



Generator Interconnection Queue Update

System Planning Committee
of the Board of Directors

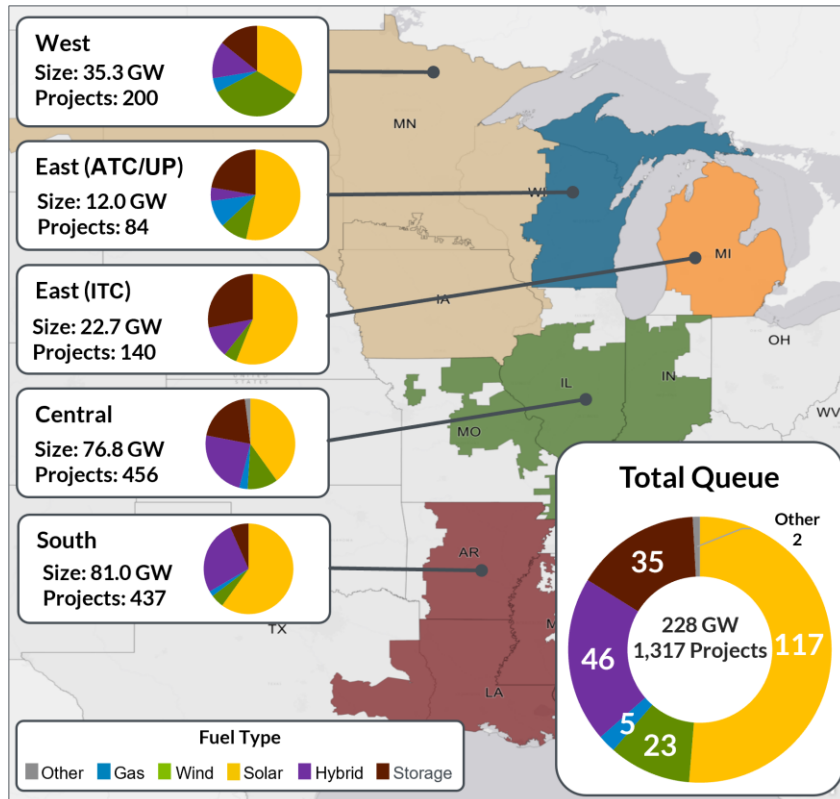
December 5, 2023

Executive Summary



- MISO faces a growing supply-demand gap as anticipated generator retirements outpace additions, and the loss of reliability attributes further compounds the challenges
- Reforms can expedite Queue processing, but external factors such as supply chain issues are limiting build-out of new generation
- Alignment and collaboration between MISO, its Members and policymakers are critical to ensure timely implementation of Queue and resource adequacy reforms and to mitigate near-term reliability risks

Member decarbonization goals are driving significant growth in MISO's Generator Interconnection Queue, resulting in a backlog of projects and challenges for customers

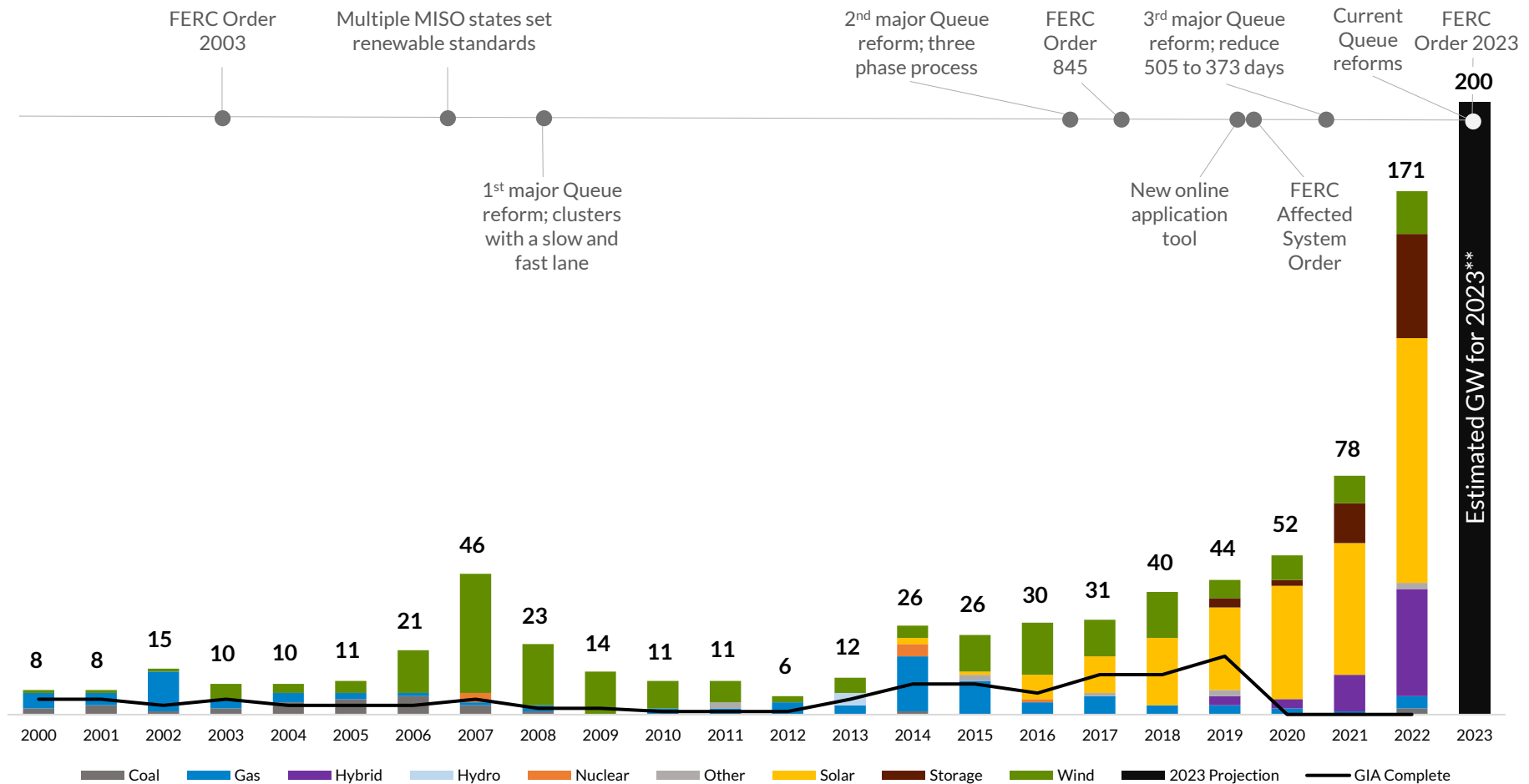


- Current Tariff rules allow for more speculative projects
- More than 70% of submitted projects don't get built
- The large volume of requests drives longer study cycles, more withdrawals and uncertainty

The 2023 application process is paused while Queue reforms are pending at FERC, allowing MISO to address the backlog, make process improvements and prepare for future applications.

Queue data as of November 7, 2023

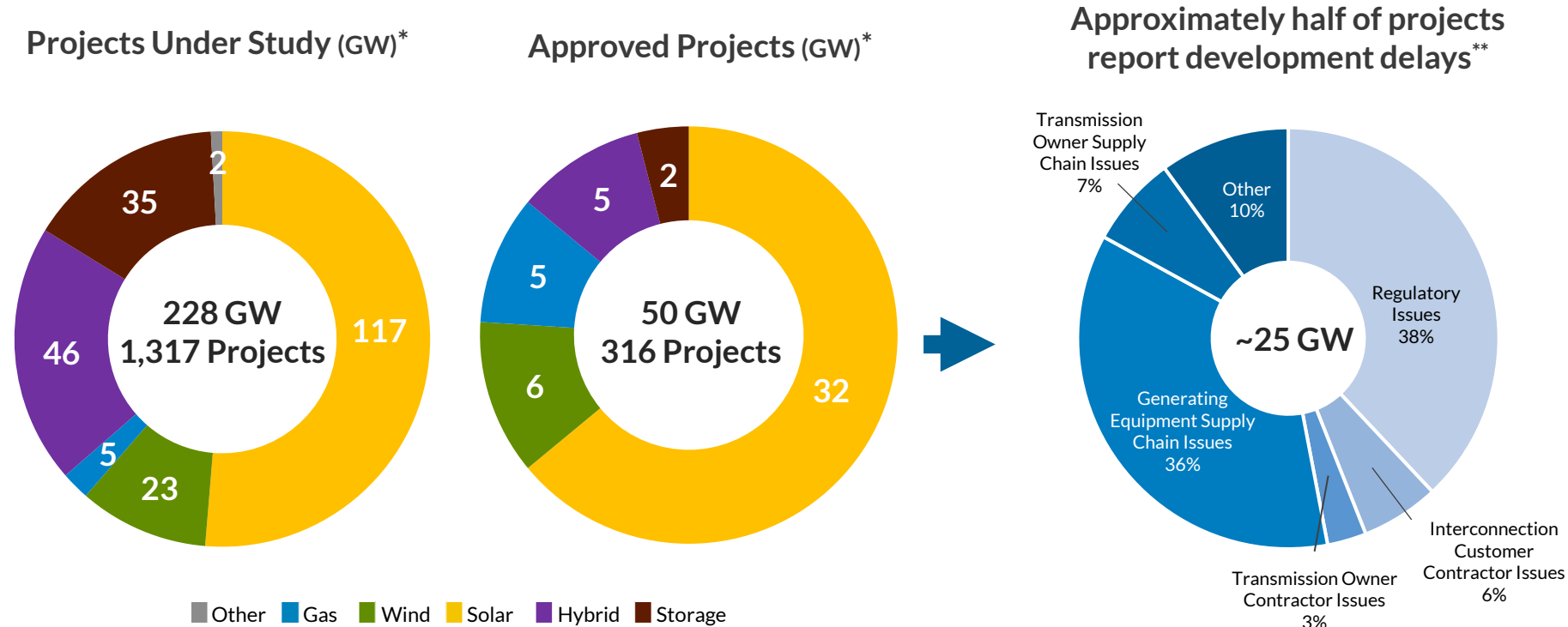
MISO has made several improvements to Queue processes that reflect “first-ready, first-served” principles, but additional reforms are needed to achieve reasonable Queue speed and volume



*Not all project applications will enter the active queue. ** Estimate for applications without Queue reforms. Historically, 5% to 30% of projects have been withdrawn/removed during the application review phase. GIA – Generator Interconnection Agreement.

Even with Queue processing improvements, external factors are limiting construction of new resources, which compounds MISO's resource adequacy risk

50 GW of resources approved through MISO's interconnection processes are in or awaiting construction with approximately 50% already signaling a delay with an average of 650 days to commercial operation

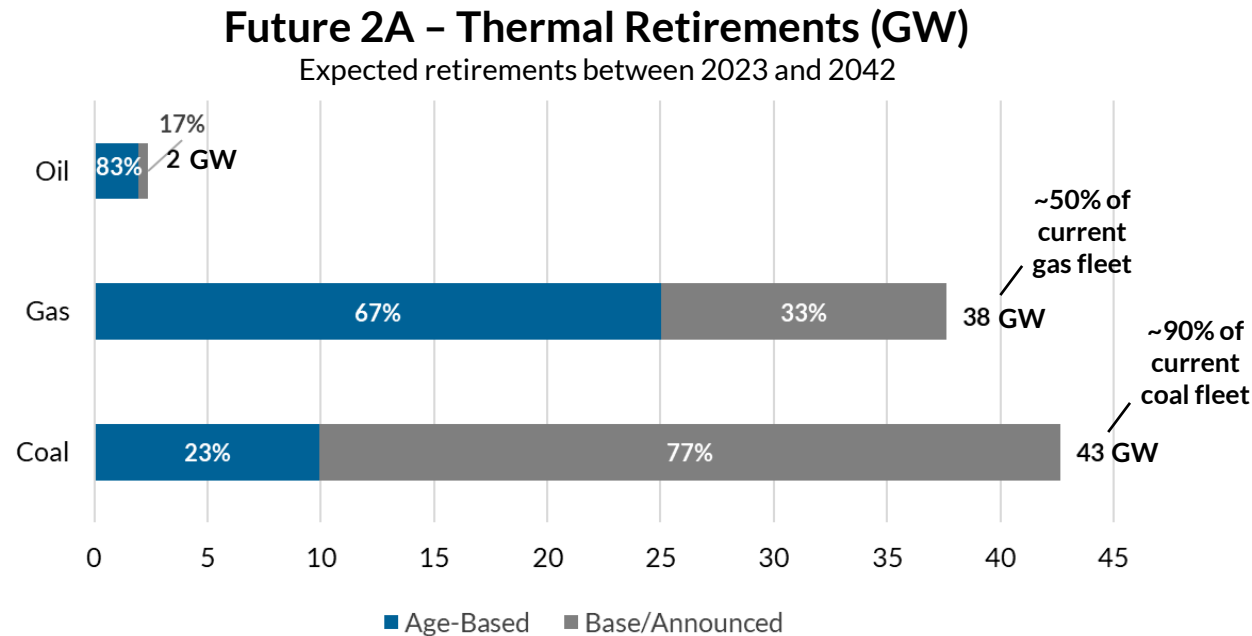


* Queue data as of November 7, 2023.

** Reasons for delay based on responses from a subset of delayed projects.

Policy direction is also driving Member plans to accelerate thermal unit retirements, and MISO needs to help the system avoid a mismatch between resource additions and retirements

- Member/state clean energy and decarbonization goals
- EPA regulations
 - Carbon Rule (proposed)
 - Good Neighbor Rule
- Inflation Reduction Act and Infrastructure Bill



Retirements can be accelerated by headwinds like EPA regulations, which may drive significant thermal resource reductions in 2032 and 2035 if key compliance deadlines occur.

MISO's latest reforms as well as FERC Order 2023 seek to further expedite the entry of new resources while providing increased visibility of generation retirements

Additions

- Increase milestone payments
- Increase site control requirements
- Change withdrawal provisions including automatic penalty
- Implement cap on size of Queue cycles with a narrow list of allowed exemptions
- Provide other improvements to Queue tools and processes

Retirements

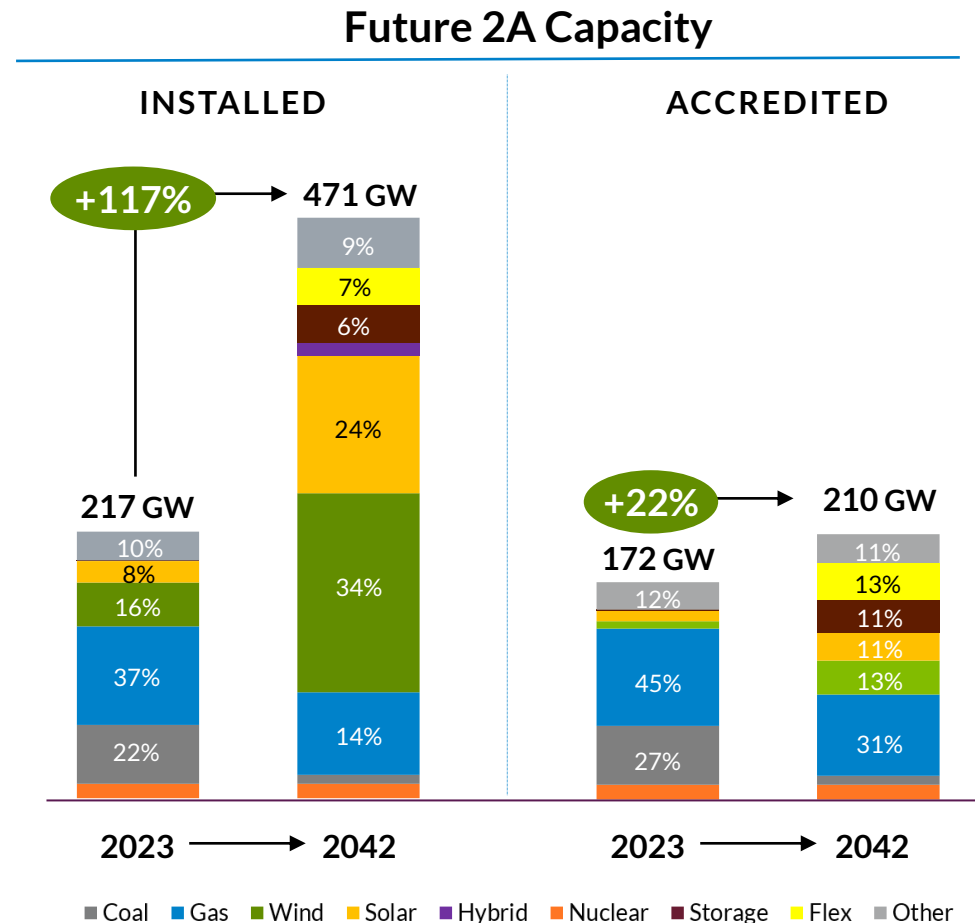
- Extend notice for retirement requests from 26 weeks to one year
- Conduct quarterly retirement studies to better forecast
- Better align with MTEP processes
- Increase transparency into active and approved requests

Tariff changes for Queue reform were filed November 3rd.

Work continues as intermittent resources with diminishing reliability attributes dominate the Queue, resulting in capacity differences and operational uncertainty issues that must be managed

Considerations for resource planning process changes

- **Entry:** Significant volume and processing of Queue for projects lacking critical attributes
- **Exit:** Ensure sufficient capacity and attributes during accelerated pace of retirements
- Ensure accreditation of resources reflect reliability contributions



Futures do not account for all operational-level reliability needs and attributes that may require different levels of resources. Resource additions may be subject to adjustment based on new accreditation rules. "Other" includes biomass, geothermal, hydro, oil, pumped hydro, demand response, and non-photovoltaic distributed generation (and energy efficiency for installed capacity).

MISO's Reliability Imperative includes several initiatives to address the changing and increasing resource adequacy risk



Engage with policy makers on the impact of fleet evolution and timing



Reduce the speculative volume in future queue cycles to preserve timeliness and effective outcomes



Align resource capabilities and accredited resource value with needs during the highest risk hours across the year



Provide increased visibility of generation retirements and additions



Identify, track and measure system reliability attributes, and ensure the provision of these attributes