



MISO-SPP Joint Targeted Interconnection Queue Study

SIG/NAGF/NERC/EPRI Generation Interconnection Workshop
August 9, 2022

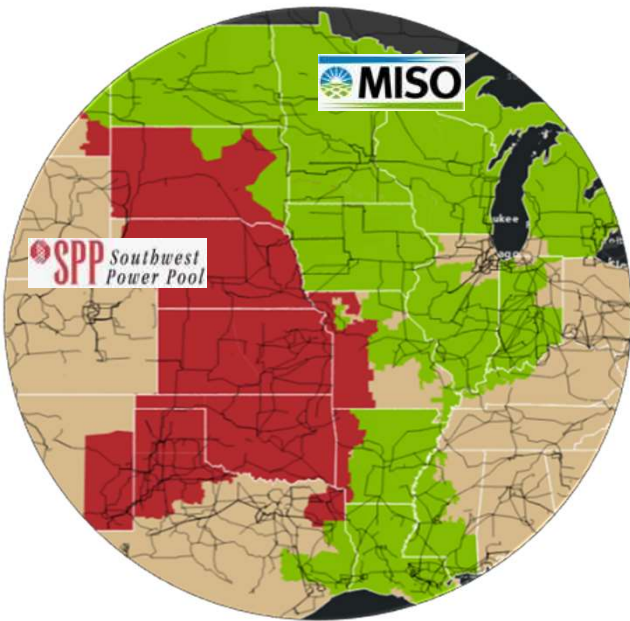
Executive Summary



- First of its kind study - The SPP-MISO Joint Targeted Interconnection Queue (JTIQ) Study focuses on optimizing transmission needed for interconnection across the seams for the evolving resource mix
- Seven potential projects have been identified to allow the interconnection of low-cost resources beneficial to both regions
- Exemplary Interregional MISO-SPP Coordination
 - Queue Process Alignment and Relative Queue Priority updates approved by FERC in June 2022
- MISO and SPP are looking to replace the Affected System Study (AFS) process within individual queue cycles, with JTIQ; design discussions continue with stakeholders through monthly meetings

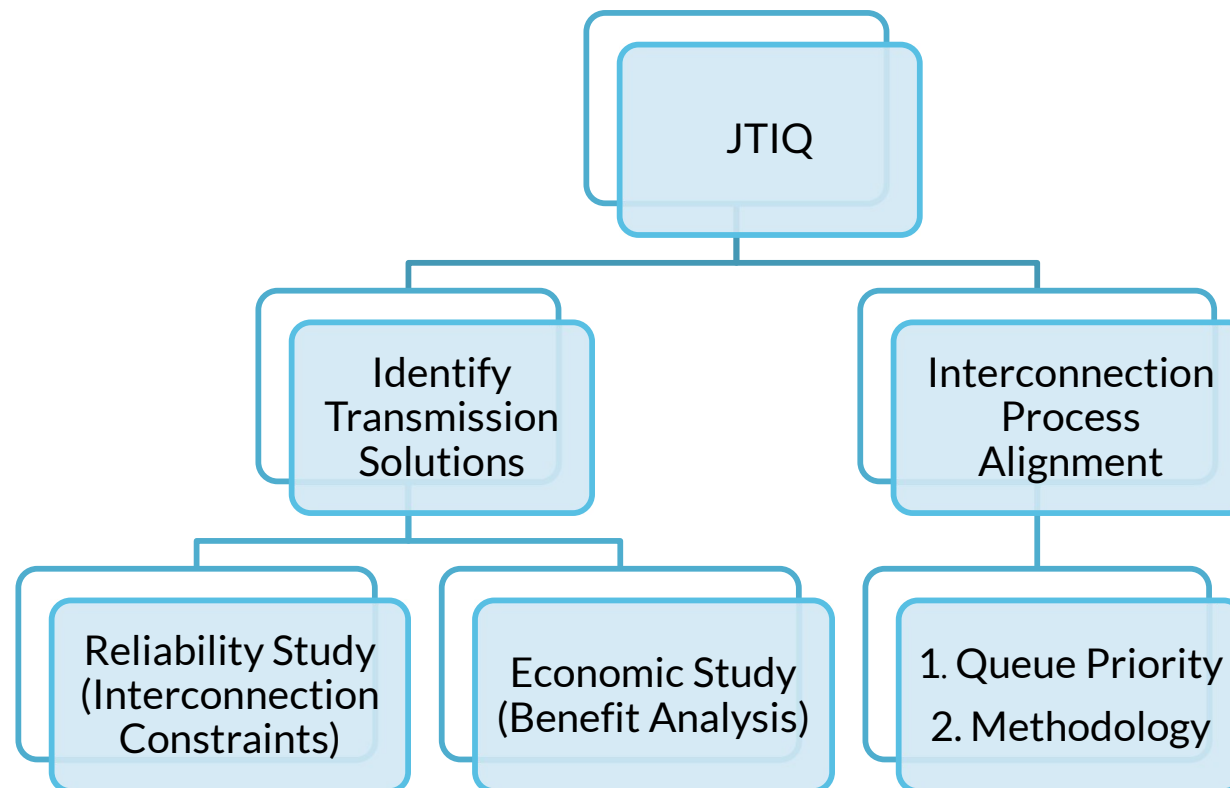
JTIQ Need – Why now?

The SPP-MISO JTIQ Study focuses on optimizing transmission needed for interconnection across the seams for the evolving resource mix



- SPP and MISO are experiencing similar resource mix shifts
- The transmission system is at capacity along the SPP-MISO seam
- Upgrades are too costly for small groups of interconnection customers, contributing to churn in the queue
- The study accomplishes what FERC Affected System Studies were meant to achieve

The work scope focused on two aspects, identify transmission solutions and process alignment



MISO and SPP coordinated the JTIQ study assumptions, but used separate models

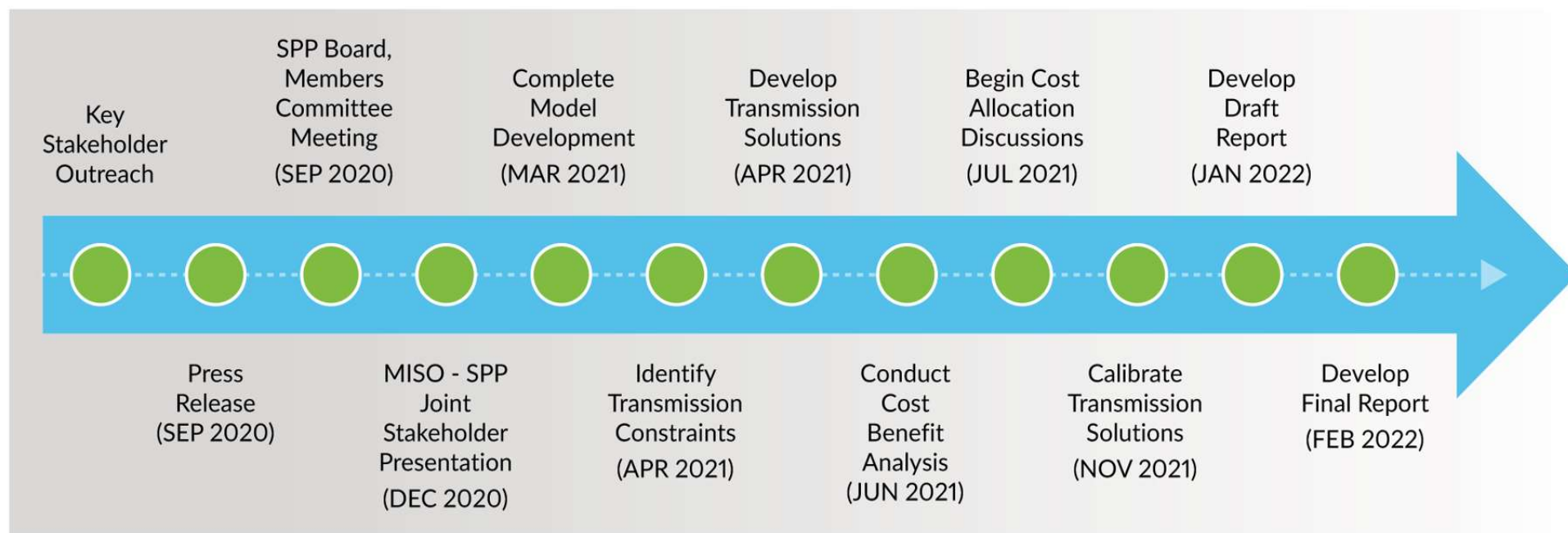
SPP

- 2021 ITP 2 year and 5 year out models
- Summer Peak, Light Load, Winter Peak
- Single Group Study
 - 2023 Summer Peak
 - 2026 Light Load
 - 2026 Summer Peak
 - 2026 Winter Peak
- Deactivations – Age Based (Futures)
- New Interconnections (Futures and Queue)

MISO

- MTEP 5 year and 10 year out models
- Summer Peak and Summer Shoulder
- Single Group Study
 - 2025 Summer Shoulder
 - 2025 Summer Peak
 - 2030 Summer Shoulder
 - 2030 Summer Peak
- Deactivations – Age Based (Futures)
- New Interconnections (Futures and Queue)

Study Timeline



JTIQ Portfolio includes a seven-project portfolio with an estimated cost of \$1.65B

- Improves reliability by fully resolving targeted transmission constraints identified in the study
- Increase interregional transfer capability
- Enhancement of ~28.6 GW in combined system interconnection capacity
- Provides economic Adjusted production cost benefits to each RTO (Assumes no LRTP Tranche 1)
 - \$724 Million to MISO
 - \$247 Million to SPP
- MISO-SPP Interconnection Process Alignment
 - Relative Queue priority - First Ready First Serve



JTIQ Portfolio/LRTP Overlap

JTIQ Portfolio	Location by RTO	Cost (\$M)
Bigstone – Alexandria – Riverview – Quarry – Monticello 345 kV	MISO	424.5
Jamestown – Ellendale 345 kV	MISO	165
Bison – Hankinson – Big Stone South 345 kV	MISO	476
Brookings Co – Lakefield 345 kV	MISO	331
Raun – S3452 345 kV	MISO - SPP	144.4
Auburn – Hoyt 345 kV	SPP	90.5
Sibley 345 Bus Reconfiguration	SPP	18.8
Total Cost of Portfolio of Projects	MISO - SPP	1,650.2

Projects included in
LTRP Tranche 1

MISO PV Benefit (\$M)	SPP F2 20Y Benefit (\$M)	SPP-MISO Combined B/C
724.23	246.74	0.60

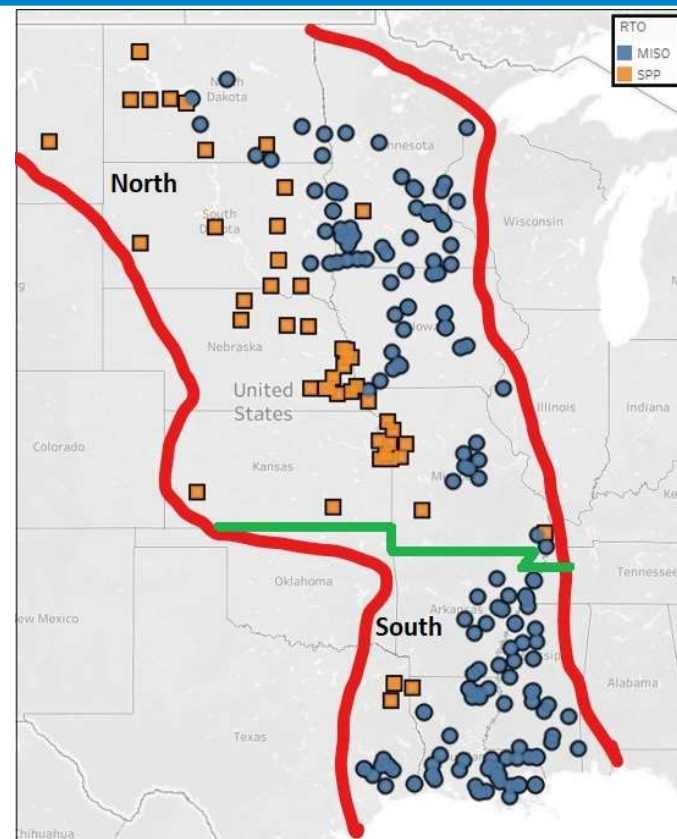
Only Adjusted Production Cost (APC) savings are accounted in Benefit and B/C calculations (assuming no LRTP Tranche 1)

Stakeholder Cost Allocation discussions

- JTIQ replacing Affected System study process between MISO and SPP
 - Post ongoing JTIQ Affected System transmission needs will be identified through a periodic future JTIQ(s).
- Forward looking Periodic JTIQ(s) will pre-determine transmission needs and affected system costs of future DPP and DISIS interconnection requests
 - Will consider interconnection queue trends in DPP and DISIS
 - Mitigate existing and future AFS constraints utilizing futures generation input
 - Proposed to occur at least every two years
- Assigns a **predetermined \$ per MW** of capacity charge to applicable interconnection requests in JTIQ AFS Zone
 - Zonal charge will be adjusted accordingly based on future JTIQ studies
- Takes advantage of cost sharing opportunities between GI customers and load

JTIQ AFS Zone Concept

- JTIQ AFS Zone
 - Representative of transmission facilities around MISO-SPP entire seam most likely to be impacted by DISIS and DPP interconnection requests (DFAX -5%)
 - Generators connecting on facilities within the JTIQ AFS Zone will be assigned a pre-determined AFS charge (\$/MW)
 - AFS Zone will be split into two regions – North and South
 - Screening will be performed before start of Phase 1 to identify the DISIS or DPP requests that are in JTIQ AFS Zone



Benefits of JTIQ replacing AFS process

- **Provides cost and timing certainty** for GI requests in MISO and SPP
 - GI customers would know affected system cost at the start of DPP or DISIS
 - Completion of DPP or DISIS can conclude the study process for requests in those processes without having to wait for separate AFS study results
- Eliminates unknown AFS Network Upgrades
- AFS study cost is eliminated
- Eliminates timing delays on AFS study coordination
- Builds on notion of interconnection zones contemplated by FERC's transmission planning NOPR
- Identifies more optimized network upgrades as compared to individual MISO & SPP AFS processes

JTIQ Roadmap to FERC Filing Q4 2022

- Next JTIQ Stakeholder meetings – August 22, 2022
- Draft updates to MISO/SPP Joint Operating Agreement (JOA)
- MISO present JTIQ concept/JOA changes at stakeholder forums
 - IPWG – Seek feedback
 - PAC – Seek feedback
- SPP present JTIQ concept/JOA changes at stakeholder forums
 - GIUF/SAG & CAWG/RSC/MOPC – Seek feedback
 - Board of Directors
- Additional Joint Stakeholder meeting(s) – Present final plan
- FERC Filing Q4 2022



Questions?

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