I&M Exhibit: _____

INDIANA MICHIGAN POWER COMPANY

PRE-FILED VERIFIED DIRECT TESTIMONY

OF

DANIEL M. WHITE

Cause No. 45933

Content

DIRECT TESTIMONY OF DANIEL M. WHITE
ON BEHALF OF
INDIANA MICHIGAN POWER COMPANY

I. Introduction of Witness

Q1. Please state your name and business address.

My name is Daniel M. White, and my business address is 1 Riverside Plaza Columbus, OH 43215.

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

I am employed by American Electric Power Service Corporation (AEPSC) as the Managing Director of Economics and Supply 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. Briefly describe your educational background and professional experience.

I received a Bachelor of Business Administration Degree in both Finance and International Business from New Mexico State University in 2006. In 2008 I received a Master of Arts Degree in Economics, also from New Mexico State University.

I have worked as an economist since 2008 when I served as a financial economist for the New Mexico Legislative Finance Committee. In that role I forecasted revenues and advised policymakers on a wide range of public policy issues concentrated around economic development, public investment, and debt management.

In 2010 I joined Moody's Analytics as an economic forecaster and ultimately served in a variety of roles including Director of Public Sector Research, Director of Economic Consulting, and Senior Director of Economic Research.

In March of 2023 I joined AEPSC as Managing Director of Economics and Supply Forecasting.

Additionally, since 2016 I have taught classes as a member of the economics faculty at Villanova University.

Q4. What are your responsibilities as Managing Director of Economics and Supply Forecasting?

I serve as the company's Chief Economist and manage teams responsible for our economic, load, and supply cost forecasting. Those forecasts are provided to each of the AEP operating companies, including I&M.

Q5. Have you previously testified before any regulatory commissions?

I have testified in front of numerous legislative and other governmental bodies around economic and revenue forecasting, but not in front of a regulatory commission.

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 2024.

Q7. How is your testimony organized?

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

Q8. Are you sponsoring any attachments?

Yes, I am sponsoring the following attachments:

- Attachment DW-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 described below.

Q9. Are you sponsoring any workpapers?

Yes, I am sponsoring the following workpapers:

- Confidential WP-DW-1: Long-Term Price Forecast, Large Industrial and Wholesale Energy Models and Input Data
- WP-DW-2: Model Equations, Results of Statistical Tests and Input Data Sets Pertaining to the 2022 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?

The attachment and workpapers I sponsor were prepared and assembled before I joined AEPSC by teams that I now supervise. However, I have since reviewed and approved these documents.

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 88 GWh higher than the normalized actuals in 2022. This includes an increase in Industrial class sales that is partially offset by lower Commercial and Residential class sales. The Test Year forecast reflects an economy dealing with a tight labor market as well as persistent inflation, and a shift from expansionary to contractionary monetary policy. Inflation (as measured by year over year growth in the Consumer Price Index: Urban Consumer – All Items) reached a high of 8.9% in June 2022. The pace of inflation has slowed since the Federal Reserve began its aggressive monetary tightening policy. However, higher costs and wages have become more entrenched in overall consumer prices which will cause inflation to continue at levels above the Federal Reserve's target into at least 2024.

III. Test Year Forecast Results

Q12. What are the Test Year load, customer, and peak demand projections?

Attachment DW-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 in 2024, we are projecting 14,925 GWh with an average customer count of 479,899 and an annual peak demand of 2,889 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 energy is 20,706 GWh with an average customer count of 611,486 and an annual peak demand of 3,981 MW.

Q13. Do the Test Year load, customer, and peak demand projections contain any proforma adjustments?

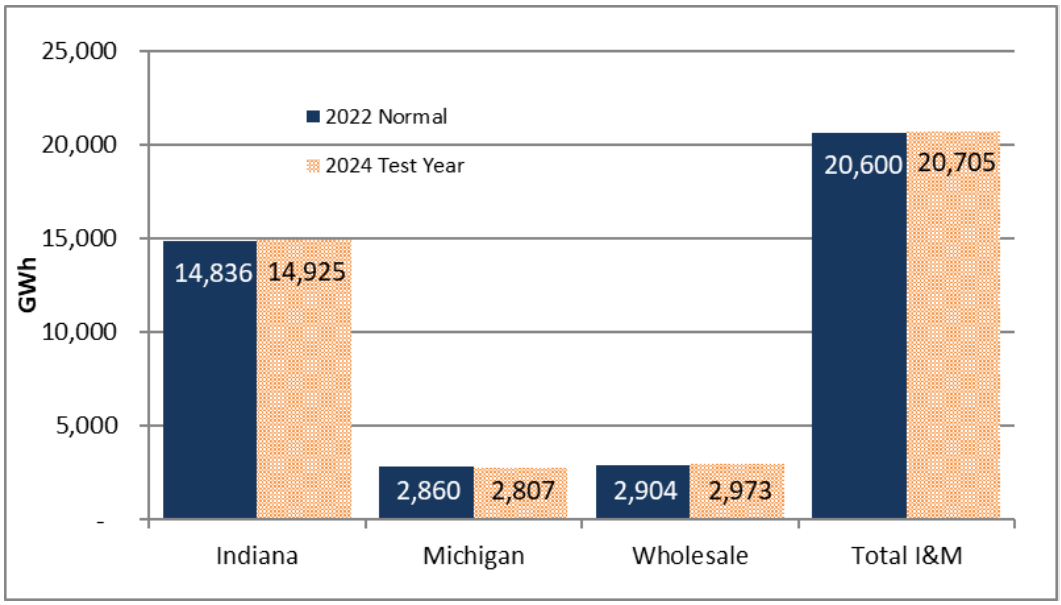
No, the Test Year forecast does not contain any proforma adjustments. However, after the Test Year forecast was completed, there was a reclassification of load related to the transfer of a customer from wholesale service to Indiana retail service. Company witness Seger-Lawson discusses this transfer of service in more detail while Company witnesses Fischer and Duncan discuss how the load reclassification from wholesale load to IN Retail load was treated in this case.

Q14. How do the forecasted energy sales for the Test Year compare to actuals in 2022 by jurisdiction?

Figure DW-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 105 GWh above the weather normalized 2022 actual sales.

The increase in the Test Year sales is coming from the 88 GWh increase in Indiana retail sales. This gain is offset by a 53 GWh decrease in Michigan retail sales and a 69 GWh increase in the Wholesale class load.

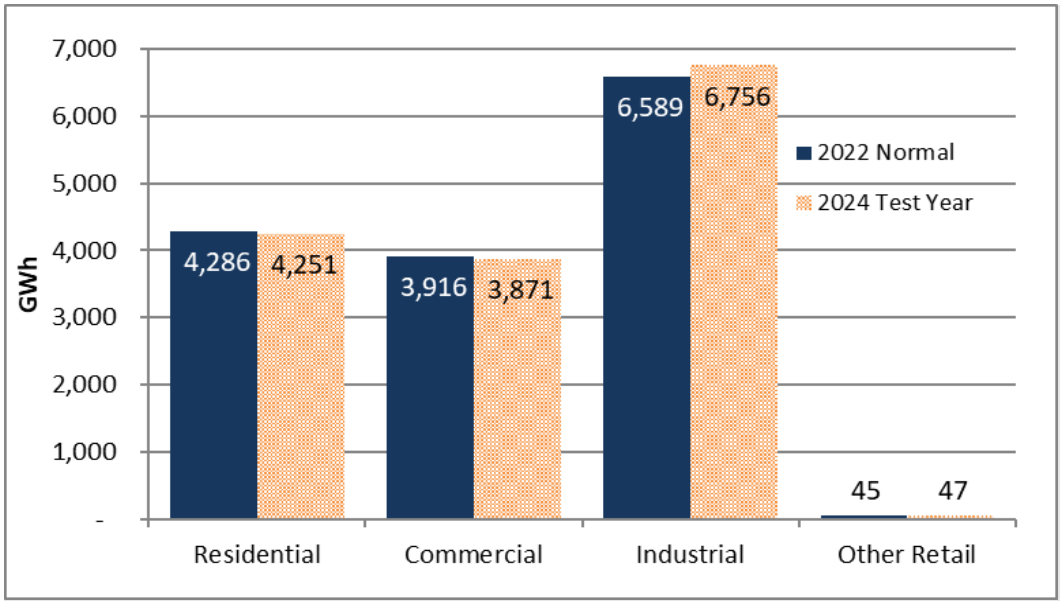
Figure DW-1. Comparison of 2022 Weather Normalized Actuals to Forecasted Test Year (GWh by Jurisdiction)



Q15. How do the forecasted energy sales for the Test Year compare to actuals in 2022 by class for the Indiana jurisdiction?

In total, the forecasted Test Year sales are up 88 GWh compared to the normalized actuals in 2022. *Figure DW-2* shows the forecast comparison for the Indiana retail jurisdiction by class. The increase in Industrial class sales (167 GWh) is being partially offset by lower Commercial and Residential class sales (down approximately 45 GWh and 35 GWh, respectively) compared to the 2022 weather normalized actuals.

Figure DW-2. Comparison of 2022 Weather Normalized Actuals to Forecasted Test Year (GWh by class, Indiana)



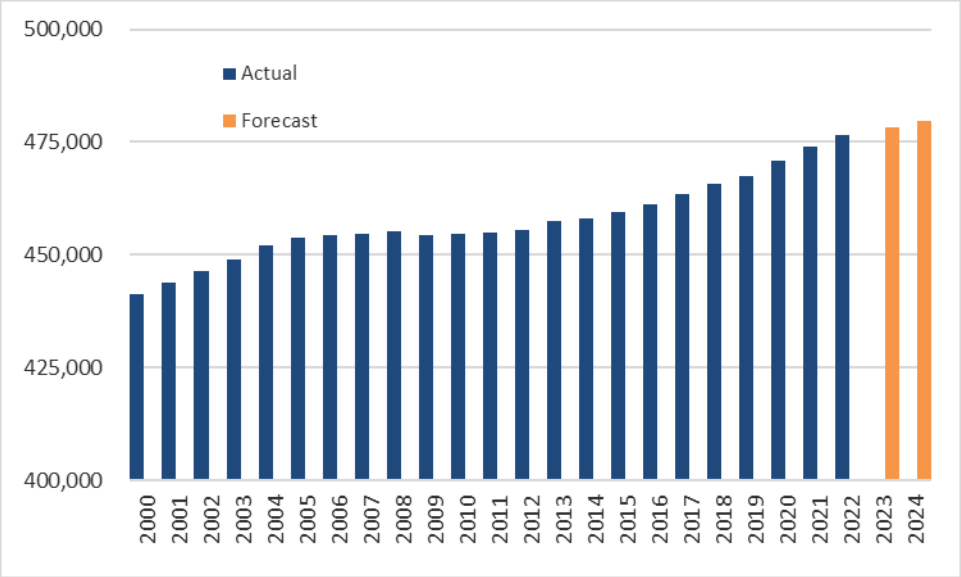
Q16. Please summarize I&M's customer forecast for the Indiana jurisdiction.

Overall, the customer count for the Indiana jurisdiction was forecasted to grow at a pace less than that of the previous two years. This is in line with the rate of

growth experienced prior to the COVID-19 pandemic and consistent with the demographic and economic projections that are discussed in Section IV below.

Figure DW-3 shows how the forecasted customer count aligns with the historical data series for I&M's Indiana jurisdiction.

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



Compared to the 2022 actuals, I&M's forecasted customer count for 2024 is approximately 3,056 higher than the average customer count in 2022. As a result of the moratorium on disconnects that was implemented in 2020, customer counts were temporarily inflated as the Company suspended its normal operating procedures for counting customers as directed by the IURC. Since the moratorium was lifted, customer count growth has slowed. The Test Year forecast in this case reflects a continuation of that trend.

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

I&M's Total Company forecasted peak demand for the Test Year is 3,981 MW in July of 2024. By comparison, I&M's actual peak demand in 2022 was 3,850 MW

on June 21, 2022. The weather normalized peak estimate for 2022 was 3,978 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. The normal temperature for any given day is determined by a rolling 30-year average as I will discuss below. In 2022, temperatures were cooler than normal for the peak day, so the actual peak came in lower 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, Company witnesses Duncan and Small use the load forecast in the jurisdictional and the class cost study allocations, respectively.

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. Since the load forecast is completed early in the planning process, we monitor its performance during the last half of the year to ensure accuracy is maintained. 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 originally completed in May 2022 using actual data through December 2021. However, as part of our normal monitoring process, we noticed some slight forecast variance trends developing over the first seven months of 2022. The most impactful trend was within the Industrial sector which was experiencing a slower near-term economic recovery than was previously assumed. Smaller upward revisions were made to both the Residential and Commercial classes. We alerted I&M's management team of the trend and recommended an overall downward adjustment to the load forecast. The load forecast presented as the Test Year in this proceeding is the May 2022 forecast that includes the update that was made in August 2022. The load forecast presented as the Test Year in this proceeding is the same vintage that is being used for I&M's 2023 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?

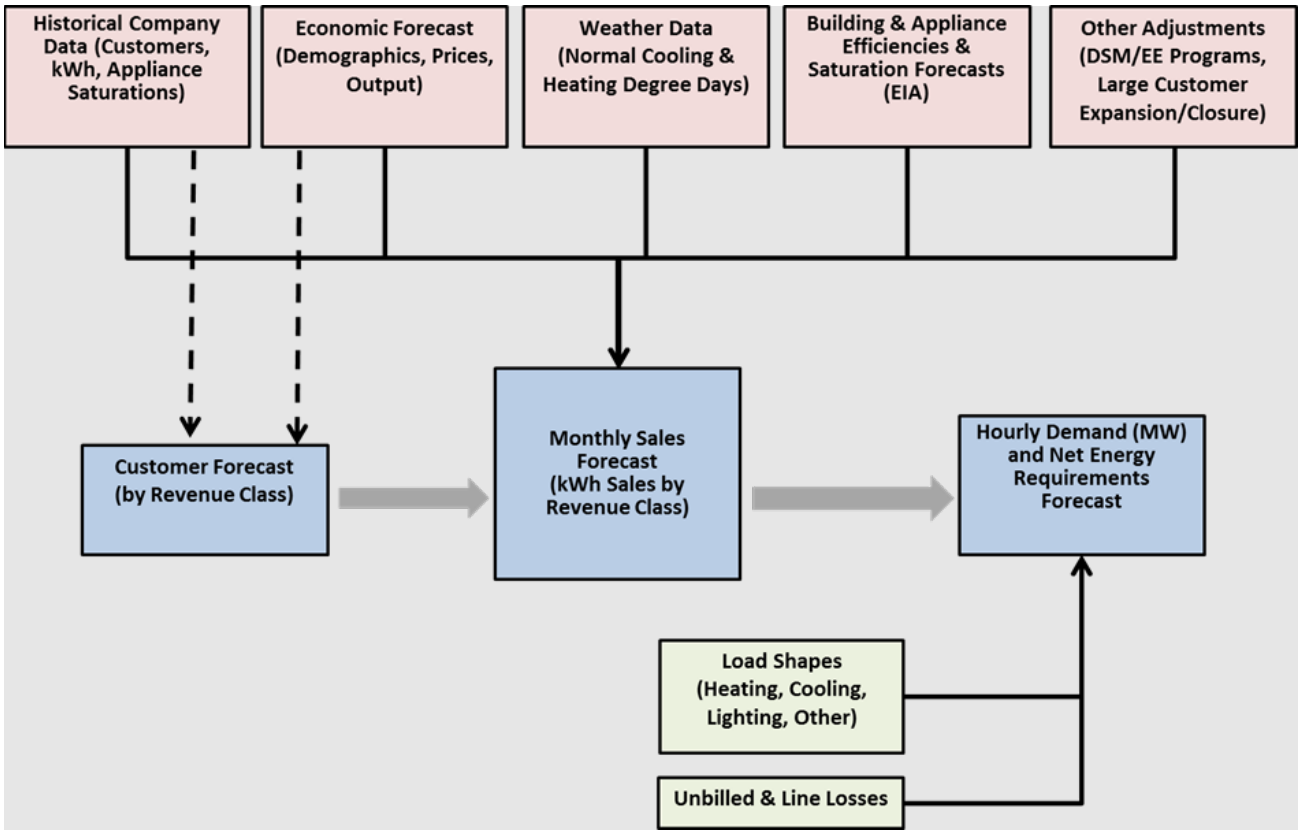
The primary objective when determining how to model the Company's load forecast is to utilize models that will accurately predict future electricity consumption. There are many different modeling techniques available, and the Company employs a balanced approach to modeling. In other words, we select

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 DW-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 DW-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 (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 2022 vintage forecast presented in this proceeding was July 2022. Because the 2024 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 and the Energy Independence and Security Act of 2007, 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 sales 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 economic 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 (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 by census region.

The Demand Side Management (DSM)/Energy Efficiency assumptions come from Company reports filed with the IURC (i.e. Energy Efficiency Portfolio Plan and Integrated Resource Plan (IRP)). 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 three to four 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 DSM and Energy Efficiency programs that are approved by the Commission or for the longer term, contained within the Company's IRP.

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) within the load forecast?

As part of the normal forecast routine, the Economic Forecasting team reaches 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 (e.g. the National Oceanic and Atmospheric Administration, Moody's Analytics, the U.S. 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 Nos. 45235 and 45576?

Yes. The load forecast methodology has not changed from what was filed in I&M's two previous base rate cases (Cause No. 45235 and 45576).

Q37. Did the Commission make any findings or statements about the Company's load forecast in its Final Orders from those cases?

Yes. The Commission did make specific findings in Cause No. 45235. In its findings regarding the load forecast, the Commission's Final Order states that it found "I&M's test year forecast to be reasonable."[1] The Commission also approved a settlement agreement in Cause No. 45576, which I understand is not precedential,

[1] IURC Final Order in Cause No. 45235, Section 12 (Revenue Forecast) Part 4 (Discussion and Findings) Pg.77.

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

Yes. The same methodology is used in every filing where the Company's projection of kWh sales is used to set the rates. The most recent at the time of the filing of this testimony being Cause No. 38702, FAC 90.

Q39. Is this also the same load forecast methodology that was used in the Company's most recently filed 2021 IRP?

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 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 used in I&M's IRP?

Yes. In Indiana, IURC staff reviewed the Company's 2018-19 IRP and published their assessment of the load forecast methodology in the final Director's Report.[2] 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." (Page 8)

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:

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

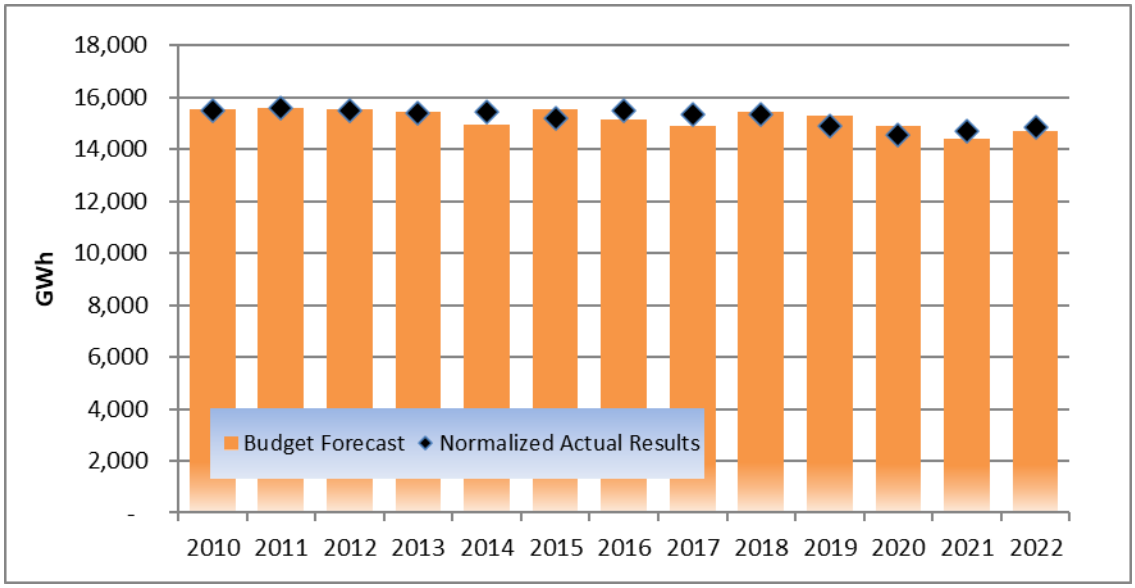
- the Company's "energy sales and peak demand forecasts [were] consistent with other load growth projections in the region" (at 5),
- "the Company's forecasting methodology with respect to weather aligns with industry norms" (at 7), and
- "the load forecasts used by the Company in the IRP [are] reasonable" (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 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 0.2% on a weather-normalized basis, as shown in *Figure DW-5*.

Figure DW-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. 45576) that used a forecasted 2022 test year?

The final load forecast that was filed in Cause No. 45576 predicted I&M's total retail sales in Indiana would be 14,595 GWh in 2022. The weather-normalized results for 2022 came in at 14,837 GWh, which means the weather normalized actual results were 1.7% higher than the load forecast that was used to develop the billing determinants.

Q43. What caused the normalized actual results in 2022 to come in higher than the load forecast that was used to develop the billing determinants in Cause No. 45576?

Primarily, sales to the commercial sector came in higher than expected. Residential sales were slightly higher than had been expected, while industrial sales were slightly lower than forecasted.

The US economy went into an unprecedented recession in February 2020 as a result of the COVID-19 pandemic. That recession in 2020 was the shortest on record, but also the steepest since the Great Depression.[3] By May 2020, the US economy had already hit the trough of the economic cycle and had started on the road to recovery. The load forecast used in Cause No. 45576 assumed a recovery for both the US economy and that of I&M's Indiana service territory.[4] However, for the I&M Indiana service territory, the economic decline was not quite as deep as assumed in the previous forecast and the recovery proved to be faster. In Cause No. 45576, gross regional product for the Indiana jurisdiction of I&M's service territory was expected to grow by 3.9% from 2020 to 2022. During that period, gross regional product actually grew by 4.9%. Likewise, in Cause No. 45576, I&M Indiana's total non-farm employment was

[3] NBER Business Cycle Dating Committee Announcement July 19, 2021 (https://www.nber.org/cycles/main.html).

[4] See Company witness Burnett's direct testimony (pgs 22-24) in Cause No. 45576.

expected to grow by 1.1% from 2020 to 2022 as the economy opened back up and businesses re-opened. In fact, the service territory experienced growth in total non-farm employment of 3.3%.

V. Drivers of the Test Year Load Forecast

Q44. Please summarize the results of the economic forecast for I&M's Indiana service territory.

Moody's Analytics projects population within I&M's Indiana service territory will grow at an average annual rate of 0.1% per year from 2022 to 2024, which is slightly slower than 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 2.3% per year through 2022, which is better than the 1.2% per year growth from the past decade but slower than the initial recession-recovery rate of 4.9% over the period of 2020 to 2022. Finally, non-farm employment is expected to increase at an average annual rate of 1.4% per year compared to the 0.5% per year growth over the past decade. This is also slower than the early recession-recovery rate of 3.3%.

Q45. How has normalized load growth for the I&M-Indiana retail jurisdiction recovered since the COVID-19 pandemic and recession?

The recovery from the COVID-19 pandemic and resulting recession has varied across the different classes of normalized retail sales within the I&M-Indiana service territory. Soon after the pandemic hit, on 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. As a result of these actions, Residential sales increased, but were more than offset by lower sales in the Commercial

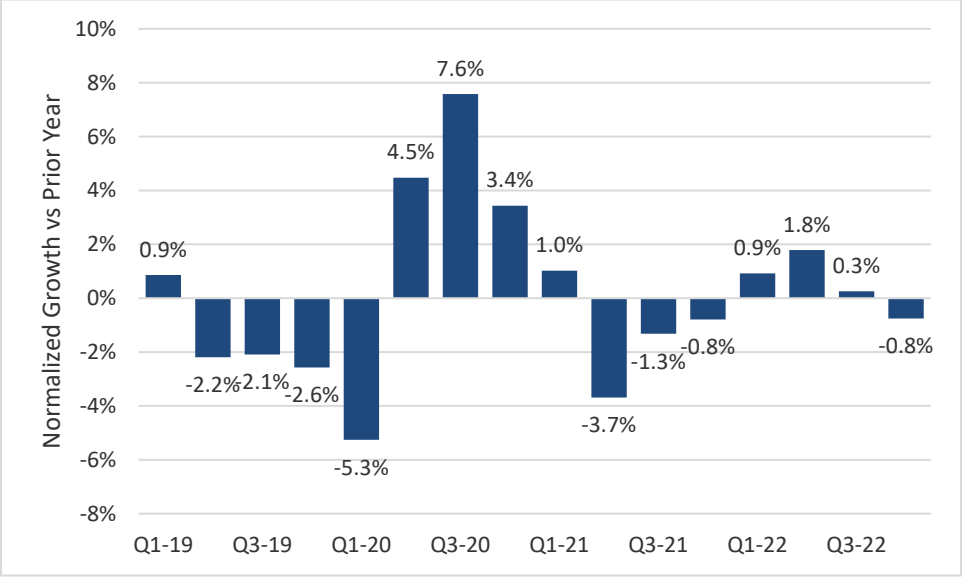
and Industrial classes. As conditions improved and the stay-at-home provision was lifted, the economy began to re-open. Reactions by Residential and Industrial sales were less prolonged than those in the Commercial class.

Q46. What has the recovery looked like, as reflected in Residential normalized sales within I&M's Indiana jurisdiction, since the recession and pandemic ended?

Figure DW-6 illustrates the recovery of normalized Residential sales within I&M's Indiana service territory. As a result of the stay-at-home provision in Indiana, Residential sales reached a maximum year-over-year growth rate of 7.6% in Q3-20. After that, growth began to slow and by Q2-21, Residential sales started to decline in comparison to prior year levels.

By the end of 2022, normalized Residential sales had returned to levels comparable with those in Q1-19.

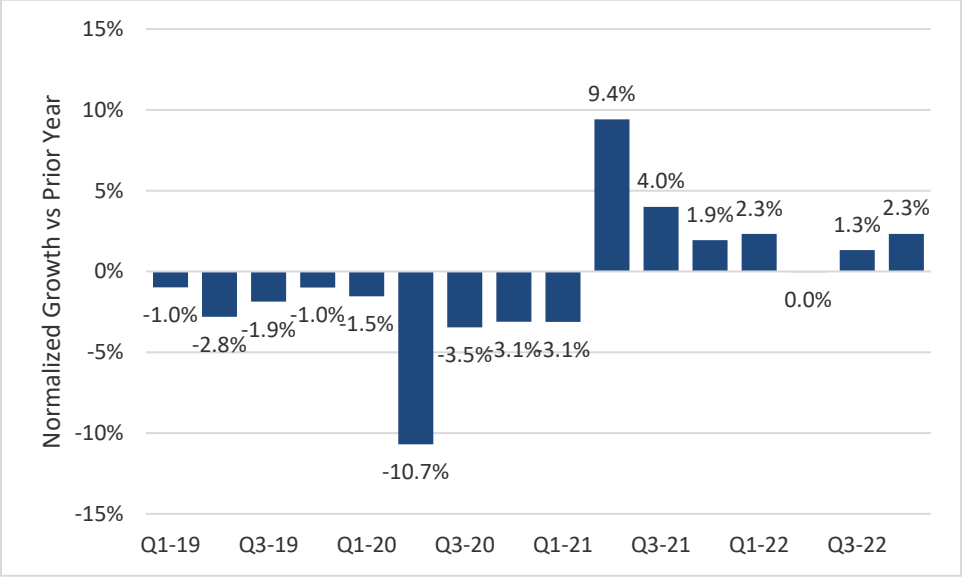
Figure DW-6. I&M-IN Normalized Residential GWh Growth Through Q4-22



Q47. What has the recovery looked like, as reflected in Commercial normalized sales within I&M's Indiana jurisdiction, since the recession and pandemic ended?

Figure DW-7 illustrates the significant decrease in weather-normalized Commercial sales in Q2-20, as much of Indiana's economy was effectively closed down, followed by the gradual improvement as the economy began the process of opening back up. In Q2-20, Commercial sales declined by 10.7% from the prior year level. Re-opening the economy took some time. Commercial sales did not begin to attain year-over-year growth until Q2-21. However, slowly improving supply chains and pent up consumer demand have allowed the recovery within the Commercial sector to outlast those of the Residential and Industrial sectors. With the exception of Q2-22, normalized Commercial sales have experienced year-over-year growth in every quarter since the recovery began in Q2-21.

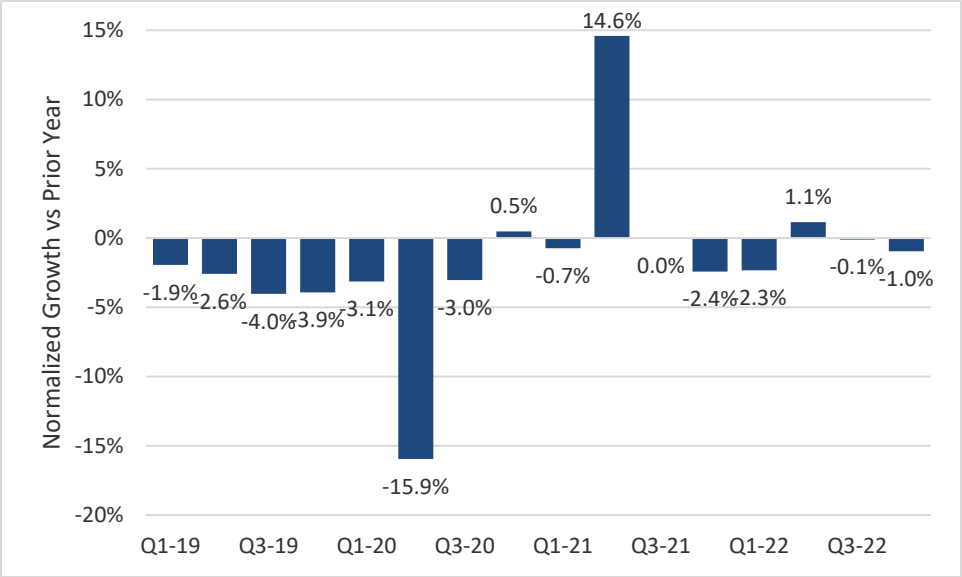
Figure DW-7. I&M-IN Normalized Commercial GWh Growth



Q48. What has the recovery looked like, as reflected in Industrial sales within I&M's Indiana jurisdiction, since the recession and pandemic ended?

Figure DW-8 illustrates that I&M's industrial sales, which were also already in a state of decline before the recession and pandemic converged, experienced their biggest decline of 15.9% in Q2-20. Industrial sales began to recover at the same time Commercial sales did. However, the recovery was much less prolonged than that of the Commercial sector. Industrial sales rebounded by 14.6% in Q2-21 but have only experienced one additional quarter of year-over-year growth since then. Industrial sales remain below their pre-pandemic 2019 level.

Figure DW-8. I&M-IN Industrial GWh Growth



Q49. Does this conclude your pre-filed verified direct testimony?

Yes.

VERIFICATION

I, Daniel M. White, Managing Director of Economics and Supply 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: 8/8/23

Daniel M. White

I&M- Indiana Jurisdiction
Forward Looking Test Year Ending December 2024
Energy Sales (MWh)

	Jan-24	Feb-24	Mar-24	Apr-24	May-24	Jun-24	Jul-24	Aug-24	Sep-24	Oct-24	Nov-24	Dec-24	**Total**
Residential	456,672	423,774	356,109	281,161	303,745	338,974	422,105	425,849	286,376	291,749	299,692	364,782	**4,250,989**
Commercial	323,718	313,198	299,505	273,825	333,608	354,840	365,743	372,035	298,578	335,587	313,961	285,924	**3,870,519**
Industrial	536,948	547,005	566,208	539,602	603,912	590,550	570,527	597,034	533,535	578,134	566,828	525,888	**6,756,171**
Other Retail	5,030	4,180	4,079	3,606	3,288	2,959	3,132	3,532	3,680	4,359	4,628	4,826	**47,298**
Total IN Retail	*1,322,367*	*1,288,157*	*1,225,902*	*1,098,193*	*1,244,553*	*1,287,323*	*1,361,507*	*1,398,450*	*1,122,168*	*1,209,829*	*1,185,108*	*1,181,420*	***14,924,977***
Total MI Retail	*253,497*	*243,688*	*227,063*	*205,188*	*222,578*	*241,341*	*259,997*	*275,628*	*212,768*	*218,274*	*220,908*	*226,484*	***2,807,416***
Total Wholesale	*262,273*	*243,321*	*245,965*	*232,067*	*240,746*	*244,381*	*260,623*	*267,914*	*238,413*	*241,383*	*238,617*	*257,477*	**2,973,178**
Total I&M	*1,838,137*	*1,775,166*	*1,698,930*	*1,535,448*	*1,707,877*	*1,773,045*	*1,882,126*	*1,941,991*	*1,573,349*	*1,669,486*	*1,644,634*	*1,665,380*	***20,705,571***

Customer Counts

	Jan-24	Feb-24	Mar-24	Apr-24	May-24	Jun-24	Jul-24	Aug-24	Sep-24	Oct-24	Nov-24	Dec-24	**Avg Customers**
Residential	420,454	420,383	420,532	419,684	419,169	419,030	418,966	419,248	419,423	419,526	420,011	420,757	**419,765**
Commercial	54,471	54,488	54,505	54,522	54,538	54,554	54,570	54,586	54,602	54,617	54,632	54,647	**54,561**
Industrial	4,018	4,018	4,018	4,018	4,018	4,018	4,017	4,017	4,017	4,017	4,017	4,017	**4,018**
Other Retail	1,555	1,555	1,555	1,555	1,555	1,555	1,555	1,555	1,555	1,555	1,555	1,555	**1,555**
Total IN Retail	*480,498*	*525,767*	*525,963*	*525,162*	*524,693*	*524,601*	*524,583*	*524,912*	*525,133*	*525,281*	*525,813*	*526,604*	***479,899***
Total MI Retail	*131,464*	*131,437*	*131,585*	*131,472*	*131,515*	*131,625*	*131,615*	*131,712*	*131,642*	*131,696*	*131,684*	*131,599*	**131,587**
Total I&M	*611,961*	*657,204*	*657,547*	*656,634*	*656,208*	*656,226*	*656,198*	*656,624*	*656,775*	*656,978*	*657,497*	*658,203*	***611,486***

Peak Demand

	Jan-24	Feb-24	Mar-24	Apr-24	May-24	Jun-24	Jul-24	Aug-24	Sep-24	Oct-24	Nov-24	Dec-24	**Annual Max**
I&M System Peak Demand (MW)	3,393	3,293	2,901	3,003	3,135	3,606	3,981	3,844	3,300	3,236	2,891	3,043	**3,981**