

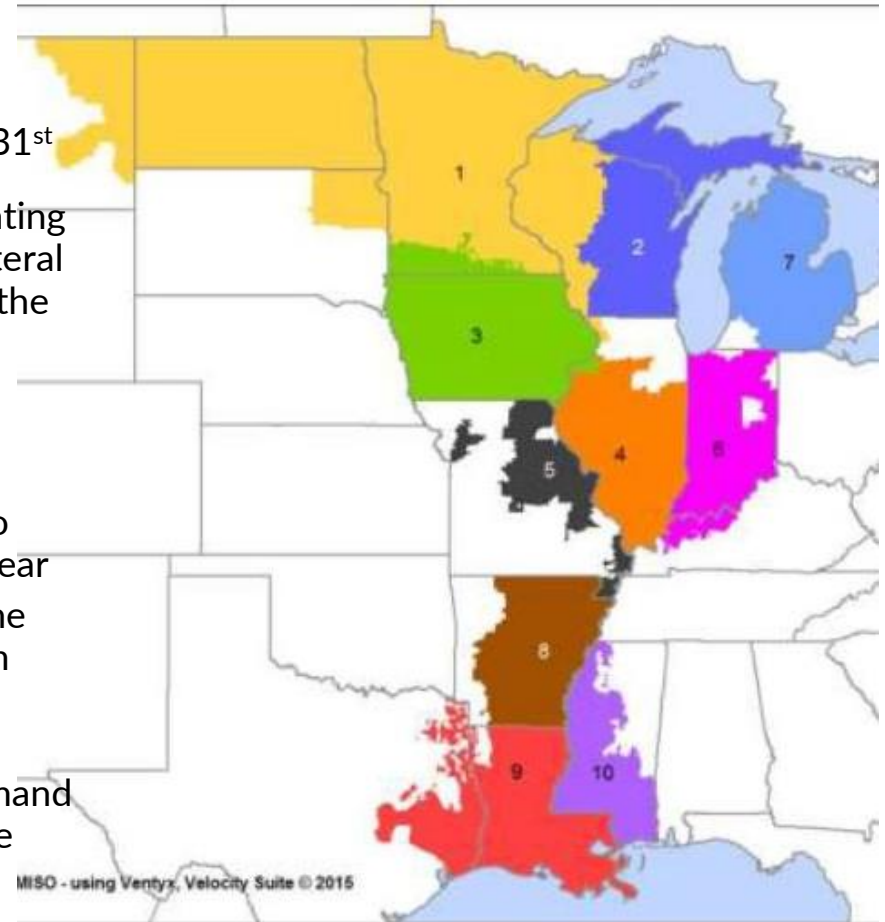


MISO Update on Resource Adequacy

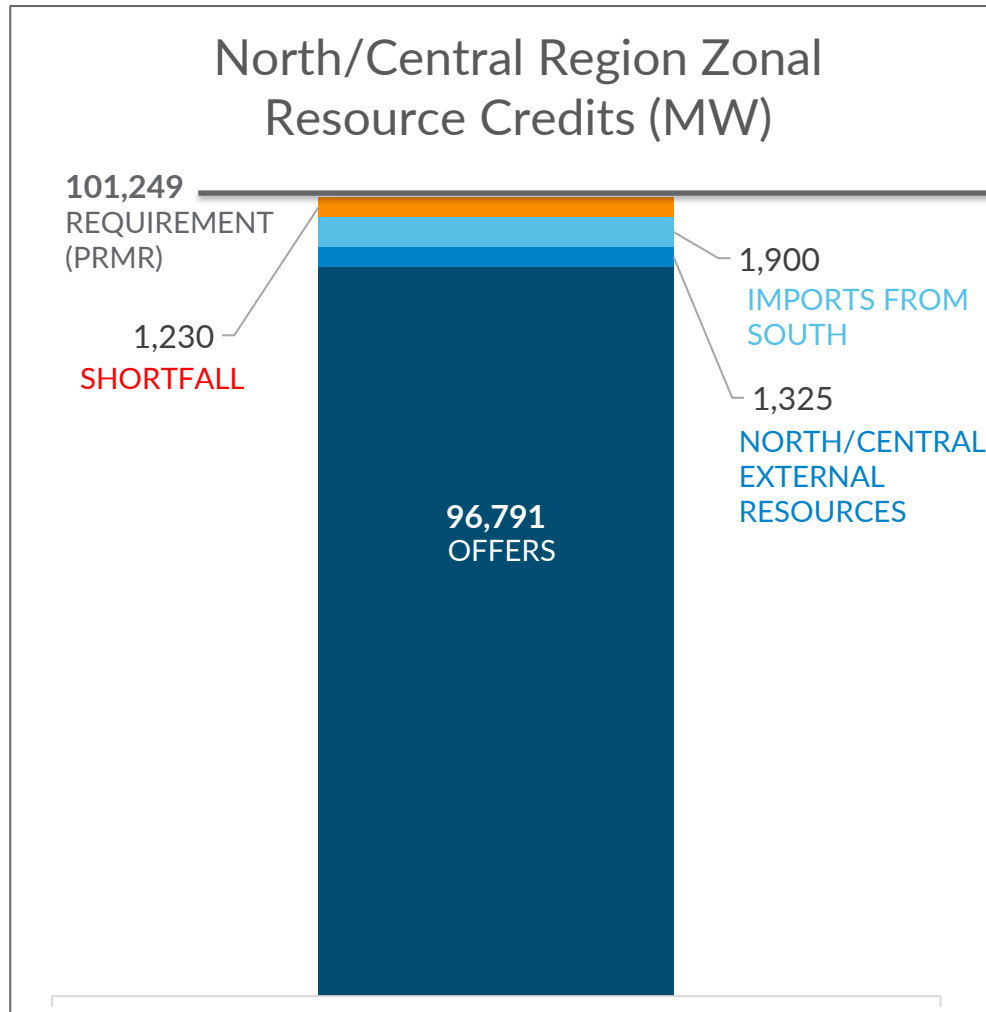
Missouri Public Service Commission
August 17, 2022

Overview of MISO's Resource Adequacy Construct

- Annual Obligation for Load Serving Entities
 - Planning Year period is from June 1st to May 31st
 - Multiple methods of achieving and demonstrating resource adequacy, including self-supply, bilateral contracting and market-based acquisition via the Planning Resource Auction.
- Overview of Planning Resource Auction
 - Occurs two months ahead of Planning Year
 - Residual Auction - allows buyers and sellers to balance resource portfolio prior to Planning Year
 - Includes a locational requirement indicating the amount of capacity that must be secured from resources within each zone to meet reliability standards
 - If there are insufficient resources to meet demand in the auction, Resource Adequacy may not be achieved.



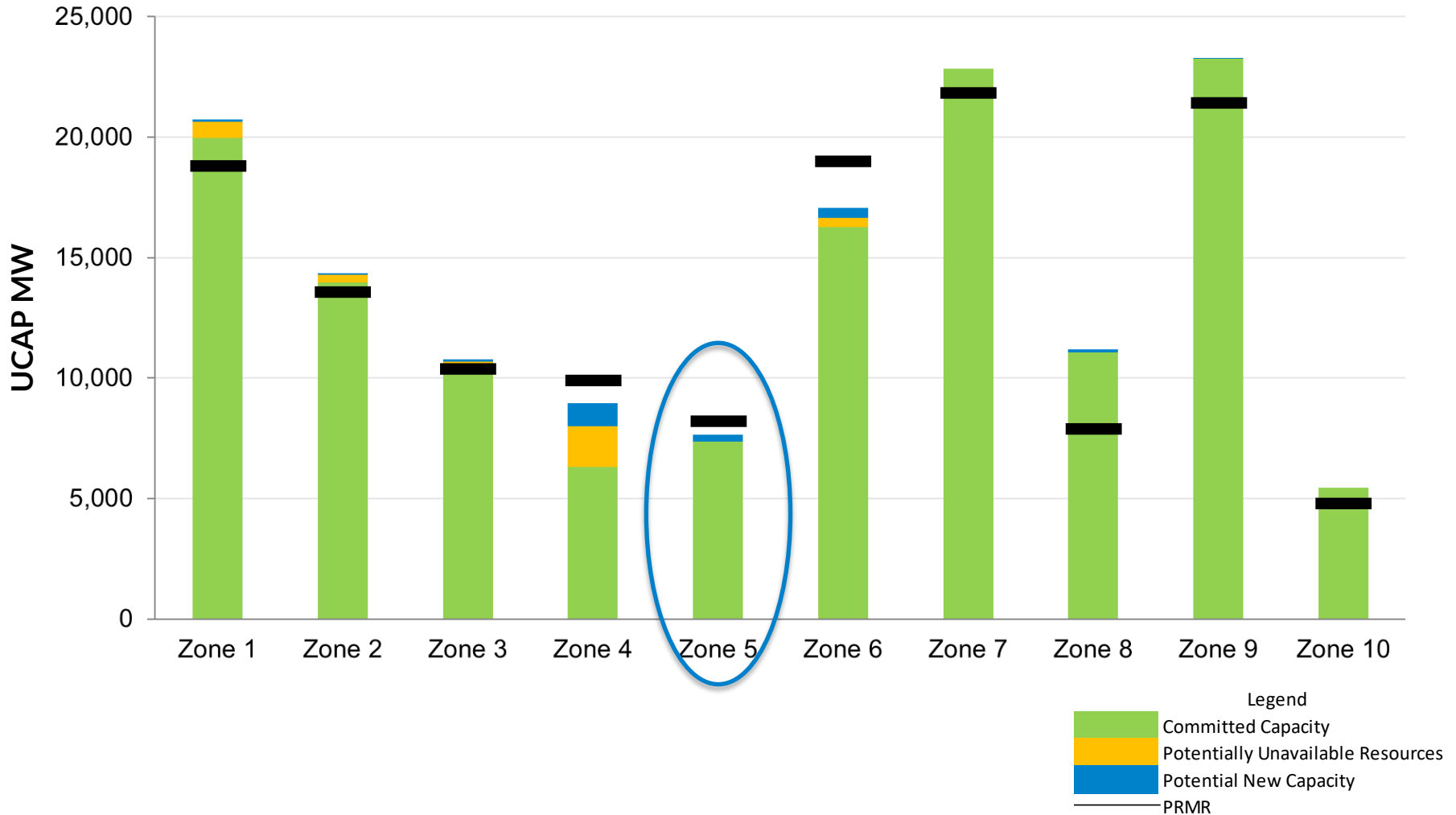
Capacity deficit in the recent Planning Resource Auction points to accelerating fleet change and increased risk



Insufficient capacity in the North and Central Regions increases Loss of Load Expectation from **1 day in 10** years to **1 day in 5.6** years

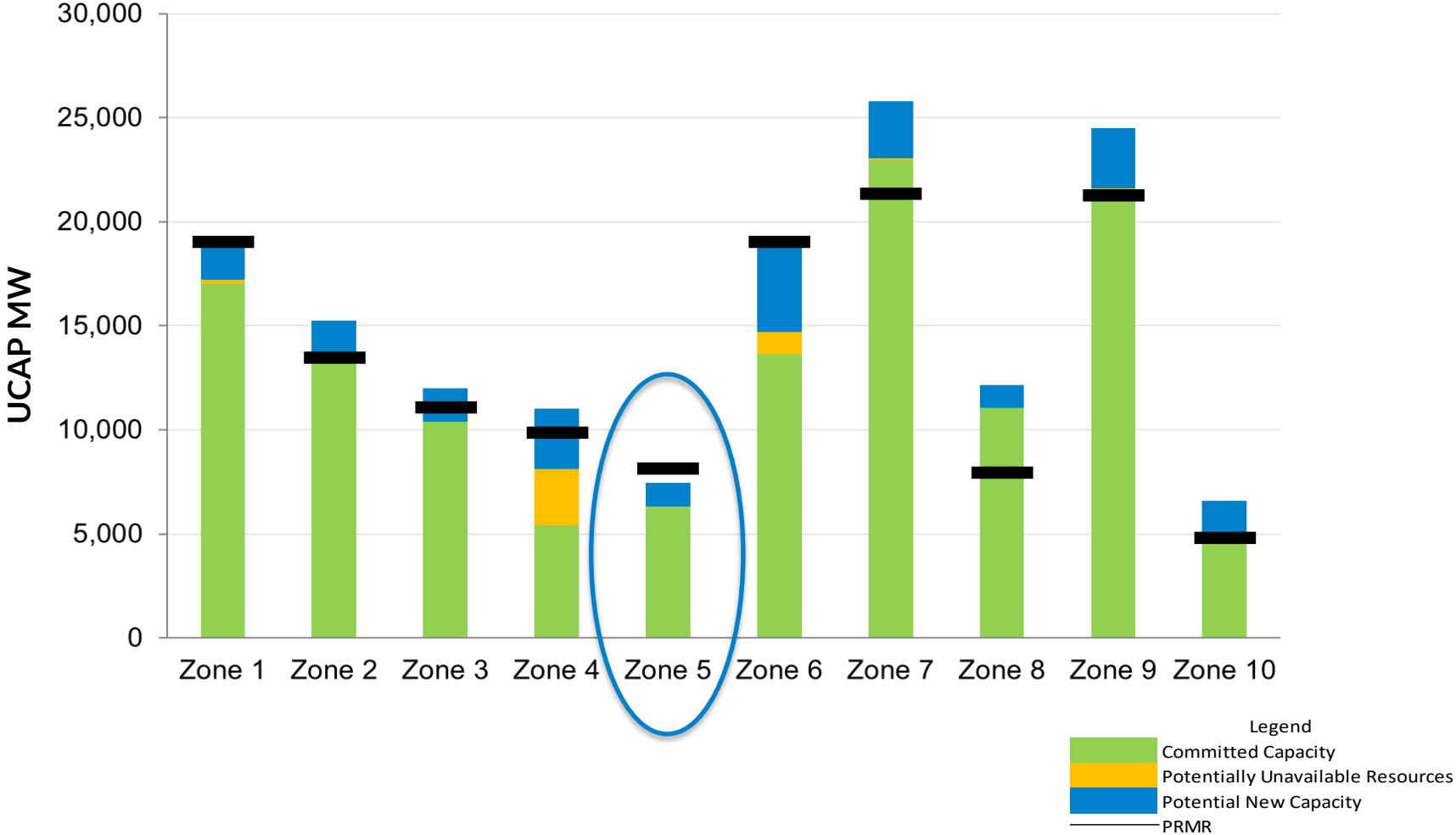
Capacity shortages shown in 2022 PRA are reflected in the 2023 survey zonal outlook

2022 OMS MISO Survey PY 2023/24 By Zone

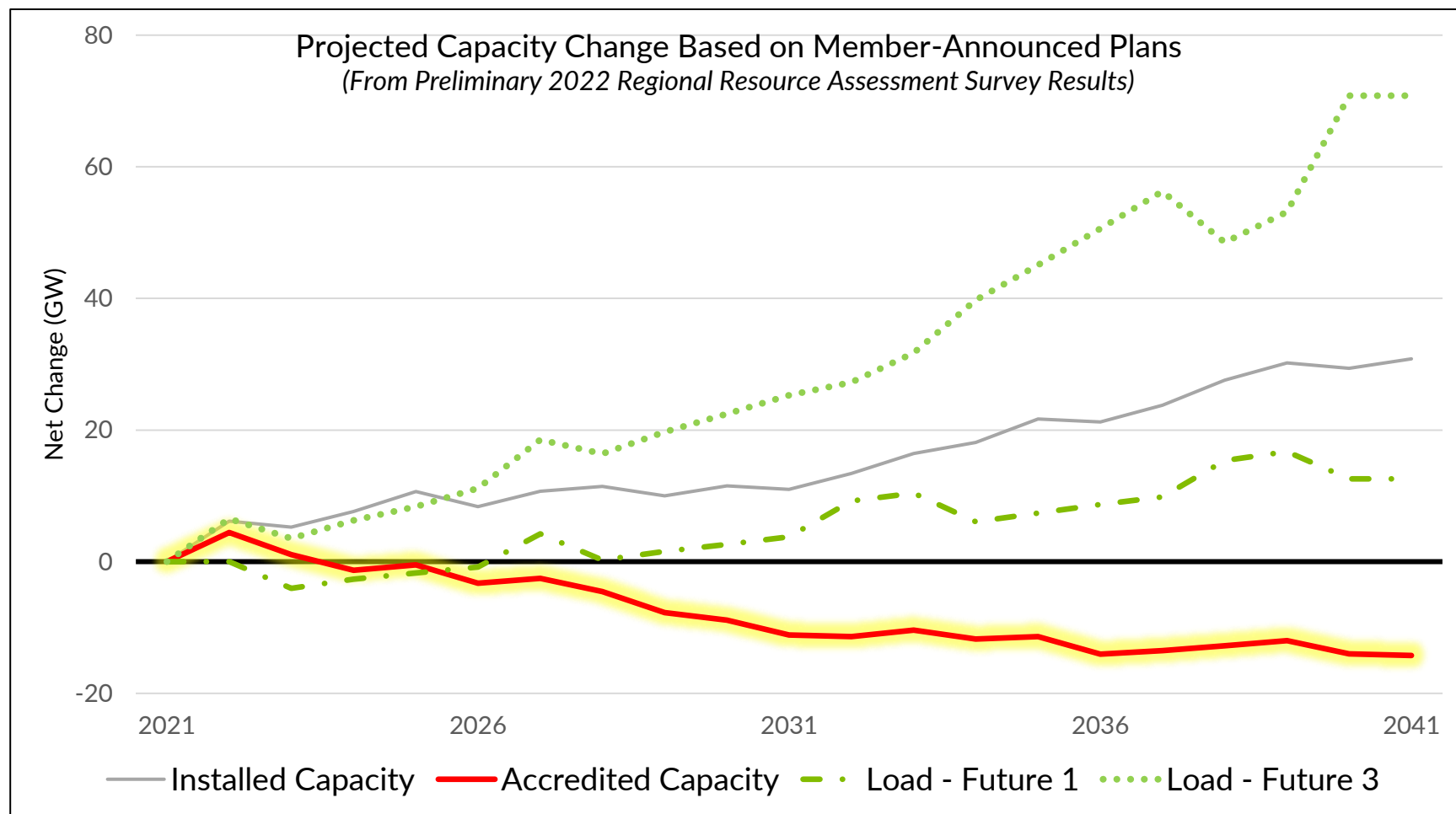


By 2027, North/Central will need completion of significant number of MISO GI projects to cover projected Committed Capacity deficit

2022 OMS MISO Survey PY 2027/28 By Zone



While total installed capacity is steadily trending up, accredited capacity is moving in the opposite direction due to the capabilities of the resource types

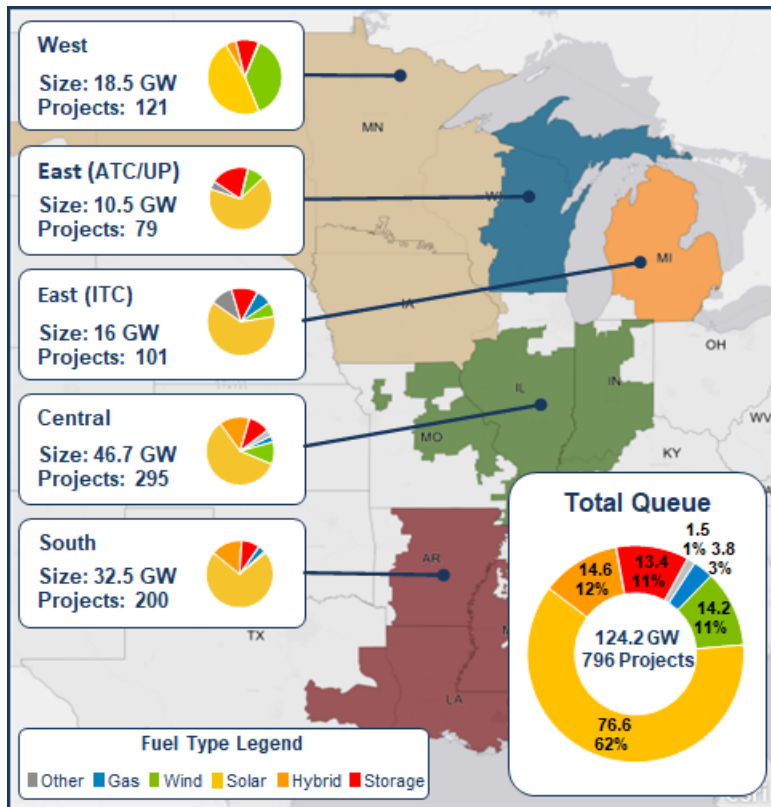


*Future projections calculated as change from Future 1 2022 load assumption

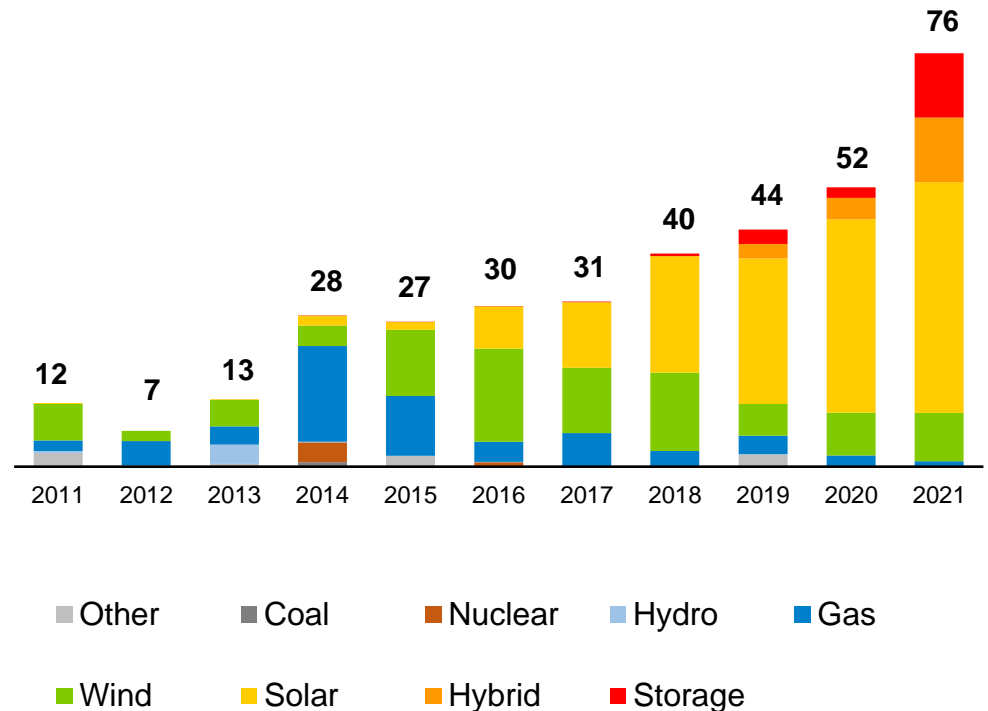
Estimated accredited capacity: 16.6% for wind; 35% for solar, 87.5% for battery, 90% for coal, 90% for gas, and 95% for nuclear

The interconnection queue is dominated by solar and wind, which have less accredited value than traditional resources

MISO Active Queue by Study Area



MISO Queue Historical Trend by Requested Generation (GW)



We collectively need to be prudent in our actions to ensure sufficient resources and flexibility during the fleet transition

States

- Factor regional consideration into state resource adequacy, resource attribute, and market construct requirements
- Inform the broader policy and statutory discussion at the state level
- Implement NERC recommendations for resiliency and reliability

Members

- Collaborate with MISO and States on timely resource adequacy, market enhancements and regional transmission
- Share resource plans with MISO to enable accurate regional view

MISO

- Enhance transparency of resource evolution and regional outlook
- Improve Resource Adequacy construct
- Visibility into and reviewing impacts of resource retirements
- Inform the broader policy discussion with federal policymakers and agencies