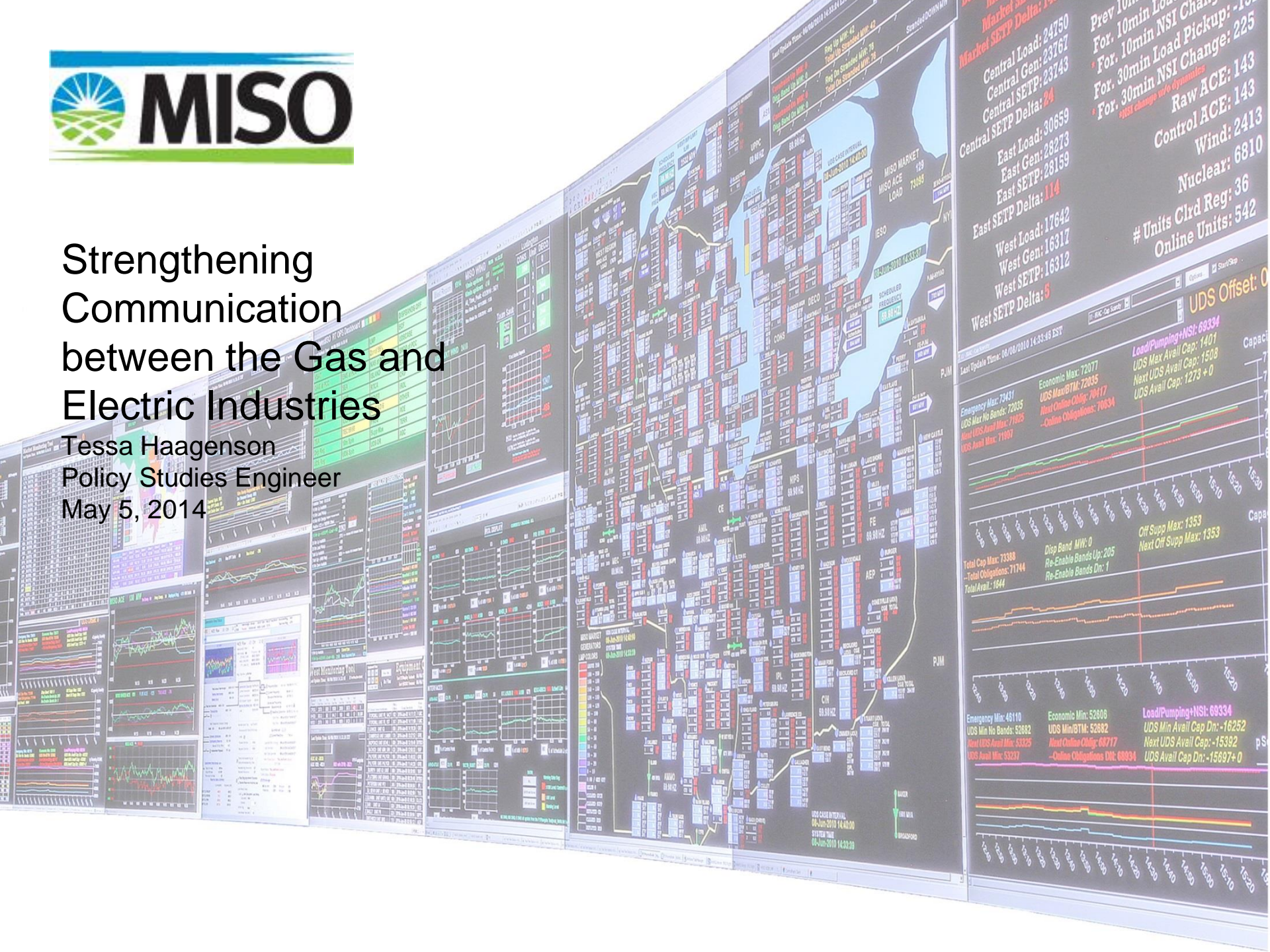




Strengthening Communication between the Gas and Electric Industries

Tessa Haagenson
Policy Studies Engineer
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The Midcontinent Independent System Operator (MISO)

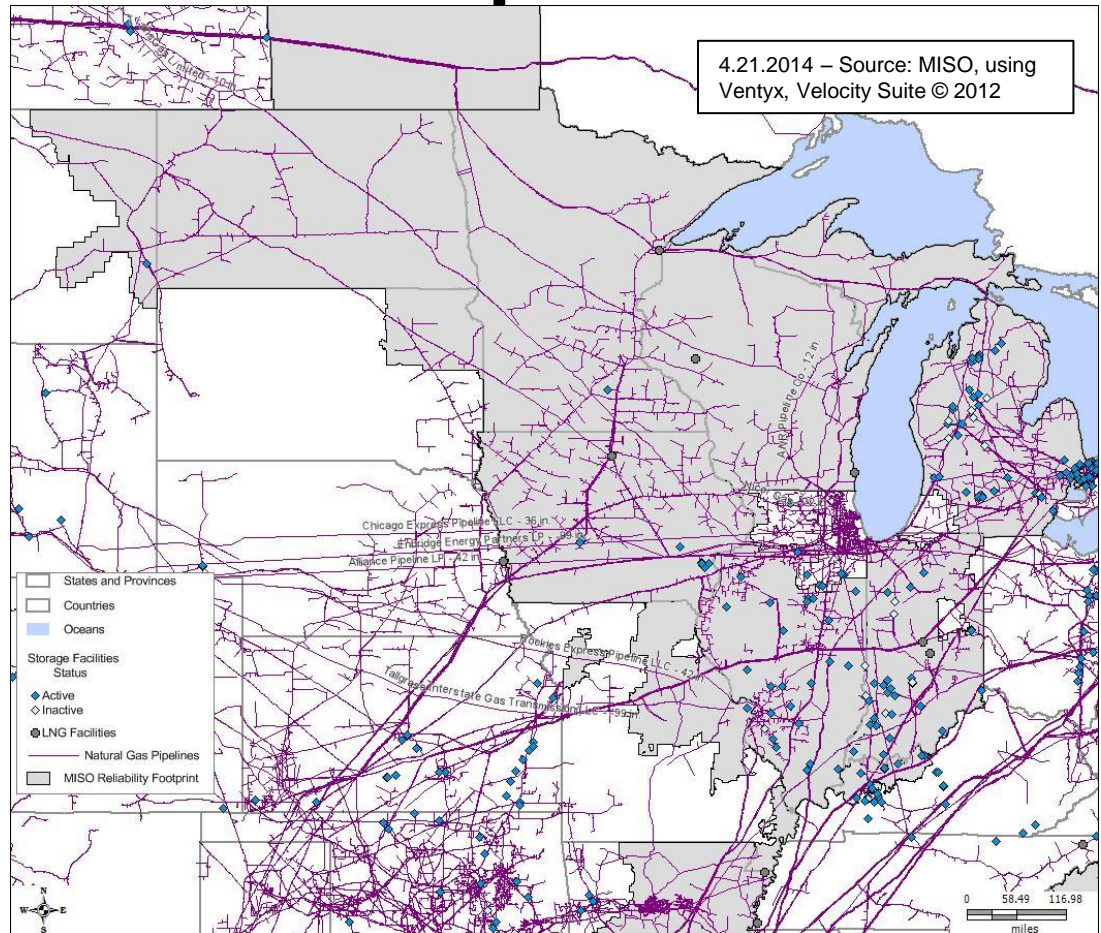
- **Peak load:**
~126,000 MW
- **Generation capacity:**
~176,000 MW
- **Transmission:**
~66,000 miles
- **End-use customers:**
42 million



There are 39 interstate gas pipeline systems in the MISO footprint...

...each with its own tariff, and with variations in operational capabilities and services offered.

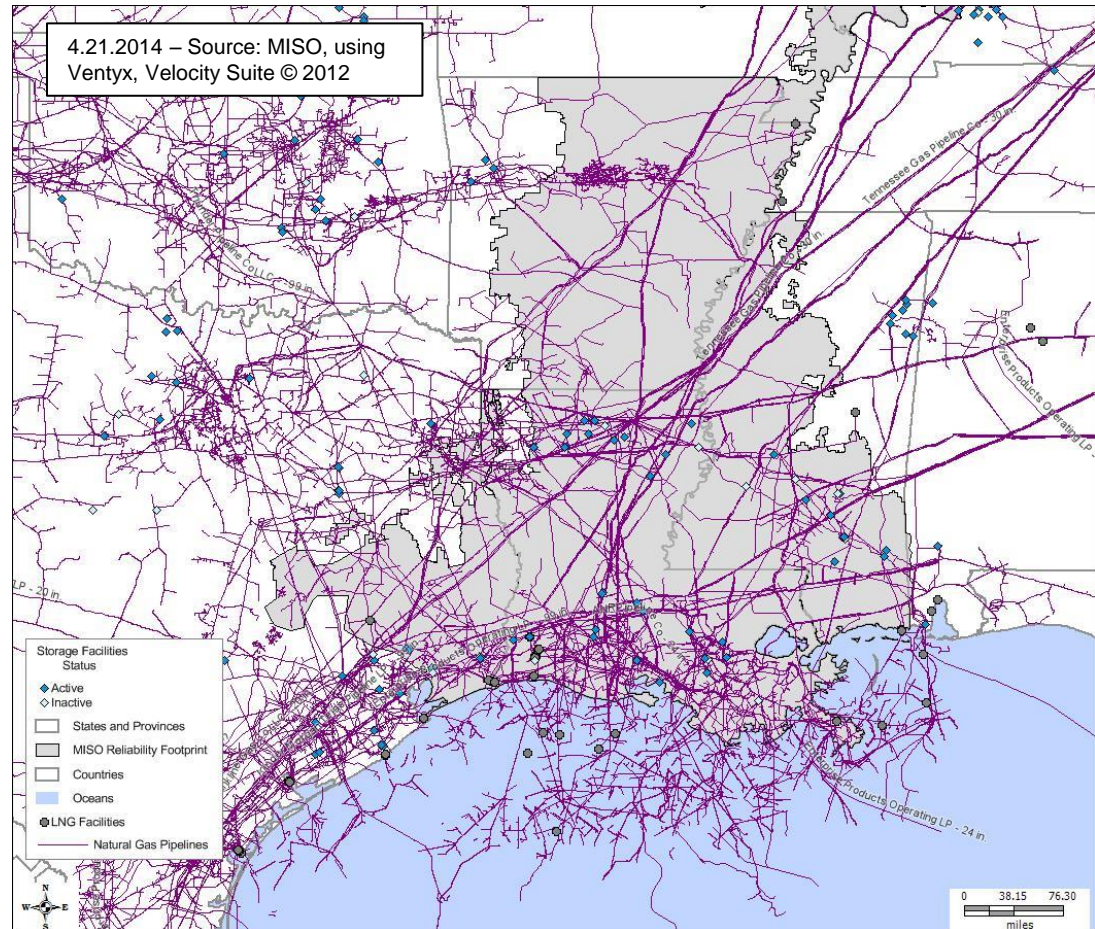
20 interstate pipeline systems deliver gas to the MISO North and Central Regions, shown at right.



The MISO South Region is also served by extensive natural gas infrastructure.

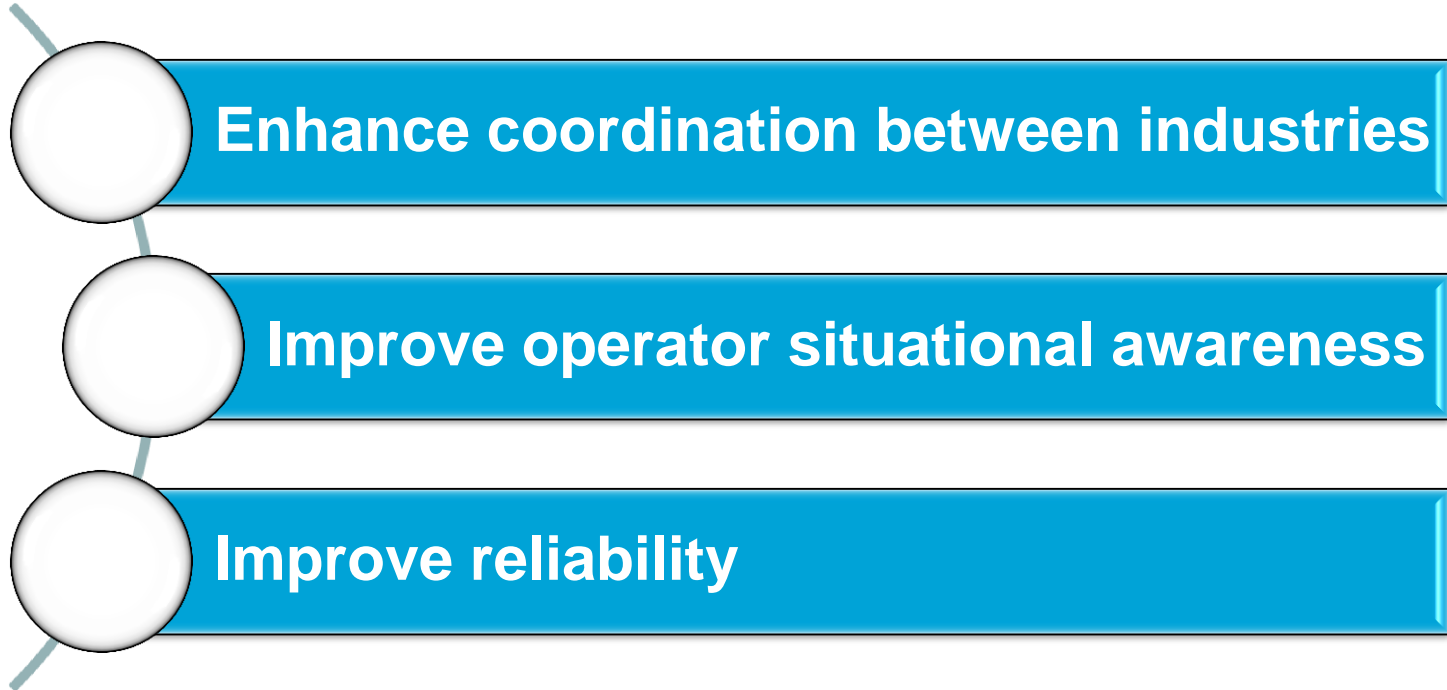
There is ~32,000 MW of gas-fired electric generation capacity in MISO South.

Many of these generators are interconnected with several natural gas fuel supply sources.



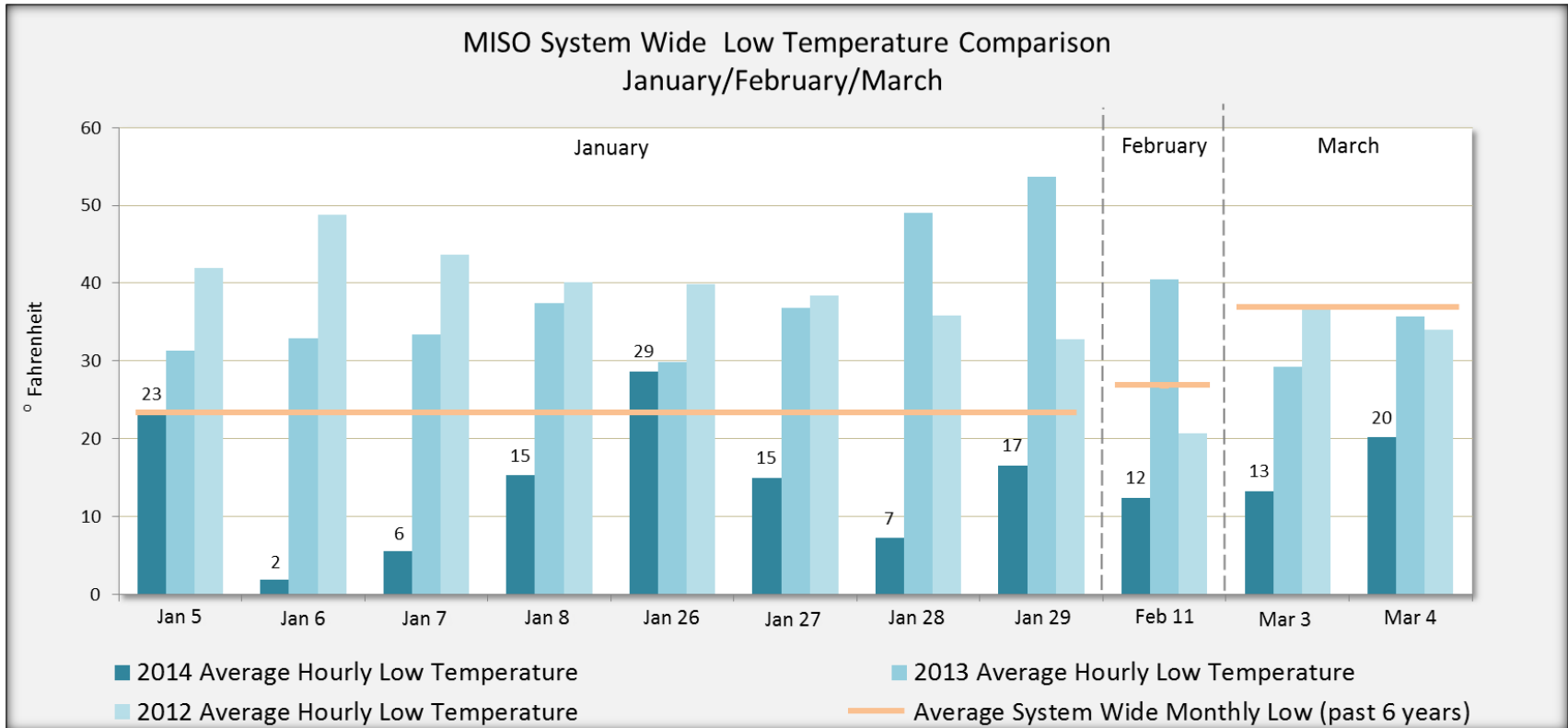
MISO recently completed its Coordination Field Trial with two major interstate pipeline companies.

The Field Trial added value to MISO Operations and served as an important step towards strengthening cross-industry communications.



THE POLAR VORTEX & NG/EL COORDINATION

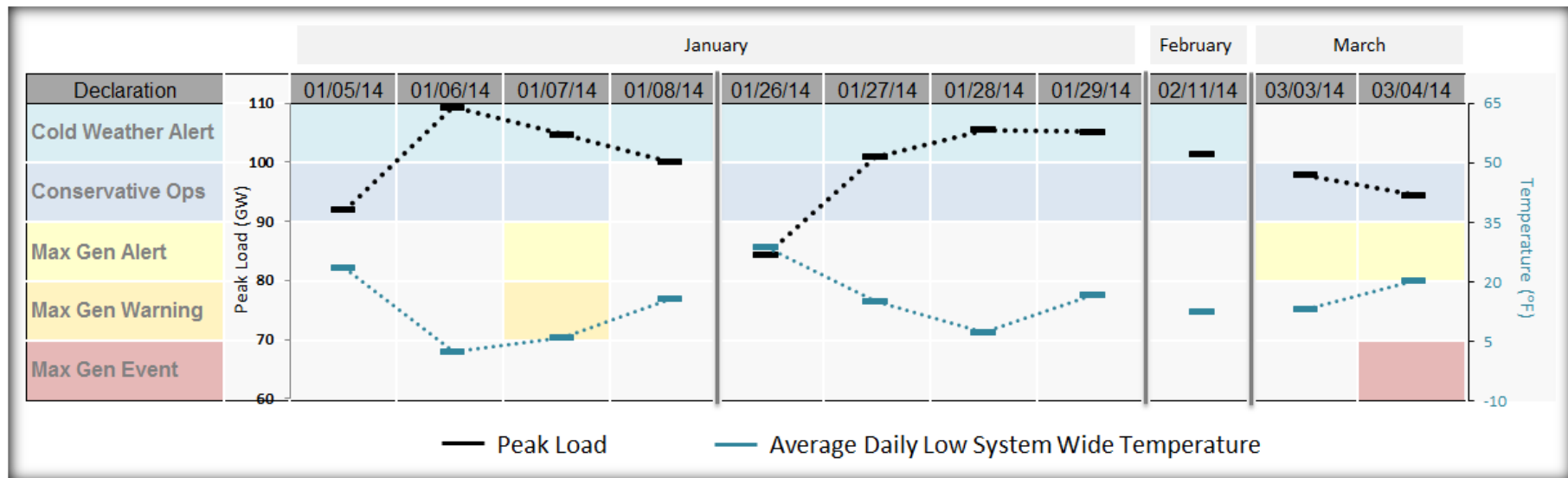
Impacts of extreme low temperatures were experienced across the footprint this past winter.



Temperatures in many areas were the coldest experienced in 20 years.

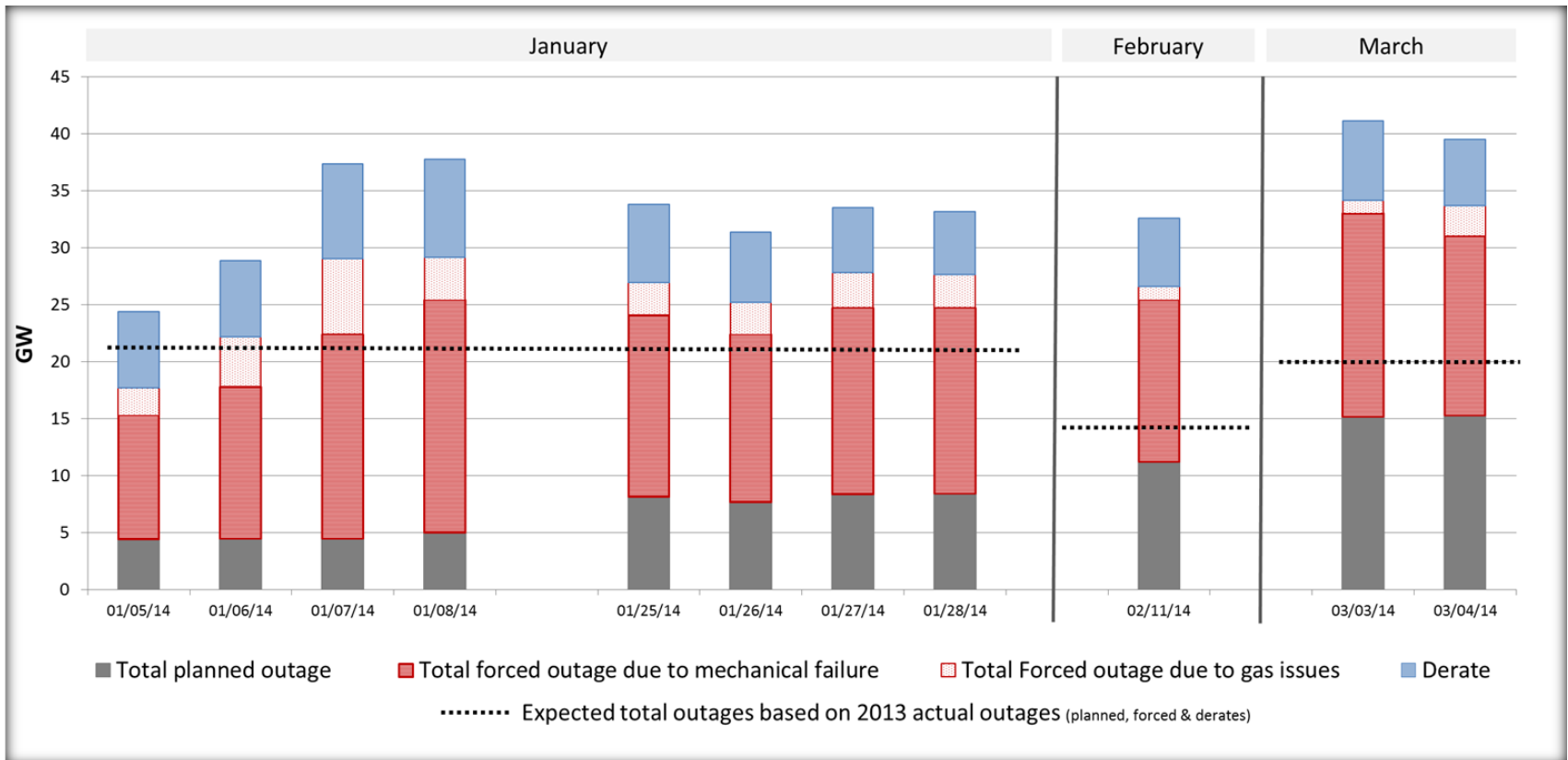
The extreme weather drove multiple emergency declarations by MISO Operations.

System load exceeded 100,000 MW on 13 days in the 2013/2014 winter.



A new all-time (Market footprint) winter peak load of ~109,300 MW was set on Jan. 6th, which was ~9% higher than the prior winter peak for MISO's current membership.

Lines of communication established during the Field Trial proved useful during operational challenges of the Polar Vortex.



Extreme conditions were managed successfully due to preparation and significant coordination.



MISO has several on-going initiatives to continue to improve situational awareness.

- Extension of the Coordination Field Trial through 2014
- Installation of natural gas infrastructure overlay display in MISO Control Rooms
- Development of online platform for gas pipeline Operational Flow Orders (OFOs) and Critical Notices
- The display and online platform will be linked to a database of gas-fired generators and their fuel supply sources, for MISO Ops.
- We're also exploring options for increasing granularity around reporting of generator outages, as well as fuel contracting and dual-fuel unit operations.