



Overview of Winter Storm Fern

Reliability Subcommittee

February 17, 2026

Executive Summary

- Winter Storm Fern brought extreme cold, snow and ice across the MISO footprint, which created operational challenges including forecasting errors, unit availability, and low wind production
- To maintain reliability, two Maximum Generation Events - Step 2c were declared on January 24 allowing MISO access to generation unit emergency ranges, load modifying resource curtailments, and emergency power purchases
- MISO is actively engaging in solutions to address the challenges that arose during the event

Proactive and on-going planning prepared MISO for this winter storm

MISO regularly coordinates with our neighbors during events and normal operations

SYSTEM TOPOLOGY

- Highly inter-connected grid across 15 states and Manitoba
- Diverse generation mix
- Relationships with seams partners

ON-GOING

- Coordinated Seasonal Assessments (Winter)
- Winter Readiness Workshops
- Emergency Procedure Drills

PRE-EVENT

- Issued Informational Advisories & Cold Weather Alert
- Daily coordination with neighbors
- Declared Conservative Operations

EVENT

January 24, 2026

- Max Generation Event Step 2c – North and Central Regions
 - Emergency Ranges
 - Utilized LMRs
 - Emergency Power Purchase from PJM

January 26, 2026

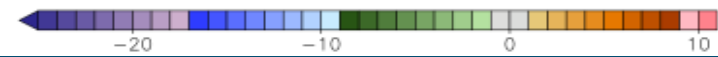
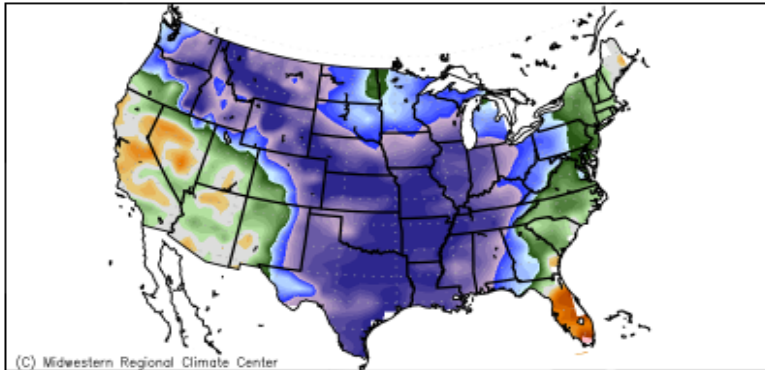
- Capacity Advisory – North and Central Regions

While all occurring in January over the last three years, each winter event has unique characteristics that require different actions

WINTER STORM HEATHER

January 13-17, 2024

Average Temperature (°F): Departure from Mean
January 16, 2024

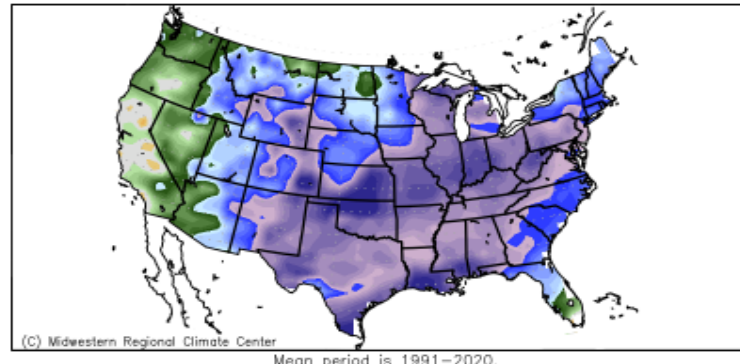


System Peak Load (January 16, 2024)	105 GW
Incremental Unplanned Outages	4 GW
Scheduled Load Modifying Resources*	0 MW
RDT Max Flow & Direction	2.6 GW N-S
Average Daily Wind Generation	20.0 GW
Precipitation: Moderate snowfall across MISO's South and Central regions	

WINTER STORM ENZO

January 18-22, 2025

Average Temperature (°F): Departure from Mean
January 21, 2025

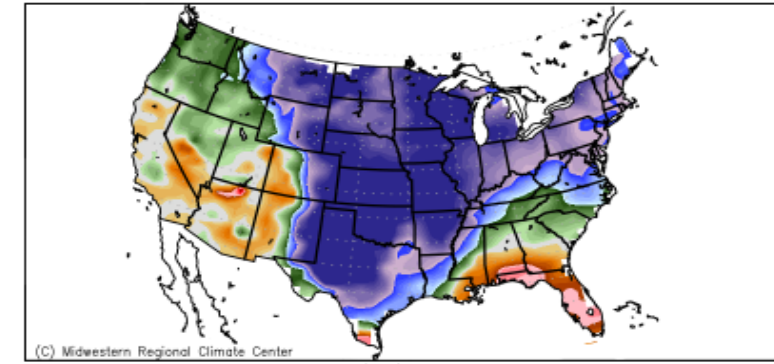


System Peak Load (January 21, 2025)	107 GW
Incremental Unplanned Outages	10 GW
Scheduled Load Modifying Resources*	1.2 GW
RDT Max Flow & Direction	2.7 GW N-S
Average Daily Wind Generation	15.4 GW
Precipitation: Modest snowfall across MISO's North and Central regions	

WINTER STORM FERN

January 22-27, 2026

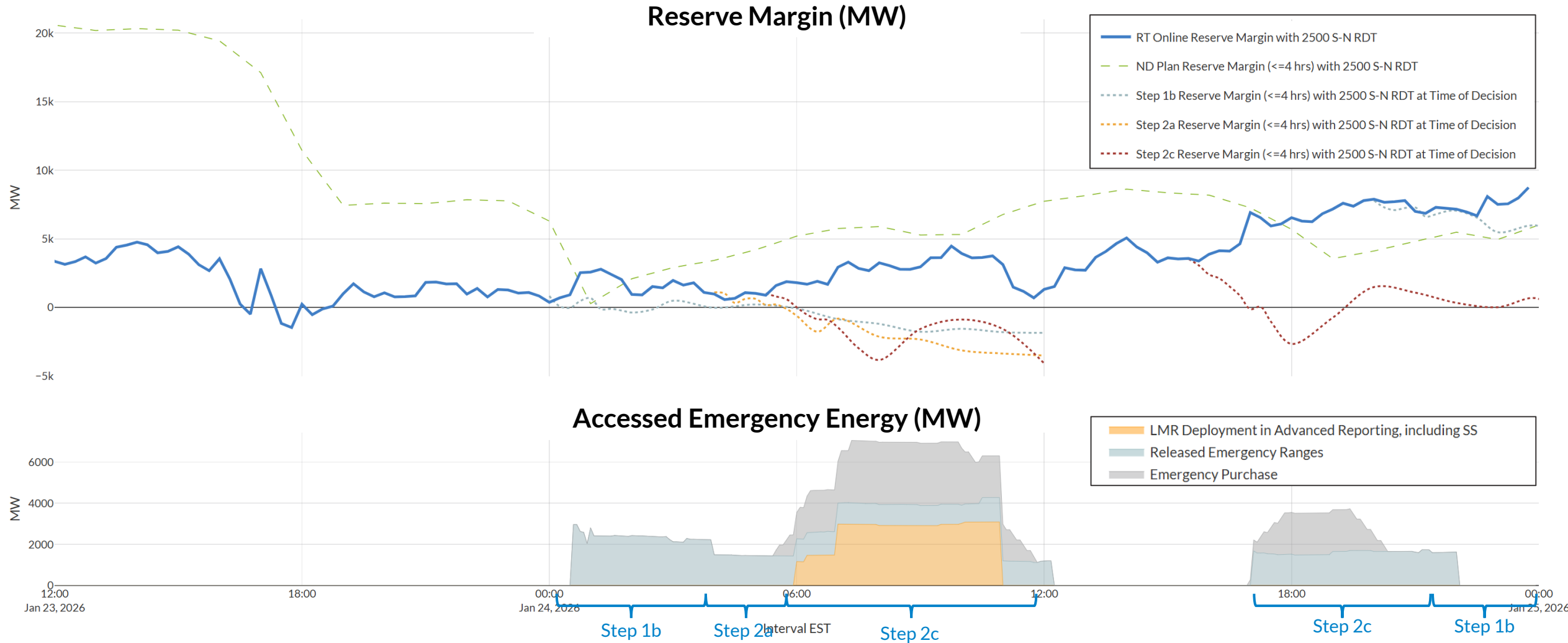
Average Temperature (°F): Departure from Mean
January 24, 2026



System Peak Load (January 27, 2026)	105 GW
Incremental Unplanned Outages	6 GW
Scheduled Load Modifying Resources	2.0 GW
RDT Max Flow & Direction	4.0 GW S-N
Average Daily Wind Generation	3.1 GW
Precipitation: Significant snowfall across MISO's South and Central regions, significant icing in the South region	

*Load Modifying Resources requested for the peak load hour for the noted storm time period

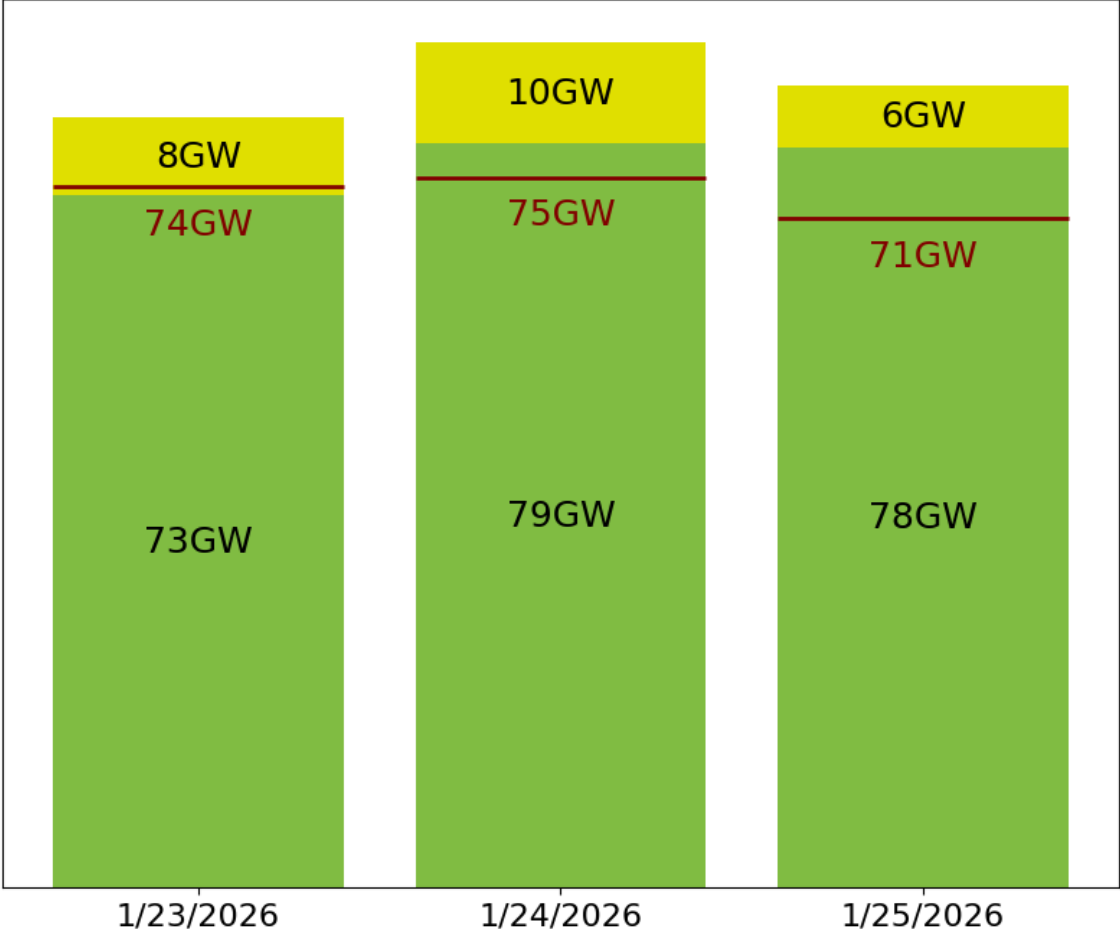
Persistent negative capacity margins in the North and Central regions on January 24 prompted MISO to take emergency actions to maintain system reliability



Event step times are approximate, for exact times see slide 11 in the appendix
 RT = Real Time and ND = Next Day

Significant unplanned outages caused by the extreme cold contributed to the need for MISO to commit all available resources in real time

Daily Committed Thermal Unit Capacity in DART & Actual Generation at Peak Hour



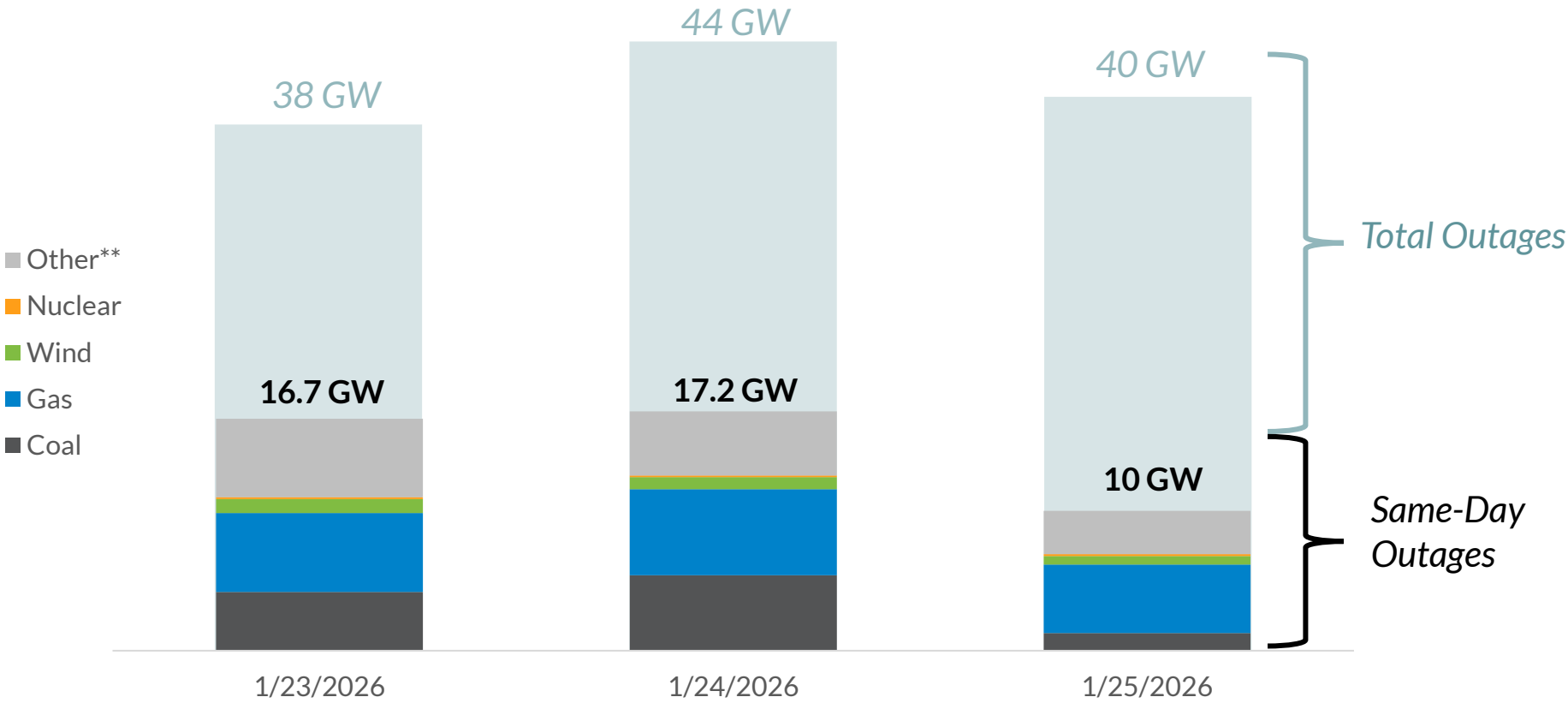
Committed RT Committed DA Actual Generation

Extended Combustion Turbine (CTs) lead times hindered real-time commitments

- In the North and Central regions 29 CTs increased their start times significantly on January 23
- 13 of those remained under the 24-hour notification threshold to maintain maximum accreditation value

MISO experienced significant unplanned outages due to the extreme cold mostly in the North and Central Region

Unplanned* Outages and Derates



Percentage of total unplanned* outages that occurred in the North/Central regions	82%	80%	77%
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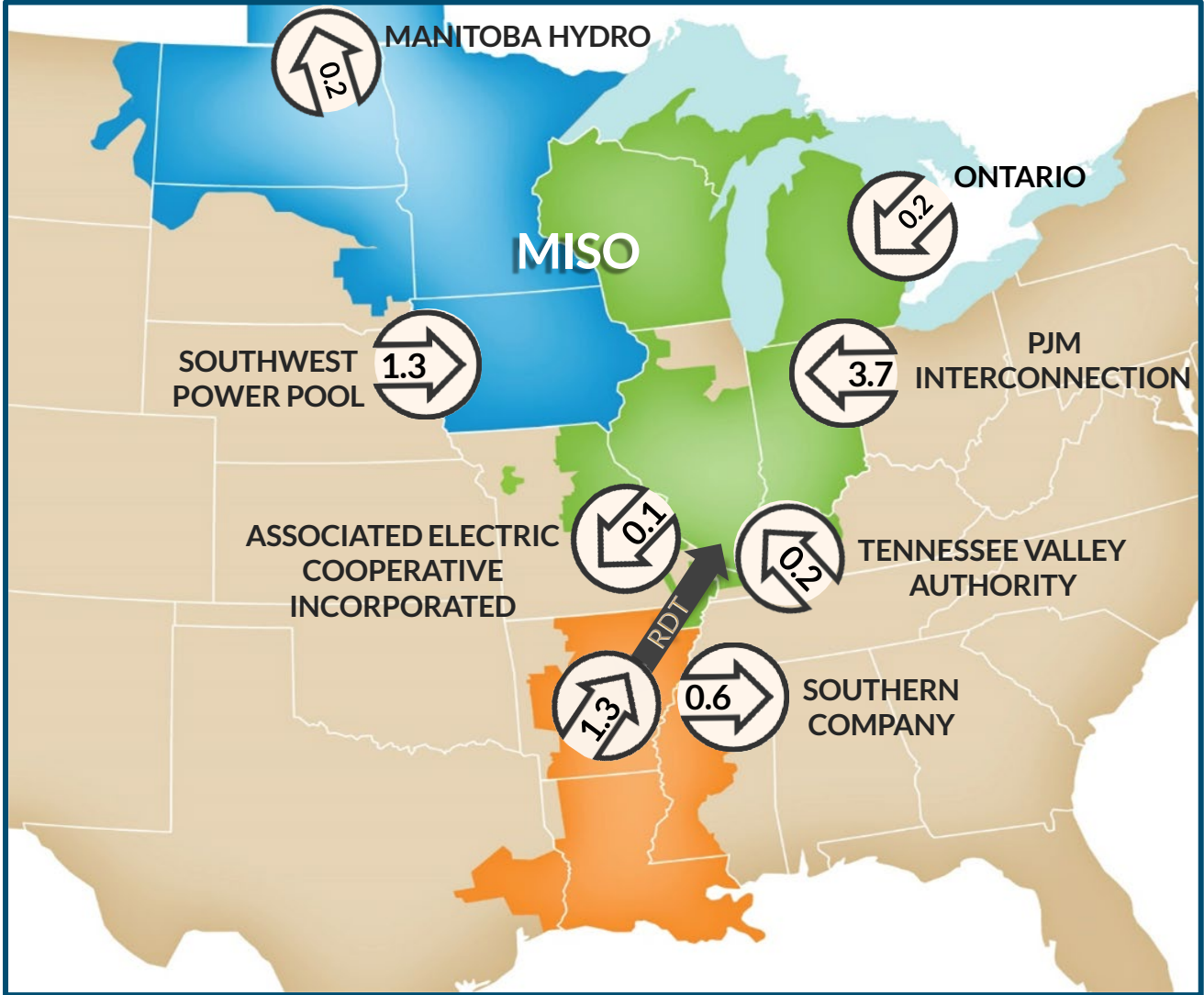
*Unplanned includes emergency, urgent and forced outages and derates. Charts reflect data in the CROW outage system on January 26, 2026. Wind often reported as derated over the time period.

** Other includes Oil, Hydro, Petroleum Coke, Waste, Behind the Meter Generation, and units not in the market footprint

Average Net Scheduled Interchange (GW) January 24, 2026

Emergency prices were not published for eleven hours on January 24 due to technical issues; as a result, prices did not reflect emergency conditions and imports were not properly incentivized

Imports from PJM were driven by emergency energy purchases



RDT = Regional Directional Transfer, which has a North-South limit of 3.0 GW and South-North limit of 2.5 GW

Challenges that impacted operations during Winter Storm Fern are already being addressed with solutions



Proactive Communication

MISO coordinated with members to maximize transmission and generation availability



Staffing Support

Extra operators, including dual-qualified operators, ensured MISO had the experienced personnel needed



Coordination with Neighbors

PJM provided emergency energy that was key to addressing capacity concerns

LESSONS LEARNED

- **Tailored Operating Instruction:** There was a lack of clarity in operating instruction regarding public appeals; enhanced functionality in Operator Interface will be implemented by this summer
- **Pricing Fix** - Ex-Post LMPs were not calculated or published for ~11 hours due to a software issue; a fix was implemented on February 5, 2026
- **Reserve Procurement and Deliverability** - Reserves offered into the market were stranded in the south but Look Ahead Commit (LAC) could not differentiate; enhancement will be delivered this year
- **Uncertainty Forecasting and Peak Hour Planning** - Enhancements needed to improve uncertainty forecasting model, and we need to move away from peak hour planning and assess the operating plan across all hours of the operating day
- **Emergency Pricing** - Emergency prices were observed in the non-emergency South region; cause TBD but needs to be addressed

Appendix

Sequencing of alert, warning and events during winter storm Fern

ALERTS

Cold Weather Alert (System Wide)

Jan 23, 00:00 EST – Feb 01, 23:59 EST

Conservative Operations (System Wide)

Jan 23, 20:00 EST – Jan 29, 23:59 EST

Conservative Operations (MISO South)

Jan 30, 00:01 EST – Feb 01, 23:59 EST

WARNING

Capacity Advisory (North and Central)

Jan 29, 00:00 EST – Jan 29, 23:59 EST

Max Generation Warning (North and Central)

Jan 24, 12:00 EST – Jan 24, 17:00 EST

EVENTS

Max Gen Event Step 1b (North and Central)

Jan 24, 00:30 EST – Jan 24, 04:36 EST

Max Gen Event Step 2a (North and Central)

Jan 24, 04:36 EST – Jan 24, 06:01 EST

Max Gen Event Step 2c (North and Central)

Jan 24, 06:01 EST – Jan 24, 12:00 EST

Max Gen Event Step 2c (North and Central)

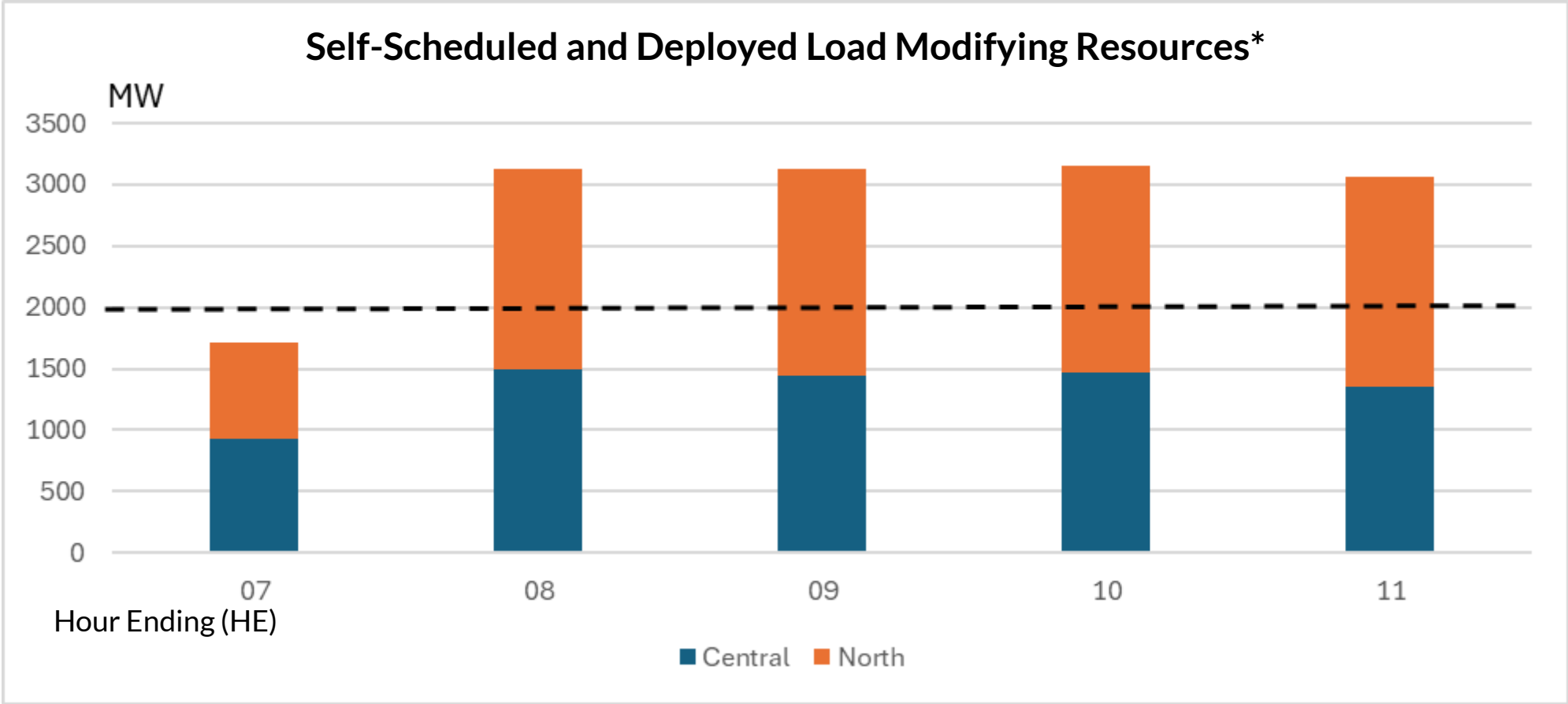
Jan 24, 17:00 EST – Jan 24, 21:00 EST

Max Gen Event Step 1b (North and Central)

Jan 24, 21:00 EST – Jan 24, 23:59 EST

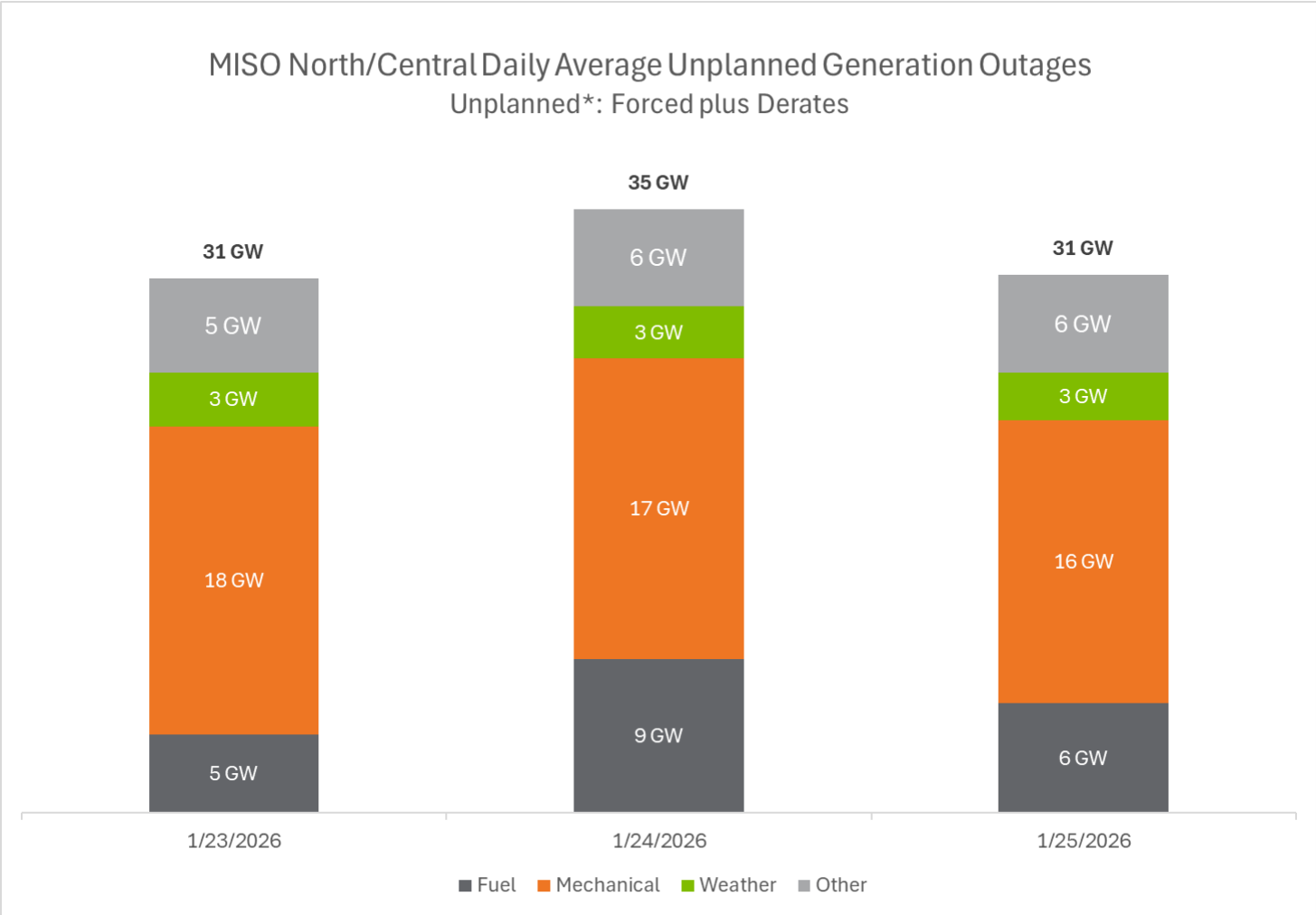
Note: All times indicate the effective time of each declaration

As part of the EEA2 declaration, MISO deployed ~2 GW of Load Modifying Resources in addition to the self-scheduled amount in the North and Central regions



*MP Acknowledgement of MISO scheduling instructions

MISO experienced an increase of unplanned and derated outages due to fuel-related issues in the North and Central regions



*Unplanned = forced outages and derates, Charts reflect data in the CROW outage system on January 26, 2026, Wind often reported as derated over the time period