

A large, light gray sunburst graphic is positioned on the left side of the slide. It consists of numerous triangular rays radiating from a central point, creating a semi-circular shape that extends across the width of the slide.

2015 Winter Readiness Assessment

Midcontinent ISO

Docket AD15-14

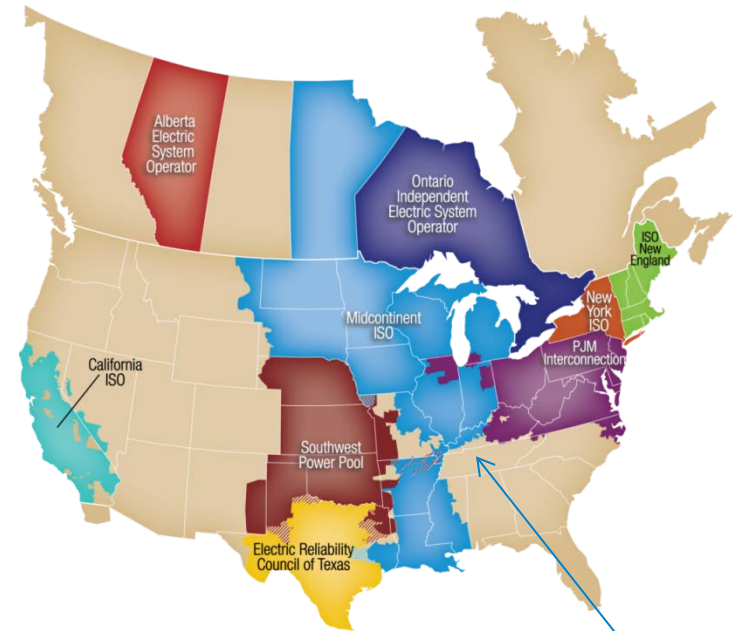
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Vice President System Operations & Market Services

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2015 MISO Winter Readiness Overview

MISO has taken a proactive approach to identify winter operational risks and improve processes and solutions to mitigate adverse economic and reliability outcomes

- Winter peak conditions pose unique challenges, as highlighted by the Polar Vortex
- Market Enhancements implemented after Polar Vortex have proven to be beneficial and several are anticipated to be implemented in the near future
- These enhancements, along with high levels of winter reserves, favorably position MISO to meet winter needs

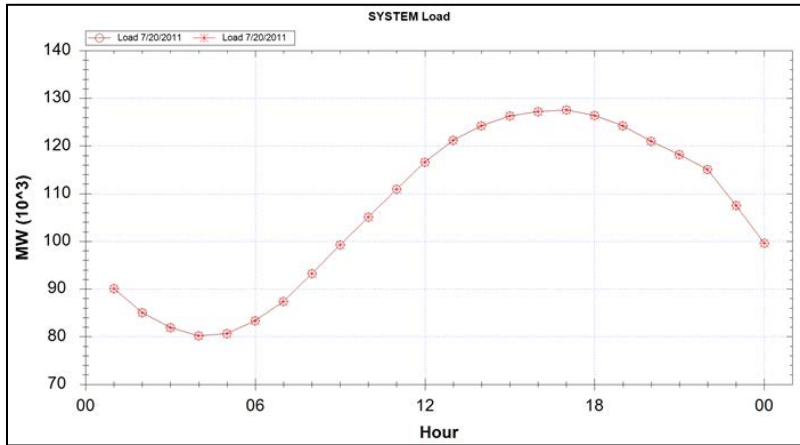


MISO Preliminary 2015 Winter Forecast

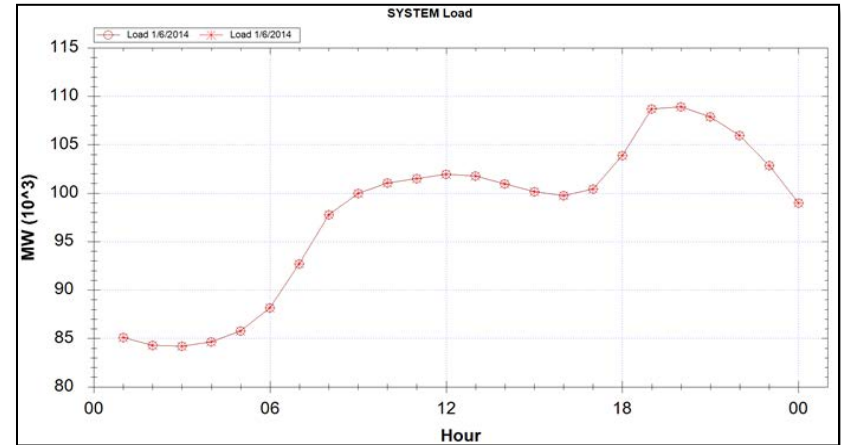
Installed Capacity Available	146 GW
Winter Peak System Demand Forecast	104 GW

Traditionally a summer peaking system, winter peak conditions pose different challenges – Polar Vortex underlined these challenges...

Summer Peak Load Trend



Winter Peak Load Trend



Winter Peak Load Challenges:

- Morning load pick-up
- Generation forced outages due to extreme cold
- Generation delayed start due to extreme cold
- Increased fuel related outages

Market Enhancements implemented after Polar Vortex have proven to be beneficial and several are anticipated to be implemented in the near future

Gas-Electric Coordination

- Communication Coordination
- New & Improved Operator Tools
- Pipeline and Price Monitoring

Enhanced Fuel Assurance Transparency

- Cause codes added for weather and fuel related issues in outage system
- Fuel Survey

Market Performance

- Extended Locational Marginal Pricing (ELMP)
- SPP Market-to-Market
- Emergency Pricing*
- Seasonal Resource Adequacy*
- Offer Cap Solution*

* Future Enhancements

Several efforts underway have improved our Gas-Electric Coordination situational awareness

Operational Contact List for Pipelines (35 Pipelines)

Continuing Winter Generator Survey on Fuel Contracting Practices and Backup Fuels

Sharing of MISO Public Data with Pipelines

Created MISO Notification to Pipeline MISO Communication System (MCS) Distribution

Expanding Monthly Pipeline Operations Call

Leading into this winter, MISO plans to have sufficient reserve margin but will continue to proactively prepare for any extreme conditions that may arise

Transmission Analysis

NERC Winter Readiness Webinar

MISO Winter Readiness Workshop

Winterization Coordination planned for MISO
Winter Readiness Workshop

Fuel Survey