

Policy Session: Solutions to Resource Adequacy in MISO Zone 4



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Sustainable **FERC** Project

Policies for a Clean Electric Grid

View Depends Partly on Perspective



Sustainable **FERC** Project

Policies for a Clean Electric Grid

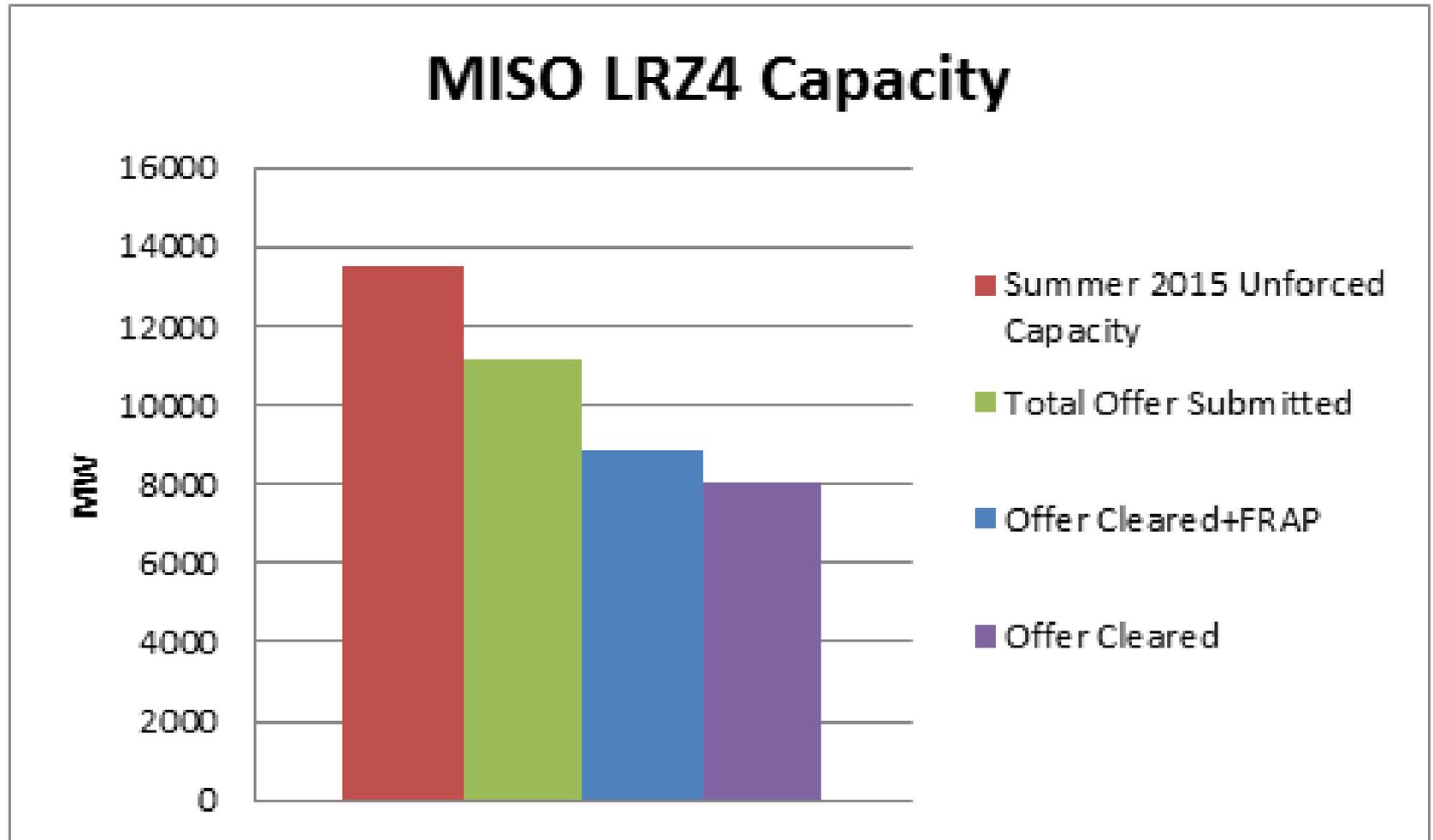
Overview

- Zone 4 resource adequacy is secure in near term.
- Many choices to support resource adequacy in future.
- Avoid unintended consequences of a major MISO capacity redesign; only minor changes necessary.

Zone 4 Has Significant Excess Capacity

- Current planning year (15/16)
 - ~23% Planning Reserve Margin (3x the 7.1% minimum PRM for Z4)
 - 3,142 MW of capacity did not clear 15/16 auction
 - 1,200 MWs of internal capacity was ignored and is available to help meet demand
 - ~50% of the total Zone 4 PRM Requirement was met by self-supply and bi-lateral contracts

Auction Results



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Complaints and MISO Actions

- Pending Zone 4 complaints will affect Planning Resource Auction design
 - E.g., increase net imports to Zone 4
- Possible MISO Changes to PRA will address resource adequacy
 - Seasonality
 - Locational Considerations
 - Generation interconnection queue processes

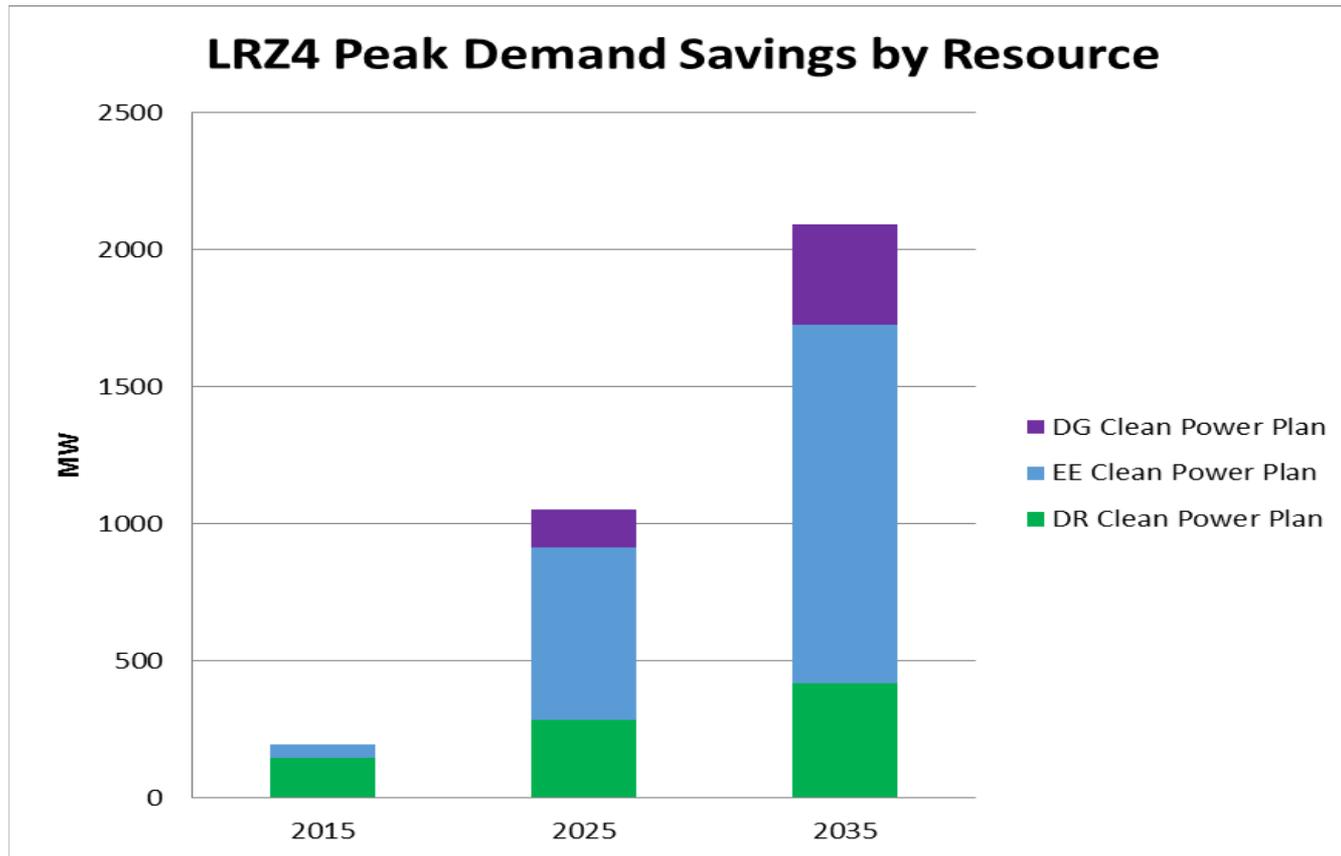
Looking to 2020, Sufficient RA

- MISO OMS Survey says +500 MW surplus over reserve margin for combined IL and MO zones
- +2,000 MW of active queue generation for Illinois and Missouri not included in OMS survey
- Import capability growing – up to 4,328 MW in 16/17 and likely higher thereafter
- State laws (Clean Jobs Plan +4,500 MW wind and solar in Illinois), other factors in a paradigm shift in resource mix

Post-2020, Many Factors Will Address RA

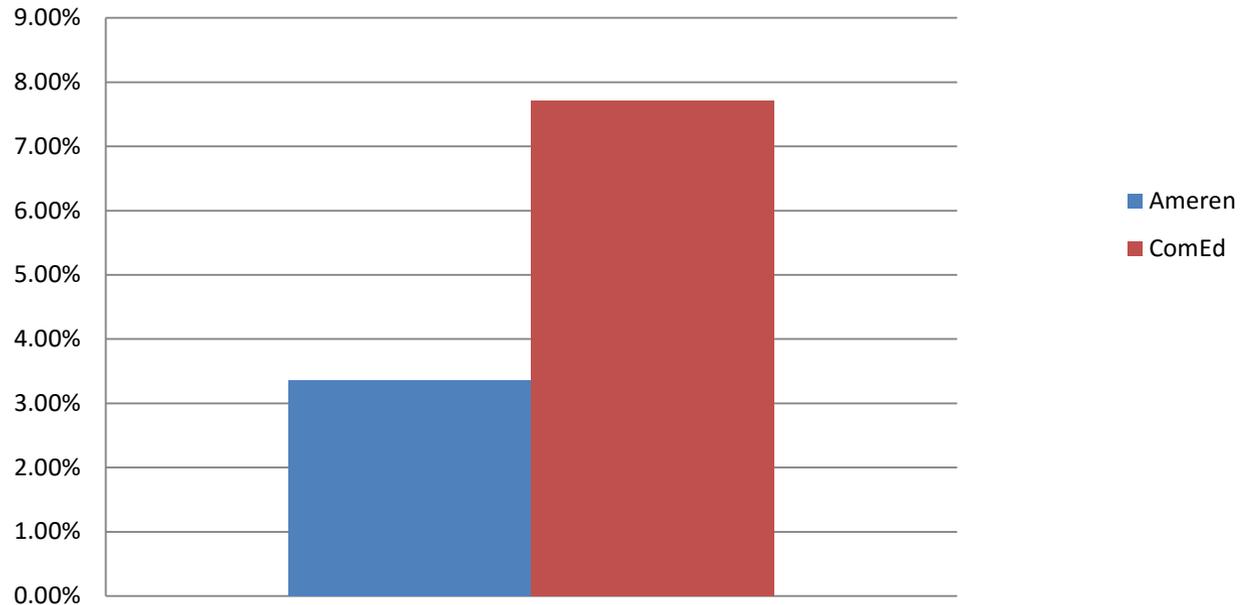
- Clean Power Plan → new resource development
- DR and EE + new resources offset plant retirements
- Rooftop solar and other distributed energy
- Focus on seasonal/winter peak
- More wind/solar → focus on demand net of renewable energy resources

More Demand Side Resources Benefits Consumers, Jobs, Environment



Zone 4 EE (and DR) Potential Lags ComEd

EE MWh Savings Relative to Total Power Purchases



Minor MISO Rule Changes Will Address PRA Issues

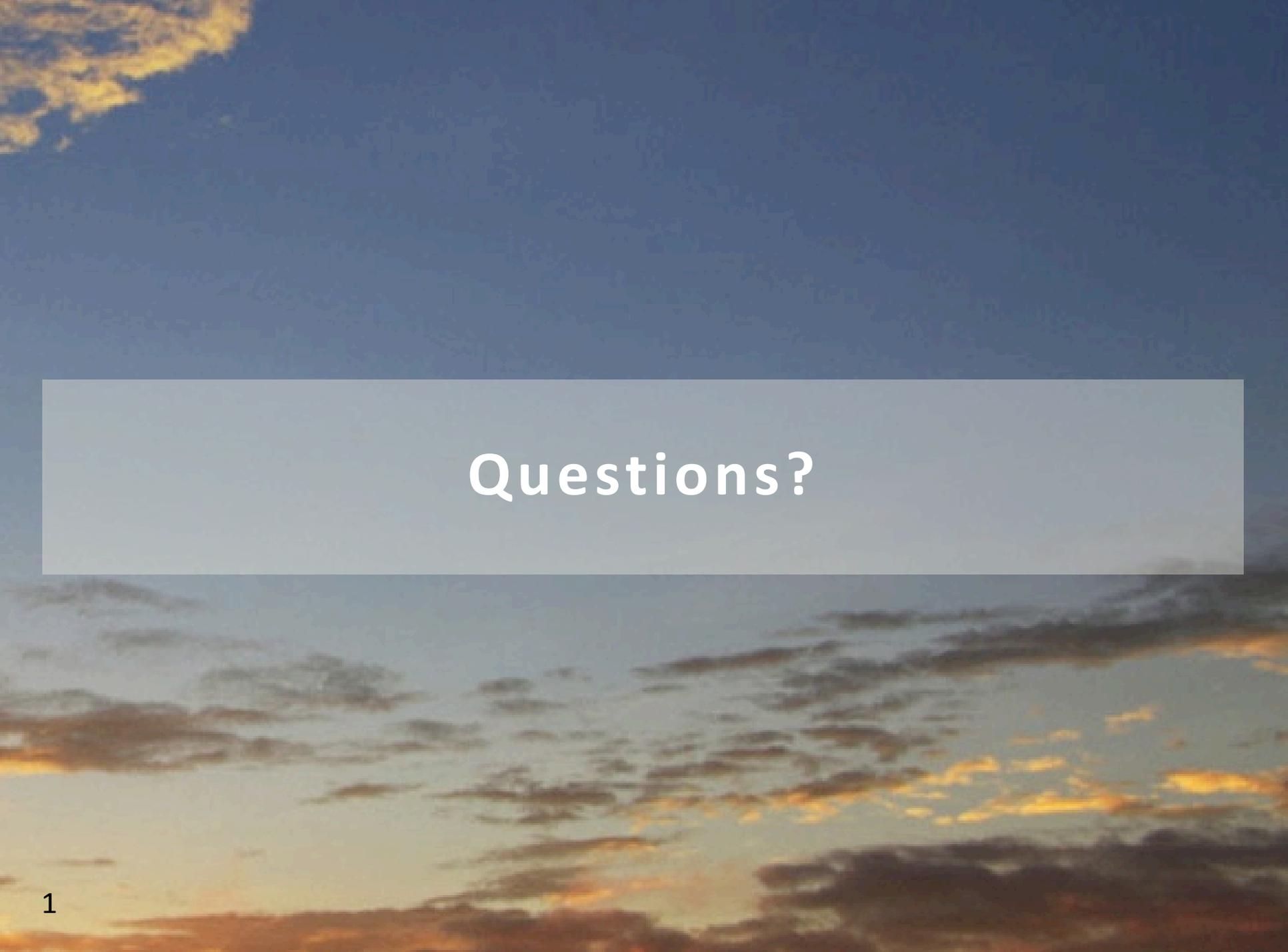
1. Set the opportunity costs at zero for the next auction for all MISO Zones and set MISO's Initial Reference Level using a measure of going-forward costs for existing resources
2. Account for counter-flows from exports on a 1/1 basis when determining Capacity Import Limits and Local Clearing Requirements for each Zone
3. Return to the methodology employed in MISO's initial capacity auction to determine Capacity Import Limits (i.e. ignore limits on facilities below 200kV)
4. Consider combining Zones 4 and 5

Other MISO Supply Priorities

1. Full credit for variable energy resources – ELCC or seasonal credit
2. Improve market opportunities and better price formation for demand response
 - Allow DR to set prices in both the real-time energy and operating reserve markets during emergency conditions
 - Reduce the 5 MW minimum threshold for a resource to participate in the energy and ancillary services markets

Cautions on Moving Towards a PJM-style Capacity Market

- Process:
 - MISO is not ICC; no opportunity for public notice and comment and witnesses
 - MISO FPA 205 filing is not easy for FERC to amend
- PPAs remain primary driver for new wind, solar
 - Current capacity markets unfavorable to low cost RE and EE resources

A sunset sky with a semi-transparent white box in the center containing the text "Questions?".

Questions?