Indiana Michigan Power Company's 2024 Indiana Integrated Resource Plan

Stakeholder Workshop #4

March 5, 2025

Table of Contents

Welcome & Introductions 2

Review of 2024 IRP Process 2

Candidate Portfolio Selection 4

Risk Analysis Method 5

Preferred Portfolio Development 6

Q&A Related to Preferred Portfolio Development 7

Results Summary & Comparison 11

Q&A Related to Results Summary 14

Short-Term Action Plan 17

Q&A Related to Performance Indicators & Short-Term Action Plan 17

Open Discussion 18

Q&A Related to Open Discussion 18

Welcome & Introductions

Kayla Zellers covered Slides 1-2.

Kayla Zellers, Director of Resource Planning at American Electric Power Company (AEP), called the meeting to order at 1:00 PM on March 5, 2025. Kayla welcomed participants to Stakeholder Workshop 4 for I&M's 2024 Indiana Integrated Resource Plan and introduced AEP and I&M team members on the call.

Andrew Williamson covered Slide 2.

Andrew Williamson welcomed stakeholders to Stakeholder Meeting 4. Andrew reiterated that this IRP is a collaboration between I&M and its stakeholders, and that feedback, questions and comments are encouraged during this meeting and at any time during the process.

Andrew then introduced the remainder of the I&M Leadership team present at the meeting before handing it back over to Kayla.

Kayla presented an overview of the meeting's contents, including Candidate Portfolios, Risk Analysis and the Preferred Portfolio development.

Kayla introduced Brian Despard, Senior Project Manager at 1898 & Co.

Brian Despard Covered Slides 4-5.

Brian Despard discussed stakeholder participation, stating that questions would be allowed anytime during the presentation via Microsoft Teams' "Raise Hand" and "Chat" functions. Any questions regarding the Indiana IRP can be submitted to I&MIRP@aep.com anytime. All questions and answers recorded during this meeting (or shortly after, via email) have been provided within these minutes.

Finally, Brian presented guidelines for constructive participation.

Review of 2024 IRP Process

Kayla Zellers covered Slides 6-9.

Kayla reviewed the IRP process with the visual presented on slide 6, which was also shared in Stakeholder Meeting 1. She noted that the visual has been slightly adjusted since

Stakeholder Meeting 1 to reflect a more accurate representation of the IRP process. When comparing the presentations, a few small differences can be noticed.

On the right side of the slide, Kayla walked through the steps. In the first stakeholder meeting, the IRP objectives were defined, aligning with the Five Pillars of Indiana Energy policy. In the second meeting, key modeling inputs and assumptions were discussed. During Stakeholder Meetings 3A and 3B, optimized portfolios were reviewed. In the current meeting, steps 4 and 5 will be covered, including a review of the Risk Analysis, the Preferred Portfolio, and the Short-Term Action Plan.

In the lower portion of the slide, Kayla highlighted that the IRP stakeholders have had opportunities throughout the process to provide feedback. Since the first stakeholder meeting roughly seven months ago, the stakeholder group has provided significant input, which has been considered in the IRP.

Kayla presented a timeline of the IRP engagement on slide 7 with the stakeholder group. The timeline includes Stakeholder Meetings, Technical Conferences, and Office Hours which were held for technical stakeholders to ask modeling-specific questions.

The first public stakeholder meeting in June kicked off the IRP, discussing objectives, assumptions, scenarios, and proposed portfolio metrics. Smaller group sessions in August and September with hyperscale customers and the technical stakeholder group provided initial feedback, such as including the Energy Community tax credit bonus alongside the investment tax credit. This feedback was incorporated into the IRP.

The second public stakeholder meeting in September furthered the discussion on inputs and key modeling assumptions. Following this, portfolio modeling efforts began and extensive modeling for different portfolios was completed.

In early October, stakeholder feedback on inputs and assumptions was received, particularly regarding the cost and build limit assumptions for resources. These were re-evaluated and updated in Stakeholder Meeting 3A. Continuous evaluation of build limit assumptions led to updates to near-term build limits for wind resources. This led to two new Expanded Wind Availability Cases, which were covered in Stakeholder Meeting 3B.

Kayla discussed the Indiana-specific capacity and energy positions on slide 8. Although these visuals have been covered in the past, she emphasized their importance in showcasing the need and problem the IRP aims to address with the growing customer base.

The visuals highlight a significant capacity and energy need, specifically in the first 10 years. There is a forecasted 4 GW capacity and a 43,000 GWh energy shortfall. This immense need underpins the significant resource additions seen in all the modeled portfolios throughout the process.

Kayla reviewed with stakeholders the 15 modeled portfolios to understand resource selection under various inputs and assumptions. In all cases, natural gas resources, whether CCs or CTs, were necessary to meet the capacity obligations. However, the energy need could be met with different mixes of renewable natural gas and nuclear resources. As the 15 different cases were reviewed, time was taken to identify key attributes that were important for selecting candidate portfolios for the risk analysis.

Candidate Portfolio Selection

Kayla Zellers covered slides 10-11.

Kayla segued into the selection process of Candidate Portfolios on slide 10. This process included looking at the capacity additions and performance indicator metrics. Three Candidate Portfolios were selected to move on to the next step of Risk Analysis.

The first Candidate Portfolio selected was the Base Reference Case because this portfolio functions as an important comparison point for all the other Candidate Portfolios and the Preferred Portfolio. The Base Reference Case also had one of the lowest costs.

The Low Carbon: Transition to Objective Case was selected because this portfolio had one of the highest resource diversity values and the highest environmental sustainability results. This portfolio selected a large amount of carbon-free resources. Kayla stated that one downside to this portfolio was the affordability metric, as this portfolio showed some of the highest costs in comparison to other portfolios.

The Expanded Wind Availability (EER) was selected because it had a lower net present value and short-term growth rate compared to some of the other portfolios modeled. It had favorable resource diversity values and the second-highest environmental sustainability results. In addition, it was important to complete Risk Analysis on a portfolio that considered the EPA Section 111(b)(d) regulations.

Capacity and energy mixes were also assessed when selecting Candidate Portfolios. Kayla presented visuals showing the firm capacity and energy mixes for the years 2034 and 2044.

Examining the firm capacity mix, the Low Carbon: Transition to Objective and Expanded Wind Availability (EER) Cases have more accredited capacity from renewables compared to the Base Reference Case. However, the amount of accredited capacity from renewables remains small compared to natural gas and nuclear resources due to the low accredited capacity values for renewables assigned by PJM.

In the Expanded Wind Availability (EER) Case, the accredited capacity from natural gas resources is similar to that of the Base Reference Case. However, the energy mix between these two cases differ significantly, primarily due to the additional renewable resources and capacity factor constraints on natural gas resources in the Expanded Wind Availability (EER).

There is greater energy diversity in the Low Carbon: Transition to Objective and Expanded Wind Availability (EER) Cases compared to the Base Reference Case. Resource diversity was important for the development of the Preferred Portfolio.

Kayla welcomed Mohamed Abukaram, Director of Resource Planning at I&M to present expansion plan modeling results.

Risk Analysis Method

Mohamed Abukaram covered slides 12-13

Mohamed introduced the methodology of the risk analysis process on each candidate and Preferred Portfolio. In the Risk Analysis process, uncertainty was calculated for load, energy market prices, and gas prices. This calculation produced 100 samples for each input variable. Probability Distributions for uncertainty input variables were developed and applied along with correlations to capture uncertainties and interdependencies. These variables were injected into the build plans for each portfolio, with the physical resources of these portfolios remaining fixed. Energy market imports, exports and short-term capacity purchases were allowed to fluctuate to assess the cost and market risk of each portfolio.

Mohamed presented a comparison of candidate portfolios using Box and Whisker charts that demonstrate cost and market risks. The charts included Net Present Value (NPV) risk, energy market purchases as a percent of annual load, and energy market sales as a percent of annual load for both 10-year and 20-year time frames. The bottom whisker to the top whiskers in the charts represent the 10^{th} to 90^{th} percentile of outcomes. The thicker

portion of each bar shows the 25th to 75th percentile of outcomes. The white dot on each bar represents the mean of the outcomes.

The Expanded Wind Availability (EER) Case showed less variation in cost risk compared to the Base Reference Case, while the Low Carbon: Transition to Objective Case had the least variation but a higher mean cost.

In terms of energy market purchases, the Expanded Wind (EER) Case had significantly less variation due to reduced gas generation risks, driven by capacity factor limitations due to EPA 111(b)(d) policy. The mean of the Expanded Wind Availability (EER) Case was similar to the Base Reference Case but with far less risk. For energy market sales, the Low Carbon: Transition to Objective Case had a higher risk due to increased renewable energy penetration, which affects market sales.

Mohamed concluded that the Expanded Wind Availability (EER) Case offered the best balance of cost risk and market risk. It has a similar mean cost and market purchase risk as the Base Reference Case but with lower risk, and a significantly lower market sales risk as compared to the Low Carbon: Transition to Objective Case.

Preferred Portfolio Development

Andrew Williamson covered slides 14-16.

Andrew explained the development of the Preferred Portfolio, emphasizing that it was a thorough process evaluating various scenarios and sensitivities. The goal was to ensure the Preferred Portfolio balanced the consideration of Indiana's Five Pillars of energy policy. The Portfolio Performance Indicator metrics were used to inform the selection of the Preferred Portfolio. Ultimately, the Expanded Wind Availability (EER) Case was chosen as the primary basis for the Preferred Portfolio development. This case provided a well-rounded, diverse resource plan that better positions I&M for future environmental compliance.

Additionally, the Preferred Portfolio was developed by leveraging I&M's 2024 RFPs, which offered real-time market intelligence focusing on resource availability in the near-term. This approach allowed for the incorporation of more wind resources into the portfolio than initially expected. I&M also took advantage of opportunities specific to the Rockport site, enabling cost savings associated with Small Modular Reactor (SMR) technology.

Another key consideration for this IRP was the relicensing of the Cook nuclear plant. This resource option was consistently selected in all evaluated scenarios and sensitivities. Thus, it was selected in the Preferred Portfolio.

Andrew presented a summary of the resource capacity additions associated with the Preferred Portfolio from the capacity expansion analysis. The Preferred Portfolio significantly expands I&M's clean energy resources, adding nearly 3,000 MW of wind, solar, and storage over the next five years. The Preferred Portfolio also includes 600 MW of SMR technology to be added between 2036 and 2037.

A key component of the plan is the subsequent license renewal for the Cook nuclear plant, which will maintain Cook as a foundational resource for future electric service. This license renewal will help ensure reliability, resource adequacy, and rate stability for customers. Additionally, the plan selects the relicensing of two hydroelectric facilities evaluated in the IRP. Andrew emphasized that the IRP evaluation is just one of several factors that will be considered in making a final decision about these hydro facilities.

Lastly, the Preferred Portfolio includes a diverse mix of demand-side resources, further enhancing the overall resource plan.

Andrew presented a depiction of the Preferred Portfolio's capacity and energy relative to I&M's obligations. The Preferred Portfolio notably increases the amount of clean energy resources compared to many other scenarios and sensitivities evaluated during the IRP process. Nuclear and natural gas resources remain critical for meeting I&M's future capacity needs, a trend observed consistently throughout the other scenarios and sensitivities modeled. In addition, renewables make a significantly larger contribution to I&M's future energy needs in the Preferred Portfolio.

This Preferred Portfolio provides a balanced mix of dispatchable technologies and nuclear energy while also leveraging the benefits of intermittent renewable resources. The Preferred Portfolio represents a diverse combination of resources to meet I&M's future energy requirements.

Q&A Related to Preferred Portfolio Development

1. How do Renewables result in higher market energy sales?
    a. Renewables result in higher energy market sales due to the manner in which renewable energy complements dispatchable energy. Renewables provide

intermittent generation energy during specific periods of the day, and when this is aggregated with dispatchable energy, can cause our energy production to exceed loads levels and thus generates market sales.

2. How many MWs of data centers were included in the load forecast behind the Preferred Portfolio?

    a. The load forecast assumptions of the Preferred Portfolio is no different from the load forecast assumptions that were used through all the scenarios and sensitivities, with the exception of the High and Low Economic Growth and Base with High and Low Indiana Load Cases. The load shown in the Preferred Portfolio represents the base load forecast that was evaluated throughout the IRP process.

3. Can you further explain how to interpret the zeros across the board for years 2025-2027 in the table on slide 15? Do the zeros mean there were no resource additions in those years?

    a. Yes, that is correct, and is due to the long-term supply-side resource limitation assumptions used in the IRP. The IRP assumes 2028 would be the earliest year where supply-side resources would be available. Between 2025 and 2028, the IRP could select short-term capacity and demand-side resource options to meet the capacity and energy requirements between 2025-2027.

4. Why does the Expanded Wind Availability (EER) Case reduce solar compared to the Low Carbon: Transition to Objective Case?

    a. In the Expanded Wind Availability (EER) Case, less solar is selected compared to the Low Carbon: Transition to Objective Case because more wind is selected. The increase in wind availability in this case, on a per year and cumulative basis starting in 2028, increases the selection of wind resources and as a result decreases the selection of solar. Alternatively, in the Low Carbon: Transition to Objective Case, the Low Carbon Objective as discussed in Stakeholder Meeting 3A established a low carbon energy requirement that influenced the resource selection. To meet that objective, the model selected more solar in the near term as less wind was available.

5. Why are the accredited MWs declining after 2035 for DR/EE/DER (this question is related to the Preferred Portfolio)?

    a. These are cumulative numbers, and the decrease is due to some of the resources reaching end of life by the middle of the planning horizon.

6. Did you model the expanded OVEC capacity that I&M has proposed shifting from Michigan to Indiana customers?

    a. Not as part of this IRP process. We are addressing that through a separate case that is currently pending the Commission's review.

7. Most plans point to market purchases, especially in the short term to meet demand. How will that impact consumer prices?

    a. It is necessary to utilize short-term capacity to bridge the gap between our load obligation and what our long-term resources are able to provide. This is something that we have done historically and are currently doing. The impact of this is relative to what the cost of short-term capacity is compared to a long-term generation resource. At this time, we are not expecting there to be a significant impact on the cost of providing service to our customers. Most importantly, we do acquire the short-term capacity through competitive solicitations to provide the most economic price available.

8. Why is there so little storage in the Preferred Portfolio?

    a. In the Preferred Portfolio and other portfolios, we allowed for storage to be selected economically. Given the energy and capacity value of storage, the selection of 50 MW of standalone storage is reasonable. The capacity from existing combined cycles and combustion turbines as well as the intermittent energy generated from solar was more economic than building more storage.

9. Is the nuclear on the Michigan State side or projected for Indiana? Is it SMR?

    a. The nuclear column represents two resources. It represents the relicensing of the Cook nuclear plant, which is located in southwest Michigan. However, it does provide service to Indiana retail customers. The values associated with the Cook nuclear plant are Indiana's jurisdictional share of capacity. In addition, nuclear numbers include two SMR units, one in 2036 and one in

2037. These are each 300 MW and would be located at the Rockport facility in Rockport, IN which is in Southeastern Indiana.

10. How are you comparing fairly the three portfolios, as they have very large capacity differences, outlined below?

    - Base Reference - 8,005 MW
    - Low Carbon: Transition to Objective - 14,867 MW
    - Expanded Wind Availability (EER) - 11,521 MW

    a. These three portfolios, and all other portfolios, were compared using the Portfolio Performance Indicator metrics (slides 19 and 20), the Results Summary Comparison (slide 17), and the Risk Analysis (slide 18). Further discussion of these portfolios occurred later in the meeting.

11. What are the biggest hurdles to wind and solar expansion?

    a. New renewable development faces a lot of challenges with zoning and permitting. This is true for several counties in Indiana and AEP has experienced this in many different states and has seen this throughout the country. Additionally, the solar resources are intermittent, and they provide a lower accredited capacity value for I&M's customers. PJM goes through a process of evaluating the capacity value associated with intermittent resources and this is called Effective Load Carrying Capability (ELCC). The capacity value of solar is closer to 10%, and wind is closer to 30% versus dispatchable technology, which will be in the range of 70% or higher. The specific ELCC values over the planning horizon are included in Stakeholder Meeting 2. The modeling recognizes the hurdle around the capacity value and that significantly more renewable resources would have to be selected to achieve a similar capacity value as dispatchable technologies with higher capacity factors, resulting in a more expensive portfolio.

12. Where is the Cook nuclear radioactive waste disposed?

    a. The Cook nuclear plant, similar to other nuclear facilities in the country, is storing spent nuclear fuel on site. They have a very robust nuclear fuel storage program that is highly regulated. We continue to work with the Department of Energy (DOE) on spent nuclear fuel storage, including

reimbursement of storage costs, which is likely to continue until the federal government establishes a national repository. More generally, radiological waste from normal plant activities are disposed of utilizing qualified vendors. These vendors contract with licensed disposal sites located in both Texas and Utah.

Results Summary & Comparison

Kayla Zellers covered slides 17-18.

Kayla explained that the Preferred Portfolio was based on the Expanded Wind Availability (EER) Case. She pointed out that the firm capacity chart showed an increase in nuclear capacity from the Cook relicensing and the addition of SMRs in 2036 and 2037, which is a difference between the Preferred Portfolio and the Expanded Wind Availability (EER) Case.

Regarding energy mix, Kayla noted that over both 10- and 20-year periods, the Preferred Portfolio displayed greater diversity in the resource mix compared to the Base Reference Case. By 2044, wind and solar were expected to contribute roughly 25% of the energy needed to serve Indiana's load in the Preferred Portfolio. There is also a reduction in natural gas energy compared to the Expanded Wind Availability (EER) Case, due to the replacement of a natural gas CC with the addition of the Rockport CT and SMRs.

Kayla emphasized that the energy reduction from natural gas was replaced by carbon-free energy from the SMRs. She addressed comparing cases with different capacity additions over the planning horizon, explaining that the visual represented firm, or accredited capacity. She noted that renewable resources generally have a lower accredited capacity value compared to dispatchable resources. In the Low Carbon: Transition to Objective Case, a significant amount of renewables was selected, increasing the nameplate capacity additions. However, when comparing the Expanded Wind Availability (EER) and the Preferred Portfolio from an accredited capacity perspective, the differences were not as pronounced. Kayla stated that the Low Carbon: Transition to Objective Case had higher accredited capacity values because it aimed to serve a specific amount of Indiana's energy needs with carbon-free energy.

Kayla covered the Preferred Portfolio Risk Analysis results in comparison to the Candidate Portfolios. She noted that the slide was similar to what Mohamed had presented earlier, with the addition of the Preferred Portfolio shown in light blue. The Risk Analysis results

supported the selection of the Preferred Portfolio and provided insights into how the portfolio would perform under various uncertain futures.

Mohamed had discussed earlier that the input data for the risk analysis, highlighting the variability in load market, energy, and gas prices. The NPV chart showed that the Preferred Portfolio's variability was similar to, but slightly less than, the Expanded Wind Availability (EER) Case. She emphasized the importance of this visual, as NPV uncertainty ranges are included in the Portfolio Performance Indicator matrix.

Based on the 20-year Market Purchases (% of Annual Load), the Preferred Portfolio results were similar to the Expanded Wind Availability (EER), with much less variability compared to the Base Reference Case.

For the 20-year Market Sales (% of Annual Load) chart, Kayla highlighted how the market sales variability and mean value for the Preferred Portfolio were lower compared to the Expanded Wind Availability (EER). This was attributed to the lower number of solar resources in the Preferred Portfolio. The variability seen in the market sales risk is a function of the number of renewables selected in the plan.

The Preferred Portfolio displayed a balanced mix of cost and market energy variability in the risk analysis. Kayla concluded that the Preferred Portfolio's level of variability was similar to the Expanded Wind Availability (EER) and much less than the Base Reference Case.

Portfolio Performance Indicators

Kayla Zellers covered slides 19-20

Kayla explained that the Preferred Portfolio is about 3% more costly than the Base Reference Case, totaling $33.1 billion expressed as an NPV. However, this additional cost brings several benefits and a more balanced consideration of the Five Pillars, as reflected in the Portfolio Performance Indicators matrix.

One key benefit is the Portfolio Resilience metric, which represents the 10th to 90th percentile range of the NPV from the Risk Analysis (slide 18). While the Base Reference Case has a lower overall cost, it shows a much higher range of NPV, indicating more risk. The Low Carbon: Transition to Objective Case has the least variability but comes with a much higher cost.

In terms of Short-Term Affordability, the Preferred Portfolio shows a slightly lower growth rate compared to the Expanded Wind Availability (EER) Case. This is due to the lower cost assumption for the Rockport CTs compared to the existing CCs. The addition of the Rockport CT and SMR replaced 900 MW of existing CCs, lowering the short-term cost for the Preferred Portfolio.

Another significant benefit of the Preferred Portfolio is in the Environmental Sustainability metrics. In a future where the proposed greenhouse gas rules are implemented, the Preferred Portfolio achieves a similar reduction in carbon emissions compared to the Low Carbon: Transition to Objective Case but at a much more affordable cost. This cost difference is over $6 billion in NPV across the planning horizon, making the Preferred Portfolio a cost-effective option for reducing carbon emissions.

Kayla explained the use of the Shannon Weiner Diversity Index to measure capacity and energy diversity for each case modeled over the planning horizon. This index was computed annually, and the percent change in capacity and energy diversity was analyzed over 10- and 20-year periods starting from 2025. She provided this background for those who might not have attended Stakeholder Meetings 3A and 3B and recommended looking up the Shannon Weiner Index for more details on its calculation.

Kayla emphasized that resource diversity was a crucial metric in developing the Preferred Portfolio. The Preferred Portfolio achieved a much higher capacity and energy diversity metric compared to the Base Reference Case and had similar results to the Expanded Wind Availability (EER). However, the Low Carbon: Transition to Objective Case had higher capacity and energy diversity values but was more costly.

Kayla also highlighted the fleet resiliency metric, noting that all modeled portfolios provided significant dispatchable resources relative to company peak demand. Over the 20-year period, the Preferred Portfolio showed a slight improvement in dispatchable capacity compared to the Expanded Wind Availability (EER). The Preferred Portfolio provided over 90% of dispatchable capacity relative to company peak demand, demonstrating strong fleet resiliency.

Kayla reiterated that the Preferred Portfolio successfully balanced all the different objectives and metrics set out for the IRP, aligning with the Five Pillars.

Q&A Related to Results Summary

13. What is the reason for the 2034 and 2044 emission values to be the same in the Preferred Portfolio?

    a. The focus of this is the change in resources that emit CO2, NOX, and SO2 between these two time periods. The generation for these emitting resources did not significantly change from 2034 to 2044.

14. Are the portfolio risk analysis results statistically significant (not explainable to chance alone, that they are clearly discernable)? If they are not, how are you able to differentiate the portfolios adequately?

    a. Though we didn't perform formal statistical significance tests, our approach provides a robust basis for portfolio comparison. We injected 100 samples of market prices, load, and gas prices into the runs for each one of these candidate build-out portfolios without allowing the physical resource mix to change as compared to the deterministic run. We also ensured that the correlation between these variables is maintained throughout the forecast, so they are subject to the same variability in the three input parameters. This methodology allows us to draw fair comparisons between portfolios and differentiate them based on their risk profiles.

15. The Low Carbon: Transition to Objective Case appears to be the only portfolio that doesn't have market purchases. Why is it not the Preferred Portfolio?

    a. The chart on slide 17 represents the net market purchases thus it does not represent that there are no energy market purchases for the Low Carbon: Transition to Objective Case in 2044. In 2044, there are more market sales than market purchases. The market purchases were discussed for the Low Carbon: Transition to Objective Case on slide 20. It was not selected as the basis of the Preferred Portfolio due to the high cost. Ultimately what we are seeing is that in 2044, we have more market sales than we do market purchases.

16. Are you satisfied with carbon reduction being unchanged from 2034 to 2044 when there is clearly a need to see reductions of far more by 2050?

    a. The carbon emission results continue to represent significant reductions from 2005 levels. A consistent theme throughout I&M's IRP modeling was that I&M requires a significant amount of natural gas generation to serve its growing load. A benefit of the Preferred Portfolio is that it leverages existing resources which mitigates the additionality impacts of adding carbon to the environment. Every three years I&M has the opportunity to reevaluate carbon emissions as we conduct future Indiana IRPs. This gives us the opportunity to assess changes in technologies and the associated costs and continue to refine our ongoing resource plans.

17. Are the market purchases in the Preferred Portfolio low carbon (are the purchases coming from low carbon resources)? Is that how you accomplish a similar carbon reduction in the Low Carbon: Transition to Objective Case?

    a. We assume that the energy market purchases are coming from the PJM energy market, so we do not have an assumption for what type of energy and whether that is low carbon. To address the second part of the question, in the Low Carbon: Transition to Objective Case the reduction is achieved by reducing the number of natural gas CCs. The Preferred Portfolio achieves a similar carbon reduction due to the capacity factor constraints that is applied to the natural gas CCs and the reduction of the natural gas CCs selected. The capacity factor constraints are aligned with the EPA Section 111(b)(d) regulations. Thus, it is a combination of the reduction of the natural gas CCs in the Preferred Portfolio and the capacity factor constraints that are applied to those natural gas resources. Together, these enable the Preferred Portfolio to meet similar carbon emission reductions.

18. Does I&M use uranium from Canada? If so, have you used the higher uranium cost variables with respect to the tariffs?

    a. I&M contracts for uranium do not specify the country of origin of the uranium so any tariffs due would depend on specific circumstances at the time of delivery. As an example, for 2025, considering the entities we are contracting with, we anticipate that about one-third of a reload is likely sourced from a Canadian supplier A tariff, if any due, would be determined at that time. Based on the tariff information

currently available, for 2025 the impact is estimated at $1-2 million, which would remain a lower cost option than purchasing at the current spot market.

19. Since we haven't talked about it in these meetings, I assume they are not part of the IRP filing, but I'm wondering if you have conducted any analysis that would accompany the IRP, e.g., have you conducted a resource adequacy study of the PJM footprint? Have you conducted any transient stability or EMT studies of your new datacenter customers?

    a. AEP requires dynamic modeling data to be submitted for all large load interconnections, including data centers, per the AEP's publicly posted Requirements for Connection of New Facilities or Changes to Existing Facilities Connected to the AEP Transmission System. AEP utilizes the submitted data to perform targeted dynamic/transient stability studies in both time domain (PSSE) and EMT (PSCAD) and mitigates reliability issues identified with the interconnection.

       Public Link to the referenced document:

       AEP Transmission Studies & Requirements

20. What is the key driver for market sales and purchases - the expectation of wholesale power prices?

    a. The key drivers for market sales and purchases are power prices, load and resource generation. When there is not enough generation to meet load, then market purchases are necessary. When there is more than enough generation to meet load and there is incentivization (due to high market prices) to sell excess energy into the market, then this results in market sales. If market prices are low, then this could lead to market purchases because it may be more economically feasible to purchase energy from the market to serve load rather than producing energy.

21. Relating to the portfolio risk results, have you thought of running a T-Test (as they look normally distributed, I assume you used a normal distribution in your Monte Carlo simulation) or maybe a nonparametric test (e.g. Wilcoxon signed-rank test) for thoroughness, to determine if they are statistically significant, as in they are distinct portfolios that actually perform differently, such that you can select

confidently that the Preferred Portfolio performs actually best among the other portfolios?

a. We implemented several methodological safeguards to ensure our results are robust. We maintained consistency by using the same 100 samples scenarios throughout our modeling. we also implemented quality assurance checks to validate the samples statistical properties. We are happy to investigate the methods mentioned and how they may be used in the future, but for this set of analyses, we did not implement those measures noted in the question.

Short-Term Action Plan

Andrew Williamson covered slide 21.

Andrew explained that I&M will continue to conduct RFPs or other competitive procurement practices as needed, consistent with past practices. Regarding Cook subsequent license renewals, he mentioned that they had discussed this in prior Indiana Utility Regulatory Commission (IURC) proceedings. The plan was to evaluate the opportunity in the IRP, and if selected, they would take the necessary steps to continue to implement the subsequent license renewal process, which takes several years and will be ongoing for I&M following the IRP.

Andrew stated that they would finalize the evaluation of the Elkhart and Mottville Hydro operating license renewal opportunities, as reflected in the Preferred Portfolio. He emphasized that, as with past IRPs, they will continue to check and adjust as they move forward. The IRP serves as a foundation for resource decisions, but they will consider and evaluate the best information available at the time and adjust to changing circumstances as they occur.

Q&A Related to Performance Indicators & Short-Term Action Plan

22. Do you assume market prices will go up when I&M plans to purchase energy?

a. We have a fundamental forecast of market energy prices included in the appendix of Stakeholder Meetings 1 and 2 and those market energy prices are from a capacity expansion plan model that is PJM-wide. We do not have

an assumption included in the model that would increase the market energy prices as the model is purchasing energy.

23. Where are the expanded wind and solar generation going to be built? Are these projects very likely to come online as they are part of your assumptions?

    a. When we complete modeling related to an IRP, we assume generic non-location specific resources. The updated wind availability assumptions that were used to inform the Preferred Portfolio were driven from the results of our 2024 RFP. This reflects updated market intelligence that there are a number of resources available that would allow us to achieve these levels. The RFP considered both existing facilities as well as new facilities and we have a robust set of non-price criteria that looks at assessing the development risk associated with these.

24. On your Five Pillars there seems to be bias as to some being more important than others? Where are the metrics?

    a. We have a description of all the metrics in the appendix on slide 42 of the presentation. This has a description of what all the different metrics are. In addition, we have included in the appendix the portfolio performance indicators matrix starting on slide 43 for all the different cases that we ran.

Open Discussion

I&M staff thanked stakeholders for their participation. Any additional questions or feedback can be submitted to the IRP Email address at I&MIRP@aep.com. Staff fielded all remaining stakeholder questions and adjourned the meeting.

Q&A Related to Open Discussion

25. How did you obtain a -0.5% 7-year CAGR under Base portfolio? Wouldn't adding more capacity always increase affordability cost?

    a. This is something that we covered in Stakeholder Meetings 3A and 3B. This metric specifically is on a $/MWh basis, which is different than the NPV we use for the long-term portfolio Power Supply Costs. It was important to have this metric on a $/MWh basis because of the significant increase in load and revenue over the analysis period, as provides a more relevant comparison

between each of the cases that we had modeled. Meaning, while we see a significant number of resources additions in future, these additions are driven by load growth. As load grows, revenues that I&M will receive will help offset costs. The negative percentage was achieved because the economics of the capacity additions in the Base Reference Case are reducing I&M's average power supply costs over the 7-year period measured.

26. If Section 111(b) is voided, will you be doing remodeling?

    a. Regardless of any of the scenarios or sensitivities that were modeled, there was a similar amount of natural gas resources that were selected by the IRP. The main difference when you consider the Preferred Portfolio is: did it leverage new natural gas opportunities or existing? Assuming the environmental regulations that were used as the basis in the EER cases, it favored existing resources because it lessened the cost of compliance with the current and proposed rules. Those resources are still needed regardless of whether the rules would be enacted or not. If anything, they position I&M to transition more quickly to other technologies that will be available in the future that can further the transition to a clean energy future. We feel that this positions I&M very well on multiple fronts, both with respect to whether the laws or regulations are enacted or if they are not.

27. Since you are locking in substantial gas capacity by 2034, how would future IRPs be able to economically reduce carbon to lower levels by 2050 given the lifetime cost of gas CCs?

    a. In part, that opportunity will come through the actual resources that I&M has in the portfolio. The IRP had to evaluate this through a set of limited assumptions but as we move forward and evaluate the actual options that are available in the market to obtain the resources that are needed, we are going to be evaluating a very diverse set of resource opportunities. Some resource opportunities will have much shorter lives and will provide the opportunity for us to continue to make progress on the transition in the future.

28. It seems like you were talking about 25% or so renewables in the 2044 scenario of this Preferred Portfolio, but those are not guaranteed. It is not like those projects have been approved or they are online yet, so it is a goal, but it is not a guarantee. Those things could still not happen, correct?

    a. That is a fair statement for any of the resources in an IRP because an IRP is a projection of the future that is subject to a lot of variables, some of which are very much outside the control of any utility. While it is true that there is going to be some variability in the future versus what is modeled here, it is also true that we are going to see a lot of the resources that were selected being added in varying quantities. The results for the 2024 RFPs show us that there is a very diverse set of opportunities available for solar, wind, and natural gas that align very well with the Preferred Portfolio. There will be some variability between the IRP and the actual resources we acquire, but we also expect that the diversity will materialize for I&M and its customers.

29. Following up on the CAGR question, if I am understanding it correctly that the load is growing faster than available capacity in 7-years, does that mean that I&M is buying wholesale from the market to meet load before the capacity is available? Hence a negative value, since customers are not yet paying for new capacity.

    a. In terms of buying from the market vs acquiring resources to provide the needed capacity and energy it is going to be a mix of both. We are going to leverage our existing resources, continue to expand our long-term resources through the efforts that we have discussed, and in between we will fill the gaps with purchases of energy or capacity within PJM. This is no different than how all utilities operate. All of those factors are reflected in the compound annual growth rate (CAGR) calculation. It considers the assumptions that were made on purchases of market energy including any market sales, long-term resource costs, and short-term capacity purchases in each of the respective years based on the resource expansion plan that we modeled.

30. Will there be a formal comment period?

    a. Yes, once the IRP is submitted, the IURC will establish a formal comment period. Stakeholders are encouraged and able to provide us feedback

directly throughout this process by going to our IRP landing page on the Indiana Michigan Power website. We encourage feedback there as well.

31. When do you anticipate a Certificate of Public Convenience and Necessity (CPCN) filing?

    a. We anticipate beginning to make our resource approval filings as early as April and we would anticipate additional filings being made through the remainder of 2025.

32. Could you please clarify - for 2025, which resources would you seek approval for? We would appreciate the opportunity to comment/stay involved/informed of that process.

    a. That would be primarily the resources related to our 2024 RFPs. We have been evaluating bilateral opportunities because some resources are not able or in a position to participate in an RFP-like process. The resource filings we would expect to make this year would be driven by a combination of those two efforts.