

**BEFORE THE  
ILLINOIS COMMERCE COMMISSION  
COMMENTS OF PJM INTERCONNECTION, L.L.C.  
ON THE AMEREN ILLINOIS RTO COST-BENEFIT ANALYSIS**

**I. INTRODUCTION**

PJM Interconnection, L.L.C. (PJM) respectfully submits the following comments to the Illinois Commerce Commission (ICC) on the Ameren Illinois RTO Cost-Benefit Analysis (analysis) filed on July 21, 2023, in Docket No. 22-0485. PJM offers these comments as the independent, federally regulated regional transmission organization (RTO) responsible for ensuring reliable power delivery across the bulk-power system for all or part of 13 states and the District of Columbia, including part of Illinois.

The bulk-power system in Illinois is managed by two different system operators, PJM and the Midcontinent Independent System Operator, Inc. (MISO). Customers in the Commonwealth Edison (ComEd) service territory are served by PJM. Customers in the Ameren Illinois service territory are served by MISO.

In both cases, Illinois customers receive the demonstrable benefits and efficiencies inherent to the RTO/ISO<sup>1</sup> model. These benefits include competitive markets for energy and ancillary services, the option to use competitive markets for resource adequacy, optimized generation dispatch, reduced reserve margin requirements, geographic scale and diversity, and integrated and comprehensive transmission planning. PJM and MISO are both mission-driven to ensure the reliability of the bulk-power system while creating economic efficiencies that help consumers save money. Through these efficiencies, PJM estimates that it provides \$3.2 billion to \$4 billion of savings to the 65 million consumers located in its footprint.<sup>2</sup> This includes savings in energy production costs driven by an expanded dispatch area, regional

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<sup>1</sup> Independent System Operator

<sup>2</sup> [PJM Value Proposition](#)

transmission planning, and streamlined generation investment resulting in the replacement of less efficient resources that also results in emission reductions. The RTO model allows for more efficient region-wide transmission planning, dispatching and resource adequacy planning, representing a significant cost savings to consumers. MISO provides similar benefits to the consumers in the MISO region.

The ICC initiated this analysis for a number of reasons, including the fact that Illinois is a restructured, retail-choice state. Unlike Illinois, the majority of the other states served by MISO use a vertically integrated utility model that does not include retail choice. Vertically integrated utilities typically do not rely on markets for resource adequacy.

The ICC recently asked whether the Ameren Illinois service territory (Zone 4) would further benefit from joining the PJM region, where more energy providers participate in a competitive market for the procurement of resource adequacy. The analysis, performed by Charles River Associates (CRA), concluded that moving Zone 4 to PJM would increase system resiliency and lower emissions, but that it would do so at an increased overall net cost to consumers. The increased costs projected by the analysis result primarily from the fact that Zone 4 is short of capacity. The model used in the analysis indicates that moving Zone 4 to the PJM capacity market, as it is currently structured, would increase capacity costs across all of Illinois. PJM offers these comments to provide additional context to the analysis and to suggest areas of further consideration.

It is important to note that, by submitting these comments, PJM is not advocating for Ameren's move to PJM. PJM and MISO share a strong partnership, assisting each other during times of grid stress and working collaboratively on any number of issues that impact the bulk-power system. PJM is submitting these comments because it serves consumers in the state of Illinois as well, and PJM and its markets provide a tremendous value proposition to those consumers that the CRA analysis did not capture because of the nature of the analysis objective and modeling assumptions. It is important that PJM provides feedback on the CRA analysis and suggests certain areas that CRA and the ICC may want to consider prior to affirmatively accepting the conclusions in the report.

## **II. COMMENTS**

The analysis evaluates whether Zone 4's continued membership in MISO is more financially advantageous to Illinois consumers than integrating with PJM. The analysis looks at energy trade benefits, transmission expansion costs, capacity (reliability) costs, RTO administrative costs and the cost of integration. The cost of integration is a one-time cost to make the legal, administrative and technical changes required for the zone to become a part of PJM.

The results of the analysis indicate that Illinois consumers see increased energy trade benefits and reduced RTO administrative costs when Zone 4 joins PJM. However, the analysis shows that these benefits are obtained at the expense of an overall net cost increase to Illinois consumers, with the largest impact resulting from increased capacity costs and transmission expansion costs. The increased capacity costs are largely due to the fact that Zone 4 is capacity short, which makes it a net importer from the rest of the system (whether the system be MISO or PJM). Because of this dynamic, the implied directional results of the analysis are rational; the constrained region impacts the surrounding regions. It is possible that the capacity shortfall in Zone 4 is similarly impacting costs across the MISO footprint. However, because of the method in which the analysis was performed, the magnitude of the increased costs warrants further evaluation.

### **A. Capacity Costs**

The analysis derived the capacity costs with an assumption of bidding behaviors from the most recent PJM Reliability Pricing Model (RPM) auction with an assumption of the "missing money" using expected avoidable going-forward costs and energy market performance. While this method can produce robust results, the inputs for the expected avoidable costs may not reflect expected future conditions and PJM market rule changes. Additionally, the assumed energy market performance and ultimate determination of the "missing money" may not properly consider the dynamic nature between capacity and energy revenues in a changing environment. PJM recognizes the challenges in modeling these expected conditions and simply identifies these challenges as a potential reason of the significant magnitude of increased capacity from the analysis.

Further, the analysis did not evaluate the cost or reliability impact of changing dynamics on both the MISO and PJM systems. Evaluation of reserve margins as well as significant changes to capacity market designs are currently under consideration at both PJM and MISO. Notably, the changes under consideration will likely result in greater capacity market design similarity between PJM and MISO (e.g., sloped demand curves and seasonal market structures in both). This may result in capacity market price convergence between PJM and MISO. However, without full consideration of the likely market design evolution in both regions, the analysis lacks context regarding the impacts of present-day capacity price differentials as a net cost between PJM and MISO.

#### **i. Impacts of Reserve Margins**

Zone 4, on its own, does not have enough capacity resources to supply its resource adequacy obligation. Consequently, Zone 4 depends on the rest of the system for the additional capacity needed to meet its reliability needs. Today, the region relies on the rest of MISO for the capacity it requires. In the analysis, if Zone 4 were to become a part of PJM, it would then rely on the rest of PJM for that capacity. The analysis does not consider the impacts of the relative reserve margins available to MISO and PJM over the time horizon. It is well documented that all RTOs are concerned about declining reserve margins in the future. There is objective data that is readily available to the ICC and CRA related to the trajectory of each RTO and both their current and projected reserve margins. For instance, the North American Electric Reliability Corporation (NERC) recently published its 2023 seasonal risk assessment,<sup>3</sup> and there are other reports and public statements related to current and forecasted installed reserve margins in each RTO. This is relevant to each RTO's positioning related to the ability to procure capacity in Zone 4 and should impact the CRA analysis.

#### **ii. Impacts of Changing Capacity Market Design**

At present, the capacity market constructs in PJM and MISO have key differences. PJM is under an annual capacity market construct, meaning, it procures capacity resources on an annual basis (resources

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<sup>3</sup> North American Electric Reliability Corporation, [2023 Summer Reliability Assessment](#) (2023).

are committed for a delivery year from June 1 to May 31). MISO utilizes a seasonal market construct, which allows the market to procure capacity for the needs of that seasonal period, rather than the annual period. PJM and its stakeholders recognize the efficiency and reliability value of a seasonal market and are evaluating the benefits of PJM moving to a seasonal (or other beneficial more granular) approach to capacity procurement as well.

In addition, PJM uses a downward-sloping demand curve to procure capacity (called a Variable Resource Requirement or VRR curve), meaning, it may procure additional reliability megawatts while lowering the total cost to consumers. The economics of the elastic demand curve ensure the amount consumers pay is commensurate with the benefit they receive from capacity. At present, MISO does not use a downward-sloping curve, but rather, procures capacity strictly to the target metric (this is also referred to as a vertical demand curve). MISO and its stakeholders are currently evaluating moving to a downward-sloping demand curve.

As noted in the analysis, if PJM moved to a seasonal market construct and MISO moved to a downward-sloping demand curve, the difference in capacity costs between MISO and PJM observed in this study could diminish.

## **B. Transmission Expansion Costs**

The analysis also considers the difference in transmission expansion costs between PJM and MISO. The analysis indicates that transmission expansion costs would increase for Zone 4 if it were to join PJM. However, there are key underlying assumptions on transmission expansion costs in the analysis that do not fully capture the cost-benefit profile. The first is an inconsistent allocation of future project costs, and the second is an incorrect assumption about future PJM costs.

The transmission costs observed in the analysis are in part due to MISO cost allocation rules for zones leaving the ISO; Ameren Illinois would still be responsible to pay for any MISO transmission costs allocated to Zone 4 before the zone exits MISO. Because of this, the analysis considered transmission costs allocated to Zone 4 in MISO's Long-Range Transmission Planning Tranche 1 and projected costs for Tranche 2, as it is expected that those costs would be allocated to Zone 4 prior to an exit from MISO.

The study then adds this “sunk” transmission cost to a projected estimate for what Zone 4 could expect in future PJM transmission expansion projects to calculate the cost-benefit. However, it appears that the analysis did not similarly extrapolate MISO transmission expansion costs over the analysis time horizon, including the recently released \$9.8 billion MISO Transmission Expansion Plan (MTEP), and Long-Range Transmission Plan Tranches 3 and 4, to net them against the PJM projected transmission costs over that same time frame. PJM would suggest examining the projected transmission expansion costs over the study time horizon for both MISO and PJM to better examine the net benefits of remaining in MISO versus joining the PJM RTO.

In addition, the analysis includes projected PJM transmission costs that were taken from an informational-only offshore wind study.<sup>4</sup> This study was conducted as a collaborative effort between PJM and the states, and it is purely advisory in nature. The study analyzed five scenarios to provide a high-level reliability assessment and resulting cost estimates of how envisioned offshore wind generation and current state renewable portfolio standard (RPS) targets would impact the onshore transmission system. PJM’s transmission expansion process includes a State Agreement Approach (SAA), which allows a state, or multiple states in agreement, to incur the cost of transmission expansion for public policy. The offshore wind study was advisory only; it was not integrated into the PJM Regional Transmission Expansion Plan, and the state of New Jersey chose a single-state SAA for their offshore wind public policy goals. For those reasons, the transmission cost allocation from the offshore wind study would largely not be applicable to Illinois. Consequently, PJM recommends that the analysis results exclude costs allocated based on the offshore wind study from the overall cost-benefit analysis.

### **C. Energy Trade Benefits and RTO Administrative Costs**

RTOs and ISOs provide significant cost-benefits to the consumers they serve. The analysis indicates that all consumers in Illinois would enjoy net energy trade benefits if Zone 4 were to join PJM. Additionally, Zone 4 customers would see a decrease in RTO administrative costs by joining PJM. In its

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<sup>4</sup> [Offshore Wind Transmission Study: Phase 1 Results](#)

value proposition, PJM estimates that customers across its footprint recognize \$600 million in savings from reduced energy production costs and is encouraged that the analysis indicates that this benefit would be extended to Zone 4 if it were to join PJM. These cost savings would accrue to Zone 4 consumers through low-cost generation available in the PJM region. PJM's administrative costs are lower than MISO's, which would also represent an additional cost savings to Zone 4 consumers. Again, it is important to recognize that all Illinois consumers are beneficiaries of the state's participation in PJM and MISO. The analysis clearly delineates these benefits and shows that the specific situation in Zone 4 results in certain cost components being optimized in MISO and other cost components being optimized in PJM.

### **III. CONCLUSION**

PJM thanks the Illinois Commerce Commission for the opportunity to comment. Again, PJM is not advocating the Ameren Illinois move to PJM. PJM believes Ameren consumers are well positioned with their membership in MISO, and ComEd consumers are well positioned with their membership in PJM. As modeled under current market conditions, the analysis recommends that Zone 4 remains in MISO based on the total net costs associated with joining PJM at this time. PJM takes no issue with that stated conclusion. However, the CRA analysis should not be interpreted to mean that PJM is a more expensive proposition for Illinois consumers generally. The magnitude of the CRA results can be attributed to modeling assumptions, the challenges and limitations in undergoing this type of projection analysis, and the specific dynamics of Zone 4. While the implied directional results of the analysis were rational based on Zone 4's current system dynamics and topology, there were transmission expansion and markets modeling assumptions that hinder the analysis from providing a complete picture of cost-benefit impacts.

This analysis indicates that capacity costs would be the largest net cost to consumers if Zone 4 were to join PJM. However, it did not consider the impact of reserve margins over the study time horizon. The analysis also noted that if PJM were to move to a seasonal construct and MISO were to move to a downward-sloping demand curve, the capacity costs would likely converge, mitigating some portion of the difference in the cost-benefit analysis. Given the dynamic nature of the ongoing energy transition as

well as market modifications in both PJM and MISO, there may be an opportunity for the ICC to undergo additional cost-benefit analyses at some point in the future. Any such future analysis may benefit from a more in-depth consideration of capacity reserves in PJM and MISO as well as the observed trends in both regions. Future analysis may also benefit from the consideration of a more comprehensive and comparable assessment of PJM and MISO transmission expansion costs over the study period.

PJM believes that consumers across Illinois are well served by their membership in both PJM and MISO, and we look forward to our continued partnership with the state of Illinois as it seeks to maintain the balance of reliability and affordability while pursuing its climate objectives.

Respectfully submitted,

*Asim Haque*

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