PJM/MISO IPSAC Feb 17, 2023
Annual Issues Review – 3rd Party Issues and Feedback

RMI appreciates the opportunity to submit comments pursuant to the February 17, 2023 PJM-MISO IPSAC meeting concerning issues to potentially be addressed in this year's Coordinated System Plan (CSP).

As several recent studies have noted, there are multiple benefits from increased transmission capacity buildout between PJM and MISO in the coming decades.[1] This is not just due to the forecasted growth of renewable energy resources in both RTOs, which is already evident from increasingly backlogged interconnection queues in both RTOs,[2] but also stems from an urgent need to improve reliability during high stress conditions such as the recently experienced Winter Storm Elliott.[3]

As these and other studies have described, proactively planned transmission buildouts are more economical than piecemeal transmission buildouts driven by individual generation additions.[4] To that end, the PJM-MISO IPSAC CSP process holds great potential to meet the transmission needs identified by these studies in a cost-effective manner.

The current IPSAC Annual Issues Review process, while beneficial for identifying short-lead time transmission solutions along the PJM-MISO border (e.g., Targeted Market Efficiency Projects), is not designed to proactively identify and address the needed increase in interregional transfer capability the studies cited above show. For instance, IPSAC has noted how the TMEP review process is designed to be backward-looking at past (historic) congestion events.[5] Such a backward-looking approach fails to investigate potential future needs for additional transmission capacity due to factors such as increased

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[1] Xu, Q., Patankar, N., Lau, M., Zhang, C., and Jenkins, J.D., *Cleaner, Faster, Cheaper: Impacts of the Inflation Reduction Act and a Blueprint for Rapid Decarbonization in the PJM Interconnection*, Princeton University ZERO Lab, December 2022, https://doi.org/10.5281/zenodo.7429042, slide 33; *Grid of the Future: PJM's Regional Planning Perspective*, PJM Planning Division, May 10, 2022, https://pjm.com/-/media/library/reports-notices/special-reports/2022/20220510-grid-of-the-future-pjms-regional-planning-perspective.ashx, top of p. 10; Manz, S.T., Bachert, A., Najafabadi, A., MacDowell, J., and Hinkle, G., *Economic, Reliability, and Resiliency Benefits of Interregional Transmission Capacity: Case Study Focusing on the Eastern United States in 2035*, GE Energy Consulting, October 17, 2022, https://www.nrdc.org/sites/default/files/ge-nrdc-interregional-transmission-study-report-20221017.pdf; Larson, E., Greig, C., Jenkins, J., Mayfield, E., Pascale, A., Zhang, C., Drossman, J., Williams, R., Pacala, S., Socolow, R., Baik, E., Birdsey, R., Duke, R., Jones, R., Haley, B., Leslie, E., Paustian, K., and Swan, A., *Net-Zero America: Potential Pathways, Infrastructure, and Impacts*, Princeton University, October 2021, https://www.dropbox.com/s/ptp92f65lgds5n2/Princeton%20NZA%20FINAL%20REPORT%20%2829Oct2021%29.pdf?dl=0, slides 109-112, 123-126, 130-133, 137-140, 144-147.

[2] Rand, J., Wiser, R., Gorman, W., Millstein, D., Seel, J., Jeong, S., and Robson, D., *Queued Up: Characteristics of Power Plants Seeking Transmission Interconnection As of the End of 2021*, Lawrence Berkeley National Laboratory, April 2022, https://emp.lbl.gov/sites/default/files/queued_up_2021_04-13-2022.pdf

[3] Manz, S.T., et al., *Economic, Reliability, and Resiliency Benefits of Interregional Transmission Capacity*, October 2022 (see note 1); Goggin, M., *Transmission Makes the Power System Resilient to Extreme Weather*, July 2021, https://acore.org/wp-content/uploads/2021/07/GS_Resilient-Transmission_proof.pdf

[4] Brown, P.R., and Botterud, A., "The Value of Inter-Regional Coordination and Transmission in Decarbonizing the US Electricity System," *Joule 5*(1), January 2021, https://www.sciencedirect.com/science/article/pii/S2542435120305572 (see Figures 2 and 3); Pfeifenberger, J., Spokas, K., Hagerty, J.M., Tsoukalis, J., Gramlich, R., Goggin, M., Caspary, J., and Schneider, J., *Transmission Planning for the 21st Century: Proven Practices that Increase Value and Reduce Costs*, October 2021, https://www.brattle.com/wp-content/uploads/2021/10/2021-10-12-Brattle-GridStrategies-Transmission-Planning-Report_v2.pdf; Pfeifenberger, J., Spokas, K., Hagerty, J.M., and Tsoukalis, J., *A Roadmap to Improved Interregional Transmission Planning*, November 30, 2021, https://www.brattle.com/wp-content/uploads/2021/11/A-Roadmap-to-Improved-Interregional-Transmission-Planning_V4.pdf

[5] December 15, 2022 IPSAC meeting

renewable energy deployment or load growth due to electrification of end uses such as heating, transportation, and industrial processes such as hydrogen production.

Moreover, mismatches between the two RTOs' regional planning processes mean that it is inherently difficult for the IPSAC Annual Issues Review and CSP processes to identify large-scale interregional solutions that are more efficient.[6] For instance, there is no clear equivalent to MISO's Long-Range Transmission Planning (LRTP) process, which uses forward-looking scenario-based planning to assess transmission needs for future renewables and load growth due to electrification, in PJM's regional planning process. This makes it difficult for the IPSAC CSP to investigate more efficient interregional solutions to the needs identified by MISO in its LRTP, given that PJM is not studying transmission needs on the same temporal scope/scale.

The planning silos currently utilized by the CSP process (reliability, market efficiency, public policy) also make it difficult to plan interregional transmission solutions that may fulfill multiple and/or different needs in each RTOs (e.g., a line that provides market efficiency benefits in MISO but meets public policy objectives in PJM).[7]

To address the issues laid out above, RMI requests that the IPSAC investigate the launch of a more comprehensive, forward-looking interregional transmission planning process. Such a process would:

- Employ scenario-based planning, with scenarios designed to address credible ranges of uncertain future conditions, including but not limited to:
    - Renewable energy generation growth
    - Load growth due to electrification
    - System stress conditions such as extreme weather events
- Utilize a multi-value planning approach (studying lines that can deliver multiple types of benefits to each RTO and/or meet multiple or different needs for each RTO, branching across the pre-defined categories of reliability, market efficiency, and public policy)
- Include an initial stakeholder engagement window to solicit needs/drivers for interregional transmission from each RTO and its stakeholders to shape the forward-looking scenarios used. Various inputs solicited during this window could include:
    - Renewable energy development forecasts from states (including state public policy drivers such as Renewable Portfolio Standard goals)
    - Interconnection queue data on current projects in the queue and recent trends in queue entrances/exits
    - Current and forecasted congestion and curtailment data
    - Load growth scenarios under various electrification futures

The more comprehensive, forward-looking interregional transmission planning process laid out above could be a one-time occurrence to begin with but could turn into a recurring process (albeit less frequent than the Annual Issues Review and CSP sequence due to the increased scope and length of study required). Precedent exists for other RTOs launching one-time larger-scale study processes to deal with unique issues facing their grids today. For instance, in 2020, MISO and SPP launched the Joint

[6] Pfeinfenberger, J., et al., *Transmission Planning for the 21st Century* (see note 4)
[7] Pfeinfenberger, J., et al., *A Roadmap to Improved Interregional Transmission Planning* (see note 4)

Targeted Interconnection Queue (JTIQ) study process to identify transmission upgrades required along the MISO-SPP seam to integrate an increased volume of generation customers in their interconnection queues.[8] PJM and MISO could launch a similar one-time process to start, using a stakeholder engagement window to solicit input on issues that a more comprehensive, forward-looking interregional transmission planning process could address.

RMI urges the PJM-MISO IPSAC to consider over the coming months what a more comprehensive, forward-looking planning process could look like. Failure to adapt PJM-MISO interregional transmission planning to consider more forward-looking, multi-value scenarios could result in more congestion between systems and more costly, inefficient upgrades to both systems' grids as the pace of generator interconnections grows. It is important to take steps now to ensure that future changes to each system's grid are being looked at in a comprehensive and consistent manner through a single, streamlined interregional planning process—one that does not simply rely on comparing the findings from each RTO's regional transmission plan but that solicits inputs from both RTOs and other stakeholders to conduct forward-looking, scenario-based modeling on an interregional scale. While some of the issues laid out in this letter could be addressed by a forthcoming rulemaking from the Federal Energy Regulatory Commission (FERC),[9] there is no need for PJM-MISO IPSAC to wait for FERC to act.

Respectfully submitted,

Claire Wayner, Associate
RMI
On behalf of RMI

[8] "SPP-MISO Joint Targeted Interconnection Queue (JTIQ) Study," https://www.misoenergy.org/stakeholder-engagement/committees/miso-spp-joint-targeted-interconnection-queue-study/

[9] Federal Energy Regulatory Commission, *Building for the Future Through Electric Regional Transmission Planning and Cost Allocation and Generator Interconnection*, April 21, 2022, Docket No. RM21-17, https://www.ferc.gov/media/rm21-17-000