



Notice of Inquiry (23-NOI-01)

**Ameren Illinois Regional Transmission Operator
Cost-Benefit Study**

**Report to the Commission
Pursuant to 2 Ill. Adm. Code 1700.350**

January 25, 2024

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I. Background

On August 3, 2023, the Illinois Commerce Commission (“Commission” or “ICC”) issued a Notice of Inquiry (“NOI”) to obtain stakeholder comments regarding the Ameren Illinois Report (“Ameren Report” or “Study”) filed in Docket No. 22-0485 on July 21, 2023. The report is a ten-year cost and benefit study by Charles River Associates on Ameren Illinois Company (“AIC”) and the entirety of MISO Zone 4 (which includes the Springfield City Water, Light, and Power utility (“CWLP”) and the Southern Illinois Power Cooperative or “SIPC”) either remaining with the Midcontinent Independent System Operator (“MISO”) or joining the PJM Interconnection (“PJM”) beginning in January 2025.¹ The Ameren Report examines five key cost/benefit components: 1) energy trade benefits; 2) transmission expansion costs; 3) capacity costs; 4) regional transmission operator (“RTO”) costs; and 5) exit and integration fees. The study concludes that for the period 2025-2034, the estimated net costs resulting from AIC and the rest of MISO Zone 4 joining PJM are \$733.6 million for AIC, \$22.4 million for SIPC and CWLP, and \$2,696.2 million for ComEd, for a total of approximately \$3.4 billion². Of that amount, approximately \$3.35 billion are due to a forecasted increase in capacity prices primarily due to a lack of capacity in MISO Zone 4.

Initial comments were due on October 2, 2023, and reply comments were due on November 1, 2023. Initial comments were submitted by the following six parties: AARP Illinois (“AARP”); Commonwealth Edison Company (“ComEd”); Illinois Electric Energy

¹ In its Order in Docket No. 22-0485, the Commission directed AIC “to conduct an analysis and study of its continued membership in MISO” and did not reference the MISO membership of either CWLP or SIPC. The Commission did, however, accept Staff’s recommendation that AIC should “be entitled to maintain a level of independence and control of this study.” Illinois Commerce Commission, Order in Docket No. 22-0485, dated July 21, 2022, at, respectively, 5 and 4.

² Estimates are stated on a 2023 net present value basis.

Customers (“IIEC”); MISO; PJM Interconnection, L.L.C. (“PJM”); and the Staff of the Illinois Commerce Commission (“ICC Staff”). Reply comments were submitted by eight parties: AIC; Charles River Associates (“CRA”); the City of Springfield, Illinois’ Office of Public Utilities (“City” or “CWLP”); ICC Staff; MISO; Prairie Power, Inc. (“PPI”); SIPC; and The Association of Illinois Electric Cooperatives (“AIEC”).

The comments submitted by the parties are available to the public under the heading “NOI Schedule and Submissions” on the Commission’s website at <https://www.icc.illinois.gov/notice-of-inquiry/23-noi-01>.

II. Summary

A. Initial Comments

Two key ongoing developments in MISO and PJM capacity market designs that could impact the Study if they were quantified and/or incorporated into the analyses were recognized by multiple parties:

- MISO’s proposal to transition to a reliability-based demand curve (“RBDC”) for its Planning Resource Auction (“PRA”) beginning in the 2025/2026 planning year in lieu of a vertical demand curve. If approved by FERC, MISO and PJM would both be using a sloped demand curve and would reduce the Study’s estimated incremental capacity costs from an RTO switch.
- PJM’s ongoing evaluation to move to a seasonal capacity procurement like MISO. This approach would also reduce estimated incremental capacity costs from a switch to PJM.

Of the six parties submitting initial comments, one party advocates for AIC switching from MISO to PJM, one party advocates for AIC remaining in MISO, two parties were neutral, and two parties highlight the Study's modeling limitations.

In support of AIC becoming a PJM member, AARP cites to the following advantages of AIC leaving MISO: removing the seams issue caused by two different RTO memberships in Illinois; allowing all Illinois ratepayers access to low-cost Illinois nuclear power that would save AIC customers \$526 million; lower administrative costs; and a better fit since PJM is composed of states that, like Illinois, allow retail supplier choice and have aggressive renewable energy goals.

In support of AIC remaining in MISO, IIEC cites to the substantial \$3.4 billion cost estimated by the Study that would be passed on to Illinois ratepayers if AIC moves to PJM. IIEC notes that recent MISO-proposed reforms (i.e., use of an RBDC instead of a vertical curve at its PRA) and the results of the PRA for the 2023/2024 planning year address capacity price volatility concerns and capacity shortfalls in future auctions that were cited in the Study.

Although not taking a position on whether AIC should join PJM, ComEd highlights the Study's finding that if AIC joins PJM, local greenhouse gas emissions would increase in the ComEd zone due to increased exports to AIC that "are balanced by additional fossil generation."

MISO notes the Study used MISO's models appropriately and finds the Study's scenarios and impacts to be reasonable.

PJM and ICC Staff's comments identify modeling shortcomings in the Study. PJM's model-related comments pertain to two areas. First, with respect to capacity

costs, PJM states the Study based bidding behaviors on PJM's most recent "Reliability Pricing Model (RPM) auction with an assumption of the 'missing money' using expected avoidable going-forward costs and energy market performance" which may not reflect expected future conditions and market rule changes. PJM also notes the impacts of MISO's and PJM's relative reserve margins available through the Study's time horizon were not considered nor were the two ongoing capacity market design developments discussed at the top of this section. Second, with respect to transmission expansion costs, PJM states the Study inconsistently allocated future transmission costs since it did not include projected MISO transmission costs over the time horizon netted against PJM projected transmission costs over the same period. The Study, however, reflected "sunk" MISO transmission costs that would be allocated to Zone 4 under a move to PJM scenario. PJM further notes the Study used projected transmission cost inputs from an informational-only offshore wind study that would largely not apply to Illinois. Considered together, these modeling concerns would affect the cost-benefit impacts quantified in the Study and any future analysis would benefit from addressing these concerns. Finally, PJM notes that in addition to benefitting from lower administration costs, its customers have seen an estimated \$600 million in savings from reduced energy production costs.

ICC Staff notes that MISO member states have mostly vertically integrated utilities and, as the only retail access state, Illinois' energy policy has been at odds with MISO's PRA. In contrast, "most PJM member states are retail access states that rely on competitive markets to discipline electricity prices." Consequently, PJM's policies and operations are more in line with Illinois policies. ICC Staff states, however, that

benefit is not quantified in the Study along with other benefits of joining PJM: less volatile clearing prices, PJM's effort to establish a clean energy market, "improvements of emissions, better outcomes for environmental justice communities, and resiliency." Staff notes other modelling concerns that would have an effect on the Study's results. First, the study's 10-year time horizon may understate costs and/or benefits since transmission lines have a long life, noting that even MISO's long-term transmission planning uses a 20-year period. Second, the Study's finding that MISO may be unable to prevent unserved demand is a significant reliability risk that was not quantified in the Study. Third, the Study assumes without confirmation that a move by AIC to PJM would result in SIPC and CWLP similarly moving to PJM. Fourth, the Study may have overestimated incremental capacity costs from a switch to PJM because it does not reflect the two ongoing capacity market design developments noted at the top of this section. Fifth, the Study does not attempt to quantify the impact of increasing capacity prices on incentivizing construction of new generation and capacity and/or a delay in retirements of existing capacity which in turn would result in reducing capacity prices.

B. Reply Comments

Ameren Illinois Company (AIC)

AIC responds that criticisms leveled against the Study are mostly policy or qualitative in nature and that dynamic factors, such as changes in technology and markets, affect even the most rigorous study's ability to predict future outcomes. In response to AARP, 1) AIC affirms the independence of the consultants it engaged to conduct the Study; 2) AIC asserts Commission administrative challenges associated

with two RTO memberships in Illinois would be overshadowed by the “greater burden in monitoring the highly disruptive process of a major utility transferring to a different RTO”; and 3) the Study’s findings should be viewed as a whole instead of focusing on factors in isolation.

In response to Staff, AIC corrects Staff’s claim that MISO Zone 4 *twice* failed to meet its Planning Reserve Margin Requirement in the last decade to *once* in the said period. AIC agrees with Staff that capacity market shortages may not be sufficiently addressed by high capacity prices and is the reason for its support for MISO’s use of a sloped demand curve. Finally, AIC asserts that there is no empirical evidence that switching RTOs will reduce prices or resolve capacity price volatility concerns.

Charles River Associates (CRA)

CRA notes that its Study’s approach was presented to the Commission, MISO, and PJM early in the process and that the Study’s 10-year forecast period was pursuant to an ICC Order. Further, a longer forecast period would not have changed the Study’s cost assumptions and any costs/benefits from a longer period would have been discounted to their present value in 2023 dollars, resulting in a proportionally smaller impact relative to costs assumed in the first 10 years.

With respect to capacity costs, CRA asserts that changes to Study assumptions based on the NOI comments would not change the Study’s conclusion that a switch to PJM will result in billions in incremental costs to Illinois. CRA also notes that 1) its Study explicitly considered the impact of higher capacity prices on capacity supply responses such as new plant construction or decreased plant retirements; 2) Zone 4 price increases from differences in MISO and PJM constructs will persist even with

symmetrical market designs and similar supply and demand; 3) the Study assumption that all of Zone 4 will move to PJM if AIC moves to PJM is a likely outcome and the resulting costs for Illinois of such a move by non-AIC participants would not be substantial; and 4) power “procurements will be driven by the opportunity cost for capacity sellers, which are influenced by market prices.”

With respect to the Study’s reliability analysis, CRA notes its Study analyzed various portfolios for resource adequacy under 1,050 combinations of weather patterns and random outage events. The analysis indicates, among other things, that medium-term corrective measures by MISO can reduce its risk profile, and that there is only a 0.02% difference in the ratio of total MWh at risk to total annual demand between MISO and PJM.

With respect to transmission costs, CRA clarifies that forecasted MISO transmission costs for the Study period will occur regardless of whether AIC switches to PJM or not (i.e., zero net cost) and *incremental* transmission costs occur only if AIC switches to PJM. Given the absence of long-range transmission studies for PJM, CRA asserts its use of cost inputs from a PJM offshore wind transmission project was reasonable. But even if such cost inputs were eliminated, CRA asserts it would have only had a minimal impact on the net costs identified in the Study, i.e., 0.5%.

City of Springfield – City, Water, Light and Power (City or CWLP)

The City notes it was not consulted about the inputs or assumptions in the Study and it would not support an AIC move to PJM. It believes the Study’s assumed RTO exit fees were not based on “an analysis of the tariff or historical review of exit fee negotiations” that would be accepted by MISO owners/members absent litigation. The

City opines the integration fee assumptions were not based on an adequate study or analysis. The City states the Study's estimates of transmission expansion costs are unreasonably low, and the basis of the estimated \$38.6 million CWLP energy trade benefits are unclear or speculative in part. Additionally, while the Study concludes CWLP customers would see savings of 0.1 cents/kWh or \$9.50/year based on March 2023 residential rates if it joins PJM, the City notes as of that same period CWLP customers were already paying \$42.84 less per month than the State average residential electric customer. The City further states the Study incorrectly assumes that CWLP would not need to procure capacity in the market. CWLP no longer generates sufficient power and must rely on power markets for the difference, which would be more costly to do in the PJM capacity market.

With regard to resource adequacy, the City disagrees with the Study's statement that Illinois utilities rely on their respective RTOs for resource adequacy as this is not true for CWLP, a vertically integrated utility that plans for its own resource adequacy and service reliability. The City is concerned that with the State's specific fossil fuel plant retirement dates and incentives for building renewable resources without a formal study on their resource adequacy, moving to the PJM RTO that 1) has no long-range transmission planning, 2) is unable to bring off-shore wind to market in the near-term, and 3) is heavily reliant on natural gas generation, increases Illinois' vulnerability to future challenges with power reliability, resiliency, costs, etc. The City further asserts the Study did not have an adequate basis for concluding that switching to PJM increases resiliency as it appears to be based on an assumption that MISO is moving to a larger solar portfolio than PJM.

With regard to whether CWLP will move to PJM if AIC does the same, the City notes the MISO tariff requires a MISO owner to be physically interconnected with MISO's transmission system. CWLP is a MISO owner from its physical interconnection with AIC. Assuming MISO grants CWLP a waiver and is allowed to continue as a MISO owner even if AIC moves to PJM, this will require, among other things, potentially building a new transmission network to physically connect CWLP to another MISO owner or procuring transmission service from AIC at an unknown, PJM market cost. On the other hand, if CWLP moves to PJM with AIC, the City states it would also incur significant costs that include MISO exit fees, integration fees, new software costs, new protocol training, payments for approved transmission projects, costs for new long-term transmission and generation planning based on new RTO rules, stranded assets, and renegotiation of existing power contracts.

Finally, the City notes that the growing similarities between MISO and PJM are reducing financial advantages to switching RTOs, MISO has more renewable generation (22%) than PJM (7%) and is better able to access wind power from its western areas, and 11 other states are similarly split between two RTOs---three of which are between MISO and PJM (i.e., IN, KY, MI).

ICC Staff

ICC Staff expressed its support for MISO's efforts to transition to a Reliability Based Demand Curve (RBDC) and notes the RBDC addresses the concerns it raised in its Initial Comments on the vertical demand curve that MISO currently uses for its PRA. ICC Staff notes that MISO's RBDC proposal submitted to FERC on September 29, 2023, if approved, will impact the 2025-2026 planning year.

ICC Staff also concurs with MISO that with respect to resource adequacy, MISO's seasonal (instead of annual) construct better captures risk in a given year. ICC Staff further notes that PJM's efforts to likewise move to a seasonal approach has been delayed as the PJM Board seeks more time to refine the proposal. Thus, PJM's proposed capacity market reforms with the FERC on October 13, 2023, did not reflect a seasonal construct.

MISO

MISO points to its September 29, 2023 tariff filing with the FERC that, if approved, would allow it to transition to the downward sloping RBDC for its future PRAs. MISO notes such filing was supported by the Organization of MISO States that includes the Commission. MISO further states that while it is a leader in interconnection queue development and transmission planning, it is further improving its queue process including reflecting reforms associated with the FERC's July 28, 2023 Order.

With respect to long-range transmission planning ("LRTP"), MISO avers that a second LRTP portfolio that builds upon the first LRTP portfolio is currently being studied. The new LRTP portfolio's goal is to "enable all the resource goals of MISO states and membership." MISO disagrees with Staff's determination that lower emissions would result from a switch to PJM, noting that its LRTP allows for increased interconnection with emission-free resources. MISO further points to its efforts such as emissions tracking since 2021, its online dashboard that reflects various emissions-related data within the MISO footprint, and its near real-time emissions projects at pilot scale as part of its market redefinition efforts to support the MISO Reliability Imperative.

Prairie Power, Inc. (PPI)

PPI is an electric cooperative composed of 10 rural electric distribution members that serve more than 78,000 retail customers in central Illinois. It owns and operates 328 MW of generating capacity, approximately 898 miles of high-voltage transmission lines, and is a MISO owner based only on its physical interconnection with AIC. PPI states an AIC switch to PJM will cause it to lose its physical interconnection with MISO, along with its status as a MISO owner, and its access to the MISO energy markets. PPI further states that regardless of whether it moves or does not move with AIC, an AIC switch to PJM would likely generate new issues with higher cost implications such as new FERC proceedings and additional MISO exit costs to both AIC and PPI.

The decision as to whether non-Ameren utilities can stay in MISO if AIC switches RTOs rests with MISO; therefore, PPI disagrees with ICC Staff's statement that implies such decision rests with the utility. Although it is unlikely that MISO will allow PPI to remain a MISO member if AIC moves to PJM, if allowed to stay, PPI states it will incur significant costs to either build a new extensive network of transmission facilities to physically interconnect with an existing MISO owner or procure transmission services from AIC at an unknown and ongoing cost. In the event PPI would need to leave MISO with AIC, PPI states it will also incur significant costs that include MISO exit fees, integration fees, new software, new protocol training, payments for approved transmission projects, new long-term transmission and generation planning based on RTO rules, stranded assets, and renegotiation of existing power contracts. PPI believes none of the risks and costs that will emanate from AIC's exit from MISO should be borne by PPI, its members, or its retail customers.

Finally, PPI notes that the growing similarities between MISO and PJM are reducing financial advantages to switching RTOs, MISO has more renewable generation (22%) than PJM (7%) and is better able to access wind power from its western areas, and 11 other states are similarly split between two RTOs---three of which are between MISO and PJM (i.e., IN, KY, MI).

Southern Illinois Power Cooperative (SIPC)

SIPC is an electric cooperative composed of seven rural electric distribution members that serve more than 84,000 retail customers in southern Illinois. It owns and operates 523 MW of generating capacity, approximately 1,100 miles of high voltage transmission lines, multiple substations, and is a MISO owner based on its physical interconnection with AIC and Big Rivers Electric Corporation (“BREC”). SIPC states that if AIC leaves MISO, the decision as to whether non-Ameren utilities can stay in MISO if AIC switches RTOs rests with MISO; therefore, SIPC disagrees with ICC Staff’s statement that implies such decision rests with the utility. Moreover, SIPC notes that only four of its seven members are physically interconnected to MISO. Therefore, an AIC switch will potentially split SIPC between the two RTOs.

Although it is unlikely that MISO will allow SIPC to remain a MISO member if AIC moves to PJM, if allowed to stay, SIPC states it will incur significant costs to build an extensive network of transmission facilities to increase its physical interconnection with BREC, provide training on new protocols, renegotiate existing power contracts, and pay for Transmission Service Request costs even after existing contracts end. In the event SIPC would need to leave MISO with AIC, SIPC states it will also incur significant costs that include MISO exit fees, integration fees, new software, new protocol training,

payments for approved transmission projects, new long-term planning transmission and generation based on new RTO rules, stranded assets, and renegotiation of existing power contracts. These costs may be substantial particularly since SIPC may have a split system of four members in PJM and three members in MISO. SIPC believes none of the risks and costs that will emanate from AIC's exit from MISO should be borne by SIPC, its members, or its retail customers.

Finally, SIPC notes that the growing similarities between MISO and PJM are reducing financial advantages to switching RTOs, MISO has more renewable generation (22%) than PJM (7%) and is better able to access wind power from its western areas, and 11 other states are similarly split between two RTOs---three of which are between MISO and PJM (i.e., IN, KY, MI).

The Association of Illinois Electric Cooperatives (AIEC)

AIEC is an organization composed of 25 distribution cooperatives that serve approximately 600,000 customers in 90 out of 102 Illinois counties, and five Illinois transmission cooperatives. AIEC states the possible financial and practical impacts that AIC leaving MISO would have on other load-serving entities must be considered in a thorough and detailed analysis. If AIC were to leave MISO, AIEC states that even if allowed to stay in MISO, electric cooperatives would need to build new duplicative transmission to connect to MISO. If the electric cooperatives leave with AIC to join PJM, exit fees would be incurred by its members.

III. Conclusion and Recommendation

The Illinois Commerce Commission Staff values the information the participants shared through their comments and appreciates each party's participation in this proceeding. The comments that were submitted in response to this Notice of Inquiry proceeding highlight the importance and impact to both Illinois utility customers and utilities surrounding a potential move by AIC (and potentially all members in MISO Zone 4) to PJM.

As identified in the Notice of Inquiry, the Commission did not intend for this proceeding to result in an enforceable Commission action. Rather, the Notice of Inquiry proceeding, and this report are intended to serve as reference tools that the Commission and other State policy makers may use to form the basis of a rulemaking or for other purposes at a later date.

In its Order in Docket 22-0485, the Commission directed AIC to examine the costs and benefits of AIC's membership in MISO and its participation in MISO markets, as opposed to the costs and benefits of membership in another regional transmission organization in order to provide better information regarding whether membership in MISO continues to serve the interests of AIC's electricity customers. The Ameren Report and the initial and reply comments in this proceeding provide such information.

Several parties provide recommended changes to the methodology and/or inputs into the Ameren Report that may improve the information available to the Commission regarding such benefits. Nevertheless, it is not clear that implementing such changes would change the conclusion from the Ameren Report that Zone 4 joining PJM would result in incremental net costs for AIC, ComEd, and the State of Illinois overall. Therefore,

based upon the information submitted in the proceeding, at this time, ICC Staff does not recommend the Commission take any specific action with regard to changing AIC's MISO membership. In making this recommendation, ICC Staff notes that the information submitted in this proceeding suggests that assessing the net benefits of AIC's MISO membership is not a static assessment and will change over time. As a consequence, ICC Staff further recommends the Commission leave open the possibility of further analyses should future circumstances warrant them.