

**MISO Advisory Committee Hot Topic
Seams Status and Improvements
August 16, 2012**

Response of the Organization of MISO States

Enhancements

- 1. MISO's goal in enhancing the seam with its partners (PJM, SPP...) is to ensure benefit to the stakeholders in the broader region across all the markets. As such it is pursuing enhancements such as Capacity Deliverability and Interchange Optimization.**
 - a. What key factors should be considered in developing enhancements to the MISO seams?**
 - b. Are there other recommendations for enhancements across the MISO seams?**
 - c. What priority/timelines should MISO give your recommendations?**

MISO exists as the independent regional grid manager to ensure that the principles of open access to transmission facilities are fulfilled. These functions allow for increased reliability and more efficient use of the transmission facilities that MISO manages, which benefits all consumers within the MISO region. To fulfill these tasks, MISO has to adequately balance the interests of a variety of stakeholders within its region.

Utilities on the seams of other RTOs may experience issues related to both operation of the transmission system and the efficiency of the markets operated by RTOs. These issues can impact electricity consumers, in some cases, negatively. While a minority of utilities and market participants within the MISO Region are physically situated on or near a seam with another RTO, these issues and their impacts are not necessarily limited to these entities. Operational issues, interregional planning and market issues can have an impact to all stakeholders, including concerns about unit dispatch, transmission rights and reservations, cost allocation of transmission upgrades, the potential for changes to capacity prices and the potential for changes to Locational Marginal Prices.

As it does within its own region, MISO should be continually exploring initiatives with neighboring regions that would be mutually beneficial to both regions. MISO should explore all alternatives, including those that can be bundled with other initiatives to produce the most

economic and reliable results. Presumably, neighboring regions would take actions to benefit their stakeholders by bringing the benefits of increased efficiency in both operation of the transmission system and operation of markets.

If an initiative that is shown to be beneficial to MISO but cannot move forward because a neighboring region believes the initiative is not beneficial to its region, then MISO and its stakeholders should take the problem and proposed resolution to federal decision-makers (FERC or Congress) who are charged with advancing national interests.

The OMS does not make specific recommendations for enhancements across the MISO seams at this time, largely because OMS believes that additional study of these issues is necessary to fully identify the issues that need solving. For example, MISO has identified that issues exist with capacity deliverability across the MISO/PJM seam. While preliminary study shows the potential for significant economic benefit through the modification of specific market rules between the RTOs, further study of the extent of those benefits (and the specific rules that require modification) should be pursued.

Seams issues, including capacity deliverability across the MISO/PJM seam, may have the potential for significant consumer savings on both sides of the seam. These potential benefits should be better quantified.

Impact of Market Design differences

- 2. Generation and load customers on the seam are likely to be uniquely impacted by the differences in the rules in markets across the seam. Each market provides flexibility in its rules for customers to hedge against potential negative impacts.**
 - a. Do the existing rules in the MISO market successfully mitigate such an impact?**
 - b. Do the existing rules in other markets (PJM, SPP) successfully mitigate such an impact?**
 - c. What priority/timelines should MISO give your recommendations?**

The OMS is not clear on what specific issues this question is attempting to address. While OMS responds in the context of FTRs/ARRs, further clarification of the concerns underlying this question may allow for a more specific answer.

The OMS response to this question is based on its understanding that MISO is asking if customers on the seam (or elsewhere within MISO) are protected by MISO rules from

adverse effects of any neighboring market rules and/or actions, if other RTOs' rules provide such protection to their customers, the relative importance of the OMS recommendation(s) provided here, and how quickly such recommendation(s) should be implemented.

FTRs

The standard hedging mechanism currently in MISO, PJM, and in the future in SPP, is a Financial Transmission Right (FTR). The rules governing FTRs and Auction Revenue Rights (ARRs) are rigid and do not provide for flexibility across the seams or in the Real-Time. Basically, an FTR offers a degree of protection against paying congestion charges which result from the difference in locations and prices from the point of receipt and the point of delivery (generation to load).

In MISO, a Market Participant may acquire an FTR through a variety of methods, including (but not limited to): purchasing an FTR in the FTR Auction; self-scheduling an ARR in the Annual FTR Auction; participating in the secondary market; requesting new point-to-point transmission service in OASIS; and financing expansion of the transmission system. In PJM, the means to acquire a FTR include (but are not limited to): the Long-term FTR Auction; the Annual FTR Auction; the Monthly FTR Auction; and the FTR Secondary market. In other words, PJM has long-term, annual and monthly auctions, while MISO uses an annual auction, which includes peak and off-peak for all seasons and a monthly FTR auctions (along with other opportunities to obtain FTRs).

ARRs are based upon where a MISO Market Participant or LSE physically serves load. An LSE's initial FTR allocation is based on its historical use of the transmission system. Therefore, the ARR provides the entitlement for the LSE to share in the revenues generated through the FTR Auction. An allocation of FTRs provides LSEs with a right to the congestion hedging value of the system, from the LSEs generation to its load. There is an allocation process where ARR nominations are made, prior to the FTR auction. This process provides a hedging opportunity and quantifies the value of an ARR.

The existing rules and FTR products that exist in MISO and PJM do not successfully mitigate negative impacts that could occur in the other RTO. The first problem that arises is that an FTR is not a cross-border product or mechanism that can be utilized by Market Participants across the seams. To help mitigate this issue, OMS believes some type of cross-border hedging mechanism could be developed.

One issue is that the current timing of existing auctions in each RTO does not align. While the separate timing of these existing auctions may benefit to the stakeholders in each RTO, MISO may want to study or investigate the impact of an annual and monthly cross-border auctions on all congestion costs (both from an LSE perspective and a broader operational perspective) and FTR hedging.

Capacity Deliverability

As identified above, there are a number of issues relating to capacity deliverability that should be studied to identify the potential impacts.

In MISO there are various ways to acquire an FTR, which includes requesting Yearly Firm Point-to-Point Transmission Service in OASIS. According to the MISO Capacity Deliverability Whitepaper:

“Transmission Service was further broken down into “Network Service” and “Point-to-Point” Service. Network Transmission Service is used for the transmission of capacity and energy from network generating resources to network loads within a single Balancing Authority Area. Network customers also can use the service to deliver economic energy purchases to their network loads. Point-to-Point Transmission Service uses the system for the transmission of a fixed MW capacity and energy between a point of receipt and a point of delivery, which can be into, out of or through the footprint.”¹

“Regional Transmission Organizations (RTOs) were created to eliminate the inefficiencies in transmission utilization caused by the existence of multiple transmission tariffs. RTOs eliminated these inefficiencies within their own footprint through extending Network Resource Interconnection Service (NRIS) and Network Integration Transmission Service (NITS) to member Load Serving Entities instead of continuing to use Point-to-Point or Network transmission service reservations. The consolidation of NRIS and NITS service within RTOs created efficiencies by expanding the pool of generation resources available to load for capacity and energy under a single transmission tariff. This same opportunity to increase the efficient use of the transmission system exists between RTOs.”²

Therefore, if FTRs can be requested through Yearly Firm Point-to-Point Transmission and (as suggested by MISO) one potential avenue to improving capacity deliverability is to establish a Network Service across the seam; then, could this have an impact on FTRs at the seams?

Real-Time Issue

A third issue relates to value (or more specifically, the lack of value) of an FTR in Real-Time markets. A Real-Time hedging mechanism could be useful for transactions across the seams. While looking to develop such a mechanism, MISO should consider the possibilities

¹ Midwest ISO, *MISO Capacity Deliverability Whitepaper*, (June, 2012), 5.

² Midwest ISO, *MISO Capacity Deliverability Whitepaper*, (June, 2012), 5-6.

that such a product could also mitigate the impact of overflow, congestion or re-dispatch in Real-Time.

Pending Entergy Transaction

Lastly, with the potential membership of Entergy in MISO, the rules governing ARR are being reevaluated to accommodate Entergy membership. This was demonstrated and discussed in the July 11, 2012 MISO FTRWG. However, this discussion is occurring just after the recently completed stakeholder process to improve the ARR allocations process and revenue sharing. Any modifications (whether for the integration of new members or not) should be pursued in a prudent and rational manner with significant stakeholder involvement.

Inter RTO/ISO Coordination and Transparency

- 3. For the activities listed below: Is the existing coordination and transparency between the RTOs adequate in terms of assuring efficient seams processes? What additional steps should the RTOs take, jointly and independently, to promote coordination and transparency?**
 - a. Stakeholder forums and rules development processes**
 - b. Joint and Common Market standards and resolutions**
 - c. JOAs – Specifically for guidance and seams resolutions**
 - d. PJM & MISO’s current seams modeling inputs and assumptions**

The OMS recognizes MISO’s efforts over the last few years on seams issues with the goal of enhancing coordination with neighboring RTOs. While some improvements have been made along the seams there is much work still to be done and many areas of concern that must be addressed in the near-term.

OMS reiterates the need for greater transparency and more formalized reporting on all seams-related activities. This formalized reporting should focus on all of the categories of seams issues identified at the July 16th Joint and Common Market (JCM) meeting: market operations, transmission planning, and capacity deliverability. Greater transparency will allow for all stakeholders to better identify the issues that need resolving, help in the development of solutions, and provide for greater acceptance and implementation of solutions.

It is troubling to the OMS that there are regular meetings between neighboring RTO staff for which stakeholders only receive limited reporting on the process and outcomes. This is a specific area that would be improved through greater transparency and reporting to stakeholders.

Future RTO JCM meetings should be regularly scheduled and open to all stakeholders from both RTOs to hear proposals by management. MISO and PJM should work to provide stakeholders with more explanation of how the JOA processes work to resolve seams issues that would provide benefit to all stakeholders in both regions. MISO and PJM currently share seams data, modeling inputs, and assumptions but this sharing between RTOs should be expanded as much as possible while attempting to align problematic items and considering the greatest possible efficiency to benefit both regions.

In addition, MISO and PJM modeling at the seams can cause issues to arise for two reasons:

- 1) Inputs and assumptions affect the scenarios and output. If MISO and PJM are not using the well-coordinated assumptions and inputs in their modeling the analysis produced may not be comparable.
- 2) Modeling needs to be done at the interface on the seams. It is the understanding of OMS, based on meetings with PJM and utilities at the seam, that this isn't currently being done.

Proper modeling at the seam using well-coordinated, if not identical, inputs and assumptions in both RTOs should help improve issues related to constraints and flows across the seams. The OMS has observed a need for further coordination of modeling inputs and assumptions; in recent years, the seam between MISO and PJM has changed as RTO membership has transitioned between MISO and PJM.³

Finally, there is also a need for more engaging and formalized coordination between MISO and other non-RTO entities that share seams with MISO, for example: the Associated Electric Cooperative Inc. (AECI) and the Western Area Power Administration (WAPA).

³ The Indiana URC notes that PJM has made presentations that indicate it models to the AEP interface and then to ComEd, which means PJM modeling does not account for the seam between AEP and ComEd. The lack of proper assumptions in modeling could have an impact for a utility on the seam between AEP and ComEd. For example: if a utility along this seam has a constraint caused in PJM, often PJM doesn't see the constraint if ComEd can input power to the system. Therefore, it is presumed such an operational issue does not exist at the seam and one reason could be due to a lack of proper modeling. However, this type of operational issue has an impact in MISO. In this example, if there is a constraint at the seam, originating in AEP in PJM, it may require a utility along the seam in MISO to ramp down their generators to help mitigate the problem and reduce the constraint across the seam. When this happens, the utility in MISO is forced into the daily market to procure power to cover its load. The costs associated with these operations will ultimately be passed onto the consumers through the utility's tariff.

Measurement

4. How would you suggest benchmarking and measuring both the success in resolving seams issues and the success of future implemented solutions?

Measuring the success of any action on seams issues may be skewed by the sector or region that is doing the evaluating. The OMS believes that any benchmarking or measurement of improvement in seams management activities should be focused on the benefits provided to all regions. OMS also urges MISO and its seams partners to provide the additional transparency of more granular benefit analysis by the individual regions. Such transparency would reveal the merits of issues both for each region and for the component sub-regions. Specific metrics that OMS believes would be useful for analysis of seams issues are: the magnitude of any potential changes in capacity prices in each RTO; the magnitude of any potential changes in energy prices in each RTO; specific modeling to show how any potential changes are calculated; and an identification of the quantity and frequency of energy transfers occurring in price-efficient directions.