

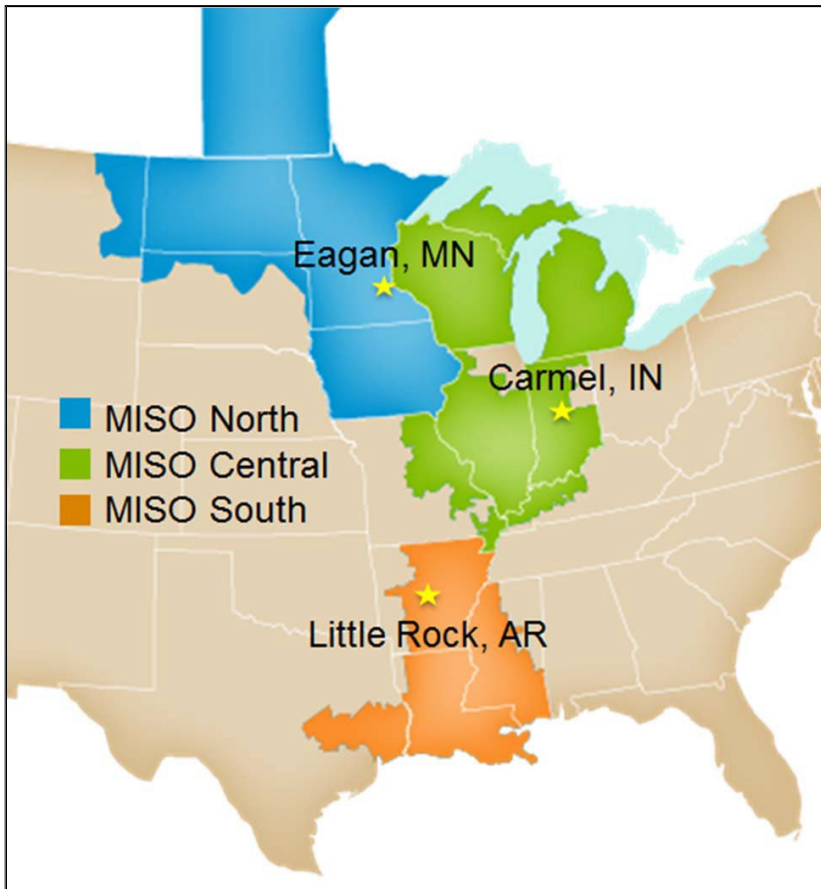


Grid Reliability and Summer Energy Demand

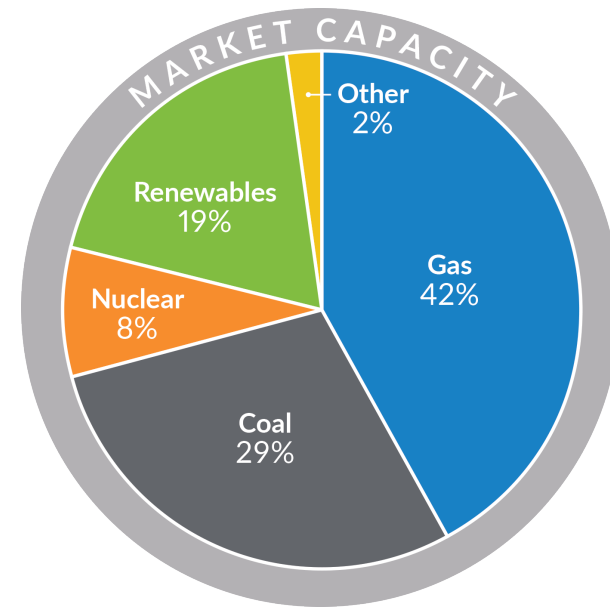
Interim Joint Committee on
Natural Resources and Energy

July 7th 2022

MISO is a voluntary, non-profit member-services organization responsible for providing reliability and system-planning services across its multi-state region



MISO by-the-numbers	
High Voltage Transmission	65,800 miles
Generation Capacity	174,000 MW
Peak System Demand	127,125 MW
Customers Served	42 million



MISO manages flows on the transmission system by directing generator usage

MISO COORDINATES TRANSMISSION USAGE AND TRANSMISSION-CONNECTED GENERATION

1 **GENERATION**

Power is generated from many fuel sources including coal, natural gas, nuclear and renewable power. MISO does not own generators; rather, it distributes the power over the bulk electrical grid.

2 **TRANSMISSION**

Allowing the flow of electricity to bridge long distances, MISO's member transmission lines and towers support more than 65,800 miles of electricity flow.

MISO manages transmission (part of the **Bulk Electric System**), which is federally regulated by the Federal Energy Regulatory Commission (FERC).

MEMBER UTILITIES OPERATE DISTRIBUTION SYSTEMS AND SERVE END USERS

3 **DISTRIBUTION**

Allows energy to be moved from transmission lines closer to end users, ensuring reliability and power quality.

4 **END USERS**

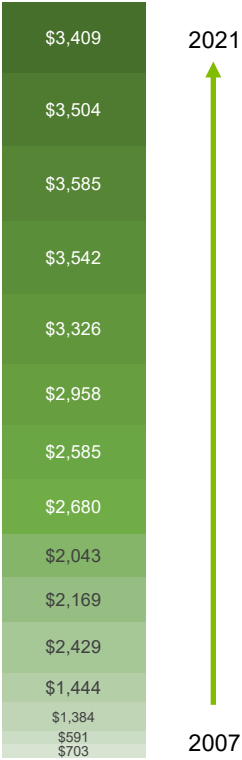
As travel distance increases, smaller power lines are used to reach business, industrial and residential end use customers.

The **distribution system**, which brings power to homes and businesses, is managed by local utilities and is under state jurisdiction.

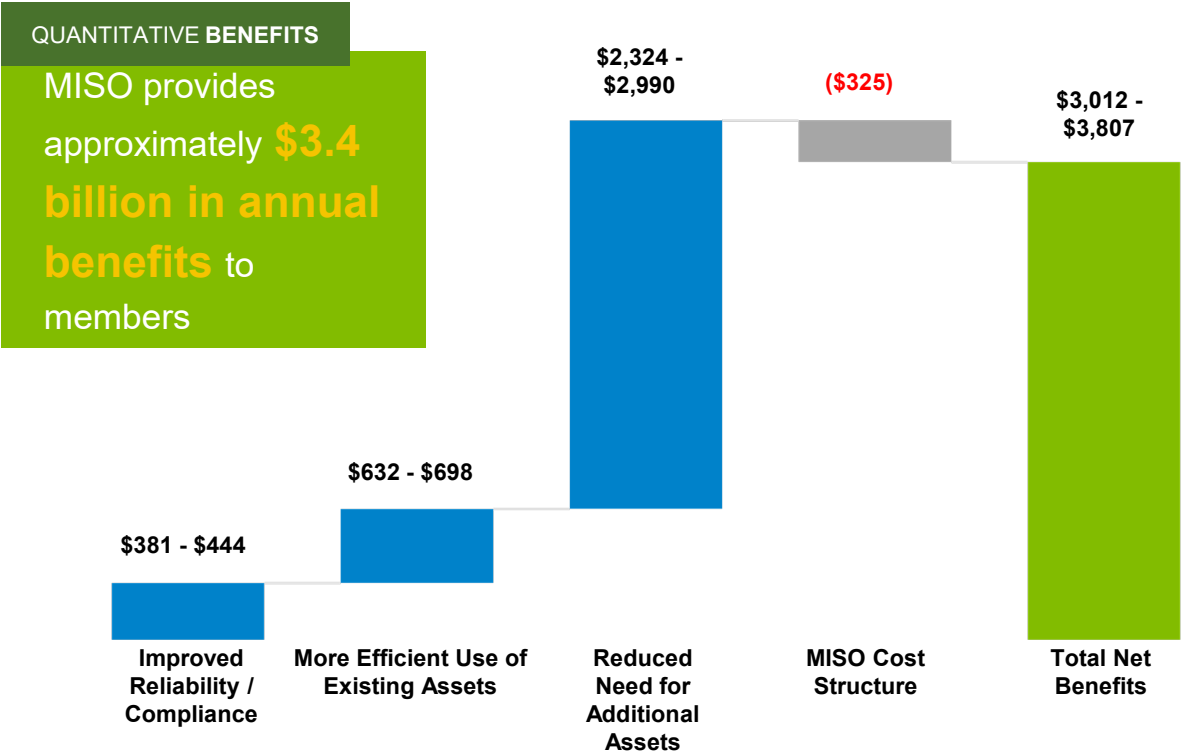
Since 2007, MISO has documented over \$36 billion in benefits

Cumulative Benefits

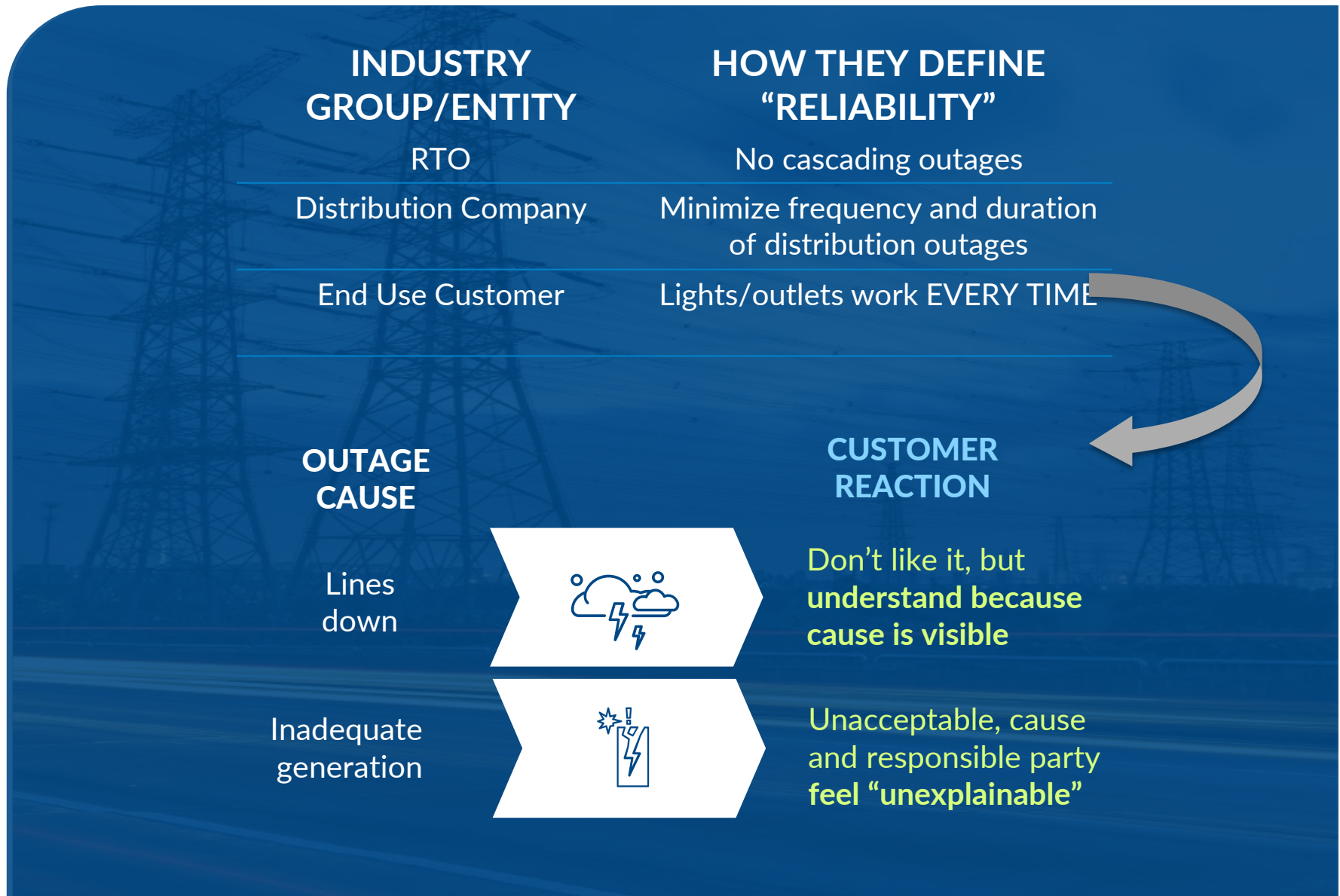
(\$ millions)
\$36,348



2021 Benefit by Value Driver (\$ millions)



Resource adequacy and reliability go together, and customers find outages for resource adequacy unacceptable



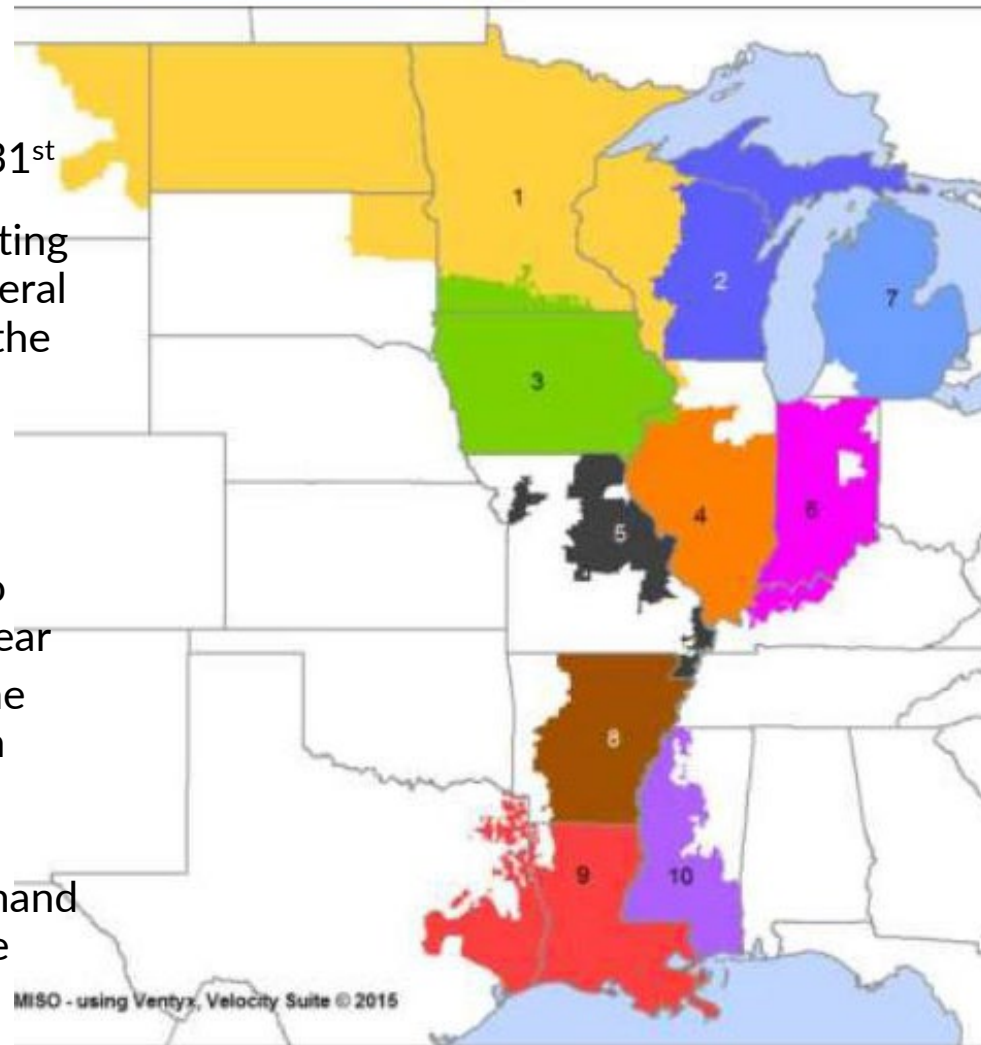
MISO's Resource Adequacy Construct

- Annual Obligation for Load Serving Entities

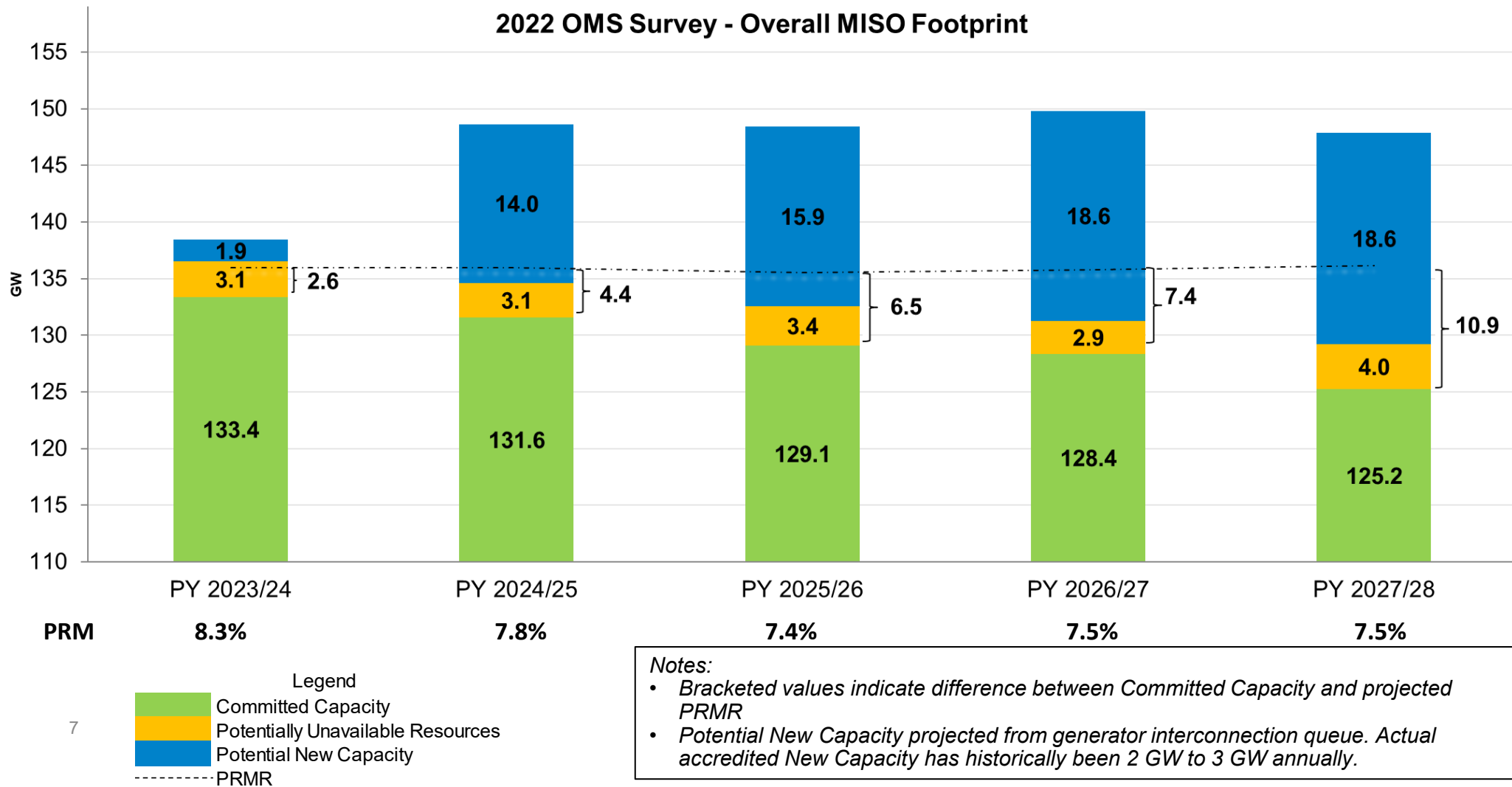
- Planning Year period is from June 1st to May 31st
- Multiple methods of achieving and demonstrating resource adequacy, including self-supply, bilateral contracting and market-based acquisition via the Planning Resource Auction.

- 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.

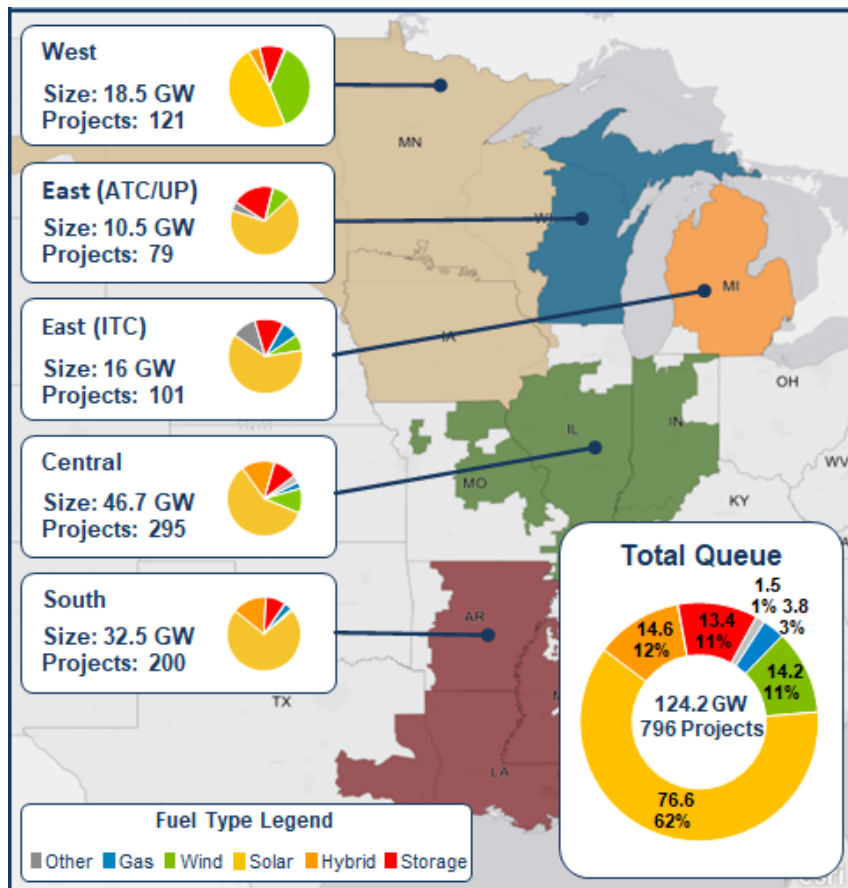


Resource projections show the need for new resources to play an important role in ensuring Resource Adequacy

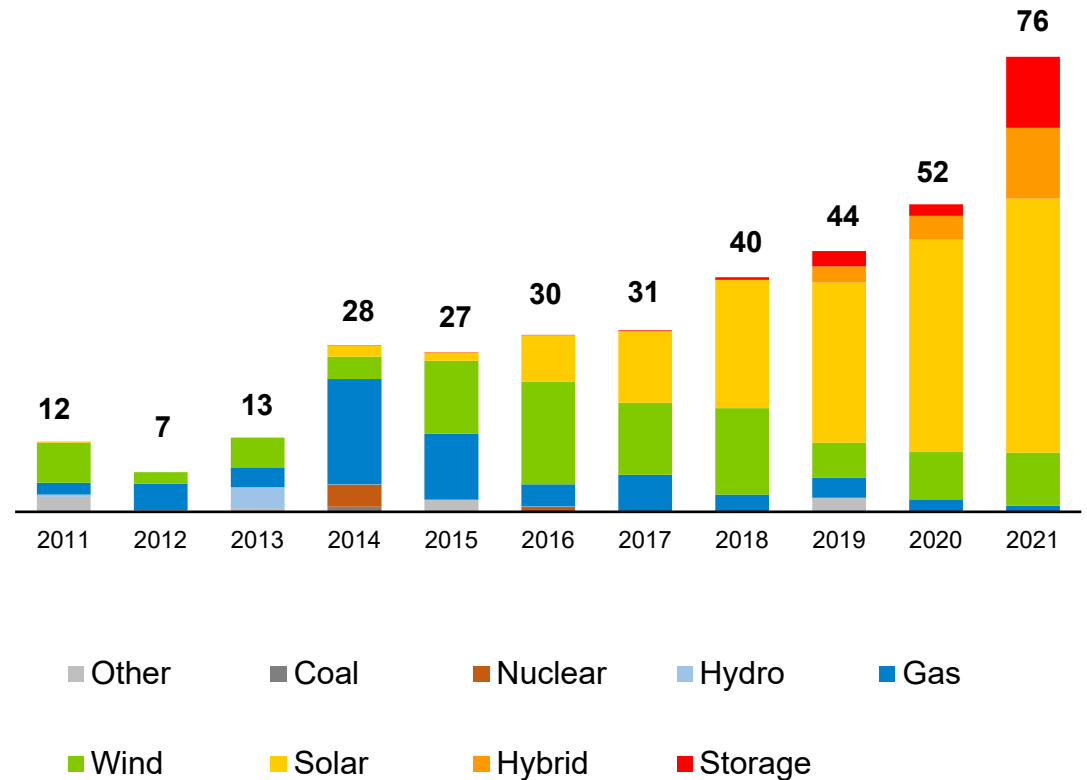


The generator interconnection queue reveals the majority of new resources that will be coming online will be renewables

MISO Active Queue by Study Area



MISO Queue Historical Trend by Requested Generation (GW)



MISO prepares for extreme conditions in advance. During the operating day, unplanned outages and other unknowns may require additional actions

