

A large, faint, light gray graphic of a sun with rays is positioned in the background on the left side of the slide. The rays are triangular and radiate from a central point, creating a semi-circular shape.

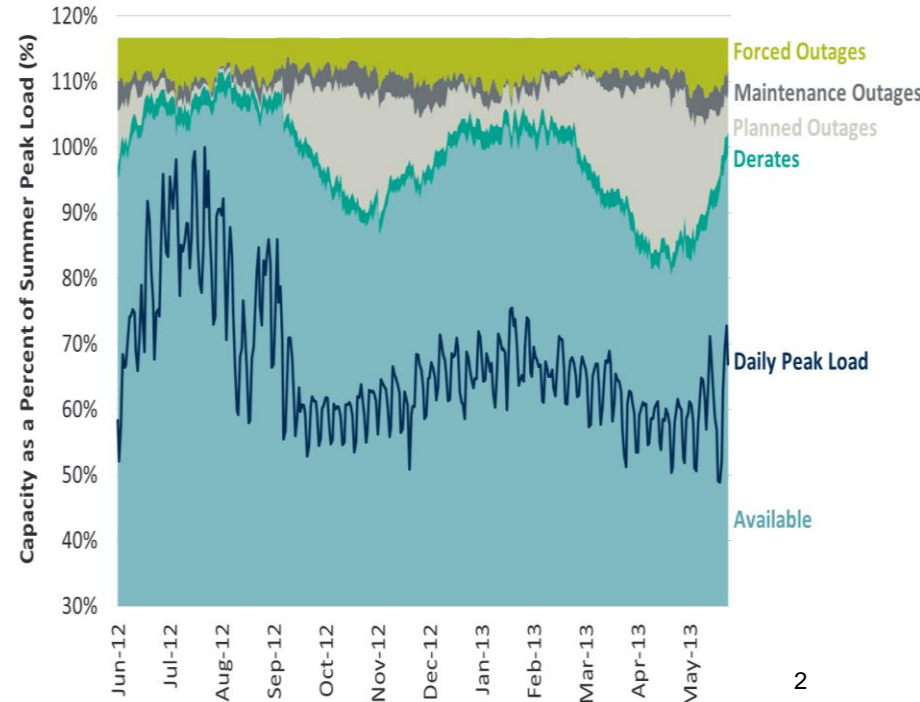
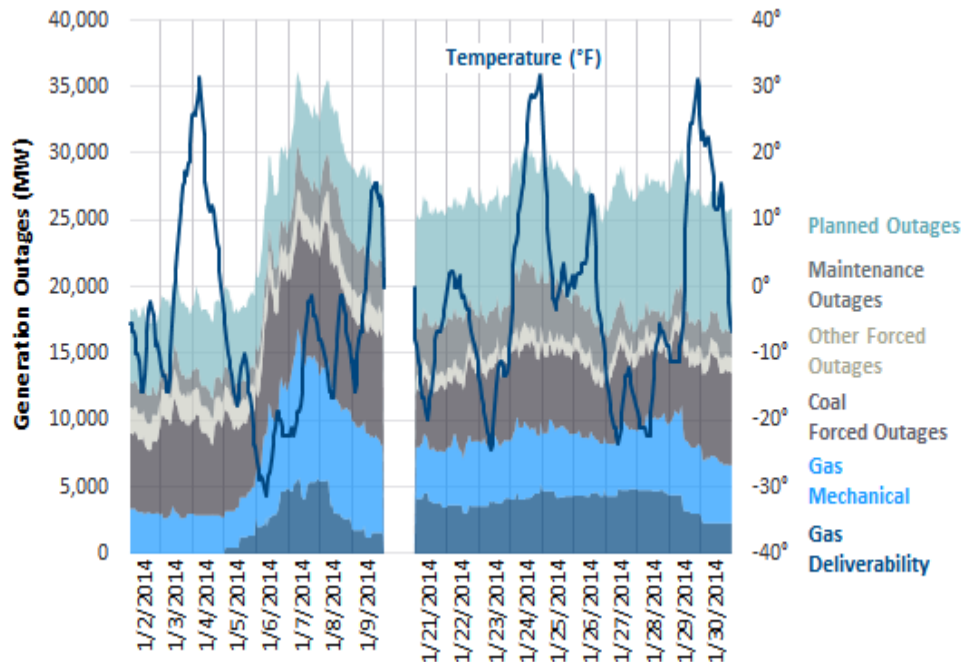
MISO Capacity Market Seasonal Considerations

IEEE LOLE Working Group

7/21/2016

MISO Seasonal Objective: Accurately represent risk of LOLE when serving summer and winter peak demand

- What are the risks of loss of load throughout the season?
- How does load uncertainty change seasonally?
- How does capacity uncertainty change seasonally?
- How can we capture the risk and procure the correct MW's in capacity planning.
- We see planned and maintenance outages on peak hours from historical data.



Modified LOLE Study to capture seasonal risk

- **There are seasonal variations in MISO Load Forecast Uncertainty (LFU) or historical load variance**
 - A higher LFU increases the reserve margin requirements in order to have sufficient reserves to cover the volatility
- **Seasonal Variations exist in Capacity Forced Outage Rates**
 - Variations may be seen among the forced outage rates for each month, along with a summer and winter average.
 - Higher seasonal forced outage rate would increase the reserve margin required.
- **Seasonal LOLE modeling is currently being studied at MISO to support a new seasonal capacity construct.**