

Interstate Power and Light Resource Evaluation Study IEC, ELPC and Sierra Club Post October 31 Meeting Comments December 6, 2024

Environmental Intervenors (EI) thank Interstate Power and Light (IPL) for the opportunity to provide comments on the fourth Resource Evaluation Study (RES meeting) held on October 31, 2024. At this meeting, IPL presented new material including the Aggressive Decarbonization (AD) and New Regulation (NR) portfolios, the scoring metrics used to summarize its portfolio results, and a reliability study. The following comments provide our responses to the limited materials presented at the fourth RES meeting. The comments also highlight some specific concerns we have with the transparency and rigor of IPLs modeling process that we hope to address with the Company in the coming weeks. EI will provide comprehensive feedback on all of IPL's RES modeling as well as the full RES process in subsequent comments after IPL files its RES.

Overall, we are pleased to see that the Company has incorporated consideration of decarbonization and new regulations into its portfolios with the AD and NR scenarios. This is an important step for the Company to consider how it can best reduce greenhouse gas (GHG) risk for customers. Additionally, IPL designed a scorecard that provides useful summary information about its portfolios. However, there are also elements of its resource plan and modeling we are concerned about:

- The Company's approach to modeling is difficult to interpret and replicate, especially given the condensed timeframe for its modeling activities this fall.
- The Company has not provided an action plan describing how it will manage near-term risk and uncertainty when procuring resources for customers.
- The Company may be planning to over-build its system—and incur excess costs—by unnecessarily assuming that no capacity will be available through the market after 2031.
- The Company's GHG policy scenarios are not aggressive enough to reflect the level of carbon regulation that is likely in the future or the Company's own net-zero goal.
- The Company did not justify its assumptions around growth in large-load customers as part of its load forecast.
- The Company did not conduct reliability modeling in a transparent manner and therefore it is not clear that it used best practices for iteratively evaluating the reliability of the resource portfolio.

Our comments provide recommendations that will help the Company manage cost and risk for customers. We also provide recommendations that will increase transparency so that stakeholders understand the drivers of resource need in the Company's long-term plan. In summary, we recommend the following:

- IPL should present a short-term action plan that describes how the Company will pursue the best near-term resources to help manage risk for customers.
- IPL should use modeling assumptions that better reflect the type of GHG policy that will be needed in the future.
- IPL should focus its efforts on procuring as much near-term solar, wind, and storage as is cost-effective and available for customers.
- IPL should provide support for its assumption that no market capacity will be available to meet peak demand after 2031.
- IPL should provide support and explanation for its forecast that peak load may increase by up to 2000 MW by 2030.
- IPL should add to the dashboard metrics to evaluate the GHG policy risk and fuel price risk in the Company's portfolios.
- IPL should outline for the Commission how it will protect ratepayers from paying the cost of new resources built for the purpose of serving prospective data center customers.

I. Stakeholder engagement with IPL's modeling process

We are concerned with the transparency and rigor of IPL's resource planning process. IPL's process was dormant for months and then resumed this fall with a rushed conclusion. IPL's approach to modeling is difficult to interpret and work with, which has been compounded by the accelerated time frame since the resource planning process resumed. While we appreciate the recent meeting with the Company's consultant to review how the portfolio model is intended to be run, we have not even been able to replicate IPL's modeling. It is unclear how the results presented in the RES are drawn from the outputs of the portfolio model. Consultation with Aurora technical support has yielded more questions and uncertainty than answers. The approach adopted by the Company's consultant to define optimal portfolios is atypical and remains difficult to discern. In our review to date, including review with Aurora experts, it is unclear how the market scenario long-term capacity expansion models inform the Company's portfolio model and ultimate portfolio selection. Aurora recommends using portfolio optimization to stress test several dozen potential portfolios under varying conditions to identify the most robust result. We question whether there is enough variability among the portfolios evaluated by the Company to realize the benefits of the portfolio optimization study approach.

By contrast, the MidAmerican RES process adopted a more typical model approach that has aided transparency and furthered stakeholder participation in the RES process. MidAmerican developed a distinct set of future scenarios and completed a long-term capacity expansion study for each scenario to arrive at optimal portfolios for each future. Then, MidAmerican evaluated the hour-to-hour operational performance of each portfolio through dedicated dispatch, standard zonal, studies. With the benefit of the dispatch results, MidAmerican was then able to iterate upon its portfolios to advance toward RES recommendations.

We request that IPL and its consultants work with our team to help us understand its modeling approach so that we are both able to replicate how IPL's model works, and we have the opportunity to run our own modeling based on IPL's modeling. Benchmarking the Company's model is a critical first step to productive participation in the RES process, but it has not been possible to date.

II. Near-term Actions

A. Action plan: GHG risk

IPL did not include a near-term action plan in its presentation at the fourth RES meeting. We acknowledge that the Company faces significant uncertainty across its long-term planning horizon from regulations, load growth, and other factors. The uncertainty faced by the Company provides more reason for IPL to present an action plan describing concrete steps the Company plans to take over the next few years. Doing so will help manage risk and uncertainty with near-term procurement.

IPL has an opportunity to take near-term actions that minimize cost and risk for customers around GHG policy. The action plan should take into consideration the Company's Aurora modeling, including the results of IPL's AD and NR GHG policy scenarios. While the AD and NR scenarios do not represent the full extent of GHG policy that is likely in the future, they provide some insight into how the Company can manage the risk of GHG policy for customers.

The Company's Mid Load scenario includes deployment of 430 MW of new gas combined cycle (CC) capacity by 2030. However, in the AD and NR scenarios with greenhouse gas policies, the 430 MW of gas CC is replaced by other resources including wind, solar, storage, and efficiency. Gas CCs are designed to operate at a high capacity factor and as a result they generally emit higher levels of GHGs than peaking gas CC resources. Investing in gas CC generation now, with climate regulation currently in place and likely to be in the future, poses an unnecessary risk for customers. The Company should identify no-regrets actions that provide value in all potential future scenarios and diversify its resource portfolio by adding non-emitting energy resources in the near-term instead of adding fossil generation.

Recommendation:

The Company should explain how it considered the results of the AD and NR scenarios in developing its near-term action plan, specifically as it relates to the risk of future greenhouse gas policy and how that will impact its plan to build a new CC generator.

B. Action plan: Renewable procurement

IPL placed annual build limits on solar, wind, and storage additions modeled in Aurora. While it may be reasonable to model some scenarios with build limits, those limits should be justified, especially if they are binding (as was the case in some portfolios). Additionally, IPL should also model scenarios without build limits to determine the most economic resource portfolio. Regardless of what build limits the Company uses in its modeling, when it procures resources in the market, it should let the market decide what is possible, and not place artificial limits on procurement of economic solar, wind, or storage.

Recommendation:

The Company should seek to procure as much near-term economic solar, wind, and storage as is available and cost-effective for customers, and not limit its near-term acquisition plans based on artificial RES modeling constraints that may not reflect actual availability.

III. Scenario and Portfolio Modeling of GHG Policy

We appreciate IPL's modeling of the AD and NR resource portfolios. Given the necessity and likelihood of GHG regulation in the future, these portfolios are important in helping the Company consider how to reduce GHG emissions at the lowest cost and risk to customers.

However, the GHG policies in the AD and NR scenarios do not represent the extent of policy that will be necessary to achieve IPL's net zero by 2050 greenhouse gas goals. The AD and NR scenarios do not appear to meet this target. IPL should design a scenario with a declining cap on GHG emissions that reaches the Company's 2050 net-zero goal. If IPL is not planning to meet its own goal, the goal is essentially meaningless.

The NR portfolio has the lowest GHG emissions of any portfolio, with 81 percent of generation from clean energy resources by 2040. However, IPL did not design the NR scenario to meet IPL's existing goal of net-zero emissions by 2050. In the NR case, the Company includes a carbon tax priced at the lowest estimate of the social cost of carbon provided by the EPA. The low estimate, at a 5 percent discount rate, is substantially lower than other estimates, as shown in the following graph:



In the future, IPL should include a scenario that studies the type of aggressive GHG policy likely to be needed to manage GHG pollution in the future. The Company could use a carbon price that uses a mid or high estimate of the social cost of carbon instead of a low estimate.

Additionally, future GHG policy scenarios should allow the Aurora model to decide to retire coal units early for economic reasons. We believe IPL should use the utility industry's best-practice of allowing its resource planning modeling to select economic coal plant retirements in *all* portfolios, but economic coal retirements would be especially useful in the GHG policy scenario modeling. Under a scenario with future carbon regulation, the model would likely retire coal units early to reduce operating costs and compliance costs associated with required capital upgrades. Failing to allow economic coal retirements in these scenarios causes the portfolio costs to be unrealistically high.

Recommendations:

- IPL resource planning should include a scenario that meets the Company's adopted 2050 net-zero emissions goals.
- In future planning exercises, the Company should consider scenarios and portfolios with more aggressive GHG policy.
- Future GHG policy scenarios should allow early economic retirement of coal units.

IV. Reliability Modeling

A. IPL does not include market purchase capacity in its portfolio modeling.

IPL requires the Aurora model to build enough new resource capacity to meet IPL's resource needs with a planning reserve margin. The Company does not allow market purchases for capacity to help meet its load and reserve margin after 2031. This reflects a subjective judgment by the Company that market capacity will not be reliably available in the future, or that MISO will require the Company to provide for its own capacity needs without relying on market purchases. While it's reasonable to limit reliance on market capacity, it is out of line with resource planning best practices to remove it completely unless there is a strong justification supported by regional analysis and modeling for doing so. Rather than removing all market purchases for capacity after 2031, IPL should rely on regional studies for estimates of available capacity, or else conduct its own studies, to determine a reasonable level of reliance for imports.

Procuring capacity resources is expensive for customers, and the Company may be able to find lower-cost capacity on the market. IPL should not plan to supply all of its own capacity needs unless there is good reason to believe the Company will not have access to capacity from the market in the future. The Company must explain its decision to assume no market capacity is available after 2031. In the absence of a strong reason, the Company must provide in the IRP a reasonable estimate of the amount of market capacity that is likely to be available after 2031.

Recommendation:

IPL must provide a clear explanation in the IRP of its reasoning for assuming no market capacity will be available after 2031. The Company should undertake a careful analysis and evaluation of regional studies to inform its capacity availability assumptions.

B. IPL should use round-trip modeling to improve reliability in its portfolios.

In IPL's reliability study, the Company reports any hour where its portfolio does not include enough generation to meet load as an hour with "market exposure risk." Market risk does not necessarily equate to reliability risk. We do not agree that any hour with market exposure should be viewed as an hour when reliability is at risk. The Company has not provided evidence for this assumption. Iowa utilities have regularly imported energy for years—the key issue is relying on the market when the market itself is tight. Notwithstanding this concern, we recommend improvements to the Company's reliability study that are relevant whether or not the Company assumes market capacity is available. The AD and NR GHG policy portfolios, which have less dispatchable fossil capacity and more renewable energy than other portfolios, are reported as having substantially higher "market exposure risk" than other portfolios. We are concerned about the potential for these findings to be viewed as an indication that the renewable energy in these portfolios is causing a decrease in portfolio reliability. In fact, resource adequacy modeling can be used in tandem with capacity expansion modeling to evaluate and improve portfolio reliability performance. If a portfolio falls short, incremental resources can be programmed in and the reliability analysis re-run to confirm portfolio performance.

Portfolios that include renewable energy coupled with battery storage and other grid resources should not be dismissed as less reliable than portfolios that rely heavily on dispatchable fossil generation. Instead, these portfolios should be analyzed and modeled so that the reliability level can be rigorously calculated, not hypothesized. Due to the complexities of modeling renewable energy and storage, however, renewable portfolios often require more round-trip modeling iterations than portfolios with higher levels of dispatchable fossil resources.

Long-term planning models like Aurora are not perfect at predicting future reliability needs when presented with the complexity of variable renewable energy and storage resources. This has been noted by utilities and industry experts in recent years, and this known modeling issue is often approached by using a round-trip modeling approach. When IPL sees that a portfolio has a lower-than-expected reliability value, the Company can add capacity resources to that portfolio, and then re-evaluate its reliability performance. For example, the addition of 600 MW of storage capacity in 2030 would likely bring the NR and AD portfolios to a level of risk closer to that of other portfolios.

Recommendation:

Rather than discounting renewable portfolios for low reliability, IPL should undertake and integrate robust resource adequacy modeling into its resource planning modeling process. IPL should treat its capacity expansion modeling as an iterative, round-trip modeling approach that iterates between reliability and cost-optimization.

V. Transparency

A. Dashboard metrics

IPL provided a dashboard with summary metrics for each of its 11 portfolios at the fourth RES meeting. The dashboard includes a range of metrics describing portfolios' costs, risks, and benefits. EI appreciate that IPL's scorecard can provide a quick way to compare portfolio qualities including GHG reductions and resource diversity. This presentation of results follows many best practices in resource planning.

While the EI appreciate that the dashboard measures the amount of renewable energy in each portfolio, the dashboard misses an opportunity to provide useful information on the risk-reduction value of renewable energy. Solar and wind power have no fuel requirements and emit no greenhouse gases. Adding solar and wind to resource portfolios therefore reduces fuel cost risk and greenhouse gas regulatory risk for customers.

While the Company has an obligation to customers to consider the value of non-emitting energy for avoiding GHG regulatory risk and the risk of increased fuel costs, this value has not been fully reflected in IPL's portfolio modeling. Many of IPL's portfolios rely on gas for up to 50 percent of energy needs in 2035. Yet the Company has not discussed the effects of high gas prices on these portfolios in comparison with portfolios that include more renewable energy. Similarly, the Company has not studied any carbon price except the EPA's low carbon price in this IRP, even though more aggressive carbon policy is likely in the future. The EI request that the dashboard include metrics that transparently measure the risk of fuel price increases and GHG policy in these portfolios.

Recommendation:

To provide better information about the risks of portfolios heavy in gas generation, the EI recommend that the scorecard include one additional metric:

- The portion of portfolio PVRR in 2035 from variable fuel costs that are subject to fuel price risk, and
- A metric that evaluates the societal impacts of carbon emissions from each portfolio using the social cost of carbon. Alternatively, the Company could model higher costs for carbon emissions to quantify that risk.

B. Transparency in reliability modeling

The EI request increased transparency in IPL's reporting on the reliability modeling tool used by Charles River Associates (CRA). While we appreciate IPL's incorporation of reliability modeling into its resource plan, CRA's modeling tool is proprietary, and is not available for intervenors to evaluate. IPL and CRA should provide model documentation and a detailed explanation of how the model works in its long-term plan.

C. Transparency in the load forecast

IPL's mid load forecast includes 1,000 MW of new peak load by 2030, representing a one-third increase in peak load over just the next five years. The high load forecast reflects even higher levels of load growth—specifically 2,000 MW of new load by 2030. Procuring resources to prepare for a large forecasted increase in peak load will cause increases in costs and rates for IPL ratepayers. For example, if IPL adds 1,000 MW of gas CC capacity, that results in a capital cost of approximately \$1.25 billion. If these increases in peak load then fail to materialize, absent action from the Commission, ratepayers will pay for capacity they don't need.

In the first RES meeting, the Company provided information on the MISO load forecast that IPL used in the Company's MISO-wide modeling. However, the Company has not provided adequate support or explanation for its increased peak load forecast for its own system, even though the peak load forecast is a major driver of costs in the Company's RES portfolios. In response to RES participants' questions, the Company has provided general statements about its load forecasts and the large customers driving much of the increase in load. These informal responses are helpful for gaining a basic understanding of the load forecast drivers, and are aligned with national trends we are seeing elsewhere. But the final RES document should provide a detailed justification and explanation of the Company's forecasting methodology. The Company should be using probability

weightings and rankings in developing its mid- to long-term load forecast. In the near-term, IPL should not be building resources to meet new load until it has provided strong evidence—such as developer construction milestones or commitments to pay for a substantial portion of projected power demand—to the Commission and stakeholders that the new load is likely to materialize.

When including a large increase in forecasted load, the Company must explain clearly the assumptions and methodologies used. The risks to customers are high, and the Company's burden to support its load forecast must also be high. The Company should provide information about the main drivers of its increasing load forecasts. For large project industrial load, the Company should provide enough information for participants to understand how likely the new load is to materialize, including information regarding how much of the new load has signed any agreement with IPL for new or increased load requests, and how much of the new load has begun construction on new facilities. The RES should also reflect the best available information that IPL has. For example, if the Company anticipates large customers using the Individual Customer Rate (ICR) tariff approved in the recent rate case, the resource planning should transparently reflect that.

Recommendations:

- The Company should identify and prioritize no-regrets actions that provide value in all potential future scenarios and diversify its resource portfolio by adding non-emitting energy resources in the near-term instead of adding fossil generation.
- The Company should outline for the Commission how it will ensure that residential customers are not on the hook for the cost of new resources built to serve new data center load for example, by requiring signed commitments from the customer, data center specific tariffs and agreements that commit the customer into a portion of the cost of the new resources, or other measures and requirements.

VI. Conclusion

We appreciate the opportunity to engage in the RES process and provide feedback. IPL's process was dormant for months and then resumed this fall with a rushed conclusion. The process has presented challenges for both providing comments and understanding IPL's modeling approach. We request that IPL and its consultants work with our team to help us understand its modeling approach so that we are both able to replicate how IPL's model works, and we have the opportunity to run our own modeling based on IPL's modeling. We look forward to being able to run our own modeling and provide additional feedback on IPL's RES process.

Respectfully submitted December 6, 2024.

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