Planning Advisory Committee

Summary of Review and Advice to Advisory Committee and Board of Directors

MISO Transmission Expansion Plan (MTEP23) Appendix F

September 21, 2023

The Planning Advisory Committee, through its sector representatives, has reviewed the draft MTEP23 report and invited MISO stakeholders to provide input. The following is a summary of key input from stakeholders to the Advisory Committee and the MISO Board of Directors as well as brief MISO responses.

Summary of Feedback Received

MISO greatly appreciates the stakeholder feedback received throughout the MTEP23 study effort and most recently as part of the formal substantive feedback request, included below in detail with MISO's responses. MISO has long committed to robust and transparent transmission planning processes and has and will continue to take this valuable feedback to help inform the process(s). The substantive feedback received focused on the following topics:

1) Consideration of battery/storage resources and how to enable
2) Generator Interconnection queue reforms
3) Process and analysis for alternative solutions and larger-scale transmission projects
4) HVDC and 765 kV transmission consideration
5) Tranche 3 scope and schedule
6) Interregional planning improvements

This document includes substantive comments from the following stakeholders:

- Environmental Sector
- Great River Energy
- Competitive Transmission Developer Sector

Stakeholder Substantive Comments and MISO Responses

Environmental Sector Verbatim Comments:

The Environmental Sector submits these comments in response to MISO's MTEP23 Draft Report ("Draft Report"). As MISO's core transmission planning report, it's critical that MTEP reports are accurate and meaningfully transparent in explaining to stakeholders the challenges that the MISO system faces and how those challenges are being addressed, including how transmission system investments are selected and put forth for approval, and how the MTEP process fits with MISO's various roles and responsibilities in enabling the energy future being pursued by its member utilities and states. To that end, we offer these comments:

1. **The Draft Report belies the potential for battery storage and MISO's struggles to overcome ongoing hurdles to its deployment at scale:** In response to MISO's assertion that: "Potential future technologies that can provide flexible attributes, such as hydrogen, long-duration storage and small modular nuclear reactors, are not yet commercially available nor deployed at scale" (Chapter 1, p. 4), we would note (and request that MISO acknowledge) the ability of currently cost-effective and commercially available 4-hour batteries and hybrid resources to provide flexibility attributes and contribute significantly to meeting reliability needs. Unfortunately, MISO has not prioritized the steps necessary to enable interconnection and market participation of these resources, including market products that will compensate batteries for the attributes they can provide and that MISO is expressing an urgent need for. The Draft Report would benefit from a discussion of where interconnection and market rules for battery storage resources currently stand, the issues currently being discussed, and a timeline for addressing outstanding issues.

2. **We appreciate the Draft Report's improved transparency in how MTEP projects are vetted:** We want to commend MISO for the additional details in the Draft Report regarding how MISO evaluates TO-proposed projects and alternatives to those projects. Ensuring all transmission system investments are well-vetted and the most efficient and effective solutions to the identified issues is critical to protecting consumers from unnecessary costs, particularly given the sheer size and number of Appendix A projects this cycle. We appreciate MISO's effort to add clarity to the bottom-up planning processes and shed light on MISO vetting methodologies, including alternatives consideration, even as we continue to stress the need to expand MISO's consideration of alternatives and overall vetting of TO-proposed projects.

   We do note, however, that while the Draft Report clarifies that that MISO "strategically set up our local planning processes to assume FERC Order 890 transparency requirements for Transmission Owner submissions, with MISO's role ranging from alternative assessment, need validation, no-harm tests and/or transparency depending on the project submissions" (Chapter 1, page 9), and that "alternative assessments for projects may be completed by Transmission Owners prior to project submission to MISO, proposed by MISO, or proposed through stakeholder submissions", (Chapter 1, page 12), the Draft Report fails to explain how MISO determines when it will seek out and propose its own alternatives for vetting compared to simply analyzing TO-identified alternatives. We request MISO add this important detail to its description of the MTEP process.

3. **The Draft Report demonstrates the growing investment in, and need for, high-voltage transmission investments:** It is encouraging to see the expansion of the 345 kV network over the past several years, as shown in Figure 1.3-3, (Chapter 1, page 20). This will be a critical piece to meeting the high-renewables futures that MISO, states, and utilities are driving towards. But we note the absence of 500 kV, 765 kV, and/or HVDC and stress our concern that these high voltage solutions are not being adequately considered as solutions that can help cost-effectively meet the needs of the system as we achieve increasing reliance on renewable energy. While MISO staff have initiated very preliminary conversations on the consideration of 765 kV and HVDC in the LRTP process, MISO and stakeholders

need to quickly establish criteria for their consideration and methodologies to accurately capture the costs and benefits of these technologies and to understand their role in meeting the needs of MISO's system going forward. The Draft Report would benefit from an expanded discussion of the system's high-voltage needs and the steps MISO is taking to evaluate options.

4. **The Draft Report should better reflect MISO's struggles to manage its interconnection queue:** We appreciate MISO's recognition of the need to bring new resources onto the system quickly, (Chapter 2, page 11) and its admission that it has not been able to meet its DPP timelines due to the sheer volume of requests in the queue (Chapter 2, page 11), but the Draft Report fails to discuss what MISO is doing internally to address this need. The Draft Report alludes to new processes being developed, but these new processes are almost exclusively focused on reducing the number of projects entering the queue by putting additional risks onto interconnection customers. The Draft Report fails to acknowledge or discuss the new resources MISO will need to meet its own internal deadlines for project evaluation. The Draft Report would benefit from more information on the resources MISO needs to complete studies in a timely manner and/or what action MISO is taking to secure those new resources.

5. **The Draft Report's characterization of LRTP Tranche 3 raises concerns:** MISO's discussion of Tranche 3 LRTP planning is framed as 'Considerations' rather than 'Status' (Chapter 3, page 3). While this might seem like an unremarkable nuance, it raises questions regarding MISO's commitment to Tranche 3 planning. At a minimum, an indicative schedule for Tranche 3 planning and cost allocation would be helpful for stakeholders engaged in the effort and give confidence to stakeholders that MISO is committed to overcoming the current standoff over cost-allocation methodologies for Tranche 3 to move forward with planning a robust and reliable grid in the South.

6. **Interregional planning continues to fall short of system needs:** We appreciate MISO and SPP's progress on the Joint Targeted Interconnection Queue (JTIQ) study and proposed tariff provisions to implement replacing the Affected Systems Study process with the JTIQ. We urge timely filing of the package of tariff revisions with FERC so that the JTIQ portfolio can move forward. But seams interconnection studies are not sufficient, and we continue to raise concerns regarding the failure of interregional planning processes. The Draft Report's statements that there will not be CSP studies conducted with either SPP or PJM (Chapter 3, pages 6-7) highlight the lack of effective interregional planning. The decision to initiate a CSP study is based primarily on historic congestion, a glaring shortcoming given the recognized value of moving energy across the seams, particularly under high-renewable energy scenarios where the geographic diversity of resources becomes even more critical to maintaining the reliability and resilience of the system. MISO, PJM, and SPP should be doing long-term scenario planning of interregional needs. At a minimum, the Draft Report should discuss MISO's position on the needs for greater interregional connections, the shortcoming of the current interregional planning processes, and what MISO is doing to overcome these barriers. We continue to stress a need for MISO to be pursuing greater collaboration with its neighbors and the need for a forward-looking, scenario-based interregional planning process.

7. **The bottom-up process is an imperfect venue for responsible large-scale transmission investments, but we applaud MISO staff's efforts to address shortcomings:** The Environmental Sector notes that the reliability-driven local transmission investments slated for Louisiana and Texas are a sizable share of the overall MTEP23 portfolio. As noted in the September 6th SSPM meeting materials: 'MISO South top 10 Targeted Appendix A projects represent 41% of the overall cost of $8.8 Billion'. (MTEP23 Reliability Planning Scope Overview, 3rd South Region Subregional Planning Meeting, September 6th, 2023) Given this scale, we are appreciative of the additional attention MISO staff has given to our concerns about the process of qualifying projects of this magnitude through the SPM process.

We stress that we are supportive of local reliability and regional reliability transmission buildout, but above all, we support the thoughtful analysis of cost effective, efficient, and forward-looking investment decisions, particularly for projects (or portfolios of projects) of this size and scope. The SPM process simply doesn't

provide that. For example, the SPM process only allows for a narrowly-tailored economic analysis based on adjusted production costs. This process fails to consider the suite of economic benefits that transmission is known to provide and that are recognized in other MISO transmission planning processes like the LRTP.

That being said, we appreciate MISO's work with stakeholders, the addition of an economic screening process, and the consideration of alternatives for ELL Amite South Reliability Phases I-III, DSG Reliability and Resilience, and ETI SETEX Area Reliability projects (Chapter 3, pages 107-114 and 124-125 respectively). Specifically, we support MISO's selection of the alternate configuration provided in the September 6th meeting materials for the DSG Reliability and Resilience, and Amite South Reliability Phase I projects with the Commodore-Waterford-Churchill 500 kV Loop.

In all, the Environmental Sector appreciates MISO's efforts to put forth a Draft Report that provides improved transparency into MISO efforts to meet the needs of the system as it evolves. We look forward to continuing to work with MISO staff and leadership to improve on MISO processes and transparency.

MISO Response:

Comment: The Draft Report belies the potential for battery storage and MISO's struggles to overcome ongoing hurdles to its development at scale.

Analysis, such as the LRTP energy adequacy assessments, have shown that batteries with a 4-hour duration may be insufficient to provide necessary reliability attributes. MISO does not intend to imply that such available storage resources, or other commercially available technologies such as hybrid resources, provide no reliability value.

The MISO Generator Interconnection Queue is fuel-agnostic and must evaluate all interconnection requests in a common manner. The amount of storage within the queue was relatively small until the 2022 queue cycle when the amount of stand-alone storage requests tripled. As of September 2023, there are 38 GW of stand-alone storage requests and 94 GW of hybrid resources with a storage component. Additionally, MISO has approved the interconnection of approximately 2.3 GW of battery storage as either stand-alone or part of a hybrid configuration. Only 20 MW are currently in-service. MISO will continue making improvements to the interconnection processes while preparing for other changes associated with FERC Order 2023.

On the markets side, battery storage was incorporated into MISO's market operations when Electric Storage Resources were introduced in September 2022. This favorably positioned MISO to accommodate deeper penetration and bulk participation of storage devices in the MISO market. MISO will continue to evaluate market performance as more resources are constructed.

Comment: The Draft Report fails to explain how MISO determines when it will seek out and propose its own alternatives for vetting compared to simply analyzing TO-identified alternatives.

We appreciate the comments supporting the detail in the draft report regarding how MISO evaluates TO-proposed projects and alternatives to those projects. Chapter 1 and Figure 1.4-7 reveal that a small number of facilities with a large, total investment of $3.6 billion were analyzed for alternative solutions. To provide additional clarity and an example, MISO will add the language below on how MISO identifies alternatives and how they are selected and analyzed:

> *In MTEP23, MISO identified and evaluated alternatives for facilities that are larger in cost and/or have higher potential impact on the system; staff also evaluates alternatives provided by stakeholders. For example,*

projects that propose new lines are prioritized for analysis because MISO's experience shows that addressing existing infrastructure is typically a more cost-effective investment than building new lines. Alternatives would be assessed in this situation to ensure that the additional benefits justify the potential higher cost.

Chapter 1 and Figure 1.4-7 reveals that a small number of facilities with a large, total investment of $3.6 billion were analyzed for alternative solutions.

Comment: The Draft Report demonstrates the growing investment in, and need for, high-voltage transmission investments.

MISO agrees with the importance of evaluating a broad range of transmission technologies (e.g., 345 kV, 765 kV, and HVDC, etc.) to ensure a least-regrets set of transmission projects is identified through the LRTP planning process. MISO encourages stakeholders to participate in the Planning Advisory Committee and LRTP workshops where discussions on different transmission technologies have and will occur as the LRTP Tranche 2 study progresses (see the Planning Advisory Committee March 8, 2023, item 7 material, and the May 31 – June 1, 2023, item 8 and 11 materials).

Comment: The Draft Report should better reflect MISO's struggles to manage its interconnection queue.

MISO believes that many limitations on new generator interconnections are due to factors outside of MISO's processes, even as we continue to reform queue processes to expedite interconnection of all resource types. As MISO shared during the September System Planning Committee of the MISO Board of Directors' meeting, interconnection project delays are industry-wide and mostly due to construction lags and supply chain issues. While MISO's interconnection queue currently contains 242 GW, 49 GW of approved resources for all types are awaiting construction, which will delay operation by an average of more than 650 days. Additionally, there is another approximate 210 GW of signed Generator Interconnection Agreements in other RTOs representing generation that has yet to come online.

MISO has historically led the industry on improvements to the interconnection queue process to ensure it is not an impediment to having the necessary generator resources available when needed. These past reforms along with our current reforms are focused on ensuring that projects entering the queue are more "ready" and limiting the amount of projects that are studied at a given time to improve timing and cost estimates from studies. These improvements will enable a quicker, more efficient and less burdensome queue process for MISO members. In fact, MISO has the shortest end-to-end tariff defined queue time among its peer RTOs and ISOs. The next set of reforms should allow MISO to meet its tariff timeline of approximately one year.

MISO consistently evaluates staffing levels and added several staff members in 2023 to support queue activities. However, the challenge to meet queue timelines cannot be eliminated by just adding staff. Multiple levers need to be pulled to meet timelines. To that end, MISO will continue making improvements to its generator interconnection processes while preparing for other changes associated with FERC Order 2023, which currently include the addition of penalties for MISO and its Transmission Owners when they contribute to queue delays. Other tool and process improvements are also in development as discussed at the September 18, Planning Advisory Committee meeting. Given that these changes are actively being discussed in the stakeholder process, any inclusion in the MTEP23 report would be out of date almost immediately. The MTEP24 Report will include progress on any additional changes or improvements that are implemented.

Comment: The Draft Report's characterization of LRTP Tranche 3 raises concerns.

MISO will adjust the title of the Tranche 3 discussion to refer to its 'Status'.

MISO remains committed to preforming a Tranche 3 planning study in the MISO South region to ensure reliable and economic operations into the future. MISO's work on LRTP Tranche 3 is currently focused on collaborating with stakeholders to address cost allocation. MISO will provide more detail on the LRTP Tranche 3 scope, planning process and timeline in 2024.

Comment: Interregional planning continues to fall short of system needs.

MISO appreciates the recognition of the progress on the Joint Targeted Interconnection Queue (JTIQ) analysis and remains committed to investigating further opportunities for partnerships with neighboring regions on interregional planning. In 2023, this included preparing for a FERC filing to adopt the JTIQ study process, engaging in FERC discussions about the value of enhanced interregional operational coordination, and presenting interregional coordination planning efforts with PJM and SPP to the Interregional Planning Stakeholder Advisory Committee (IPSAC)

MISO will continue working to enhance and streamline interregional planning efforts between various FERC planning regions into 2024. This effort should lead to more standardized interregional planning processes with smoother project development cycles that align better with the MTEP processes. We also recognize the value of strong market-to-market coordination with neighboring regions as a way to effectively use existing transmission infrastructure; we will continue to work on enhancing both market and non-market operations with seams partners accordingly.

Early in 2023, MISO, SPP and PJM jointly presented interregional coordination planning efforts for 2023 to the Interregional Planning Stakeholder Advisory Committee (IPSAC) during its Annual Issues Review meeting. MISO will continue coordination with SPP and PJM and present plans for stakeholder discussion at the Q1 2024 IPSAC meeting.

Comment: The SPM process fails to consider the suite of economic benefits that transmission is known to provide and that are recognized in other MISO transmission planning processes like the LRTP.

MISO appreciates the comments supporting the alternatives assessment conducted on the Amite South, DSG, and EIT projects. For future projects, MISO is willing to consider a broader analysis of benefits when warranted due to project size and the results of initial Adjusted Project Cost (APC) screenings; that is, this analysis would be conducted when it may be useful to classify that projects are Multi-Value Projects or Market Efficiency Projects.

For the MTEP23 analysis, the set of larger projects in question resulted in an APC benefit to cost ratio of 0.01; additional analysis would have created delay without an expectation that such a delay would be meaningful as other benefits were not likely to increase a 0.01 benefit-cost ratio to one equal or larger than the 1.0 benefit-cost ratio required for Multi-Value Projects or Market Efficiency Projects. As such, MISO used the economic screening as part of the discussion to review the larger South projects listed above. Because none of the projects met the economic criteria, further analysis was not conducted. It should be noted that the approval of Amite South Phase 3 has been delayed while MISO completes alternative solution analysis.

Great River Energy Verbatim Comments:

We thank MISO for conducting the draft MTEP23 Near-term Congestion study which provided historical congestion data and insight on the persistence and magnitude of congestion at existing resources.

GRE submits feedback relating to the Johnson Junction - Graceville 115 kV flowgate as shown in Table 3.3-1 of the MPTE23 report:

GRE requests that MISO include an explanation for the Johnson Junction -Graceville 115 kV line congestion in the final MTEP23 report. The suggested wording of the explanation is:

"The Johnson Junction to Graceville congestion issue was directly related to the planned construction outage on the Johnson Junction to Morris line which occurred between Oct 1,2021 and Feb 1, 2022. The normally open line segment north of Graceville was closed in to accommodate this construction outage leading to congestion on the Johnson Junction to Graceville line. Thus, the congestion correlates the construction of the Johnson Junction-Morris construction outage and grid reconfigurations. It is understood that when upgrading transmission facilities to accommodate the changing grid, it is often necessary to alter the normal operations of the transmission system which can lead to temporary economic congestion in order to ensure continued grid reliability"

MISO response:

MISO will incorporate GRE's suggested language above into the MTEP23 and a final Near-term Congestion Study report later this year. In addition, MISO plans to continue a Near-term Congestion Study in 2024.

Competitive Transmission Developer Sector Verbatim Comments:

The Competitive Transmission Developer sector notes that proposed spend in MTEP23 on Other Projects [$5.8B] and Baseline Reliability Projects [$2.0B] has virtually doubled from last year [$3.2B and $550M, respectively]. We appreciate MISO's effort to review alternatives to a sub-set (11) of these projects, however the majority of the 578 projects in MTEP23 do not appear to have been reviewed for more efficient or cost-effective regional project alternatives. Such a review is required by the MISO Tariff and FERC Order No. 1000, and the failure to consider alternatives may lead to the approval of transmission projects that do not efficiently solve these and other system needs, which ultimately increases costs to customers.

MISO response:

MISO remains compliant and analyzes alternatives in accordance with the MISO Tariff and FERC Order No. 1000, including alternatives submitted by stakeholders in addition to those identified by MISO staff and Transmission Owners. MISO is confident that the transmission projects recommended for approval in MTEP23 are effective and cost-efficient solutions to identified system needs.

It should be noted that not all transmission projects have relevant alternatives. Roughly 75% of projects submitted for MTEP23 didn't meet criteria for alternative solution analysis, as they address miscellaneous facility changes, substation work or upgrades to existing lines and have no cost-effective alternatives. Instead, MISO prioritizes analysis on facilities that are larger in cost and with a larger potential impact on the system. For MTEP23, this has resulted in one alternative in the South and another in the East moving forward to replace two projects.