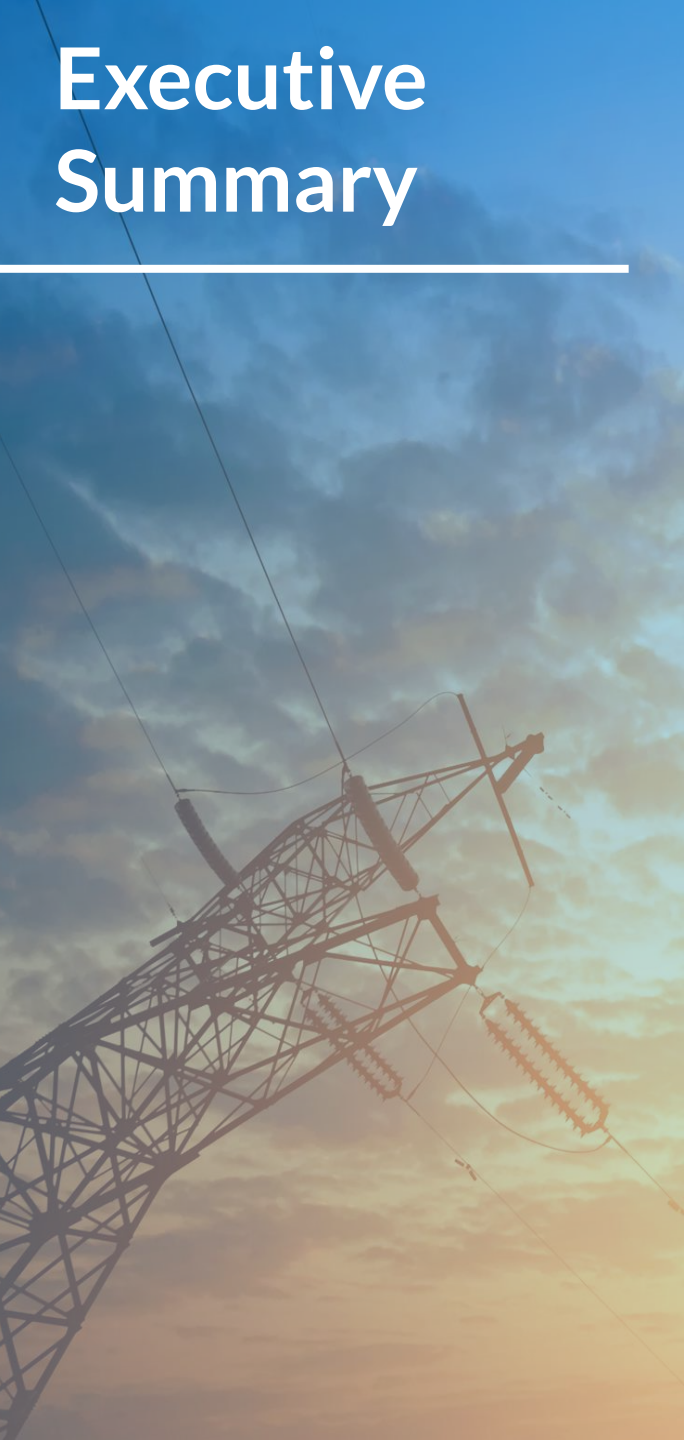
# Transmission Evolution

*System Planning Committee of the Board of Directors*

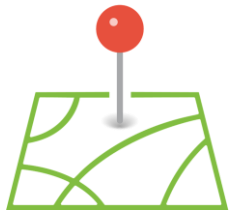
*December 9, 2025*

# Executive Summary



- MISO's robust planning process continues to address the Reliability Imperative by developing transmission to support future load growth, large load additions, and new generation
- Preliminary Futures reinforce load growth as a key driver for new generation and show the impact of federal policy and supply constraints on the resource mix
- MISO is working with stakeholders to ensure study approaches meet emerging system needs, including interregional studies with PJM and SPP and in the next phase of Long Range Transmission Planning analysis

# MISO's comprehensive planning approach enables us to meet the evolving needs of the electric system



## LOCAL

**Efficiently validate local needs; evaluate system against reliability standards**

***Current work***

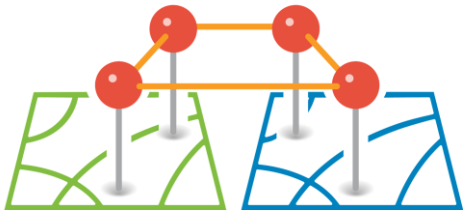
Support ongoing system reliability through local project review, evaluating alternatives to minimize cost and defining projects to interconnect large loads

## REGIONAL

**Long-term regional planning based on future scenarios**

***Current work***

Update Futures based on member plans to capture relevant bookends for upcoming LRTP studies and resource planning discussions; plan scope for upcoming LRTP



## INTERREGIONAL

**Collaborate and coordinate with neighboring grid operators**

***Current work***

Partner with neighboring regions to develop processes that enable future generation and load and efficiently maintain reliability; determine shared system issues and potential solutions

LRTP: Long Range Transmission Planning

# Large loads are an emerging demand, and MISO continues to work on processes to facilitate their interconnection and meet the needs of states and members

## GENERATION INTERCONNECTION

***Expediting processes to get generation online faster***

### ERAS

Targeted process for generation serving new load

### JTIQ

Facilitates timely interconnection of future interconnection requests at lower costs

### Interconnection Queue

Numerous enhancements create efficiencies in standard processes, driving to a 373-day cycle

## CROSS FUNCTIONAL

***Providing continuity across resource and transmission planning***

### GI Options

Standard, provisional, surplus, replacement, and ERAS generation interconnection requests provide options to customers

### Load Forecasting

Improved load forecast capabilities support proactive transmission and resource planning

### New Tools

Automation enhances transparency and provides improved tools for study across processes, enabling more transparent and efficient results delivery

## TRANSMISSION PLANNING

***Evaluating the transmission system to meet near- and long-term system needs***

### MTEP

Transparently review near term needs and evaluate alternatives

### EPR

Quickly analyze emerging needs, such as large loads, to reliably enable speed to power

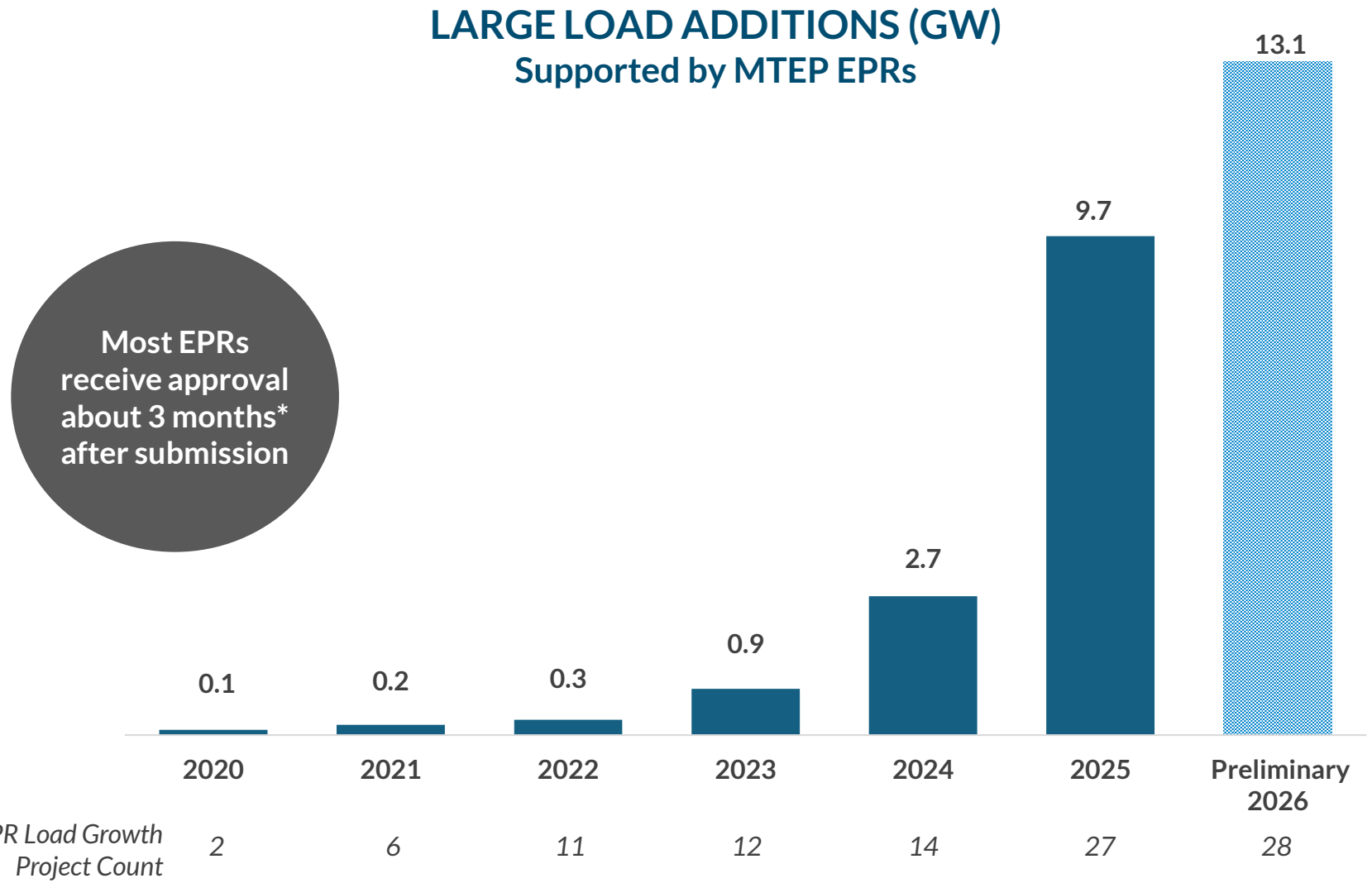
### LRTP

Provide a backbone to enable energy and lower total transmission costs on the system

**MISO is considering additional efforts to reliably enable speed to power**

ERAS: Expedited Resource Addition Study
MTEP: MISO Transmission Expansion Plan
JTIQ: Joint Targeted Interconnection Queue
LRTP: Long Range Transmission Planning
GI: Generation Interconnection
EPR: Expedited Project Review

# The Expedited Project Review process supports members' urgent load growth needs as demand accelerates




*Reflects timeline after process improvements made in June 2025

# Large Loads Workshop

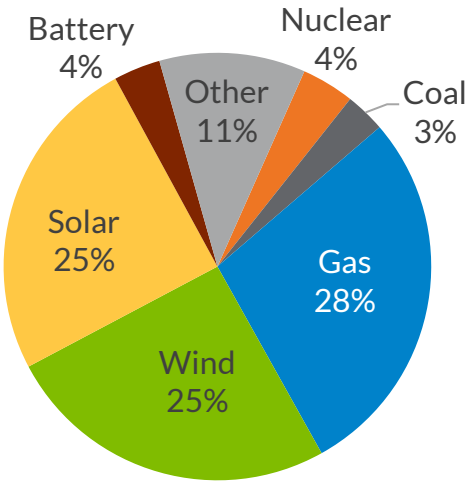
January 30, 2026

*Discussion and overview of large load issues and opportunities*

# Preliminary Series 2 Futures show a shifting resource mix driven by load growth, member plans, new federal policies and supply constraints

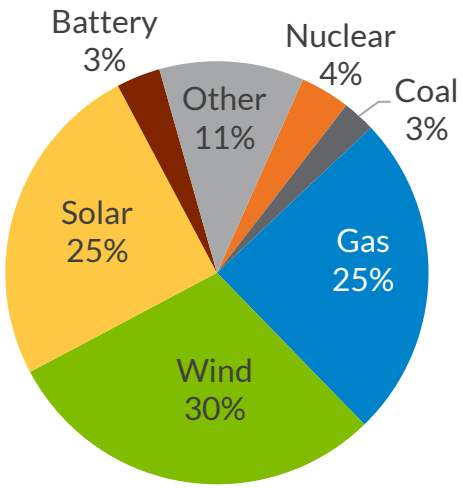
## INSTALLED CAPACITY (GW, 2045)

### Future 1
**Lower Load Growth**



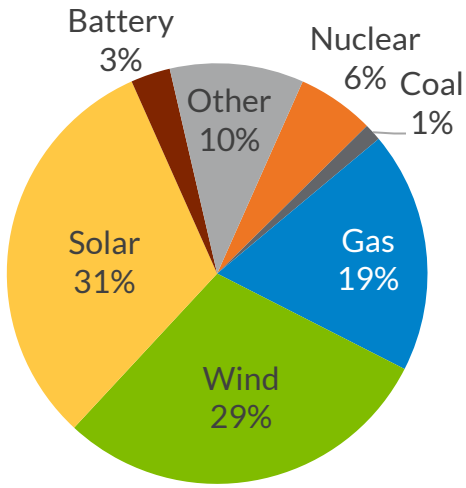

**383 GW**

### Future 2
**Stated Policy**



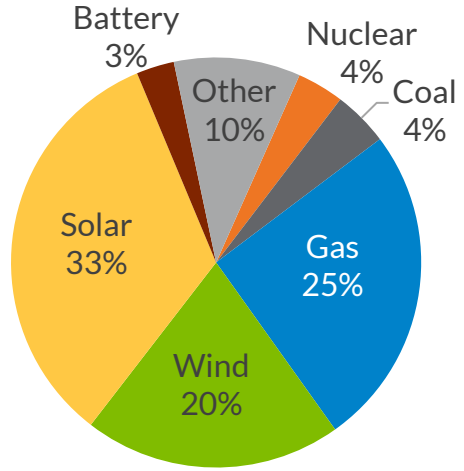

**403 GW**

### Future 3
**Higher Load Growth**




**446 GW**

### Future 4
**Supply Shift**




**454 GW**

### Initial Takeaways

- Load growth continues to drive the need for increased generation
- The OBBBA and supply constraints shifted the supply mix to a more balanced blend due to resource economics and build rate limits
- Member plans and goals continue to drive the resource expansion, with notable increases in natural gas buildout

### Next Step: Finalize Sensitivities

Sensitivities help validate that the scenarios sufficiently capture the range of future possibilities. We're working with stakeholders to finalize a sensitivities list to test the upper and lower bounds of the Futures.

*Examples:*

- *Hyperscaler load*
- *Decreased price of small modular reactors*
- *Higher natural gas prices*

Other includes distributed energy resources (DER) and demand-side management (DSM), oil, conventional hydro, biomass, geothermal and other resource types.
Nuclear includes traditional and small modular reactors (SMR). OBBBA: One Big Beautiful Bill Act

# MISO plans to begin its next set of LRTP studies in 2026


## South LRTP

Begins the subregional journey with a collaborative, investigative approach

**Needs** Support reliability and load growth

**Process** Evaluate system reliability and load-serving needs using models defined by the updated Futures; develop detailed scope with stakeholders, beginning with Louisiana and Texas

**Outcome** Options to guide next steps, which could include transmission and/or generation solutions for further study

***LOAD POCKET Supporting Work***
Developing enhanced simulation capabilities to assess risk

## Midwest LRTP

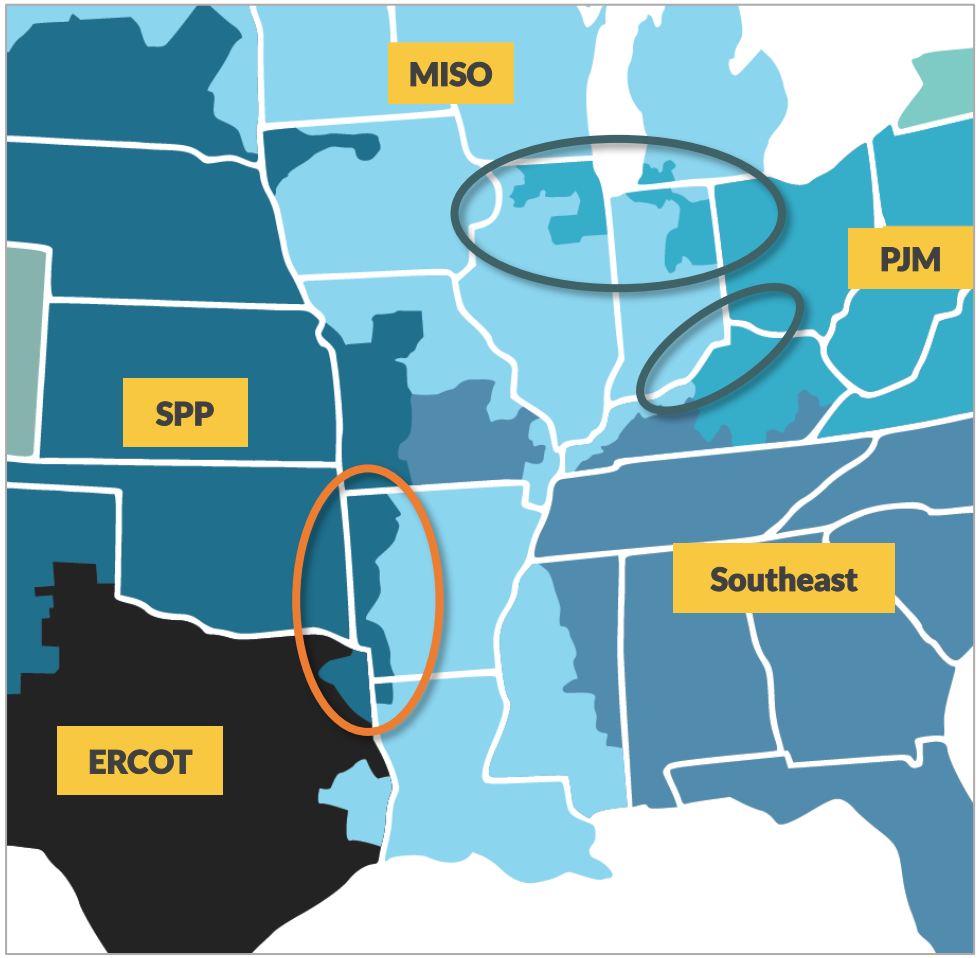
Builds on an extensive foundation of prior studies and stakeholder engagement

**Needs** Support subregional transfers, state and member goals, and load growth

**Process** Evaluate system reliability and economics using models defined by the updated Futures

**Outcome** Solutions for identified issues (subsequent MTEP cycles)

# Separate studies with SPP and PJM are progressing with a more comprehensive and forward-looking approach than prior Coordinated System Planning collaborations




## PJM – MISO Address reliability, transfer and economic needs

| | | |
|---|---|---|
| ✓ | Q1 2024 | Study kick-off |
| ✓ | Nov 2024 | Study update to stakeholders |
| ✓ | March 2025 | Share initial results |
| ✓ | May 2025 | Solicit and develop solutions options |
| ✓ | June 2025 | Present potential solutions |
| | Q4 2025/Q1 2026 | Joint stakeholder discussions on next steps |

## SPP – MISO Address reliability, transfer and economic needs

| | | |
|---|---|---|
| ✓ | Dec 2024 | Final scope review |
| ✓ | May 2025 | Finalize blended models |
| ✓ | Q3 2025 | Share initial results and stakeholder feedback request |
| | Q4 2025 | Evaluate potential solutions and determine business case metrics |
| | Q4 2025/2026 | Joint stakeholder discussions on final solutions |

MISO and SPP are considering a FERC filing to amend the JOA and allow projects with multiple benefits

JOA: Joint Operating Agreement

# Appendix

# MISO is refreshing the Futures as the foundation for its upcoming LRTP studies and for future resource adequacy discussion


**Next Steps**

- ☑ **Re-run resource expansion to account for One Big Beautiful Bill Act modifications,** which rescind Inflation Reduction Act tax credits for wind and solar
- ☑ **Include potential sites for generation resources** with input from stakeholders
- ☐ **Finalize sensitivities** to validate that the scenarios sufficiently capture the range of future possibilities
- ☐ **Complete energy adequacy review** of preliminary capacity expansion
- ☐ **Incorporate new Direct Loss of Load (DLOL)** resource accreditation and energy adequacy