



Indiana Michigan Power Company’s 2024 Indiana Integrated Resource Plan

Hyperscaler Load Customers Meeting Summary

August 8, 2024

Table of Contents

Welcome & Introductions	2
Agenda.....	2
Portfolio Performance Indicators	3
Going-In Position Review	4
Q&A Related to the Going-in Position Review	4
Market Assessment of Existing and New Resources:	7
Q&A Related to the Market Assessment of Existing and New Resources	8
Technology Assumptions.....	9
Q&A Related to Technology Assumptions	9
Scenarios and Sensitivities	10
Q&A Related to Scenarios and Sensitivities.....	10
Final Questions and Answers/Closing	12



Welcome & Introductions

Andrew Williamson covered slides 1 and 2

Andrew Williamson, Indiana Michigan Power (I&M) Director of Regulatory Services, called the meeting to order at 2:05 PM EST.

Andrew welcomed Hyperscaler Load (HSL) customers participating in the 2024 Indiana Integrated Resource Plan (IRP), acknowledging HSL growth's significance in the IRP and its stakeholder engagement process. I&M requested and encouraged HSL customer feedback and input during the meeting and throughout the Indiana IRP.

Andrew introduced Brian Despard, 1898 & Co. Senior Project Manager. For the 2024 Indiana IRP, 1898 & Co. is assisting I&M and its stakeholders by facilitating stakeholder meetings and taking/sharing minutes for public knowledge. Andrew introduced additional I&M leadership and Infrastructure Development and IRP Planning team members, including Dylan Drugan, I&M Manager, and Resource Planning.

Agenda

Dylan Drugan covered slide 3

Dylan covered the meeting agenda and encouraged active stakeholder participation at any time, including during a portion at the end of the meeting set aside for open discussion.

Dylan mentioned that the presentation does not indicate finalized IRP inputs, assumptions, or goals. All materials provided in this presentation are based on existing estimates and stakeholder feedback and are subject to change based on further discussion.

The meeting begins with a review of proposed portfolio performance indicators and the “going-in” positions for capacity and energy. Further discussion includes market assessment of new and existing resources, current technology assumptions, and IRP scenarios and sensitivities.

Dylan introduced Greg Soller, I&M Manager, Resource Planning.



Portfolio Performance Indicators

Greg Soller covered slide 4

Greg reviewed the proposed metrics for evaluating portfolio performance in the 2024 Indiana IRP. These metrics are based on the Indiana Utility Regulatory Commission's (IURC) five pillars. It is paramount that the resulting IRP plans are in accordance with these attributes.

In planning for the **affordability** pillar, the planned portfolio must meet capacity and energy expectations with a balance between portfolio cost and associated risks. The near-term impact on stakeholder rates is also proposed for evaluation.

The **reliability** pillar necessitates that I&M meet energy and capacity needs as a load-serving PJM entity. I&M seeks to avoid customer risk inherent in over-reliance on PJM while balancing the final portfolio with the benefits provided by PJM membership. This makes market exposure via purchases and sales an additional metric proposed to measure reliability.

To plan for a **resilient** system, I&M proposes evaluating resource diversity. A balanced portfolio should balance cost, sustainability, and dispatchability. Fleet resiliency should be measured by the content of thermal, dispatchable resources and inverter-based resources that may add other pressures to the grid.

Grid Stability is another pillar concerned with a dispatchable fleet. It is proposed to follow the same performance standards for fleet resiliency as resiliency.

Finally, **sustainability** impacts are proposed to be measured in emissions changes compared to 2005 levels, accounting for balance to cost impacts mentioned under the affordability pillar.

Ultimately, incorporating the Five Pillars should be the foundation for a portfolio that best serves the interests of the I&M ratepayers and stakeholders.



Going-In Position Review

Dylan Drugan covered slides 5 and 6

Dylan walked stakeholders through the Effective Load Carrying Capability (ELCC) table, emphasizing renewable and storage technologies. These technology types tend to decrease in capacity accreditation as incremental additions of each resource class are assumed annually. I&M believes this decrease in overall capacity/energy accreditation for these resource types to be a primary driver for a diverse resource mix.

Dylan also discussed the Forecast Pool Requirement (FPR) forecast, which indicates the required percentage of peak load PJM requires I&M to carry. These numbers are correlated to ELCC and, as such, decrease over time. This decrease helps lessen the reserve margin over time, which alleviates some planning pressures provided by decreasing ELCC values.

Dylan reviewed the Capacity Needs Assessment with stakeholders. He explained that the total PJM requirement with additional reserves, which is being planned to in this Indiana IRP, has been calculated using FPR and ELCC information and projected load additions. Dylan explained changes in assumptions between this projection and the one shared at the 1st stakeholder meeting held on June 27th. Only “Phase 1” HSL loads were initially projected, but estimates have since been expanded to include “Phase 2” HSL loads, accounting for all HSL projected loads.

Finally, Dylan talked through key assumptions on existing capacity and impacts shown on the going-in position, including the reduction in Cook Nuclear Plant capacity to reflect licensure expiration and the loss of Rockport Coal capacity due to its retirement. I&M reminded stakeholders that examining the extension of Cook licenses is integral to the 2024 Indiana IRP. The strategy for replacing Rockport includes capacity contracts for gas plants that provide an opportunity in 2030 to pivot to other advantageous resources.

Q&A Related to the Going-in Position Review

1. Question: Can you clarify what the terms "Phase 1" and "Phase 2" mean?
 - a. Phase 1 is customer load that we will serve with existing transmission capability and the transmission LOA is either completed or in progress. Phase 2 would be the additional incremental load that customers have expressed an interest in but would require additional transmission investment to serve.
2. Question: How much capacity are you planning as contingency in real numbers?



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- a. It is approximately 7 percent additional capacity on top of I&M's FPR load obligation that translates into about 800 megawatts. That value is not set in stone right now, but we are planning to have a risk cushion.
3. Question: Follow up to phase question: Is Phase 1 what you have under LOA and Phase 2 are discussions not yet under LOA?
 - a. That is a reasonable way of describing Phase 1, based on the LOAs that have been established or are underway.
4. Question: Would it be possible, on a bilateral basis, to provide to each Hyperscaler the data, like to provide Google what proportion of what the assumption is for Google's load that is embedded here? It would help show the portion of these white boxes to specific companies.
 - a. Yes, we can certainly do that. It is the information that you have previously provided to I&M.
5. Question: What is the timeline for re-licensing Cook (when will I&M know if it will need to replace that power supply)?
 - a. The timeline for relicensing Cook is partially driven by this IRP. This IRP will evaluate the relicensing of Cook and whether it is in the best interest of I&M and its customers that a Cook relicensing be included in I&M's Preferred Portfolio. If it is, then I&M will continue to progress forward in the subsequent license renewal process. We had general rate cases in both states that were filed in 2023, and we received orders recently in 2024, where we presented to the Commission preliminary plans and requested support for some initial funding to get started on the subsequent license renewal process. As we are working through the IRP process, we're also, in parallel, continuing to evaluate the subsequent license renewal from an operational perspective. The IRP process will provide key information in this evaluation, and we remain optimistic that we will be able to move forward with the Cook facility.
6. Question: One of the elements that I am wondering about is how best to incorporate in terms of either sensitivities or just resources on the table as you look at that gap. How have you considered the potential for load flexibility among the Hyperscalers and being able to bridge some of this need? It can be a very useful tool, and the toolkit obviously needs to be the subject of detailed conversations with individual customers as to capabilities. But I want to make sure that we are thinking about that at the front end because I think there is a huge opportunity for collaboration there, especially regarding the attention that we are going to be seeing in this IRP.



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- a. We have had several discussions with various customers about that and at this time no specific opportunity has yet materialized. So, the likely situation for this IRP is I&M will have a resource plan that does not rely upon those potential demand response opportunities. If and as opportunities materialize in the future, they would supplement the resource plan in I&M's Preferred Portfolio from this IRP and will reduce resource needs that were otherwise identified in the plan. The IRP provides a snapshot in time based on the best set of assumptions and information available at that time. Moving forward, as we make resource decisions, we will consider not only the IRP but also new information. That could mean additional demand response opportunities that supplement other long term resources. In order for this to happen, we would have to identify a demand response opportunity that was acceptable to both parties and that reduced our capacity obligation in PJM. We do have demand response customers that are included in our plans currently. If demand response opportunities become a viable opportunity and are approved by the Commission, we would reflect those in our IRPs going forward. It is probably worth noting that our IRP does consider market potential study results that inform assumptions around energy efficiency and demand response and other similar opportunities that are available within the marketplace. These are incorporated into the IRP process, but I think what we are talking about here is a unique opportunity. That demand response modeling is not something that would come through a market potential study, rather it is something that would be driven by specific customer capability that would be unique to that customer.
7. Question: Follow up to question 16: Can you clarify what materialize means in this discussion?
 - a. In this situation, materialize means real opportunity that is actionable.
8. Question: Looking at the chart on slide 6, are you concerned about meeting any of these shortages?
 - a. There is sufficient capacity in the market today to serve customer load and there are a lot of resources that are in the queue that are available. We remain confident that we can meet the load requirements going forward as they are shown here, particularly in the near term. That is the importance of this IRP process and getting it completed and in parallel, getting out in the market to identify and acquire those long-term resources. As we showed in our metrics, one of the things that the company is interested in is balancing the energy adequacy position. We know that these Hyperscaler loads have high load factors. This energy metric is important



because it is very different compared to what our retail customer load profiles look like. That adds to the criticality of not only looking at meeting our capacity obligations to PJM, but also having a set of resources that is capable of meeting our energy needs in the future.

9. Question: When is I&M considering SMRs as viable technology over the 20-year time horizon for inclusion in the IRP?
 - a. 2036; A lot of that is based around the site permitting and getting the early site permit for construction valuations of technology. We have been engaged with OEMs over the last couple of years trying to understand their capabilities and where they are in the process of developing the supply chain. We do not have one in the U.S yet, so we need to get through that first hurdle of the permitting process. I think other utilities have used a similar 2035-2036 timeline for SMR projects in there IRPs.
10. Question: Is there excess capacity in the portfolio over the next 3 years? (referring to I&M portfolio)
 - a. I&M will take the steps necessary to acquire additional resources to serve the load growth associated with the Hyperscaler customers and that includes the load growth in 2025, 2026 and 2027. That will be done through a combination of short-term bilateral purchases as well as long-term resource opportunities.

Dylan introduced Tim Gaul, I&M Director, Regulated Infrastructure Development.

Market Assessment of Existing and New Resources:

Tim Gaul covered slide 7

Tim provided an overview of the availability of in-queue resources within PJM to serve I&M customer needs. These resources are split into four (4) queue cycles: “fast lane” projects, projects included in cycles 1 and 2 of the transitory period to PJM’s new generation interconnection methodology, and projects in cycle 1 of the new methodology. To serve load, I&M is looking at queue resources in Indiana, Michigan, and the nearby states of Illinois, Ohio, and Kentucky.

As fast lane capacity is in progress now (with slight delays), most current RFP efforts issued by I&M are focused here. For the 2027-2029 timeframe, the aforementioned transition cycle capacity is being reviewed as a solution to capacity and energy needs.



Tim provided a technology-specific breakdown of the queue resources, much of which is solar or hybrid capacity. Wind resources in the queue are limited due to generation interconnection (GI) challenges and associated capacity that is already allocated to other load-serving entities. Storage shown increases over time as the technology develops. Finally, there is a limited amount of gas resources, which leads I&M to focus acquisition efforts on existing gas resources.

Tim called attention to the cautious approach I&M must take with assessing the PJM queue capacity. I&M regularly converses with PJM about the projects, their capacities, and their deliverability and accessibility.

Q&A Related to the Market Assessment of Existing and New Resources

1. Question: Can you confirm that the y-axis on slide 7 is nameplate capacity?
 - a. Yes.
2. Question: How are you thinking about the value to your portfolio of Illinois and other projects that are not located in AEP zone?
 - a. We are in discussions on that now. As far as capacity resources like gas and storage are concerned, our preference is to have those within the AEP zone. When it comes to intermittent resources, we will have the flexibility to consider a broader geography, but that is still under discussion. If the AEP zone is evaluated separately from PJM, PJM would require that generation resources located within AEP Zone serve load within AEP zone. We are continually monitoring the potential development of an AEP zone. We cannot control that risk outside of us selecting resources within the AEP zone. We evaluate resource options and opportunities on a case-by-case basis, but we are going to prefer acquiring long-term resources located within our zone. That way we eliminate the risk that something could happen within PJM in terms of a constraint that would no longer allow a resource outside the zone to be counted toward meeting our capacity obligations. We are in regular conversations with PJM and one thing that is important to recognize is that as these projects work through the process, there have been issues with deliverability of these projects. How we take the information that is in the PJM interconnect queue and try to predict what projects are executable and deliverable within this timeframe requires bit of art and science. Projects work through a local siting process and just the execution phases of the project have been constrained that we're working through. That is a concern that PJM has also expressed.



Technology Assumptions

Dylan Drugan covered slide 8

Dylan reviewed proposed resource modeling parameters with stakeholders. The table on slide 8 shows years resources are available and amounts of capacity expected to be achievable during certain time periods based on I&M market observations and RFP data. Overnight cost ranges shown in the table utilize EIA2023 data supplemented by RFP information as available. Dylan informed stakeholders that not all resources have supplemental RFP data, and that additional historical data may instead supplement cost estimates.

Tim Gaul discussed various market pressures that impact the availability of interconnection resources and impacts on data used for technology assumptions. Market pressures include tariffs, EPC costs (heightened by wage/apprenticeship requirements), and local approval processes. I&M and AEP are actively engaged in the market and use this information to inform I&M's technology assumptions in the IRP.

Q&A Related to Technology Assumptions

1. Question: What cost year are you using?
 - a. The costs that are shown here are representative of the first year available.
2. Question: There has been a lot of movement in battery prices, and I want to see if you are using the most recent data given how much it has changed.
 - a. Battery costs are informed by market data received from recent RFPs and reflect the most recent market intelligence available. Additionally, the current market costs are then forecasted in part through using the NREL Technology Cost curves. These Technology Cost curves indicate an approximate 25 percent decline in the real dollar costs of the Battery Storage by 2030. This decline represents one of the more aggressive cost declines of all the technologies included in the modeling. I&M and AEP are also considering security concerns regarding certain manufactures of battery technology which may influence technology cost assumptions.



Scenarios and Sensitivities

Dylan Drugan covered slides 9 and 10

Dylan reviewed the proposed market scenarios and sensitivities originally presented at the June 27th meeting, noting that the scenarios are driven by differing economic growth rates and EPA 111d 2023 rules.

Previous stakeholder conversations have questioned I&M's suggested evaluation of the initially proposed EPA 111d rules instead of the final accepted ones. As such, I&M has committed to evaluating the base scenario under the EPA 111d 2024 Final Rules as a sensitivity.

Other sensitivities include differing Indiana load forecasts, early retirement of the Rockport Coal unit, and early exit from OVEC, of which I&M is a capacity off-taker of approximately 7.8 percent of the project on a cost-plus basis. Dylan noted that scenarios are not set in stone and that there is room for additional sensitivities at stakeholder request.

Q&A Related to Scenarios and Sensitivities

1. Question: Can you clarify what OVEC ICPA refers to?
 - a. OVEC stands for the Ohio Valley Electric Corporation. I&M is a sponsoring company that has a purchase power agreement to take approximately 7.8 percent of the total power of OVEC on a cost-plus basis through 2040. There are several other sponsoring companies that have similar agreements. I&M is not an owner of OVEC, but I&M is an off-taker under the intercompany power agreement (ICPA).
2. Question: Recognizing that it can take some time to run scenarios, it would be interesting to see a few scenarios with lower tech costs. e.g., a scenario in which battery costs continue to decline, holding others constant.
 - a. We have performed sensitivities like that in the past looking at low and high side technology costs. We will be balancing the feedback of all stakeholders and the time it takes to run these different sensitivities in determining the final set of sensitivities to run for this IRP. That is why we are looking for feedback on what stakeholders are wanting to see.
3. Question: Is this the totality of sensitivities you are intending?



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- a. No. What is represented on the screen here (Slide 10) is not intended to be the totality of our sensitivities. We will continue this discussion with the larger stakeholder group to gather the input necessary to determine the final set of sensitivities to run.

4. Question: I am not seeing different scenarios on this chart. Is that somewhere else in the presentation?
 - a. Scenarios are in the previous slide (slide 9).

5. Question: Moving forward, how can we have a discussion over the intentionality and approach to this IRP? The large amount of Hyperscaler load, which have strong clean energy commitments, are on the call here today. There are elements that get to IRP scenarios and then there are also elements that get to the bilateral discussions that HSLs are having, which are outside the course of this conversation. But you know, essentially just at a high level, if you could speak to the extent you are able to, where do we go from here in terms of selection of a preferred portfolio. What assurances can you provide the companies that are on the line here today that our load is a significant driver of the need to acquire capacity and that we will have an opportunity to inform and collaborate with you all on how those portfolios ultimately get formed?
 - a. The way this IRP process works is that we ultimately evaluate several scenarios and sensitivities that give us a robust set of modeling results that are tested under a lot of different conditions and that measured up against IRP objectives and metrics. Ultimately, we will use the collective set of results to inform decisions in a Preferred Portfolio. A preferred portfolio could be the result of a particular model run or it could represent pieces of multiple model runs to create a customized portfolio. During this IRP process, we will be reviewing the information we reviewed with you all today and with all our other stakeholders. Reviewing our plans and the results of the scenarios and sensitivities, we will seek stakeholder feedback along the way that will inform I&M's Preferred Portfolio. It will be important to receive stakeholder feedback from teams represented here and from other stakeholders. It is important to recognize a preferred portfolio is a plan, but it is not prescriptive in the sense of exactly what will happen in the future. The preferred portfolio is going to have to be a portfolio that we can demonstrate to the Commission is supported by and reasonably balances all the IURC pillars.

6. Question: As we think about the gap in capacity for 2029-2030, where there is a 7 GW gap, what is the action plan or preferred portfolio? What year will this plan go out to and with what granularity will the plan discuss the types of resources included? How does that

relate to this temporal picture that we have seen? Are the sensitivities involved just tied to the next 3 years?

- a. The preferred portfolio will set forth a resource plan over a 20-year horizon and includes the resource type and quantity. However, that is a snapshot in time, and we will go through this IRP process every three years. The focus point of the IRP is always the three-to-five-year window that follows the year in which the IRP is conducted. IRP plans are continually updated and re-evaluated every three years thereafter. This IRP is mainly going to focus on that period through 2029. Then the next IRP will focus on the preferred portfolio and associated resources with the 2030–2035-timeframe.

Final Questions and Answers/Closing

Andrew Williamson covered slide 11

Andrew opened the floor for questions from stakeholders. The questions asked and their answers are provided above under the appropriate topics for each question.

Andrew provided closing comments and expressed appreciation to stakeholders on behalf of I&M. He noted that while Stakeholder Meeting #2 will take place in September, questions on additional sensitivities or general recommendations are encouraged to be submitted to I&MIRP@aep.com at any time.