



Reliability Imperative Update: Large Loads

Markets Committee of the Board of Directors

September 15, 2026

Executive Summary



- Reliability Imperative initiatives across MISO are addressing the shifting reliability landscape, with a surge in large loads driving more urgent changes and focus
- MISO's large load framework is aligned with FERC's show cause order, developing requirements and solutions that will quickly integrate large loads while protecting reliability
- Key milestones delivered in the next 24-36 months position MISO to address operational and execution risks



MISO is focused on quickly enabling large loads, advancing initiatives across the Reliability Imperative in response to emerging reliability risks



MARKET REDEFINITION

- Improve accreditation and peak risk period alignment
- Optimize storage resource participation
- *Improve local reliability through dynamic reserves*
- *Standardize demand response product performance*
- *Reform congestion pricing*



OPERATIONS OF THE FUTURE

- Centralize control room operations
- *Integrate Ambient Adjusted Ratings*
- Enhance emergency preparedness and simulation capabilities
- *Ensure reliable and efficient grid operations with large load integrations*
- Evolve the Operations Risk Management Platform



TRANSMISSION EVOLUTION

- Enable large loads with reliable speed-to-power
- Enable fast Generator Interconnections
- Release updated Futures
- Advance MISO Midwest and South transmission plans
- Execute load pocket analysis informed MISO South studies

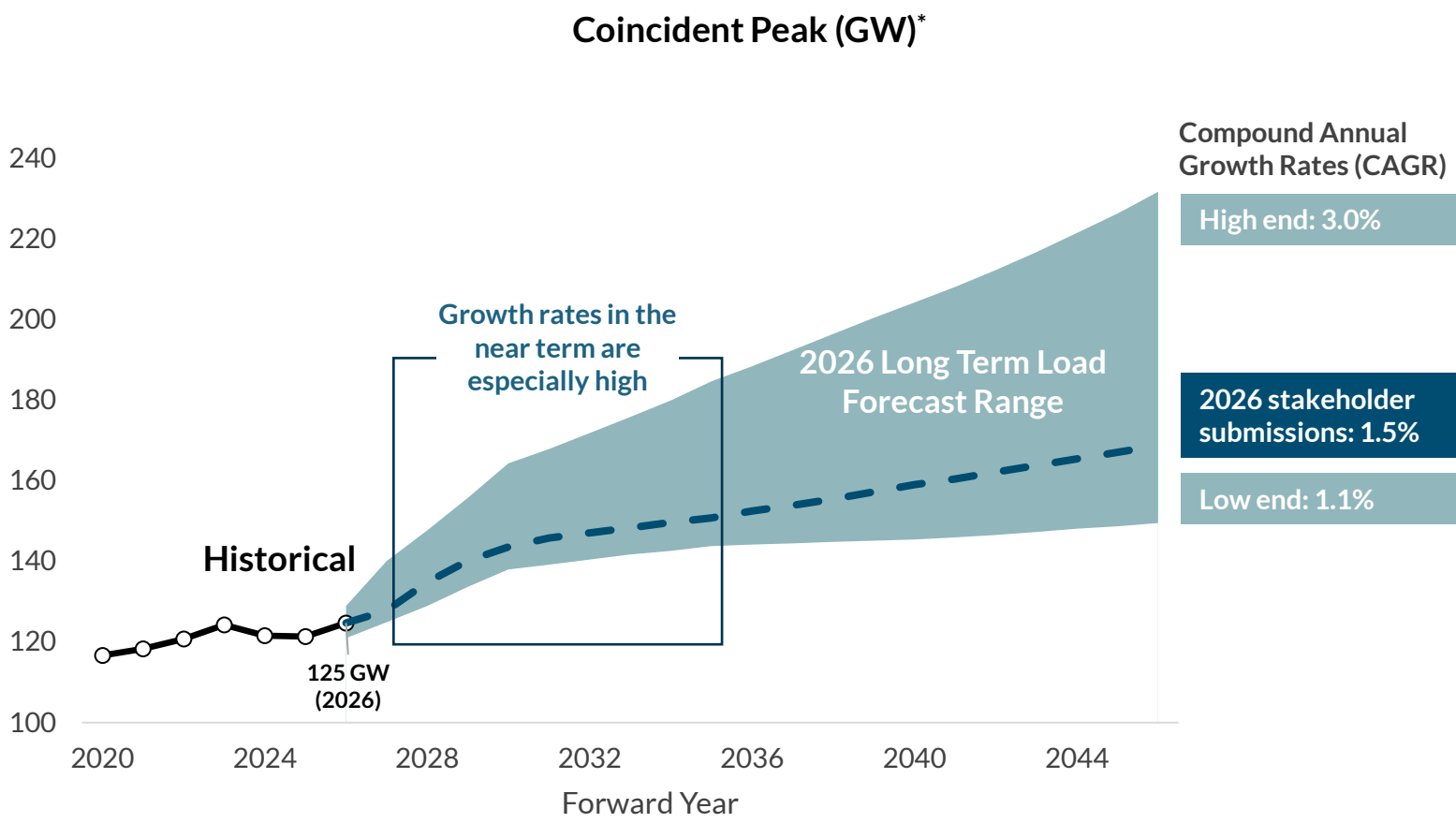


SYSTEM ENHANCEMENTS

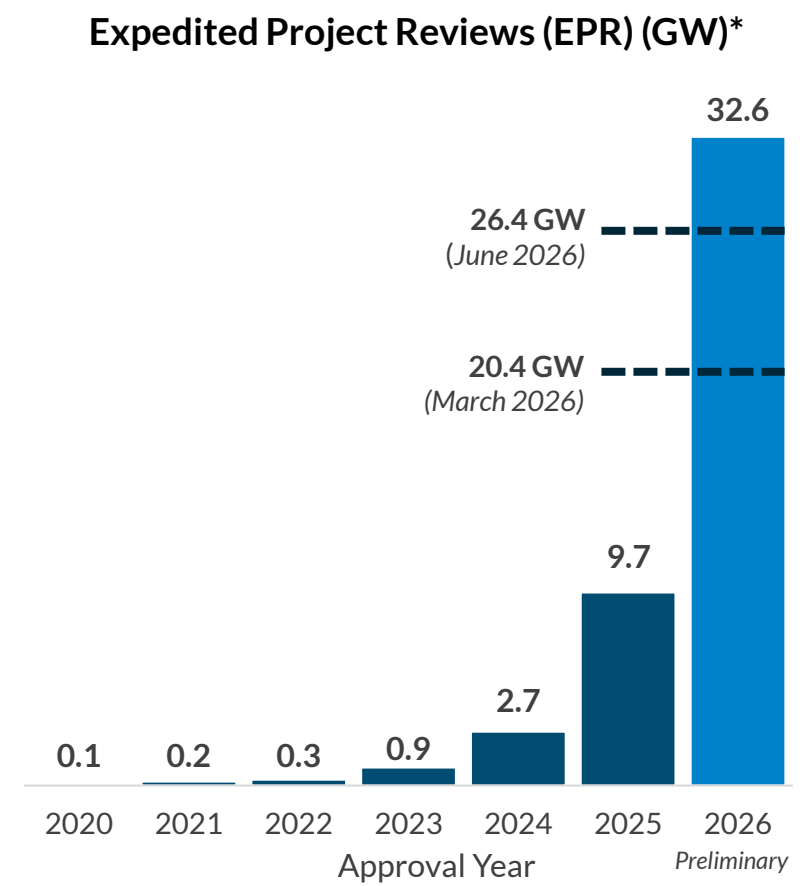
- Enhance product quality assurance capabilities
- Launch look-ahead tools and improve performance
- Enhance security resilience and business continuity
- Expand cloud capabilities for settlements
- Accelerate adoption of artificial intelligence and automation

Planned large loads continue to grow based on stakeholder, EPR and industry trends, creating operational risks from both individual facilities and their cumulative impact

Load Growth Forecasts



Approved Projects

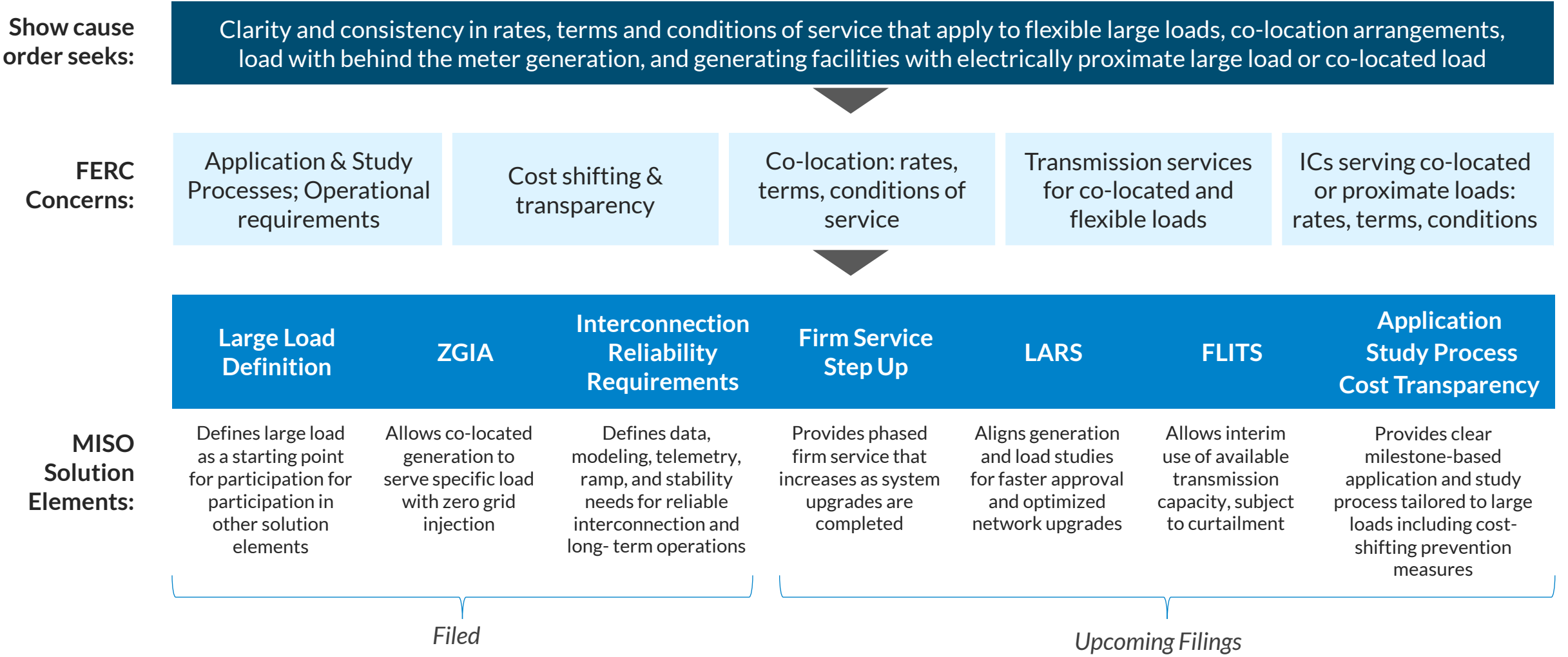


Source: [MISO 2026 Long-Term Load Forecast](#)

MISO continues developing a three-part framework that will enable members to integrate large loads quickly and reliably while delivering lasting value for the region

Objectives	1	Connect Quickly	2	Transition and Scale with Flexibility & Transparency	3	Ensure Long-Term Reliability
		Get MISO approval within 120 days with all studies completed and GIAs signed		Transition and scale with flexible options consistent with timing of network upgrade buildouts and without cost shifting		Sustain reliable operations with ability to withdraw or inject energy based on conditions and signals
	Needs	Certainty on transmission needs and associated costs: Generation only, load only, generation-load combination		Curtailment capability, resource adequacy coordination, efficient use of existing transmission capacity		Real-time telemetry and coordination, curtailment capability, ride-through, stability control, resilience, security
Solutions		• Co-located resources • Expedited generation • Fast load studies • Aligned load / generation studies		• Transparent alignment of costs with large load drivers • Co-located resources • Non-firm service option • Firm service step-up option		• Clear requirements • Operations system enhancements • Market pricing signals • Demand response and new reserve market products

The large load workplan addresses FERC's show cause order and relies on stakeholder collaboration and feedback to meet an aggressive timeline



Providing critical visibility into large loads through interconnection reliability requirements to enhance operational readiness is a key focus



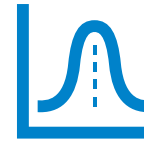
Visibility

Provide facility data, real-time telemetry, forecasting, outage coordination for accurate load representation



Ride-Through

Ensure large loads remain connected during disturbances, with clear recovery expectations



Ramp

Prevent sudden step changes that challenge system balancing, voltage control, or contingency response

MISO’s large load reliability requirements complement NERC’s activity in this space, and are the results of broad industry and stakeholder collaboration

- MISO has filed proposed interconnection reliability requirements designed to mitigate large load risks
- MISO is a member of NERC’s Large Load Working Group, a thought partner on requirement development
- Good alignment exists on aspects of the work that have advanced in NERC’s process, but other elements are lagging and timeliness is critical

	Definition	Visibility	Ride-Through	Ramp
NERC	Proposed 20 MW threshold for computational load registration requirement	Initial set of standards being developed	Not yet developed	Not yet developed
	≈	≈		
MISO*	Large Load: Demand >= 50 MW Computational Load: Large Load with >= 25 MW of demand from IT equipment	Applies to all new loads commencing service after December 4, 2026, or new loads approved in MTEP26 or prior but that has not yet taken service	Applies to all new computational loads commencing service after December 4, 2026	Applies to all new computational loads commencing service after December 4, 2026

*MISO proposal filed with FERC on August 28, 2026

MISO will continue addressing operational risks exacerbated by fleet change and load growth

OPERATIONAL RISK	RISK CATEGORY	DESCRIPTION
Long Duration Outages	 <i>Availability</i>	Prolonged resource unavailability from weather or fuel issues strains energy supply.
Net-Load Shape	 <i>Ramp</i>	Evolving resources increase net load variability, requiring more flexible ramping.
System Stability	 <i>Stability</i>	Fewer synchronous resources and more inverters reduce grid stability and complicate assessments.
Large Loads	  	Rapid growth of large loads adds strain on planning for ramp, adequacy, and stability.
Load Pocket Adequacy	  	Areas at the edge of the MISO system with limited import capability are reliant on local generation and face distinct risks.

Appendix

MISO continues to advance key Market Redefinition initiatives

MARKET REDEFINITION KEY INITIATIVES

STAKEHOLDER PROCESS	
INITIATIVE	STATUS
Planning Reserve Margin Requirement Allocation	●
External Resources Accreditation	●
Transmission Constraint Demand Curve	●
Regulation Reserve Deliverability	●
24-Hour Lead Time in Accreditation	●

REGULATORY PROCESS	
INITIATIVE	STATUS
LMR Penalty Provision	●
Zero Injection Generator Interconnection Agreement (ZGIA) (part of Large Loads)	●

IMPLEMENTATION		
INITIATIVE	DESCRIPTION	STATUS
Deliverability in Accreditation	FERC approved the filing on August 31, 2026, for implementation on September 1, 2027.	●
FERC Order 2222 – Distributed Energy Resources (DER)	FERC approved the final compliance filing in January 2026. DER Aggregation enrollment will begin on June 1, 2029.	●
Demand & Emergency Resources Reforms	FERC approved the filing on June 22, 2026. FERC also issued a compliance filing for July 20, 2026, which MISO submitted. Implementation is set for the 2028-2029 Planning Resource Auction.	●
Co-Located Resources Interconnection Service Limit	FERC approved the filing August 5, 2026, for an implementation date of October 1, 2026.	●

MISO continues to advance key Operations of the Future initiatives

OPERATIONS OF THE FUTURE KEY INITIATIVES

IN PROGRESS			
INITIATIVE	STATUS	INITIATIVE	STATUS
Control Room Consolidation & Redesign	●	Large Load Integration Work	●
Ambient Adjusted Ratings Integration	●	Operations Risk Management Platform	●
Emergency Preparedness and Simulation	●	Transmission Reconfiguration	●

IMPLEMENTATION
INITIATIVE
Dynamic Ramp, Regulation and Short-Term Reserves
Transmission System Emergency and IROL processes, procedures and tool enhancements

● On target ● Possible delays or additional discussion needed