Recommended Improvements to the MISO-PJM IPSAC Process

Executive Summary
The current MISO-PJM IPSAC planning process has not achieved the intent of FERC Order 1000 on interregional transmission coordination\(^1\) nor has it provided any tangible projects in the previous three efforts and should be revised. The MISO Transmission Developer Sector supports revising this process with the focus on improving the ability to identify and approve beneficial interregional projects by addressing issues with proposal qualification and evaluation metrics, modeling, and the process of approving projects. Multiple MISO and PJM hurdles of qualification and evaluation metrics should be streamlined. Modeling errors need to be reduced and the number of models utilized to evaluate projects should be reduced. In addition, all models which will be utilized to evaluate projects at the interregional level should be made available to stakeholders well before the opening of a project proposal window rather than at the opening of the project proposal window. A clear process needs to be defined explaining exactly how selected interregional projects by both MISO and PJM are submitted for regional evaluation and/or approval. The process should include actions required, the sequence of the actions, and parties responsible for the actions. The process should also explain how cross-border project construction activities are split and awarded by each RTO. Revising the existing MISO-PJM Joint Operating Agreement (JOA) and MISO and PJM Tariffs to streamline metrics, modeling, and better define the approval and award process is necessary for the intent of FERC Order 1000 on interregional transmission coordination to be achieved.

Cross-Border Market Efficiency (CBMEP) Metrics
The ability for the MISO-PJM IPSAC process to identify and approve interregional projects is limited by the multiple layers of qualification metrics required in the evaluation of project proposals. Under the current MISO-PJM Joint Operating Agreement (JOA)\(^2\), project proposals must pass the following three sets of criteria before being recommended as an interregional project: 1) MISO-PJM IPSAC criteria; 2) MISO Regional Planning Criteria; and 3) PJM Regional Planning Criteria. A summary comparison of these metrics is illustrated in Table 1.

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\(^1\) FERC Order No. 1000 at P 346 and 350

\(^2\) MISO-PJM JOA Article IX, 9.4.4.1.2 Criteria for Project Designation as a Cross-Border Market Efficiency Project
Streamlining the evaluation process will improve the ability of the MISO-PJM IPSAC planning process to identify and approve interregional projects. The Transmission Developer Sector encourages the MISO-PJM IPSAC to consider the following alternatives to streamline the evaluation process:

1) Reduce the layers of interregional and regional criteria;
2) Reduce metrics

Streamlining Interregional and Regional Study Processes

Reducing the layers of interregional and regional criteria will streamline the study process by providing more consistency in the evaluation of projects and will provide more certainty for development of beneficial projects. As Table 1 illustrates, the B/C ratio is the only consistent metric across the regional and interregional evaluation processes. Variations in benefit metrics, flowgate requirements, cost thresholds, benefit years, voltage thresholds, and multiple sets of futures require interregional project proposals to pass three very different evaluations while regional market efficiency project proposals in both MISO and PJM are only required to pass one evaluation. Because projects under the regional evaluation and approval processes receive different treatment, including a single set of requirements and a lower cost criterion, it is likely more regional projects will get approved while fewer, or as 2014 has indicated, no beneficial interregional projects will be approved.

The Transmission Developer Sector proposes the elimination of the regional modeling and screening metrics process in favor of a jointly agreed to interregional-only modeling and screening process. In this approach, MISO,

| Table 1 – Summary of Regional and Interregional Market Efficiency Metrics |
|-----------------------------|-----------------------------|-----------------------------|
|                            | MISO                        | PJM                         | JOA                         |
| B/C                         | 1.25                        | 1.25                        | 1.25                        |
| Benefit Metric              | 100% APC                    | (50% APC + 50% NLP) + (50% Total System Capacity Costs + 50% change in Net Capacity Payments)* | 70% APC + 30% NLP |
| Cost Threshold              | $5 million                  | No minimum                  | $20M                        |
| Drivers                     | Address one of the Top 15 flowgates from the MTEP production cost model scenarios | Address one of the Top 25 flowgates identified by PJM’s RTEP production cost model | Address one or more constraints defined as those on which at least one dispatchable generator in the adjacent market has a 5% or greater Generator to Load Distribution Factor with respect to serving load in that adjacent market, as determined using the Coordinated System Plan power flow model |
| Benefit Years               | 20 Year NPV**               | 15 Year NPV                 | 10 Year NPV***              |
| Voltage                     | >=345kV                     | >100kV                      | >100kV****                  |

*lower voltage projects are allocated based on 100% NLP
**not to exceed 25 years from study year
***not to exceed 20 years from year of study
****345kV and above and lower voltage facilities of 100kV or above that collectively constitute less than 50% of the combined estimated project cost
PJM, and their respective stakeholders would agree to one set of models, flowgate mitigation requirements, benefit metrics, benefit years, and voltage thresholds and rely completely on an interregional screening process for project approval. Projects successfully passing the interregional screening process would not be subjected to further evaluation by regional models. The successful interregional projects would be forwarded to MISO and PJM for inclusion in the MISO MTEP and PJM RTEP recommendations to their respective Boards of Directors.

In addition, the MISO-PJM IPSAC should consider reducing the cost threshold in the MISO-PJM JOA\(^3\) to $5 million from $20 million. As Table 1 illustrates, reducing the cost threshold to $5 million would bring the interregional cost threshold in line with MISO’s regional cost threshold and expand the types of solutions eligible for consideration to include lower voltage and possibly more cost effective solutions.

Streamlining interregional and regional study processes will open up the range of solution ideas available to the interregional planning process and could lead to the approval of more efficient, cost-effective project proposals. Expanding the range of solution ideas available will improve the effectiveness of the MISO-PJM interregional planning process which will ultimately benefit ratepayers.

**Modeling**

The ability of the MISO-PJM interregional planning process to identify and approve interregional projects is also limited by a number of modeling issues.

1. Error reduction;
2. Model alignment;
3. Resolve multiple flowgates simultaneously

**Error Reduction**

Focus needs to be placed on improving the model data controls and updating the review process to reduce the number of input data errors including topology errors in the powerflow, resource status changes and ratings corrections in the PROMOD event file. A formal internal controls process is critically important to ensuring the current and most accurate model is made available to stakeholders. If MISO and/or PJM lack this type of an internal control process, one should be created. If MISO and/or PJM already have a model controls process in place, the control process should be reviewed and improvements sought. Once a model is made available to stakeholders, a model review window (e.g. 60 days) should be created to provide stakeholders a reasonable amount of time to review the input data for accuracy and completeness. In the most recently completed MISO-PJM IPSAC study, model input errors continued to be identified very late in the evaluation process and should have been identified and corrected much sooner in the study process. Developing or improving a model control process and establishing a formal model review period will reduce the number in input errors and lead to more accurate and reliable results.

**Model Alignment**

Similar to the concerns expressed above regarding the multiple layers of JOA and regional qualification criteria, utilizing multiple models for IPSAC, MISO, and PJM project evaluation processes is also limiting the ability of the MISO-PJM IPSAC process to identify and approve beneficial interregional projects. Currently, each project proposal submitted to the IPSAC process is evaluated based upon the IPSAC model and set of assumptions.

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\(^3\) MISO-PJM JOA Article IX, 9.4.4.1.2 Criteria for Project Designation as a Cross-Border Market Efficiency Project
Projects passing an interregional set of metrics based upon the output of the interregional models are forwarded to MISO and PJM for regional evaluation against separately developed regional models and sets of assumptions. The interregional model is made available to stakeholders prior to the opening of a MISO-PJM IPSAC project proposal window. However, the regional models may not be available at the time the interregional project proposal window opens because the regional assumptions may not be agreed to and finalized. This interregional process flaw will not produce the most optimal transmission solution along the seams and must be remedied.

In addition, all developers and the RTOs themselves face an already difficult task in identifying solutions capable of passing three different models with three different sets of assumptions. The difficult task of identifying solutions is made nearly impossible when developers and the RTOs must identify solutions without the knowledge of what regional models and assumptions will be utilized to evaluate the solution ideas, nor have Developers and Transmission Owners had time to correct obvious flaws in the models. Developers cannot completely analyze their solution ideas and the incomplete analysis opens the possibility developers may submit project proposals incapable of passing one or both sets of regional metrics. The current trifurcated process results in stakeholders and the RTOs wasting time and resources.

These inefficiencies can be eliminated by adopting a single model, the IPSAC model, to study any project proposals submitted to the MISO-PJM IPSAC planning process. This should lead to a reduction in the number of ineffective project proposals being submitted to the IPSAC process and allow the identification of projects that benefit the regions and ultimately the customers with more efficient and effective solutions.

**Approval Process**

A clear process needs to be defined explaining exactly how approved interregional projects are submitted for regional evaluation and/or approval. MISO and PJM Staff have separately acknowledged the specific procedures are not defined for submitting an approved interregional project to the MISO and PJM regional process for evaluation and approval. Are approved interregional projects forwarded by the IPSAC to the MISO and PJM regional processes or is it the responsibility of project proposer to submit the approved interregional project to the MISO and PJM regional processes? Also, can an entity other than the entity which submitted the approved interregional project submit the same project proposal to MISO and PJM for consideration as a regional project? Many pertinent questions remain unanswered.

The process should also explain how cross-border project construction activities are split and awarded by each RTO. The current MISO-PJM JOA under sections 9.3.6 (Development of the Coordinated System Plan), 9.4 (Allocation of Costs of Network Upgrades), or 9.5 (Agreement to Enforce Duties to Construct and Own) is silent on the determination of how the project construction activities of approved Cross-Border Market Efficiency Projects (CBMEP) will be split and awarded.

Finally, interregional and regional approval timelines need to be brought more closely into alignment. Alignment of approval timelines may ultimately require coordination between the Boards of MISO and PJM so each Board can be sure they are approving a cross-border project that will be approved by the other RTO.
Conclusion
The issues presented in this whitepaper need to be addressed and resolved at the MISO-PJM JRPC (or IPSAC) and at the MISO and PJM regional levels to improve the interregional planning process. Improving the interregional planning process will allow transmission developers to properly assess the risks to being awarded a competitive transmission project and make better decisions regarding participation which will ultimately lead to broader participation in the interregional planning process. Broader participation in the interregional planning process will lead to greater levels of competition and allow ratepayers to fully realize the benefits intended in FERC Order 1000.