

Coordination Opportunities

Joint Comment Market Stakeholder Meeting

Aug 24, 2012

Summary

- **MISO and PJM received comments from 17 stakeholders**
- **MISO and PJM grouped all issues into one of 4 categories:**
 - Market Operations
 - Operations/Scheduling
 - Transmission Planning
 - Resource Adequacy
- **MISO and PJM have worked together to develop work plan for issues related to each of these categories.**

Summary of Stakeholder Comments

Category	Sub-Category	Potential Work Item	Details
Market Operations	Day-ahead & Real-time Markets	Short-term: Transparency and RTO-to-RTO Coordination	<p>Coordination:</p> <ul style="list-style-type: none"> - Additional coordination since the M2M Baseline Review includes: DA Market constraint coordination, tight Reliability Engineer coordination, data exchange, tie-line management, daily review team ... - Additional near-term coordination under discussion: outage coordination, 25% flowgates <p>Transparency:</p> <ul style="list-style-type: none"> - Additional Postings to be made each business day - Prior day Firm Flow Entitlement (FFE) - Prior day, hourly settlements for each flowgate - Updated flowgate list (with effective and terminate dates)
		Mid-term: Transparency and M2M Calculations	<p>Transparency:</p> <ul style="list-style-type: none"> - M2M Calculations. Additional details about the FFE and Market Flow calculations including evaluation of unit specific imports and exports. - Freeze Date. M2M calculations based off of 2004 reference data. - Outage coordination - Additional data exchange.
		Long-term: Parallel Flow Visualization.	The NAESB Parallel Flow Visualization practices are in draft and anticipated to change the calculation of market flow and TLR relief obligations for the Eastern Interconnection.
	Operations / Scheduling	Split units near the border	Align rules. Explain options and implications.
		Support DIT	Facilitate more economic and responsive scheduling to align with real-time economics.
		Support interchange scheduling alignment (over DIT)	Interface pricing, intra-hour scheduling rules, ramp.
		Market-to-Market - RTO data exchange	Transparency between RTOs.
		M2M Calculations/Coordination (FFE, MF), Proxy M2M	Revisit calculations to better reflect real-time operations. Individual unit impacts on M2M.

Summary of Stakeholder Comments

Category	Sub-Category	Potential Work Item	Details
Transmission Planning	Transmission Planning	Planning Studies (Generation & Transmission, MTEP/RTEP) and Cross Border Projects	Study transparency, use of CBM, queue alignment, coordinated studies, TO involvement, cost & FFE allocation, identify upgrades, market participant funded upgrades.
		Transparency	Increase transparency for all stakeholders.
		Transmission Rates	Allow for innovative network transmission service rates across the RTO seams.
Capacity Deliverability	Capacity Deliverability	Transmission Service Requests and Capacity Product Definition	Coordinate models, assumptions and timelines for analysis of firm transmission service requests to support capacity transfers across the seam; Coordinate deliverability study assumptions and models; ensure consistent use of CBM
		Capacity Deliverability Studies and Market Timelines	Align capacity market timelines and capacity deliverability study processes.
		Joint Deliverability Analysis and Capacity Constructs	Develop joint deliverability analysis (potentially requiring joint DA market); MISO longer term capacity market; potentially joint capacity market

Category: Market Operations

Day-ahead and Real-time Market Coordination

Problem Statement: Less than optimal transparency and consistency in operating and market practices associated with MISO-PJM Day-ahead and Real-time Market Coordination impacts efficiency.

Priority: High

Progress to date:

- Day Ahead Market:
 - Exchange significant Day Ahead constraints - manual process
- Real Time Coordination:
 - Continue to enhance data exchange to verify Market Flow Calculations (implement in next 6 months)
 - Transfer control of M2M flowgate to an entity with most effective generation
- Outage coordination:
 - Implementation of monthly joint MISO/PJM review of outages scheduled to occur within the next 6 months and projected constraints.
 - MISO has initiated a process to review transmission outage impact on market operations with MISO Transmission Owners and discussions to review transmission outage submission rules.

Day-ahead and Real-time Market Coordination

Action Plan:

- Short-term (prior to March 1, 2013)
 - Provide additional education and transparency to stakeholders
 - Educate stakeholders on existing practices and coordination
 - Post Firm Flow Entitlements daily (for previous day)
 - Post Flowgate list with effective and termination dates
 - Post M2M settlements by flowgate by hour
 - Improve coordination and align modeling for Day-ahead Market
 - Improve coordination/exchange outages, constraint information and screening criteria used in Day-ahead Market on a daily basis
 - Align modeling assumptions in Day-ahead Market
 - Insure consistent communication of model information
 - Improve and align MISO and PJM outage coordination
 - Identify business practice and potential tariff changes to align outage scheduling practice
 - Revisit firm flow entitlement and market flow calculations
 - Review and Improve market flow calculations
 - Continue to enhance RTO to RTO data exchange
 - Implement enhanced Real-time and market flow data exchange

Day-ahead and Real-time Market Coordination

Action Plan:

- Mid-term (prior to Sept 2013)
 - Improve coordination and align modeling for Day-ahead Market
 - Define content and criteria for automated Day-ahead Market data exchange
 - Improve and align MISO and PJM outage coordination
 - Align outage scheduling rules and Implement outage data exchange
 - Revisit firm flow entitlement and market flow calculations
 - Review alternatives to 2004 Freeze date
 - Continue to enhance RTO to RTO data exchange
 - Additional data exchange and shadow calculations
- Long-term (target within next 18 months)
 - Revisit firm flow entitlement and market flow calculations
 - Firm Flow Entitlement Re-design
 - Improve coordination and align modeling for Day-ahead Market
 - Evaluate common Day-ahead Market requirements
 - Implementation of Parallel Flow Visualization

Operations and Scheduling

Problem Statement: Real time interchange between PJM and MISO could be accomplished more efficiently and Participants have not been fully effective in arbitraging the price differences in real time. Other analysis suggested that Participant scheduling in reaction to price differential leads to significant volatility of the energy transfers (Net Interchange) across the seam and creates operational challenges and market impacts.

Priority: High

Operations and Scheduling

Progress to date:

- Alignment of Scheduling Rules
 - MISO evaluated the Participant requests, increased the import ramp limit from 700 MW/15 min to 1000 MW/15 min and investigating whether interface definition for PJM needs to be enhanced
 - PJM published a spreadsheet with PJM and MISO scheduling characteristics
 - MISO and PJM have held stakeholder discussions at SMWG and MIC
- Dispatchable Interregional Transactions
 - Developed high level design and performed cost-benefit study
 - Held joint stakeholder workshops

Operations and Scheduling

Action Plan:

Short-term (prior to March 1, 2013)

- Develop a document that provides the following:
 - Explains and contrasts each RTO's scheduling practices, interface definition and pricing methodology and published forward-looking information
 - Analysis performed so far including analysis by the market monitors and MISO-PJM joint cost-benefit analysis
- Evaluate opportunities and requirements for alignment or enhancement of rules
 - Additional real-time and forecast level data that can be published
 - Reduction of MISO's notification time
 - Increase of MISO's export ramp limits from 500MW/15min to 1000MW/15min
 - Identification of common alternative solution so MISO can relax the intra-hour scheduling prohibition and PJM can relax the 45 min duration requirement
 - Efficiency of interface proxy bus definition for accuracy of dispatch and price signals
- Recommend and implement enhancements that require short lead time with respect to required analysis and procedure/software changes

Operations and Scheduling

Action Plan:

Mid-term (prior to Sept 2013)

- Re-evaluate efficiency and volatility of interchange after the short-term enhancements are implemented
 - Identify frequency and cost impact of inefficient transactions
 - Perform cost-benefit analysis to determine overall scope of savings and efficiency gain
- If substantial inefficiency persists, develop and implement interchange optimization solutions
 - Dispatchable Interregional Transactions (DIT)
 - Others

Long-term (target within next 18 months)

- Evaluate efficiency of interchange optimization solution, if implemented, and develop and implement further enhancements if necessary
- Develop and implement 5-minute settlement
- Remove intra-hour scheduling restrictions that are intended to avoid market manipulation opportunities under hourly settlement construct

Category: Transmission Planning

Category: Coordinated System Planning (MTEP/RTEP)

Problem Statement: Coordinated regional planning between MISO and PJM can be improved. Enhancements in transparency, data and model coordination, interregional project identification and interregional project cost sharing mechanisms should be investigated. These are all areas addressed in Order 1000 compliance obligations.

Priority: High

Progress to date:

- RTOs are working together to address compliance to Order 1000
- Joint stakeholder Order 1000 kick-off meeting to be scheduled for October, 2012
- RTOs to launch joint Market Efficiency Project study in fall 2012.
 - Scope in development

Category: Coordinated System Planning (MTEP/RTEP)

Action Plan:

- Short-term (0-6 months)
 - Initiate joint Market Efficiency Planning study with IPSAC meeting to be scheduled for before October 1.
 - Use Order 1000 interregional planning and cost allocation compliance initiative, including stakeholder workshops, to develop compliant enhancements to interregional planning coordination and cost allocation issues.
 - Kickoff meeting October 2012 (select date)
 - Propose monthly (as needed) joint stakeholder meetings through March 2013
 - Compliance Filings due April 2013
- Mid-Term
 - Anticipate completion of MEP study in 12-18 months

Category: Market Participant Funded Upgrades

Problem Statement: Establish clear practices in each RTO to address coordinated development of Market Participant Funded Upgrades and allocation of associated incremental rights.

Priority: Medium

Progress to date:

- Modification in progress to JOA to address coordinated evaluation of requests for IARR (October 2012)

Category: Market Participant Funded Upgrades (MPFU)

Action Plan:

- Short-term (0-6 months)
 - MISO formalize internal practices to address requests for MPFU at MISO Planning Advisory Committee (December 2012)
 - RTOs explore additional revisions to each tariff or BPMs that provide for consistent and compatible evaluation of MPFU's and associated rights to funding entity (March 2013)
 - Discuss existing processes
 - Include proposed JOA modifications to address joint analyses pursuant to requests for IARRs

- Mid-term (6-12 months)
 - Finalize MPF tariff or BPM language (April 2013)

Category: **Generation Interconnection Process Coordination**

Problem Statement: Difficult to coordinate Generation Interconnection studies due to procedural differences emanating from two distinct tariffs

Priority: High

Progress to Date: Based on a real scenario and feedback from its affected Transmission Owner, MISO has drafted a proposal to improve the existing Generation Interconnection coordination with PJM

Category: Generation Interconnection Process Coordination

Action Plan:

- Short-term : (Next 6 months)
 - Involve Stakeholders to assist in aligning MISO's First Ready First Served (FRFS) Generator Interconnection process with PJM's First In First Out Process(FIFO)
 - Educate the Stakeholders with the two distinct Generator Interconnection Processes at PJM and MISO
 - Highlight differences that may have prompted Market Participants to raise concerns
 - Develop joint proposal with Stakeholders
- Mid-term: (6-12 months)
 - Update Business Practices Manuals.
 - Implement the finalized proposal into the Generation Interconnection Studies
 - Monitor the Generation Interconnection Coordination process
 - Develop feedback loop to test if the Coordination Plan is working as anticipated

Category: Long Term Transmission Service Process Coordination

Problem Statement: Delayed Study results to the Market Participants. Transmission Customers desire responses to long-term firm requests coordinated with respect to content and timing.

Priority: High

Progress to Date:

- MISO has been allowing customers to defer decisions on accepting service or proceeding to a Facilities Study until getting PJM study results

Category: Long Term Transmission Service Process Coordination

Action Plan:

- Short-term : (Next 6 months)
 - Educate Stakeholders with Long term Transmission Service Process at PJM and MISO
 - Highlight differences that may have prompted Market Participants to raise concerns
 - Develop joint proposal with Stakeholders
- Mid-term: (6-12 months)
 - Update Business Practices Manuals.
 - Implement the finalized Transmission Service Request Coordination Proposal
 - Monitor the Transmission Service Request Coordination process
 - Develop feedback loop to test if the Coordination Plan is working as anticipated