I&M Exhibit: _____

Cause No. 45576

INDIANA MICHIGAN POWER COMPANY

PRE-FILED VERIFIED DIRECT TESTIMONY

OF

CHAD M. BURNETT

Content

DIRECT TESTIMONY OF CHAD M. BURNETT
ON BEHALF OF
INDIANA MICHIGAN POWER COMPANY

I. Introduction of Witness

Q1. Please state your name and business address.

My name is Chad M. Burnett and my business address is 212 East Sixth Street, Tulsa, OK 74119.

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

I am employed by American Electric Power Service Corporation (AEPSC) as the Director of Economic Forecasting. AEPSC supplies engineering, accounting, planning, advisory, and other services to the subsidiaries of the American Electric Power (AEP) system, one of which is Indiana Michigan Power Company (I&M or the Company).

Q3. What are your responsibilities as Director of Economic Forecasting?

I am responsible for preparing customer, sales, peak demand, and revenue forecasts for each of the AEP operating companies in the eleven jurisdictions and three regional transmission organizations (RTOs) that cover the AEP service territory. In addition, I am responsible for the weather normalization calculations and sales and revenue variance reports for each of the AEP operating companies, including I&M.

Q4. Briefly describe your educational background and professional experience.

I received a Bachelor of Science degree in Business Administration from the University of Tulsa in 1998 with emphasis in Economics and Finance. In 2002, I received a Master of Business Administration degree from the University of Tulsa. In 2005, I completed the Executive Strategic Leadership program at Ohio State University.

I have worked in the utility industry as an economist since 1997 when I was employed by Central and South West Service Corporation, which later merged with AEP in June 2000. I became the Manager of Economic Forecasting in June 2007. In October 2013, I was promoted to Director of Economic Forecasting.

I also work as an Adjunct Professor of Economics in the Graduate Business School at Southern Nazarene University where I have taught Managerial Economics, Health Care Economics, and the Survey of Economics since 2002.

Q5. Have you previously testified before any regulatory commissions?

Yes. I filed testimony before the Indiana Utility Regulatory Commission (IURC) in Cause No. 44967 in 2017, Cause No. 45235 in 2019 and Cause No. 45285 in 2020. I have also testified before regulatory commissions in the states of

Arkansas[1], Kentucky[2], Michigan[3], Oklahoma[4], Tennessee[5], Texas[6], and Virginia[7].

II. Purpose of Testimony

Q6. What is the purpose of your testimony?

The purpose of my testimony is to present the kilowatt-hour (kWh or energy), customer, and kilowatt (kW or peak) forecasts used by the Company to develop its test year billing determinants. I also discuss the processes and methodology employed to forecast the Test Year, which is the 12-month period ending December 2022.

Q7. How is your testimony organized?

My direct testimony is organized into three major sections. First, I will share the Test Year load forecast results, showing how they compare to recent historical actual results. Then I will describe the methodology used to develop the Test Year load forecast. Finally, I will provide an explanation of some of the key assumptions and drivers of the forecast that are influencing the Test Year load forecast results.

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1 Docket No. 19-008-U in 2019.

2 Case No. 2019-00443 in 2020.

3 Cause No. U-20359 in 2019 and Case No. U-20591 in 2020.

4 Cause No. 20080014 in 2008, Cause No. 201800097 in 2019, and Cause No. 202100055 in 2021.

5 Docket No. 16-00001 in 2016.

6 Docket No. 36966 in 2009, Docket No. 37364 in 2009, Docket No. 40443 in 2012, Docket No. 44701 in 2015, Docket No. 46449 in 2016, and Docket No. 51415 in 2020.

7 Case No. PUR-2017-00174 in 2018 and Case No. PUR-2018-00051 in 2018.

Q8. Are you sponsoring any attachments?

I am sponsoring the following attachments:

- Attachment CMB-1, which contains the summarized load forecast results (kWh, kW, customers) used in the Test Year. All of the input data, model equations, and statistical results for the various forecast models used to develop the Test Year load forecast are provided in the workpapers discussed below.

Q9. Are you sponsoring any workpapers?

Yes, I am sponsoring the following workpapers:

- Confidential WP-CMB-1: Long-Term Price Forecast, Large Industrial and Wholesale Energy Models and Input Data
- WP-CMB-2: Model Equations, Results of Statistical Tests and Input Data Sets Pertaining to the 2020 Vintage Load Forecast, Residential and Commercial SAE Model documentation

Q10. Were the attachment and workpapers that you sponsor prepared or assembled by you or under your direction?

Yes.

Q11. Please summarize your testimony.

The Test Year forecast is a reasonable projection of I&M's customer count, sales, and peak load. I&M's load forecast methodology, which is unchanged from the prior rate case, is proven to produce reliable projections that are useful for planning and setting rates. The forecast techniques utilized by the Company are widely accepted across the electric utility industry and utilize data inputs from recognized third-party sources.

This methodology produced an Indiana retail jurisdictional forecast that is 24 GWh higher than the normalized actuals in 2020. This includes an increase in Industrial class sales that is partially offset by lower Commercial and Residential class sales. The Test Year forecast reflects a gradual recovery from a historical reference year in 2020, which included both the impacts of a recession and a global pandemic.

III. Test Year Forecast Results

Q12. What is the purpose of this section of your testimony?

The purpose of this section of my testimony is to present the forecast for I&M's Indiana jurisdiction over the Test Year using the procedures described in Section IV below, while providing historical context and explanation for some of the underlying trends that are influencing the forecast results.

Q13. What are the Test Year load, customer, and peak demand projections?

Attachment CMB-1 contains the monthly summary of the load forecast that was used to develop the Test Year billing determinants. For the Indiana retail jurisdiction of I&M, we are projecting 14,595 GWh in 2022 with an average customer count of 469,808 and an annual peak demand of 2,919 MW.

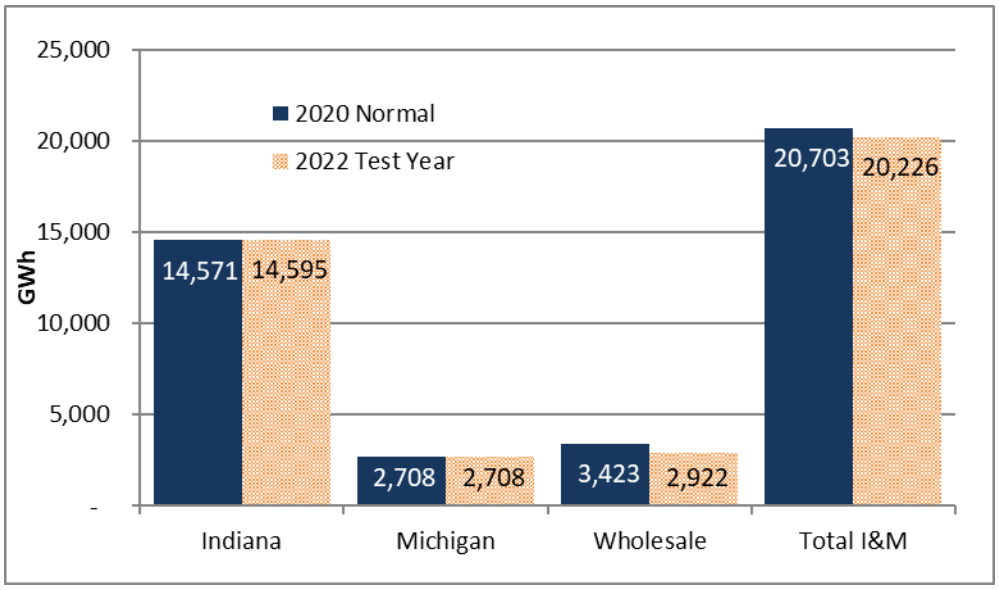
For the total I&M system, including the retail jurisdictions in Indiana and Michigan as well as the wholesale class, the total Test Year kWh are 20,226 GWh with an average customer count of 599,638 and an annual peak demand of 3,898 MW.

Q14. How do the forecasted energy sales for the Test Year compare to actuals in 2020 by jurisdiction?

Figure CMB-1 shows I&M's kWh sales forecast comparison over the projected period for each jurisdiction. In summary, the total Test Year kWh are approximately 477 GWh below the weather normalized 2020 actual sales.

The majority of the decrease in the Test Year sales is coming from the 501 GWh reduction in the Wholesale class load. If you were to exclude the impact of expired wholesale contracts in 2020, the Test Year forecast for the I&M system would have been slightly above the 2020 levels.

Figure CMB-1. Comparison of 2020 Weather Normalized Actuals to Forecasted Test Year (GWh by Jurisdiction)

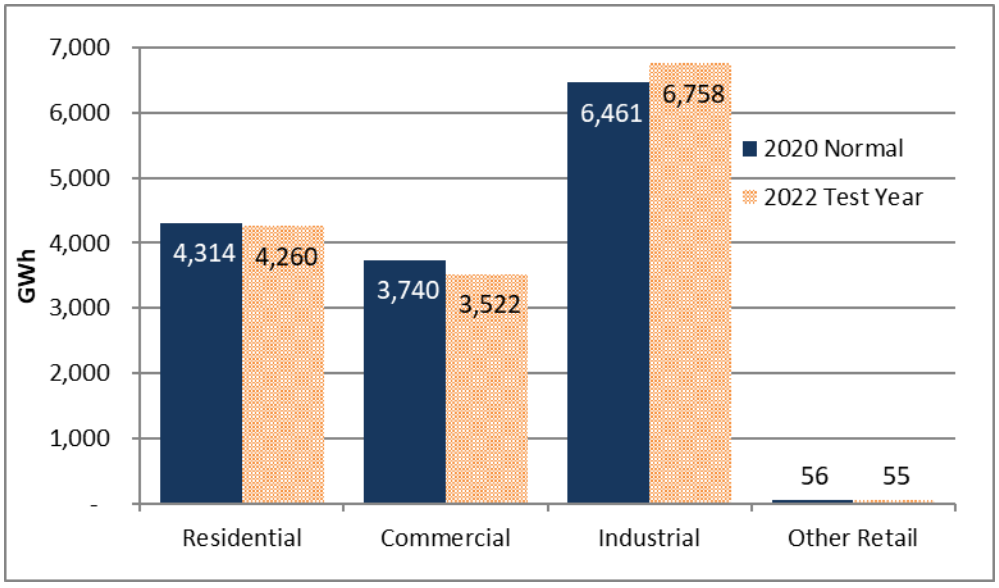


Q15. How do the forecasted energy sales for the Test Year compare to actuals in 2020 by class for the Indiana jurisdiction?

In total, the forecasted Test Year sales are up 24 GWh compared to the normalized actuals in 2020. *Figure CMB-2* shows the forecast comparison for the Indiana retail jurisdiction by class. The increase in Industrial class sales (297

GWh) is being partially offset by lower Commercial and Residential class sales (down approximately 218 GWh and 54 GWh, respectively) compared to the 2020 weather normalized actuals.

Figure CMB-2. Comparison of 2020 Weather Normalized Actuals to Forecasted Test Year (GWh by class, Indiana)

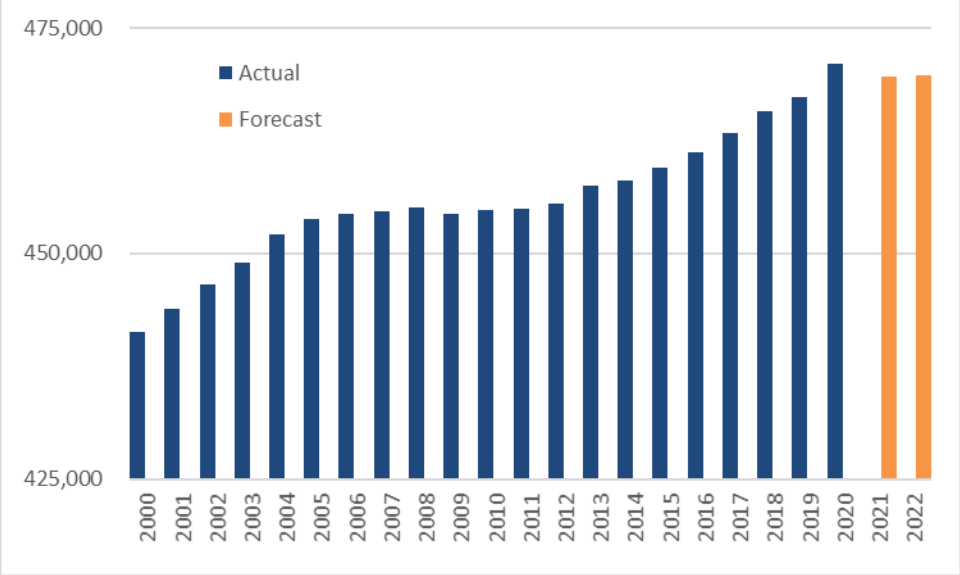


Q16. Please summarize I&M's customer forecast for the Indiana jurisdiction.

Overall, the customer count for the Indiana jurisdiction was forecasted to be relatively flat. This is generally consistent with the demographic and economic projections that are discussed in Section IV below.

Figure CMB-3 shows how the forecasted customer counts align with the historical data series for I&M's Indiana jurisdiction.

Figure CMB-3. I&M Indiana Retail Customer Count Forecast



Compared to the 2020 actuals, I&M's forecasted customer count for 2022 is approximately 1,186 lower than the average customer count in 2020. This is primarily due to the moratorium on disconnects that was implemented in 2020 in response to the pandemic.

As a result, customer counts in 2020 were temporarily inflated as the Company suspended its normal operating procedures for counting customers as directed by the IURC. The Test Year forecast in this case did not assume a similar moratorium on disconnects to be in place in 2022.

Q17. Please summarize I&M's peak forecast.

I&M's Total Company forecasted peak demand for the Test Year is 3,898 MW in August of 2022. By comparison, I&M's actual peak demand in 2020 was 3,970 MW on July 9, 2020. The weather normalized peak estimate for 2020 was 3,955 MW.

A weather normalized peak represents what the peak value would have been if the temperature on the peak day had been normal for a peak day. In 2020, the temperatures were slightly warmer than normal for peak day, so the actual peak came in higher than it would have been under normal peak day conditions.

Q18. How is the Test Year load forecast you sponsor used in this Case?

Company witness Fischer uses the Test Year load forecast to develop the forecasted billing determinants used in rate design. In addition, the load forecast is used by Company witness Duncan in the jurisdictional and Company witness Hornyak in the class cost study allocations.

IV. Load Forecast Methodology

Q19. How often does I&M prepare a load forecast?

I&M generates a new load forecast once a year as part of its normal planning process. The load forecast is one of the first inputs used in the development of I&M's long-term financial forecast. Typically, the load forecast is completed in the summer months while the rest of I&M's work plans are still being developed.

Q20. Is the load forecast monitored or updated during the year?

Yes. Because the load forecast is completed early in the planning process, we monitor its performance during the last half of the year to ensure that it

accurately predicts the most recent actual results. Updates to the load forecast may occur during this time period, depending on the degree of the differences between the load forecast and the actual results.

Q21. When was the load forecast used in this proceeding prepared?

The load forecast used in this proceeding was completed in September 2020 using actual data through July 2020. The pandemic had just started when the Company developed its initial load forecast in the Spring of 2020. However, as part of its normal monitoring process, the Economic Forecasting group noticed that the economic projections had changed notably from the earlier estimate.

Furthermore, the Economic Forecasting group determined there would be value in re-estimating the models to include the recent actual data since the pandemic began to capture any observed changes in consumer behavior as a result of the historic recession and pandemic.

The Economic Forecasting group alerted I&M's management team of the updated load forecast and recommended it be used for planning purposes. The load forecast presented as the Test Year in this proceeding is the same vintage that is being used for I&M's 2021 Control Budget.

Q22. Why are forecasts of customers, energy (kWh), and hourly demand (kW) prepared?

Forecasts of customers, energy sales (kWh), and demand (kW) are prepared to provide planning information for a variety of business uses. These uses include financial, fuel, capacity, and rate planning.

Q23. What are the major objectives considered when determining how the Company will prepare its load forecast?

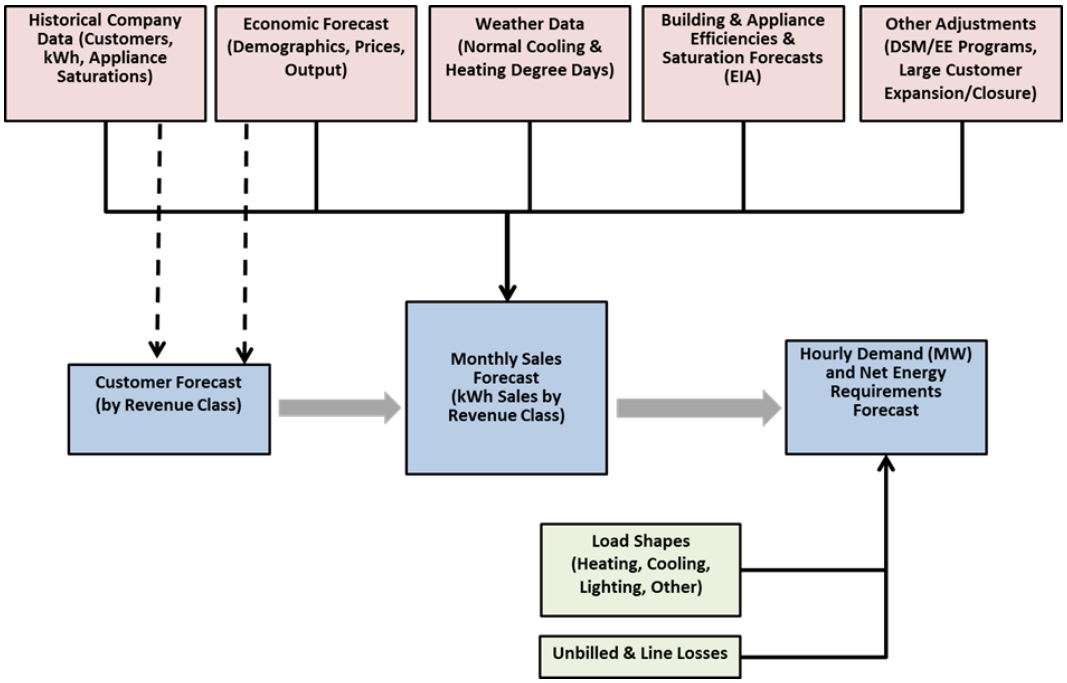
The primary objective when determining how to model the Company's load forecast is to utilize models that will accurately predict future electricity consumption. There are many different modeling techniques available, and the Company employs a balanced approach to modeling. In other words, we select models that are sophisticated enough to be able to produce accurate and reliable results, yet simple enough that they can be readily shared with and understood by management, regulators, interveners, and other stakeholders.

Q24. How are the kWh energy, customer, and kW demand forecasts prepared?

I&M uses a methodical approach to forecasting load. *Figure CMB-4* illustrates the various inputs and processes involved in the development of the load forecast. The final forecast is the culmination of a series of underlying forecasts

that build on each other (i.e., customer forecast feeds the sales forecast which goes into the demand forecast).

Figure CMB-4. Inputs and Processes Used in I&M's Load Forecast



Q25. What methods does I&M use to develop the load forecast?

Two distinct methods were used for forecasting customers and kWh for the short-term (i.e., 0 to 24 months following the last actual data point utilized) and the long-term (0 to 30 years following the last actual data point utilized).

The last actual data point utilized in the 2020 vintage forecast presented in this proceeding was July 2020. Because the 2022 Test Year falls outside the short-term forecast period, the Test Year forecast uses data from the long-term process, and thus I will focus most of my description on the long-term forecast methodology. Nonetheless, the short-term forecast was used as a reference to confirm the reasonableness of the long-term forecast.

To forecast long-term kWh sales, I&M used Itron's Statistically Adjusted End-use (SAE) models for forecasting Residential and Commercial kWh. SAE models are widely used across the industry for long-term planning.

SAE models are econometric models with features of end-use models included to specifically account for energy efficiency impacts, such as those included in the Energy Policy Act of 2005 (EPACT) and the Energy Independence and Security Act of 2007 (EISA), etc. SAE models start with the construction of structured end-use variables that capture underlying trends in end-use equipment saturation levels and efficiencies. Factors are also included to account for changes in energy prices, household size, home size, income, and weather conditions.

The long-term process for forecasting Industrial and Other Retail kWh starts with an economic forecast provided by Moody's Analytics for the United States as a whole, each state, and regions within each state. These forecasts include forecasts of employment, population, industrial production, and income.

The Industrial and Other Retail long-term kWh forecast uses econometric models incorporating the economic forecast to produce a forecast of annual kWh sales. Inputs such as regional and national economic and demographic conditions, energy prices, customer-specific information and informed judgment are all utilized in producing the forecasts.

The results of the kWh sales models, in turn, are inputs to the demand (or kW) models. As part of the forecast review process, the Company evaluates and validates the historical relationship between the energy (kWh) and peak demand (kW) based on the metered load factors.

Q26. Why does I&M use different methods for short-term and long-term kWh forecasting?

I&M uses processes that take advantage of the relative strengths of each methodology. The short-term process utilizes time-series regression models that capture patterns within the recent sales and weather data to represent the variation in kWh sales on a monthly basis for short-term applications like capital budgeting and resource allocation. Although these models can produce accurate forecasts in the short run, without logical ties to economic factors, they are less capable of capturing the structural trends in electricity consumption that are important for longer term planning.

The long-term process, with its explicit ties to economics and demographics, as well as efficiency and saturation trends, is more appropriate for longer-term decisions such as capacity planning and distribution planning issues. In some cases, the long-term process may be used for short-term forecasting if the results are determined to be more reasonable and reliable than those produced from the short-term process during the internal review process.

Q27. How were class kWh level energy sales forecasts translated into an hourly load forecast?

Historical load and temperature data was used to develop hourly load representations (load shapes) for specific temperature increments by revenue class and load type (e.g., Residential cooling shape, Commercial heating shape, etc.). These load shapes are then applied with the sales forecasts and normal weather file to generate hourly load forecasts.

The aggregate of the load shapes for each of the classes is the system load profile. If necessary, the system load profile is calibrated based on the load factor trend to produce an hourly load and peak kW forecast. In this case, the

peak forecast is primarily used for production costing and jurisdictional cost allocation development for rate design.

Q28. What are the sources of the data used in the forecast?

All kWh sales, customer, and peak load data are taken from Company billing and operational records. The weather data is provided by the National Oceanic and Atmospheric Administration from weather stations in I&M's service territory (i.e. Ft. Wayne, IN and South Bend, IN).

The economic forecasts are based on data gathered by federal, state, and local authorities, as well as propriety sources of Moody's Analytics for the counties served by I&M. The appliance saturations and efficiencies come from company surveys and/or Itron's SAE models which are linked to the Energy Information Administration (EIA's) National Energy Modeling System (NEMS) by census region.

The DSM/Energy Efficiency assumptions come from Company reports filed with the IURC (i.e. EE Portfolio Plan and Integrated Resource Plan). And the large customer assumptions come from I&M's customer service engineers who have direct contact with our customers.

Q29. Is Moody's Analytics a reliable source of economic forecast information?

Yes. Moody's Analytics is a trusted and reputable provider of economic forecast data. In addition to the numerous accuracy accolades, Moody's Analytics has a broad client base across the globe including approximately fifty-seven utilities throughout the US. This includes at least four utilities that provide electricity service to customers in the state of Indiana.

Furthermore, PJM, the RTO of which I&M is a member, also utilizes Moody's Analytics as its economic forecast provider in the development of its load forecasts. While it is not required for I&M to use the same economic forecast

provider as PJM, there are benefits to having some of the load forecast model assumptions in sync.

Q30. Is Itron's SAE model a reliable forecasting tool used by others in the electric utility industry?

Yes. Itron Inc. is a leading technology provider to the global energy and water industries. They introduced the SAE models in the early 2000's. Today, over 60 companies across North America utilize Itron's SAE models for forecasting including three Indiana utilities, as well as the PJM load forecasting team.

Q31. Does the Test Year forecast assume normal weather conditions, and if so, how is this accomplished?

Yes, the forecast assumes normal weather conditions throughout the entire forecast horizon including the Test Year. It is appropriate to utilize weather normalized billing determinants when setting customer rates since it represents the most likely outcome (i.e., highest probability of occurrence) that minimizes the possibility that the Company will under or over collect the intended revenue requirement set by the Commission. The Company uses a rolling 30-year average of heating and cooling degree days to compute the projected normal degree days that are used in the forecast models.

Q32. How does the Company account for energy efficiency in the long-term load forecast?

As mentioned earlier, the SAE model integrates end-use saturation and efficiency information into the forecast modeling that already incorporates the impact of federal energy standards and other relevant energy efficiency factors.

The appliance saturation statistics are calibrated with the Company's periodic Residential Appliance Saturation Survey results, which are conducted every 3-4

years. In addition to the energy efficiency impacts that are included in the base SAE model framework, I&M also adjusts the load forecast for the impacts of its Demand Side Management (DSM) and Energy Efficiency programs that are approved by the Commission or for the longer term, contained within the Company's Integrated Resource Plan.

Q33. What DSM program assumptions were used to adjust the load forecast?

The Company used the most recent DSM assumptions that were available at the time the load forecast was developed. That means that for the Test Year, the Company adjusted the load forecast for the impact of DSM programs that had been implemented prior to 2020 or were included in I&M's 2020-2022 DSM Plan filing in Cause No. 45285.

Q34. How does the Company account for changes in specific large customer loads (i.e., a major expansion or closure) in the load forecast?

As part of the normal forecast routine, we reach out to I&M's customer service engineers to ask about any significant load additions or closures that are expected during the forecast horizon.

Once we compile the list of expansions or closures, we then compare the list with the base forecast to see if these known expansions are implicitly accounted for in the base economic forecast. To the extent the specific customer changes are material and not already included in the base forecast, we make an adjustment to account for the difference.

Q35. Is the methodology used to produce the load forecast reasonable?

Yes. I&M's load forecast methodology is proven to produce reliable projections that are useful for planning and setting rates. The forecast techniques utilized by the Company are widely accepted across the electric utility industry.

Furthermore, the necessary input data comes from reliable sources (i.e. National Oceanic and Atmospheric Administration (NOAA), Moody's Analytics, the U.S. Energy Information Administration (EIA), Itron, and I&M's customer billing and accounting systems, etc.).

Q36. Is this the same load forecast methodology that was used in Cause No. 45235?

Yes. The load forecast methodology has not changed from what was filed in the previous base rate case (Cause No. 45235).

Q37. Did the Commission make any findings or statements about the Company's load forecast in its Final Order from Cause No. 45235?

Yes. In its findings regarding the load forecast, the Commission Final Order states that it found "I&M's test year forecast to be reasonable."[8]

Q38. Is this the same load forecast methodology that is used in I&M's Fuel Adjustment Clause filing?

Yes. The same methodology is used in every filing where the Company's projection of kWh sales is used to set the rates.

Q39. Is this also the same load forecast methodology that was used in the Company's most recently filed 2018-2019 Integrated Resource Plan?

Yes, with the exception of the assumptions for long-term DSM savings.

For the Financial Forecast, the long-term DSM assumptions come from the most recently completed IRP. For the IRP optimization, the load forecast excludes the

[8] IURC Final Order in Cause No. 45235, Section 12 (Revenue Forecast) Part 4 (Discussion and Findings) Pgs. 76-77.

impact of future DSM programs so that the IRP optimization can determine the optimal level of DSM for the Company to pursue in future years, based on market fundamentals, technology costs, etc.

Q40. Has staff from any state regulatory commission reviewed the load forecast methodology from I&M's 2018-19 IRP?

Yes. In Indiana, IURC staff reviewed the Company's 2018-19 IRP and recently published their assessment in the final Director's Report[9]. In the Director's Comments on load forecasting, the report states, "I&M's forecast methodology was well done, the data sources and tools were appropriate for this IRP, and the forecast was well documented both in the report itself and in the appendices."

In Michigan, Staff witness Roger Doherty from the Michigan Public Service Commission testified in Case No. U-20591 (I&M's 2018-19 IRP filing) that:

- the Company's "energy sales and peak demand forecasts [were] consistent with other load growth projections in the region" (at 5),
- "the Company's forecasting methodology with respect to weather aligns with industry norms" (at 7), and
- "the load forecasts used by the Company in the IRP are reasonable" (at 7).

Q41. Do you know how accurate the Company's forecasts have been using the methodology described above?

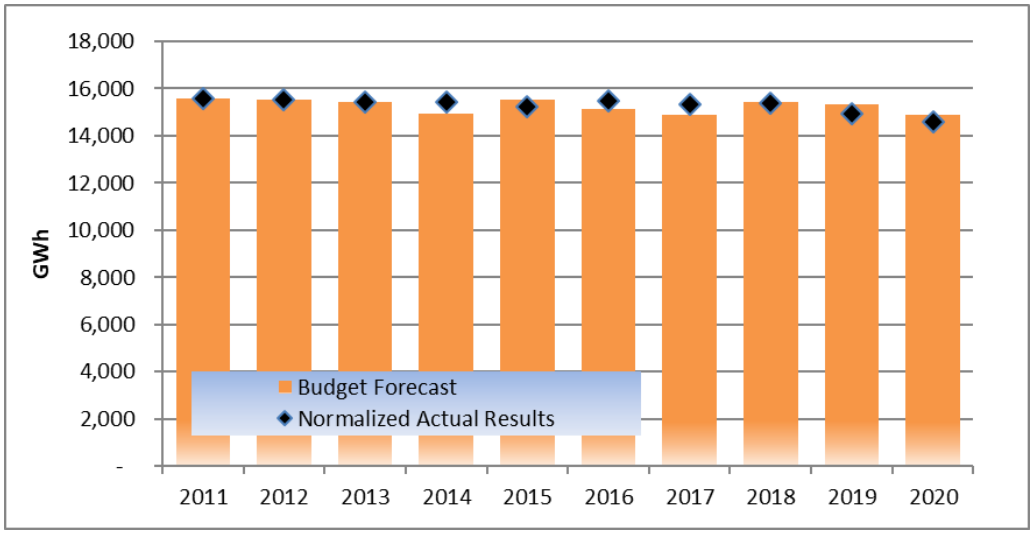
Yes. As described earlier, part of my job is to monitor the performance of our load forecast on a routine basis. In the analysis, we identify the forecast

[99] IURC Electricity Director's Final Report for Indiana Michigan Power Company's 2018-2019 Integrated Resource Plan, February 12, 2020. https://www.in.gov/iurc/files/IMs-2019-Directors-Report-Final-Version-2.12.21.pdf

variance that is caused by weather (deviations from normal weather). Since our forecast is based on normal weather, we focus most of our attention on the weather-normalized variances to determine how well the forecast is performing.

The average accuracy of our budget load forecasts (GWh) for I&M since 2010 has been 0.1% on a weather-normalized basis, as shown in *Figure CMB-5*.

Figure CMB-5. I&M-IN Normalized Budget Variance (GWh)



Q42. How accurate was the load forecast that was used in the Company's last base rate case (Cause No. 45235) that used a forecasted 2020 test year?

The final load forecast that was filed in Cause No. 45235 predicted I&M's total retail sales in Indiana would be 15,057,901 MWh in 2020. The weather-normalized results for 2020 came in at 14,571,494 MWh, which means the load forecast that was used to develop the billing determinants were 3.2% higher than the weather normalized actual results.

Q43. What caused the actual results in 2020 to come in so much lower than the load forecast that was used to develop the billing determinants in Cause No. 45235?

The short answer is the COVID-19 pandemic. You may recall that the load forecast in Cause No. 45235 had assumed a mild recession in 2020.[10] That assumption was proven accurate. According to the National Bureau of Economic Research (NBER), which is responsible for determining the start and end dates of US business cycles, the US economy officially went into recession in February 2020.

While the load forecast in the last case accurately predicted a recession to start in 2020, it did not anticipate the impact of the recession would be amplified by a global pandemic.

On March 6, 2020, one month into the recession, the Indiana State Department of Health announced its first confirmed case of COVID-19.[11] By March 23, 2020, Governor Holcomb issued a stay at home provision for the state of Indiana. Included in this provision was the condition that all non-essential businesses would close or allow employees to work from home. This announcement came one week after President Trump declared a national emergency in response to the pandemic.

The dramatic measures implemented by government officials to address the public health crisis at the beginning of the recession changed the trajectory of the economy from an expected mild recession to a truly historic recession.

[10] See Company witness Burnett's direct testimony (pg. 14) in Cause No. 45235.

[11] Indiana confirms first case of COVID-19 (wcpo.com)

V. Drivers of the Test Year Load Forecast

Q44. What is the purpose of this section of your testimony?

The purpose of this section is to explain ***why*** the Test Year forecast numbers are what they are. I have previously addressed ***what*** the Test Year forecast results are (Section III) and ***how*** they were developed (Section IV).

Q45. Please summarize the results of the economic forecast for I&M's Indiana service territory.

Moody's Analytics projects I&M's Indiana service territory population will grow at an average annual rate of 0.2% per year from 2020 to 2022, which is consistent with the 0.2% per year growth over the past decade (2010-2020). Over the same forecast period, the gross regional product for the Indiana jurisdiction of I&M's service territory is expected to grow at an average rate of 3.9% per year through 2022, which is better than the 0.9% per year growth from the past decade and reflects a partial recovery from the 2020 recession. Finally, non-farm employment is expected to increase at an average annual rate of 1.1% per year compared to the 0.4% per year growth over the past decade.

Q46. Why is the Moody's projection for growth in gross regional product and non-farm employment through 2022 higher than I&M has experienced in recent history?

Moody's Analytics is predicting a recovery from the COVID-19 recession.

Figure CMB-6 illustrates that non-farm employment for I&M's Indiana jurisdiction reached its cycle peak in March of 2019 and experienced a significant decline in 2020 due to the recession and pandemic. In fact, the unemployment rate for

I&M's Indiana territory went from 2.3% in March of 2019 to a high of 10.6% in November of 2020, or a total loss of just over 77,000 jobs in the I&M-IN territory.

Figure CMB-6. I&M-IN Non-Farm Employment Forecast

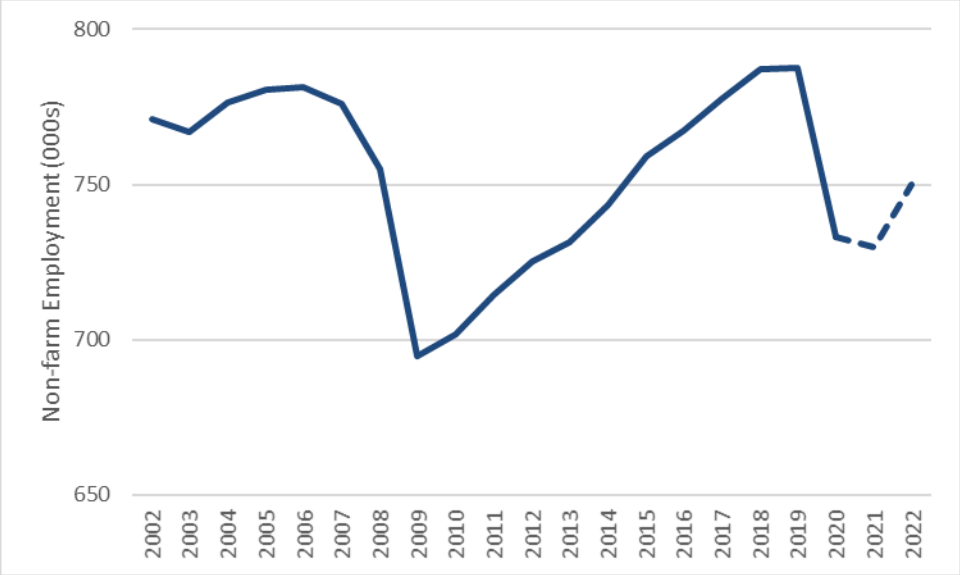


Figure CMB-6 also illustrates that the job loss from the 2020 recession was about two-thirds of the size of the job loss from the Great Recession in 2007-09.

It took approximately 12 years for non-farm employment to reach its pre-recession levels after the Great Recession. While this recovery may not take as long to reach pre-recession levels, it is not expected to be at the pre-recession levels by the end of the Test Year.

Q47. Do you know how the Company's projected recovery compares with other independent energy projections?

It is consistent with most projections I have reviewed in my role as the Director of Economic Forecasting.

For example, the US EIA recently published its Annual Energy Outlook 2021 report. When describing its Reference Case, the report states:

> *The 2020 downturn in the U.S. economy stems from a series of demand shocks, both direct and indirect, that have resulted in large part from responses to the COVID-19 pandemic. Demand for energy delivered to the four U.S. end-use sectors (residential, commercial, transportation, and industrial) decreased to 90% of its 2019 level in 2020; a steeper decline than seen in real GDP.*
>
> *Compared with the financial crisis of 2008, the COVID-19-related decline in the total demand for delivered energy is about 70% larger. In the AEO2021 Reference case, EIA projects that U.S. energy demand takes until 2029 to return to 2019 levels."*[12]

Q48. How did the COVID-19 pandemic and recession change the normalized load growth by class for the I&M-Indiana retail jurisdiction?

It caused an increase in Residential sales growth that was more than offset by lower sales in the Commercial and Industrial classes. Since this recession was coupled with a pandemic that required extraordinary measures to address the public health emergency, the traditional response by class was disrupted.

The stay-at-home order required all non-essential businesses to temporarily shut down or allow employees to work from home, causing electricity consumption to change by class. In other words, electricity usage by Commercial businesses fell while Residential usage increased as people spent more time at home.

[12] US Energy Information Administration (EIA) *Annual Energy Outlook for 2021 with projections to 2050 Narrative.* Pg. 4. Published February 3, 2021 https://www.eia.gov/outlooks/aeo/

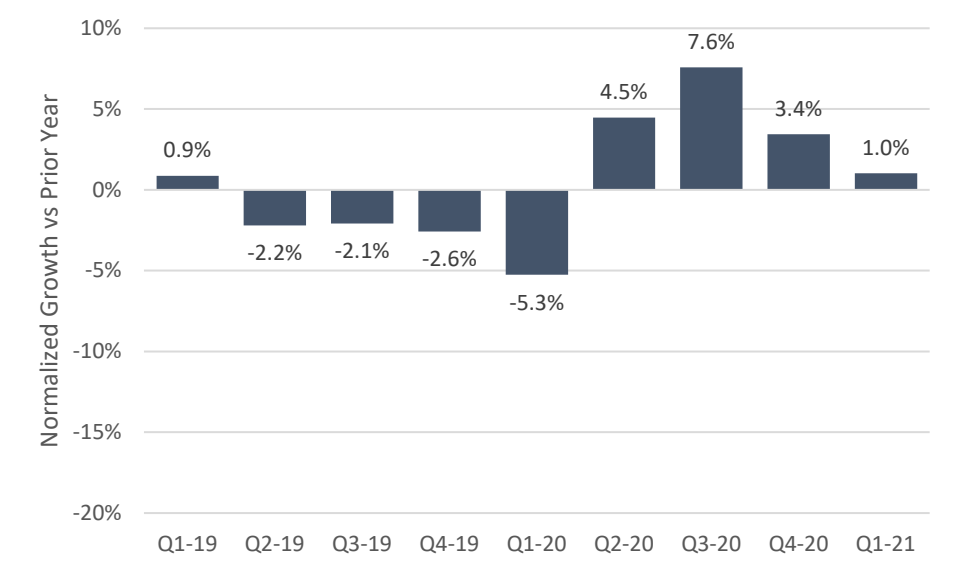
Q49. How did Residential consumption change in I&M's Indiana jurisdiction since the recession and pandemic began?

Figure CMB-7 illustrates I&M's Indiana service territory experienced a significant increase in normalized Residential sales growth starting in Q2-20.

I would like to point out, however, that as the economy has since reopened and the restrictions on businesses have lessened, the growth in Residential sales have also moderated. While we expect some office workers to remain in a work-from-home arrangement indefinitely, we also recognize not every employment sector is suited for a work-from-home arrangement.

As a result, the growth in normalized Residential sales is expected to moderate as the service territory continues to recover from this recession.

Figure CMB-7. I&M-IN Normalized Residential GWh Growth



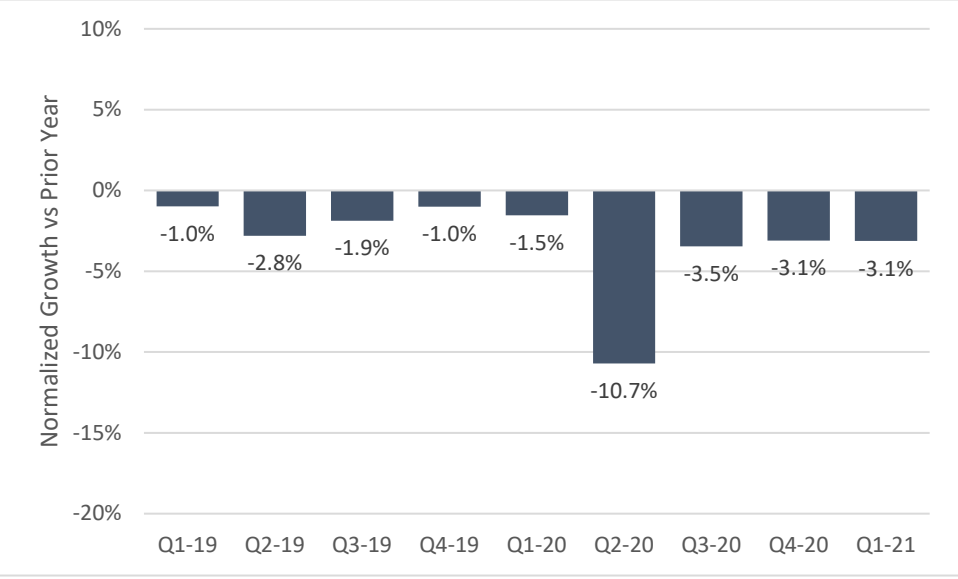
Q50. How did Commercial class consumption change in I&M's Indiana jurisdiction since the recession and pandemic began?

Not surprisingly, there was a dramatic decrease in Commercial sales since the recession and pandemic began.

Figure CMB-8 illustrates the significant decrease in weather-normalized Commercial sales in Q2-20, followed by gradual improvement since then. The use of the word *improvement* should not be confused with *growth*. While the subsequent quarters do show an improvement from the Q2-20 (i.e. less negative), the growth rate is still negative which means I&M's Indiana Commercial class sales were still contracting through the end of 2020.

Figure CMB-8 also illustrates that I&M-IN Commercial sales were already in a state of decline before the pandemic and recession began. It is important to recognize this trend when interpreting the slower Commercial recovery projected in the Test Year forecast.

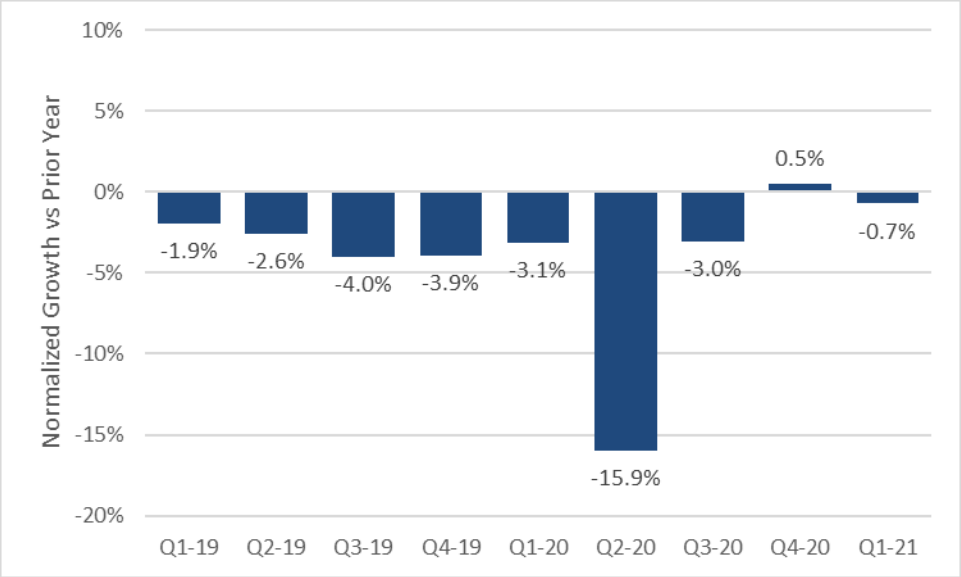
Figure CMB-8. I&M-IN Normalized Commercial GWh Growth



Q51. How did Industrial class consumption change in I&M's Indiana jurisdiction since the recession and pandemic began?

Figure CMB-9 illustrates that I&M's industrial sales were also already in a state of decline before the recession and pandemic converged. Those sales experienced their biggest decline in Q2-20, but have since started to recover. In fact, Industrial sales posted their first positive year-over-year growth quarter in Q4-20. This recovery is projected to continue and can explain why the Test Year Industrial sales are expected to exceed the 2020 levels as described in Section III above.

Figure CMB-9. I&M-IN Industrial GWh Growth



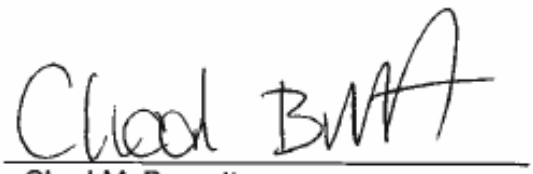
Q52. Does this conclude your pre-filed verified direct testimony?

Yes.

VERIFICATION

I, Chad M. Burnett, Director of Economic Forecasting for American Electric Power Service Corporation, affirm under penalties of perjury that the foregoing representations are true and correct to the best of my knowledge, information, and belief.

Date: 06/29/2021



Chad M. Burnett

I&M- Indiana Jurisdiction
Forward Looking Test Year Ending December 2022
Energy Sales (MWh)

	Jan-22	Feb-22	Mar-22	Apr-22	May-22	Jun-22	Jul-22	Aug-22	Sep-22	Oct-22	Nov-22	Dec-22	**Total**
Residential	486,912	402,385	397,471	271,122	277,748	314,836	439,185	392,781	315,389	273,148	302,963	386,033	**4,259,973**
Commercial	311,799	258,427	293,139	240,079	295,357	307,471	354,700	317,257	301,499	299,930	286,374	255,722	**3,521,756**
Industrial	545,093	527,113	584,039	534,914	593,396	576,070	591,047	582,172	560,029	573,807	566,361	524,224	**6,758,265**
Other Retail	5,960	4,832	4,822	4,215	3,798	3,407	3,713	4,098	4,392	5,083	5,448	5,670	**55,439**
Total IN Retail	*1,349,764*	*1,192,757*	*1,279,471*	*1,050,331*	*1,170,299*	*1,201,784*	*1,388,644*	*1,296,308*	*1,181,309*	*1,151,969*	*1,161,146*	*1,171,648*	***14,595,432***
Total MI Retail	*254,738*	*223,281*	*232,297*	*192,100*	*203,504*	*221,238*	*272,083*	*252,800*	*219,286*	*206,095*	*208,758*	*222,111*	***2,708,291***
Total Wholesale	*257,793*	*234,434*	*241,311*	*227,632*	*236,555*	*240,173*	*257,464*	*264,751*	*234,746*	*237,117*	*235,138*	*254,808*	**2,921,922**
Total I&M	*1,862,295*	*1,650,472*	*1,753,079*	*1,470,063*	*1,610,359*	*1,663,195*	*1,918,192*	*1,813,859*	*1,635,341*	*1,595,181*	*1,605,042*	*1,648,568*	***20,225,645***

Customer Counts

	Jan-22	Feb-22	Mar-22	Apr-22	May-22	Jun-22	Jul-22	Aug-22	Sep-22	Oct-22	Nov-22	Dec-22	**Avg Customers**
Residential	411,483	411,294	411,346	410,377	409,757	409,518	409,372	409,586	409,673	409,731	410,182	410,858	**410,265**
Commercial	53,758	53,792	53,824	53,857	53,889	53,920	53,950	53,978	54,005	54,031	54,056	54,079	**53,928**
Industrial	4,051	4,051	4,051	4,051	4,051	4,051	4,050	4,050	4,050	4,050	4,050	4,050	**4,051**
Other Retail	1,564	1,564	1,564	1,564	1,564	1,564	1,564	1,564	1,564	1,564	1,564	1,564	**1,564**
Total IN Retail	*470,856*	*470,701*	*470,785*	*469,849*	*469,261*	*469,053*	*468,936*	*469,178*	*469,292*	*469,376*	*469,852*	*470,551*	***469,808***
Total MI Retail	*129,627*	*129,651*	*129,800*	*129,717*	*129,762*	*129,872*	*129,867*	*129,977*	*129,902*	*129,979*	*129,964*	*129,850*	**129,831**
Total I&M	*600,483*	*600,352*	*600,585*	*599,566*	*599,023*	*598,925*	*598,803*	*599,155*	*599,194*	*599,355*	*599,816*	*600,401*	***599,638***

Peak Demand

	Jan-22	Feb-22	Mar-22	Apr-22	May-22	Jun-22	Jul-22	Aug-22	Sep-22	Oct-22	Nov-22	Dec-22	**Annual Max**
I&M System Peak Demand (MW)	3,283	3,163	2,903	2,992	3,115	3,351	3,835	3,898	3,656	3,046	2,839	3,072	**3,898**