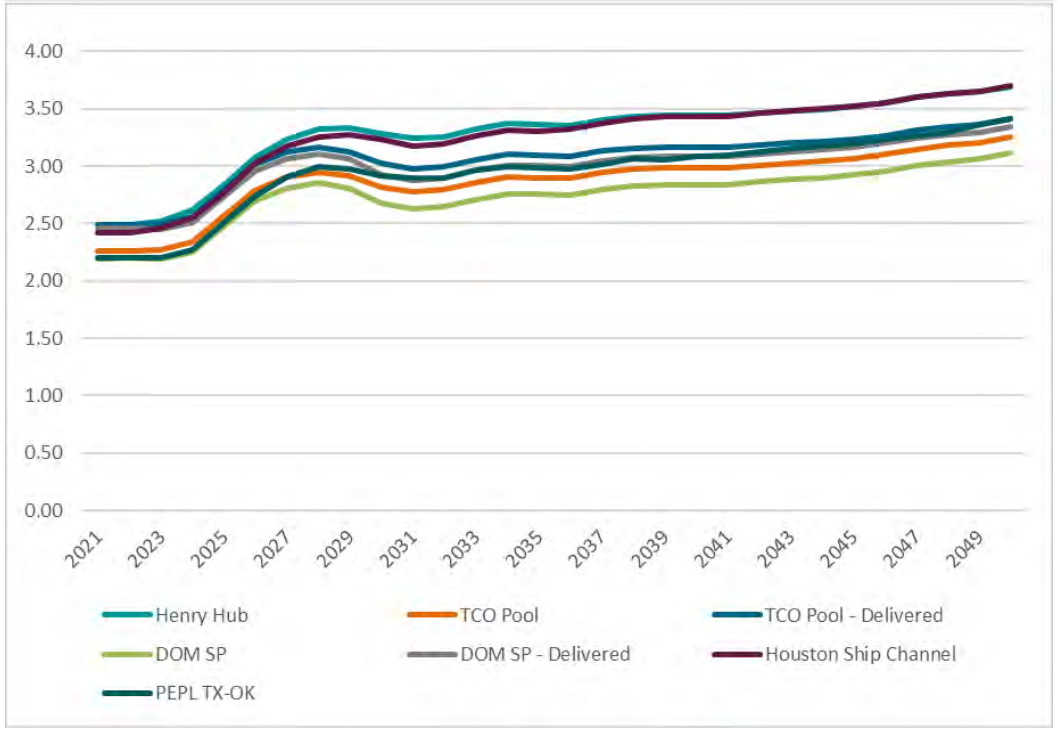
AURORAxmp and other model and tools

AURORAxmp (AURORA) is an industry standard model for electricity production costing, resource valuations, market risk analysis and market simulations.

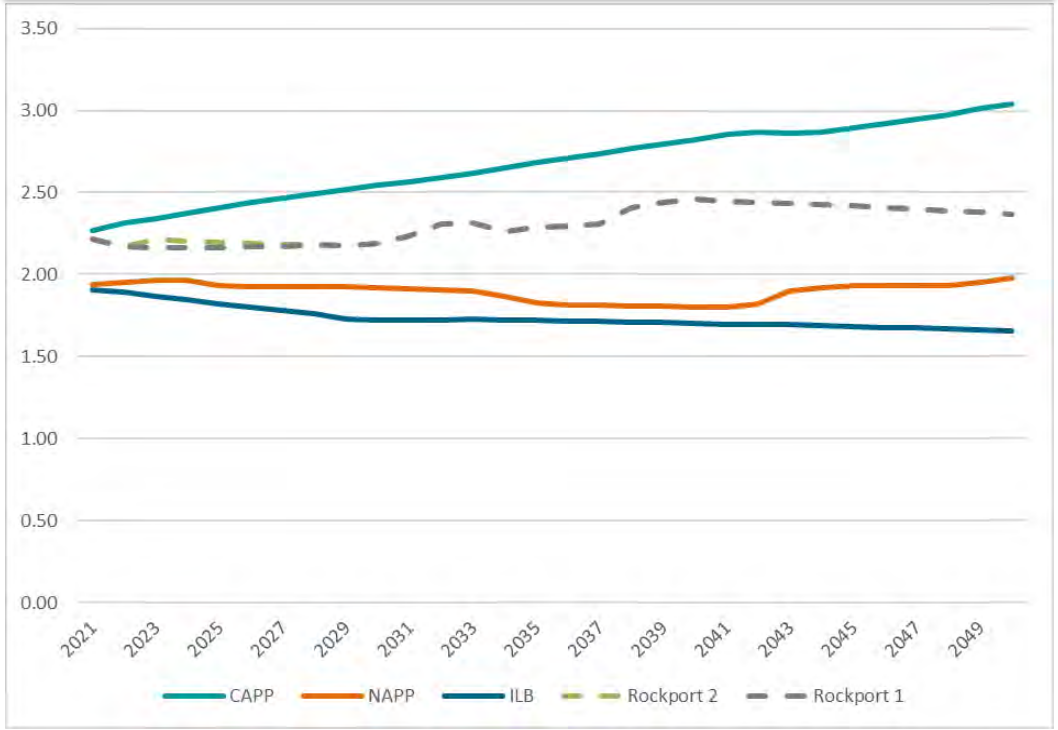
- AURORA is licensed by hundreds of clients in North America, ranging from consultants to utilities to regulatory bodies
- AURORA is accepted in many regulatory jurisdictions
- AEP I&M and Siemens PTI will use the AURORA model in the IRP to provide the following analysis:
  - Commodity forecasts and base case assumption development
  - Least cost optimization of different portfolios
  - Simulation of the performance of different portfolios under a variety of market conditions
  - Production cost modeling to provide market prices for energy
  - Emissions tracking based on unit dispatch
  - An analysis of various regulatory structures such as reserve margins, RPS requirements, others
  - Risk analysis based on stochastic simulation of key inputs

Reference Case: Fuel Prices

Natural Gas Forecast (2019$/MMBtu)

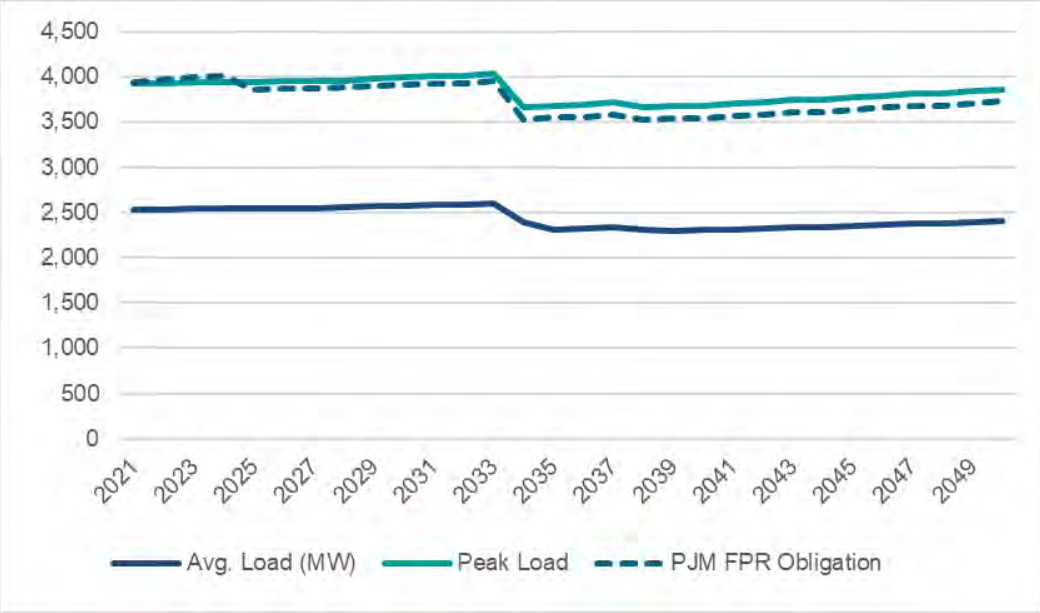


Coal Basin Price Forecast (2019$/MMBtu)

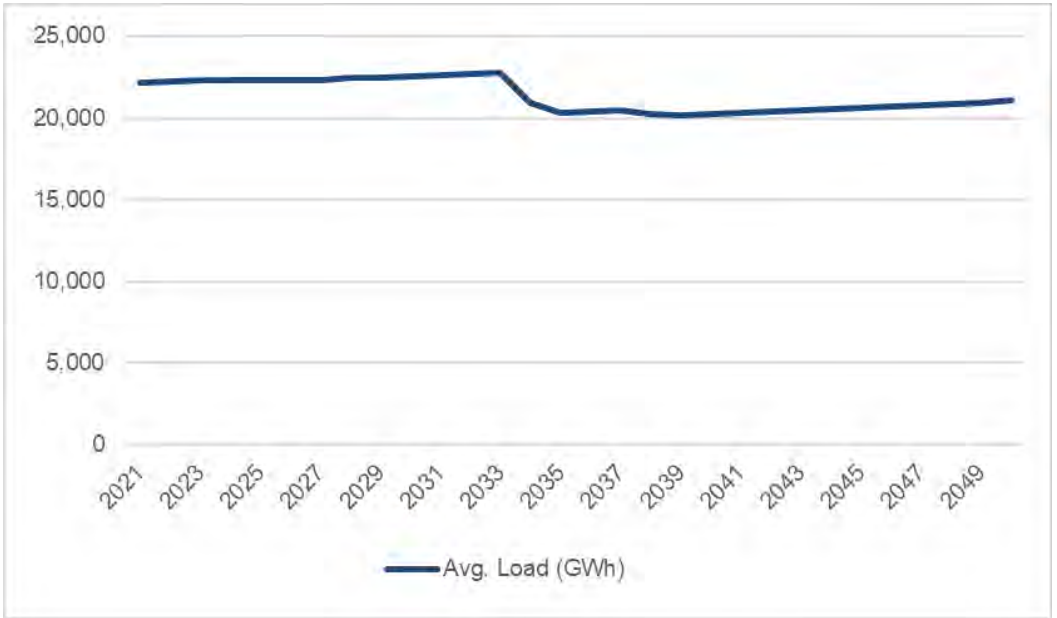


Reference Case: Load Forecast

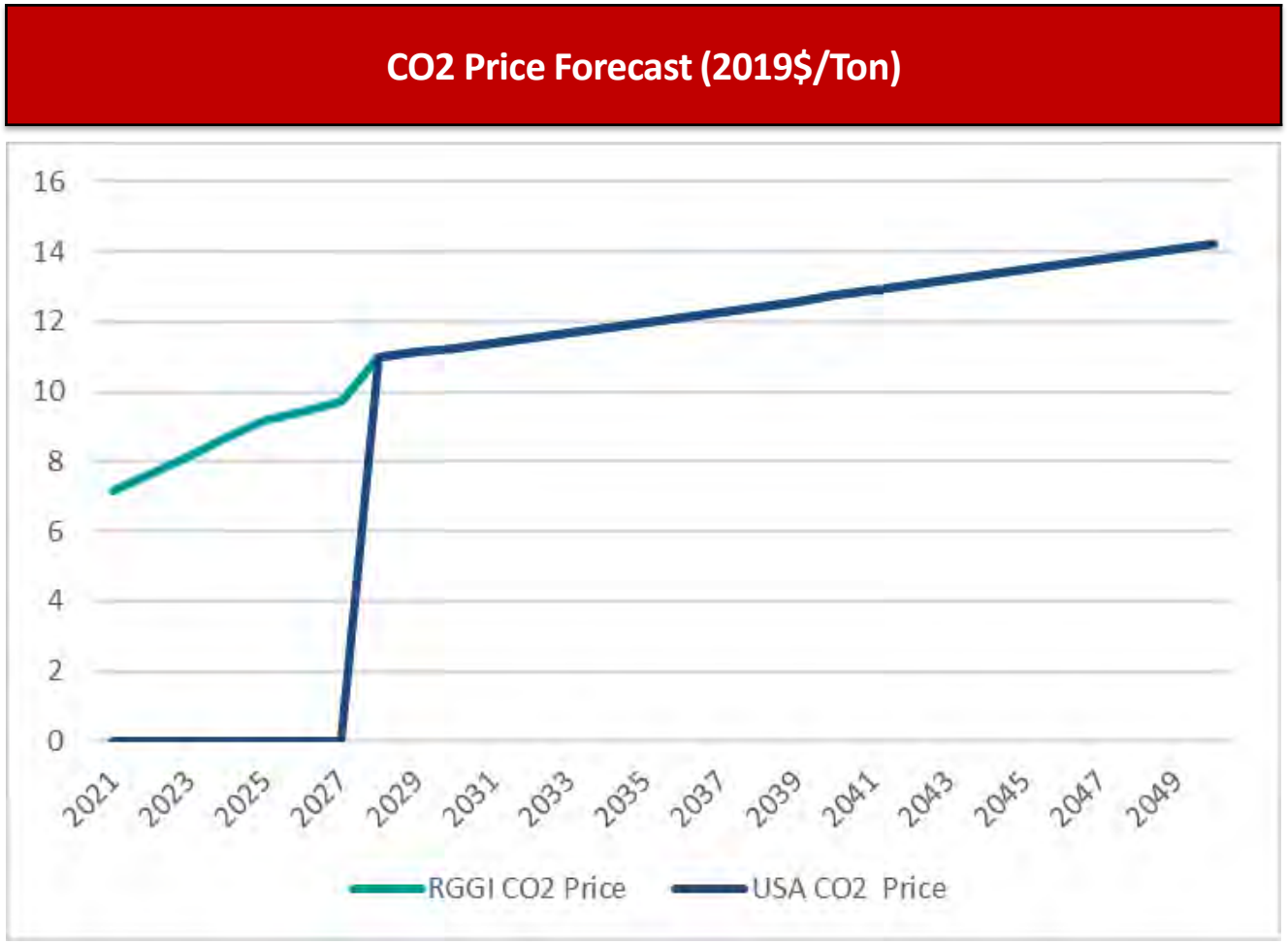
I&M Load (MW)



I&M Energy (GWh)

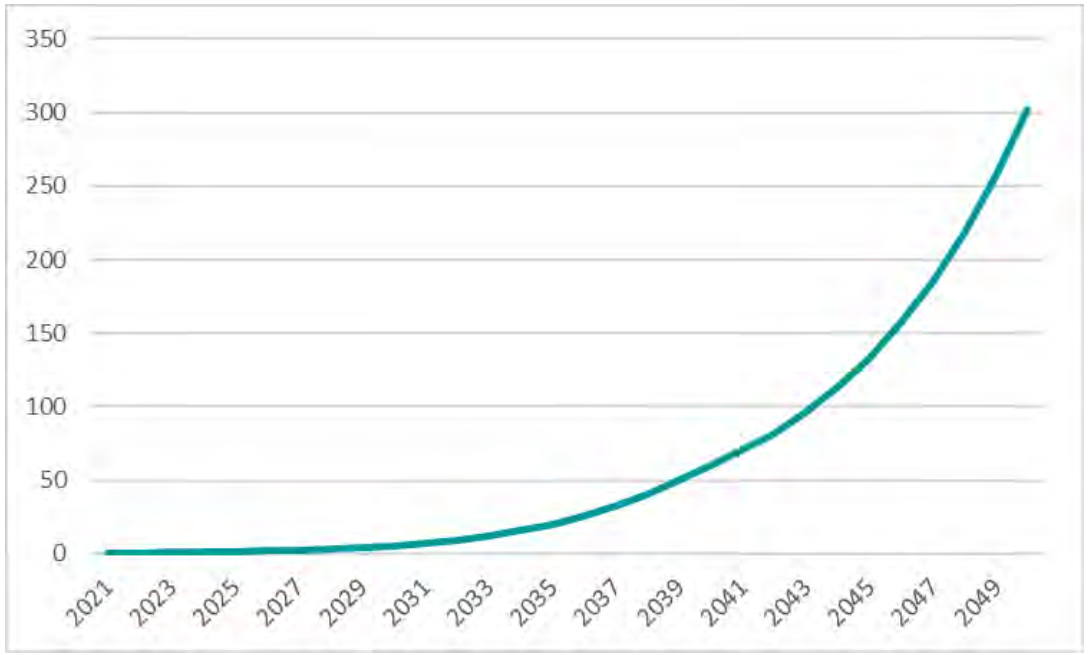


Reference Case: Emissions Price Forecast

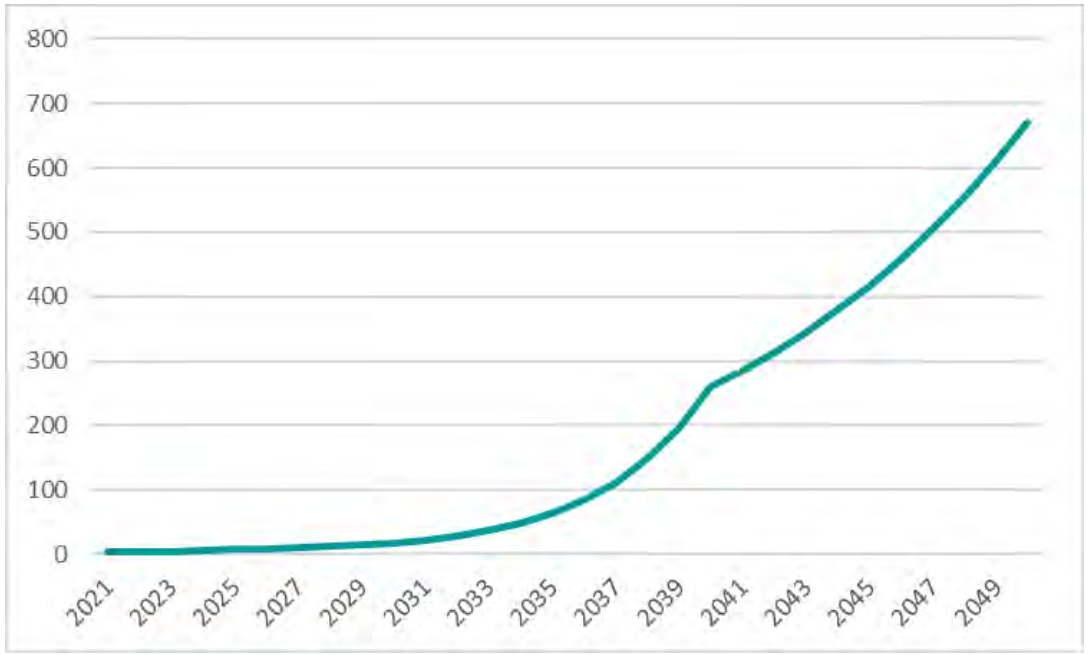


Reference Case: Solar & EV

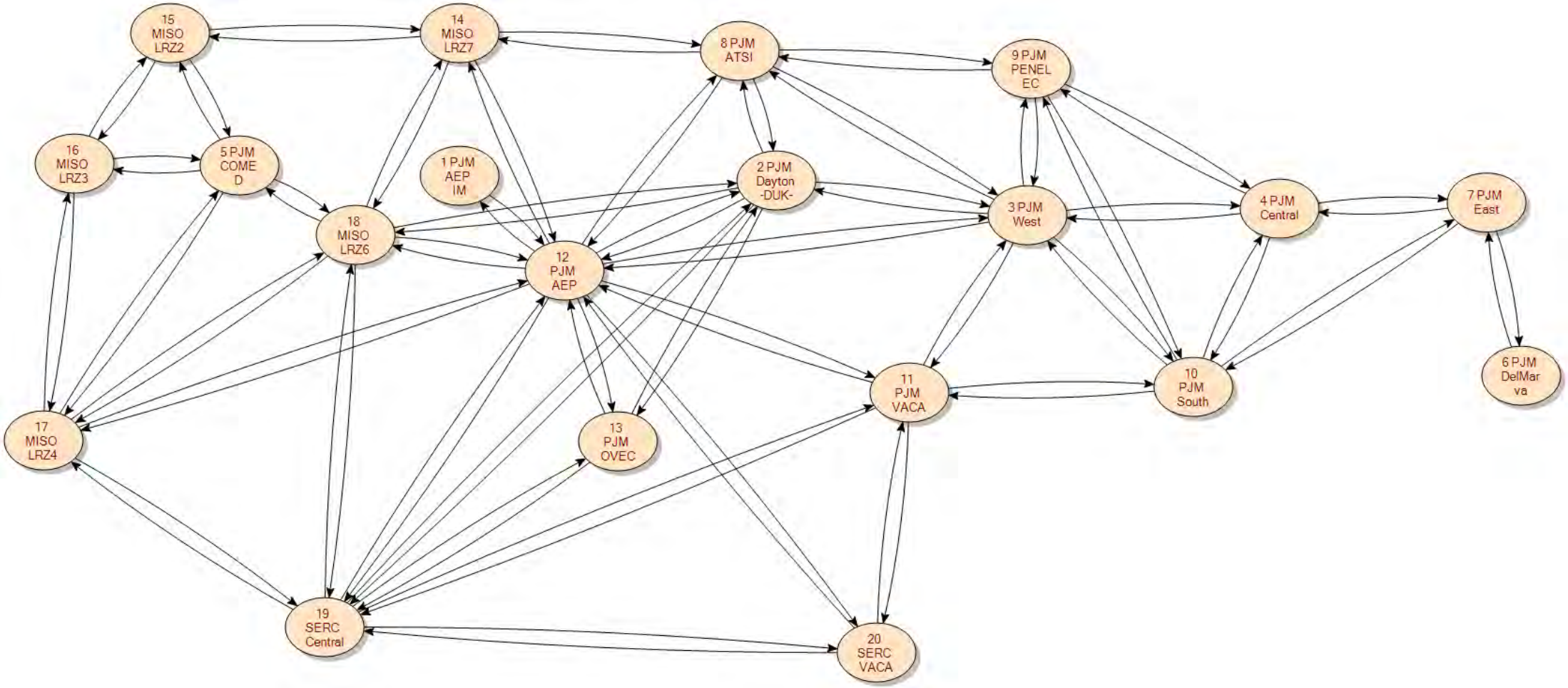
I&M DG Solar Capacity (MW)



I&M Electric Vehicle Demand (MW)



Reference Case: Transmission Topology



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FEEDBACK AND DISCUSSION

RESOURCE OPTIONS – SUPPLY SIDE

Resource Overview – Self-Build Baseload and Peaking Options

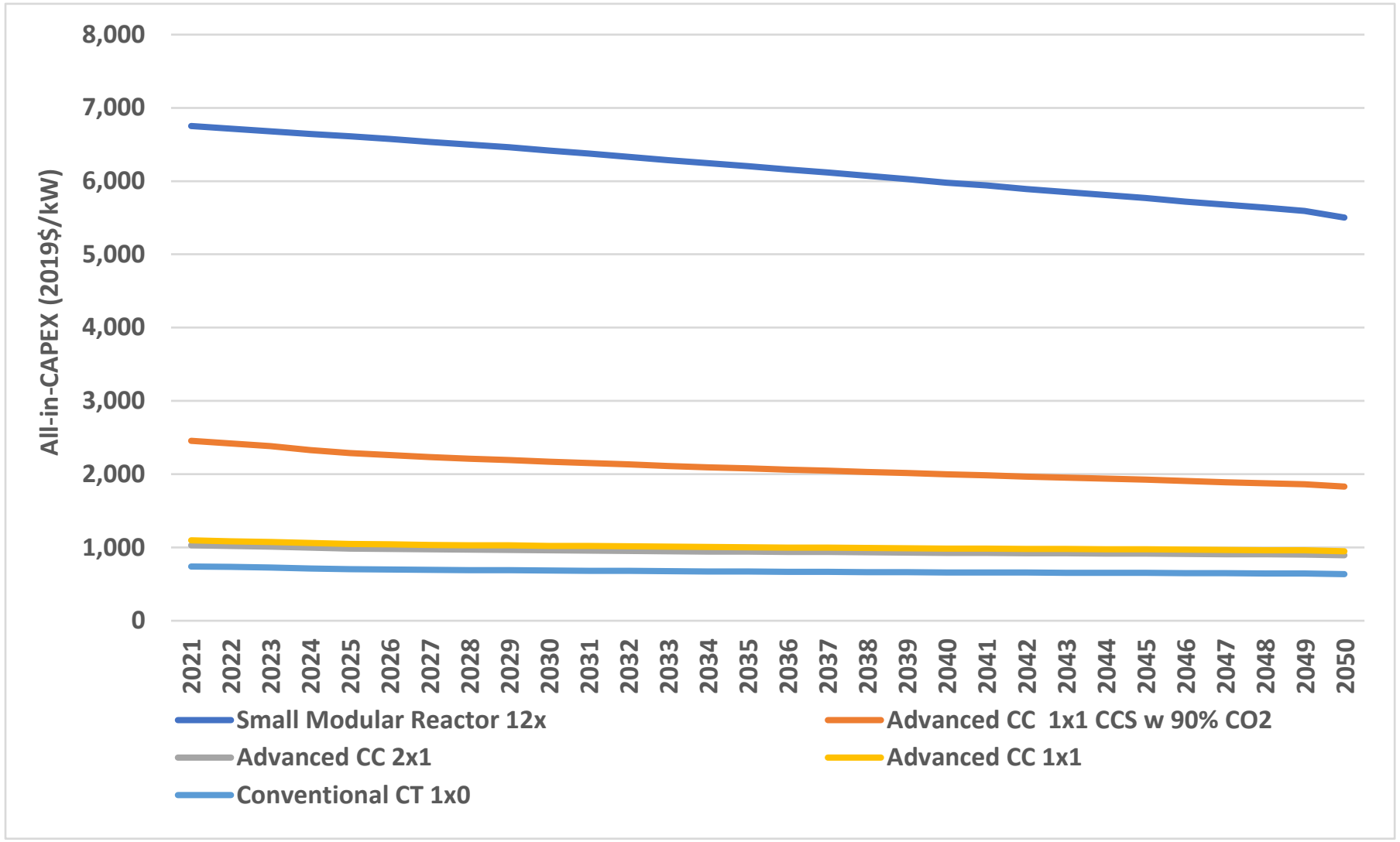
Sources: EIA, Siemens

Technology	Small Modular Reactor	Advanced CC	Advanced CC	Advanced CC	Conventional CT
	12x	1x1 CCS w 90% CO2	2x1	1x1	1x0
Fuel	Uranium	Nat. Gas.	Nat. Gas.	Nat. Gas.	Nat. Gas.
Construction Time (Yrs)	10	7	6	5	5
Book Life (Yrs)	40	40	30	30	30
Size (MW)	600	380	1030*	420	230
Average Heat Rate (Btu/kWh), HHV	10,046	6,431	6,370	6,431	9,905
VOM (2019$/MWh)	3.03	5.84	1.87	2.55	0.60
FOM (2019$/kW-yr)	96.14	27.58	11.26	14.10	6.99

* The Optimization routine can select the Gas CC 2x1 Configuration in smaller increments

Resource Overview – Self-Build Baseload and Peaking Options

Sources: EIA, Siemens



Resource Overview – Renewable and Storage Options

Sources: EIA, Siemens, AEP

Technology	BESS	Onshore Wind	Solar	Solar	Solar + Storage
	50MW/ 200 MWh	with PTC	Tier 1 w ITC	Tier 2 w ITC	20MW/80MWh w ITC
Fuel	NA	Wind	Sun	Sun	Sun
Construction Time (Yrs)	1	2	2	2	2
Book Life (Yrs)	30	10	35	35	35
Size (MW)	50	200	50	50	100
Average Heat Rate (Btu/kWh), HHV					
VOM (2019$/MWh)	0.00	0.00	0.00	0.00	0.00
FOM (2019$/kW-yr) *	20.67	31.72	16.70	16.70	37.55

* The FOM costs are based on levelized FOM assumptions provided by AEP IM

Resource Overview – Renewable and Storage Options – ITC and PTC

Siemens included Investment Tax Credit (ITC) and Production Tax Credits (PTC) for solar and wind resources, respectively.

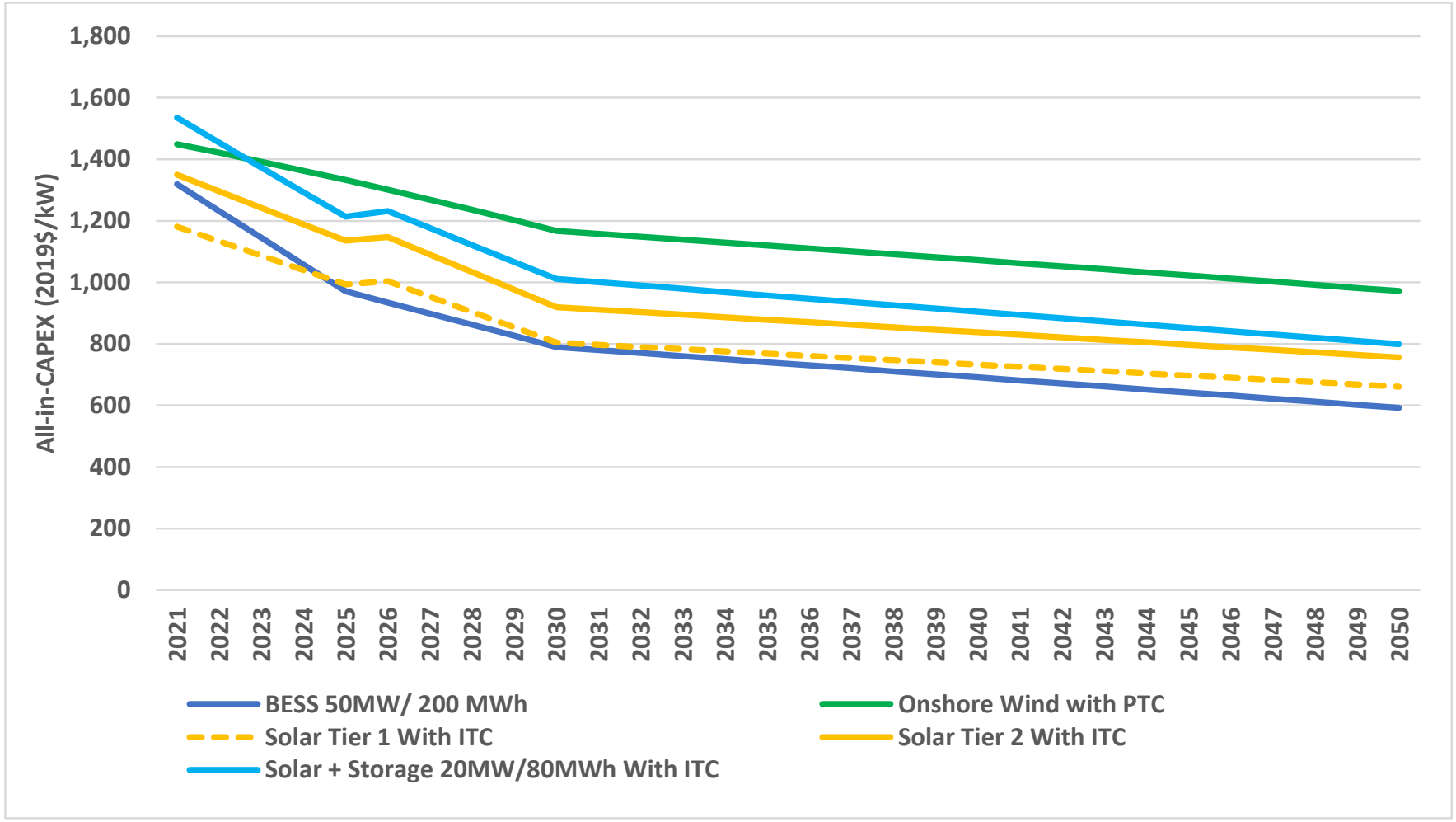
- The ITC is assumed to be available for solar resources coming online through the forecast horizon according to the following schedule:
  - 26% for resources coming online before the end of 2025
  - 10% for resources coming online after January 1st, 2026

- The PTC is assumed to be available for wind resources coming online before the end of 2025.

*AEP I&M solar and wind tax credits assumes ability to leverage safe harbor clause for projects

Resource Overview – Renewable and Storage Options

Sources: EIA, Siemens, AEP



Feedback and Discussion

RESOURCE OPTIONS – DSM/EWR

Demand Side Management Resource Options

Siemens PTI, GDS and the I&M IRP team collaborated on the development of the forecasted inputs needed to include Demand Side Management (DSM) Resources in the analysis.

The AEP I&M IRP included the following DSM options:

- Energy Efficiency (EE)
- Demand Response (DR)
- Distributed Energy Resources (DER)

Resource Overview

DSM resources act as a load reducing resource and decrease the need for capacity and/or generation from new resource options

- **Energy Efficiency** has become an increasingly important measure in Integrated Resource Planning since it reduces the generation needs and can be an effective tool in carbon reduction strategies.

- **Demand Response** provides a reduction in Peak Capacity needs which can act as a carbon reduction strategy decreasing the operating time of less efficient Peaking resources.

- **Distributed Energy Resources** are drastically increasing in the US as renewable energy, specifically solar, has significantly decreased in costs due to policy incentives and learning curves. This allows homeowners or commercial and industrial entities to generate their own energy, decreasing the need for energy generation from utilities.

DSM Resource Treatment

Measure	Program	Treatment	# of Programs
Energy Efficiency	Conservation Voltage Reduction (CVR)	Going-In	4
	Low Income Qualified (IQW)	Going-In	3
	Long-Term Vintages	Optimized	39
Demand Response	Residential	Non-Optimized	1
	Commercial & Industrial	Non-Optimized	1
Distributed Energy Generation	Rooftop Solar (DG)	Going-In	2
	Combined Heat & Power (CHP)	Going-In	1

Optimized: These programs will be exposed to the optimization routine, and the capacity and generation impact will be determined by the economic need for these programs.

Non-Optimized: The capacity included in the analysis; however, the actual impact to each Portfolio may depend on the economic dispatch of the program.

EE Bundle Development For IRP

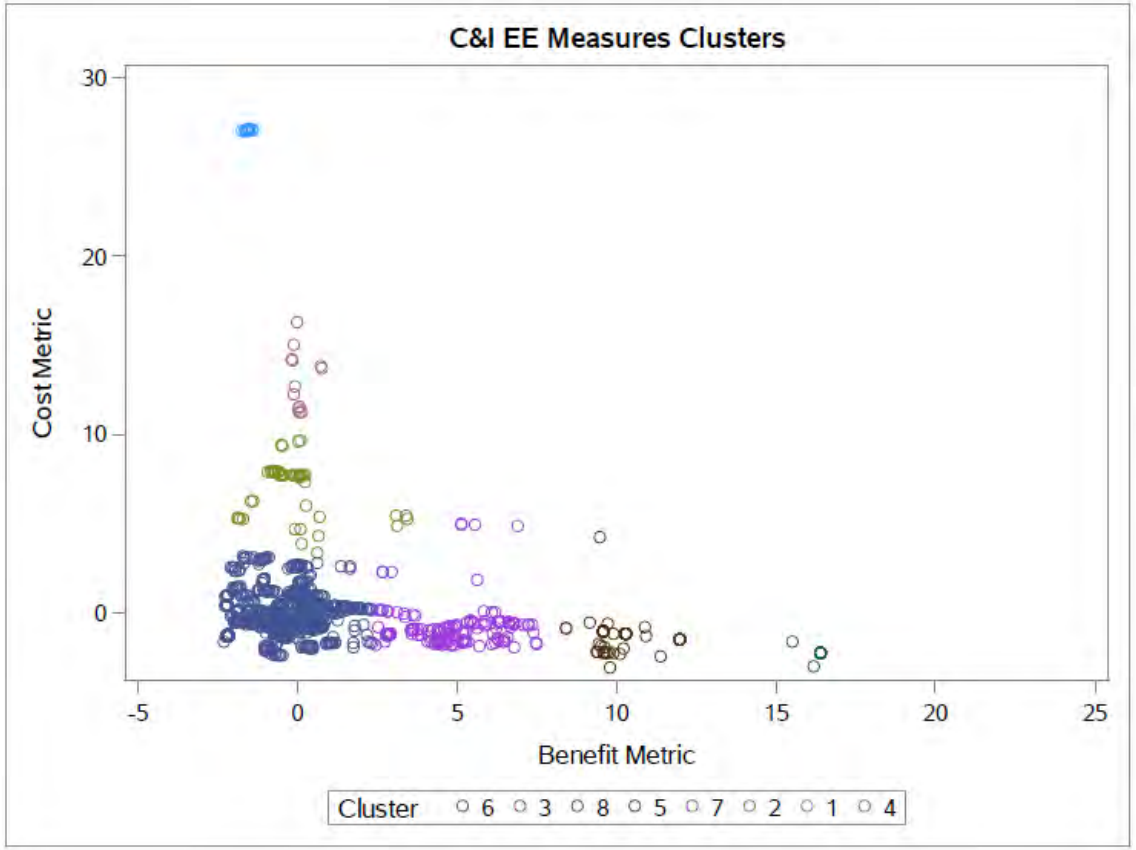
GDS produced value-based bundles based on statistical cluster technique

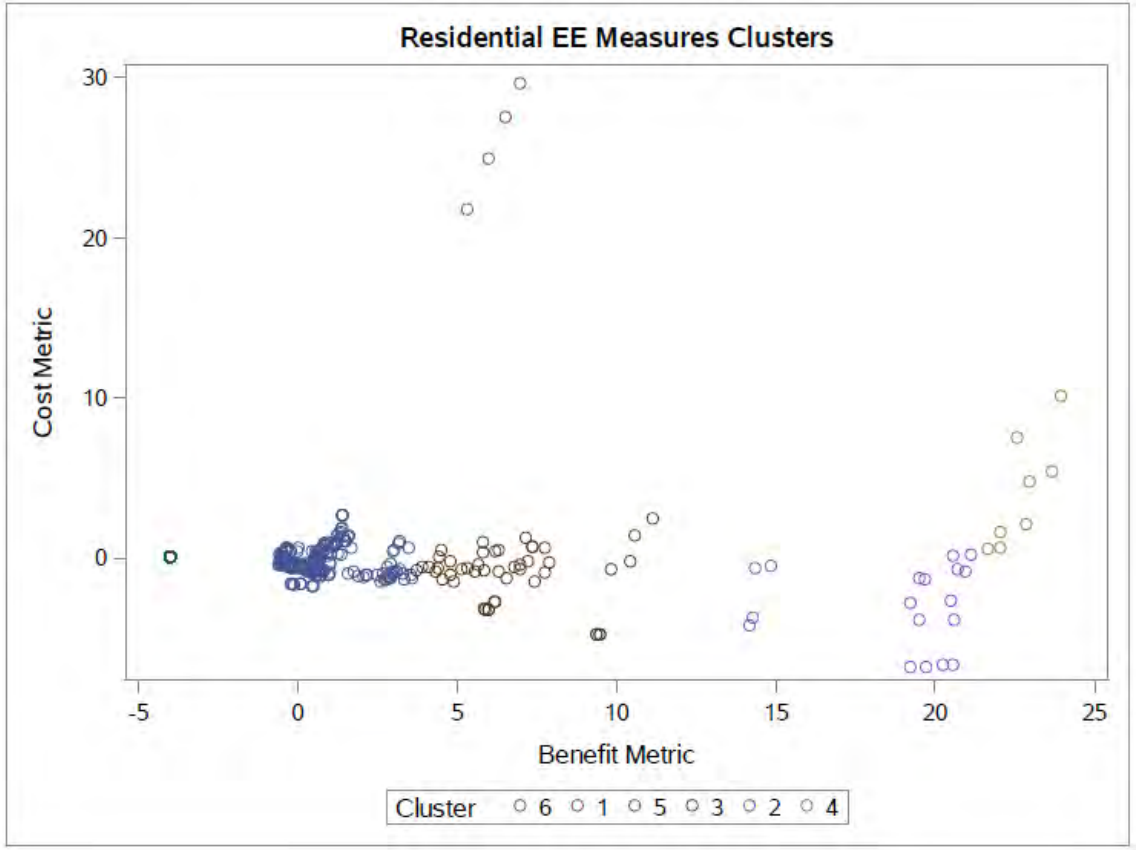
- k-means clustering is a way to group data points together based on some user defined metric(s)
- Data is grouped together by minimizing the Euclidean distance between data points and a randomly selected centroid (single point) within the data
  - Of course, but what does that mean??
- Essentially, data points that are the most similar are grouped together within a cluster
  - The number of clusters affects the groupings
  - Iterative process to get the closest/most similar group of data points in each cluster

EE Measures clustering

- **Residential and Non-Residential measures were kept separate**
  - Cluster process was developed separately for each
- **NPV $ Benefits (and costs)/lifetime kWh were used as the metrics to determine clusters**
  - Both metrics were used to determine cluster groupings
- **Clustering process was analyzed using 2 through 20 clusters**
  - There is no “correct” answer, rather a range of clusters that provide the best results based on the various metrics the analysis provides

EE Measures clustering





EE Measure BUNDLES

- Measure cluster assignment was used to create bundles
- EE bundles are based on the *gross* Realistic Program Potential Determined from the IRP
- Bundles are *not* equal in total savings
- Costs were adjusted to reflect the T&D benefits of each bundle
- Each bundle has unique 8,760 hourly shape

Residential

Five bundles

1 bundle represents ~ 85% of savings

Income-Qualified

Single bundle (non-optimized)

Savings modified from MPS to align with historical spending

C&I

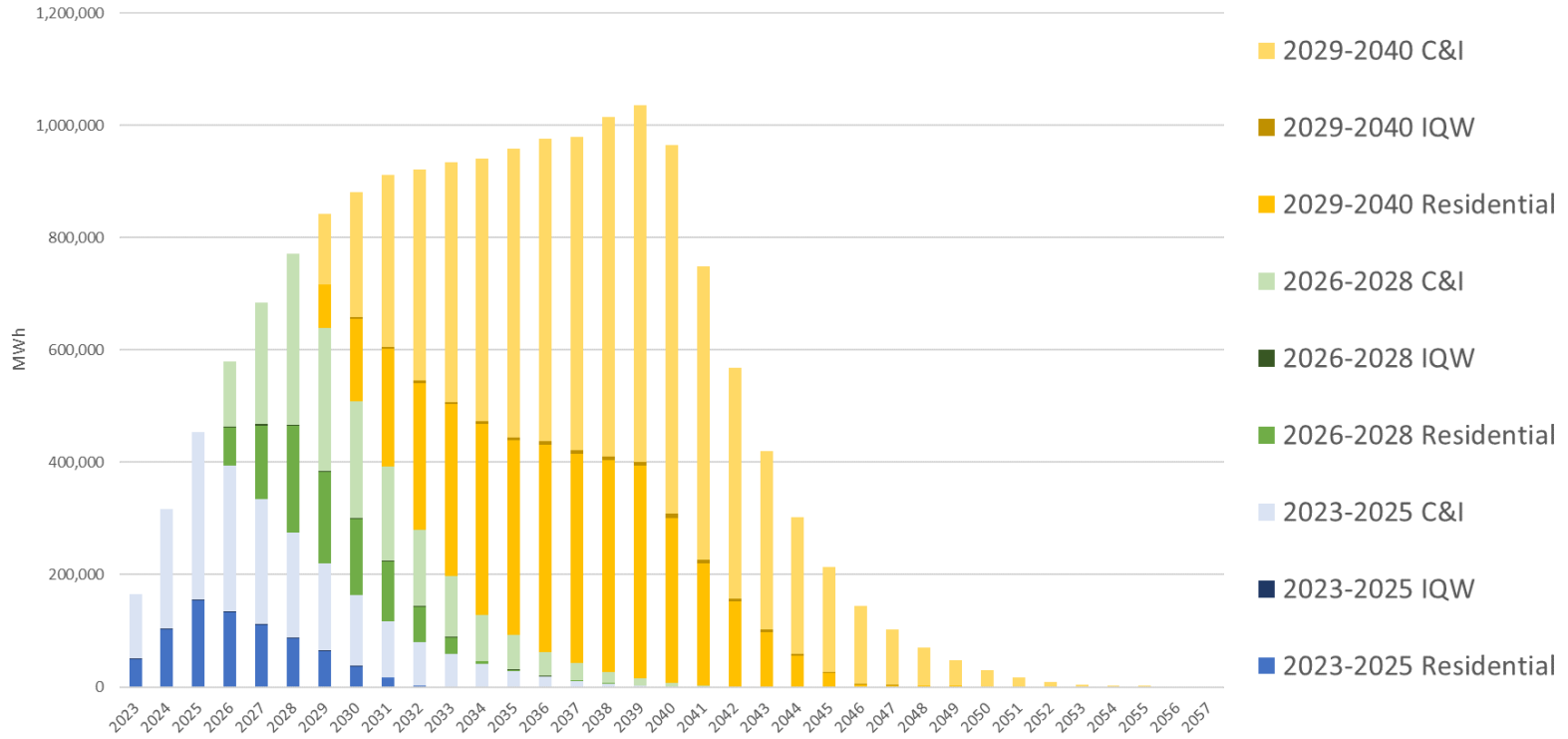
8 bundles

1 bundle ~ 55% of savings

2 additional bundles ~ 30% of savings

EE Measure BUNDLES

Annual costs and savings (inclusive of line losses) are incorporated
Shown below are sector level impacts only ***(actual sectors had additional bundles as indicated on the prior slide)***

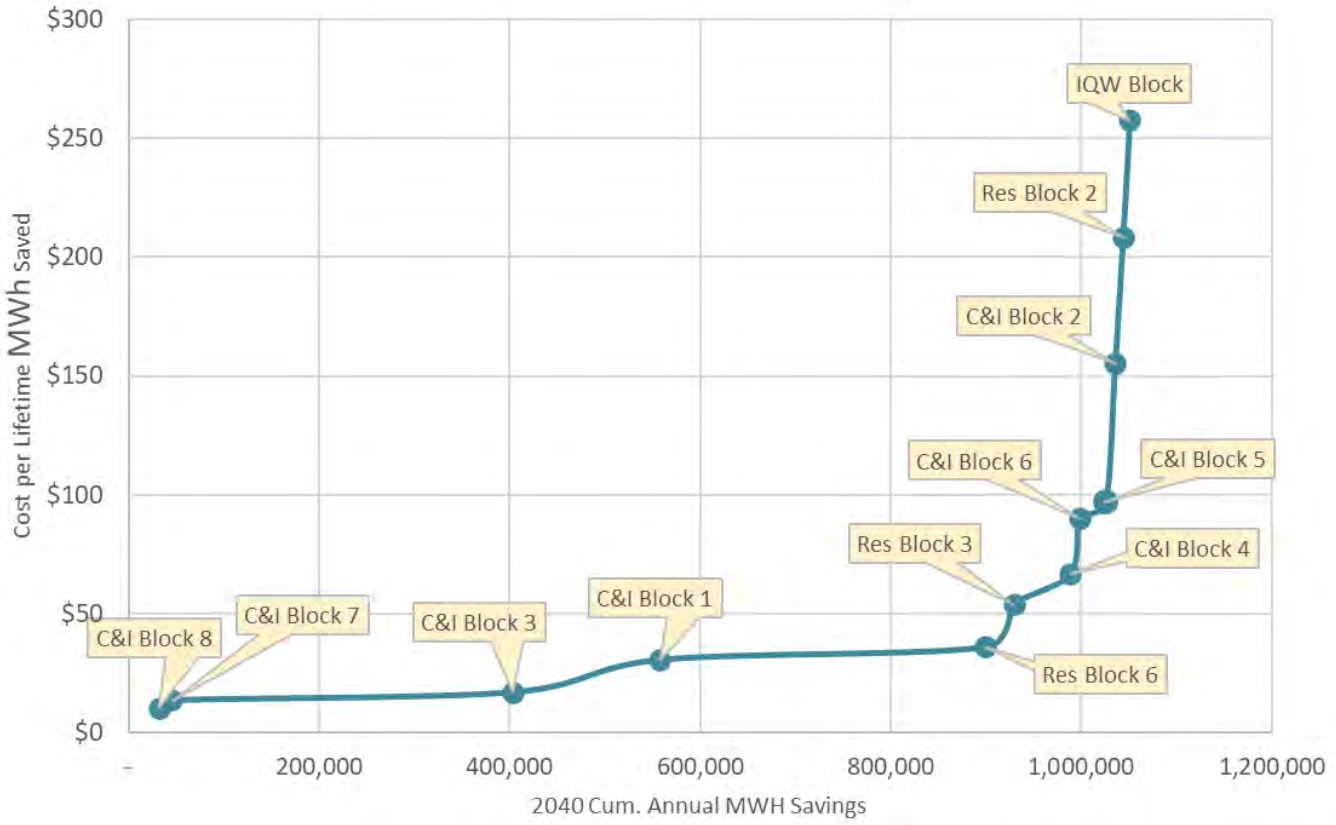


Levelized Cost ($/MWh)

Range	Mean	
$13-$155	$34	*Vintage #3*
$298	$298	
$36-$798	$43	
$12-$154	$29	*Vintage #2*
$267	$267	
$35-$793	$42	
$10-$155	$24	*Vintage #1*
$258	$258	
$36-$792	$42	

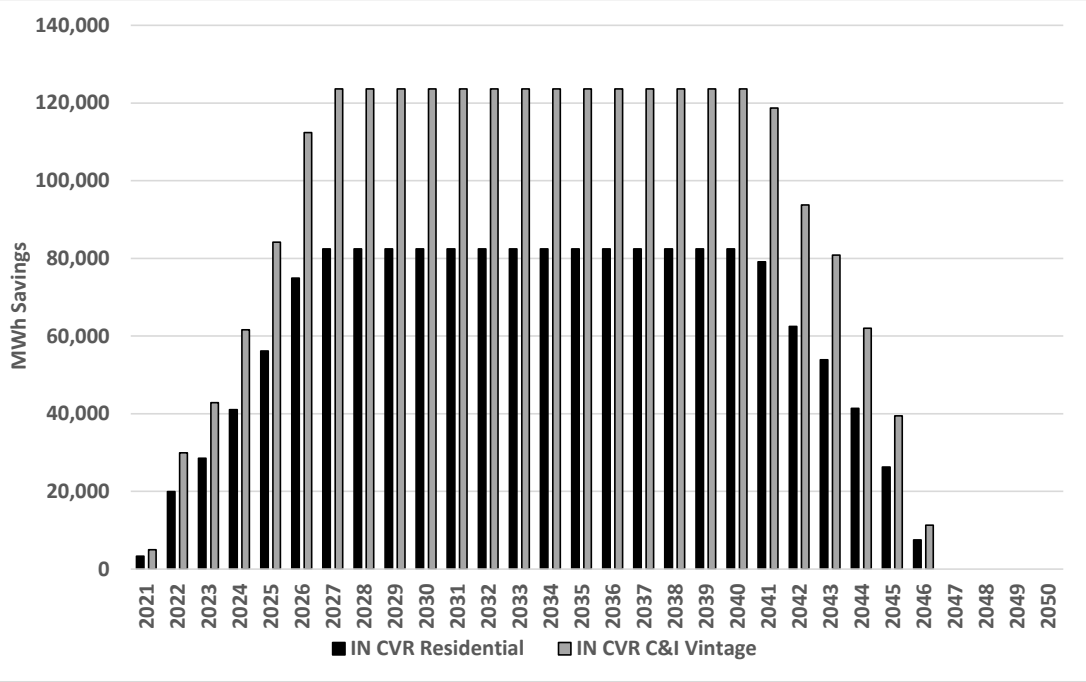
EE Measure Bundles

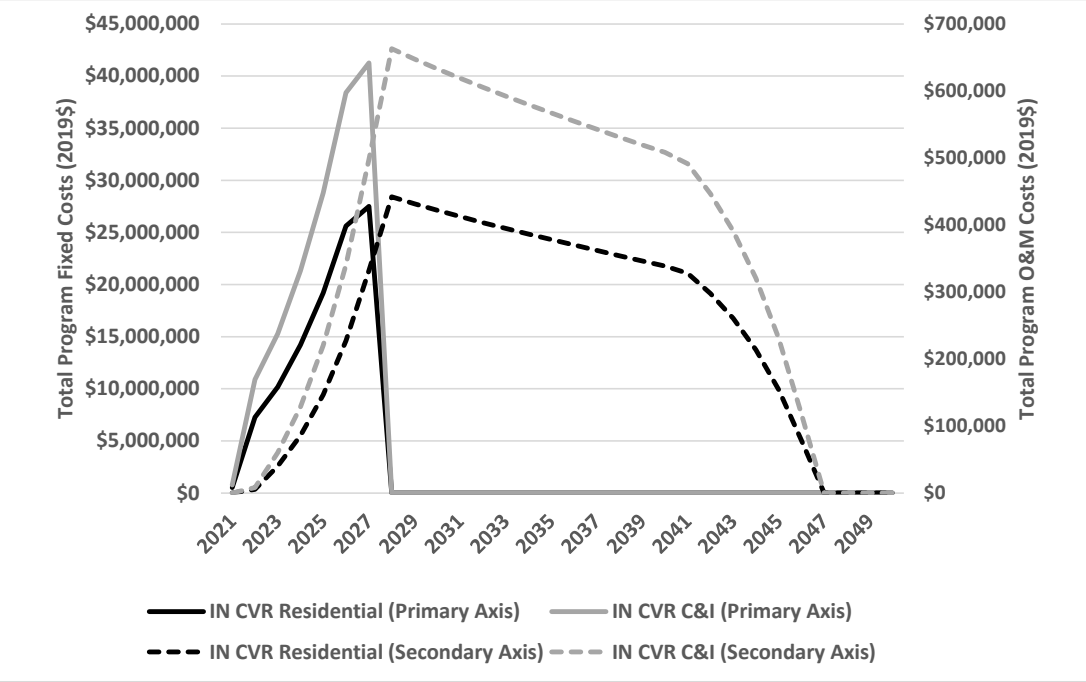
- Supply Curve demonstrates the breakout of the individual DSM bundles and their relative contribution to the cumulative annual impacts in 2040.
- The largest C&I block is 3rd on the supply curve (~$18/lifetime MWh).
- The largest residential block is 5th on the supply curve (~$36/MWh)



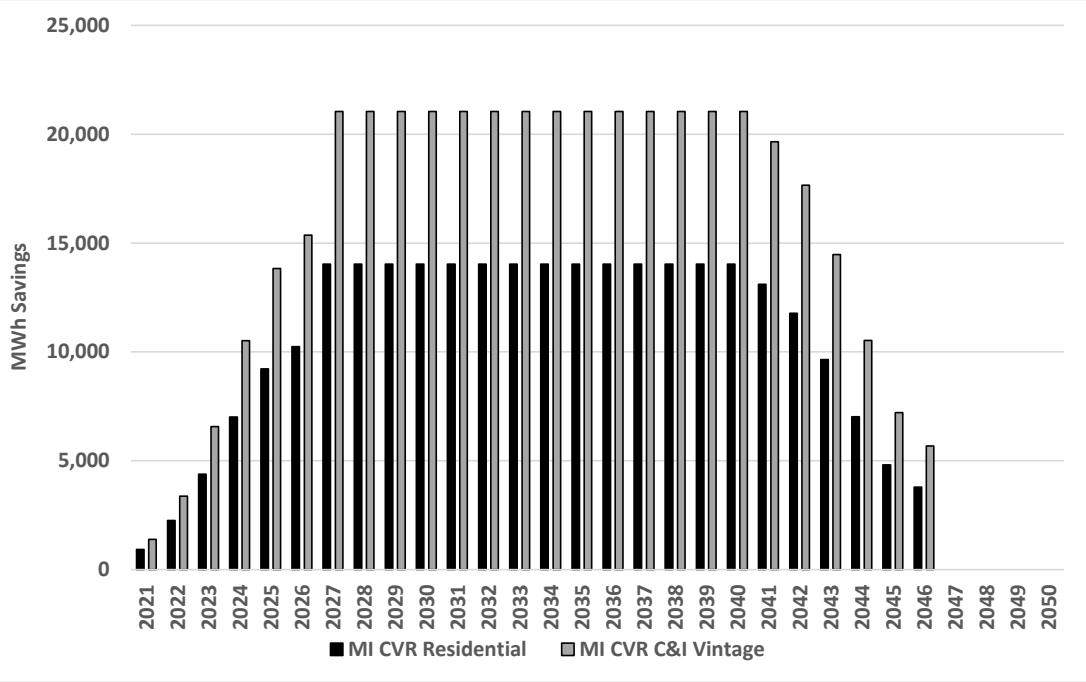
** Two additional residential blocks, with a cost per lifetime MWh saved $300 were omitted from the supply chart. They represent less than 0.1% of the 2040 Cumulative Annual MWh savings in 2040.*

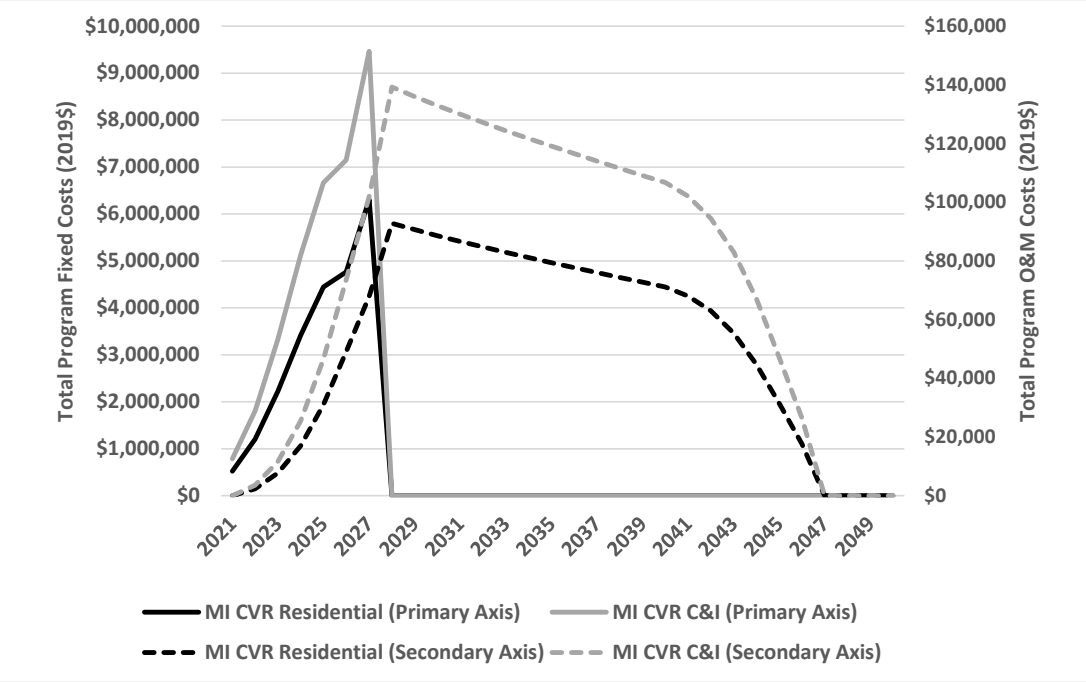
Siemens Parametrization of EE "Going-in" Data
Indiana CVR



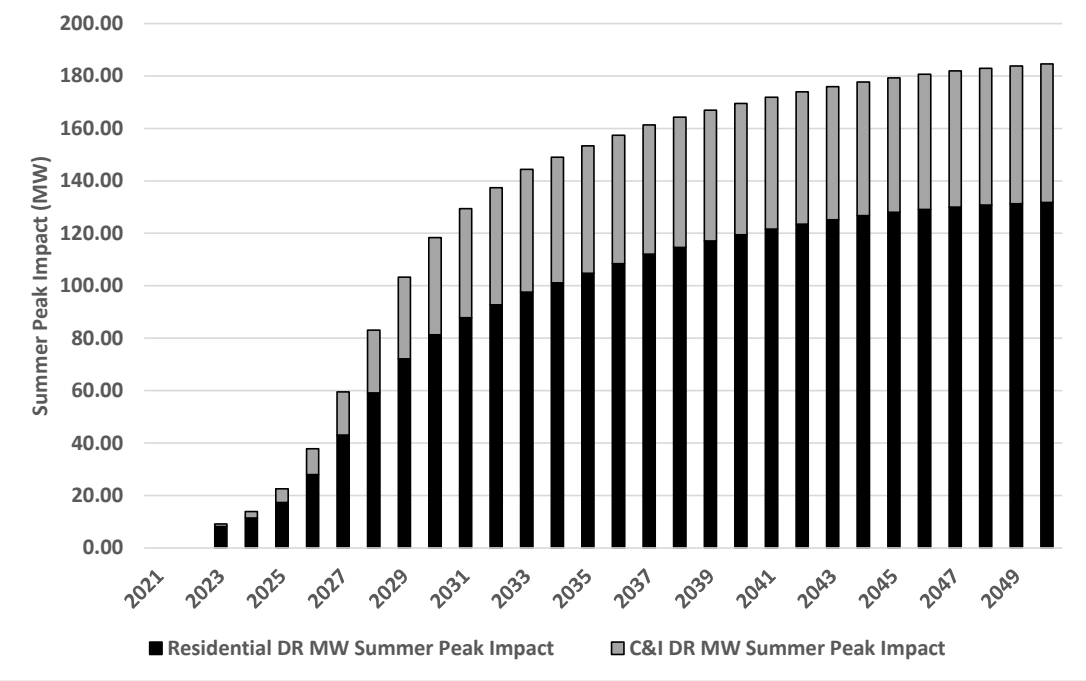


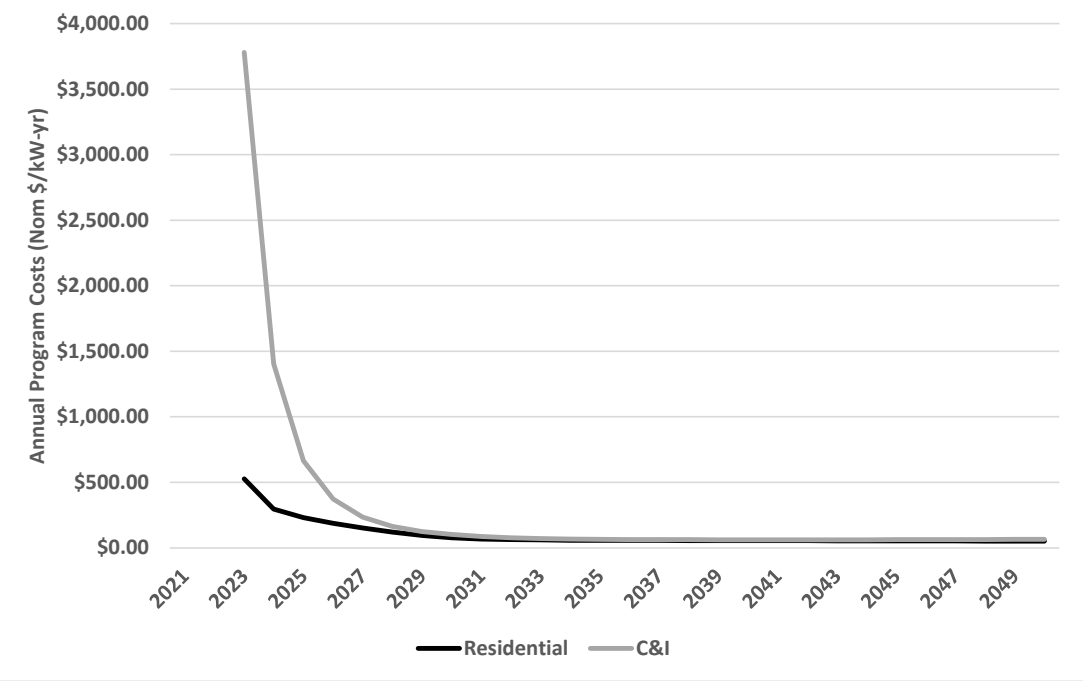
Siemens Parametrization of EE "Going-in" Data
Michigan CVR





Reference Case: Realistic Achievable Potential Demand Response Data





Peer Utility Review

In response to Stakeholder comments after the 2nd Stakeholder meeting, I&M reached out to multiple Investor-Owned Utility (IOU) in the states of Indiana and Michigan to see how they were accounting for energy efficiency in their IRPs and load forecast models.

I&M also reached out to Itron (the developer of the SAE models) to review I&M's approach to modeling energy efficiency in the SAE load forecast models.

Utilities Surveyed

Indiana Utilities	Michigan Utilities
AES (IP&L)	Consumers Energy
Centerpoint (Vectren)	DTE Electric
Duke Energy	
NIPSCO	

Benchmark to Other Utilities in IN & MI

	I&M	Utility A	Utility B	Utility C	Utility D	Utility E	Utility F
Itron SAE Models?	Yes	Yes	Yes (use Itron)	No (traditional econometric model)	No (Use External Consultant)	Yes	Yes
DSM Optimized?	Optimized	Target	Optimized	Target	Optimized	Optimized	Target
DSM Model Approach	Supplemental Efficiency Adjustment Matrix based on measure life	Regress DSM as independent variable	Regress DSM as independent variable	Model programs base on measure life. Assume no savings after measure life expires	Use Add-back method with Aurora	Regress DSM as independent variable	Use Add-back method with MPS EE targets
Adjusting DSM savings in Load Forecast?	Supplemental Efficiency Adjustment used in conjunction with SAE model to prevent double counting EE	DSM coefficient used to discount future DSM savings in forecast	DSM coefficient used to discount future DSM savings in forecast	Load forecast is standard econometric model that doesn't attempt to account for future EE. As a result, no adjustment needed for future DSM savings.	Load forecast is standard econometric model that doesn't attempt to account for future EE. As a result, no adjustment needed for future DSM savings.	DSM coefficient used to discount future DSM savings in forecast	Add back historical savings, and assume MPS savings for future EE savings.

Benchmarking Observations

- 5 out of the 7 IOUs surveyed in IN and MI use Itron's SAE model.
- Utilities that operate exclusively in MI are assuming a target for DSM/EWR whereas most IN and multi-state utilities are optimizing DSM as a supply side resource.
- The majority of IOU's using Itron's SAE model are modeling the DSM series as an independent variable in the regression.
- I&M's Supplemental Efficiency Adjustment (SEA) gets to the same levels as using DSM variable as a independent variable in the regression. In future IRP cycles, I&M will replace the SEA approach by modeling DSM series as an independent variable in the regression equation.
- Many IOU's are using a different load forecast methodologies for their IRP than they use in base rate case, fuel, and/or rider filings. This is not the case for I&M.

SEA vs DSM as an Independent Variable

I&M Indiana												
	Residential Lighting											
5 / 10	900,000	19,899,654	15,515,989	15,306,274	19,651,372	15,067,351	15,169,832	11,939,913	1,070,007	609,626	-	-
	2008	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
2008	900,000											
2009	688,574											
2010	440,204											
2011	207,749											
2012	49,670											
2013												
2014												
2015		19,899,654										
2016		15,224,867	15,515,989									
2017		9,733,237	13,818,033	15,306,274								
2018		4,593,477	11,871,004	13,631,267	19,651,372							
2019		1,098,246	9,759,036	11,710,554	17,500,870	15,067,351						
2020			7,589,116	9,627,132	15,034,911	13,418,490	15,169,832					
2021			5,485,731	7,486,541	12,360,053	11,527,759	13,509,757	11,939,913				
2022			3,581,587	5,411,585	9,611,798	9,476,858	11,606,165	10,633,296	1,070,007			
2023			2,003,944	3,533,178	6,947,809	7,369,680	9,541,315	9,135,012	952,914	609,626		
2024			856,315	1,976,859	4,536,165	5,327,113	7,419,806	7,509,804	818,643	542,913	-	
2025			195,335	844,741	2,538,043	3,478,027	5,363,346	5,840,001	672,999	466,414	-	-
2026				192,695	1,084,543	1,946,001	3,501,682	4,221,397	523,358	383,434	-	-
2027					247,396	831,555	1,959,237	2,756,124	378,305	298,178	-	-
2028						189,687	837,211	1,542,081	246,992	215,535	-	-
2029							190,977	658,954	138,195	140,721	-	-
2030								150,315	59,053	78,735	-	-
2031					Total to Subtract from LF		69,099,327		13,471	33,645	-	-
2032					Total Savings w/ no adjustment		151,698,321			7,675	-	-
					Supplemental Efficiency Adjustment Impact		46%				-	-

JURIS	CLASS	DSM Variable Coefficient	T-Stat	P-Value
IM-IN	Residential	-0.51	(2.88)	0.43%
	Commercial	-0.47	(5.70)	0.00001%
I&M-MI	Residential	-0.52	(4.42)	0.0018%
	Commercial	-0.39	(1.88)	6.12%
	Average	**-0.47**		

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FEEDBACK AND DISCUSSION

SCENARIOS

Overview of Proposed Scenarios

I&M will use a scenario- and sensitivity-based approach to construct future market and regulatory environments. The Reference scenario is the most expected future scenario and includes the base case inputs provided by AEP I&M. The changes in the alternative scenarios are shown relative to the Reference scenario.

All Portfolios in each proposed scenario will achieve a Net Zero by 2050 Carbon Reduction goal which aligns with the AEP Corporate Goal.

Scenario	Load	Gas Price	Coal Price	CO2	Renewable and Storage Costs	EE / DR Cost
Reference	Base	Base	Base	Base	Base	Base
Rapid Technology Advancement	Base	Base	Base	Base	Low	Low
Enhanced Regulation	Base	High	High	High	Base	Base

The directional basis of the Scenario drivers are as compared to the Reference scenario.

Scenario Narrative: Reference Scenario

Scenario	Load	Gas Price	Coal Price	CO2	Renewable and Storage Costs	EE / DR Cost
Reference Scenario	Base	Base	Base	Base	Base	Base

The Reference Scenario

The Reference scenario is the most expected future scenario that is designed to include a consensus view of key drivers in power and fuel markets. The existing generation fleet is largely unchanged apart from new units planned with firm certainty or under construction. An increased carbon reduction is assumed to achieve net zero in the electric sector.

In the Reference scenario, major drivers include:

- Coal prices remain relatively flat over the forecast horizon in constant dollars consistent with EIA reference
- Natural gas prices move upward in real dollars to 2050 consistent with EIA reference
- Capital costs are downward sloping for fossil and wind resources, and decline significantly for solar and storage resources
- Carbon regulations limiting CO2 emissions will commence in 2028 and remain in effect throughout the forecast horizon
- Portfolio achieves Net Zero by 2050 without any incremental goals and assuming an $100/ton (nominal) offset is available

Scenario Narrative: Rapid Technology Advancement

Scenario	Load	Gas Price	Coal Price	CO2	Renewable and Storage Costs	EE / DR Cost
Rapid Technology Advancement	Base	Base	Base	Base	Low	Low

Rapid Technology Advancement

The Rapid Technology Advancement scenario assumes technological advancements, favorable regulation and overall economies of scale that impact renewable resources. The scenario assumes technology costs for supply- and demand-side renewable resources decline over time, resulting in up to 35% reductions in technology costs; significantly faster than in the Reference scenario.

In the Rapid Technology Advancement scenario, major drivers include:

- Technology cost reductions for renewables and storage result in lower capital costs
- Technological advancement and economies of scale contribute to greater potential for energy efficiency and demand response
- Carbon regulations limiting CO2 emissions will commence in 2028 and remain in effect throughout the forecast horizon
- Thermal generation retirements are driven by unit age-limits and announced retirements, consistent with Reference scenario
- Fundamental drivers (load, commodity prices, net zero requirement by 2050) remain constant to the Reference scenario

Scenario Narrative: Enhanced Regulation

Scenario	Load	Gas Price	Coal Price	CO2	Renewable and Storage Costs	EE / DR Cost
Enhanced Regulation	Base	High	High	High	Base	Base

Enhanced Regulation

The Enhanced Regulation scenario assumes increased environmental regulations covering natural gas, coal and CO2. Illustrative examples include a potential fracking ban and increases of carbon reduction targets.

In the Enhanced Regulation scenario, major drivers include:

- Natural gas, coal prices and CO2 prices are increased to reflect enhanced regulation
- Technology costs for thermal and renewable units remain consistent with the Reference scenario
- Thermal generation retirements are driven by unit age-limits and announced retirements, consistent with Reference scenario
- Carbon regulations limiting CO2 emissions will commence in 2025 and remain in effect throughout the forecast horizon
- Portfolios achieves Net Zero by 2050 without any incremental goals and assuming an $100/ton (nominal) offset is available

INDIANA MICHIGAN POWER
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FEEDBACK AND DISCUSSION

INDIANA MICHIGAN POWER
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STAKEHOLDER SESSION

Stakeholder Session

- The purpose of this session is to allow stakeholders to discuss and propose different strategies to meet load obligations over the next 20 years.
- We won't be able to run a least-cost portfolio run for each strategy, but we will optimize several different strategies.

Process:

1. Open Discussion
2. Poll – based upon the discussion, what additional strategy would you like to see included in the IRP process.
3. In the next meeting, strategies will be defined as model structures
4. Structures will be consolidated into several portfolios for further evaluation

Questions to Facilitate the Discussion

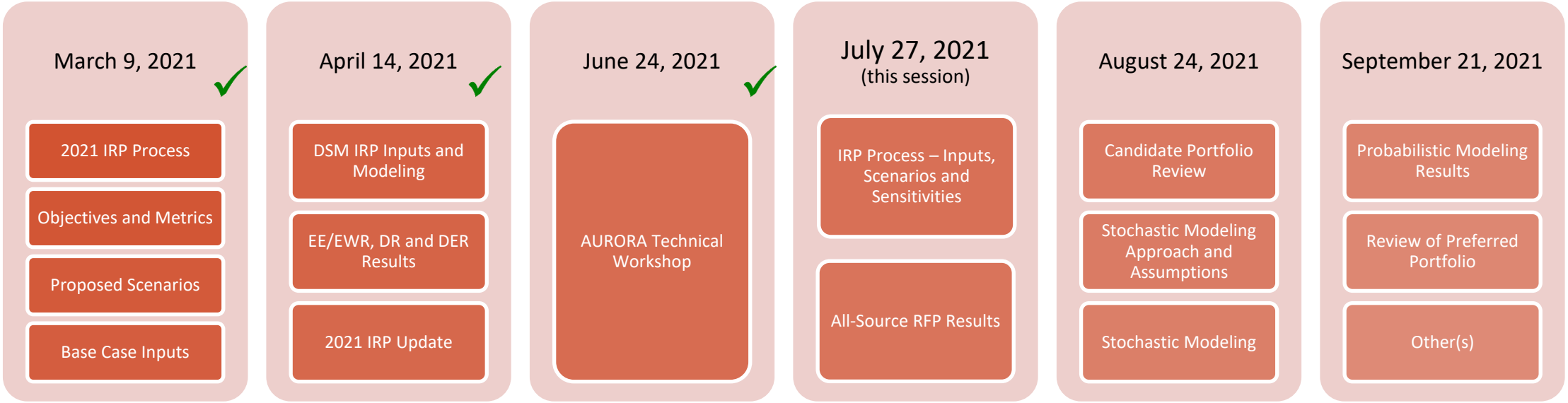
1. When you consider our IRP objectives of Affordability, Sustainability, and Reliability, is there an alternative strategy that would emphasize a particular objective?

2. In the short-term, what alternative option would you like to see added to the analysis?

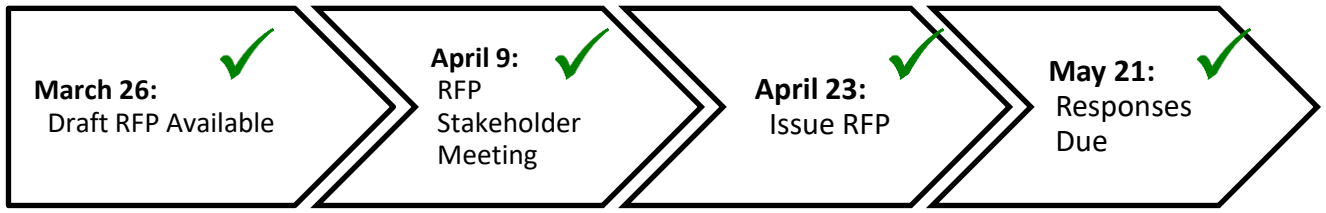
3. Over the long-term, should a different strategy be introduced into the analysis?

STAKEHOLDER PROCESS

Stakeholder Timelines



All-Source RFP Timeline



AURORA Licensing and Data Provision

Licensing of Aurora Application

- As part of the Stakeholder engagement, I&M executed an agreement to extend licenses of Energy Exemplar's AURORA application to the parties in Case No. U-20591 and to the stakeholders in Indiana that are highly involved in the technical aspects of the IRP.
- As of this meeting, licenses have been issued. Any licensing issues should be reported to Jay Boggs (jay.boggs@siemens.com) or Christen Blend (cmblend@aep.com)
- Online help manuals are available within the Aurora application - the model's Help menu features material like a user manual.

AURORA Licensing and Data Provision (continued)

Data Provision

- Consistent with prior I&M Integrated Resource Planning processes, we will continue to provide access to data to support stakeholder review of the IRP process.
- Siemens will host a confidential and secure site for stakeholders to access the information.
- IRP databases would include input and output tables used in the modeling and will require an NDA with Siemens.
- The model database will be available for review, but Siemens will not provide any review support beyond clearly-defined naming conventions (data key).
- Process for signing up to access the data will be shared by the Stakeholder Meeting #3B in August.

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FEEDBACK AND DISCUSSION

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CLOSING REMARKS

Indiana Michigan Power Company

2021 Integrated Resource Plan

Stakeholder Workshop #3B Meeting Minutes

October 14, 2021

1. Welcome and Safety Moment – Andrew Williamson

Andrew kicked off the meeting at 9:30 and covered slides 3-4.

Andrew kicked off the meeting and welcomed participants to the 2021 I&M Integrated Resource Plan (IRP) stakeholder workshop. Andrew reviewed a safety moment for autumn safety.

Andrew announced the Stakeholder Meeting #4 date has been set to November 18, 2021, pending confirmation with the regulating authorities.

Andrew also explained that the Reference Case that will be presented today has been updated to remove the Rockport Unit #2 after 5/31/2024, as a result of the recent settlement agreement IURC Cause No. 45546.

2. Meeting Guidelines – Jay Boggs, Siemens PTI

Jay covered slides 5-8

Jay introduced the Meeting Guidelines section and its content and established the role of Moderator for the Stakeholder Meeting.

Meeting guidelines and agenda were discussed.

Jay also provided an overview of the Questions and Feedback process, including directing stakeholders to submit comments and stay informed at the I&M IRP Website: http://www.indianamichiganpower.com/info/projects/IntegratedResourcePlan.

In addition, stakeholders are encouraged to submit questions via email to I&MIRP@aep.com

3. Candidate Portfolio Development – Peter Berini, Siemens PTI

Peter covered slides 9-16

Peter covered the candidate portfolio development process (Step 3 of the 5-step process.)

Peter covered the IRP process overview (slide 10), explaining that the IRP is a roadmap of where the organization (AEP I&M) is going and how AEP I&M is going to get there. I&M partnered with Siemens to create the **Reference portfolio** and a set of **Candidate Portfolios** with the incorporation of stakeholder feedback. Reference and candidate portfolios will be analyzed to identify the preferred portfolio.

Peter reviewed each of the following slides, which outline the key inputs and assumptions used in the development of the Reference Portfolio:

Slide	Description
11	Reference Case Fundamental Drivers and Resource Options
12	Generating Resources

13	Demand Side Management Resources
14	Resource Limitations

Peter then reviewed slide 15, which outlines the **Reference Portfolio** (referred to as "Reference Case" on slide 15), as well as the 8 sensitivities and 5 additional scenarios performed.

Peter indicated that there may be additional sensitivities and scenarios performed as part of the analysis. Once the preferred portfolio is selected, additional sensitivities will be performed to further analyze the portfolio.

Finally, Peter noted that while the results of all of the sensitivities and scenarios are included in the PowerPoint presentation materials, those designated as "Appendix" in the Details column have been included in the Appendix at the end of the presentation materials and will not be covered in the presentation.

Feedback and Discussion

As part of the oral questions from the audience not captured in the Appendix, there were two topics discussed:

- The initial discussion was around the treatment of tax credits, particularly the PTC and ITC. The Siemens team confirmed the PTC is assumed to be available for wind resources coming online before the end of 2025 and that the ITC is assumed to be available for solar resources coming online through the forecast horizon, starting at 26% and reaching 10% in 2026 and beyond.
- There was also a discussion around the constraint of resources used in the analysis. Siemens noted that the limits, which were informed by the all-source RFP, were discussed on Slide 14, and that two additional sensitivities were developed to test the impact the limits had on the portfolio selection.

4. Reference Case Portfolio Results - Peter Berini, Siemens PTI

Peter covers slides 17-25

Peter provided an introduction to the Reference Case Results, highlighting the following two important points:

1. The Reference Case Portfolio is the optimized portfolio, based on existing resources and the expected conditions (as outlined in the previous section.) It is intended to be used as the basis for comparing other strategic choices.
2. The Reference Case Portfolio does **not** represent I&M's preferred portfolio, but provides a basis to conduct sensitivities and portfolio comparisons

Key details about the Reference Case Portfolio:

1. The Reference Case portfolio has approximately 7 GW of new nameplate capacity (mostly renewable) through the forecast horizon
2. Energy Efficiency resources are selected with total Energy Efficiency generation as compared to retail load growing to 5% in 2030
3. Wind resources selected in 2025 and 2026 take advantage of the Production Tax Credit[1]

4. Solar and Solar Hybrid resources selected in 2025 and 2026 take advantage of the Investment Tax Credit[1]
5. Gas resources are selected with Rockport and Cook Retirements to support portfolio needs for capacity and energy. The resources selected are a combination of hydrogen convertible simple cycle and combined cycle
6. The carbon free generation declines after the retirement of the Cook Nuclear facilities and would require market offsets to meet targets thereafter

Peter then explained Slides 19-21, which provide a visualization of Reference Case Results of the I&M Total Portfolio Capacity, Cumulative Capacity Expansion, and Capacity Additions of Renewables and Gas CT/CC resources.

Peter then reviewed slides 22-23, which introduce the calculation of Key Metrics for the Reference Case Portfolio. The metrics calculated for each portfolio are as follows, with their calculation formula:

Metric	Calculation Formula
Capacity Position against FPR	(UCAP of resources/PJM Capacity Obligation with Reserve)-1
Energy Balance	I&M energy generation / energy demand
Imports I&M	imported energy / energy demand
Exports I&M	exported energy / energy demand
Carbon Free Generation	carbon free generation / total generation
Energy Efficiency (EE)	all EE generation / retail energy demand

Peter also pointed out that the color coding on the metrics values is intended as a visual aid only and should not be used to compare portfolios.

On slide 23, Peter presented the results of the metrics for the Reference Case Portfolio, highlighting the following:

Metric	Notes related to the Reference Case Results
Capacity Position against FPR	Short-term capacity contracts are required in 2024 to account for shortage in capacity. Capacity position maintains healthy margins through forecast period.
Energy Balance	Energy Balance is high in the early years as renewable energy is being selected to meet capacity position.
Imports I&M	Imports maintain reasonable balance without any years exceeding +30%
Exports I&M	Exports maintain reasonable balance without many years exceeding +30%
Carbon Free Generation	Carbon free generation meets targets until the retirement of Cook Nuclear facilities.
Energy Efficiency (EE)	EE Penetration for new and existing programs reaches ~5% of retail load obligation by 2030

5. Sensitivity Based Candidate Portfolios, Siemens PTI IRP Team

The Siemens PTI IRP Team covered slides 26-40

Peter kicks off this section by reviewing the listing of scenarios and sensitivities listed on slide 27 that will be reviewed in this section of the meeting. A summary of the results is as follows:

Slides	Alternative Scenario/Sensitivity
28-29	Rockport Unit 1 Early Retirement (2024)
30-31	Rockport Unit 1 Early Retirement (2025)
32-33	Cook Unit 1 and Unit 2 License Extensions
34-35	Cook Unit 1 and Unit 2 License Extensions and No Conventional Gas
36-37	35% Reduction in Renewable, Storage and EE Costs
38-39	Increased Environmental Regulations Leading to High Gas, Coal and CO2 Prices

Feedback and Discussion:

Oral questions from the audience

As part of the oral questions from the audience not captured in the Appendix, there was a lengthy discussion on how the analysis considers federal policy that is currently being debated. The IRP process is meant to develop future states of the world that capture the impacts of future policy changes in the energy space. Both the enhanced regulation and the rapid technology advancement scenarios capture potential states that allow us to draw conclusions about the impact of pending policy changes.

6. IRP Alignment Discussion – Art Holland and Peter Berini, Siemens PTI

Art covers slides 41-48

The Siemens PTI team introduced this section of the meeting as an opportunity for all stakeholders to post questions and provide their feedback related to any part of the 2021 I&M IRP process. To provide a guide to the discussion, the Siemens PTI will walk through each step of the IRP process, soliciting feedback at each step along the way.

Slide	Process Step
43	Step 1: Determine Objectives
44	Step 2: Assign Metrics
45	Step 3: Create Reference Case and Candidate Portfolios
46	Step 4: Analyze Candidate Portfolios
47	Step 5: Develop Balanced Scorecard

Feedback and Discussion:

All questions discussed in this section are recorded in the following Questions Section of the minutes.

7. Stakeholder Next Steps and Data Provision Plans – Jay Boggs, Siemens PTI

Jay covered slides 50-51

Jay reviewed the timeline for stakeholder meetings.

Jay also explained that we continue to work with the Technical Stakeholders to provide data in accordance with the original email to the technical stakeholders. While we have experienced delays in the schedule, the original intent for data provision remains the same.

8. Closing Remarks, Andrew Williamson

Andrew concluded the meeting expressing thanks on behalf of the I&M leadership for the active participation in today's meeting.

9. Appendix A: List of Questions Answered on Call

List of questions addressed on the call:

Question Asked Date/Time	Question Asked	Answer Given
09:51:35 AM EDT	As a number of us articulated in the last meeting, we feel like I&M/Siemens has utilized very little of our feedback so far. If you are legitimately interested in what we have to say for the rest of the process it would be very helpful to know what about this presentation you consider finalized and will not change and what can change.	As answered by Andrew
10:01:18 AM EDT	I may have misheard but did I&M earlier say its preferred plan may be a combination of portfolios?	As answered by Andrew
10:04:25 AM EDT	Hi Andrew, so anything about the Reference Case is final and all of the input assumptions are final as well? So what can we provide feedback on as it relates to the non-Reference Case scenarios?	As answered by Andrew
10:04:34 AM EDT	On slide 11, Candidate Portfolio Development, it shows DG solar as 0 in 2021, 1.1 in 2023 and so on. I believe these estimates are on the very low side for what can and probably will be developed. As of right now, my company, Lakeshore Die Cast has ~1.4MW of generation (150kW currently up and 1.4MW waiting on some interconnection paperwork with I&M). I'm certainly not the only person in the territory with solar so this number just strike me as off.	As answered by Andrew
10:05:30 AM EDT	And not to be a broken record, but it's really difficult to provide feedback on modeling choices and results without seeing the modeling files.	As answered by Peter Berini and Jay Boggs
10:07:22 AM EDT	What did you use as the basis for UCAP values for resources (especially renewable resources)? Also, did	As answered by Peter Berini

	you model impose any limits as to net reliance on the PJM energy market by hour?	
10:10:09 AM EDT	Regarding my earlier question about how preferred plan can be a combo of portfolios, how can you avoid concerns about I&M cherry picking?	As answered by Andrew
10:13:44 AM EDT	I get flexibility but I'm sure you can understand our concern and would appreciate you all considering that.	As answered by Jay Boggs
10:14:56 AM EDT	Is it also likely that an optimized portfolio may not be buildable as the model constructs it because there is not an ability to build a certain level of particular resources overnight? Therefore there may be a need to adjust the portfolio to address what can actually be installed in certain timeframes?	As answered by Andrew
10:15:58 AM EDT	What kind of analysis have you done as to the capital cost for relicensing Cook? Will those numbers/analysis be available for review?	As answered by Andrew
10:16:01 AM EDT	Hi, Sameer Doshi of Earthjustice here, on behalf of Citizens Action Coalition of Indiana. The September 2020 settlement in the Michigan PSC required that "I&M will work with stakeholders to define the modeling inputs for the IRP" -- including on several specific areas. What is I&M's plan to work with stakeholders and incorporate their advice on defining modeling inputs?	As answered by Andrew
10:16:08 AM EDT	I raised my hand Jay, but you may not have seen it.	Anna posed several observations and a question that were addressed by the IRP Team.
10:21:40 AM EDT	To follow up, if you did not do an analysis of the cost of relicensing Cook, what did you use in the "Cook Senstitivity" model runs?	As answered by Andrew
10:23:51 AM EDT	Has I&M's consulted with other utilities and taken into account industry accepted methods and siting constraints for consideration of capital costs, tax credits, resource build and siting limitations per year, etc?	As answered by Art Holland and Greg Soller and Andrew
10:28:03 AM EDT	Does the Company plan to conduct a full Cook relicensing analysis in another IRP in some future filing?	As answered by Andrew
10:34:36 AM EDT	Yes, sorry!	No problem! :)
10:38:56 AM EDT	Peter, the ITC isn't sunsetting, it's declining to 10% indefinitely. Is there a reason you all didn't reflect that?	As answered by Peter Berini
10:46:38 AM EDT	Since the cumulative totals for wind, hybrid storage, hybrid solar, and solar don't change after 2026, does	As answered by Peter Berini

	that mean that the max resource constraint(s) is/are binding?	
10:48:32 AM EDT	Is Aurora able to recognize the ITC and post ITC period for the solar hybrid resources or is the assumption that the solar and storage would be paired together for the entire planning period?	As answered by Peter Berini
10:50:45 AM EDT	Are the gas peaker and gas cc units new units that are going to be built (if so when?) or is that generation going to come from PPAs?	As answered by Peter Berini
11:02:06 AM EDT	Given the high energy balance and export numbers from 2026-2034, is there any concern that the model is adding resources primarily to sell energy on the market?	As answered by Art Holland
11:02:11 AM EDT	Peter, since you aren't dispatching to price, but rather are simulating load and gen in I&M's territory and in neighboring BAs why would I&M's system preferentially overbuild for purposes of selling energy?	As answered by Art Holland
11:02:19 AM EDT	Do you plan to add somewhere what the upstream gas emissions are?	As answered by Peter Berini
11:09:31 AM EDT	Is there any concerns that gas units that are built in the late 2030s early 2040s might lose out on running for their lifespan given that we are likely looking for carbon neutrality around 2050? Does the model look at how storage might be able to replace those gas units or is it to far out for the model to see how that technology might progress?	As answered by Art Holland
11:09:42 AM EDT	Can you describe how you add a constraint to the model secifically to keep imports and exports within "bounds"?	As answered by Art Holland
11:09:48 AM EDT	Yes, I understand why you are trying to fix this, but I wonder if there is a deeper issue. If the neighboring BAs have access to the same resource choices as I&M then it seems like I&M wouldn't have some special arbitrage opportunity. Does that make sense?	As answered by Art Holland
11:09:55 AM EDT	specifically...	As answered by Art Holland
11:10:35 AM EDT	MISO is in the process of proposing a seasonal construct. It seems potentially important to wonder whether PJM will be led to the same approach and the extent to which such an approach might affect your optimal portfolio. Have you thought about that and/or plan to do any modeling on that?	As answered by Art Holland
11:37:31 AM EDT	To follow up on Anna's questions, you are modeling PJM energy market prices based on your assumptions about resource builds in neighboring utilities by hour?	As answered by Art Holland

11:59:08 AM EDT	There seems to be a consistent cliff between 2034 and 2035 where the energy balance drops by about a third. However, it's not clear why that's happening in 2035 because the first loss of Cook capacity happens in 2034. Do you have any thoughts about why that is happening?	As answered by Peter Berini
12:00:04 PM EDT	Why would you not model for zero carbon by 2050 or 2040 given the dire threat posed by climate change?	As answered by Andrew
12:00:24 PM EDT	And do you have any thoughts about why the cumulative limits on the renewables and storage through 2035 seem to hold for the entire planning period even though the limits are relaxed after 2035?	As answered by Peter Berini
12:23:57 PM EDT	In looking at the sensitivity that removed the max build constraints on renewables (last slide of the Appendix), the energy balance and exports blow up up. Is this indicative of a bigger modeling issue where the model is building to export, similar to the discussion earlier with Anna? It seems like the max build constraint in the reference case may be hiding a problem.	As answered by Art Holland - will provide additional discussion during the alignment session of the meeting.
12:25:43 PM EDT	Thanks for the answer on net zero. If you can't extend Cook or do lock into gas CC, wouldn't that create policy risk and stranded asset risk for customers to reach your goal of 100% by 2050?	As answered by Andrew
01:38:54 PM EDT	Would like to reinforce the need for actual rate analysis, not based on NPV but actual rates. This is critical to evaluating both affordability and rate stabilty.	As answered by Art Holland
01:46:37 PM EDT	Have you considered using the HHI approach used in market power analysis to better measure resource diversity? Just measuring the number of resource types doesn't capture how much you are relying on specific resources.	As answered by Art Holland
01:49:28 PM EDT	HHI = Herfindahl-Hirschman Index	As answered by Art Holland
02:07:02 PM EDT	Did you remove the constraints on wind and solar or did you impose a higher constraint, which is still binding? The numbers look like the latter.	As answered by Art H and Peter B
02:17:18 PM EDT	Is the increased gas price volatility being incorporated into the analysis? Also concerns related to the ability to build new pipelines.	As answered by Peter Berini
02:20:17 PM EDT	I wonder if reliability would be better modeled as related to the peak hours for imports or exports for energy from the I&M system in that these are they hours in which the transmission system (and potential issues with transmission) could be most important to maintaining reliability..	As answered by Art Holland

02:47:43 PM EDT	Thanks, Anna and Jay. Yes, the more we can weigh in now and get changes to modeling, the fewer controversies in the years to come. We appreciate it.	You are very welcome!
02:49:49 PM EDT	Thanks folks!	

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Indiana Michigan Power:
2021 Integrated Resource Plan
Public Stakeholder Meeting #3B

October 14, 2021

Presented via GoToWebinar --> https://attendee.gotowebinar.com/register/1321120812922892812

BOUNDLESS ENERGY℠

Agenda

Time		
9:30 a.m.	WELCOME AND SAFETY MOMENT	**Andrew Williamson**, I&M Director Regulatory Services
9:35 a.m.	MEETING GUIDELINES AND AGENDA	**Jay Boggs**, Siemens PTI
9:40 a.m.	CANDIDATE PORTFOLIO DEVELOPMENT	**Art Holland,** Siemens PTI & **Peter Berini**, Siemens PTI
10:00 a.m.	REFERENCE CASE RESULTS	**Art Holland,** Siemens PTI & **Peter Berini**, Siemens PTI
11:00 a.m.	BREAK	
11:15 a.m.	SENSITIVITY RESULTS	**Art Holland,** Siemens PTI & **Peter Berini**, Siemens PTI
12:30 p.m.	LUNCH	
1:30 p.m.	ALIGNMENT DISCUSSION	**Art Holland,** Siemens PTI
2:15 p.m.	STAKEHOLDER NEXT STEPS	**Jay Boggs,** Siemens PTI
2:30 p.m.	CLOSING DISCUSSION	**Andrew Williamson**, I&M Director Regulatory Services
3:00 p.m.	ADJOURN	

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WELCOME AND SAFETY MOMENT

Andrew Williamson | I&M Director Regulatory Services

Safety Moment

MEETING GUIDELINES AND TIMELINE

Jay Boggs | Siemens PTI

Questions and Feedback

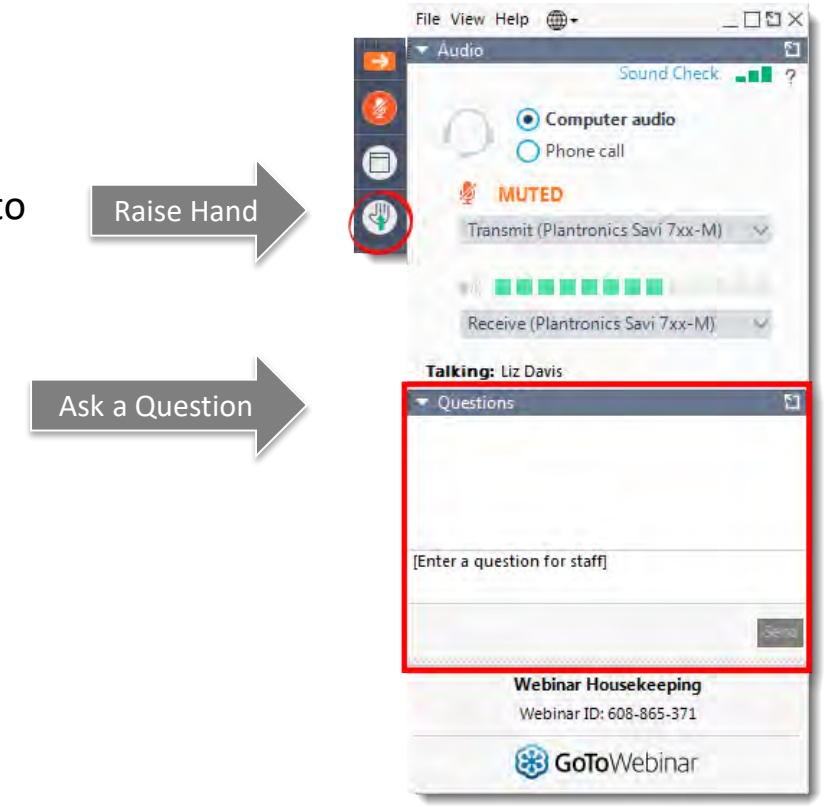
One purpose of today's presentation is to explain the IRP process and collect feedback from stakeholders. Stakeholder feedback will be posted on the I&M website IRP portal and will be considered as part of the Final IRP.

If you have a question about the IRP process during this presentation:

- Type your question in the Questions area of the GoToWebinar panel
- During the feedback and discussion portions of the presentations, please raise your hand via the GoToMeeting tool to be recognized. We plan to hear form all who wish to be heard and address all questions
- Any questions that cannot be answered during the call will be addressed and posted on the website above

If you would like to make a comment or ask a question about the IRP process after the presentation has concluded:

- Please send an email to I&MIRP@aep.com
- Stay informed about future events by visiting the I&M IRP Portal located at www.indianamichiganpower.com/info/projects/IntegratedResourcePlan



Guidelines

1. Due to the number of participants scheduled to join today's meeting, all will be in a "listen-only" mode by default.

2. Please enter questions at any time into the GoToWebinar portal. This is the best to way to ensure your question is answered. We will attempt to answer all questions during the session, time permitting.

3. Time has been allotted during the session to answer questions related to the materials presented. Unanswered questions will be addressed after the presentation and posted in accordance with the Questions and Feedback slide.

4. At the end of the presentation, we will open-up the floor for "clarifying questions," thoughts, ideas, and suggestions.

5. Please provide your feedback or any additional questions on the Stakeholder Meeting #3B presentation within ten business days of the conclusion of this meeting.

Stakeholder Timelines

March 9, 2021 ✓
- 2021 IRP Process
- Objectives and Metrics
- Proposed Scenarios
- Base Case Inputs

April 14, 2021 ✓
- DSM IRP Inputs and Modeling
- EE/EWR, DR and DER Results
- 2021 IRP Update

June 24, 2021 ✓
- AURORA Technical Workshop

July 27, 2021 ✓
- IRP Process – Inputs, Scenarios and Sensitivities
- All-Source RFP Results

October 14, 2021 (this session) ✓
- Finalized Reference Case Inputs and Key Assumptions
- Candidate Portfolio Review

November, 2021 (Nov 18, 2021)
- Stochastic Modeling
- Review of Preferred Portfolio
- Other(s)

All-Source RFP Timeline (completed)

Art Holland, Peter Berini, Siemens PTI

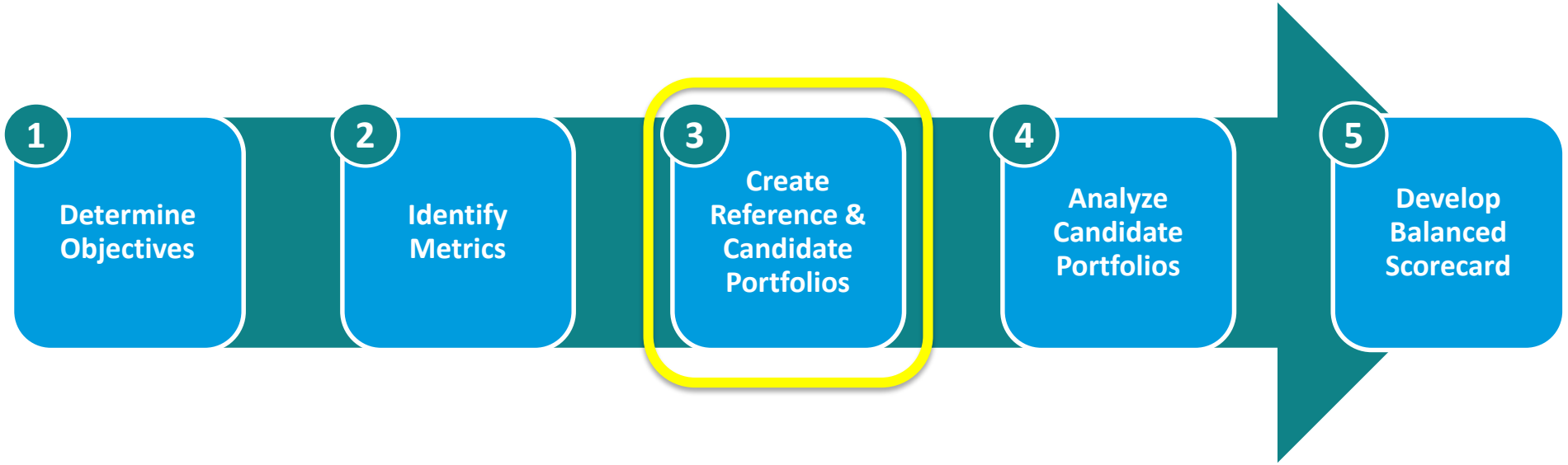
CANDIDATE PORTFOLIO DEVELOPMENT

Candidate Portfolio Development

Important Considerations

Siemens PTI applies the following 5-Step process for modeling, analyzing, and reporting the **Reference Portfolio** and **Candidate Portfolios** related to the AEP I&M IRP. The focus of Stakeholder Meeting 3B will be on results from **Step 3: Create Reference & Candidate Portfolios** of the process.

Siemens PTI: Approach to Integrated Resource Plan Modeling



Candidate Portfolio Development

Reference Case Fundamental Drivers and Resource Options

Input	Unit	2021	2023	2025	2027	2029	2031	2033	2035	2037	2039	2041
Coal (PRB)	2019$/MMBtu	0.68	0.67	0.68	0.68	0.68	0.68	0.68	0.69	0.70	0.70	0.70
CO2	2019$/ton	0.00	0.00	0.00	0.00	11.12	11.38	11.67	11.98	12.28	12.58	12.89
Gas (Henry Hub)	2019$/MMBtu	2.49	2.52	2.84	3.23	3.33	3.24	3.32	3.36	3.40	3.44	3.44
I&M PJM Obligation	MW	3,939	3,994	3,864	3,876	3,904	3,928	3,960	3,548	3,580	3,540	3,573
DG Solar	MW	0.0	1.1	1.7	2.7	4.4	7.3	12.2	20.2	32.7	50.2	71.1
EV Peak Load	MW	2	4	7	10	14	22	37	64	111	196	285
Wind (200 MW)	2019$/kW	1,449	1,393	1,333	1,269	1,202	1,158	1,139	1,120	1,101	1,082	1,062
Solar Tier 1 (50 MW)	2019$/kW	1,181	1,087	993	954	854	797	783	769	754	740	726
Solar Tier 2 (50 MW)	2019$/kW	1,350	1,243	1,135	1,090	977	911	895	879	862	846	830
Solar + Storage (100MW/ 20MW)	2019$/kW	1,535	1,373	1,214	1,177	1,066	1,000	979	958	937	915	894
Li-Ion Battery (50MW)	2019$/kW	1,319	1,145	971	898	826	780	760	741	721	701	681
Gas CC (1,070 MW)	2019$/kW	1,031	1,009	985	973	965	957	948	942	936	930	925
Gas CC (440 MW)	2019$/kW	1,097	1,073	1,048	1,035	1,027	1,018	1,009	1,003	996	990	984
Gas CT (250 MW)	2019$/kW	738	726	705	694	688	681	675	670	666	662	658

Note: The costs represent installed cost of resources in $2019. Renewable and conventional resources are informed by the Renewable RfP, the All-Source RfP and EIA Reports.

Candidate Portfolio Development

Generating Resources

Unit	Fuel	Installed Capacity (MW)	2024	2028	2034	2037	2041
Cook 1	Nuclear	1,084			Retirement		
Cook 2	Nuclear	1,204				Retirement	
Rockport 1	Coal	1,320		Retirement			
Rockport 2	Coal	650	Retirement				
Berrien Springs 1-12	Hydro	7.2					Owned Resource for 7.2 MW through 2041
Buchanan 1 - 10	Hydro	4.1					Owned Resource for 4.1 MW through 2041
Constantine 1 - 4	Hydro	1.0					Owned Resource for 1.0 MW through 2041
Elkhart 1 - 3	Hydro	1.8					Owned Resource for 1.8 MW through 2041
Mottville 1 - 4	Hydro	1.7					Owned Resource for 1.7 MW through 2041
Twin Branch 1 - 8	Hydro	4.8					Owned Resource for 4.8 MW through 2041
Deer Creek	Solar	3					Owned Resource for 2.5 MW through 2041
Olive	Solar	5					Owned Resource for 5 MW through 2041
Twin Branch Solar	Solar	3					Owned Resource for 2.6 MW through 2041
Watervliet	Solar	5					Owned Resource for 4.6 MW through 2041
St. Joseph Solar	Solar	20					Owned Resource for 20 MW through 2041
OVEC ICPA	Coal	187					ICPA Obligation ending in 2040
Fowler Ridge 1	Wind	100					PPA Obligation ending in 2029
Fowler Ridge 2	Wind	50					PPA Obligation ending in 2029
Headwaters	Wind	200					PPA Obligation ending in 2034
Wildcat	Wind	100					PPA Obligation ending in 2032

Candidate Portfolio Development

Demand Side Management Resources

Measure	Program	Customer Class	State	Source
Energy Efficiency	Conservation Voltage Reduction	Residential	MI	AEP I&M
Energy Efficiency	Conservation Voltage Reduction	Commercial & Industrial	MI	AEP I&M
Energy Efficiency	Conservation Voltage Reduction	Residential	IN	AEP I&M
Energy Efficiency	Conservation Voltage Reduction	Commercial & Industrial	IN	AEP I&M
Energy Efficiency	Low Income Qualified	N/A	MI/IN	MPS
Energy Efficiency	MI Existing EWR Plan (2021)	Residential and C&I	MI	AEP I&M
Energy Efficiency	MI Pending 2022-2023 EWR Plan (2022)	Residential and C&I	MI	AEP I&M
Energy Efficiency	IN Existing DSM Plan (2021-2022)	Residential and C&I	IN	AEP I&M
Demand Response	Residential Demand Response	Residential	MI/IN	MPS
Demand Response	C&I Demand Response	Commercial & Industrial	MI/IN	MPS
Distributed Energy Resources	Rooftop Solar DER	Rooftop Solar	MI/IN	MPS
Distributed Energy Resources	Combined Heat & Power DER	Combined Heat & Power	MI/IN	MPS

Candidate Portfolio Development

Resource Limitations

Resource	Limit (MW) Annual/Cumulative		
	2025-2034	2035-2037	2038-2050
Solar T1	250 / 1,800	250 / 2,400	250 / 3,500
Solar T2	250 / 1,800	250 / 2,400	250 / 3,500
Solar Hybrid	500 / 1,800	500 / 2,400	500 / 3,500
Wind	800 / 1,600	800 / 3,200	800 / 5,800
Gas CC 2x1	1,070 / 1,070	1,070 / 1,070	1,070 / 1,070
Gas CC 1x1	440 / 880	440 / 880	440 / 880
Gas CT Advanced	500 / 4,000	500 / 4,000	500 / 4,000

[1]Resource Limits are informed by the RFP/RFI.

Candidate Portfolio Development

Reference Case and Sensitivities

Portfolio	Description	Details
Reference Case	Rockport Unit 1 (2028) Rockport Unit 2 (2024) and Cook (2034, 2037)	
Reference with Rockport Sensitivity	Rockport Unit 1 Early Retirement (2024)	
Reference with Rockport Sensitivity	Rockport Unit 1 Early Retirement (2025)	
Reference with Rockport Sensitivity	Rockport Unit 1 Early Retirement (2026)	Appendix
Reference with Cook Sensitivity	Cook Unit 1 and Unit 2 License Extensions (beyond 2034 and 2037)	
Reference with Cook Sensitivity #2	Cook Unit 1 and Unit 2 License Extensions and No Conventional Gas Allowed	
Reference with Relaxed Renewable Limits	Expanded Cumulative Build Limits on Renewable Energy and Storage	Appendix
Reference with 30% Import / Export Limit	Import and Export Limit at ~30% of I&M Load	Appendix
Reference with No Renewable Limits	Removed Cumulative and Annual Build Limits on Renewable Energy and Storage	Appendix
Rapid Technology Advancement	35% Reduction in Renewable, Storage and EE Costs	
Enhanced Regulation	Increased Environmental Regulations Leading to High Gas, Coal and CO2 Prices	
Net Savings Sensitivity 1	Rockport Unit 1 Early Retirement (2024) Replacing SEA with Net to Gross EE Bundle Savings	Appendix
Net Savings Sensitivity 2	Rockport Unit 1 Early Retirement (2026) Replacing SEA with Net to Gross EE Bundle Savings	Appendix
Net Savings Sensitivity 3	Rapid Technology Advancement (RTA) Replacing SEA with Net to Gross EE Bundle Savings	Appendix

Note: Not all sensitivities are represented above. Additional sensitivities will be conducted on the Preferred Portfolio once selected.

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FEEDBACK AND DISCUSSION

Art Holland, Peter Berini, Siemens PTI

REFERENCE CASE PORTFOLIO RESULTS

Reference Case Results

Introduction

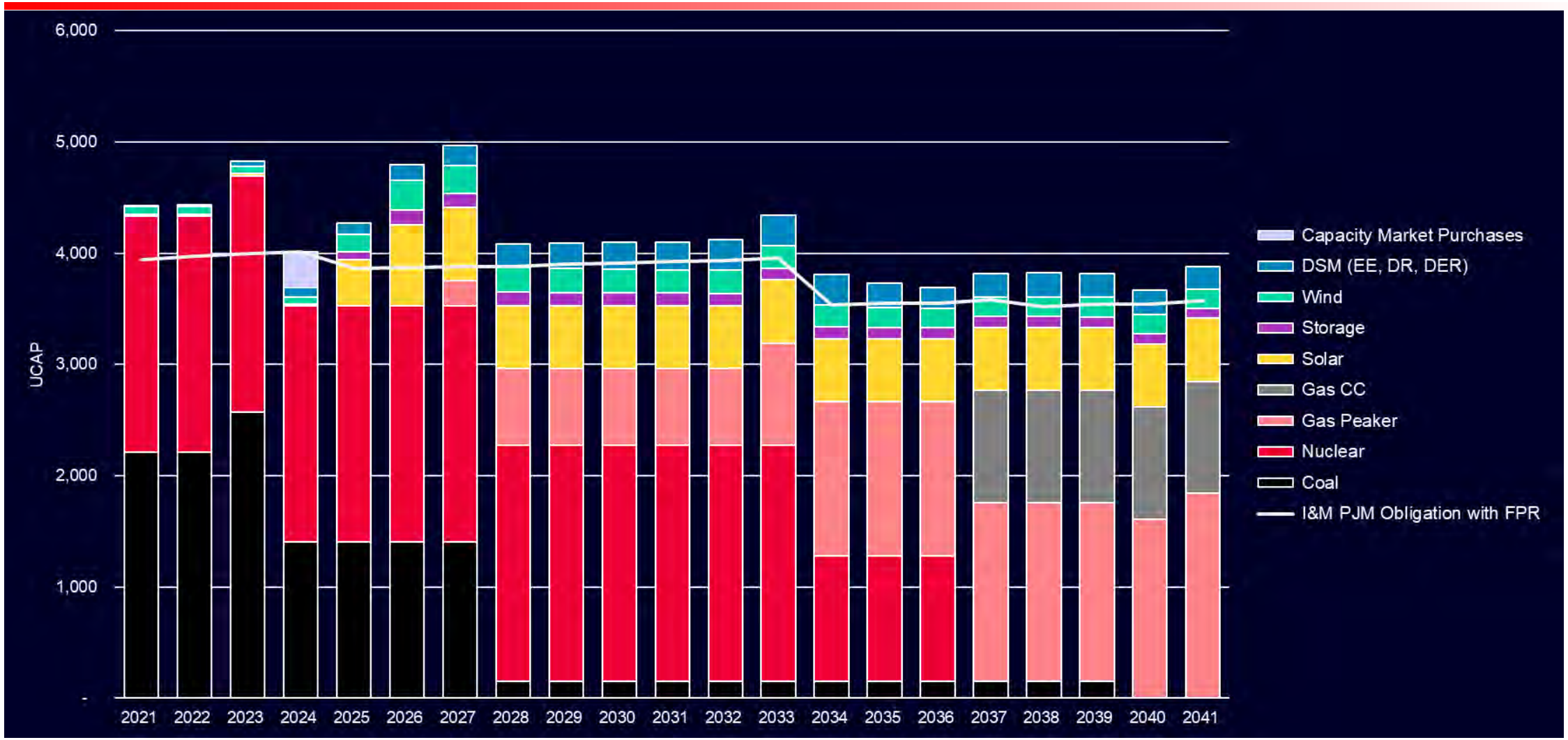
The Reference Case portfolio is the optimized portfolio based on existing resources and expected conditions as a basis for comparing other strategic choices.

- The Reference case does not represent I&M's preferred portfolio but provides a basis to conduct sensitivities and portfolio comparisons
- The Reference Case portfolio has approximately 7 GW of new nameplate capacity (mostly renewable) through the forecast horizon
- Energy Efficiency resources are selected with total Energy Efficiency generation as compared to retail load growing to 5% in 2030
- Wind resources selected in 2025 and 2026 take advantage of the Production Tax Credit[1]
- Solar and Solar Hybrid resources selected in 2025 and 2026 take advantage of the Investment Tax Credit[1]
- Gas resources are selected with Rockport and Cook Retirements to support portfolio needs for capacity and energy. The resources selected are a combination of hydrogen convertible simple cycle and combined cycle
- The carbon free generation declines after the retirement of the Cook Nuclear facilities and would require market offsets to meet targets thereafter

[1]Renewable Resources are expected to come online by December 31st of the previous year in order to capitalize on PTC and ITC benefits

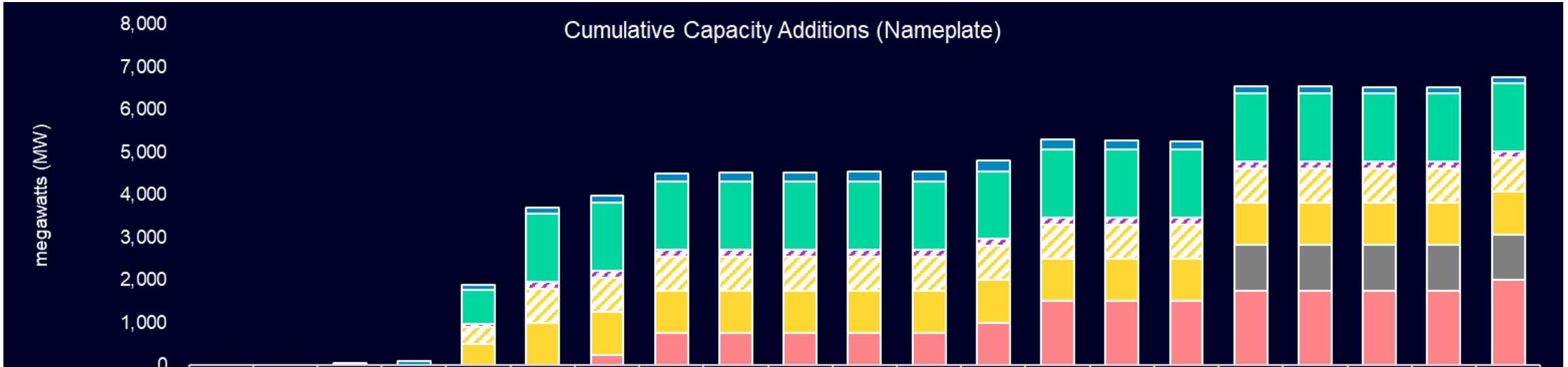
Reference Case Results, I&M Total Portfolio Capacity (MW)

Optimized for Minimum Cost



Reference Case Results

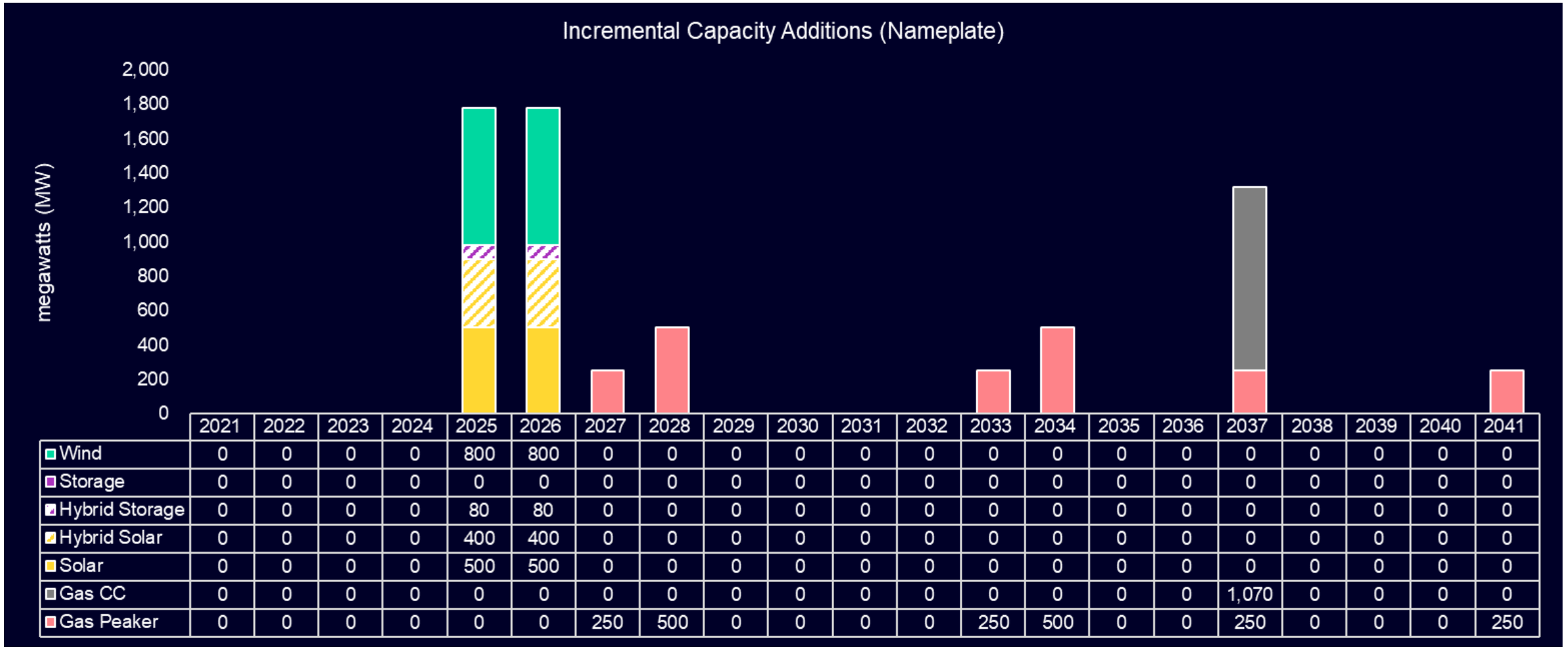
Cumulative Capacity Expansion (Nameplate)



	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041
EE	0	0	50	96	112	144	172	189	210	223	234	241	247	235	213	197	182	168	157	149	124
Wind	0	0	0	0	800	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600
Storage	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hybrid Storage	0	0	0	0	80	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160
Hybrid Solar	0	0	0	0	400	800	800	800	800	800	800	800	800	800	800	800	800	800	800	800	800
Solar	0	0	0	0	500	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
Gas CC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1,070	1,070	1,070	1,070	1,070
Gas Peaker	0	0	0	0	0	0	250	750	750	750	750	750	1,000	1,500	1,500	1,500	1,750	1,750	1,750	1,750	2,000
Total	0	0	50	96	1,892	3,704	3,982	4,499	4,520	4,533	4,544	4,551	4,807	5,295	5,273	5,257	6,562	6,548	6,537	6,529	6,754

Reference Case Results

Selection of Renewables and Gas CT/CC



	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041
Wind	0	0	0	0	800	800	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Storage	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hybrid Storage	0	0	0	0	80	80	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hybrid Solar	0	0	0	0	400	400	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Solar	0	0	0	0	500	500	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Gas CC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1,070	0	0	0	0
Gas Peaker	0	0	0	0	0	0	250	500	0	0	0	0	250	500	0	0	250	0	0	0	250

Note: Incremental EE Capacity Additions are not show in the above graphic.

Reference Case Results

Objectives and Design Requirements (1/2)

Reference						
Year	Capacity Position	Energy Balance	Imports I&M	Exports I&M	Carbon Free Generation	EE Penetration
2021	12%	103%	12%	6%	85%	0.06%
2022	12%	92%	25%	7%	83%	0.46%
2023	21%	98%	16%	4%	91%	0.79%
2024	0%	104%	10%	3%	91%	2.31%
2025	11%	120%	3%	12%	92%	2.79%
2026	24%	145%	1%	31%	94%	3.66%
2027	28%	146%	1%	34%	93%	4.08%
2028	5%	135%	1%	25%	96%	2.82%
2029	5%	138%	1%	27%	96%	3.79%
2030	5%	143%	0%	32%	96%	4.89%
2031	4%	134%	1%	24%	96%	4.95%
2032	5%	139%	1%	27%	97%	4.88%
2033	10%	135%	1%	25%	96%	4.66%
2034	8%	151%	0%	41%	95%	3.01%
2035	5%	108%	8%	8%	93%	4.02%
2036	4%	105%	11%	7%	93%	4.78%
2037	7%	146%	0%	38%	69%	4.64%
2038	9%	97%	14%	3%	52%	4.21%
2039	8%	95%	15%	2%	52%	3.80%
2040	3%	92%	16%	2%	53%	2.82%
2041	9%	90%	16%	2%	55%	3.47%

Metrics Calculations and Notes

Capacity Position against FPR:
(UCAP of resources/PJM Capacity Obligation with Reserve)-1

Energy Balance:
I&M energy generation / energy demand

Imports I&M:
imported energy / energy demand

Exports I&M:
exported energy / energy demand

Carbon Free Generation:
carbon free generation / total generation

Energy Efficiency (EE)
all EE generation / retail energy demand

Color designations – color coding is intended as a visual aid only and should not be used to compare portfolios. Coloring differentiates between threshold values.

Energy Efficiency represents the amount of EE in a mathematically optimized portfolio, subject to further evaluation.

Reference Case Results

Objectives and Design Requirements (2/2)

Reference						
Year	Capacity Position	Energy Balance	Imports I&M	Exports I&M	Carbon Free Generation	EE Penetration
2021	12%	103%	12%	6%	85%	0.06%
2022	12%	92%	25%	7%	83%	0.46%
2023	21%	98%	16%	4%	91%	0.79%
2024	0%	104%	10%	3%	91%	2.31%
2025	11%	120%	3%	12%	92%	2.79%
2026	24%	145%	1%	31%	94%	3.66%
2027	28%	146%	1%	34%	93%	4.08%
2028	5%	135%	1%	25%	96%	2.82%
2029	5%	138%	1%	27%	96%	3.79%
2030	5%	143%	0%	32%	96%	4.89%
2031	4%	134%	1%	24%	96%	4.95%
2032	5%	139%	1%	27%	97%	4.88%
2033	10%	135%	1%	25%	96%	4.66%
2034	8%	151%	0%	41%	95%	3.01%
2035	5%	108%	8%	8%	93%	4.02%
2036	4%	105%	11%	7%	93%	4.78%
2037	7%	146%	0%	38%	69%	4.64%
2038	9%	97%	14%	3%	52%	4.21%
2039	8%	95%	15%	2%	52%	3.80%
2040	3%	92%	16%	2%	53%	2.82%
2041	9%	90%	16%	2%	55%	3.47%

Metrics Calculations and Notes

Capacity Position against FPR:

Short-term capacity contracts are required in 2024 to account for shortage in capacity. Capacity position maintains healthy margins through forecast period.

Energy Balance:

Energy Balance is high in the early years as renewable energy is being selected to meet capacity position.

Imports I&M:

Imports maintain reasonable balance without any years exceeding +30%

Exports I&M:

Exports maintain reasonable balance without many years exceeding +30%

Carbon Free Generation:

Carbon free generation meets targets until the retirement of Cook Nuclear facilities.

Energy Efficiency (EE)

EE Penetration for new and existing programs reaches ~5% of retail load obligation by 2030

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FEEDBACK AND DISCUSSION

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BREAK

PLEASE PLAN A RETURN BY 11:15AM

Siemens PTI IRP Team

SENSITIVITY BASED CANDIDATE PORTFOLIOS

Reference and Candidate Portfolios

I&M and Siemens have developed **a Reference Case**, two alternative **Scenarios**, and a handful of **Sensitivities** to implement a scenario- and sensitivity-based approach to inform **Candidate Portfolios**. Each **Candidate Portfolio** will be developed from the **Scenarios** and/or the **Sensitivities** below.

Portfolio	Description	Details
Reference Case	Rockport Unit 1 (2028) Rockport Unit 2 (2024) and Cook (2034, 2037)	
Reference with Rockport Sensitivity	Rockport Unit 1 Early Retirement (2024)	
Reference with Rockport Sensitivity	Rockport Unit 1 Early Retirement (2025)	
Reference with Rockport Sensitivity	Rockport Unit 1 Early Retirement (2026)	Appendix
Reference with Cook Sensitivity	Cook Unit 1 and Unit 2 License Extensions (beyond 2034 and 2037)	
Reference with Cook Sensitivity #2	Cook Unit 1 and Unit 2 License Extensions and No Conventional Gas Allowed	
Reference with Relaxed Renewable Limits	Expanded Cumulative Build Limits on Renewable Energy and Storage	Appendix
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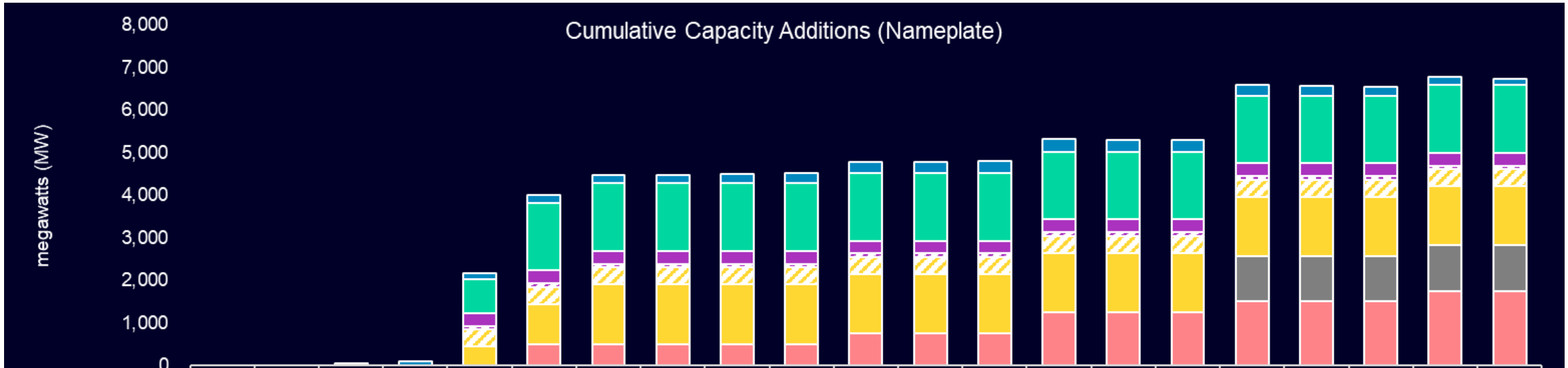
Rapid Technology Advancement	35% Reduction in Renewable, Storage and EE Costs	
Enhanced Regulation	Increased Environmental Regulations Leading to High Gas, Coal and CO2 Prices	
Net Savings Sensitivity 1	Rockport Unit 1 Early Retirement (2024) Replacing SEA with Net to Gross EE Bundle Savings	Appendix
Net Savings Sensitivity 2	Rockport Unit 1 Early Retirement (2026) Replacing SEA with Net to Gross EE Bundle Savings	Appendix
Net Savings Sensitivity 3	Rapid Technology Advancement (RTA) Replacing SEA with Net to Gross EE Bundle Savings	Appendix

Note: Not all sensitivities are represented above. Additional sensitivities will be conducted on the Preferred Portfolio once selected.

Reference Case Sensitivity

Rockport Unit 1 Early Retirement (2024)



	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041
EE	0	0	50	96	139	168	193	208	226	242	256	262	276	286	282	281	253	229	208	177	140
Wind	0	0	0	0	800	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600
Storage	0	0	0	0	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300
Hybrid Storage	0	0	0	0	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80
Hybrid Solar	0	0	0	0	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400
Solar	0	0	0	0	450	950	1,400	1,400	1,400	1,400	1,400	1,400	1,400	1,400	1,400	1,400	1,400	1,400	1,400	1,400	1,400
Gas CC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1,070	1,070	1,070	1,070	1,070
Gas Peaker	0	0	0	0	0	500	500	500	500	500	750	750	750	1,250	1,250	1,250	1,500	1,500	1,500	1,750	1,750
Total	0	0	50	96	2,169	3,998	4,473	4,488	4,506	4,522	4,786	4,792	4,806	5,316	5,312	5,311	6,603	6,579	6,558	6,777	6,740

Reference Case Sensitivity KPI

Rockport Unit 1 Early Retirement (2024)

Rockport 1 2024 Retirement						
Year	Capacity Position	Energy Balance	Imports I&M	Exports I&M	Carbon Free Generation	EE Penetration
2021	12%	103%	12%	6%	85%	0.06%
2022	12%	92%	25%	7%	83%	0.46%
2023	21%	98%	16%	4%	91%	0.79%
2024	0%	105%	11%	5%	90%	2.31%
2025	0%	114%	5%	8%	97%	3.20%
2026	4%	137%	1%	23%	96%	4.00%
2027	7%	140%	1%	28%	97%	4.35%
2028	4%	135%	1%	25%	97%	2.99%
2029	3%	138%	1%	27%	97%	3.93%
2030	3%	142%	1%	31%	97%	5.04%
2031	9%	135%	1%	24%	96%	5.11%
2032	9%	139%	0%	27%	97%	4.98%
2033	8%	135%	1%	25%	96%	4.85%
2034	6%	151%	0%	41%	96%	3.45%
2035	4%	109%	8%	8%	94%	4.81%
2036	2%	106%	11%	7%	94%	5.86%
2037	4%	148%	0%	39%	69%	5.49%
2038	6%	98%	14%	3%	52%	4.91%
2039	5%	95%	15%	2%	52%	4.36%
2040	7%	93%	15%	3%	53%	3.11%
2041	6%	90%	16%	2%	55%	3.60%

Metrics Calculations and Notes

Capacity Position against FPR:

Short-term capacity contracts are required in years 2024 and 2025 to account for early Rockport retirement. Post 2025 capacity position maintains healthy margin.

Energy Balance:

Energy Balance is high in the early years as energy rich renewable energy is being selected to meet capacity position.

Imports I&M:

Imports maintain reasonable balance without any years exceeding +30%

Exports I&M:

Exports maintain reasonable balance without many years exceeding +30%

Carbon Free Generation:

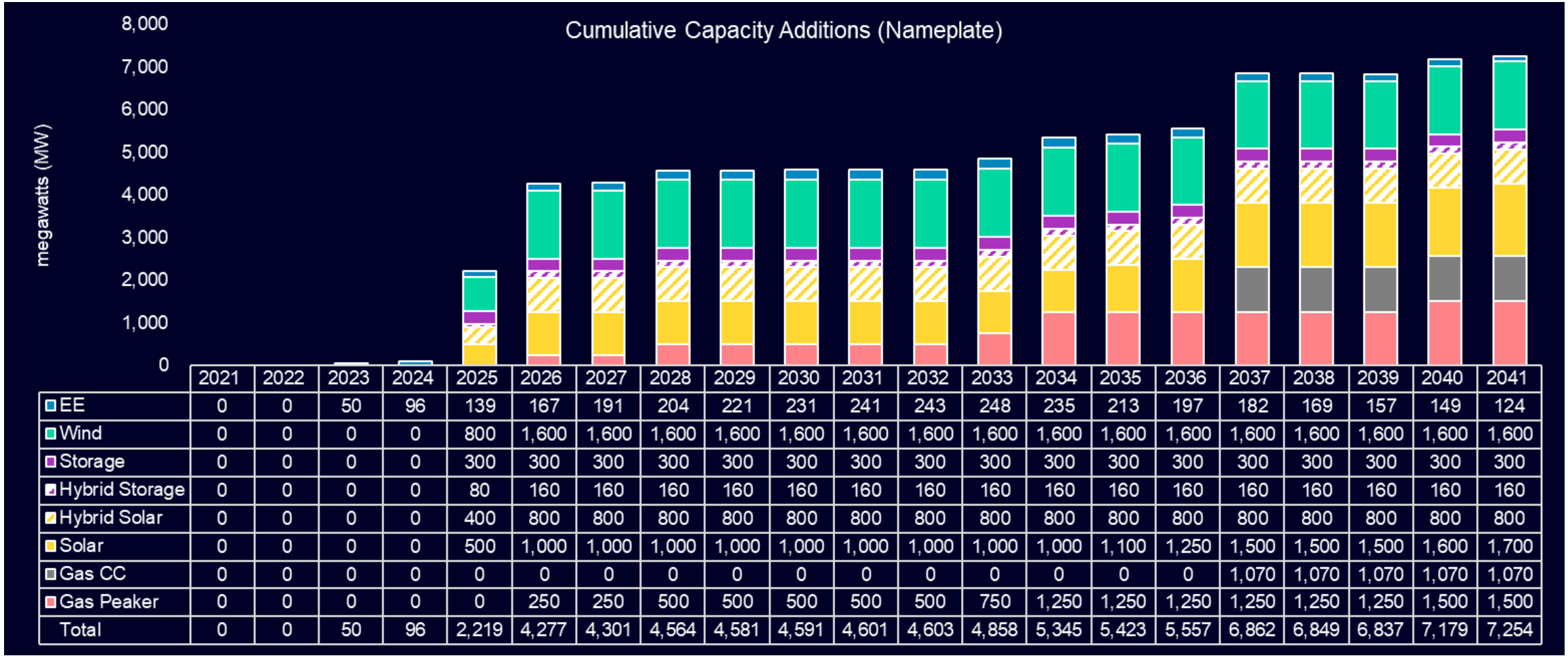
Carbon free generation meets targets until the retirement of Cook Nuclear facilities.

Energy Efficiency (EE)

EE Penetration for new and existing programs reaches ~5% of retail load obligation by 2030

Reference Case Sensitivity

Rockport Unit 1 Early Retirement (2025)



	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041
EE	0	0	50	96	139	167	191	204	221	231	241	243	248	235	213	197	182	169	157	149	124
Wind	0	0	0	0	800	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600
Storage	0	0	0	0	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300
Hybrid Storage	0	0	0	0	80	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160
Hybrid Solar	0	0	0	0	400	800	800	800	800	800	800	800	800	800	800	800	800	800	800	800	800
Solar	0	0	0	0	500	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,100	1,250	1,500	1,500	1,500	1,600	1,700
Gas CC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1,070	1,070	1,070	1,070	1,070
Gas Peaker	0	0	0	0	0	250	250	500	500	500	500	500	750	1,250	1,250	1,250	1,250	1,250	1,250	1,500	1,500
Total	0	0	50	96	2,219	4,277	4,301	4,564	4,581	4,591	4,601	4,603	4,858	5,345	5,423	5,557	6,862	6,849	6,837	7,179	7,254

Reference Case Sensitivity KPI

Rockport Unit 1 Early Retirement (2025)

Rockport 1 2025 Retirement						
Year	Capacity Position	Energy Balance	Imports I&M	Exports I&M	Carbon Free Generation	EE Penetration
2021	12%	103%	12%	6%	85%	0.06%
2022	12%	92%	25%	7%	83%	0.46%
2023	21%	98%	16%	4%	91%	0.79%
2024	0%	104%	10%	3%	91%	2.31%
2025	0%	121%	4%	14%	92%	3.20%
2026	4%	140%	1%	27%	97%	4.00%
2027	2%	139%	2%	27%	97%	4.34%
2028	5%	135%	1%	25%	97%	2.98%
2029	5%	138%	1%	27%	97%	3.92%
2030	5%	142%	1%	31%	97%	5.00%
2031	4%	134%	2%	23%	96%	5.03%
2032	4%	138%	1%	27%	97%	4.89%
2033	9%	135%	1%	24%	96%	4.67%
2034	7%	150%	0%	40%	96%	3.01%
2035	5%	108%	8%	9%	94%	4.02%
2036	5%	106%	10%	8%	94%	4.78%
2037	3%	150%	0%	42%	70%	4.64%
2038	5%	101%	13%	5%	55%	4.21%
2039	4%	98%	13%	4%	55%	3.80%
2040	7%	97%	13%	5%	56%	2.82%
2041	6%	97%	13%	5%	58%	3.47%

Metrics Calculations and Notes

Capacity Position against FPR:

Short-term capacity contracts are required in years 2024 and 2025 to account for early Rockport retirement. Post 2025 capacity position maintains healthy margin.

Energy Balance:

Energy Balance is high in the middle years as energy rich renewable energy is being selected to meet capacity position.

Imports I&M:

Imports maintain reasonable balance without any years exceeding +30%

Exports I&M:

Exports maintain reasonable balance without many years exceeding +30%

Carbon Free Generation:

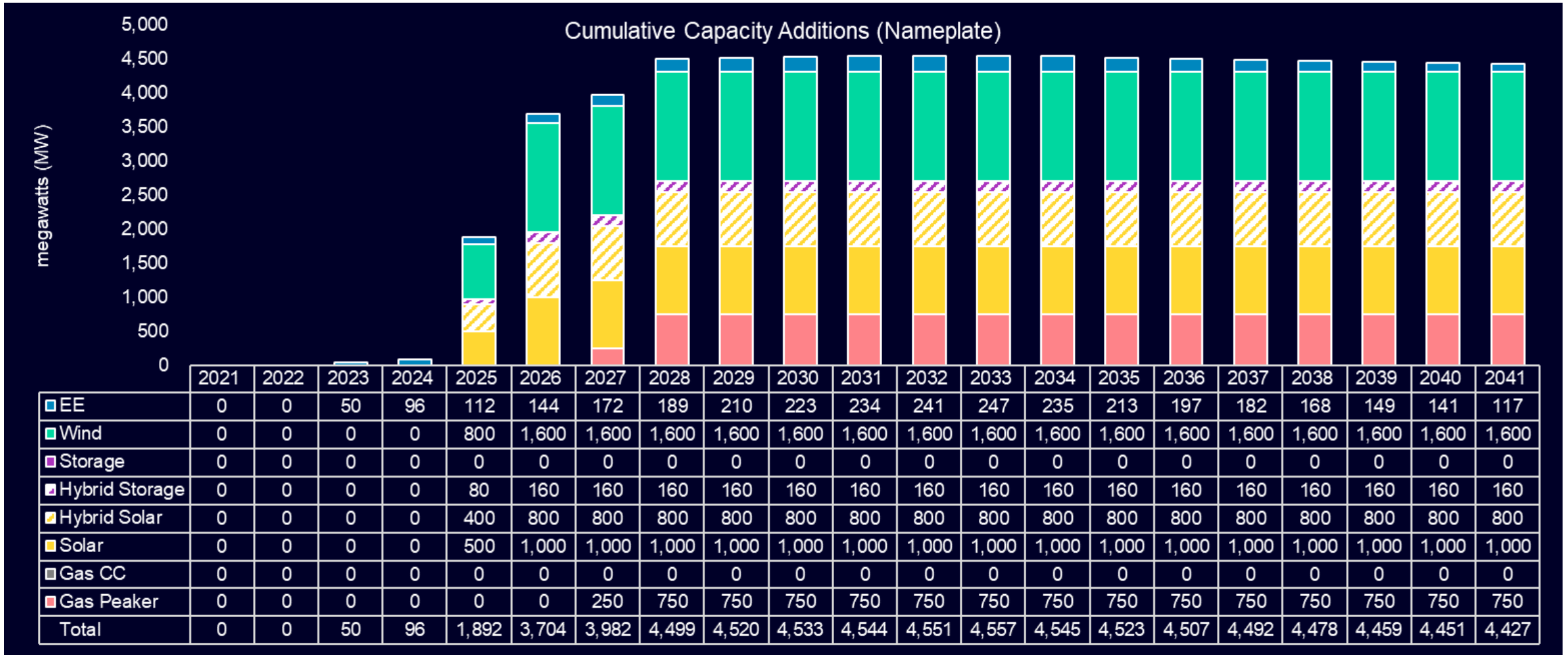
Carbon free generation meets targets until the retirement of Cook Nuclear facilities.

Energy Efficiency (EE)

EE Penetration for new and existing programs reaches ~5% of retail load obligation by 2030

Reference Case Sensitivity

Cook Unit 1 and Unit 2 License Extensions



	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041
EE	0	0	50	96	112	144	172	189	210	223	234	241	247	235	213	197	182	168	149	141	117
Wind	0	0	0	0	800	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600
Storage	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hybrid Storage	0	0	0	0	80	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160
Hybrid Solar	0	0	0	0	400	800	800	800	800	800	800	800	800	800	800	800	800	800	800	800	800
Solar	0	0	0	0	500	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
Gas CC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Gas Peaker	0	0	0	0	0	0	250	750	750	750	750	750	750	750	750	750	750	750	750	750	750
Total	0	0	50	96	1,892	3,704	3,982	4,499	4,520	4,533	4,544	4,551	4,557	4,545	4,523	4,507	4,492	4,478	4,459	4,451	4,427

Reference Case Sensitivity KPI

Cook Unit 1 and Unit 2 License Extensions

Cook Extension						
Year	Capacity Position	Energy Balance	Imports I&M	Exports I&M	Carbon Free Generation	EE Penetration
2021	12%	103%	12%	6%	85%	0.06%
2022	12%	92%	25%	7%	83%	0.46%
2023	21%	98%	16%	4%	91%	0.79%
2024	0%	104%	10%	3%	91%	2.31%
2025	11%	120%	3%	12%	92%	2.79%
2026	24%	139%	1%	26%	98%	3.66%
2027	28%	139%	2%	27%	97%	4.08%
2028	5%	135%	1%	25%	96%	2.82%
2029	5%	138%	1%	27%	96%	3.79%
2030	5%	142%	0%	30%	97%	4.89%
2031	4%	134%	1%	24%	96%	4.95%
2032	5%	139%	1%	27%	97%	4.88%
2033	4%	135%	1%	24%	96%	4.66%
2034	16%	145%	0%	35%	97%	3.01%
2035	14%	145%	0%	38%	97%	4.02%
2036	12%	144%	1%	36%	97%	4.78%
2037	12%	146%	0%	37%	97%	4.64%
2038	14%	147%	0%	39%	97%	4.21%
2039	13%	145%	0%	38%	97%	3.65%
2040	9%	143%	0%	38%	98%	2.70%
2041	8%	142%	0%	38%	100%	3.32%

Metrics Calculations and Notes

Capacity Position against FPR:

Short-term capacity contracts are required in 2024 to account for shortage in capacity. Post 2024 capacity position maintains healthy margin.

Energy Balance:

Energy Balance is high in the middle years and is maintained through the forecast as energy rich renewable energy is being selected to meet capacity position.

Imports I&M:

Imports maintain reasonable balance without any years exceeding +30%.

Exports I&M:

Exports are slightly higher than in other portfolios due to the extension of nuclear resources. However, in many years the levels do not exceed 30%.

Carbon Free Generation:

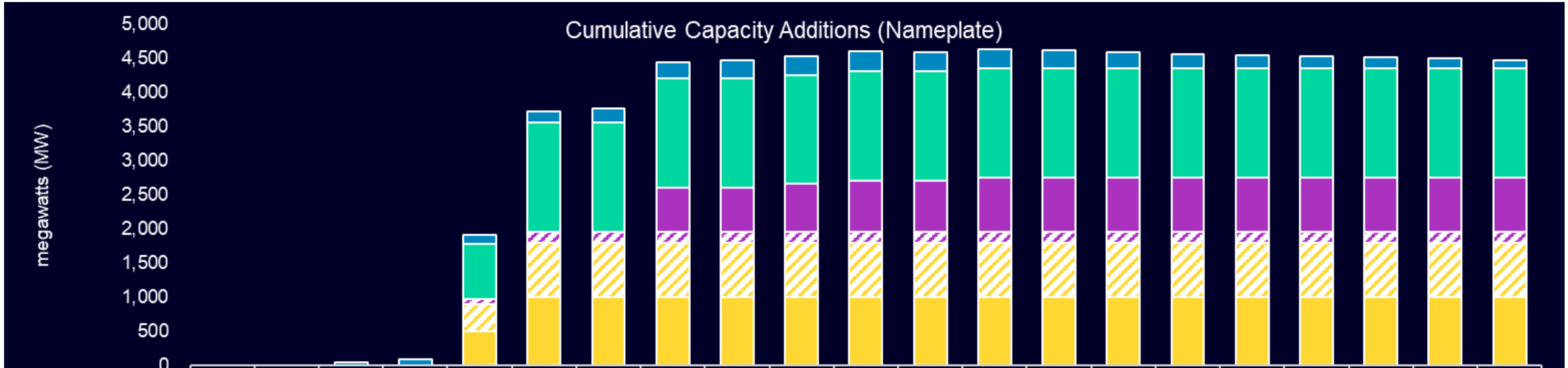
Carbon free generation meets targets for entire forecast period.

Energy Efficiency (EE)

EE Penetration for new and existing programs reaches ~5% of retail load obligation by 2030

Reference Case Sensitivity

Cook Unit 1 and Unit 2 License Extensions and No Conventional Gas



	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041
EE	0	0	50	96	136	170	204	234	260	278	293	286	280	258	230	208	190	174	155	145	121
Wind	0	0	0	0	800	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600
Storage	0	0	0	0	0	0	0	650	650	700	750	750	800	800	800	800	800	800	800	800	800
Hybrid Storage	0	0	0	0	80	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160
Hybrid Solar	0	0	0	0	400	800	800	800	800	800	800	800	800	800	800	800	800	800	800	800	800
Solar	0	0	0	0	500	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
Gas CC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Gas Peaker	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	50	96	1,916	3,730	3,764	4,444	4,470	4,538	4,603	4,596	4,640	4,618	4,590	4,568	4,550	4,534	4,515	4,505	4,481

Reference Case Sensitivity KPI

Cook Unit 1 and Unit 2 License Extensions and No Conventional Gas

Cook Extension No Gas						
Year	Capacity Position	Energy Balance	Imports I&M	Exports I&M	Carbon Free Generation	EE Penetration
2021	12%	103%	12%	6%	85%	0.06%
2022	12%	92%	25%	8%	83%	0.46%
2023	21%	98%	16%	4%	91%	0.79%
2024	0%	104%	10%	3%	91%	2.31%
2025	11%	121%	3%	12%	92%	3.14%
2026	25%	145%	1%	32%	94%	3.99%
2027	23%	146%	1%	34%	93%	4.44%
2028	2%	134%	2%	24%	98%	3.16%
2029	1%	137%	1%	26%	98%	4.28%
2030	2%	142%	1%	31%	98%	5.54%
2031	2%	133%	2%	23%	98%	5.63%
2032	2%	138%	1%	26%	98%	5.35%
2033	2%	134%	2%	24%	98%	4.95%
2034	13%	147%	0%	38%	98%	3.14%
2035	10%	149%	1%	42%	98%	4.12%
2036	8%	147%	1%	39%	98%	4.84%
2037	8%	149%	0%	41%	98%	4.67%
2038	9%	150%	0%	43%	98%	4.23%
2039	8%	148%	0%	41%	98%	3.66%
2040	3%	146%	1%	41%	99%	2.71%
2041	2%	145%	1%	42%	100%	3.33%

Metrics Calculations and Notes

Capacity Position against FPR:

Short-term capacity contracts are required in 2024 to account for shortage in capacity. Post 2024 capacity position maintains above obligation.

Energy Balance:

Energy Balance is high in the middle years and is maintained through the forecast as energy rich renewable energy is being selected to meet capacity position.

Imports I&M:

Imports maintain reasonable balance without any years exceeding +30%.

Exports I&M:

Exports are slightly higher than in other portfolios due to the extension of nuclear resources. However, in many years the levels do not exceed 30%.

Carbon Free Generation:

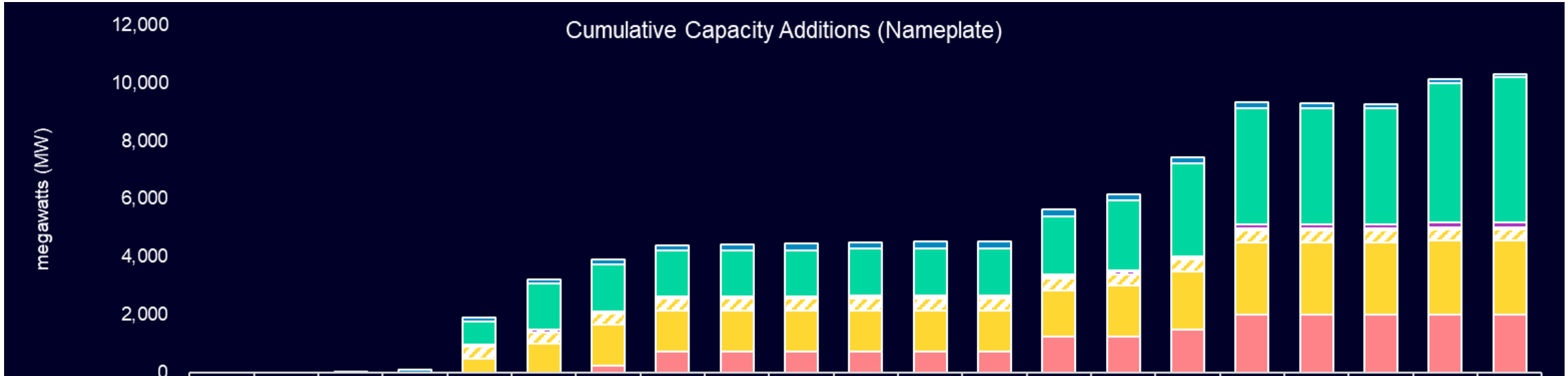
Carbon free generation meets targets for entire forecast period.

Energy Efficiency (EE)

EE Penetration for new and existing programs reaches ~5% of retail load obligation by 2030

Rapid Technology Advancement

35% Reduction in Renewable, Storage and EE Costs



	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041
EE	0	0	51	99	115	147	177	179	203	220	234	241	250	245	225	206	185	164	144	136	113
Wind	0	0	0	0	800	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600	2,000	2,400	3,200	4,000	4,000	4,000	4,800	5,000
Storage	0	0	0	0	0	0	0	0	0	0	50	50	50	50	50	50	150	150	150	150	150
Hybrid Storage	0	0	0	0	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80
Hybrid Solar	0	0	0	0	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400
Solar	0	0	0	0	500	1,000	1,400	1,400	1,400	1,400	1,400	1,400	1,400	1,600	1,750	2,000	2,500	2,500	2,500	2,550	2,550
Gas CC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Gas Peaker	0	0	0	0	0	0	250	750	750	750	750	750	750	1,250	1,250	1,500	2,000	2,000	2,000	2,000	2,000
Total	0	0	51	99	1,895	3,227	3,907	4,409	4,433	4,450	4,514	4,521	4,530	5,625	6,155	7,436	9,315	9,294	9,274	10,116	10,293

Rapid Technology Advancement KPI

35% Reduction in Renewable, Storage and EE Costs

RTA							
Year	Capacity Position	Energy Balance	Imports I&M	Exports I&M	Carbon Free Generation	Adj. Carbon Free Generation	EE Penetration
2021	12%	103%	11%	5%	85%	77%	0.06%
2022	12%	93%	22%	5%	82%	62%	0.46%
2023	6%	100%	14%	4%	90%	76%	0.80%
2024	0%	105%	9%	3%	90%	82%	2.35%
2025	11%	119%	3%	11%	92%	92%	2.85%
2026	18%	136%	1%	23%	97%	97%	3.72%
2027	27%	141%	1%	28%	96%	96%	4.18%
2028	4%	135%	1%	24%	96%	96%	2.62%
2029	4%	138%	1%	27%	96%	96%	3.66%
2030	3%	142%	0%	30%	97%	97%	4.87%
2031	4%	134%	1%	23%	96%	96%	4.96%
2032	4%	139%	0%	27%	97%	97%	4.91%
2033	4%	135%	1%	24%	97%	97%	4.74%
2034	4%	152%	0%	42%	98%	98%	3.09%
2035	4%	125%	3%	20%	95%	95%	4.20%
2036	14%	142%	0%	34%	95%	95%	4.97%
2037	4%	158%	0%	50%	97%	97%	4.72%
2038	6%	116%	10%	17%	94%	94%	4.12%
2039	5%	114%	10%	16%	94%	94%	3.55%
2040	3%	129%	5%	29%	95%	95%	2.61%
2041	3%	133%	3%	32%	97%	97%	3.21%

Metrics Calculations and Notes

Capacity Position against FPR:

Short-term capacity contracts are required in 2024 to account for shortage in capacity. Post 2024 capacity position maintains above obligation.

Energy Balance:

Energy Balance is high in the middle years and is maintained through the forecast as energy rich renewable energy is being selected to meet capacity position.

Imports I&M:

Imports maintain reasonable balance without any years exceeding +30%.

Exports I&M:

Exports maintain higher levels than in other portfolios. However, there are not many years where exports exceeds 30%

Carbon Free Generation:

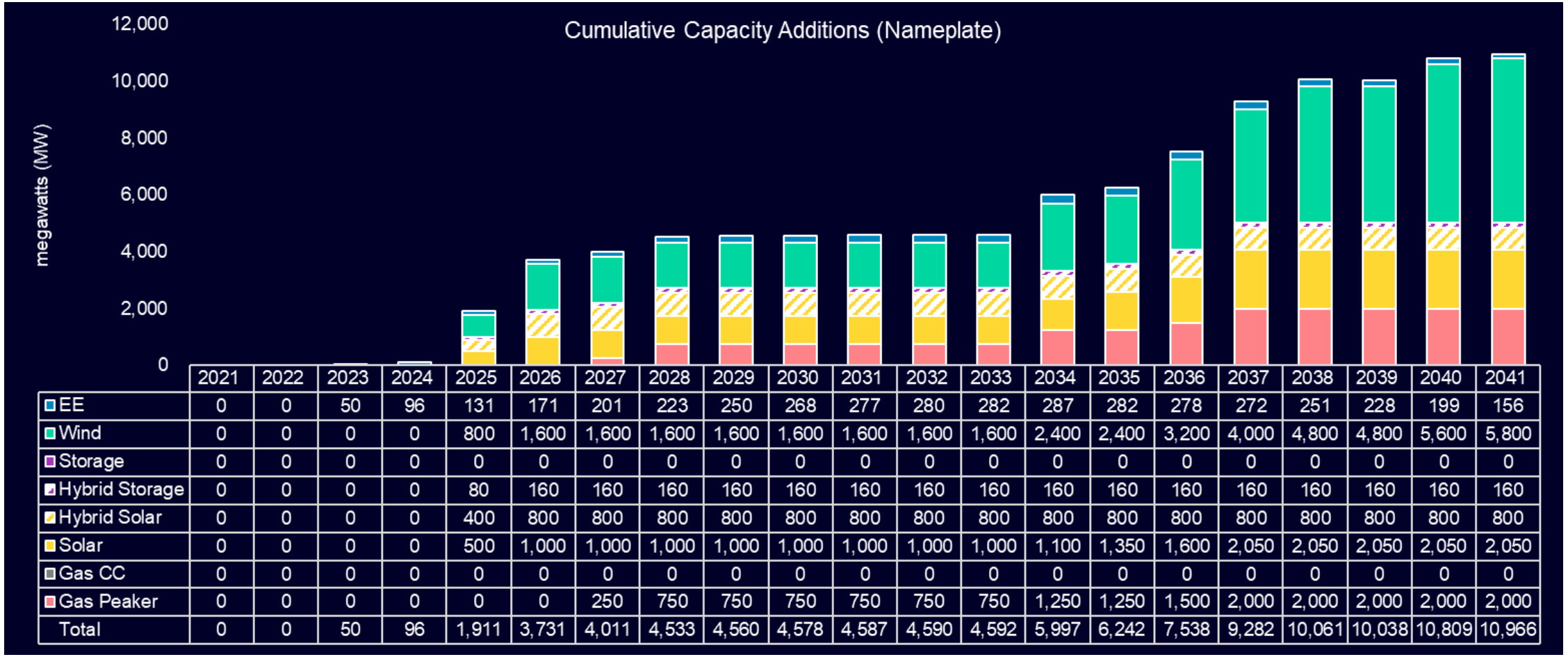
Carbon free generation meets targets for entire forecast period.

Energy Efficiency (EE)

EE Penetration for new and existing programs reaches ~5% of retail load obligation by 2030

Enhanced Regulation

Increased Environmental Regulations Leading to High Gas, Coal and CO2 Prices



	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041
EE	0	0	50	96	131	171	201	223	250	268	277	280	282	287	282	278	272	251	228	199	156
Wind	0	0	0	0	800	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600	2,400	2,400	3,200	4,000	4,800	4,800	5,600	5,800
Storage	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hybrid Storage	0	0	0	0	80	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160
Hybrid Solar	0	0	0	0	400	800	800	800	800	800	800	800	800	800	800	800	800	800	800	800	800
Solar	0	0	0	0	500	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,100	1,350	1,600	2,050	2,050	2,050	2,050	2,050
Gas CC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Gas Peaker	0	0	0	0	0	0	250	750	750	750	750	750	750	1,250	1,250	1,500	2,000	2,000	2,000	2,000	2,000
Total	0	0	50	96	1,911	3,731	4,011	4,533	4,560	4,578	4,587	4,590	4,592	5,997	6,242	7,538	9,282	10,061	10,038	10,809	10,966

Enhanced Regulation KPI

Increased Environmental Regulations Leading to High Gas, Coal and CO2 Prices

Enhanced Regulation						
Year	Capacity Position	Energy Balance	Imports I&M	Exports I&M	Carbon Free Generation	EE Penetration
2021	12%	104%	11%	5%	84%	0.06%
2022	12%	94%	21%	5%	81%	0.46%
2023	6%	100%	13%	3%	89%	0.79%
2024	0%	105%	9%	3%	90%	2.31%
2025	11%	117%	3%	9%	95%	3.11%
2026	24%	140%	1%	27%	97%	4.04%
2027	28%	140%	1%	28%	97%	4.42%
2028	5%	136%	1%	25%	96%	3.09%
2029	5%	139%	0%	27%	96%	4.17%
2030	5%	143%	0%	31%	97%	5.40%
2031	4%	134%	1%	23%	96%	5.38%
2032	5%	139%	0%	27%	97%	5.22%
2033	4%	135%	1%	25%	97%	4.90%
2034	5%	157%	0%	47%	98%	3.45%
2035	5%	127%	3%	21%	95%	4.80%
2036	14%	144%	0%	35%	95%	5.82%
2037	1%	160%	0%	51%	97%	5.78%
2038	6%	135%	5%	30%	95%	5.26%
2039	5%	132%	5%	28%	95%	4.65%
2040	3%	147%	0%	41%	96%	3.43%
2041	2%	149%	0%	45%	97%	3.89%

Metrics Calculations and Notes

Capacity Position against FPR:

Short-term capacity contracts are required in 2024 to account for shortage in capacity. Post 2024 capacity position maintains above obligation.

Energy Balance:

Energy Balance is high in the middle years and is maintained through the forecast as energy rich renewable energy is being selected to meet capacity position.

Imports I&M:

Imports maintain reasonable balance without any years exceeding +30%.

Exports I&M:

Exports maintain higher levels than in other portfolios. However, there are not many years where exports exceeds 30%

Carbon Free Generation:

Carbon free generation meets targets for entire forecast period.

Energy Efficiency (EE)

EE Penetration for new and existing programs reaches ~5% of retail load obligation by 2030

Key Takeaways and Next Steps

- Each **Sensitivity Based Candidate Portfolio** should be thought of as a strategic option that the company may want to evaluate
- Strategic Options
  - Unit retirement timing
  - Cost and performance of gas vs. non-fossil technologies
  - Small changes in timing and additions of solar, storage and wind
- **Candidate Portfolios** are variations in these strategies that will be taken to **Step 4** to compare against similar metrics

Art Holland, Siemens PTI

IRP ALIGNMENT DISCUSSION

Alignment Discussion

Opportunities for Additional Feedback in each Area of the IRP Process

The purpose of this session is to provide the opportunity
for additional feedback and discussion with Stakeholders.

Siemens PTI will facilitate discussion in each of the five steps of the IRP process.

Members of the I&M Leadership, as well as the IRP Working Team
will be available to answer questions and respond to your feedback.

Alignment Discussion

IRP Process Step 1: Determine Objectives

The purpose of the IRP is to evaluate I&M's current energy resource portfolio and a range of alternative future portfolios to meet customers' electrical energy needs in an affordable and holistic manner. The process evaluates **Candidate Portfolios** in terms of environmental stewardship, market and price risk, reliability, and resource diversity.

IRP Objectives
Affordability
Rate Stability
Sustainability Impact
Market Risk Minimization
Reliability
Resource Diversity

Alignment Discussion

IRP Process Step 2: Assign Metrics

For each **Candidate Portfolio**, the **Objectives** are tracked and measured through **Metrics** which evaluate portfolio performance across a wide range of possible future market conditions. All measures of portfolio performance are based on probabilistic modeling of 200 futures and addressed in Step 4: Analyze Candidate Portfolios.

IRP Objectives	Proposed IRP Metric	Unit
Affordability	NPV-RR	$
Rate Stability	95th percentile value of NPV-RR	$
Sustainability Impact	CO_2 Emissions	tons
Market Risk Minimization	Spot Energy Market Exposure (Purchases/Sales)	%
Reliability	Reserve Margin	%
Resource Diversity	Number of Unique Resources	#

Alignment Discussion

IRP Process Step 3: Create Reference and Candidate Portfolios

I&M and Siemens have developed **a Reference Case**, two alternative **Scenarios**, and a handful of **Sensitivities** to implement a scenario- and sensitivity-based approach to inform **Candidate Portfolios**. Each **Candidate Portfolio** will be developed from the **Scenarios** and/or the **Sensitivities** below.

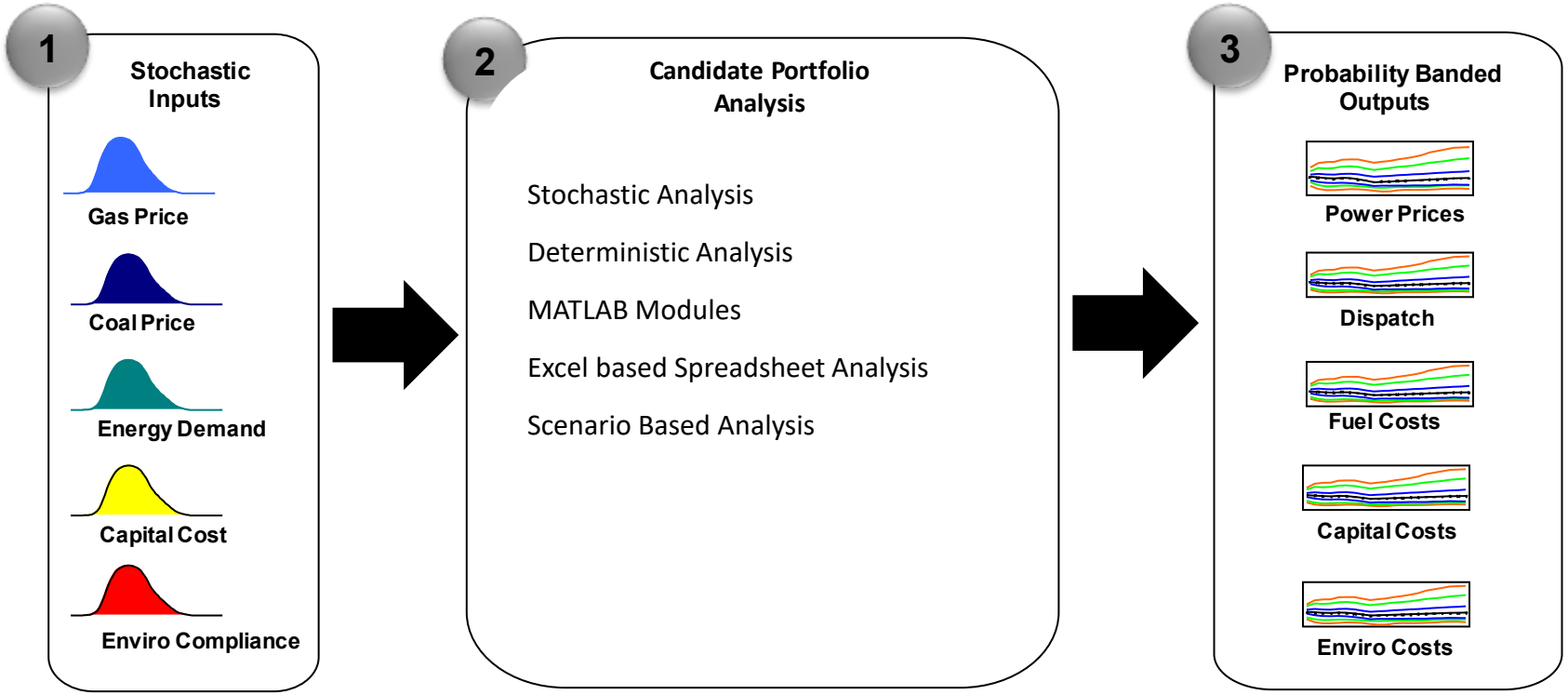
Portfolio	Description	Details
Reference Case	Rockport Unit 1 (2028) Rockport Unit 2 (2024) and Cook (2034, 2037)	
Reference with Rockport Sensitivity	Rockport Unit 1 Early Retirement (2024)	
Reference with Rockport Sensitivity	Rockport Unit 1 Early Retirement (2025)	
Reference with Rockport Sensitivity	Rockport Unit 1 Early Retirement (2026)	Appendix
Reference with Cook Sensitivity	Cook Unit 1 and Unit 2 License Extensions (beyond 2034 and 2037)	
Reference with Cook Sensitivity #2	Cook Unit 1 and Unit 2 License Extensions and No Conventional Gas Allowed	
Reference with Relaxed Renewable Limits	Expanded Cumulative Build Limits on Renewable Energy and Storage	Appendix
Reference with 30% Import / Export Limit	Import and Export Limit at ~30% of I&M Load	Appendix
Reference with No Renewable Limits	Removed Cumulative and Annual Build Limits on Renewable Energy and Storage	Appendix
Rapid Technology Advancement	35% Reduction in Renewable, Storage and EE Costs	
Enhanced Regulation	Increased Environmental Regulations Leading to High Gas, Coal and CO2 Prices	
Net Savings Sensitivity 1	Rockport Unit 1 Early Retirement (2024) Replacing SEA with Net to Gross EE Bundle Savings	Appendix
Net Savings Sensitivity 2	Rockport Unit 1 Early Retirement (2026) Replacing SEA with Net to Gross EE Bundle Savings	Appendix
Net Savings Sensitivity 3	Rapid Technology Advancement (RTA) Replacing SEA with Net to Gross EE Bundle Savings	Appendix

Note: Not all sensitivities are represented above. Additional sensitivities will be conducted on the Preferred Portfolio once selected.

Alignment Discussion

IRP Process Step 4: Analyze Candidate Portfolios

Candidate Portfolios are then subjected to **Portfolio Analysis** (including stochastic risk analysis) to measure performance across many future scenarios. The stochastic process will produce hundreds of internally consistent simulations that can provide a more realistic understanding of the potential variation in future scenarios.



Alignment Discussion

IRP Process Step 5: Develop Balanced Scorecard

Detailed portfolio results will be included for each **Candidate Portfolio** in the report write-up filed with the Commission. The **Candidate Portfolios** will be summarized in terms of each **Objective** and **Metric** through a color-coded balanced scorecard.

Balanced Scorecard (Illustrative)

	Affordability	Rate Stability	Sustainability Impact	Market Risk Minimization	Reliability	Resource Diversity
Candidate Portfolios	NPV RR	95th Percentile Value of NPV RR	CO2 Emissions	Purchases as % of Generation	Reserve Margin	Mix of Resources
Reference Case	$92.0	$115.0	-62.0%	10.0%	15%	5
Portfolio #1	$94.0	$138.0	-39.0%	15.0%	15%	4
Portfolio #2	$108.0	$145.0	-50.0%	18.0%	15%	6
Portfolio #3	$81.0	$123.0	-38.0%	24.0%	15%	4
Portfolio #4	$97.0	$146.0	-42.0%	42.0%	15%	4
Portfolio #5	$101.0	$167.0	-54.0%	34.0%	15%	5
Portfolio #6	$87.0	$113.0	-64.0%	41.0%	15%	3
Portfolio #8	$102.0	$172.0	-40.0%	34.0%	15%	5
Portfolio #9	$120.0	$198.0	-90.0%	24.0%	15%	6
Portfolio #10	$99.0	$210.0	-84.0%	12.0%	15%	5

(illustrative)

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ALIGNMENT DISCUSSION

CONCLUSION

STAKEHOLDER NEXT STEPS AND DATA PROVISION PLANS

Jay Boggs | Siemens PTI

Stakeholder Timelines

March 9, 2021 ✓
- 2021 IRP Process
- Objectives and Metrics
- Proposed Scenarios
- Base Case Inputs

April 14, 2021 ✓
- DSM IRP Inputs and Modeling
- EE/EWR, DR and DER Results
- 2021 IRP Update

June 24, 2021 ✓
- AURORA Technical Workshop

July 27, 2021 ✓
- IRP Process – Inputs, Scenarios and Sensitivities
- All-Source RFP Results

October 14, 2021 (this session) ✓
- Finalized Reference Case Inputs and Key Assumptions
- Candidate Portfolio Review

November, 2021 (Nov 18, 2021)
- Stochastic Modeling
- Review of Preferred Portfolio
- Other(s)

All-Source RFP Timeline (completed)

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FEEDBACK AND DISCUSSION

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CLOSING DISCUSSION

Andrew Williamson | I&M Director Regulatory Services

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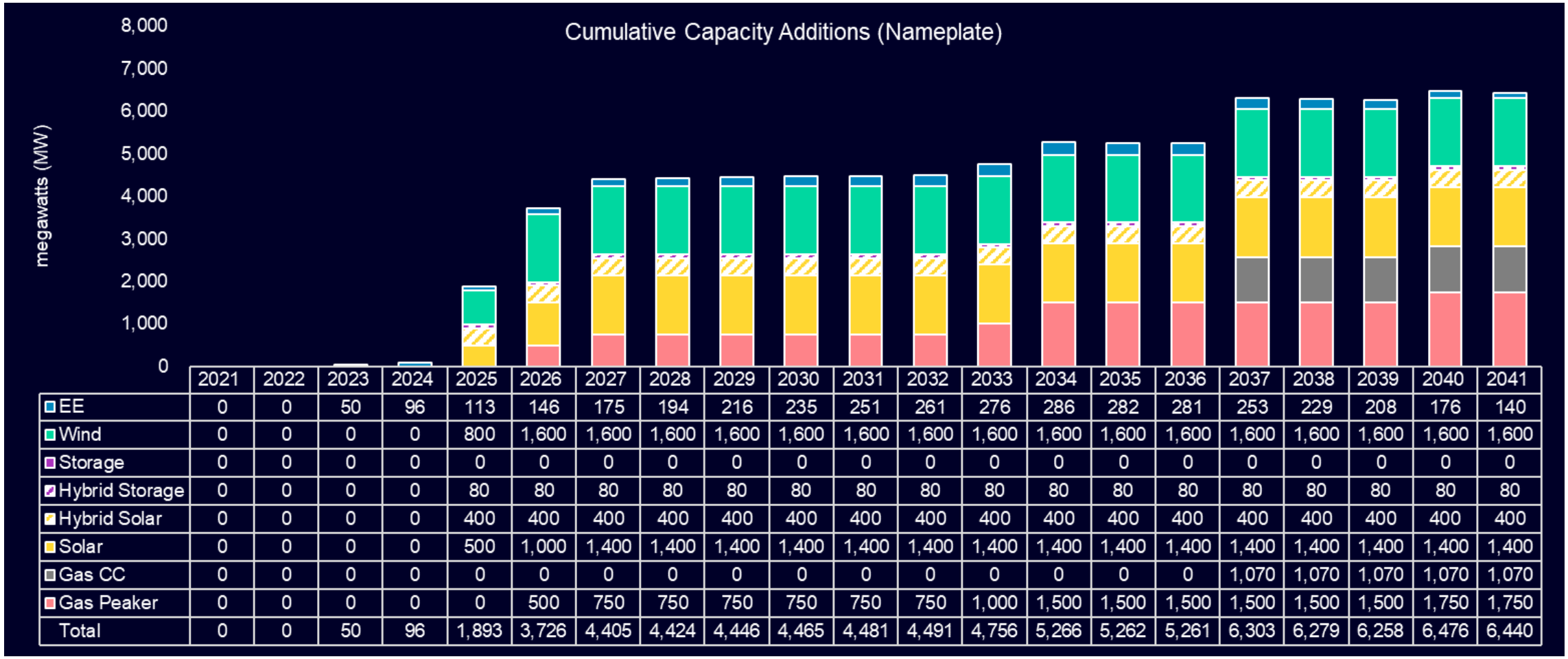
THANK YOU!

Definitions

Term	Definition
AURORAxmp	Electric modeling forecasting and analysis software. Used for capacity expansion, chronological dispatch, and stochastic functions
Condition	A unique combination of a Scenario and a Sensitivity that is used to inform Candidate Portfolio development
Deterministic Modeling	Simulated dispatch of a portfolio in a pre-determined future
Renewable Portfolio Standards	Renewable Portfolio Standards (RPS) are policies designed to increase the use of renewable energy sources for electricity generation
Portfolio	A group of resources to meet customer load
Preferred Portfolio	The portfolio that management determines will perform the best, with consideration for cost, risk, reliability, and sustainability
Probabilistic modeling	Simulate dispatch of portfolios for several randomly generated potential future states
Reference Scenario	The most expected future scenario that is designed to include a current consensus view of key drivers in power and fuel markets (reference case, consensus case)
Scenario	Potential future State-of-the-World designed to test portfolio performance in key risk areas important to management and stakeholders alike
Sensitivity Analysis	Analysis to determine the impact of early retirements and other inputs portfolios are most sensitive to

Reference Case Sensitivity

Rockport Unit 1 Early Retirement (2026)



	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041
EE	0	0	50	96	113	146	175	194	216	235	251	261	276	286	282	281	253	229	208	176	140
Wind	0	0	0	0	800	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600
Storage	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hybrid Storage	0	0	0	0	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80
Hybrid Solar	0	0	0	0	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400
Solar	0	0	0	0	500	1,000	1,400	1,400	1,400	1,400	1,400	1,400	1,400	1,400	1,400	1,400	1,400	1,400	1,400	1,400	1,400
Gas CC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1,070	1,070	1,070	1,070	1,070
Gas Peaker	0	0	0	0	0	500	750	750	750	750	750	750	1,000	1,500	1,500	1,500	1,500	1,500	1,500	1,750	1,750
Total	0	0	50	96	1,893	3,726	4,405	4,424	4,446	4,465	4,481	4,491	4,756	5,266	5,262	5,261	6,303	6,279	6,258	6,476	6,440

Reference Case Sensitivity KPI

Rockport Unit 1 Early Retirement (2026)

Rockport 1 2026 Retirement						
Year	Capacity Position	Energy Balance	Imports I&M	Exports I&M	Carbon Free Generation	EE Penetration
2021	12%	103%	12%	6%	85%	0.06%
2022	12%	92%	25%	7%	83%	0.46%
2023	6%	98%	16%	4%	91%	0.79%
2024	0%	104%	10%	3%	91%	2.31%
2025	11%	120%	3%	12%	92%	2.80%
2026	0%	144%	1%	30%	92%	3.67%
2027	6%	139%	1%	27%	97%	4.08%
2028	4%	135%	1%	25%	96%	2.83%
2029	4%	138%	1%	27%	96%	3.80%
2030	4%	143%	0%	32%	96%	4.93%
2031	3%	134%	1%	24%	96%	5.02%
2032	4%	139%	1%	27%	97%	4.97%
2033	9%	136%	1%	25%	96%	4.85%
2034	7%	152%	0%	41%	95%	3.45%
2035	5%	110%	8%	9%	93%	4.81%
2036	3%	107%	10%	8%	93%	5.86%
2037	0%	148%	0%	39%	69%	5.49%
2038	1%	98%	14%	3%	52%	4.91%
2039	1%	95%	15%	2%	52%	4.36%
2040	3%	93%	15%	3%	53%	3.11%
2041	1%	90%	16%	2%	55%	3.59%

Metrics Calculations and Notes

Capacity Position against FPR:

Short-term capacity contracts are required in 2024 and 2026 to account for early Rockport retirement. Post 2026 capacity position maintains healthy margin.

Energy Balance:

Energy Balance is high in the middle years as energy rich renewable energy is being selected to meet capacity position.

Imports I&M:

Imports maintain reasonable balance without any years exceeding +30%

Exports I&M:

Exports maintain reasonable balance without many years exceeding +30%

Carbon Free Generation:

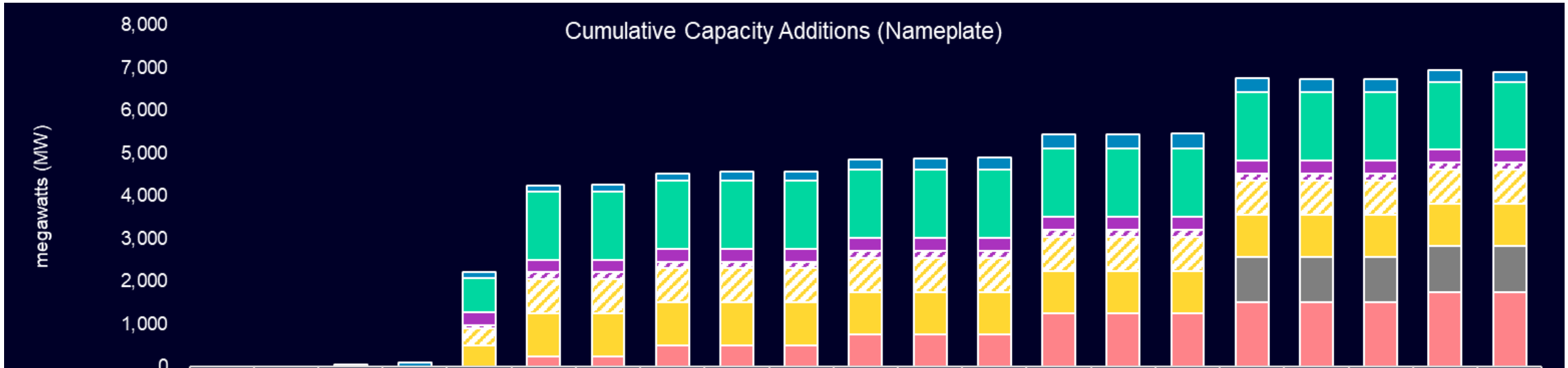
Carbon free generation meets targets until the retirement of Cook Nuclear facilities.

Energy Efficiency (EE)

EE Penetration for new and existing programs reaches ~5% of retail load obligation by 2030

Net Savings Sensitivity 1

Rockport Unit 1 Early Retirement (2024) Replacing SEA with Net to Gross EE Bundle Savings



	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041
EE	0	0	46	88	129	138	157	174	220	221	246	272	303	330	339	352	344	318	299	282	231
Wind	0	0	0	0	800	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600
Storage	0	0	0	0	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300
Hybrid Storage	0	0	0	0	80	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160
Hybrid Solar	0	0	0	0	400	800	800	800	800	800	800	800	800	800	800	800	800	800	800	800	800
Solar	0	0	0	0	500	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
Gas CC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1,070	1,070	1,070	1,070	1,070
Gas Peaker	0	0	0	0	0	250	250	500	500	500	750	750	750	1,250	1,250	1,250	1,500	1,500	1,500	1,750	1,750
Total	0	0	46	88	2,209	4,248	4,267	4,534	4,580	4,581	4,856	4,882	4,913	5,440	5,449	5,462	6,774	6,748	6,729	6,962	6,911

Net Savings Sensitivity 1 KPI

Rockport Unit 1 Early Retirement (2024) Replacing SEA with Net to Gross EE Bundle Savings

NSA 1 - Rockport 1 2024 N2G EE						
Year	Capacity Position	Energy Balance	Imports I&M	Exports I&M	Carbon Free Generation	EE Penetration
2021	12%	103%	12%	6%	85%	0.06%
2022	12%	92%	25%	7%	83%	0.46%
2023	21%	98%	16%	4%	91%	0.72%
2024	0%	104%	11%	5%	90%	2.07%
2025	0%	114%	5%	8%	97%	2.89%
2026	4%	139%	1%	26%	97%	3.45%
2027	2%	138%	2%	27%	97%	3.72%
2028	5%	133%	2%	24%	97%	2.28%
2029	5%	137%	1%	27%	97%	3.60%
2030	4%	142%	1%	31%	97%	4.72%
2031	10%	134%	1%	24%	96%	4.90%
2032	10%	139%	0%	27%	97%	5.05%
2033	9%	136%	1%	25%	96%	5.07%
2034	7%	150%	0%	40%	96%	3.21%
2035	5%	110%	8%	9%	94%	5.35%
2036	3%	109%	10%	8%	94%	6.96%
2037	6%	152%	0%	41%	69%	7.04%
2038	8%	101%	13%	3%	53%	6.39%
2039	7%	98%	14%	2%	53%	5.87%
2040	9%	95%	15%	3%	54%	4.58%
2041	7%	94%	15%	3%	56%	5.51%

Metrics Calculations and Notes

Capacity Position against FPR:

Short-term capacity contracts are required in years 2024 and 2025 to account for early Rockport retirement. Post 2025 capacity position maintains healthy margin.

Energy Balance:

Energy Balance is high in the early years as energy rich renewable energy is being selected to meet capacity position.

Imports I&M:

Imports maintain reasonable balance without any years exceeding +30%

Exports I&M:

Exports maintain reasonable balance without many years exceeding +30%

Carbon Free Generation:

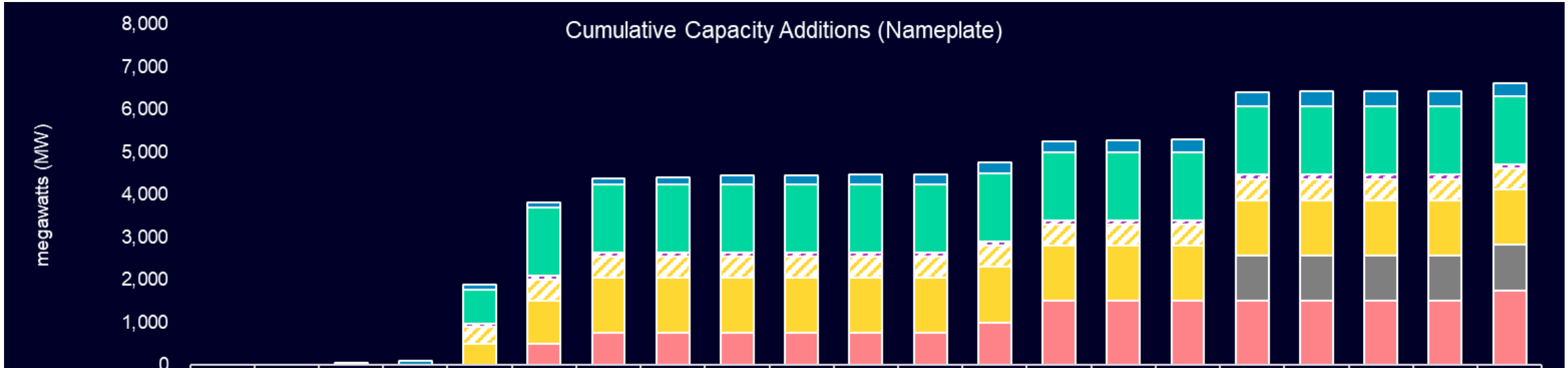
Carbon free generation meets targets until the retirement of Cook Nuclear facilities.

Energy Efficiency (EE)

EE Penetration for new and existing programs is slightly less than ~5% of retail load obligation by 2030.

Net Savings Sensitivity 2

Rockport Unit 1 Early Retirement (2026) Replacing SEA with Net to Gross EE Bundle Savings



	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041
EE	0	0	46	88	110	125	145	165	215	215	222	236	251	266	280	307	341	352	367	371	306
Wind	0	0	0	0	800	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600
Storage	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hybrid Storage	0	0	0	0	80	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Hybrid Solar	0	0	0	0	400	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500
Solar	0	0	0	0	500	1,000	1,300	1,300	1,300	1,300	1,300	1,300	1,300	1,300	1,300	1,300	1,300	1,300	1,300	1,300	1,300
Gas CC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1,070	1,070	1,070	1,070	1,070
Gas Peaker	0	0	0	0	0	500	750	750	750	750	750	750	1,000	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,750
Total	0	0	46	88	1,890	3,825	4,395	4,415	4,465	4,465	4,472	4,486	4,751	5,266	5,280	5,307	6,411	6,422	6,437	6,441	6,626

Net Savings Sensitivity 2 KPI

Rockport Unit 1 Early Retirement (2026) Replacing SEA with Net to Gross EE Bundle Savings

NSA 2 - Rockport 1 2026 N2G EE						
Year	Capacity Position	Energy Balance	Imports I&M	Exports I&M	Carbon Free Generation	EE Penetration
2021	12%	103%	12%	6%	85%	0.06%
2022	12%	92%	25%	7%	83%	0.46%
2023	6%	98%	16%	4%	91%	0.72%
2024	0%	103%	11%	3%	92%	2.07%
2025	11%	120%	3%	12%	92%	2.66%
2026	0%	144%	1%	30%	92%	3.29%
2027	6%	138%	1%	27%	97%	3.58%
2028	4%	134%	1%	24%	96%	2.18%
2029	4%	138%	1%	27%	96%	3.51%
2030	4%	142%	0%	31%	96%	4.62%
2031	3%	133%	1%	23%	96%	4.61%
2032	4%	138%	1%	27%	97%	4.73%
2033	8%	135%	1%	25%	96%	4.63%
2034	7%	149%	0%	40%	95%	2.55%
2035	4%	109%	8%	9%	93%	4.65%
2036	3%	108%	10%	8%	93%	6.33%
2037	0%	152%	0%	41%	69%	6.91%
2038	2%	101%	13%	4%	53%	6.62%
2039	1%	99%	13%	2%	53%	6.38%
2040	0%	96%	14%	3%	54%	5.35%
2041	2%	95%	15%	3%	56%	6.20%

Metrics Calculations and Notes

Capacity Position against FPR:

Short-term capacity contracts are required in 2024 and 2026 to account for early Rockport retirement. Post 2026 capacity position maintains healthy margin.

Energy Balance:

Energy Balance is high in the middle years as energy rich renewable energy is being selected to meet capacity position.

Imports I&M:

Imports maintain reasonable balance without any years exceeding +30%

Exports I&M:

Exports maintain reasonable balance without many years exceeding +30%

Carbon Free Generation:

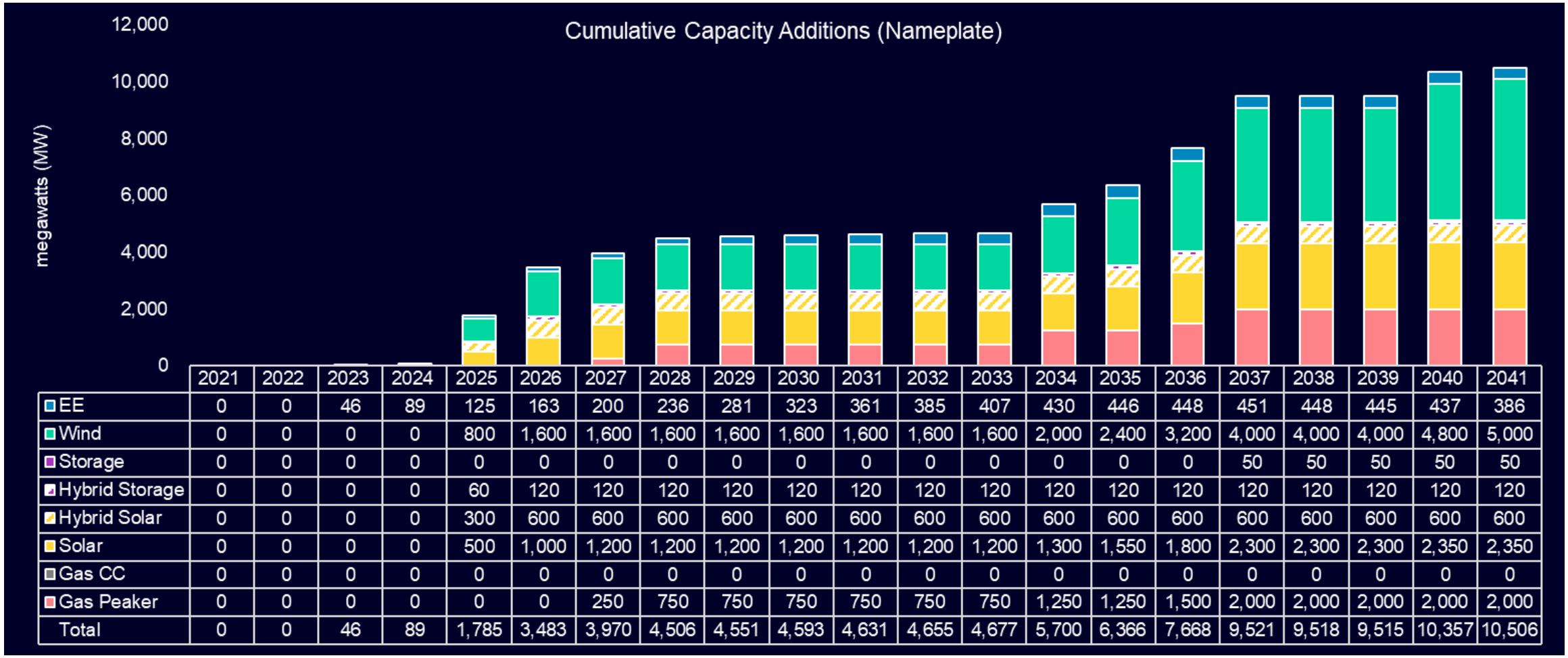
Carbon free generation meets targets until the retirement of Cook Nuclear facilities.

Energy Efficiency (EE)

EE Penetration for new and existing programs is slightly less than ~5% of retail load obligation by 2030.

Net Savings Sensitivity 3

Rapid Technology Advancement Replacing SEA with Net to Gross EE Bundle Savings



	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041
EE	0	0	46	89	125	163	200	236	281	323	361	385	407	430	446	448	451	448	445	437	386
Wind	0	0	0	0	800	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600	2,000	2,400	3,200	4,000	4,000	4,000	4,800	5,000
Storage	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	50	50	50	50	50
Hybrid Storage	0	0	0	0	60	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120
Hybrid Solar	0	0	0	0	300	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600
Solar	0	0	0	0	500	1,000	1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,300	1,550	1,800	2,300	2,300	2,300	2,350	2,350
Gas CC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Gas Peaker	0	0	0	0	0	0	250	750	750	750	750	750	750	1,250	1,250	1,500	2,000	2,000	2,000	2,000	2,000
Total	0	0	46	89	1,785	3,483	3,970	4,506	4,551	4,593	4,631	4,655	4,677	5,700	6,366	7,668	9,521	9,518	9,515	10,357	10,506

Net Savings Sensitivity 3 KPI

Rapid Technology Advancement Replacing SEA with Net to Gross EE Bundle Savings

NSA 3 - RTA N2G EE						
Year	Capacity Position	Energy Balance	Imports I&M	Exports I&M	Carbon Free Generation	EE Penetration
2021	12%	103%	11%	5%	85%	0.06%
2022	12%	93%	22%	5%	82%	0.45%
2023	6%	99%	14%	4%	90%	0.72%
2024	0%	104%	9%	3%	90%	2.08%
2025	9%	119%	3%	11%	92%	2.83%
2026	21%	138%	1%	25%	97%	3.68%
2027	28%	141%	1%	28%	96%	4.13%
2028	5%	135%	1%	25%	96%	2.85%
2029	4%	139%	1%	28%	96%	4.21%
2030	4%	144%	0%	31%	97%	5.88%
2031	4%	137%	1%	25%	96%	6.24%
2032	4%	142%	0%	29%	97%	6.26%
2033	3%	138%	1%	26%	97%	6.15%
2034	3%	153%	0%	42%	98%	4.04%
2035	4%	131%	2%	23%	95%	6.59%
2036	14%	150%	0%	37%	95%	8.27%
2037	2%	167%	0%	54%	98%	8.36%
2038	4%	125%	9%	21%	94%	7.99%
2039	4%	122%	9%	20%	94%	7.54%
2040	2%	138%	3%	33%	96%	6.17%
2041	1%	142%	3%	37%	98%	7.50%

Metrics Calculations and Notes

Capacity Position against FPR:

Short-term capacity contracts are required in 2024 to account for shortage in capacity. Post 2024 capacity position maintains above obligation.

Energy Balance:

Energy Balance is high in the middle years and is maintained through the forecast as energy rich renewable energy is being selected to meet capacity position.

Imports I&M:

Imports maintain reasonable balance without any years exceeding +30%.

Exports I&M:

Exports maintain higher levels than in other portfolios. However, there are not many years where exports exceeds 30%

Carbon Free Generation:

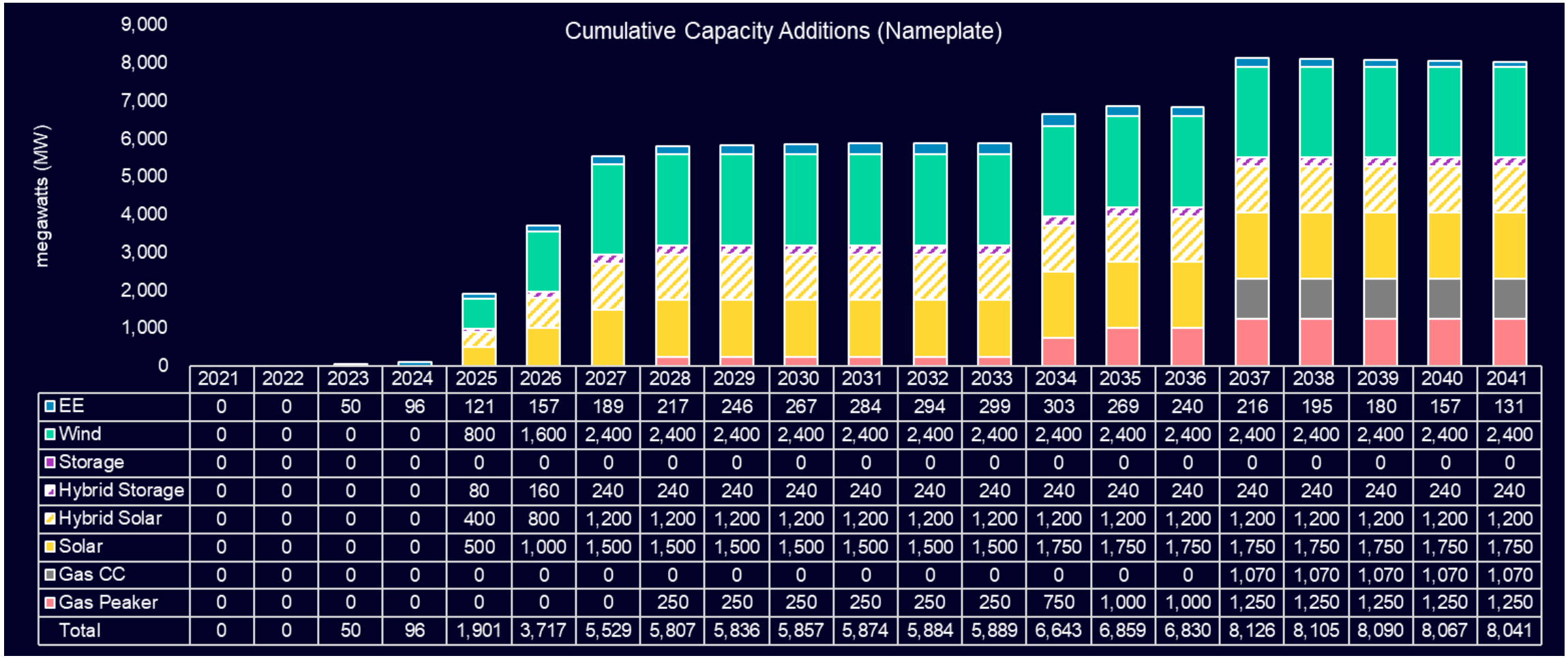
Carbon free generation meets targets for entire forecast period.

Energy Efficiency (EE)

EE Penetration for new and existing programs reaches ~5% of retail load obligation by 2030 but is slightly higher than the SEA Portfolio.

Reference Case Sensitivity

Expanded Cumulative Build Limits on Renewable Energy and Storage



	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041
EE	0	0	50	96	121	157	189	217	246	267	284	294	299	303	269	240	216	195	180	157	131
Wind	0	0	0	0	800	1,600	2,400	2,400	2,400	2,400	2,400	2,400	2,400	2,400	2,400	2,400	2,400	2,400	2,400	2,400	2,400
Storage	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hybrid Storage	0	0	0	0	80	160	240	240	240	240	240	240	240	240	240	240	240	240	240	240	240
Hybrid Solar	0	0	0	0	400	800	1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200
Solar	0	0	0	0	500	1,000	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,750	1,750	1,750	1,750	1,750	1,750	1,750	1,750
Gas CC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1,070	1,070	1,070	1,070	1,070
Gas Peaker	0	0	0	0	0	0	0	250	250	250	250	250	250	750	1,000	1,000	1,250	1,250	1,250	1,250	1,250
Total	0	0	50	96	1,901	3,717	5,529	5,807	5,836	5,857	5,874	5,884	5,889	6,643	6,859	6,830	8,126	8,105	8,090	8,067	8,041

Reference Case Sensitivity KPI

Expanded Cumulative Build Limits on Renewable Energy and Storage

Reference Renewable Limts Adjusted						
Year	Capacity Position	Energy Balance	Imports I&M	Exports I&M	Carbon Free Generation	EE Penetration
2021	12%	103%	11%	5%	85%	0.06%
2022	12%	93%	23%	5%	83%	0.46%
2023	6%	100%	14%	4%	90%	0.79%
2024	0%	104%	9%	2%	91%	2.31%
2025	11%	120%	3%	11%	92%	2.91%
2026	24%	140%	1%	26%	97%	3.79%
2027	35%	154%	0%	41%	97%	4.22%
2028	5%	150%	0%	38%	97%	3.02%
2029	4%	153%	0%	41%	98%	4.09%
2030	4%	157%	0%	45%	98%	5.33%
2031	4%	150%	0%	38%	98%	5.48%
2032	4%	154%	0%	42%	98%	5.43%
2033	3%	151%	0%	39%	97%	5.15%
2034	2%	164%	0%	53%	98%	3.56%
2035	7%	133%	3%	28%	95%	4.62%
2036	5%	130%	5%	25%	95%	5.26%
2037	8%	136%	1%	28%	93%	4.97%
2038	10%	121%	5%	17%	63%	4.45%
2039	9%	117%	6%	15%	63%	3.99%
2040	4%	115%	6%	16%	64%	2.85%
2041	3%	113%	6%	15%	65%	3.49%

Metrics Calculations and Notes

Capacity Position against FPR:

Short-term capacity contracts are required in 2024 to account for shortage in capacity. Capacity position maintains healthy margins through forecast period with slight overbuild in advance of Rockport.

Energy Balance:

Energy Balance is high in the middle years as renewable energy is being selected to meet capacity position.

Imports I&M:

Imports maintain reasonable balance without any years exceeding +30%

Exports I&M:

Exports maintain higher levels than in other portfolios. However, there are not many years where exports exceeds 30%

Carbon Free Generation:

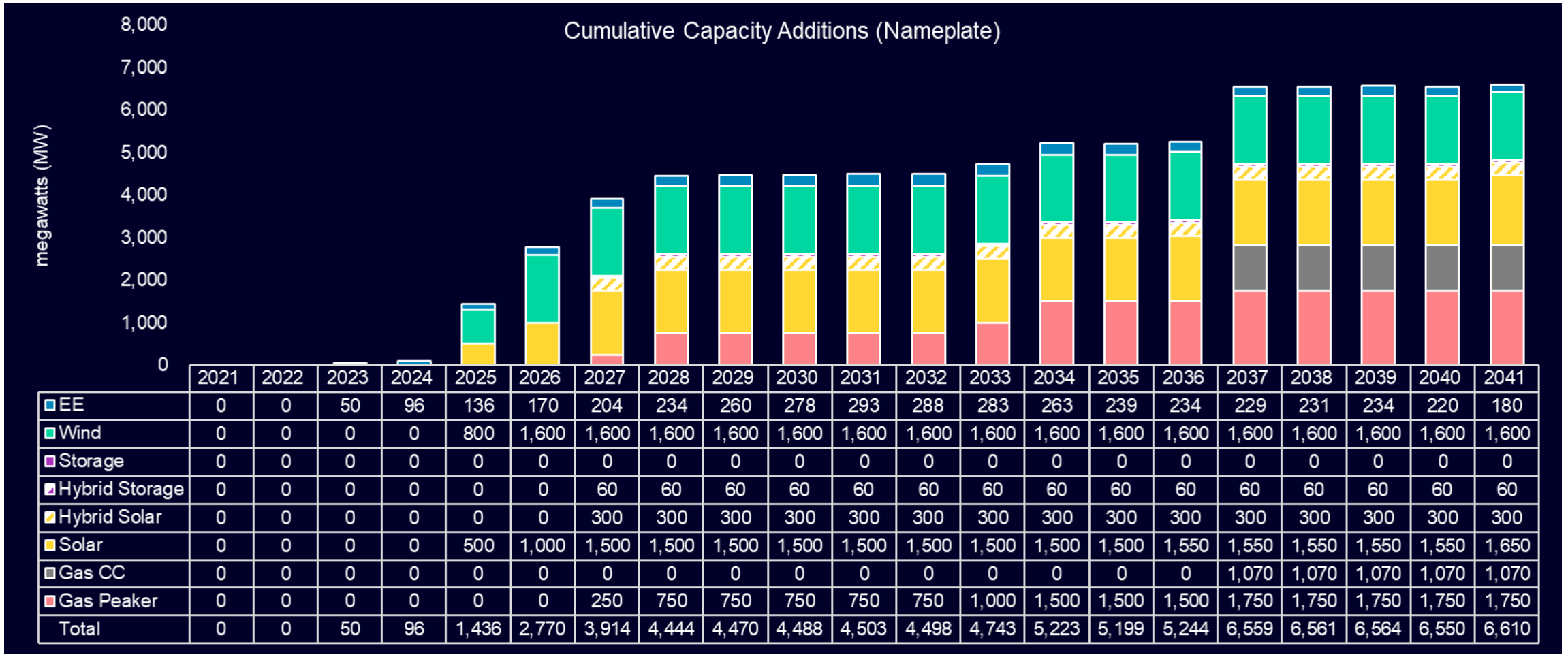
Carbon free generation meets targets until the retirement of Cook Nuclear facilities.

Energy Efficiency (EE)

EE Penetration for new and existing programs reaches ~5% of retail load obligation by 2030

Reference Case Sensitivity

Import and Export Limit at ~30% of I&M Load



	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041
EE	0	0	50	96	136	170	204	234	260	278	293	288	283	263	239	234	229	231	234	220	180
Wind	0	0	0	0	800	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600
Storage	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hybrid Storage	0	0	0	0	0	0	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60
Hybrid Solar	0	0	0	0	0	0	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300
Solar	0	0	0	0	500	1,000	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,550	1,550	1,550	1,550	1,550	1,650
Gas CC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1,070	1,070	1,070	1,070	1,070
Gas Peaker	0	0	0	0	0	0	250	750	750	750	750	750	1,000	1,500	1,500	1,500	1,750	1,750	1,750	1,750	1,750
Total	0	0	50	96	1,436	2,770	3,914	4,444	4,470	4,488	4,503	4,498	4,743	5,223	5,199	5,244	6,559	6,561	6,564	6,550	6,610

Reference Case Sensitivity KPI

Import and Export Limit at ~30% of I&M Load

Reference 30% Import / Export						
Year	Capacity Position	Energy Balance	Imports I&M	Exports I&M	Carbon Free Generation	EE Penetration
2021	12%	103%	11%	5%	85%	0.06%
2022	12%	93%	23%	5%	83%	0.46%
2023	6%	100%	14%	4%	90%	0.79%
2024	0%	104%	9%	2%	91%	2.31%
2025	5%	117%	4%	9%	92%	3.14%
2026	13%	133%	1%	20%	97%	3.99%
2027	27%	141%	1%	28%	96%	4.44%
2028	4%	136%	1%	25%	96%	3.16%
2029	4%	140%	1%	28%	96%	4.28%
2030	4%	143%	0%	31%	97%	5.54%
2031	4%	136%	1%	24%	96%	5.63%
2032	4%	140%	0%	28%	97%	5.36%
2033	9%	136%	1%	25%	96%	4.96%
2034	7%	146%	0%	35%	97%	3.15%
2035	4%	109%	8%	8%	93%	4.16%
2036	3%	106%	10%	7%	93%	5.12%
2037	6%	136%	0%	28%	75%	5.11%
2038	8%	100%	13%	4%	52%	4.95%
2039	8%	97%	14%	2%	52%	4.72%
2040	3%	95%	14%	3%	53%	3.68%
2041	3%	94%	14%	3%	56%	4.26%

Metrics Calculations and Notes

Capacity Position against FPR:

Short-term capacity contracts are required in 2024 to account for shortage in capacity. Capacity position maintains healthy margins through forecast period.

Energy Balance:

Energy Balance is high in the early and middle years as renewable energy is being selected to meet capacity position.

Imports I&M:

Imports maintain reasonable balance without any years exceeding +30%

Exports I&M:

Exports maintain reasonable balance without many years exceeding +30%

Carbon Free Generation:

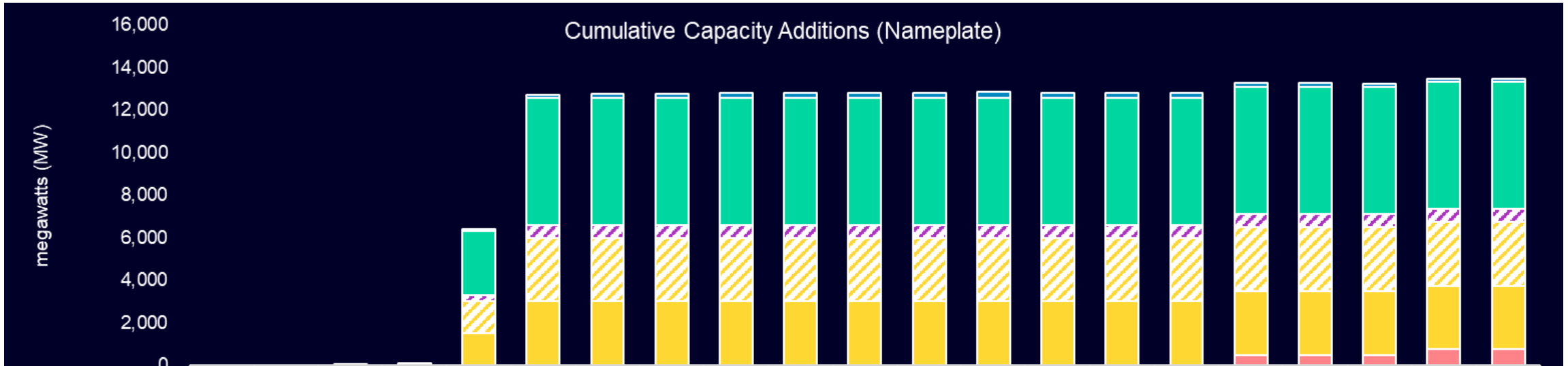
Carbon free generation meets targets until the retirement of Cook Nuclear facilities.

Energy Efficiency (EE)

EE Penetration for new and existing programs reaches ~5% of retail load obligation by 2030

Reference Case Sensitivity

Removed Cumulative and Annual Build Limits on Renewable Energy and Storage



	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041
EE	0	0	50	96	112	144	172	189	210	223	234	241	247	235	213	197	182	168	157	149	124
Wind	0	0	0	0	3,000	6,000	6,000	6,000	6,000	6,000	6,000	6,000	6,000	6,000	6,000	6,000	6,000	6,000	6,000	6,000	6,000
Storage	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hybrid Storage	0	0	0	0	300	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600
Hybrid Solar	0	0	0	0	1,500	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000
Solar	0	0	0	0	1,500	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000
Gas CC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Gas Peaker	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	500	500	500	750	750
Total	0	0	50	96	6,412	12,744	12,772	12,789	12,810	12,823	12,834	12,841	12,847	12,835	12,813	12,797	13,282	13,268	13,257	13,499	13,474

Reference Case Sensitivity KPI

Removed Cumulative and Annual Build Limits on Renewable Energy and Storage

Reference Unlimited Renewables						
Year	Capacity Position	Energy Balance	Imports I&M	Exports I&M	Carbon Free Generation	EE Penetration
2021	12%	103%	11%	5%	85%	0.06%
2022	12%	93%	22%	5%	83%	0.46%
2023	6%	100%	14%	4%	90%	0.79%
2024	0%	103%	10%	2%	91%	2.31%
2025	47%	159%	0%	47%	98%	2.79%
2026	91%	228%	0%	114%	99%	3.66%
2027	84%	229%	0%	116%	99%	4.08%
2028	42%	221%	0%	109%	99%	2.82%
2029	41%	226%	0%	115%	99%	3.79%
2030	41%	231%	0%	119%	99%	4.89%
2031	40%	223%	0%	111%	99%	4.95%
2032	40%	228%	0%	116%	99%	4.88%
2033	39%	223%	0%	111%	99%	4.66%
2034	28%	243%	0%	133%	99%	3.01%
2035	25%	210%	0%	102%	98%	4.02%
2036	23%	208%	0%	100%	98%	4.78%
2037	4%	210%	0%	101%	98%	4.64%
2038	6%	173%	2%	67%	96%	4.21%
2039	5%	170%	2%	65%	96%	3.80%
2040	6%	170%	1%	66%	97%	2.82%
2041	5%	169%	1%	66%	98%	3.47%

Metrics Calculations and Notes

Capacity Position against FPR:

Short-term capacity contracts are required in 2024 to account for shortage in capacity. Capacity position maintains high margins through forecast period with overbuild in advance of Rockport.

Energy Balance:

Energy Balance is throughout the forecast period

Imports I&M:

Imports maintain reasonable balance without any years exceeding +30% and with little need after 2025.

Exports I&M:

Exports are very high compared to other portfolios with many years exceeding 30%.

Carbon Free Generation:

Carbon free generation meets targets for entire forecast period, despite the retirement of Cook Nuclear facilities.

Energy Efficiency (EE)

EE Penetration for new and existing programs reaches ~5% of retail load obligation by 2030

Indiana Michigan Power Company

2021 Integrated Resource Plan

Stakeholder Workshop #4 Meeting Minutes

November 30, 2021

1. Welcome and Safety Moment – Andrew

Jay kicked off the meeting at 9:30 and covered slides 3-4.

Jay kicked off the meeting and welcomed participants to the 2021 I&M Integrated Resource Plan (IRP) stakeholder workshop. Greg reviewed a safety moment for season lights safety.

Greg introduced Steve Baker, Steve introduced himself to stakeholders as he took over I&M President role in August 2021 and explains his role and involvement in IRP so far.

2. Meeting Guidelines – Jay Boggs, Siemens PTI

Jay covered slides 5-8

Jay introduced the Meeting Guidelines section and its content and established the role of Moderator for the Stakeholder Meeting.

Meeting guidelines and agenda were discussed.

Jay also provided an overview of the Questions and Feedback process, including directing stakeholders to submit comments and stay informed at the I&M IRP Website: http://www.indianamichiganpower.com/info/projects/IntegratedResourcePlan.

In addition, stakeholders are encouraged to submit questions via email to I&MIRP@aep.com

3. Recap of Previous Meetings – Jay Boggs & Peter Berini, Siemens PTI

Peter covered slides 9

Peter reviews the general IRP 5 stage process that was used throughout the I&M IRP process. He goes into brief detail on each of the 5 steps in the approach which has been covered in deeper detail in previous stakeholder meetings:

1. *Determine Objectives*
2. *Identify Metrics*
3. *Create Candidate Portfolios*
4. *Analyze candidate portfolios*
    a. *Explains this involves stochastic analysis which will be covered further in next section by Mike*
5. *Balanced Scorecard and Report*

Jay covered slide 10

Jay reviews the stakeholder timeline and engagement including working with stakeholders to create assumptions and key inputs over the last 6-8 months, pointing out that the I&M IRP process has had multiple stakeholder meetings and taken a lot of stakeholder inputs into account, showing the 4 previous meetings that have been completed since March 2021. Jay reviewed the topics that were covered at each individual stakeholder meeting, as shown in the slide.

4. Portfolio Analysis - Michael Korschek, Siemens PTI

Michael covers slides 12-23

Mike overviews the stochastic process which includes specifying the major market drivers that were varied in the stochastic analysis and emphasized the benefit of this including risk of the 95th percentile.

Mike goes over the balanced scorecard and describes the benefit of using the "mean" of the stochastic iteration's vs using the "median" or "deterministic approach". He then outlines the factors that are varied and the multiple drivers that would vary each specific factor (Ex. Load can vary in the future due to weather/EV/Solar DG, etc.).

Mike goes through the stochastic input graphs, points out how the range of uncertainty grows over time, as we have a better estimate what these factors will be in the short term but there is a much wider range of uncertainty out in 2041.

Feedback and Discussion Oral Questions:
John Decuman – "In regard to the stochastic modeling you mentioned 5 drivers, for 200 iterations was the model able to vary each driver or only 1 driver per iteration?" Mike responds that each iteration has a different path in each driver.

5. Balanced Scorecard, Art Holland, Siemens PTI

Art covered slides 26-33

Art reviews the latest version of the balanced scorecard, specifying that it has gone through various stages and incorporated stakeholder feedback. He goes into detail of each of the metrics under each of the 6 classifications (Affordability, Rate Stability, Sustainability, Market Risk Minimization, Reliability, Resource Diversity). He then goes into the various portfolio summaries.

Art reviewed and compared the various slides of populated scorecards, specifying important differences between the portfolios. He then goes into detail regarding the various portfolios, and which were maintained as viable portfolios/or refined and those that were just used as an informative portfolio.

Andrew covers the OVEC analysis slide.

Alex Vaughn goes into detail on the costs included with the OVEC analysis including the model capturing energy cost changes and an out of model calculation to take the capacity costs into consideration for the analysis as well.

6. Metrics Deep dive – Peter Berini, Siemens PTI

Peter covers slides 36-43

Peter opens discussion with plan to go into more detail around the various metrics that are being focused on in analyzing the list of "focused portfolios". In the NPV CTSL, various costs taken into account including generation related costs. Specified the cook 2050+ portfolios came out with the lowest NPV for 20 year NPV but reminded all that cook license extension costs are not included. He

gives a brief overview of the box & whisker plot and how to interpret. Notes that reference prime has different selection of near term resources, giving the cheapest option.

For rate stability objective, primary objective is 95th percentile NPV CTSL and 5 year net rate increase CAGR.

Regarding sustainability goals, all portfolios surpass the 32% objective and most are very close (if not below) the 80% reduction goal by 2040. Cook portfolios are continuously low as a gas resource is not needed to replace cook capacity.

Peter reviews the spot market sales and purchases and the risk associated with some of the portfolios on energy balance, largely for cook portfolios as well as the scenario portfolios with high renewable generation.

Peter then puts it all together with the view of the fully populated scorecard with all focused portfolios.

ORAL Questions:

Emily: looking at 10 yr. NPV, would you consider any of those cases within the margin of error in your forecast? Andrew responds that he cannot give definitive answer, but that we do our best to capture that in stochastics.

Emily: how has supply chain problems affected some assumptions associated with deliverability of new technology. Andrew responds that they are aware of supply chain issues, and they will have to continuously evaluate going forward.

Art adds to Emily questions that uncertainty is integral part of the decision-making process with resource planning and that is why we spend so much time on stochastics inputs as well as the percentile bands.

Anna Sommer: are these overnight costs? Jim responds that yes these are just day 1 spend.

Anna Sommer: do these costs include any profit component? Jim responds that yes, all components are in there.

Feedback and Discussion:

7. Path to Preferred Portfolio – I&M Management

I&M Covered slides 46-50

Dave Lucas kicks off the preferred portfolio discussion. Dave echoes comments expressing appreciation for the stakeholder engagement, all engagement has been integral to determining the preferred path. Reinforces that no decisions have been made regarding Cook extensions and that no analysis has been started on looking at the cost associated with the Cook extensions. A key consideration in the development of I&M's preferred plan is to keep optionality around the Cook extensions once the necessary studies have been performed. When considering Cook optionality, we took into consideration feedback from previous stakeholder meetings regarding the level of spot market sales in the portfolios that modeled Cook extensions and the risk associated with those sales.

To maintain future optionality at Cook and address the long term energy position, I&M set up the preferred portfolio in a way that allows short term resource decisions to be made while maintaining the Cook extension as a viable option in the future.

Dave goes into specific detail around preferred portfolio adjustments, including the reduction of early year renewable build to allow I&M to make significant progress in I&M's generation transition plan, yet still allow the flexibility for the option to extend Cook when the time comes. In the preferred plan, gas resource additions all consolidated into 2028. I&M recognizes there will be further analysis in adding these gas resources but given current assumptions and weighing options around Cook and future market exposure, I&M feels that some level of gas resources will likely be necessary to replace Rockport. Long term renewable additions will be re-evaluated in the future as those are currently assumptions that are replacements of Cook energy/capacity.

Dave reviews the scorecard metrics for the preferred portfolio along with other focused portfolios for comparison and then turns it over to Art to go into further detail of these metrics.

8. Preferred Portfolio – Art Holland

Art Covered slides 52-57

Art goes into greater detail on the cumulative additions in the preferred portfolio graph on an annual basis.

9. Closing Remarks, Andrew Williamson

Andrew concluded the meeting expressing thanks on behalf of the I&M leadership for the active participation in today's meeting. Andrew gives next steps about filing IRP.

10. Appendix A: List of Questions Answered on Call

List of questions addressed on the call:

Question Asked	Answer Given
The battery forecasts that you show are based on what hour duration?	As answered by Mike Korschek
It does not make sense to me that the reference prime case would have a lower NPVRR if all you are doing is removing the i/o limit. could you give some thoughts on this?	As answered by Art Holland
Could you give a description of the difference between NPVCTSL and NPVRR as that term is commonly used, if any?	As answered by Peter B
Did you assume any penalty or other opt-out cost for OVEC?	As answered by Alex V (AEP)
Have you calculated an estimate of the capital costs (the capital costs that you have not included in the Cook portfolios)related to relicensing Cook the last time (in present	As answered by Andrew

dollars)? I realize these costs are yet to be estimated, but just to give some sense of these costs.	
Using average annual purchases as a measure of risk would seem to potentially mask issues with "stressed" hours during which I&M might be relying on purchases at the same time that other utilities will also be expecting to rely on imports. Have you looked at that? Any thoughts on your ability to look at that using your modeling of resource expansion for neighboring/PJM/MISO utilities?	As answered by Art and Peter
Are you expecting to be able to give more consideration to the 2028 gas expansion as part of your next IRP?	As answered by Dave Lucas
Do the generation related O&M and fuel costs for natural gas combustion turbines include the additional maintenance and fuel consumption costs associated with unit start-up and cycling?	As answered by Peter B
Do all portfolios include the continued operation of the OVEC units? Are you doing any new portfolios in light of the recent decision from the MI commission?	As answered by Andrew and further commented by Alex Vaughan (AEP)
Did you assume customers would be have to pay all the ICPA costs in these scenarios?	As answered by Andrew
Has I&M had any conversations with the co-owners about amending the ICPA?	As answered by Andrew
Have you considered retirement as a compliance method with CCR/ELGs?	As answered by Andrew
I know that you evaluated 2030 but that would include the CCR/ELG costs. Did you look at whether it was better for ratepayers to retire and not incur those costs?	As answered by Andrew
Please remind us what you assumed about the relicensing/continuation or retirement of your hydro plants.	As answered by Peter Berini
Please explain whether the OVEC analyses assume the continuation or discontinuation of the Ohio SB 6 subsidies to OVEC	As answered by Alex V (AEP)
To confirm, IMP unlike DEI is not going to attempt to determine a rate impact using traditional rate-making methodology as opposed to using revenue requirements of levelized cost?	As answered by Andrew, we will address is more detail later in today's presentation
Please explain how sunk costs are included in the economic analysis?	As answered by Andrew, we will address is more detail later in today's presentation
Please define CTSL	Cost to Serve Load. See Footnote #2.

Is it based upon revenue requirements of levelized costs? Does it include costs related to retired plants that have not been fully depreciated?	As answered by Art
How about revenue requirements of levelized costs?	We will address in the metric deep dive section.
How were the proposed changes at Rockport 2 considered?	As answered by Peter B and Andrew W
Just wondering how the market changes in 2021 resulted into any changes in assumptions. Not sure if this is the right to raise.	As answered by Andrew
To ask again, is it levelized costs or costs based upon the undepreciated capital.	Invited Emily To come off mute and further refine questions for Art, Peter, Andrew and the team responded to.
And no residual costs related to plant retirements.	As answered by Andrew - if further clarification is needed, please raise your hand - thank you
Just confirming upstream emissions are not included for gas	As answered by Art
Mike, could you talk about how changes in peak and average load in Aurora relate to changes in energy?	As answered by Mike. Please raise hand at the end of the session if you would like to follow up on the topic. Thank you!
In Siemens' view, what is the impact of stochastically varying capital costs just for areas outside of I&M's service territory on the costs experienced by I&M customers?	As answered by Michael Korschek
And CTSL is net of sales and purchases?	We will address in the metric deep dive section.
On the reserve margin metric, I think you mean over and above the Forecast Pool Requirement (not Reserve) right? But doesn't that include the reserve margin requirement? So that metric isn't really the reserve margin but the capacity in excess of the coincident peak load + reserve margin, right? Can you change the name of that metric to reflect that?	As Answered by Art. Will consider a revision to the name of the metric. Thank you.
I'm disappointed that you didn't advance one of the N2G portfolios given how important the modeling of EE is to CAC.	Comments provided by Greg Soller
Did you consider limiting sales in some of these of focused portfolios to get a better indication of NPV?	As answered by Art
Did I mishear what Peter said? The Cook life extension portfolios don't assume any additional cost (over current costs?) for life extension? So why do they "provide valuable strategic insights into...cost estimates for the asset life extension"?	As answered by Andrew
Are the dispatch costs of these portfolios based on Zonal or LTCE runs?	As answered by Peter B

Does the capital investment metric refer just to investment for new resources that will be capitalized or does it refer to any capitalized costs including maintenance or does it refer to any costs for new resources whether capitalized or not (but not maintenance) or does it mean something else entirely?	As answered by Andrew and Jim
Given that 2025 is three years out are you intending to start the all-source RFP process soon because you would consider advancing the online date for new capacity? Or is there some other factor at play?	As answered by Dave Lucas
This spot sales graph is really helpful because it shows much higher the average sales are in the years prior to the one - 2041 - that is reported in the scorecard. In at least one other IRP you've reported sales over most of the planning period instead of in one year, would you consider doing that here too?	As answered by Art and Greg

An AEP Company

Indiana Michigan Power:
2021 Integrated Resource Plan
Public Stakeholder Meeting #4

November 30, 2021

Presented via GoToWebinar (register here) → https://attendee.gotowebinar.com/register/4716544662590273296

BOUNDLESS ENERGY℠

INDIANA MICHIGAN POWER
An AEP Company

WELCOME AND SAFETY MOMENT

Andrew Williamson | I&M Director Regulatory Services

Safety Moment

MEETING GUIDELINES AND AGENDA

Jay Boggs | Siemens PTI

Agenda

Time		
9:30 a.m.	WELCOME AND SAFETY MOMENT	**Andrew Williamson**, I&M Director Regulatory Services
9:35 a.m.	MEETING GUIDELINES AND AGENDA	**Jay Boggs**, Siemens PTI
9:40 a.m.	RECAP OF PREVIOUS MEETINGS	**Jay Boggs**, Siemens PTI
10:00 a.m.	PORTFOLIO ANALYSIS	**Michael Korschek,** Siemens PTI
10:30 a.m.	BREAK	
10:45 a.m.	BALANCED SCORECARD	**Art Holland,** Siemens PTI
11:30 a.m.	METRICS DEEPDIVE	**Peter Berini**, Siemens PTI
12:15 p.m.	LUNCH	
1:00 p.m.	PATH TO PREFERRED PORTFOLIO	**I&M Management**
1:30 p.m.	PREFERRED PORTFOLIO	**Art Holland,** Siemens PTI
2:00 p.m.	CLOSING DISCUSSION	**Andrew Williamson**, I&M Director Regulatory Services
2:30 p.m.	ADJOURN	

Questions and Feedback

One purpose of today's presentation is to explain the IRP process and collect feedback from stakeholders. Stakeholder feedback will be posted on the I&M website IRP portal and will be considered as part of the Final IRP.

If you have a question about the IRP process during this presentation:

- Type your question in the Questions area of the GoToWebinar panel
- During the feedback and discussion portions of the presentations, please raise your hand via the GoToMeeting tool to be recognized. We plan to hear form all who wish to be heard and address all questions
- Any questions that cannot be answered during the call will be addressed and posted on the website above

If you would like to make a comment or ask a question about the IRP process after the presentation has concluded:

- Please send an email to I&MIRP@aep.com
- Stay informed about future events by visiting the I&M IRP Portal located at www.indianamichiganpower.com/info/projects/IntegratedResourcePlan

Guidelines

1. Due to the number of participants scheduled to join today's meeting, all will be in a "listen-only" mode by default.

2. Please enter questions at any time into the GoToWebinar portal. This is the best to way to ensure your question is answered. We will attempt to answer all questions during the session, time permitting.

3. Time has been allotted during the session to answer questions related to the materials presented. Unanswered questions will be addressed after the presentation and posted in accordance with the Questions and Feedback slide.

4. At the end of the presentation, we will open-up the floor for "clarifying questions," thoughts, ideas, and suggestions.

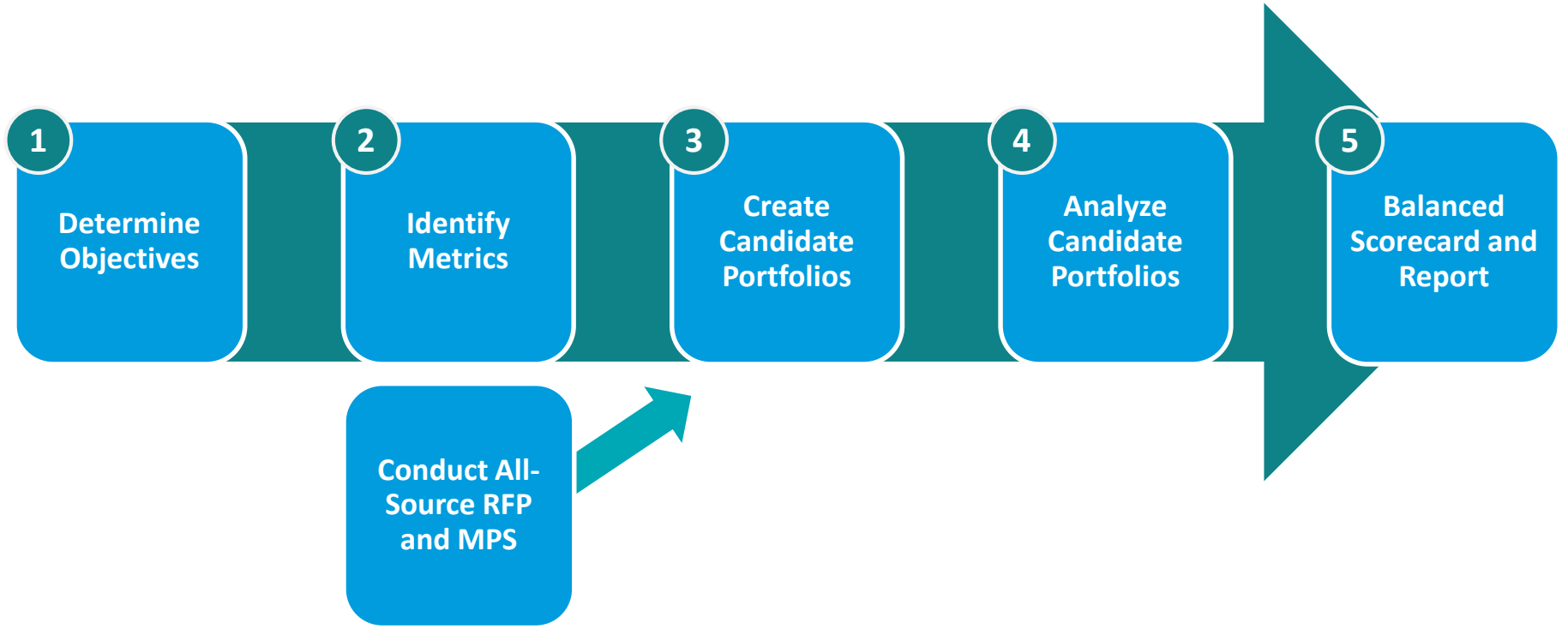
5. Please provide your feedback or any additional questions on the Stakeholder Meeting #4 presentation **within ten business days of the conclusion of this meeting.**

Peter Berini, Siemens PTI

RECAP OF THE PREVIOUS STAKEHOLDER MEETINGS

2021 IRP Process and Current State

Siemens PTI: Approach to Integrated Resource Plan Modeling



Stakeholder Timelines and Engagement

I&M established a stakeholder engagement process to encourage questions, make suggestions and provide data. As part of the IRP process, I&M has now conducted a total of five IRP Workshops and one Technical AURORA Workshop.

✓March 9, 2021	✓April 14, 2021	✓June 24, 2021	✓July 27, 2021	✓Oct. 14, 2021	✓Nov. 30, 2021	Pre- / Post Filing
2021 IRP Process	DSM IRP Inputs and Modeling	AURORA Technical Workshop	IRP Process – Inputs, Scenarios and Sensitivities	Finalized Reference Case Inputs and Key Assumptions	Stochastic Modeling	Stakeholder Feedback solicited and responded to until IRP Finalization
Objectives and Metrics	EE/EWR, DR and DER Results		All-Source RFP Results	Candidate Portfolio Review	Review of Preferred Portfolio	Continued Release of Model Inputs and Outputs
Proposed Scenarios	2021 IRP Update				Other(s)	
Base Case Inputs						

Michael Korschek, Siemens PTI

STEP 4: ANALYZE CANDIDATE PORTFOLIOS

Probabilistic Framework Applied to Candidate Portfolios

Candidate Portfolios were subjected to Probabilistic Simulations (stochastic risk analysis) to measure performance across many future scenarios. The stochastic process produces hundreds of internally consistent simulations that can provide a more realistic understanding of the potential variation in future states of the world.

Probabilistic Modeling is the basis for Step 4: Analyze Candidate Portfolios and informs the Step 5: Balanced Scorecard and Report

Advantages

- Exhaustive potential futures can be analyzed
- Uses impartial statistical rules and correlations

Disadvantages

- Link between statistical realizations and the real world can be difficult to understand

Market Driver	Varied Stochastically
Load	✓
Natural Gas Prices	✓
Coal Prices	✓
CO2 Prices	✓
Capital Costs for New Entry	✓

Stochastic Portfolio Results Inform Scorecard Metrics

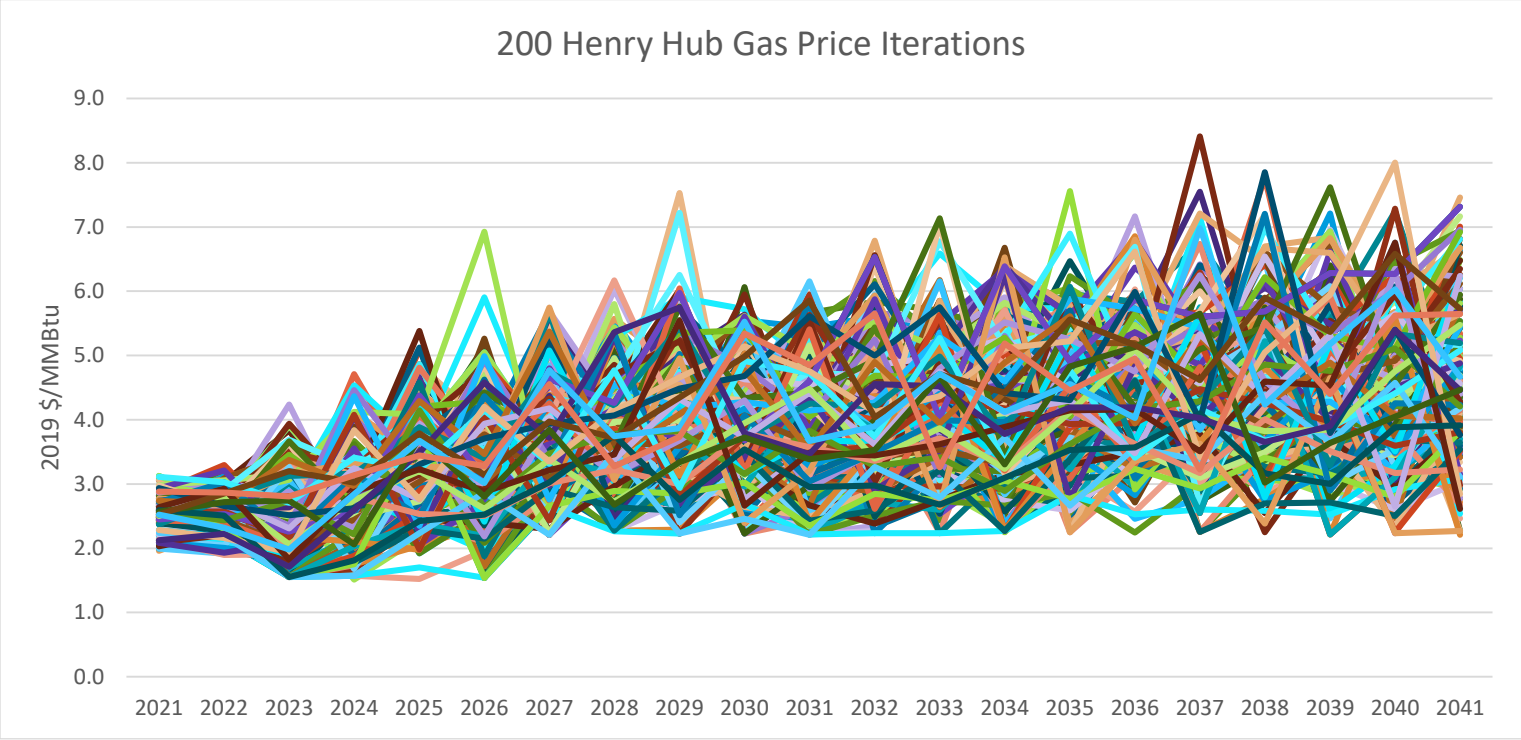
In measuring each portfolio's performance across 200 iterations, we can quantify each of the measures associated with IRP objectives. This provides a direct comparison of portfolio performance that will be summarized in the Balanced Scorecard.

IRP Objectives	Proposed IRP Metric	Unit
Affordability	20-Year NPV Cost to Serve Load 10-Year NPV Cost to Serve Load	$ $
Rate Stability	95th percentile value of NPV Cost to Serve Load CAGR of Rate Increase (2025-2029)	$ %
Sustainability Impact	CO2e Emissions	Tons
Market Risk Minimization	Purchases as a % of Demand (2041) Sales as a % of Demand (2041)	% %
Reliability	Reserve Margin above Forecasted Pool Requirement	%
Resource Diversity[1]	Number of Unique Fuel Types Number of Unique Generators	# #

[1]Resource Diversity fuel type metric is driven by Step 3 results and are not varied stochastically for the I&M portfolio.

Probabilistic Modeling Approach for Henry Hub

The probabilistic modeling framework works to measure risk from 200 potential future paths for each stochastic variable. By running each portfolio through 200 iterations, each portfolio's performance and risk profile can be quantified across a wide range of potential futures.



Probabilistic Variables and Drivers for Stochastic Inputs

Each stochastic input category has several components. Siemens identified the most salient market drivers for each category and build distributions around them. These distributions are based on multiple factors for each category as outlined below.

Load

- **Peak Load**
- **Average Load**
- Driver Variables:
- EV and Solar DG
- Weather
- GDP/ Personal Income
- EIA view on low, mid & high cases

Natural Gas

- **Henry Hub**
- Modeling based on:
- Historical Volatility
- Historical Mean Reversion
- Historical Correlation
- EIA view on low, mid & high cases

Coal

- **ILB**
- **PRB**
- **CAPP**
- **NAPP**
- Modeling based on:
- Historical Volatility
- Historical Mean Reversion
- Historical Correlation
- EIA view on low, mid & high cases

CO2

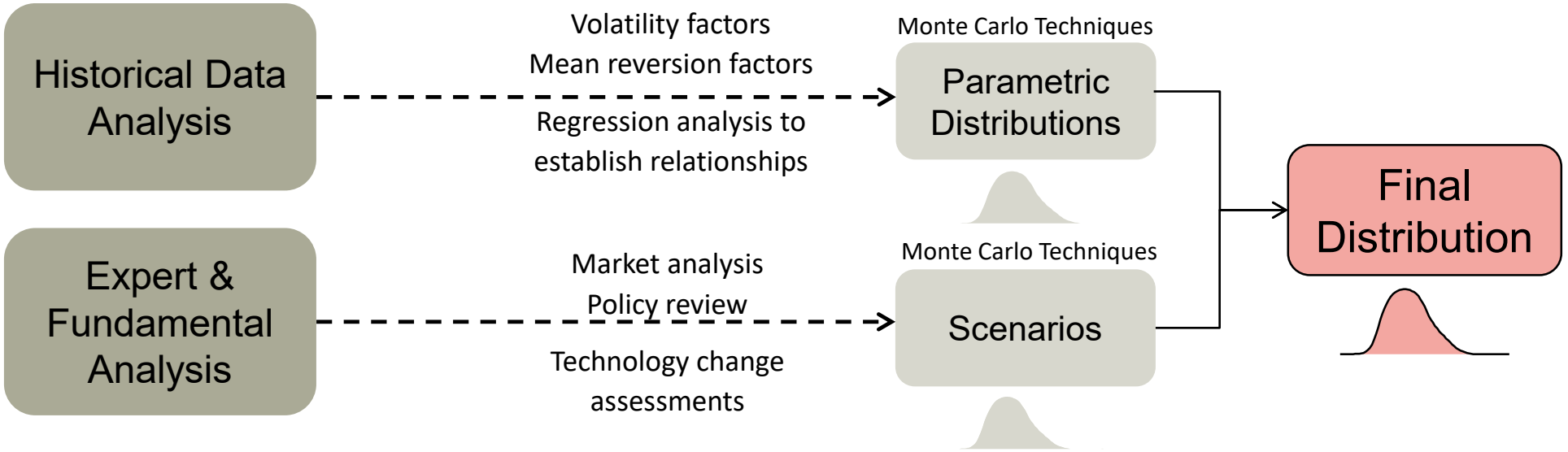
- **National CO2 price**
- Modeling based on:
- Expert view on low, mid & high cases

Capital Cost

- **Relevant technologies**
- **included**
- Modeling based on:
- EIA view on low, mid & high cases
- All Source RFP Results
- RFP Results

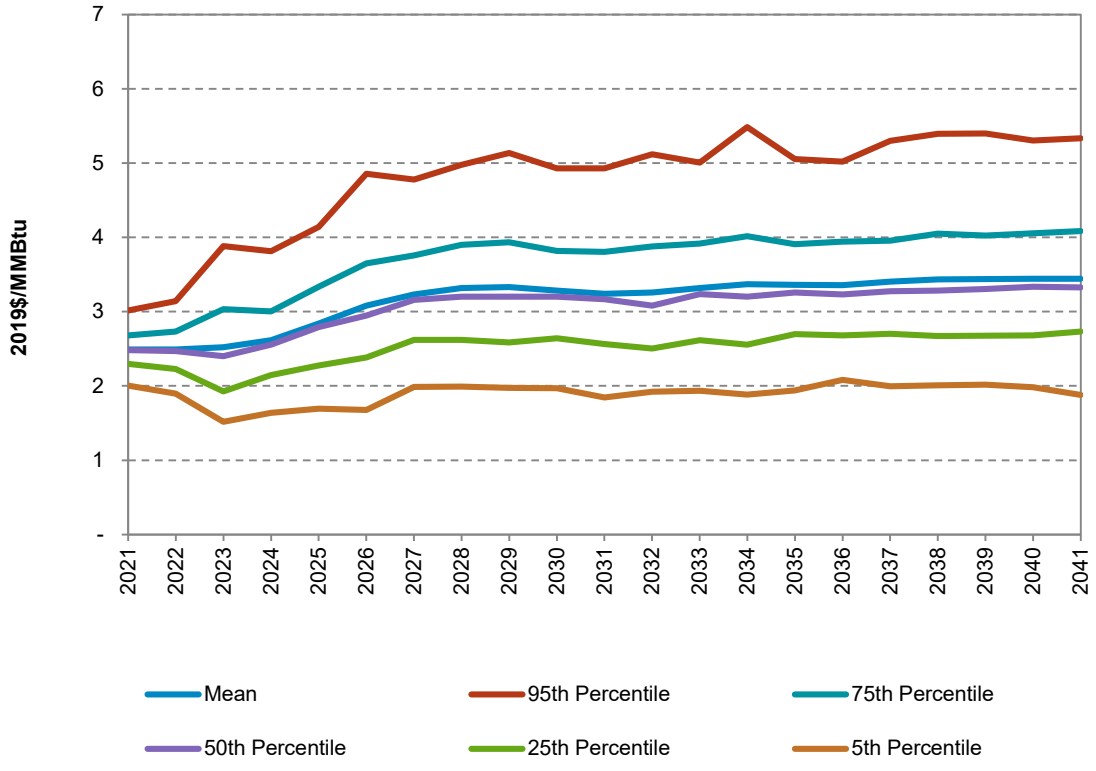
Probabilistic Modeling Approach for Stochastic Inputs

The below graphics illustrates the technical steps taken generate a full distribution for each stochastic input. This process blends historical performance and relationships coupled with market expertise to generate a distirbution that reflect historical behavior and expected future performance.

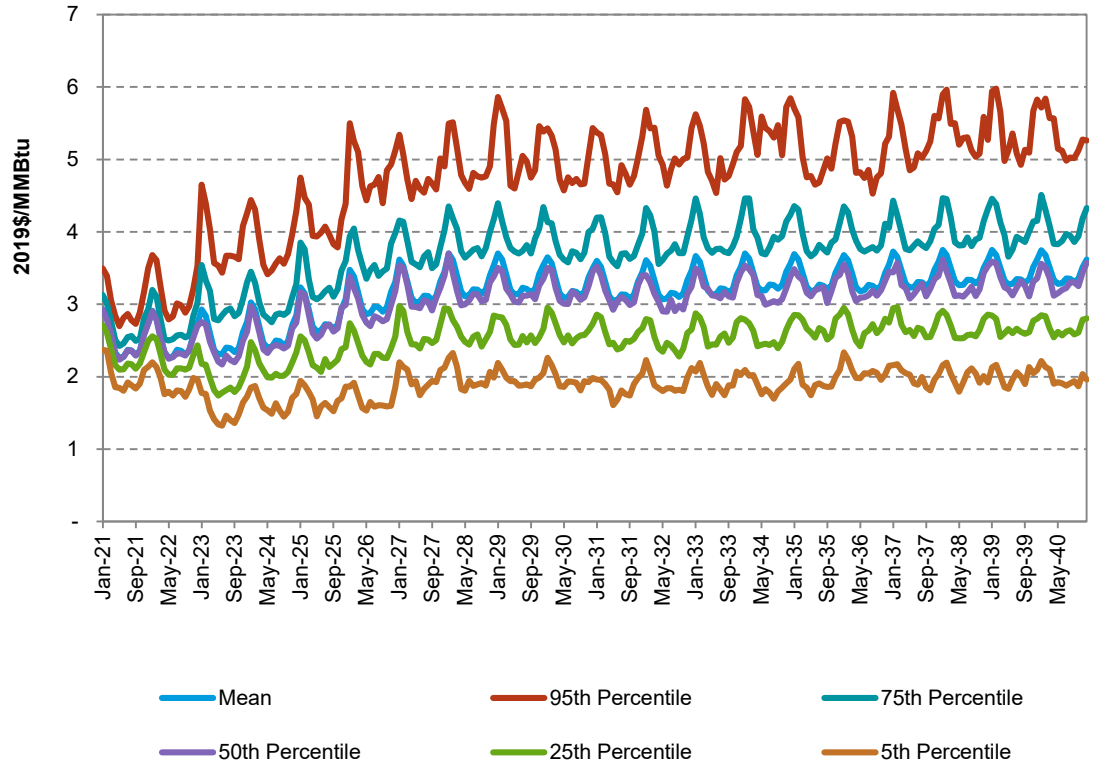


Candidate Portfolio Stochastic Inputs
Gas Prices (2019$/MMBtu)

Henry Hub, Annual



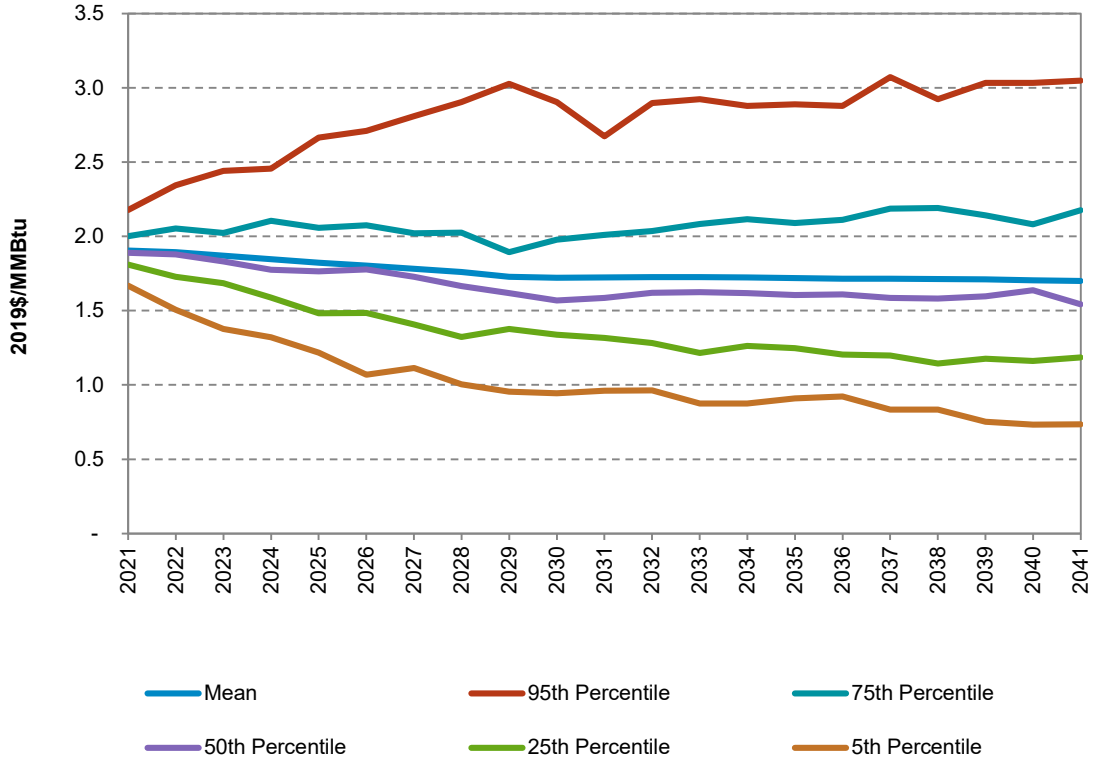
Henry Hub, Monthly



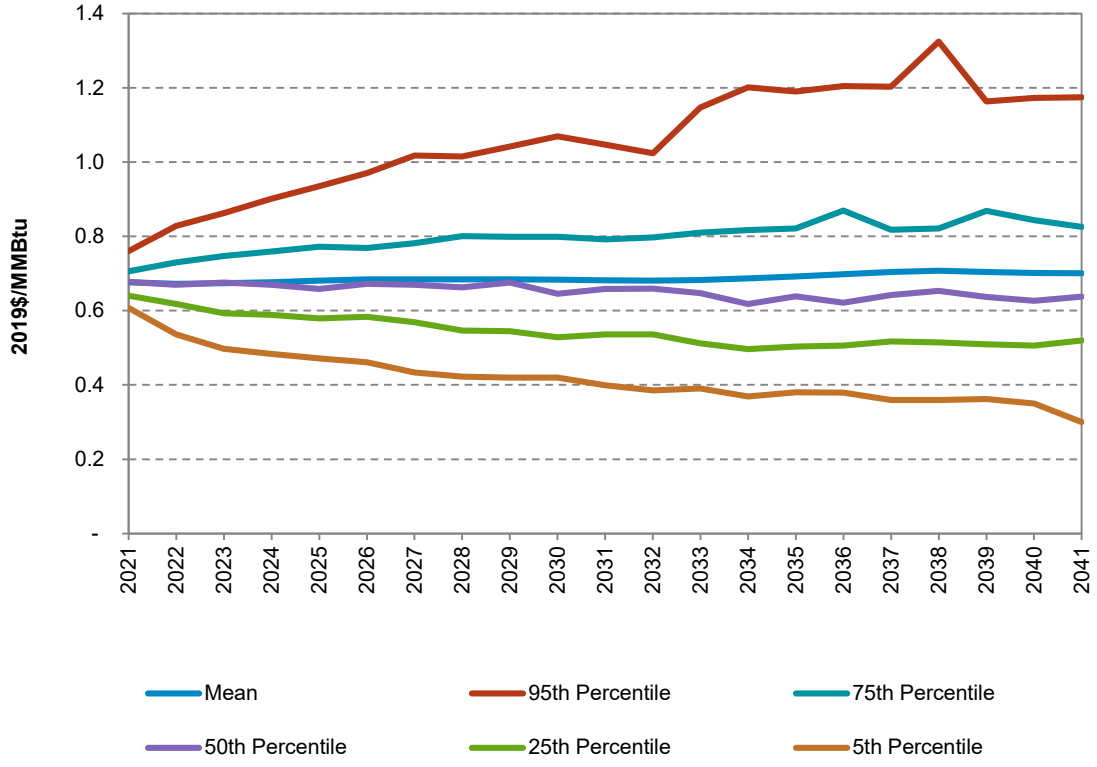
Candidate Portfolio Stochastic Inputs
Coal Prices (2019$/MMBtu)

An AEP Company

Illinois Basin (ILB)

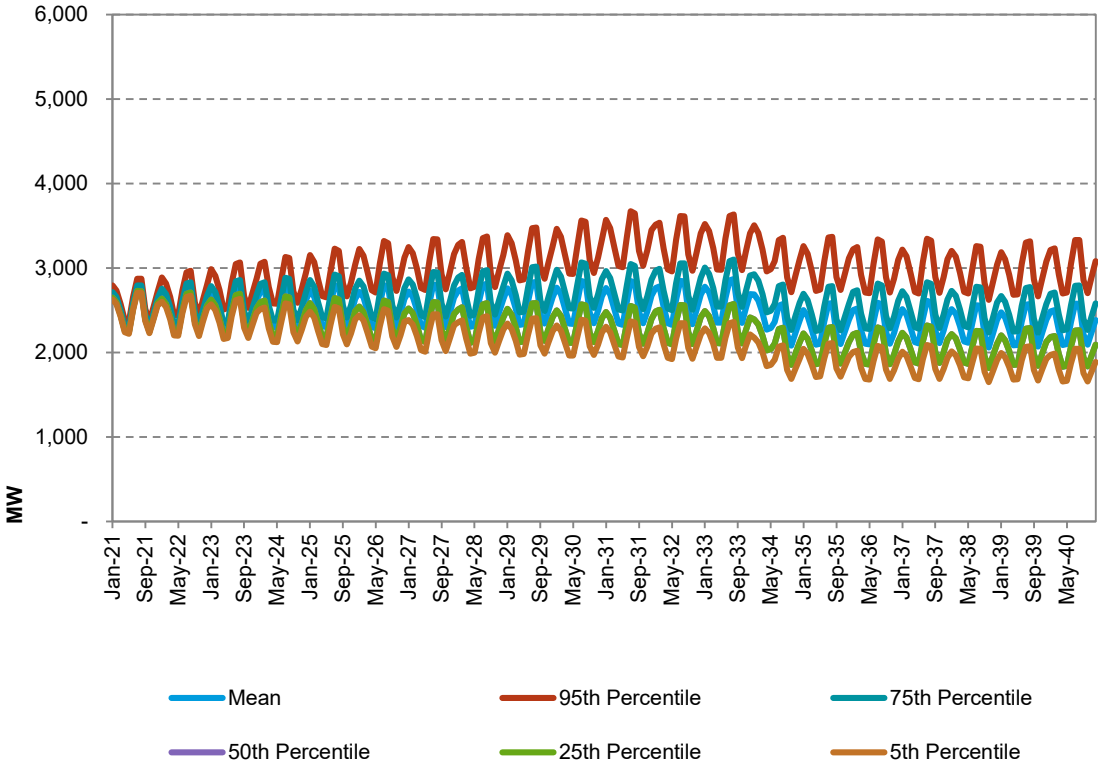


Powder River Basin (PRB)

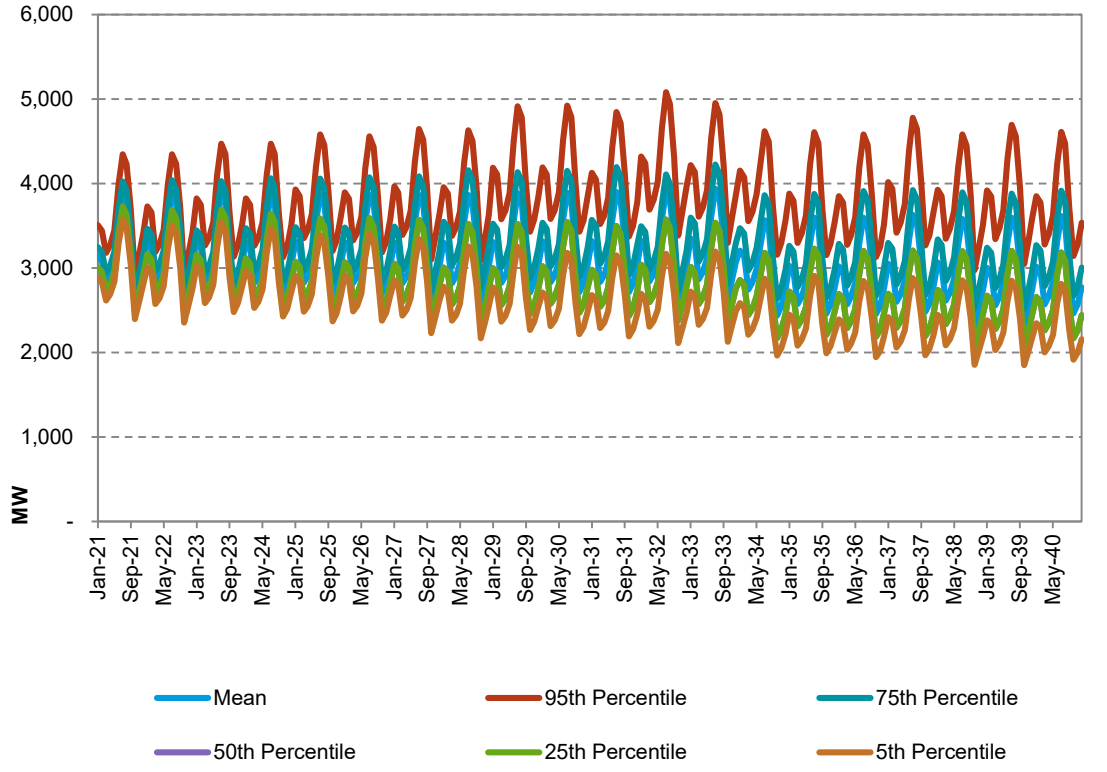


Candidate Portfolio Stochastic Inputs
Energy Demand (MW)

Average Load

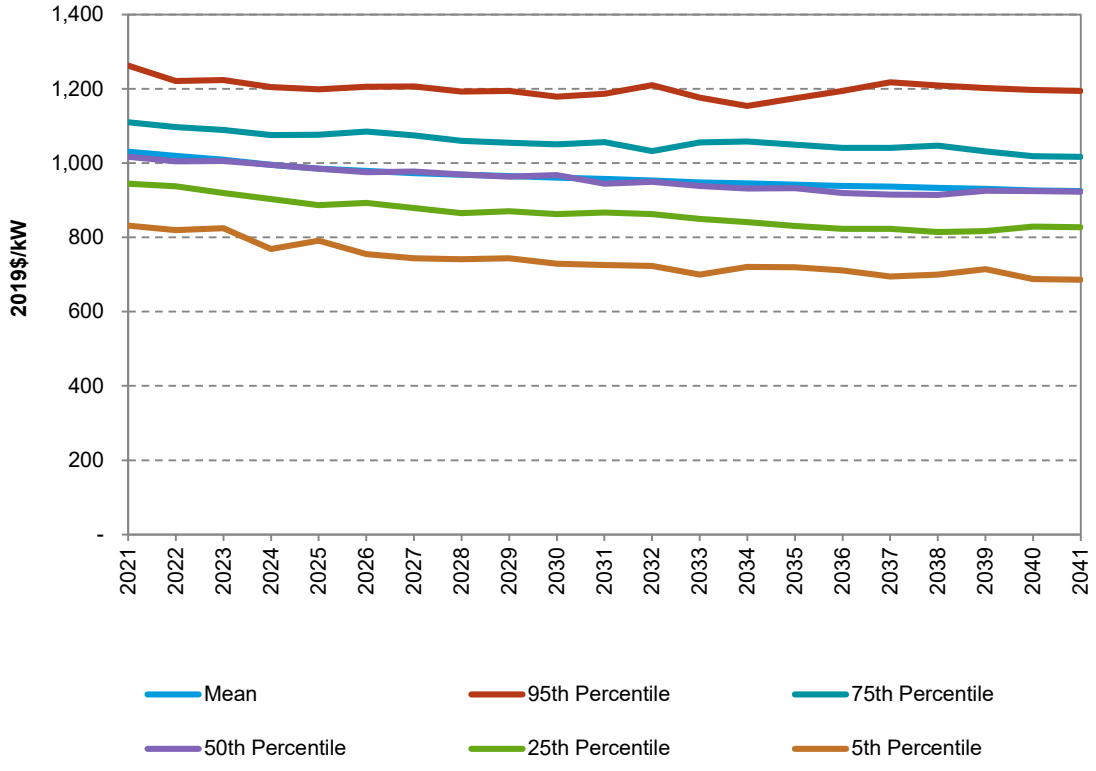


Peak Load

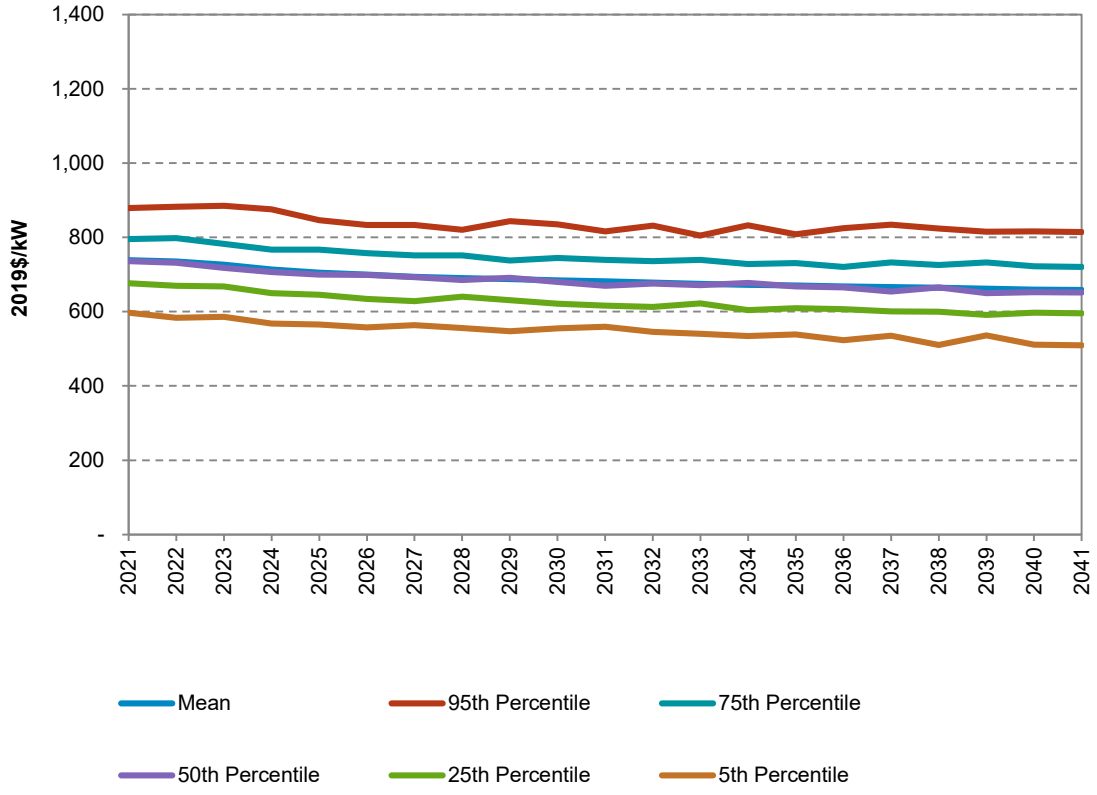


Candidate Portfolio Stochastic Inputs
Capital Costs (2019$/kW)

Advanced 2x1 Combined Cycle



Simple frame Combustion Turbine



Candidate Portfolio Stochastic Inputs
Capital Costs (2019$/kW)

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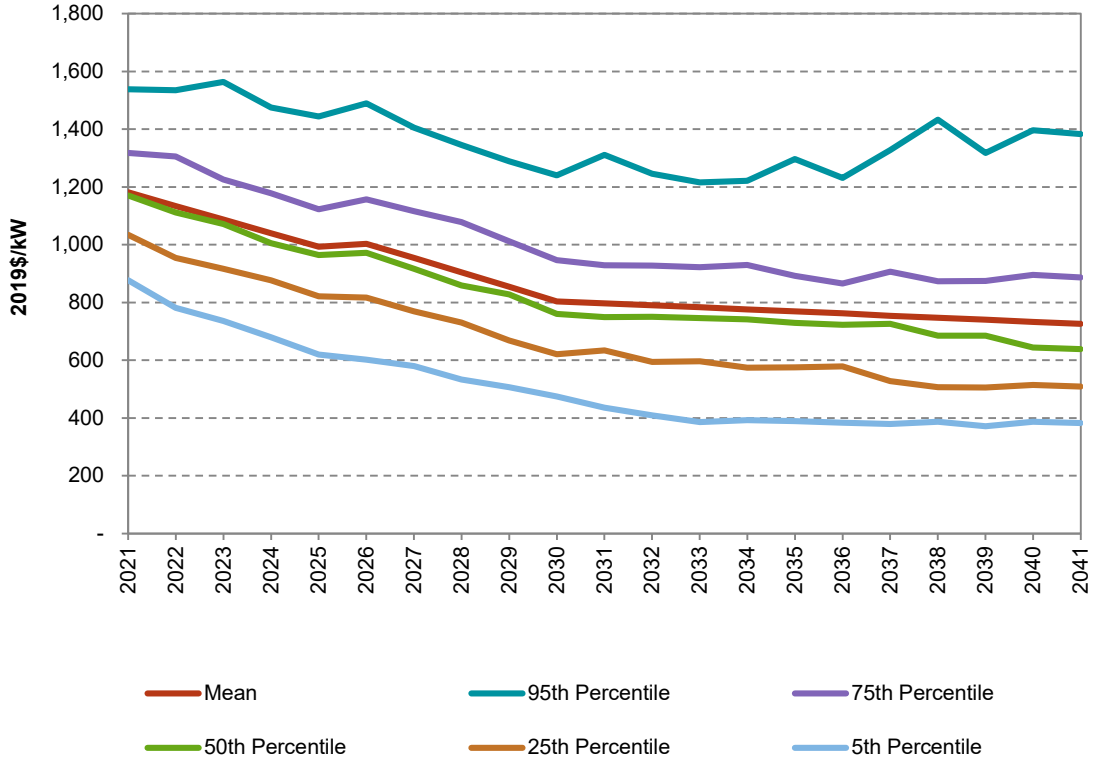
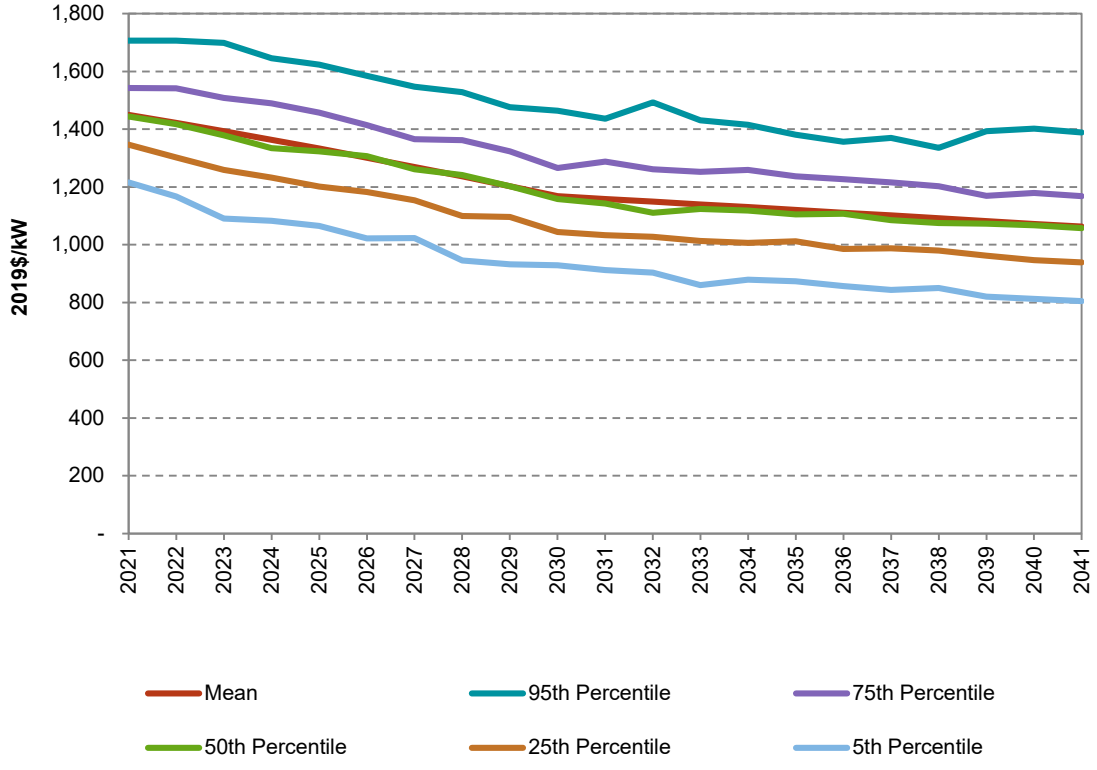
Solar PV – Tracking



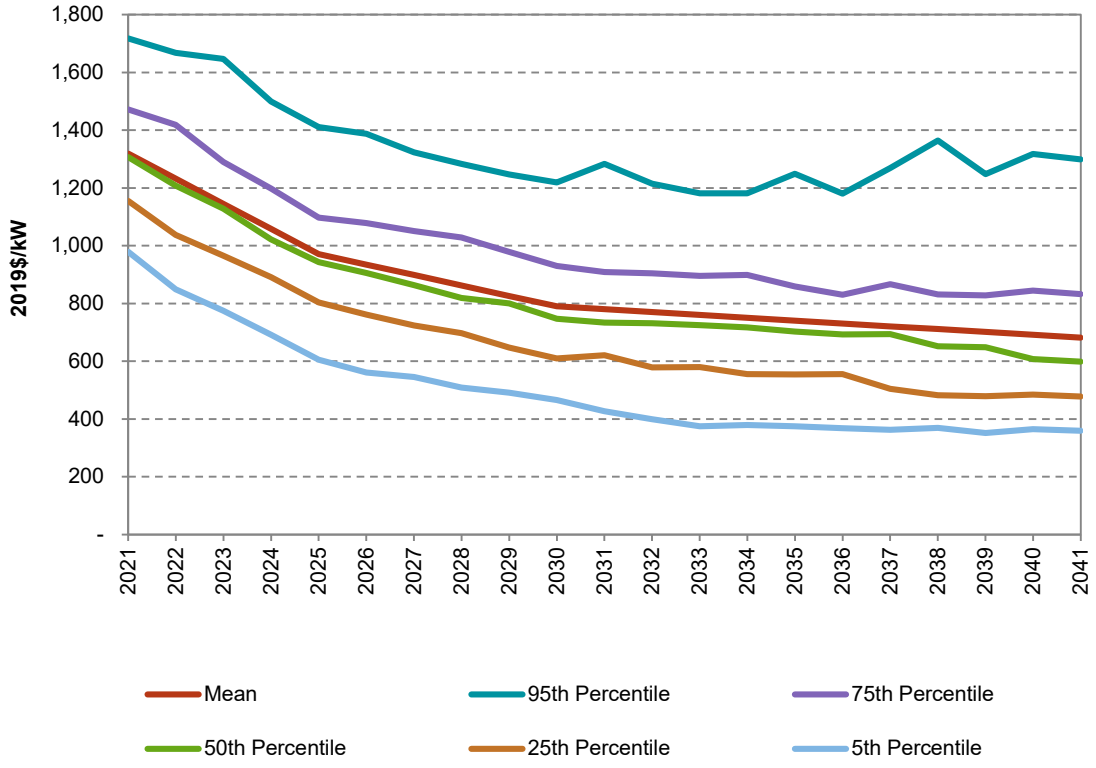
Onshore Wind



Candidate Portfolio Stochastic Inputs
Capital Costs (2019$/kW)

An AEP Company

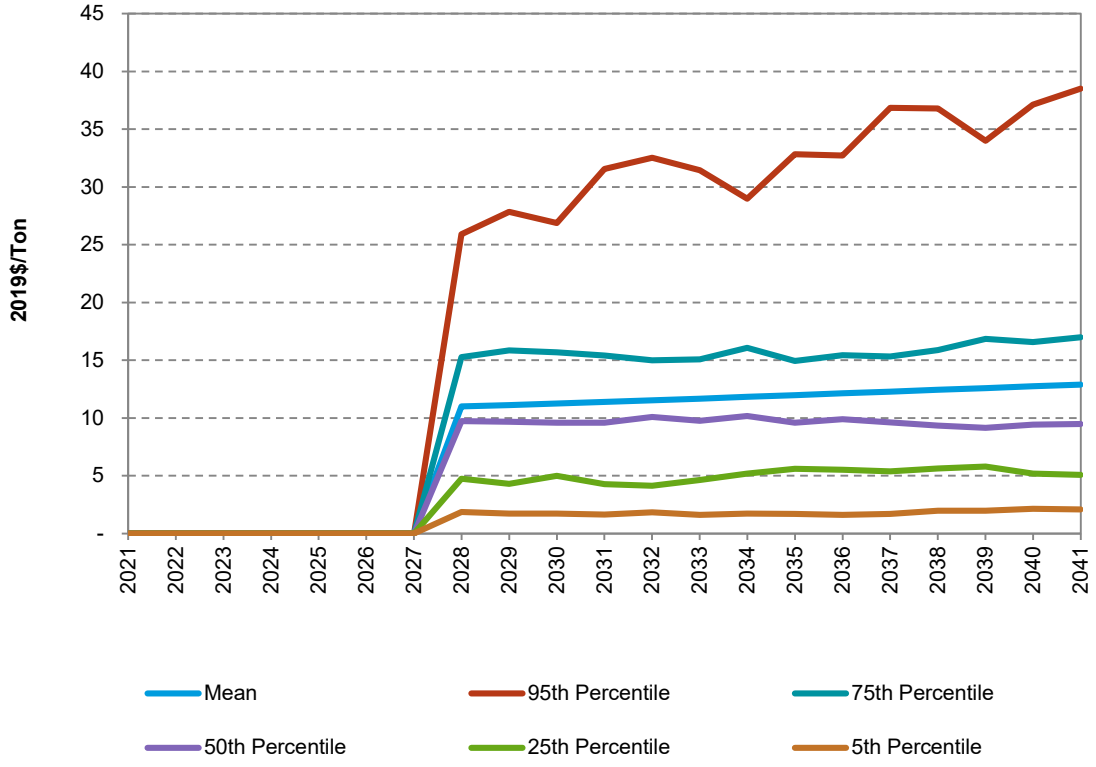
Batteries – Li-ion



Candidate Portfolio Stochastic Inputs
Environmental Costs (2019$/ton)

An AEP Company

National CO2



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FEEDBACK AND DISCUSSION

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Art Holland , Siemens PTI

BALANCED SCORECARD

Balanced Scorecard Illustrative

Detailed portfolio results will be included for each Candidate Portfolio in the report write-up filed with the Commission. The Candidate Portfolios will be summarized in terms of each Objective and Metric through the balanced scorecard. In addition to the balanced scorecard, time-series information for portfolios will also be included in the report write-up.

Balanced Scorecard (Illustrative)

	Affordability		Rate Stability				Sustainability	Market Risk Minimization		Reliability	Resource Diversity	
Candidate Portfolios	20-Year NPV CTSL[2]	10-Year NPV CTS[2]	95th Percentile Value of NPV CTSL[2]	Difference Btw. Mean and 95th Percentile	5 Year Net Rate Increase CAGR (2025-2029)	Capital Investment Through 2028	% Reduction of CO2e (2005-2041)	Purchases as a % of Demand (2041)	Sales as a % of Demand (2041)	Reserve Margin[1] (2041)	# of Unique Generators (2041)	# of Unique Fuel Types (2041)
Reference Case												
Portfolio #1												
…												
…												
…												
Portfolio #n												

[1] Reserve Margin (2041) is a measure of I&M's capacity position above the required Forecast Pool Reserve (FPR) obligation to PJM
[2] Cost to Serve Load (CTSL)

Portfolios Summary
Portfolio Names and Descriptions

Portfolio Name, Revised	Description
Reference Case (Original)	Rockport Unit 1 (2028) Rockport Unit 2 (2024) and Cook (2034, 2037)
Rockport 1 2024	Rockport Unit 1 Early Retirement (2024)
Rockport 1 2025	Rockport Unit 1 Early Retirement (2025)
Rockport 1 2026	Rockport Unit 1 Early Retirement (2026)
Cook 2050+	Cook Unit 1 and Unit 2 License Extensions (beyond 2034 and 2037)
Cook 2050+ and No Gas	Cook Unit 1 and Unit 2 License Extensions and No Conventional Gas
Expanded Build Limits	Expanded Cumulative Build Limits on Renewable Energy and Storage
Reference‘ (“Prime”)	Reference Case (Original) with an Import and Export Limit at ~30% of I&M Load
Rapid Technology Advancement	35% Reduction in Renewable, Storage and EE Costs
Enhanced Regulation	Increased Environmental Regulations Leading to High Gas, Coal and CO2 Prices
Rockport 1 2024 N2G	Rockport Unit 1 Early Retirement (2024) Replacing SEA with Net to Gross EE Bundle Savings
Rockport 1 2026 N2G	Rockport Unit 1 Early Retirement (2026) Replacing SEA with Net to Gross EE Bundle Savings
Rapid Technology Advancement N2G	Rapid Technology Advancement (RTA) Replacing SEA with Net to Gross EE Bundle Savings

Balanced Scorecard
Reference and Scenario Portfolios

Portfolio	20-Year NPV CTSL[2]	10-Year NPV CTSL[2]	95th Percentile 20-Year NPV CTSL[2]	% Reduction of CO2e (2005-2041)	Purchases as a % of Demand (2041)	Sales as a % of Demand (2041)	Reserve Margin[1] (2041)
Reference Case (Original)	$7.30 B	$4.28 B	$8.55 B	74.8%	17.5%	8.9%	8.6%

Portfolio	20-Year NPV CTSL[2]	10-Year NPV CTSL[2]	95th Percentile 20-Year NPV CTSL[2]	% Reduction of CO2e (2005-2041)	Purchases as a % of Demand (2041)	Sales as a % of Demand (2041)	Reserve Margin[1] (2041)
Rapid Technology Advancement[3]	$7.50 B	$4.26 B	$8.81 B	94.2%	3.2%	53.7%	5.1%
Enhanced Regulation[3]	$7.49 B	$4.16 B	$8.81 B	94.1%	3.2%	54.0%	4.0%

[1] Reserve Margin (2041) is a measure of I&M's capacity position above the required Forecast Pool Reserve (FPR) obligation to PJM
[2] Cost to Serve Load (CTSL)
[3] Rapid Technology Advancement affordability metrics are based on Reference Case capital costs

- Reference and Scenario Portfolios are based on broad economic and environmental variations as a technique to develop optimized portfolios for further testing ("states of the world")

Balanced Scorecard
Reference and Company Portfolios

Portfolio	20-Year NPV CTSL[2]	10-Year NPV CTSL[2]	95th Percentile 20-Year NPV CTSL[2]	% Reduction of CO2e (2005-2041)	Purchases as a % of Demand (2041)	Sales as a % of Demand (2041)	Reserve Margin[1] (2041)
Reference Case (Original)	$7.30 B	$4.28 B	$8.55 B	74.8%	17.5%	8.9%	8.6%

Portfolio	20-Year NPV CTSL[2]	10-Year NPV CTSL[2]	95th Percentile 20-Year NPV CTSL[2]	% Reduction of CO2e (2005-2041)	Purchases as a % of Demand (2041)	Sales as a % of Demand (2041)	Reserve Margin[1] (2041)
Cook 2050+[3]	$6.20 B	$4.29 B	$7.50 B	97.9%	1.0%	49.2%	7.5%
Cook 2050+ and No Gas[3]	$6.54 B	$4.42 B	$7.87 B	99.4%	1.1%	46.3%	1.6%
Reference'	$6.98 B	$4.06 B	$8.26 B	75.4%	16.1%	10.0%	2.5%
Expanded Build Limits[4]	$7.93 B	$4.57 B	$9.23 B	80.1%	8.6%	21.8%	3.2%

[1] Reserve Margin (2041) is a measure of I&M's capacity position above the required Forecast Pool Reserve (FPR) obligation to PJM
[2] Cost to Serve Load (CTSL)
[3] The Cook portfolios include an assumption for relicensing cost but no estimate for capital expenditure required for equipment life extension
[4] The Expanded Build Limits portfolio was conducted as a test and does not represent a reasonable portfolio option

- The Company Portfolios represent I&M strategic options and/or tests of certain analysis inputs
- The Reference' Portfolio contains an import and export limit of ~30% of I&M Load in response to stakeholder feedback. The Reference' portfolio has a low cost to serve load when compared to other Candidate Portfolios
- Cook life extension portfolios (Cook 2050+ and Cook 2050+ and No Gas) test the cost and performance benefits of Cook life extension
- Cook portfolios include an assumption for relicensing cost but no estimate for CapEx required for equipment life extension
- The Cook portfolios add valuable strategic insights into near-term resource additions

Balanced Scorecard
Reference and Regulatory Required Portfolios

Portfolio	20-Year NPV CTSL[2]	10-Year NPV CTSL[2]	95th Percentile 20-Year NPV CTSL[2]	% Reduction of CO2e (2005-2041)	Purchases as a % of Demand (2041)	Sales as a % of Demand (2041)	Reserve Margin[1] (2041)
Reference Case (Original)	$7.30 B	$4.28 B	$8.55 B	74.8%	17.5%	8.9%	8.6%

Portfolio	20-Year NPV CTSL[2]	10-Year NPV CTSL[2]	95th Percentile 20-Year NPV CTSL[2]	% Reduction of CO2e (2005-2041)	Purchases as a % of Demand (2041)	Sales as a % of Demand (2041)	Reserve Margin[1] (2041)
Rockport 1 2024	$7.32 B	$4.31 B	$8.60 B	75.0%	17.0%	8.8%	5.8%
Rockport 1 2025	$7.49 B	$4.39 B	$8.76 B	76.6%	15.2%	12.3%	6.3%
Rockport 1 2026	$7.27 B	$4.28 B	$8.54 B	75.0%	17.0%	8.8%	1.2%
Rockport 1 2024 N2G	$7.44 B	$4.38 B	$8.72 B	75.7%	15.4%	10.1%	7.0%
Rockport 1 2026 N2G	$7.26 B	$4.29 B	$8.54 B	75.8%	15.3%	10.2%	1.7%
Rapid Technology Advancement N2G	$7.28 B	$4.19 B	$8.85 B	93.3%	4.9%	44.2%	1.4%

[1] Reserve Margin (2041) is a measure of I&M's capacity position above the required Forecast Pool Reserve (FPR) obligation to PJM
[2] Cost to Serve Load (CTSL)

- Several portfolios were included to meet certain regulatory requirements
- Rockport 1 2026 identified as slightly lower cost alternative to the Reference Case (Original)

Balanced Scorecard
Reference and Candidate Portfolios Initial Screening

Portfolio Name, Revised	Action	Rational
Reference Case (Original)	Refined	Retain for comparison
Rockport 1 2024	Inform	Evaluate Early Rockport Retirement, Minimal Lead Time for New Resources
Rockport 1 2025	Inform	Evaluate Early Rockport Retirement, Minimal Lead Time for New Resources
Rockport 1 2026	Maintain	Evaluate Early Rockport Retirement
Cook 2050+[1]	Maintain	Optionality to Maintain Nuclear Resources, Sustainability Goals
Cook 2050+ and No Gas[1]	Maintain	Optionality to Maintain Nuclear Resources, Sustainability Goals
Expanded Build Limits	Inform	Evaluate Build Limits, High Exports and Costs
Reference'	Maintain	Manage Export Limits
Rapid Technology Advancement	Maintain	Scenario Results
Enhanced Regulation	Maintain	Scenario Results
Rockport 1 2024 N2G	Inform	Evaluate Alternative Treatment of Energy Efficiency Resources
Rockport 1 2026 N2G	Inform	Evaluate Alternative Treatment of Energy Efficiency Resources
Rapid Technology Advancement N2G	Inform	Evaluate Alternative Treatment of Energy Efficiency Resources

[1]The Cook portfolios include an assumption for relicensing cost but no estimate for CapEx required for equipment life extension

Balanced Scorecard
Reference and Focused Portfolios

Portfolio	20-Year NPV CTSL[2]	10-Year NPV CTSL[2]	95th Percentile 20-Year NPV CTSL[2]	% Reduction of CO2e (2005-2041)	Purchases as a % of Demand (2041)	Sales as a % of Demand (2041)	Reserve Margin[1] (2041)
Reference Case (Original)	$7.30 B	$4.28 B	$8.55 B	74.8%	17.5%	8.9%	8.6%

Portfolio	20-Year NPV CTSL[2]	10-Year NPV CTSL[2]	95th Percentile 20-Year NPV CTSL[2]	% Reduction of CO2e (2005-2041)	Purchases as a % of Demand (2041)	Sales as a % of Demand (2041)	Reserve Margin[1] (2041)
Cook 2050+[3]	$6.20 B	$4.29 B	$7.50 B	97.9%	1.0%	49.2%	7.5%
Cook 2050+ and No Gas[3]	$6.54 B	$4.42 B	$7.87 B	99.4%	1.1%	46.3%	1.6%
Reference‘	$6.98 B	$4.06 B	$8.26 B	75.4%	16.1%	10.0%	2.5%
Rapid Technology Advancement	$7.50 B	$4.26 B	$8.81 B	94.2%	3.2%	53.7%	5.1%
Enhanced Regulation	$7.49 B	$4.16 B	$8.81 B	94.1%	3.2%	54.0%	4.0%
Rockport 1 2026	$7.27 B	$4.28 B	$8.54 B	75.0%	17.0%	8.8%	1.2%

[1] Reserve Margin (2041) is a measure of I&M’s capacity position above the required Forecast Pool Reserve (FPR) obligation to PJM
[2] Cost to Serve Load (CTSL)
[3] The Cook portfolios include an assumption for relicensing cost but no estimate for capital expenditure required for equipment life extension

- In addition to the Reference Case, Siemens PTI and I&M focused the IRP analysis on a select list of candidate portfolios
- The Reference' portfolio was optimized in much the same manner as the original Reference Case with an added limitation on spot market imports and exports (purchases and sales) as a risk mitigation strategy

OVEC ANALYSIS

Per IURC Rockport 2 Settlement (Cause 45546) and MI IRP settlement (Case No. U-20591):

Modeled a scenario where the Preferred Plan was optimized without OVEC units after 2030

Analysis evaluated two termination alternatives

1. Only I&M exited contract
2. All owners exited contract

Analysis results showed continued operation of the OVEC units is cost-beneficial to rate payers

- Under alternative 1, estimated costs to I&M customers would increase by ~$102M NPV
- Under alternative 2, estimated costs to I&M customers would increase by ~$28M NPV

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FEEDBACK AND DISCUSSION

Peter Berini, Siemens PTI

METRICS DEEPDIVE

Affordability
20- and 10-Year NPV of the Cost to Serve Load

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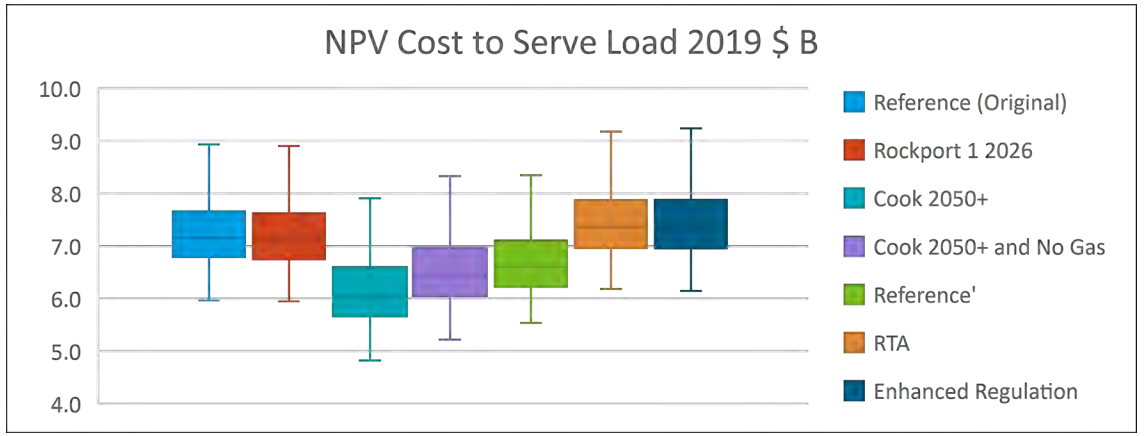
Affordability Objective

For the affordability objective, the metrics used are the 20- and 10-year Net Present Value Cost to Serve Load

- The NPV Cost to Serve Load (CTSL) is a measure of all generation related costs associated with the portfolio of assets over time
- Generation related costs include capital, O&M, fuel, related transmission costs, spot market energy purchases, and capacity purchases
- The Cook 2050+ Portfolios provide valuable strategic insights into near-term resource additions and cost estimates for the asset life extension

Portfolio	20-Year NPV CTSL	10-Year NPV CTSL
Reference Case	$7.30 B	$4.28 B
Cook 2050+	$6.20 B	$4.29 B
Cook 2050+ and No Gas	$6.54 B	$4.42 B
Reference'	$6.98 B	$4.06 B
Rapid Technology Advancement	$7.50 B	$4.26 B
Enhanced Regulation	$7.49 B	$4.16 B
Rockport 1 2026	$7.27 B	$4.28 B



Rate Stability
95th Percentile NPV of the Cost to Serve Load

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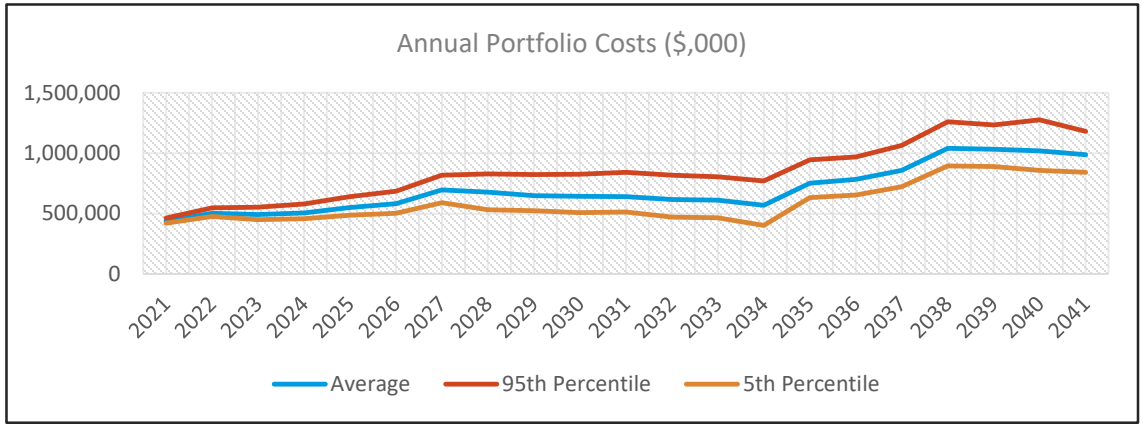
Rate Stability Objective (1/2)

For the rate stability objective, the metrics used are the 95th Percentile NPV of the Cost to Serve Load and A 5-year Compound Annual Growth Rate of the Net Retail Rate Impact

- As part of the probabilistic modeling approach, once each portfolio was subjected to 200 iterations of Aurora, a distribution was created of the NPV Cost to Serve Load portfolio costs
- The 95th percentile (approximately two standard deviations above the mean value) is a commonly used benchmark to demonstrate upper threshold of cost risk under widely varying market circumstances
- The upside risk, measured as the distance between the expected (Mean) and the 95th percentile
- Excluding the Cook portfolios, the Reference' is the lowest value for the 95th Percentile NPV Cost to Serve Load

Portfolio	95th Percentile NPV CTSL	Difference Between Mean and 95th Percentile
Reference Case	$8.55 B	17.1%
Cook 2050+	$7.50 B	21.0%
Cook 2050+ and No Gas	$7.87 B	20.4%
Reference’	$8.26 B	18.3%
Rapid Technology Advancement	$8.81 B	17.5%
Enhanced Regulation	$8.81 B	17.6%
Rockport 1 2026	$8.54 B	17.5%



Rate Stability
5 Year Net Rate Increase CAGR (2025-2029)

Rate Stability Objective (2/2)

For the rate stability objective, the metrics used are the 95th Percentile NPV of the Cost to Serve Load and a 5-yr the Compound Annual Growth Rate (CAGR) of the Net Retail Rate Impact

- 95th Percentile metric illustrates cost risks when exposed to volatility in various key drivers. The Enhanced Regulation and RTA portfolios exhibit the greatest cost risk
- The 5-yr CAGR metric provides near term insight to customer affordability and rate impacts of the resource additions in the Preferred Plan. I&M prepared a traditional, non-levelized, calculation of the annual cost of service and the change in revenue requirement for the period of 2025-2029 when new resources are added

Portfolio	5 Year Net Rate Increase CAGR (2025-2029)	Capital Investment Through 2028
Reference Case	1.50%	$5.69 B
Cook 2050+	0.50%	$4.82 B
Cook 2050+ and No Gas	1.50%	$5.40 B
Reference’	1.30%	$5.52 B
Rapid Technology Advancement	1.50%	$5.69 B
Enhanced Regulation	1.50%	$5.69 B
Rockport 1 2026	1.10%	$5.36 B

Sustainability
CO2e Emissions

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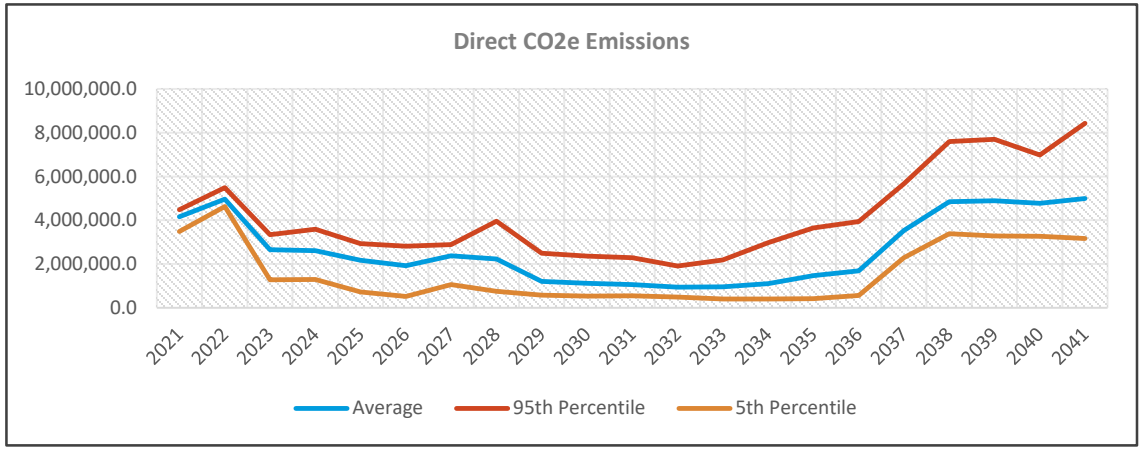
Sustainability Objective

For the sustainability impact objective, the metric estimated direct GHG emissions of each generation type, measured in tons of carbon dioxide equivalent (CO2e)

- All the portfolios result in a substantial reduction of direct CO2e emissions as measured by the mean of the stochastics
- The emission profile distributions for all P-Bands except the P-95, maintain an 80% reduction from 2005 levels throughout the forecast
- The Cook 2050+ and No Gas portfolio reaches significant reductions due to the selection of resources
- Emissions reductions are similar for portfolios through 2034 with divergences occurring with the introduction of Gas CCs in select portfolios

Portfolio	% Reduction of CO2e (2005-2041)
Reference Case	74.8%
Cook 2050+	97.9%
Cook 2050+ and No Gas	99.4%
Reference‘	75.4%
Rapid Technology Advancement	94.2%
Enhanced Regulation	94.1%
Rockport 1 2026	75.0%



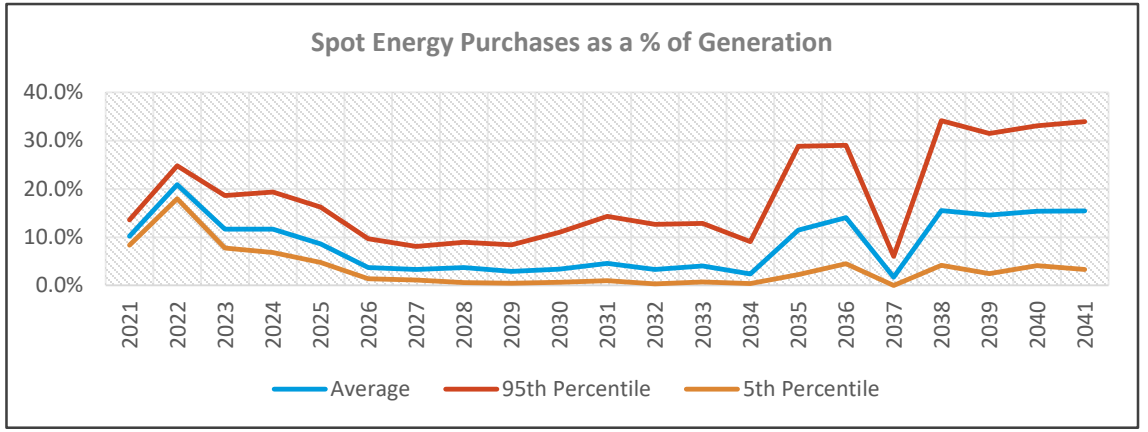
Market Risk Minimization
Spot Energy Purchases as a % of Generation

Market Risk Minimization Objective (1/2)

For the market risk minimization objective, the metrics used are the average annual energy sales and the average annual energy purchases, each divided by the average annual generation and expressed as a percentage

- The metrics show the reliance on market sales and/or purchases by the resulting portfolios
- The Spot Energy Purchases as a % of Generation for all portfolios represent a management spot market exposure The Reference Case and the Reference' result in a higher amount of spot energy purchases
- The large spikes observed in 2034 and 2037 in the graph to the right represent timing nuances between capacity retirement dates and energy retirement dates and are meant to align I&M capacity planning with the PJM capacity planning period

Portfolio	Purchases as a % of Demand (2041)	Sales as a % of Demand (2041)
Reference Case	17.5%	8.9%
Cook 2050+	1.0%	49.2%
Cook 2050+ and No Gas	1.1%	46.3%
Reference‘	16.1%	10.0%
Rapid Technology Advancement	3.2%	53.7%
Enhanced Regulation	3.2%	54.0%
Rockport 1 2026	17.0%	8.8%



Market Risk Minimization
Spot Energy Sales as a % of Generation

Market Risk Minimization Objective (2/2)

For the market risk minimization objective, the metrics used are the average annual energy sales and the average annual energy purchases, each divided by the average annual generation and expressed as a percentage.

- The metrics show the reliance on market sales and/or purchases by the resulting portfolios
- Sales as a % of Demand are much lower in the Reference Case and in the Reference' portfolio
- The Cook Sensitivities and the Scenarios represent a large number of sales that may expose I&M to high levels of market risk through an over reliance on the spot market
- The large spikes observed in 2034 and 2037 in the graph to the right represent timing nuances between Capacity Retirement Dates and Energy Retirement dates and are meant to align I&M capacity planning with the PJM Capacity planning period

Portfolio	Purchases as a % of Demand (2041)	Sales as a % of Demand (2041)
Reference Case	17.5%	8.9%
Cook 2050+	1.0%	49.2%
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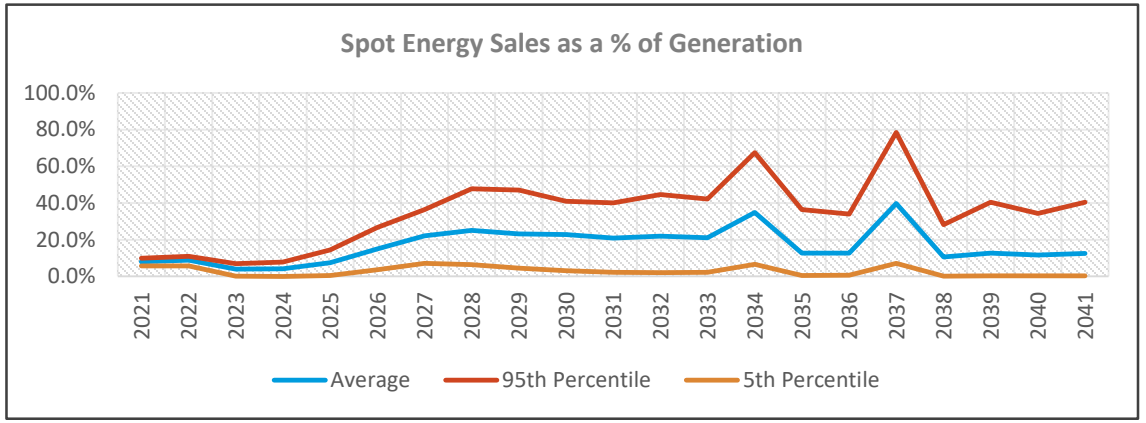
Rapid Technology Advancement	3.2%	53.7%
Enhanced Regulation	3.2%	54.0%
Rockport 1 2026	17.0%	8.8%



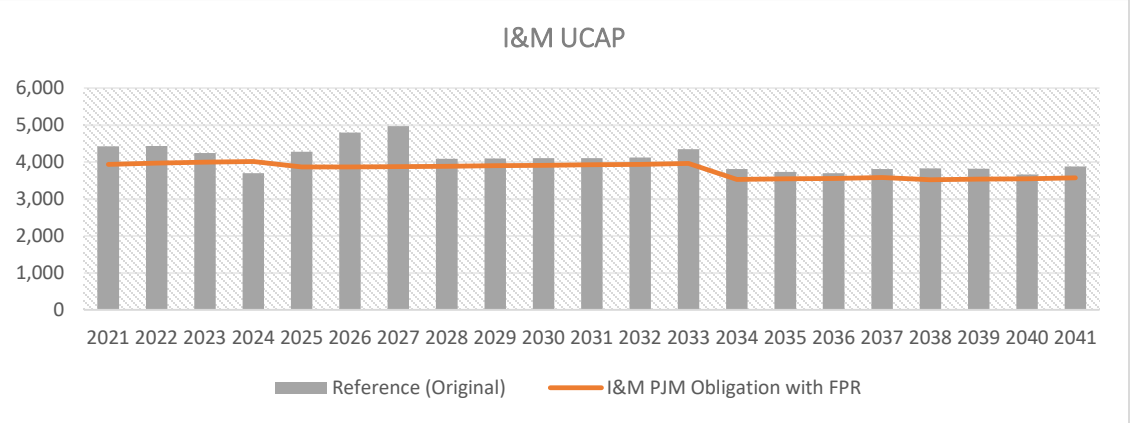
Reliability and Resource Diversity
Reserve Margin above PJM Forecasted Pool Requirement

Reliability and Resource Diversity Objective

For the reliability and resource diversity objective, the metrics used are the % above (below) I&M's PJM Reserve Margin Obligation (2041), Fuel Mix, and the Number of Unique Generators.

- Reliability: As new technologies are deployed and older base load units retired, there is more of a reliance on intermittent resources (i.e., renewable energy) to provide energy and capacity needs
- The analysis includes the PJM Capacity Obligation, Reserve Margin and PJM's Guidance on Effective Load Carrying Capability (ELCC) for intermittent resource capacity analysis
- Diversity: Resource generation fuel type is spread among several technologies. Firm generating assets to be developed with the opportunity to spread sites across a network of locations, limiting the impact of a single site outage
- Standard sizing for new technologies include Gas Peaker (250 MW), Gas CC 2x1 (1070 MW), Hybrid Resource (100 MW / 20 MW), Li-ion Storage (50 MW), Wind (200 MW) and Solar (50 MW). In addition, portfolios receive credit for Nuclear, EE and DR resource types

Portfolio (2041)	Reserve Margin	# of Fuel Types	# of Unique Generators
Reference Case	8.6%	8	59
Cook 2050+	7.5%	8	55
Cook 2050+ and No Gas	1.6%	8	68
Reference‘	2.5%	8	61
Rapid Technology Advancement	5.1%	8	101
Enhanced Regulation	4.0%	8	100
Rockport 1 2026	1.2%	8	58



Balanced Scorecard
Reference and Focused Portfolios

Portfolio	20-Year NPV CTSL	10-Year NPV CTSL	95th Percentile Value of NPV CTSL	Difference Btw. Mean and 95th Percentile	5 Year Net Rate Increase CAGR (2025-2029)	Capital Investment Through 2028	% Reduction of CO2e (2005-2041)	Purchases as a % of Demand (2041)	Sales as a % of Demand (2041)	Reserve Margin[1] (2041)	# of Unique Generators (2041)
Reference Case (Original)	$7.30 B	$4.28 B	$8.55 B	17.1%	1.50%	$5.69 B	74.8%	17.5%	8.9%	8.6%	59

Portfolio	20-Year NPV CTSL[2]	10-Year NPV CTS[2]	95th Percentile Value of NPV CTSL[2]	Difference Btw. Mean and 95th Percentile	5 Year Net Rate Increase CAGR (2025-2029)	Capital Investment Through 2028	% Reduction of CO2e (2005-2041)	Purchases as a % of Demand (2041)	Sales as a % of Demand (2041)	Reserve Margin[1] (2041)	# of Unique Generators (2041)
Cook 2050+[3]	$6.20 B	$4.29 B	$7.50 B	21.0%	0.50%	$4.82 B	97.9%	1.0%	49.2%	7.5%	55
Cook 2050+ and No Gas[3]	$6.54 B	$4.42 B	$7.87 B	20.4%	1.50%	$5.40 B	99.4%	1.1%	46.3%	1.6%	68
Reference‘	$6.98 B	$4.06 B	$8.26 B	18.3%	1.30%	$5.52 B	75.4%	16.1%	10.0%	2.5%	61
Rapid Technology Adv.	$7.50 B	$4.26 B	$8.81 B	17.5%	1.50%	$5.69 B	94.2%	3.2%	53.7%	5.1%	101
Enhanced Regulation	$7.49 B	$4.16 B	$8.81 B	17.6%	1.50%	$5.69 B	94.1%	3.2%	54.0%	4.0%	100
Rockport 1 2026	$7.27 B	$4.28 B	$8.54 B	17.5%	1.10%	$5.36 B	75.0%	17.0%	8.8%	1.2%	58

[1] Reserve Margin (2041) is a measure of I&M’s capacity position above the required Forecast Pool Reserve (FPR) obligation to PJM
[2] Cost to Serve Load (CTSL)
[3] The Cook portfolios include an assumption for relicensing cost but no estimate for capital expenditure required for equipment life extension
[4] The number of unique fuel types (2041), an additional diversity metric, is equal to eight for each portfolio above. In order to maintain adequate sizing, the metric has been removed from the above table

- Siemens PTI and I&M focused the IRP analysis on a select list of candidate portfolios

FEEDBACK AND DISCUSSION

I&M Management

PATH TO THE PREFERRED PORTFOLIO

Path to the Preferred Portfolio

In order to address concerns around Capital Intensity, Reserve Margin Length and Energy Position Length the IRP Team examined the Reference and the Reference' portfolio in further detail.

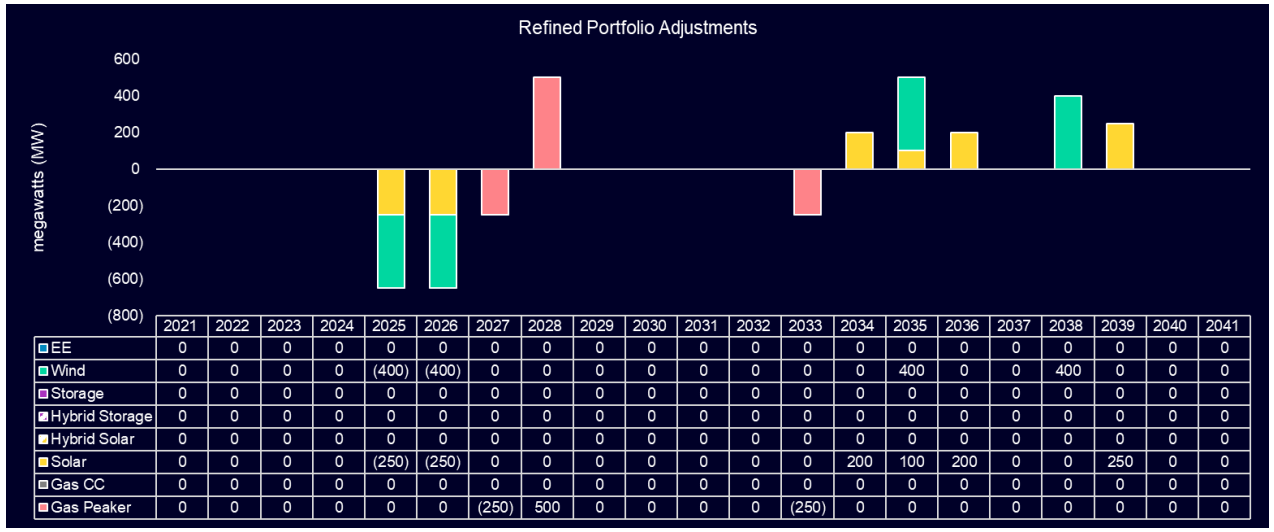
Portfolio	20-Year NPV CTSL	10-Year NPV CTSL	95th Percentile Value of NPV CTSL	Difference Btw. Mean and 95th Percentile	5 Year Net Rate Increase CAGR (2025-2029)	Capital Investment Through 2028	% Reduction of CO2e (2005-2041)	Purchases as a % of Demand (2041)	Sales as a % of Demand (2041)	Reserve Margin[1] (2041)	# of Unique Generators (2041)
Reference Case (Original)	$7.30 B	$4.28 B	$8.55 B	17.1%	1.50%	$5.69 B	74.8%	17.5%	8.9%	8.6%	59
Reference'	$6.98 B	$4.06 B	$8.26 B	18.3%	1.30%	$5.52 B	75.4%	16.1%	10.0%	2.5%	61

[1] Reserve Margin (2041) is a measure of I&M's capacity position above the required Forecast Pool Reserve (FPR) obligation to PJM
[2] Cost to Serve Load (CTSL)
[3] The number of unique fuel types (2041), an additional diversity metric, is equal to eight for each portfolio above. In order to maintain adequate sizing, the metric has been removed from the above table

- The Reference' portfolio is similar to the Reference Case portfolio with added limitations on spot market purchases and sales as a risk mitigation strategy.
- The Company also recognizes the positive attributes associated with the Cook 2050+ scenarios and evaluated opportunities to preserve optionality around future decision making on the potential Cook license extension.

Reference' Adjustments to Arrive at Preferred Portfolio

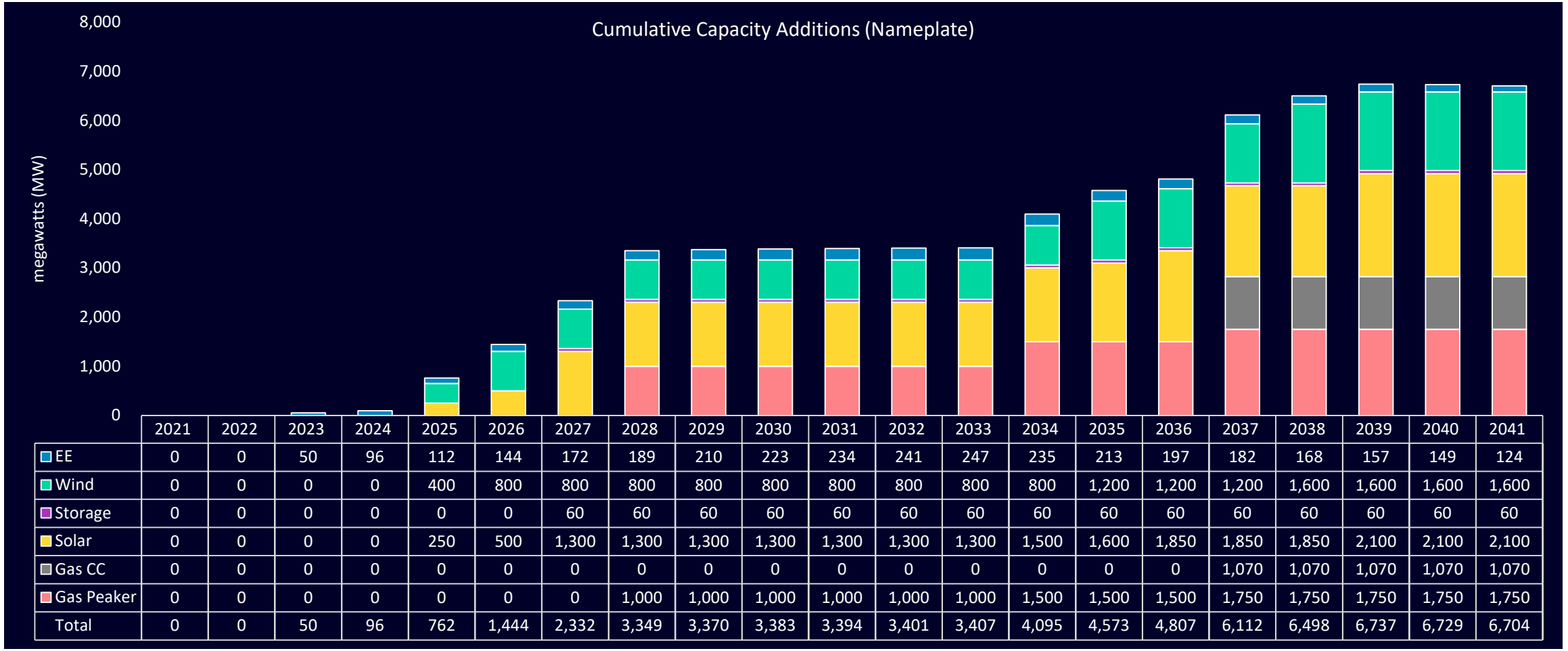
Portfolio	20-Year NPV CTSL	10-Year NPV CTSL	95th Percentile Value of NPV CTSL	Difference Btw. Mean and 95th Percentile	5 Year Net Rate Increase CAGR (2025-2029)	Capital Investment Through 2028	% Reduction of CO2e (2005-2041)	Purchases as a % of Demand (2041)	Sales as a % of Demand (2041)	Reserve Margin[1] (2041)	# of Unique Generators (2041)
Reference'	$6.98 B	$4.06 B	$8.26 B	18.3%	1.30%	$5.52 B	75.4%	16.1%	10.0%	2.5%	61



	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041
EE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Wind	0	0	0	0	(400)	(400)	0	0	0	0	0	0	0	0	400	0	0	400	0	0	0
Storage	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hybrid Storage	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hybrid Solar	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Solar	0	0	0	0	(250)	(250)	0	0	0	0	0	0	0	200	100	200	0	0	250	0	0
Gas CC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Gas Peaker	0	0	0	0	0	0	(250)	500	0	0	0	0	(250)	0	0	0	0	0	0	0	0

- The Reference' Portfolio was further refined to arrive at a Preferred Portfolio that balances long- and short-term resource decisions and preserves the option to relicense Cook
- Adjustments to Reference' Portfolio included:
- 50% Renewable builds reduction 2025-2026
  - To be shifted out to later years for cook extension flexibility
- 2027 and 2033 Gas Peaker Additions moved to 2028 for a total of 1000 MW Peaker capacity to be added in 2028 (same plan total)
- Total of 250 MW additional solar capacity in outer years to contribute to energy need after assumed cook retirement in this plan
- Short Term Market Purchase still expected in 2024 (~314 MW)

Preferred Portfolio
Cumulative Capacity Expansion



	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041
EE	0	0	50	96	112	144	172	189	210	223	234	241	247	235	213	197	182	168	157	149	124
Wind	0	0	0	0	400	800	800	800	800	800	800	800	800	800	1,200	1,200	1,200	1,600	1,600	1,600	1,600
Storage	0	0	0	0	0	0	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60
Solar	0	0	0	0	250	500	1,300	1,300	1,300	1,300	1,300	1,300	1,300	1,500	1,600	1,850	1,850	1,850	2,100	2,100	2,100
Gas CC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1,070	1,070	1,070	1,070	1,070
Gas Peaker	0	0	0	0	0	0	0	1,000	1,000	1,000	1,000	1,000	1,000	1,500	1,500	1,500	1,750	1,750	1,750	1,750	1,750
Total	0	0	50	96	762	1,444	2,332	3,349	3,370	3,383	3,394	3,401	3,407	4,095	4,573	4,807	6,112	6,498	6,737	6,729	6,704

Balanced Scorecard
Reference and Focused Portfolios

Portfolio	20-Year NPV CTSL	10-Year NPV CTSL	95th Percentile Value of NPV CTSL	Difference Btw. Mean and 95th Percentile	5 Year Net Rate Increase CAGR (2025-2029)	Capital Investment Through 2028	% Reduction of CO2e (2005-2041)	Purchases as a % of Demand (2041)	Sales as a % of Demand (2041)	Reserve Margin[1] (2041)	# of Unique Generators (2041)
Reference Case (Original)	$7.30 B	$4.28 B	$8.55 B	17.1%	1.50%	$5.69 B	74.8%	17.5%	8.9%	8.6%	59

Portfolio	20-Year NPV CTSL[2]	10-Year NPV CTS[2]	95th Percentile Value of NPV CTSL[2]	Difference Btw. Mean and 95th Percentile	5 Year Net Rate Increase CAGR (2025-2029)	Capital Investment Through 2028	% Reduction of CO2e (2005-2041)	Purchases as a % of Demand (2041)	Sales as a % of Demand (2041)	Reserve Margin[1] (2041)	# of Unique Generators (2041)
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Cook 2050+ and No Gas[3]	$6.54 B	$4.42 B	$7.87 B	20.4%	1.50%	$5.40 B	99.4%	1.1%	46.3%	1.6%	68
Reference‘	$6.98 B	$4.06 B	$8.26 B	18.3%	1.30%	$5.52 B	75.4%	16.1%	10.0%	2.5%	61
Rapid Technology Adv.	$7.50 B	$4.26 B	$8.81 B	17.5%	1.50%	$5.69 B	94.2%	3.2%	53.7%	5.1%	101
Enhanced Regulation	$7.49 B	$4.16 B	$8.81 B	17.6%	1.50%	$5.69 B	94.1%	3.2%	54.0%	4.0%	100
Rockport 1 2026	$7.27 B	$4.28 B	$8.54 B	17.5%	1.10%	$5.36 B	75.0%	17.0%	8.8%	1.2%	58

Portfolio	20-Year NPV CTSL	10-Year NPV CTSL	95th Percentile Value of NPV CTSL	Difference Btw. Mean and 95th Percentile	5 Year Net Rate Increase CAGR (2025-2029)	Capital Investment Through 2028	% Reduction of CO2e (2005-2041)	Purchases as a % of Demand (2041)	Sales as a % of Demand (2041)	Reserve Margin[1] (2041)	# of Unique Generators (2041)
Preferred Portfolio	$6.82 B	$3.89 B	$8.15 B	19.6%	1.40%	$3.83 B	75.2%	15.4%	11.6%	4.7%	66

[1] Reserve Margin (2041) is a measure of I&M’s capacity position above the required Forecast Pool Reserve (FPR) obligation to PJM
[2] Cost to Serve Load (CTSL)
[3] The Cook portfolios include an assumption for relicensing cost but no estimate for capital expenditure required for equipment life extension
[4] The number of unique fuel types (2041), an additional diversity metric, is equal to eight for each portfolio above. In order to maintain adequate sizing, the metric has been removed from the above table

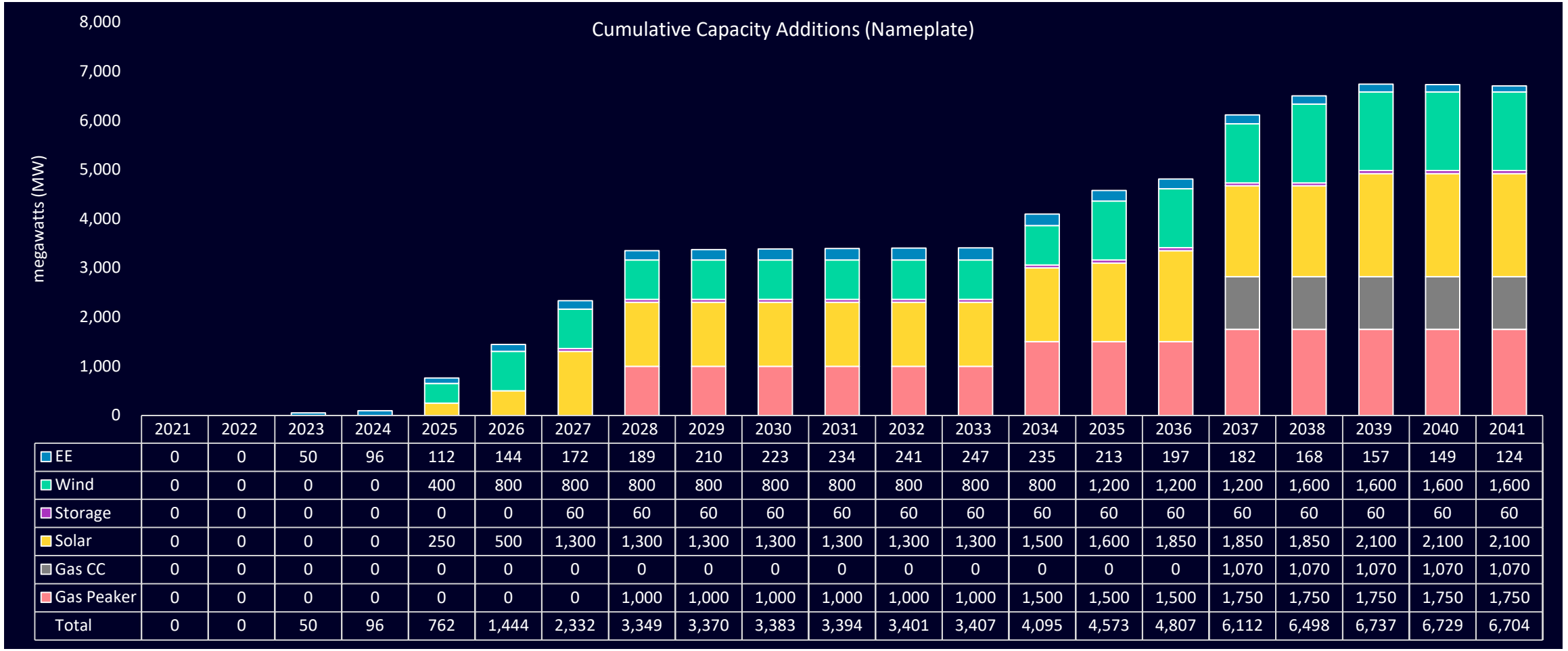
INDIANA MICHIGAN POWER
An AEP Company

FEEDBACK AND DISCUSSION

Art Holland, Siemens PTI

PREFERRED PORTFOLIO

Preferred Portfolio
Cumulative Capacity Expansion



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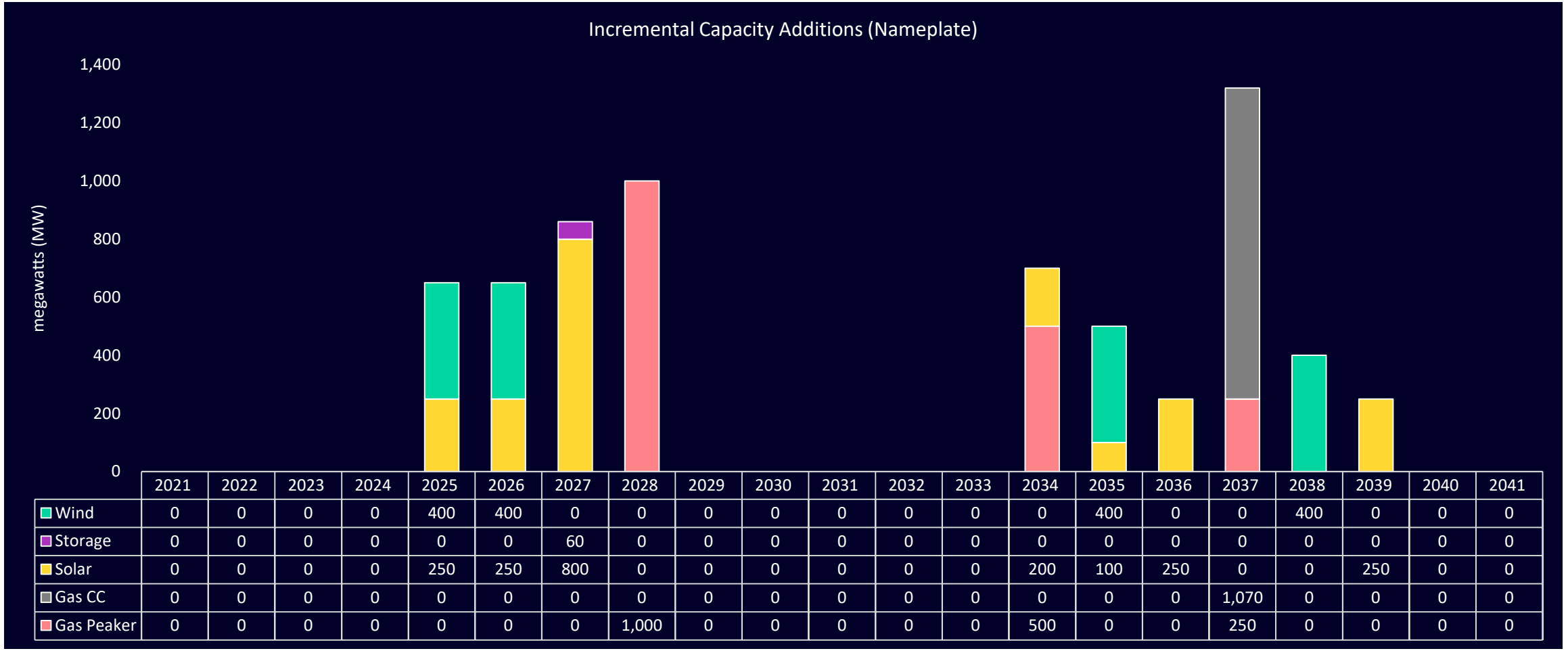
EE	0	0	50	96	112	144	172	189	210	223	234	241	247	235	213	197	182	168	157	149	124
Wind	0	0	0	0	400	800	800	800	800	800	800	800	800	800	1,200	1,200	1,200	1,600	1,600	1,600	1,600
Storage	0	0	0	0	0	0	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60
Solar	0	0	0	0	250	500	1,300	1,300	1,300	1,300	1,300	1,300	1,300	1,500	1,600	1,850	1,850	1,850	2,100	2,100	2,100
Gas CC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1,070	1,070	1,070	1,070	1,070
Gas Peaker	0	0	0	0	0	0	0	1,000	1,000	1,000	1,000	1,000	1,000	1,500	1,500	1,500	1,750	1,750	1,750	1,750	1,750
Total	0	0	50	96	762	1,444	2,332	3,349	3,370	3,383	3,394	3,401	3,407	4,095	4,573	4,807	6,112	6,498	6,737	6,729	6,704

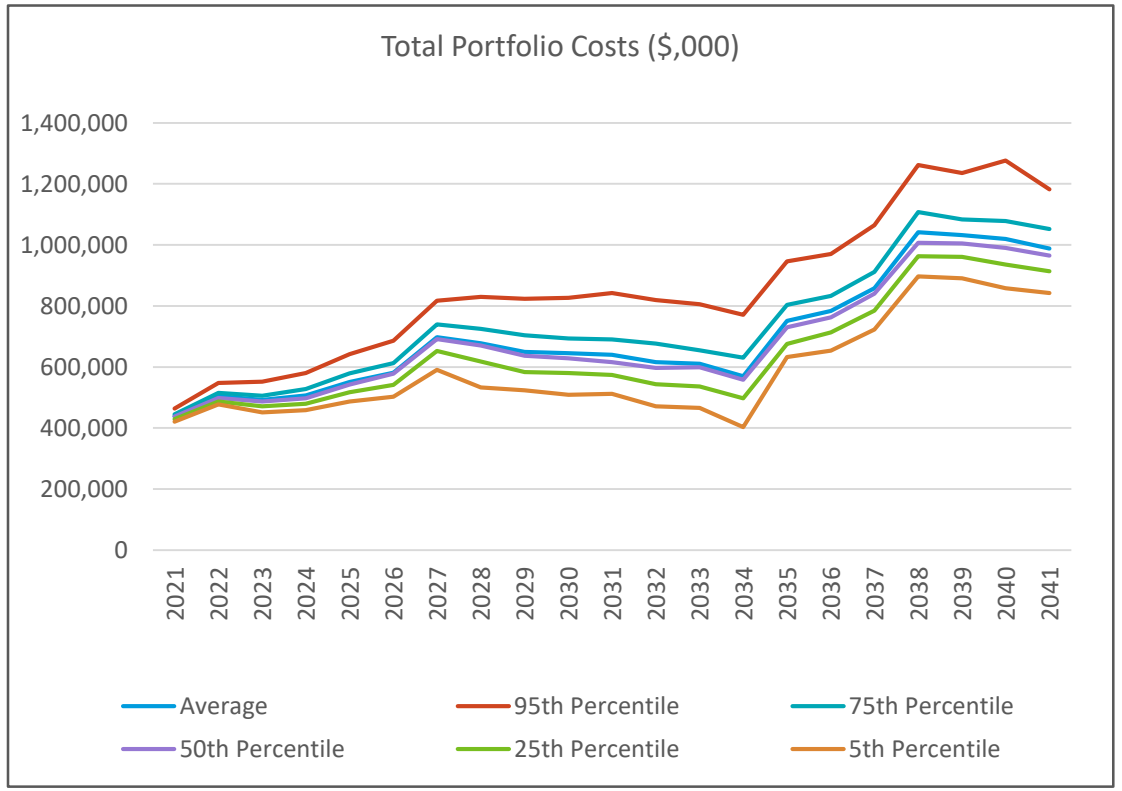
Preferred Portfolio
Incremental Capacity Expansion

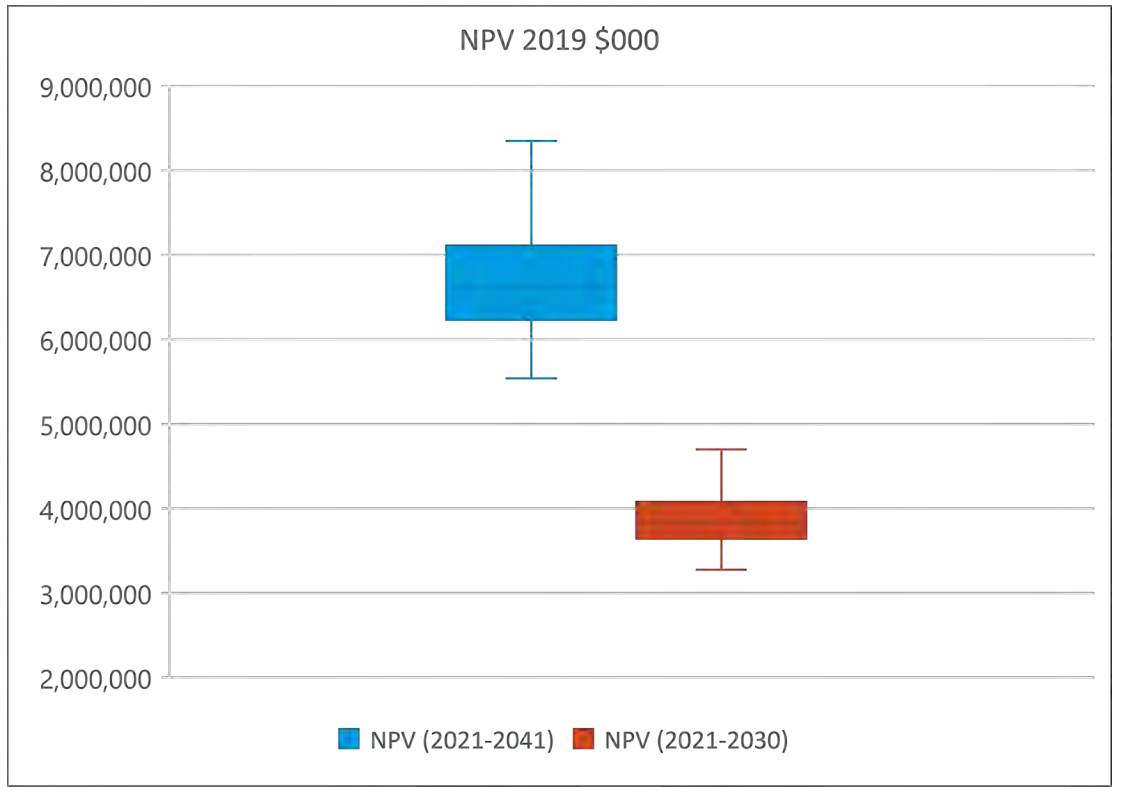


	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041
Wind	0	0	0	0	400	400	0	0	0	0	0	0	0	0	400	0	0	400	0	0	0
Storage	0	0	0	0	0	0	60	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Solar	0	0	0	0	250	250	800	0	0	0	0	0	0	200	100	250	0	0	250	0	0
Gas CC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1,070	0	0	0	0
Gas Peaker	0	0	0	0	0	0	0	1,000	0	0	0	0	0	500	0	0	250	0	0	0	0

Preferred Portfolio Affordability Objectives

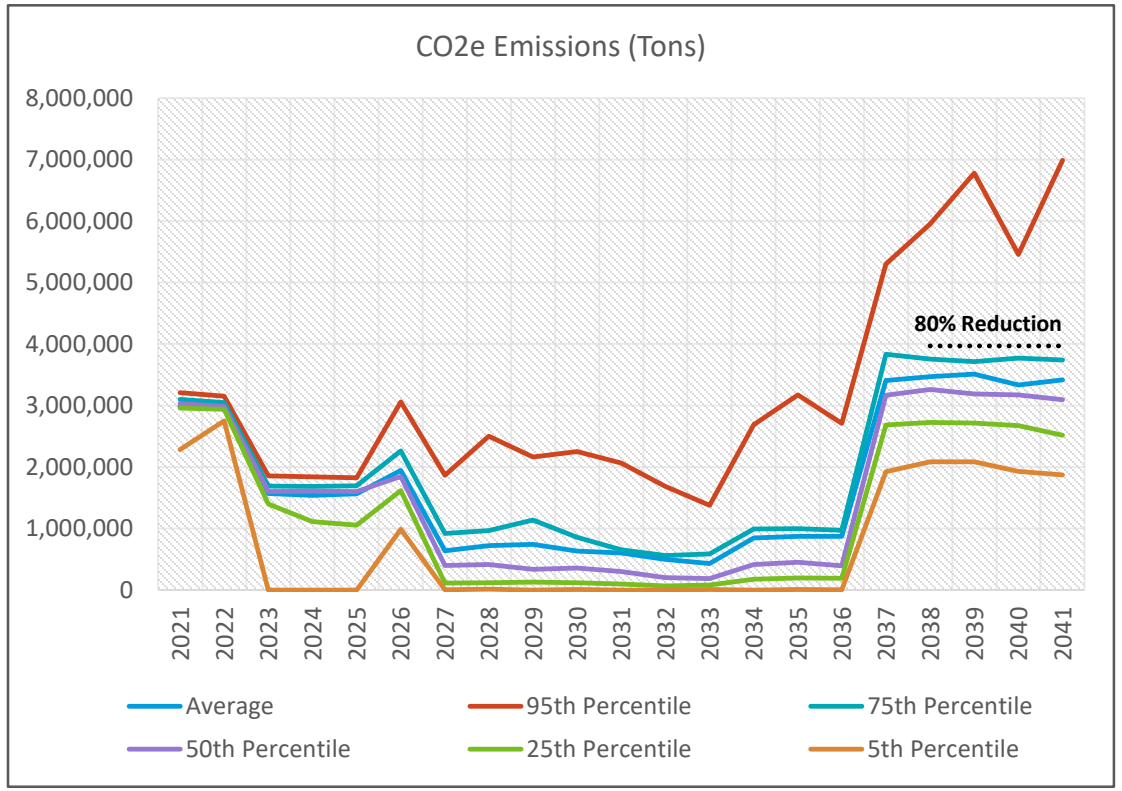
Portfolio	20-Year NPV CTSL	10-Year NPV CTSL	95th Percentile Value of NPV CTSL	Difference Btw. Mean and 95th Percentile	5 Year Net Rate Increase CAGR (2025-2029)	Capital Investment Through 2028	% Reduction of CO2e (2005-2041)	Purchases as a % of Demand (2041)	Sales as a % of Demand (2041)	Reserve Margin (2041)	# of Unique Generators (2041)
Preferred Portfolio	$6.82 B	$3.89 B	$8.15 B	19.6%	1.40%	$3.83 B	75.2%	15.4%	11.6%	4.7%	66





Preferred Portfolio Sustainability Objectives

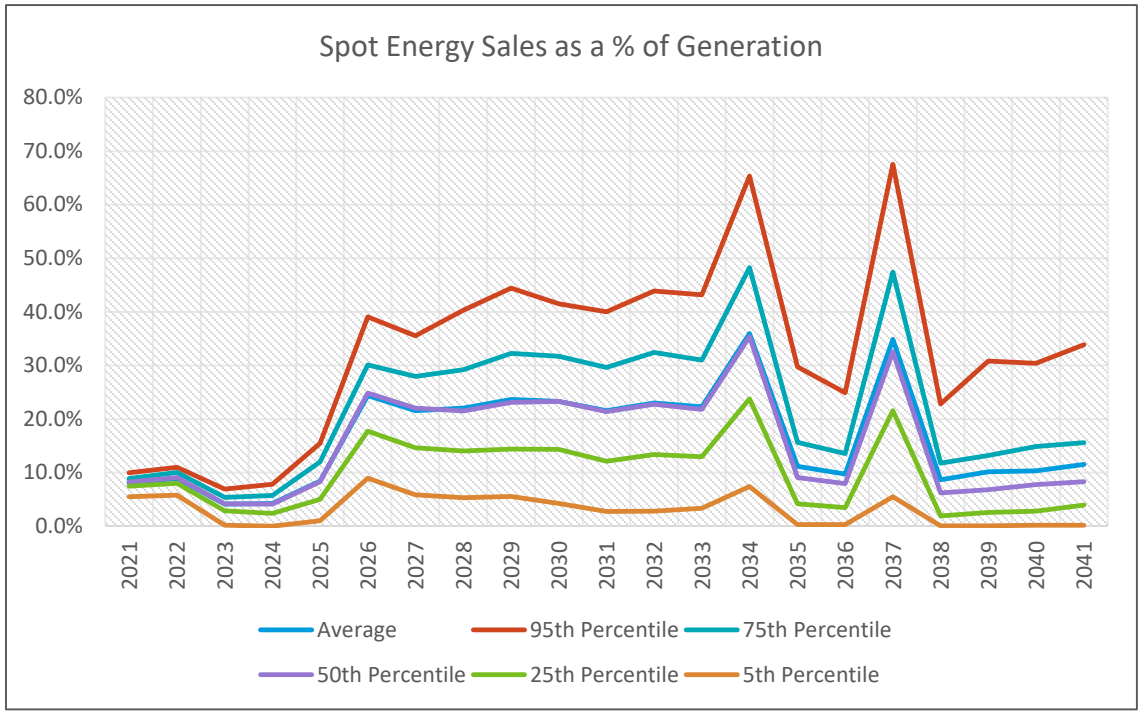
Portfolio	20-Year NPV CTSL	10-Year NPV CTSL	95th Percentile Value of NPV CTSL	Difference Btw. Mean and 95th Percentile	5 Year Net Rate Increase CAGR (2025-2029)	Capital Investment Through 2028	% Reduction of CO2e (2005-2041)	Purchases as a % of Demand (2041)	Sales as a % of Demand (2041)	Reserve Margin (2041)	# of Unique Generators (2041)
Preferred Portfolio	$6.82 B	$3.89 B	$8.15 B	19.6%	1.40%	$3.83 B	75.2%	15.4%	11.6%	4.7%	66

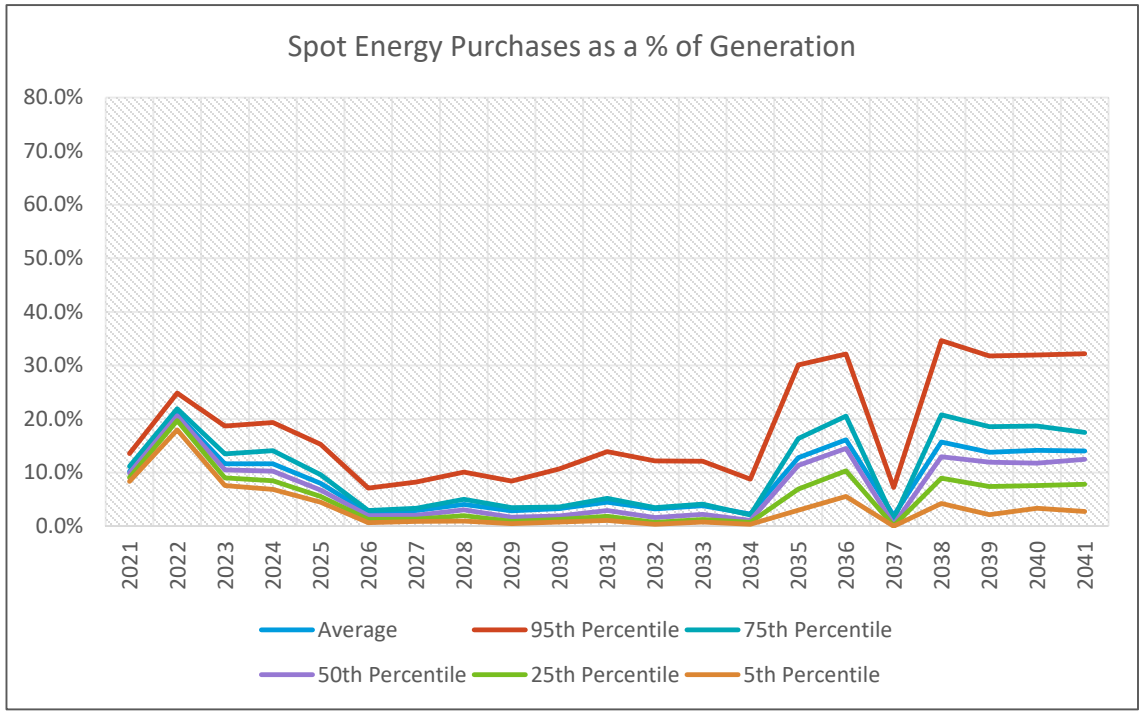


- CO_2e Emissions escalate in 2037 as a result of a CC unit addition to replace capacity and energy from Cook retirement.
- The Company will continue to monitor alternative technologies and solutions, including Hydrogen.

Preferred Portfolio
Market Risk Minimization Objectives

Portfolio	20-Year NPV CTSL	10-Year NPV CTSL	95th Percentile Value of NPV CTSL	Difference Btw. Mean and 95th Percentile	5 Year Net Rate Increase CAGR (2025-2029)	Capital Investment Through 2028	% Reduction of CO2e (2005-2041)	Purchases as a % of Demand (2041)	Sales as a % of Demand (2041)	Reserve Margin (2041)	# of Unique Generators (2041)
Preferred Portfolio	$6.82 B	$3.89 B	$8.15 B	19.6%	1.40%	$3.83 B	75.2%	15.4%	11.6%	4.7%	66





Preferred Portfolio Reliability Objectives

Portfolio	20-Year NPV CTSL	10-Year NPV CTSL	95th Percentile Value of NPV CTSL	Difference Btw. Mean and 95th Percentile	5 Year Net Rate Increase CAGR (2025-2029)	Capital Investment Through 2028	% Reduction of CO2e (2005-2041)	Purchases as a % of Demand (2041)	Sales as a % of Demand (2041)	Reserve Margin (2041)	# of Unique Generators (2041)
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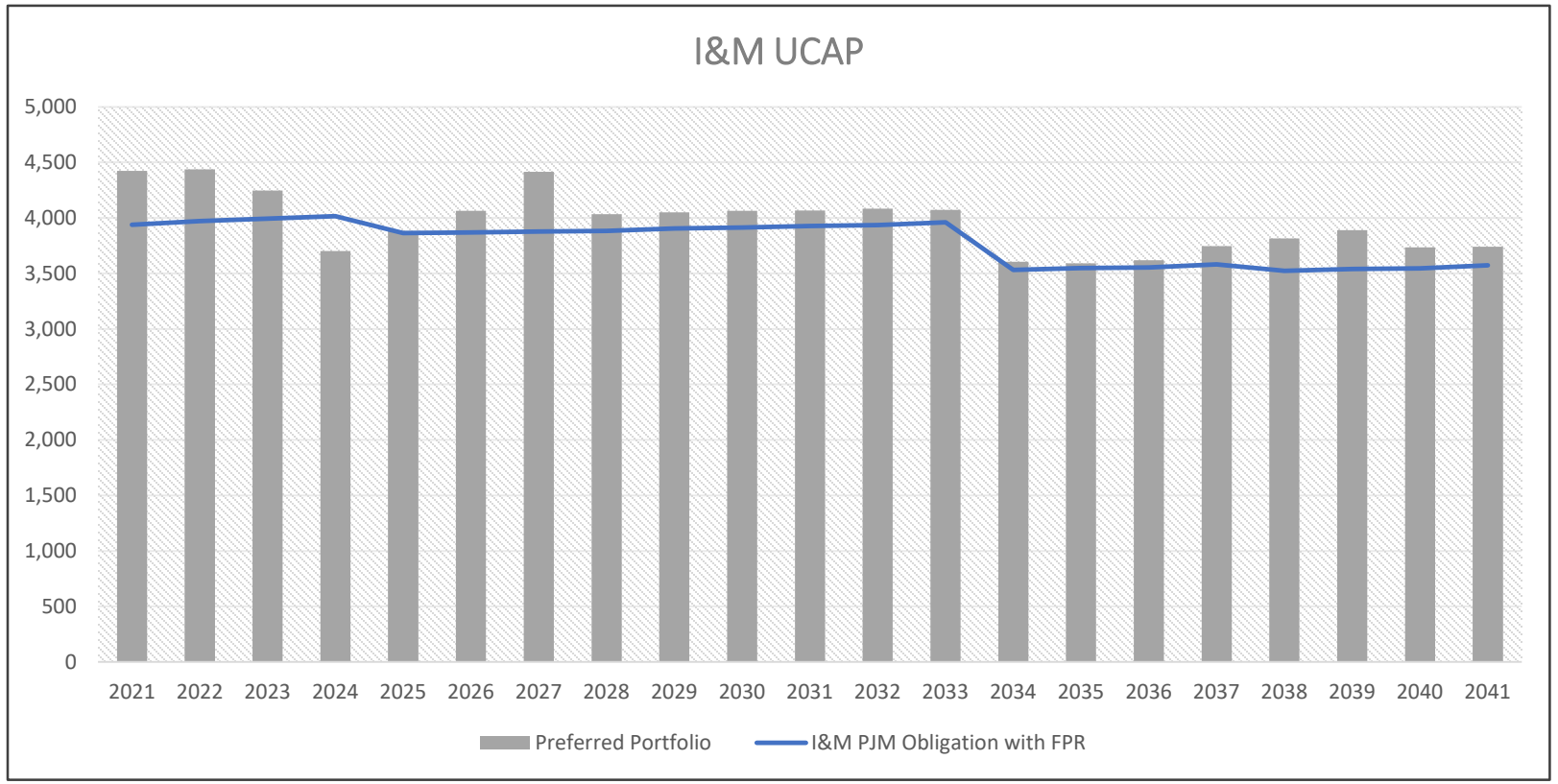

INDIANA MICHIGAN POWER
An AEP Company

CLOSING DISCUSSION

Andrew Williamson | I&M Director Regulatory Services

Definitions

Term	Definition
AURORAxmp	Electric modeling forecasting and analysis software. Used for capacity expansion, chronological dispatch, and stochastic functions
Condition	A unique combination of a Scenario and a Sensitivity that is used to inform Candidate Portfolio development
Deterministic Modeling	Simulated dispatch of a portfolio in a pre-determined future
Renewable Portfolio Standards	Renewable Portfolio Standards (RPS) are policies designed to increase the use of renewable energy sources for electricity generation
Portfolio	A group of resources to meet customer load
Preferred Portfolio	The portfolio that management determines will perform the best, with consideration for cost, risk, reliability, and sustainability
Probabilistic modeling	Simulate dispatch of portfolios for several randomly generated potential future states
Reference Scenario	The most expected future scenario that is designed to include a current consensus view of key drivers in power and fuel markets (reference case, consensus case)
Scenario	Potential future State-of-the-World designed to test portfolio performance in key risk areas important to management and stakeholders alike
Sensitivity Analysis	Analysis to determine the impact of early retirements and other inputs portfolios are most sensitive to

Data Release Schedule

Modeling Files

- Reference Case modeling inputs (November 18, 2021)
- Scenario modeling inputs (November 29, 2021)
- Probabilistic modeling inputs (November 29, 2021)
- Reference Case modeling files (confidential – available January 2022)
- Scenario modeling files (confidential – available January 2022)

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Indiana Michigan Power All-Source Informational RFP Stakeholder Review Meeting

April 9, 2021

Siemens PTI

AGENDA

- Introductions
- Scope & Objectives
- Generation Resource Qualifications
- Submittal Contents
- Schedule and Submission Instructions
- Q/A

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On the Call Today

Siemens

Angelina Martinez | Project Manager

Jay Boggs | Managing Director

Holt Bradshaw | Managing Director

I&M IRP Planning Team

Scott Fisher | Manager, Resource Planning and Grid Solutions

Greg Soller | Staff, Resource Planning and Grid Solutions

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Questions and Feedback

The purpose of today's presentation is to explain the All-source Informational RFP process, answer your questions and collect feedback from stakeholders.

If you have a question during this presentation:

- Type your question in the Questions area of the GoToWebinar panel
- At any time, please raise your hand via the GoToMeeting tool to be recognized
- Time permitting, we will address all questions and hear from all who wish to be heard
- Any questions that cannot be answered during the call will be addressed by Siemens directly.

If you would like to make a comment or ask a question about the IRP process after the presentation has concluded, please email the Siemens team via imallsourcerfp.us@siemens.com

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AGENDA

- Introductions
- **Scope & Objectives**
- Generation Resource Qualifications
- Submittal Contents
- Schedule and Submission Instructions
- Q/A

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Scope and Objectives

Scope	I&M is issuing an Informational Request for Proposal (“RFP”) notice soliciting input from the marketplace to inform its next Indiana Integrated Resource Plan (“IRP”) and evaluate how it will meet customers’ energy needs using a diverse mix of power generation resources.
Objective	Review the RFP document and its corresponding Appendices provided to the Stakeholders, which are a DRAFT of the anticipated version that will be published on April 23, 2021.

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Generation Resource Qualifications

Project Type	• In Development • In Operation
Resource type	• Dispatchable • Intermittent • DER (>1-MW)
Location	• PJM or MISO • Resource with physical deliverability to PJM
Pricing Structure	• PPA • Asset Purchase
Timing	• EOY 2022 for PJM Planning Year 2023/24 (no Renewables) • EOY 2023 for PJM Planning Year 2024/25 (no Renewables) • EOY 2024 for PJM Planning Year 2025/26 • EOY 2025 for PJM Planning Year 2026/27 • EOY 2026 for PJM Planning Year 2027/28 • EOY 2027 for PJM Planning Year 2028/29

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Submittal Contents

1 Informational Term Sheet	2 NDA	3 Excel Response Data
• Project type • Resource type • Size • Pricing structure • Interconnection status • Proof that resource qualifies as a PJM internal resource • Experience in proposed resource	• Non-Disclosure Agreement (NDA) as included	• PPA – Dispatchable Form • PPA – Renewable Form • BOT_AP Form • DER Form

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Submission Instructions and Schedule

- All respondents will directly interface with Siemens PTI for all communications including questions, RFP clarification issues, and submittal of a response. All correspondence concerning this RFP should be sent via e-mail to imallsourcerfp.us@siemens.com

	26-Mar	2-Apr	9-Apr	16-Apr	23-Apr	30-Apr	7-May	14-May	21-May	28-May	4-Jun	11-Jun
DRAFT RFP Available to Stakeholders												
RFP Stakeholder Meeting												
Issue RFP												
Responses Due												
Provide Resource Options to the Siemens IRP Modeling team												

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Questions & Feedback

Email the Siemens team anytime via imallsourcerfp.us@siemens.com

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AURORA Technical Conference AGENDA

June 24, 2021

Instructors:

Deborah Austin-Smith, Energy Exemplar
Michael Korschek, Siemens
Siemens Panel (Part 11)

1. **Aurora Overview**
   - File Management
   - Interface Overview
   - Input Database
   - Transmission Topology
   - Zonal System Diagram
2. **Aurora Zonal Navigation**
   - Project Settings
     - Run Setup
     - Logic Options
   - Database Management
3. **Scenario Management**
   - Change Sets
     - Creating change sets
     - Display change set differences
     - Importing, copying and merging change sets
     - Managing change sets in projects and change set files
   - Parameter Sets
4. **Custom Quick Views**
   - Managing Quick View files
     - Input & Output
5. **Aurora Model Logic / Algorithms**
   - Commitment & Dispatch Logic
     - Traditional
     - Commitment Optimization
6. **Modeling Resources**
   - Commitment (Non-Cycling) and Must Run Resources
   - Hydro Resources
   - Renewables
     - Solar, Wind, Geothermal
   - Energy Storage Resources (Batteries)
   - Conservation and Demand Response Programs
     - Load Shifting
     - Electric Vehicles

AURORA Technical Conference AGENDA

June 24, 2021

7. **Long-Term Capacity Expansion**
   - Creating a Long-Term Study
     - New Resource Options
     - Long-Term Logic Settings
   - Output
     - Resource Modifier Table (RMT)
     - Capacity Price Table
     - Standard Outputs
     - LT Diagnostic Outputs
8. **Constrained Dispatch**
   - Linear Program (LP) dispatch cost solution
   - Constraint Types
   - Energy, Fuel, LT Energy and Capacity (RPS), Transmission
   - Emissions (Mass and Rate)
9. **Risk Analysis**
     - Stochastic Approach
     - Computational Data Sets
     - Dynamic Build
     - Output and Reporting
10. **Output Report**
11. **Siemens use of Aurora for the I&M 2021 Integrated Resource Plan**

2022 I&M All-Source RFP
Economic Analysis Used to Determine Short-List
Solar Projects

Project Name	In-Service Date End of Year	Nameplate Capacity (MW)	If Applicable, PPA Contract Life (Years)	Levelized Adjusted Cost of Energy (LACOE) ($/MWh)	Levelized Adjusted Cost of Capacity (LACOC) ($/kW-yr)	Value-to-Cost Ratio	Price Score
[redacted]							

2022 I&M All-Source RFP
Economic Analysis Used to Determine Short-List
Wind Projects

Project Name	In-Service Date End of Year	Nameplate Capacity (MW)	If Applicable, PPA Contract Life (Years)	Levelized Adjusted Cost of Energy (LACOE) ($/MWh)	Levelized Adjusted Cost of Capacity (LACOC) ($/kW-yr)	Value-to-Cost Ratio	Price Score
[redacted]							

2022 I&M All-Source RFP
Economic Analysis Used to Determine Short-List
Solar + Storage Projects

Project Name	In-Service Date End of Year	Nameplate Capacity (MW)	If Applicable, PPA Contract Life (Years)	Levelized Adjusted Cost of Energy (LACOE) ($/MWh)	Levelized Adjusted Cost of Capacity (LACOC) ($/kW-yr)	Value-to-Cost Ratio	Price Score
[redacted]							

2022 I&M All-Source RFP
Economic Analysis Used to Determine Short-List
Standalone Storage Projects

Project Name	In-Service Date End of Year	Nameplate Capacity (MW)	If Applicable, PPA Contract Life (Years)	Levelized Adjusted Cost of Energy (LACOE) ($/MWh)	Levelized Adjusted Cost of Capacity (LACOC) ($/kW-yr)	Value-to-Cost Ratio	Price Score
[redacted]							

2022 I&M All-Source RFP
Economic Analysis Used to Determine Short-List Simple-Cycle Combustion Turbine

Project Name	In-Service Date End of Year	Nameplate Capacity (MW)	If Applicable, PPA Contract Life (Years)	Levelized Adjusted Cost of Energy (LACOE) ($/MWh)	Levelized Adjusted Cost of Capacity (LACOC) ($/kW-yr)	Value-to-Cost Ratio	Price Score
[redacted]							