

2022 Coordinated System Plan Study Update

MISO-SPP TMEP Process Development

MISO-SPP Interregional Planning Advisory Committee Meeting
September 20, 2022

September 20, 2022 IPSAC Agenda

- *Review TMEPs Congestion, Benefit, and Cost Sharing Calculations*
- *SPP DA Congestion on MISO Constraints*
- *Update on Preliminary Congestion Data*
- *Stakeholder Feedback Received to Date*
- *Review TMEP Criteria*
- *Review Timeline*
- *Next Steps*

Example: Congestion Cost Calculations

‘Congestion Cost’ is defined as the sum of Day-Ahead Market Congestion and the outcome of Congestion Hedging

	2020	2021	Total
SPP DA MKT Congestion	\$1,100,00	\$1,200,000	
SPP Congestion Hedging	\$(100,000)	\$300,000	
<i>SPP Congestion Cost</i>	<i>\$1,000,000</i>	<i>\$1,500,000</i>	<i>\$2,500,000</i>
MISO DA MKT Congestion	\$900,000	\$1,300,000	
MISO Congestion Hedging	\$100,000	\$(50,000)	
<i>MISO Congestion Cost</i>	<i>\$1,000,000</i>	<i>\$1,250,000</i>	<i>\$2,250,000</i>
Total Congestion Cost	\$2,000,000	\$2,750,000	\$4,750,000
SPP M2M Payment	\$150,000	\$200,000	\$350,000
MISO M2M Payment	\$(150,000)	\$(200,000)	\$(350,000)

Two years of historical values

Sum of both RTOs

Note – M2M payments are equal and opposite

Note: In this example M2M payments are made by SPP to MISO

Example: Benefit and Inter-RTO Cost Sharing

- Proposed upgrade is replacement of breakers and associated CTs and relays at a cost of \$2.5M
- Annual benefit is average of total congestion for two historical years:

	2020	2021	Average
Total Congestion	\$ 2,000,000	\$ 2,750,000	\$ 2,375,000

- Four years of benefits exceeds the installed cost:

$$4 \text{ years} * \$2.375 \text{ M} = \$9.5 \text{ M} > \$2.5 \text{ M}$$

<i>Sum of congestion for 2 years:</i>	
SPP Congestion Cost:	\$ 2,500,000
MISO Congestion Cost:	\$ 2,250,000
<i>Total M2M payments for 2 years:</i>	
SPP Total M2M Payments	\$ 350,000
MISO Total M2M Payments	\$ (350,000)
<i>Total Benefits offset by M2M payments:</i>	
SPP Adjusted Benefit:	\$ 2,850,000
MISO Adjusted Benefit:	\$ 1,900,000
<i>Share of adjusted benefits</i>	
SPP pays:	60%
MISO pays:	40%

SPP DA Congestion on MISO Constraints

- SPP currently does not include MISO constraints in the SPP DA MKT
- SPP intend to begin including MISO constraints in the future
 - October 1,2022 – Implementation of select M2M constraint activation process
 - June 1,2023 – Implementation of uniform M2M constraint activation process
- Impact to MISO-SPP TMEPs project
 - ‘Complete’ data set exists only for SPP constraints
 - Initial TMEPs study can only consider SPP M2M constraints
 - MISO constraints can be included in the future due to inclusion in the SPP DA MKT

Updated TMEPs Congestion Data*

FG NERC Name	FG NERC ID	MISO Total Congestion	SPP Total Congestion	Sum Total Congestion	Sum M2M (SPP to MISO +)	<i>Solution 'Budget'</i>
CHAWATCHAPAT	5717	\$4,478,979	\$6,259,433	\$10,738,412	\$1,352,659	<u>\$21,476,824</u>
COPSTJCPFRSJ	5566	\$19,820,444	\$5,264,866	\$25,085,310	-\$10,773,149	<u>\$50,170,620</u>
FARSHEBUFJAM	5725	\$35,496,898	\$7,639,596	\$43,136,494	-\$5,015,789	<u>\$86,272,988</u>
FULPATLONSAR	5426	\$84,761	\$79,204	\$163,965	\$569	<u>\$327,930</u>
NASXFRNASHAW	5577	\$17,721,869	\$2,696,556	\$20,418,425	-\$1,984,656	<u>\$40,836,850</u>
NEBS56S40S55	5508	\$4,210,146	\$13,439,519	\$17,649,665	-\$2,480,266	<u>\$35,299,330</u>
NEORIVNEOBLC	5375	\$9,925,517	\$69,576,712	\$79,502,229	-\$16,843,936	<u>\$159,004,458</u>
PITVALSUNHUG	5661	\$674,531	\$75,901	\$750,432	-\$232,138	<u>\$1,500,864</u>
RAUTEKRAUFTC	5665	\$17,360,522	\$15,363,367	\$32,723,889	-\$25,918,489	<u>\$65,447,778</u>
SIDOGASIDKEY	5510	\$5,716	\$934,470	\$940,186	\$3,783	<u>\$1,880,372</u>
TAHH59MUSFTS	5223	\$1,869,413	\$19,767,298	\$21,636,711	-\$1,458,154	<u>\$43,273,422</u>
TURXFRSARLON	5618	\$907,426	\$4,079	\$911,505	-\$869,663	<u>\$1,823,010</u>
WBUWAFAMOOVE	5708	\$11,359,845	\$4,049,100	\$15,408,945	-\$29,177,534	<u>\$30,817,890</u>

*As of 9/20, TMEPs congestion data is still considered preliminary. Recommended transmission solutions are in development. Once solutions are identified, viable TMEP candidate constraints can be identified.

Stakeholder Feedback on TMEP Congestion Data

Summary of stakeholder responses – see [8/12/22](#) and [9/20/22](#) meeting materials for verbatim feedback

Stakeholders have concerns in using historical congestion to address these issues.

Stakeholder Feedback	RTO Response
See limited value in TMEPs indicated by the preliminary list of flowgates and support forward-looking transmission planning designed to address likely issues expected in the future.	RTOs plan for this to be part of the screening process.
Consider if this congestion is expected to persist (for example, if the congestion arises from an unusual event such as hurricane or winter storm), and if regular outages are causing the congestion.	RTOs plan for this to be part of the screening process.
Consider Day-Ahead + Balancing = Real-Time as a more accurate way to capture total congestion.	Inclusion of Real-Time congestion statistics is a significant technical challenge.
Request that temporary flowgates not be included in congestion data.	Temporary flowgates are not recommended to be included as candidate constraints.
Recommend that MISO and SPP distinguish congestion data driven by generation with ERIS interconnection service and non-firm transmission service versus generation with NRIS and firm transmission service.	This would present a significant technical challenge. Such distinctions are outside of the scope of TMEPs.
Address the discrepancy between what was presented at OMS/RSC Seams Liaison Committee in 2020 of the top 10 congested M2M flowgate data for each RTO versus the TMEP congestion data.	Based on proposed TMEPs criteria, not all M2M constraints will be viable TMEP candidates.

Stakeholder Feedback on TMEP Congestion Data

Summary of stakeholder responses – see [8/12/22](#) and [9/20/22](#) meeting materials for verbatim feedback

Stakeholders have concerns on benefits.

Stakeholder Feedback	RTO Response
Do not support the assumption that the congestion would be addressed by eliminating the constrained flowgate, and do not agree that using the average of the data sample is a reliable determination of expected project benefits.	RTOs appreciate the feedback.
Request that savings be based on net congestion savings (Congestion Costs minus Congestion Hedging Revenue).	RTOs appreciate the feedback and are looking into this as part of the TMEP congestion data.
Proposal as currently drafted may promote cost shifting from interconnecting generators to load.	This is beyond the scope of TMEPs.

Stakeholder Feedback on TMEP Criteria

Summary of stakeholder responses – see [8/12/22](#) and [9/20/22](#) meeting materials for verbatim feedback

Some stakeholders request further analysis and discussions to determine if TMEP criteria are too restrictive and could be expanded.

Stakeholder Feedback	RTO Response
Consider a higher maximum cost threshold (for example, up to \$40-50M) or eliminate it due to rising material costs.	Open to discussing modest adjustments.
Consider a longer in-service date threshold due to supply chain issues.	Open to discussing modest adjustments.
Place higher importance on the four-year payback and three-year in-service requirements over a cost threshold.	Cost thresholds will be further discussed prior to being finalized.
Should not pursue projects that act as “band-aid” solutions if larger projects would be more efficient and effective.	Overlap with other planning processes will be considered.
Evaluate M2M congestion costs over a 3-year or longer period.	Agree to evaluate congestion costs over a longer period.
Reconsider greenfield projects as this criteria may exclude projects that may be good solutions.	RTOs have significant concerns about the additional regulatory and construction concerns of greenfield projects.

Other stakeholders believe the 3-year payback period, \$20M cost cap, and 3-year in-service requirement criteria are reasonable and should be retained.

Other Stakeholder Feedback

Summary of stakeholder responses – see [8/12/22](#) and [9/20/22](#) meeting materials for verbatim feedback

Stakeholders have concerns on benefits.	
Stakeholder Feedback	RTO Response
Stakeholders generally support this initiative to address congestion on the seam, which will lead to ratepayer benefits in both RTOs.	MISO and SPP appreciate stakeholders' support.
Stakeholders urge RTOs to maintain uniformity of TMEP data and process as the TMEP structure on the MISO/PJM seam.	MISO agrees that maintaining uniformity would be helpful, however, there could be need call for slight modifications (in reference to other comments here). SPP is supportive of MISO's proposal.
Stakeholders remind RTOs to consider the several transmission planning processes that may reduce historical M2M congestion costs experienced across the MISO/SPP interface, such as MTEP, JTIQ, Affected System Studies, and LRTP projects. Also consider the impact of current transmission projects underway.	MISO and SPP appreciate the feedback and will keep these in mind.
As part of the TMEP process, include conducting a “no harm” test on potential solutions and economic analysis by each RTO demonstrating that congestion is expected to persist.	RTOs plan to conduct a “no harm” test as needed as part of the study process.
As a project consideration, add a 345/230 kV transformer and short transmission line to connect Ottertail's Jamestown 345 kV station to WAPA's Jamestown 230 kV station in eastern ND.	RTOs appreciate the suggestion.

Initial Proposed MISO-SPP TMEP Criteria

Description	Criteria
Flowgates eligible for TMEP study evaluation	Limited to M2M only
M2M historical data sample size	2 years
Minimum historical M2M congestion cost used for screening potential flowgates	\$1M
Perform in conjunction with a CSP study	Yes
Cost threshold for projects	\$20M maximum
In service timeframe	3 years (3rd summer peak)
"Payback" period	4 years of avoided congestion
Project benefit determination	Average of M2M data sample period
Scope of construction	Excludes any greenfield projects

Updated Timeline & Milestones

	Status	Sept	Oct	Nov	Dec	Q1 2023
CSP scope development	Completed					
Data gathering and determine final candidate flowgate list	In Progress					
Develop initial criteria through IPSAC	In Progress					
Asset owner outreach	In Progress					
Solution development	In Progress					
Process and criteria refinement as needed	In Progress					
Finalize initial project recommendations and process	Pending					
Document process and recommended projects in CSP Report	Pending					
JOA/Tariff process language development	Not Started					
Regional cost allocation development	Not Started					
FERC filings	Not Started					

The next IPSAC Meeting is tentatively scheduled for Oct. 28 from 9-11am CT.

Next Steps

Process Development and Initial Study

- Initial TMEPs Study
 - Solution Development
 - Cost
 - Time to construct
 - Draft 2022 CSP final report
- Process Development
 - Develop draft JOA language
 - Regional cost allocation mechanisms
 - Regional review and approval
- Contact Info:
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 - Neil Robertson nrobertson@spp.org

Appendix

Bridging the gap between real-time and longer-term planning horizons

- Economic Transmission Planning typically focuses on years 5 and beyond
- Future economic planning models do not always capture the actual congestion showing up repeatedly in Day Ahead (DA) and Real-Time (RT) markets



The TMEP concept complements longer term market efficiency planning

Targeted Market Efficiency Project

- Driver is historical M2M congestion
- Limited scope and cost
- Straight-forward benefit determination

Longer Term Market Efficiency Project

- Driver is future congestion identified in regional planning processes
- Candidate projects go through project solicitation (as applicable)
- Longer model development and more complex analysis process

2022 CSP Scope Overview

- 2022 CSP Scope provided with [May 6, 2022 IPSAC Meeting Materials](#)
- Primary Objectives
 - Develop a repeatable process to effectively study persistent, historical congestion on the SPP-MISO seam, including a set of appropriate project criteria for inclusion in new JOA language
 - Identify valuable transmission upgrades, as applicable, for recommendation using a future, to-be-determined cost allocation methodology
- Guiding Principles
 - Relieve known M2M congestion issues
 - Target solutions that can be implemented in a relatively short time-frame (e.g., not greenfield)
 - Determine straight-forward benefits with quick payback on investment