



Missouri Public Service Commission Third Quarter RTO Update

SPP TRANSMISSION PLANNING
AUGUST 19, 2026

*Working together to responsibly and economically
keep the lights on today and in the future.*



SouthwestPowerPool



SPP.org



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AGENDA

- Addressing Speed to Power
- Transmission Planning
- Missouri Transmission Projects
- Generation Interconnection Agreements
- FERC Large Load Show Cause Order





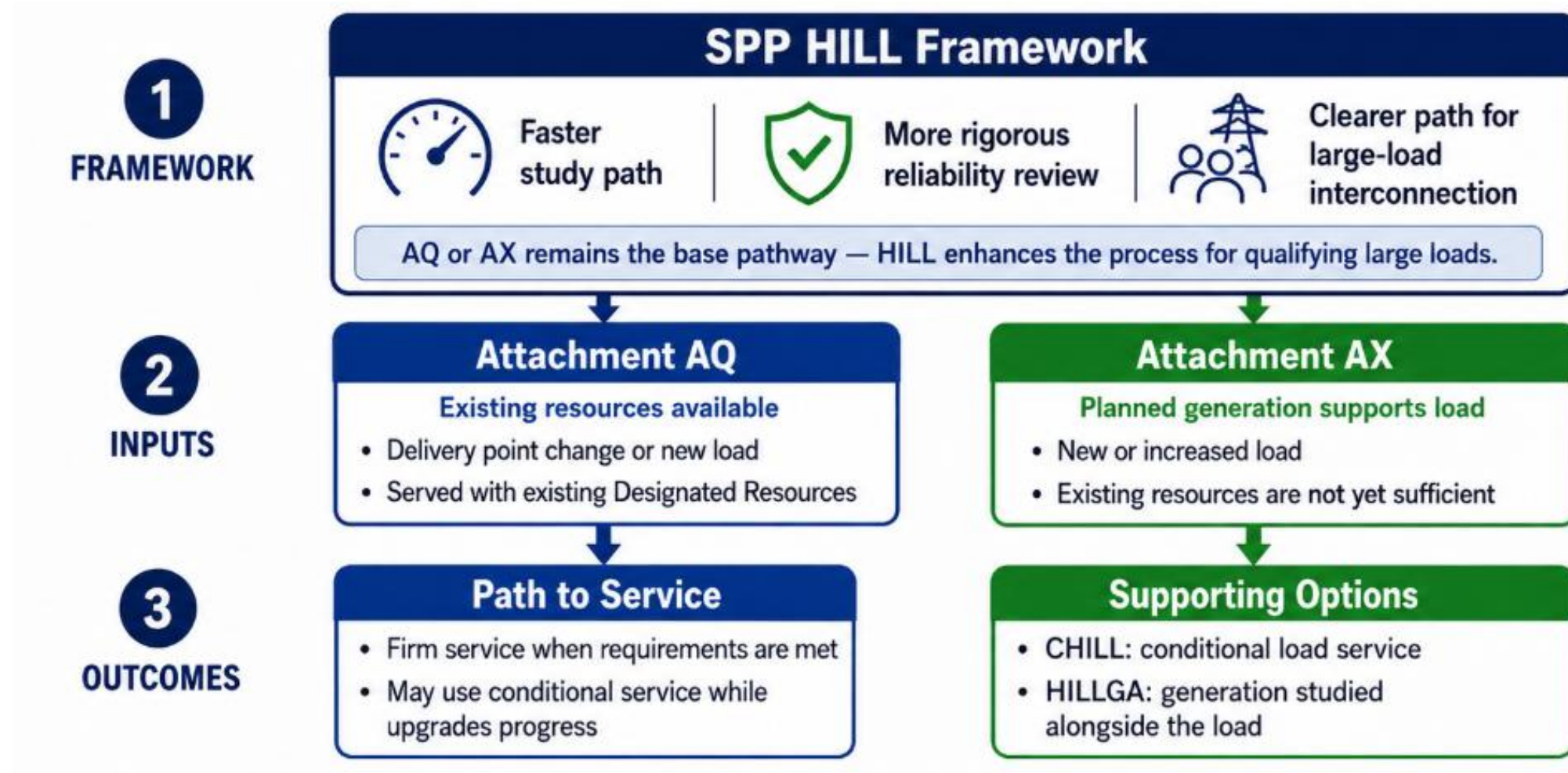
Speed To Power

High Impact Large Loads (HILL, HILLGA, CHILL, PAL)

High Impact Large Load Policy

	HILL/HILLGA Firm Service Policies				Flexible Intermittent Policies	
	HILL (for Load) <i>MOPC (Aug 21) BOD (Sept. 4)</i>		HILLGA (for Generation) <i>MOPC (Aug 21) BOD (Sept. 4)</i>		Phase 1 <i>Phase 1 (Jan '26)</i>	Phase 2 <i>Phase 2 (Apr '26)</i>
Service and parameters	AQ Process For LSEs with sufficient gen; load willing to wait on upgrades	AX Process For LSEs acquiring gen; load willing to wait on upgrades	Common Bus For supporting gen to be built behind a common bus with HILL	Local Area For supporting gen to be built behind a common bus with HILL	CHILL For large load willing to take curtailable service without sufficient gen	PAL <i>For any load willing to take curtailable service to protect market prices</i>
Typical Customer	Heavy industry, mining, refineries data centers with continuous demand		Load-owned or partnership	LSE or developer-owned	Data centers with scalable operation	<i>Crypto Mining or Battery</i>
Time to study	90 days	90 days	90 days	90 days	90 days	90 days
Tx Cost allocation	Upgrades are base plan funded	Directly assigned until firm service acquired for new gen	Directly assigned	Directly assigned	Directly assigned	<i>Directly assigned</i>
Service Limit	No limit	No limit upon new	Gen will not be injected to the grid	Gen limited to HILL's need & system capacity	Curtailable for reliability (RA or Tx)	<i>Curtailable for price or reliability</i>
Length of Service	Permanent status	Permanent status	Permanent, or grid injection w/ DISIS/CPP	5-year limited status: must pursue DISIS/CPP	7-year CHILL status (after study complete), must pursue AX/AQ	<i>TBD</i>
Demand Response	Eligible resource	Eligible resource	N/A	N/A	Not eligible	<i>Not eligible</i>
Tx costs					Monthly / unreserved usage?	<i>Flow-based</i>

How HILLs builds on AQ and AX



Missouri HILL Summary

Total HILL Requests

11

AQ (7) + AX (4)

Total Load

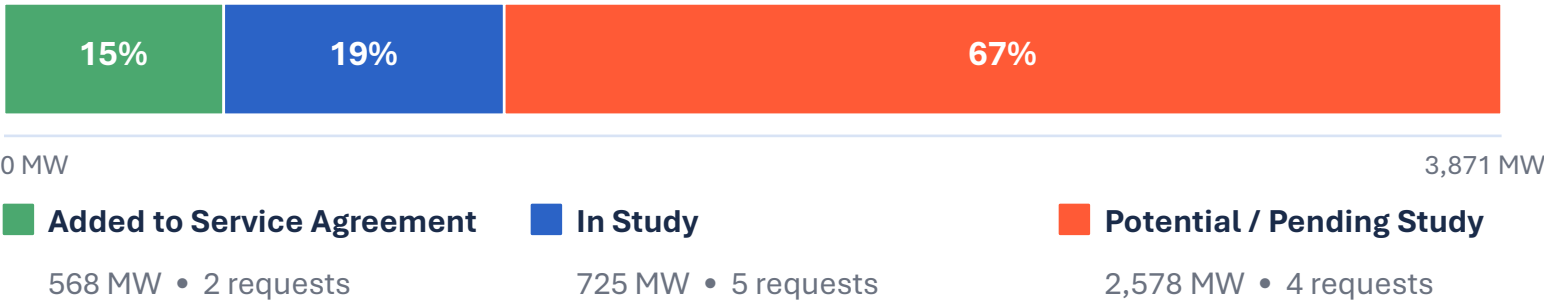
3,871 MW

~3.9 GW

Potential / Pending

2,578 MW

67% of total MW

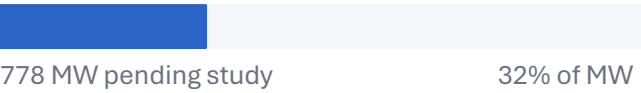


Program Breakout

AQ HILL 7 requests 2,618 MW



AX HILL 4 requests 1,253 MW



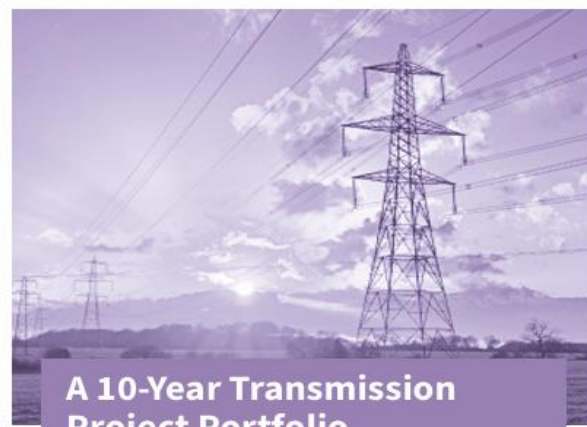
AQ Detail

Not Disclosed Load: 1,968 MW
Data Center Load: 650 MW

Integrated Transmission Planning (ITP)

Outputs of the 2026 ITP Process

- The 2026 ITP will Result in **four main Deliverables**



A 10-Year Transmission Project Portfolio

The set of transmission upgrades needed over the next decade to maintain reliability, reduce congestion, and support load growth. These projects are the candidates that can ultimately receive Notifications to Construct (NTCs) after stakeholder review and Board approval.



A 20-Year, Long-Term Outlook Portfolio

This is a longer-range view of system needs SPP is required to conduct every three years. Approval of the 2026 20-year assessment does not trigger construction of its entire portfolio of projects; this is accomplished through separate issuance of NTCs. The 20-year plan defines long-term priorities and informs future ITP/CPP-10 studies.



Projects to Receive NTCs in 2026

From the 10-year portfolio, staff identifies the needs that are within near-term planning timeframes, and projects that should move forward for construction authorization.

This subset is reviewed and voted on by Transmission Working Group (TWG) and Economic Studies Working Group (ESWG) in September, then by the Markets and Operations Policy Committee (MOPC) in October, and finally considered for approval by the Board in November, after which NTCs or NTC-Cs are issued.



SPP's First GRID-C

The Generalized Rate for Interconnection Development-Contribution (GRID-C) is an upfront per-megawatt fee charged to power plant developers to connect new generation to the SPP grid. The GRID-C is calculated based on the estimated cost of the 2026 ITP and 20-year assessment to determine new generation's share of transmission upgrade costs.

All outputs remain in progress, with substantial analysis and refinements ongoing. The portfolio is still undergoing scenario testing, benefit to cost analysis, and review across stakeholder groups.

Inside Look at SPP's ITP Plan



DEMAND GROWTH CERTAINTY

- SPP's current peak is **56 GW**.
- We have **signed service agreements to add ~9.6 GW** (17% increase compared to peak).
- **10 GW HILL** going through AQ/AX right now
- This is **up to 35% peak growth** within three years.
- **Much more is coming.**



THE **PLANNING** CHALLENGE

- ITP is on track, despite being most complex ITP ever
- **21,500 unique needs** (tripled each year, 2024-2026)
- **8,600+** solutions evaluated (2,548 in 2025)
- Process efficiency gains are keeping us on track
- Testing value of solutions in multiple future scenarios to find those that work best across most

QUICK OVERVIEW OF THE ITP PROCESS

SPP is planning smarter transmission investment for a region facing soaring electricity demand and a growing need for additional generation. We're reviewing more than 8,000 stakeholder proposals to identify the right projects to invest in, and how to sequence them appropriately.

Working with members, regulators, and independent researchers, we're committed to cost discipline and stakeholder input that materially shapes the final plan. SPP is keeping energy reliable and affordable.

ITP/CPP Portfolio Development

Step 1: Develop Candidate Portfolios

Base Reliability Models

Expedited Resource Adequacy
Stability Models

Market Economic Models

Base Generation Expansion
Models

Transfer Generation Expansion
Models

Local Generator Interconnection
Models

Step 2: Optimize Across Portfolios

OPTIMIZE

- select
- displace
- combine

most needs / best cost

Look for overlap, displacement opportunities,
and lower-cost combinations before issuing
NTC recommendations.

We create a candidate transmission portfolio for each model series, then optimize across them to deliver the highest-value overall portfolio.

Result

Best-Value 2026 ITP Portfolio

- **Addresses** the most persistent needs across all model series
- **Avoids duplication** by selecting the better project where portfolios overlap
- **Displaces** higher-cost or lower-value alternatives when another project solves the same need
- **Delivers** the most value for customers considering reliability, economics, and integration needs

ITP/CPP Portfolio Development

Step 1: Develop Candidate Portfolios

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Local Generator Interconnection
Models

Step 2: Optimize Across Portfolios

OPTIMIZE

- select
- displace
- combine

most needs / best

Look for overlap, displacement opportunities, and lower-cost combinations before issuing NTC recommendations.

This hasn't happened yet!

We create a candidate transmission portfolio for each model series, then optimize across them to deliver the highest-value overall portfolio.

Result

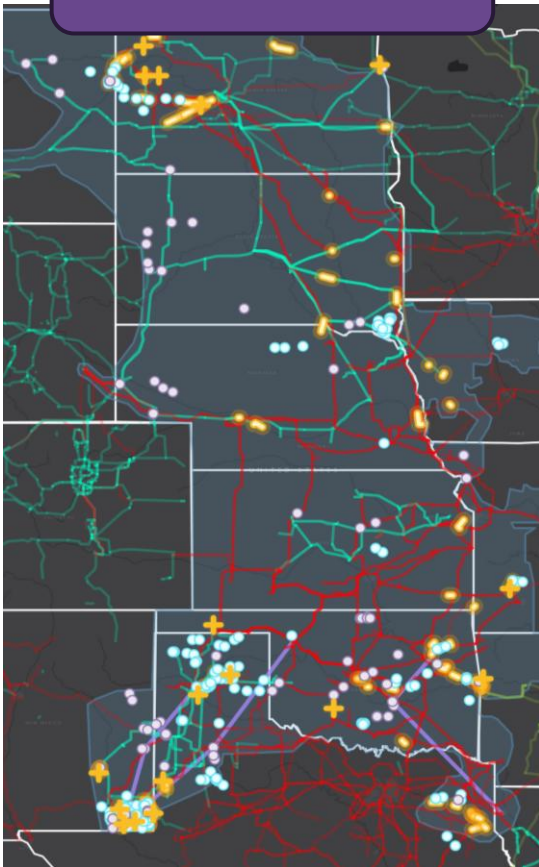
Best-Value
2026 ITP Portfolio

- Address the most persistent model series by selecting the portfolios with the most overlap
- **Displaces** higher-cost or lower-value alternatives when another project solves the same need
- **Delivers** the most value for customers considering reliability, economics, and integration needs

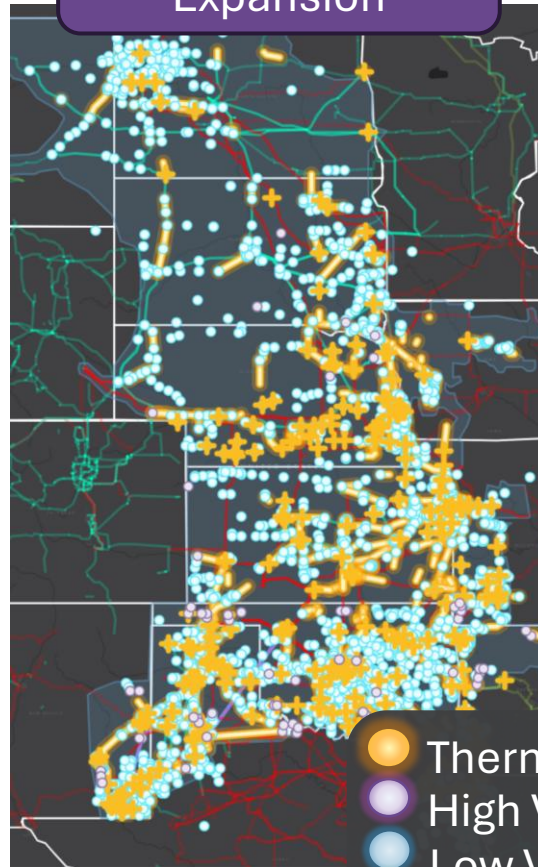
2026 Needs by Model

An extensive portfolio will be needed to address the count of system's needs as they have **increased by 5X**

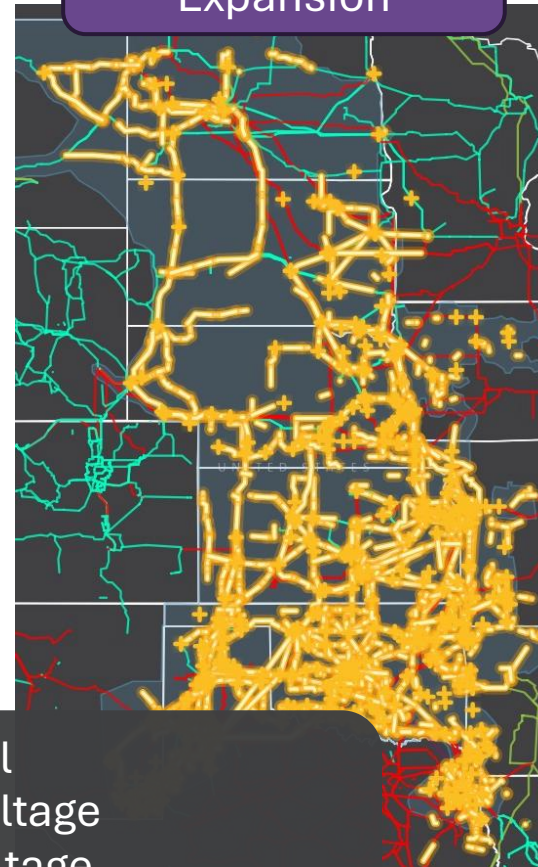
Base Reliability



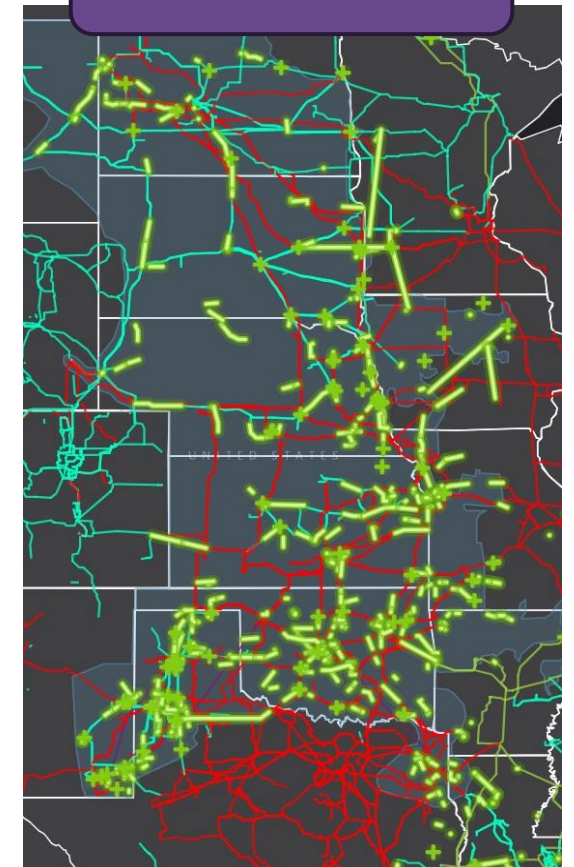
Base Generator Expansion



Transfer Generator Expansion



Market Economic



- Thermal
- High Voltage
- Low Voltage
- Economic Congestion

2026 ITP/CPP Base Reliability Needs (As of 7/17/2026)

BR Needs driven by
delivering firm generation
to firm load are distributed
across the SPP footprint,
with pockets of higher
concentration.

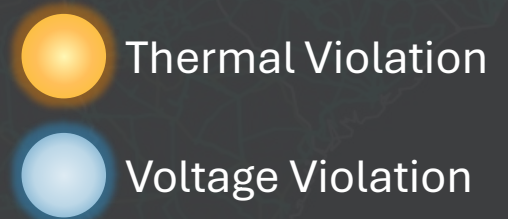


Shortfall Units
were added to
the BR Models.
Fictitious
reactive support
was not added.



2026 ITP/CPP Persistent Operational (System Operating Limit Exceedances)

Base Reliability needs are
analogous with many of the
operational needs
experienced in real-time

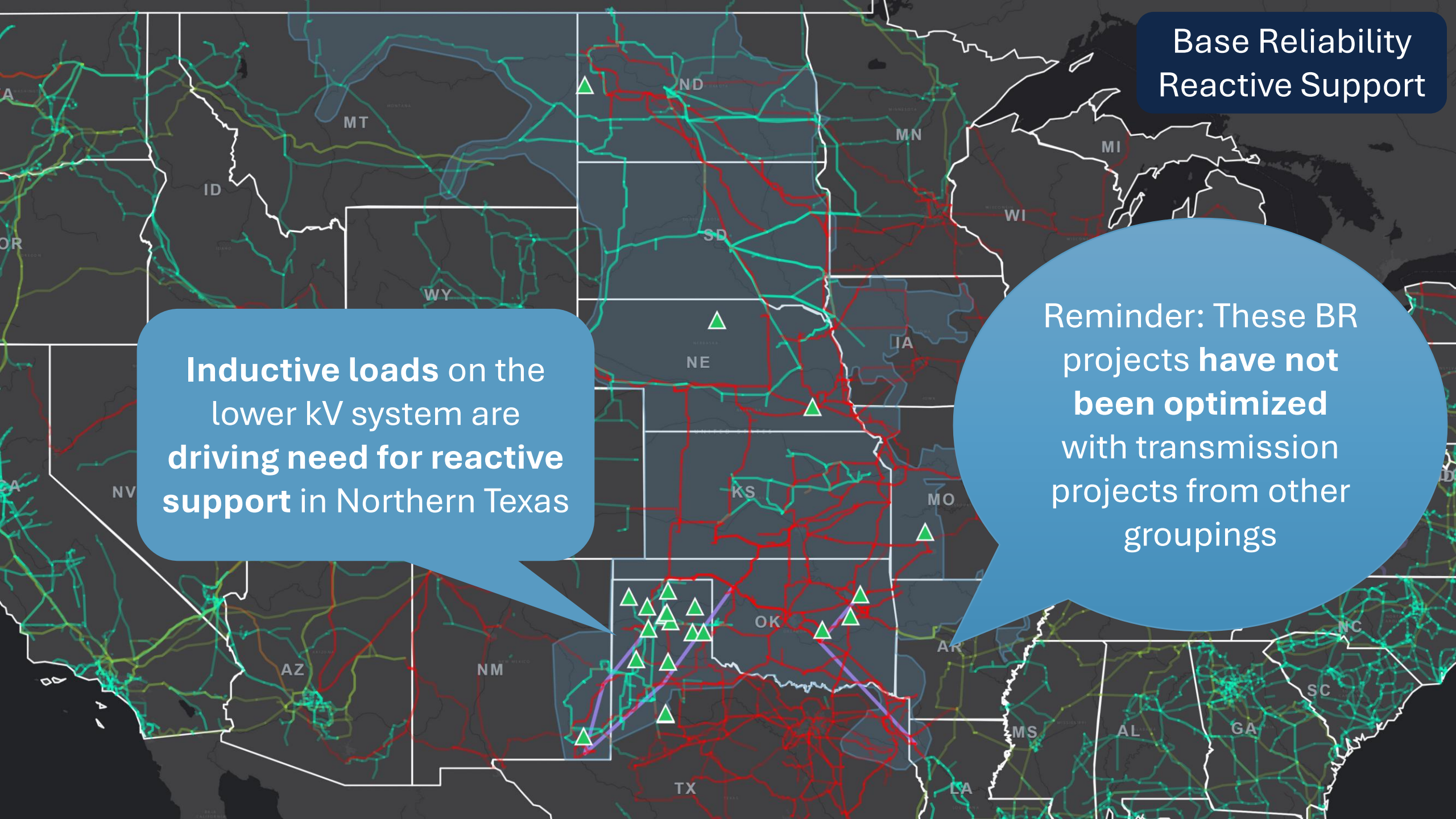


Base Reliability Projects

Total Needs Solved: 10,249

Project Legend

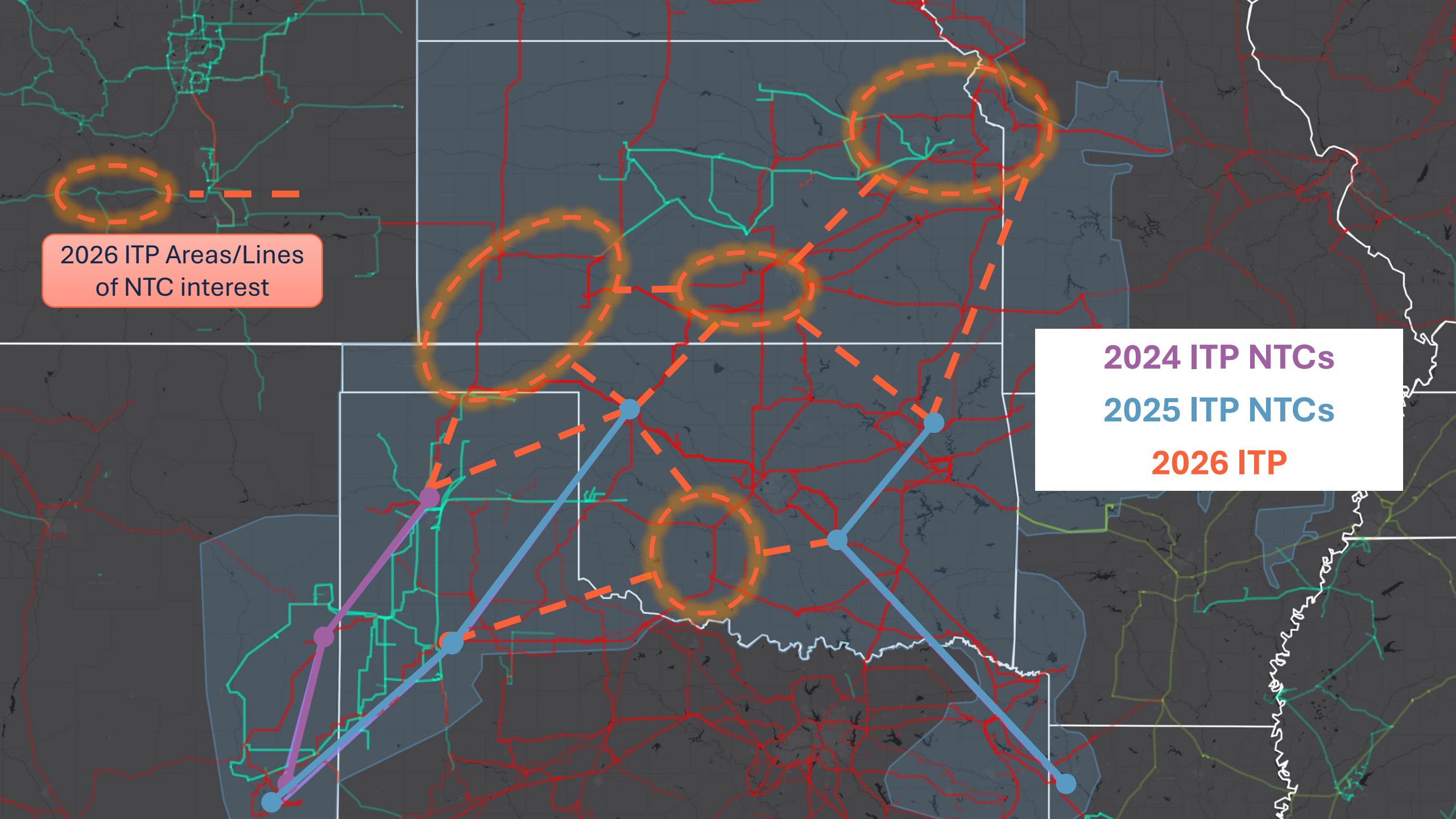
- ▲ Reactive Device
- ▲ Tap Branch
- + Transformer
- Substation
- Terminal Upgrade
- New Branch (69 kV)
- New Branch (115 kV)
- New Branch (138 kV)
- New Branch (161 kV)
- New Branch (230 kV)
- New Branch (345 kV)
- Rebuild Branch (69 kV)
- Rebuild Branch (115 kV)
- Rebuild Branch (138 kV)
- Rebuild Branch (161 kV)
- Rebuild Branch (230 kV)
- Rebuild Branch (345 kV)



Base Reliability
Reactive Support

Inductive loads on the
lower kV system are
**driving need for reactive
support** in Northern Texas

Reminder: These BR
projects **have not
been optimized**
with transmission
projects from other
groupings



A map showing a network of roads and water bodies. Several areas are highlighted with dashed orange lines, and a network of lines connects various points. The map is overlaid with a grid of white lines.

2026 ITP Areas/Lines
of NTC interest

2024 ITP NTCs

2025 ITP NTCs

2026 ITP

Evaluation of EHV Options

Attribute	765 kV (single circuit)	500 kV (single circuit)	345 kV (single circuit)
Typical Thermal Limits Megavolt-Amperes (MVA)	3,000 - 6,600 MVA	1,500 - 3,500 MVA	800 - 1,800 MVA
Right-of-way (ROW) corridors required to meet same transfer	1	2-4	4-7
Energy loss over long distance	0.5-1%	1-2%	2-4%
Portfolio \$/mile for same transfer capacity	\$6.38M \$6.38M/mi. - 1 circuit	~\$13M \$4.35M/mi. - 3 circuits	~\$19M \$3.17M/mi. - 6 circuits

Short Term & Intermediate Transmission Planning

2025 STRP Agreements

- SPP Staff has worked with AEP, OG&E, and SPS to develop an agreement via an Enhanced Notice to Construct (E-NTC)
 - E-NTC will facilitate the commitments from 2025 ITP STRP discussion at the February 2026 Board meeting
 - Agreement with AEP, OG&E, and SPS in creating an E-NTC
 - E-NTC will contain any cost & schedule commitments with a new Appendix A
 - E-NTC will require the building TO make any necessary filings at FERC to create mechanisms to effectuate cost & schedule commitments via existing formula processes and protocols
 - E-NTCs will be posted on SPP.org like other NTCs
 - Details of the commitments will be contained in new Appendix A.

Intermediate Planning Study Types

SPP-Initiated Studies

SPP Identified Issue

- Reliability, Operational, or Economic

Base Plan Upgrade

TWG/ORWG/ESWG → MOPC → Board
NTC Issuance

Sponsored Studies

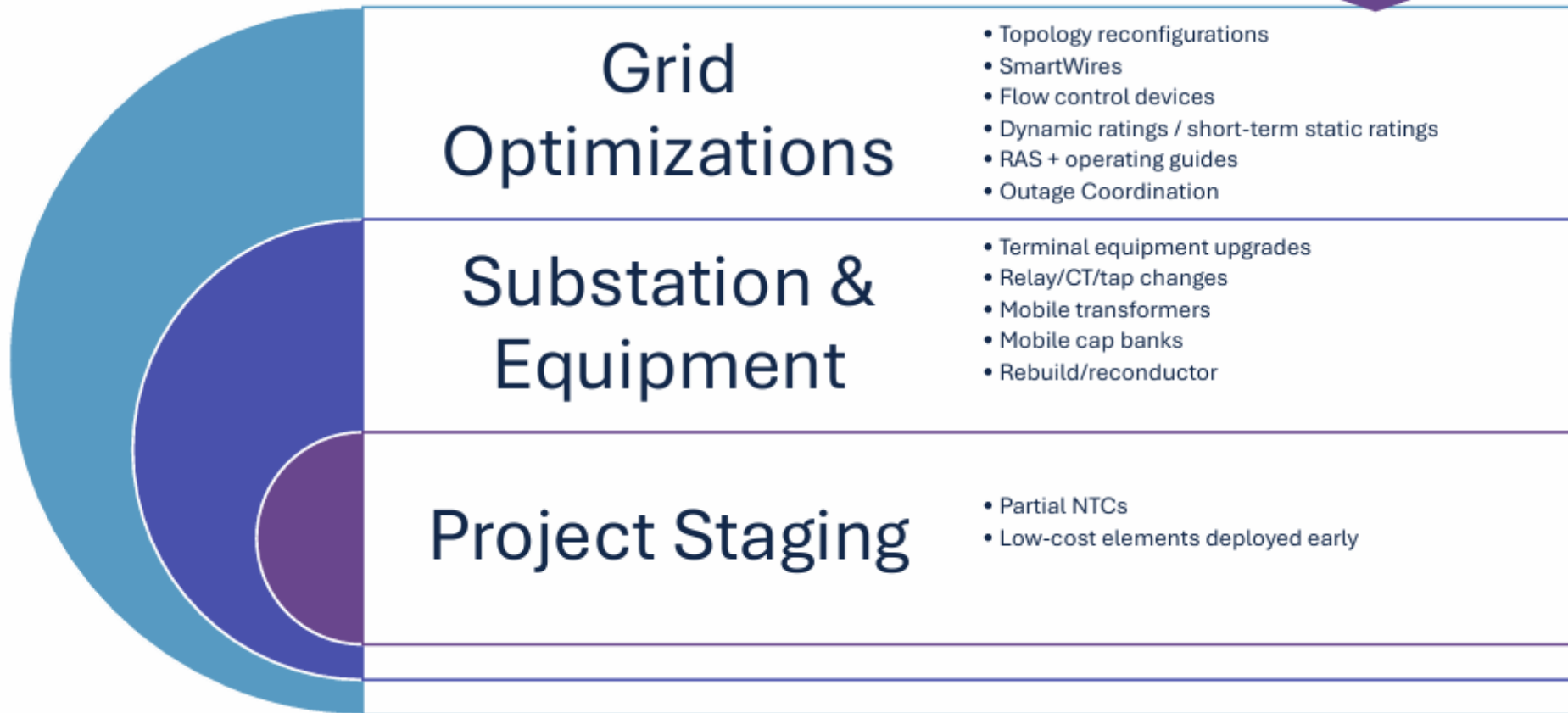
Stakeholder Requested

Sponsor Funded (\$10k screening + \$50k deposit)

Optional Sponsored Upgrade

Types of Solutions

A repository of solutions is within the IP Manual

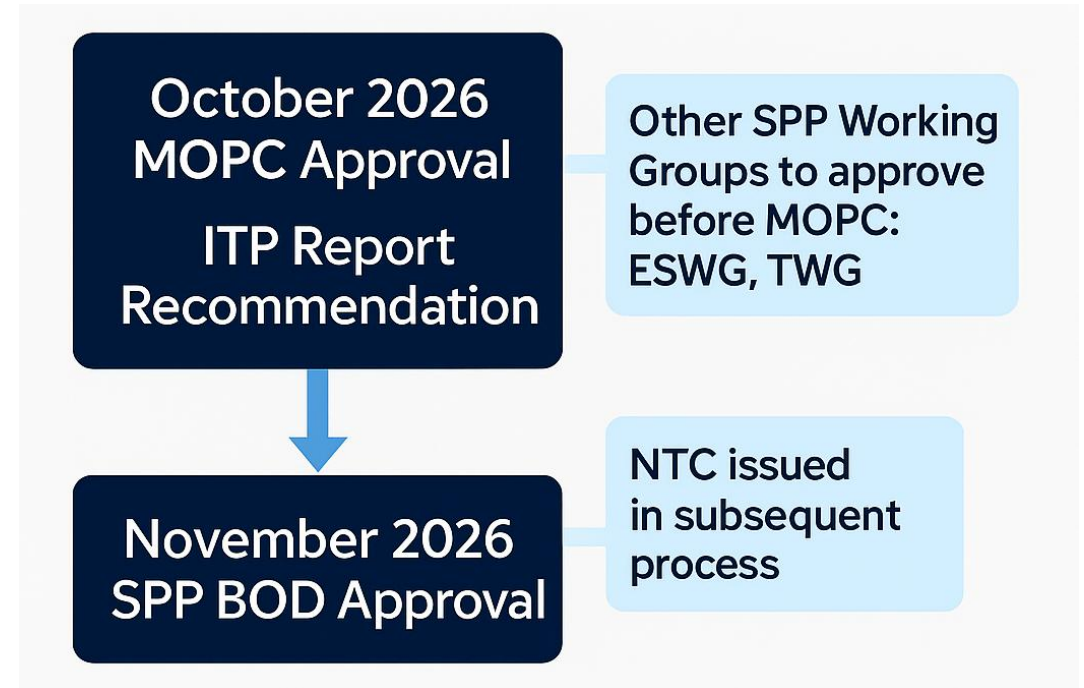




Missouri Transmission Project Update

MoMENT Update

- Costs estimated using SPP's third-party cost estimation process
- Currently evaluating the economic performance of the MoMENT project within the context of the broader 2026 ITP 765 kV transmission portfolio
- DOE SPARK¹ selection notifications anticipated to be announced this month



¹<https://www.energy.gov/oe/speed-power-through-accelerated-reconductoring-and-other-key-advanced-transmission-technology>

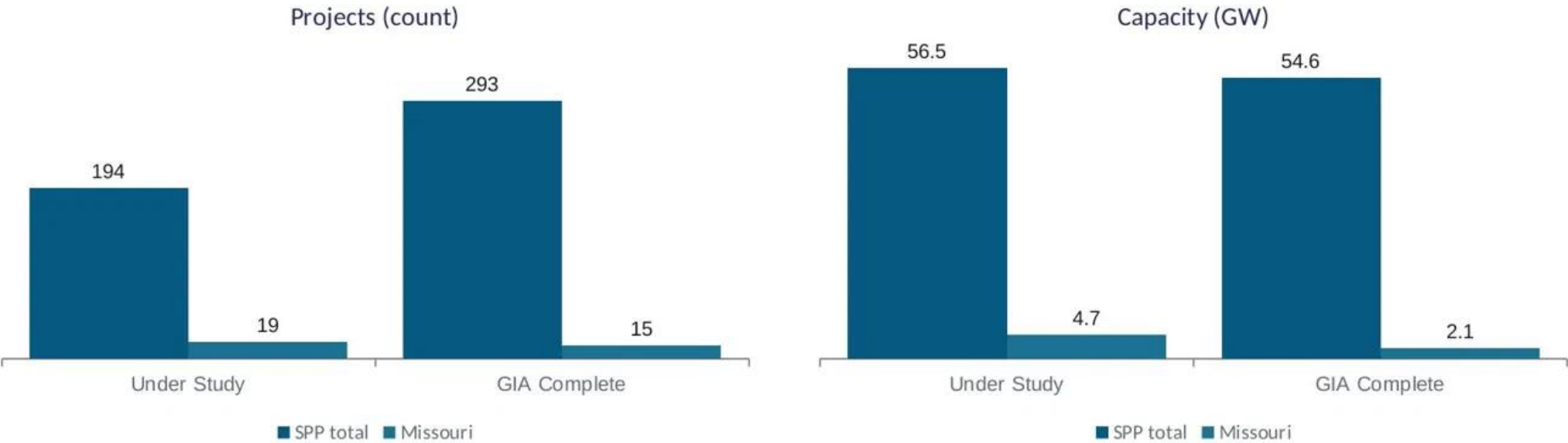


Generation Interconnection Agreements



SPP Generator Interconnection Queue

Missouri's share of the Southwest Power Pool queue, by stage



9.8%

MO share of SPP projects under study

8.3%

MO share of SPP capacity under study

5.1%

MO share of SPP projects with GIA

3.8%

MO share of SPP capacity with GIA

Missouri figures are a subset of the SPP-wide totals shown alongside them. Source: Southwest Power Pool generator interconnection queue.



FERC Large Load

Show Cause Order

EL26-68-000

COMPLIANCE IN THE FOUR CATEGORIES

01

**Transmission Service
to Eligible Customer
for Large Loads**

1

TRANSMISSION SERVICE TO ELIGIBLE CUSTOMER FOR LARGE LOADS

- SPP will look at Tariff provisions including alternative transmission technologies in its transmission service request processes and appropriate transmission planning processes
- SPP will look at its existing service agreements to see what ongoing operational requirements should be included.

02

**Transparency into
Transmission Cost &
Cost Shifting Risk**

2

TRANSPARENCY INTO TRANSMISSION COST & COST SHIFTING RISK

- SPP will look at Tariff provisions to make information available and searchable on SPP's website for some upgrades related to large loads.
- SPP will look at *pro forma* agreement between Eligible Customer, TO and SPP regarding cost shifting among transmission customers.

03

**Co-Location
Framework**

3

CO-LOCATION FRAMEWORK

- SPP will look at the clarity and appropriateness of the provisions relating to payment for ancillary services and cost responsibility.
- SPP will look at interconnection service provisions for co-located load.

04

**New Transmission
Services for Flexible
Large Loads**

4

NEW TRANSMISSION SERVICES FOR FLEXIBLE LARGE LOADS

- SPP will compare existing transmission service options to those proposed by PJM.
- SPP will determine how PALS fits.

FERC Large Load Show Cause- Filing Update

August 3 – Motion for Abeyance Filed

SPP and the Joint Movants requested that FERC hold the Section 206 Show Cause proceeding and related briefing deadlines in abeyance through November 20, 2026. Joint Movants also requested a five-day answer period and expedited FERC action. The requested extension allows SPP to:

- Complete its stakeholder process
- Obtain SPP Board approval
- Submit Section 205 Tariff revisions

August 14 – FERC Grants Abeyance

FERC issued a Letter Order granting the requested abeyance, allowing SPP's stakeholder process and development of responsive Tariff revisions to proceed.

Appendix

Order 1000 DTO Agreements

- Order 1000 Strategic Review Task Force (O1000 SRTF) final report approved by the SPC and Board, Recommendation #4 included direction for Staff to create a standardized contract required to be executed between the selected DTO and SPP after award of a competitive upgrade and filed at FERC.
- Developed RR 751 for the O1000 SRTF recommendations.
 - Included the Competitive DTO Agreement.
 - TWG approved a motion to remove the Competitive DTO Agreement and tariff language from RR 751 and move it forward in a separate RR to allow for additional stakeholder review and discussion. MOPC approved TWG motion.
- RR 785 posted with the Competitive DTO Agreement and corresponding Tariff language
 - Comments submitted proposing alternative approach
 - After a discussion RR 785 was tabled at the June TWG meeting and will be discussed again at the August TWG meeting

2025 ITP Short-Term Reliability Projects

- At the February 3, 2026, Board meeting, the Board approved the four projects from the 2025 ITP that were eligible to be considered as STRPs, which included two 765 kV lines.
- As part of that approval process, the Board adopted the following action item:
 - Between now and NTC-C dates for the STRPs staff will work with incumbents to develop an agreement to address cost overruns and delays. Staff will report progress at the May board meeting.
- SPP has been actively working on agreements with each of the TOs for the 765 kV projects. These include OG&E, AEP & SPS

FERC SHOW CAUSE DEADLINES & TIMING

SPP must file an informational report



JULY 20, 2026

(this is 30 days after Order)

The response to the show cause order and briefing questions



AUGUST 17, 2026

(this is 60 days after Order)

Any requests for additional time must be filed

- SPP intends to ask for additional time to allow for needed stakeholder processes



AUGUST 3, 2026

(this is 45 days after Order)

FERC will be very reluctant to allow for a show cause response later than:

- November Board of Directors meeting is currently scheduled for November 17, 2026, which is outside of the Commission's allowed time



NOVEMBER 16, 2026

(this is 60+90 days after Order)

TRANSMISSION SERVICE TO ELIGIBLE CUSTOMER FOR LARGE LOADS

FIRST COMPONENT

The SPP Tariff does not require the evaluation of **alternative transmission technologies** when studying transmission service requests for large loads. This omission can lead to slower, more expensive upgrades and may prevent the use of faster, cost-effective solutions, potentially resulting in unjust and unreasonable rates.

SECOND COMPONENT

The SPP Tariff lacks *pro forma* provisions in transmission service agreements between SPP and customers serving large loads, which would memorialize ongoing operational requirements. Without these, SPP may be unable to enforce operational requirements, risking reliability and fairness.

The Commission encourages the following to be evaluated automatically, not only when a customer requests them:

-  Grid Enhancing Technologies (GETs);
-  Dynamic line ratings
-  Advanced conductors
-  Topology optimization
-  Power flow control devices
-  Synchronous condensers
-  Other alternative transmission technologies

TRANSPARENCY INTO TRANSMISSION COST & COST SHIFTING RISK

1. BETTER TRANSPARENCY IS NEEDED AROUND NETWORK UPGRADE COSTS

The SPP Tariff does not require robust, accurate, and systematic provision of data (in a centralized, accessible, and filterable format) on SPP's website in a single location regarding the costs of network upgrades needed to serve large loads. This lack of transparency makes it difficult for stakeholders and regulators to assess which customers are driving transmission costs, increasing the risk of unjust cost shifts to other transmission customers. The Commission believes stakeholders should be able to clearly identify:

- ✓ Which Network Upgrades were driven by large loads
- ✓ Estimated costs
- ✓ Who requested them
- ✓ Where they are in the planning process

2. STRONGER COST SHIFTING PROTECTIONS ARE NEEDED

The SPP Tariff lacks a *pro forma* cost recovery agreement between SPP, the relevant Transmission Owner, and the Eligible Customer serving a large load that requires the Eligible Customer to make a minimum contribution toward the Transmission Owner's transmission revenue requirement, ***if the Eligible Customer ultimately takes less transmission service than anticipated because the large load does not materialize as planned or is not developed at all.***

Without such agreements, there is no mechanism to ensure that large load customers bear the risk and are ultimately responsible for costs incurred to serve them, including network upgrades. This can result in other customers paying for upgrades that do not benefit them.

The Commission wants SPP to consider:

- Standardized cost recovery agreements;
- Financial security requirements;
- Mechanisms that reduce risk to existing transmission customers; and
- Accounting that ensures customer payments are properly credited.

The emphasis is on protecting existing customers from speculative or abandoned projects.

CO-LOCATION FRAMEWORK

The Commission is concerned the SPP Tariff does not contain clear and consistent provisions addressing the rates, terms, and conditions for interconnection customers serving co-located load or load with Behind-The-Meter Generation.

THE ISSUE

Lack of clear tariff provisions creates uncertainty around co-location arrangements, ancillary service obligations, and cost responsibility, increasing the risk of cost shifting to other customers.

THE SPP TARIFF NEEDS TO CLEARLY SPELL OUT:

- Who takes transmission service
- Applicable rates
- Responsibilities
- Operational requirements

The Commission cites PJM's recent work as a useful model.

NEW TRANSMISSION SERVICES FOR FLEXIBLE LARGE LOADS

The Commission acknowledges that CHILLS is a positive development but concludes that the SPP Tariff does not fully reflect the operational reality that some large loads can reduce consumption under certain conditions. It suggests that SPP consider new transmission service options, similar to recent PJM efforts, such as:

1. **Interim NITS**
2. **Firm Contract Demand service**
3. **Non-Firm Contract Demand service**

The Commission emphasizes that customers should pay in accordance with the transmission service they use, and flexible loads should have options that align charges with

Expedited Resource Adequacy Study (ERAS)

Group	MW	Fuel Type
01 NORTH	1,638	Conventional
02 NEBRASKA	104	Conventional
03 CENTRAL	170	Battery/Storage
03 CENTRAL	3,340	Conventional
03 CENTRAL	80	Solar
03 CENTRAL	700	Hybrid (Solar/Storage)
04 SOUTHEAST	123	Battery/Storage
04 SOUTHEAST	3,165	Conventional
04 SOUTHEAST	175	Solar
04 SOUTHEAST	150	Hybrid (Solar/Storage)
05 SOUTHWEST	390	Battery/Storage
05 SOUTHWEST	1,353	Conventional
05 SOUTHWEST	384	Solar
05 SOUTHWEST	1,006	Hybrid (Solar/Storage)
05 SOUTHWEST	500	Wind

ERAS Resources by Fuel Type

Fuel Type	MW	%
Conventional	9,600	72.3%
Battery/Storage	683	5.1%
Solar	639	4.8%
Hybrid (Solar/Storage)	1,856	14.0%
Wind	500	3.8%
Total	13278	

LEGEND

- Battery/Storage
- Conventional
- Solar
- Wind

THANK YOU!

CONTACT

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Kim O'Guinn, *Sr. Director Regulatory Policy*

Sunny Rahem, *Director System Planning*

Monsherra Blank, *Manager Regulatory Affairs*



*Working together to responsibly and economically
keep the lights on today and in the future.*



SouthwestPowerPool



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