Overview of PJM and Recent FERC Orders

Presented to the Energy Resilience and Efficiency Working Group of the Maryland Climate Change Commission

Matthew Bernstein, Senior Policy Advisor

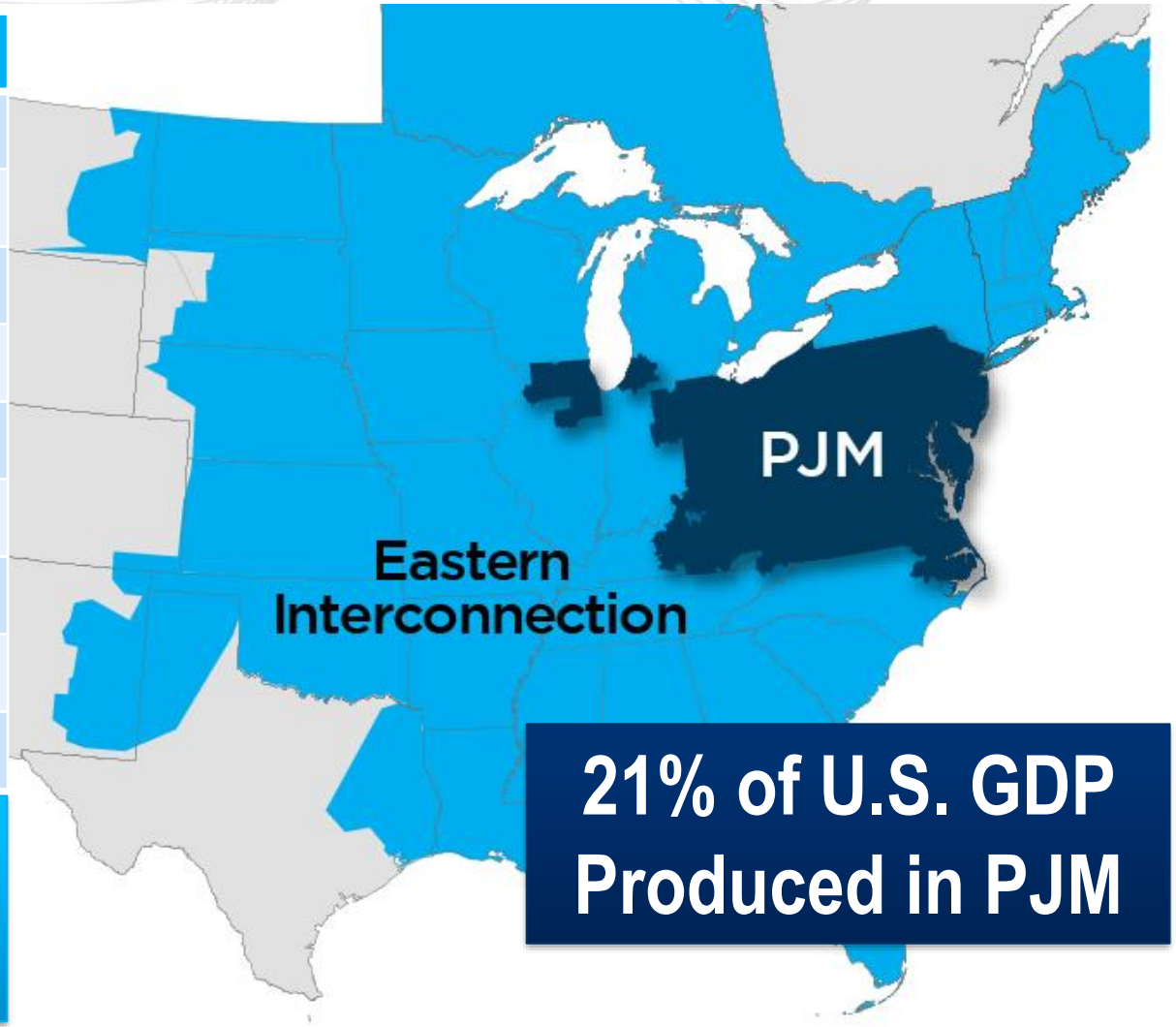
PJM Interconnection

July 16, 2024

PJM as Part of the Eastern Interconnection

Key Statistics	
Member companies	1,090
Millions of people served	65+
Peak load in megawatts	165,563
Megawatts of generating capacity	183,254
Miles of transmission lines	88,185
Gigawatt hours of annual energy	770
Generation sources	1,419
Square miles of territory	368,906
States served	13 + DC

- 26% of generation in Eastern Interconnection
- 25% of load in Eastern Interconnection
- 20% of transmission assets in Eastern Interconnection



As of 2/2024

PJM's Role as a Regional Transmission Organization

PLANNING

Planning for the future like...

OPERATIONS

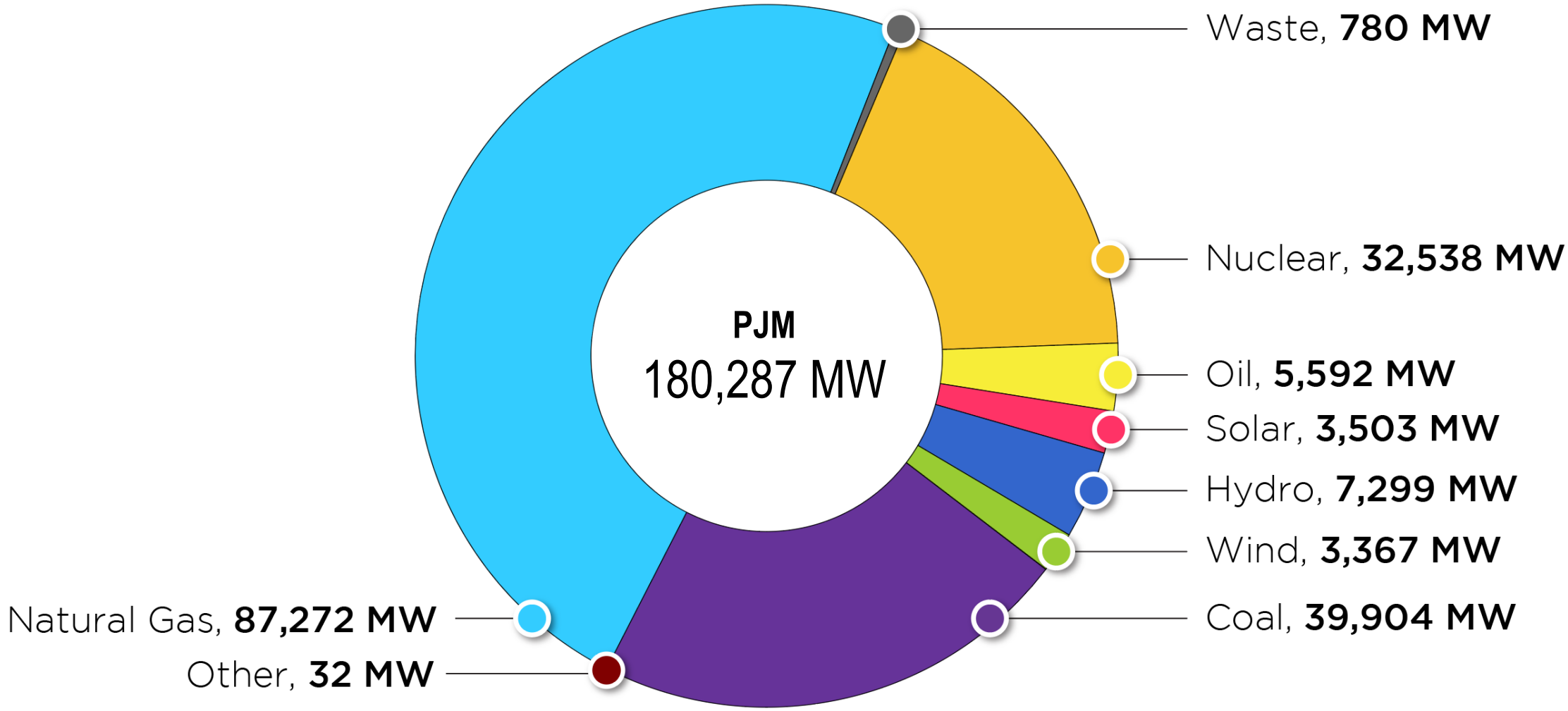
Matches supply with demand like...

MARKETS

Energy Market Pricing like...

PJM Existing Installed Capacity Mix

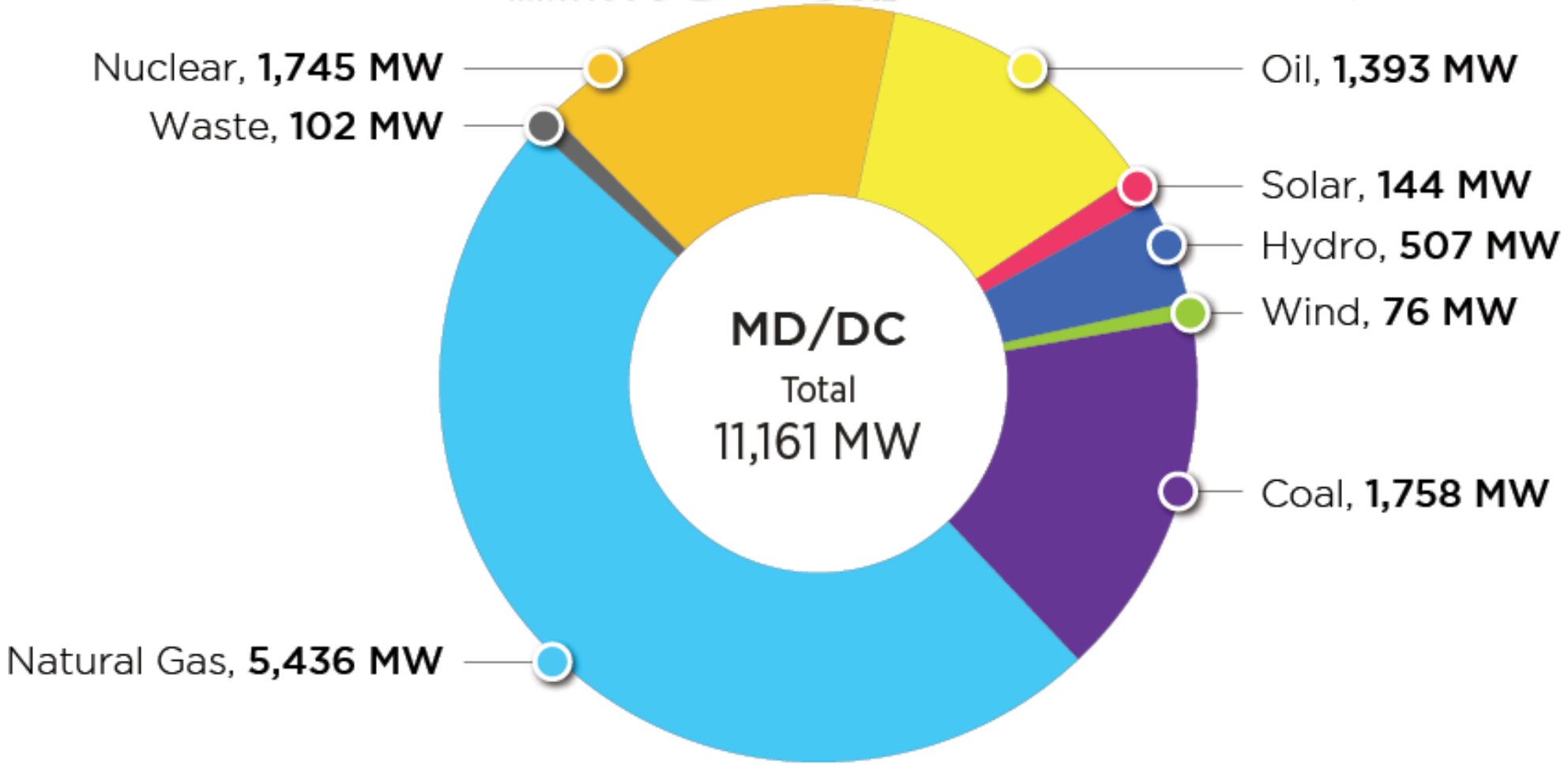
(Capacity for Resource Adequacy – as of Dec. 31, 2023)



Energy-only resources are also present on the PJM system but do not participate in PJM's capacity market.

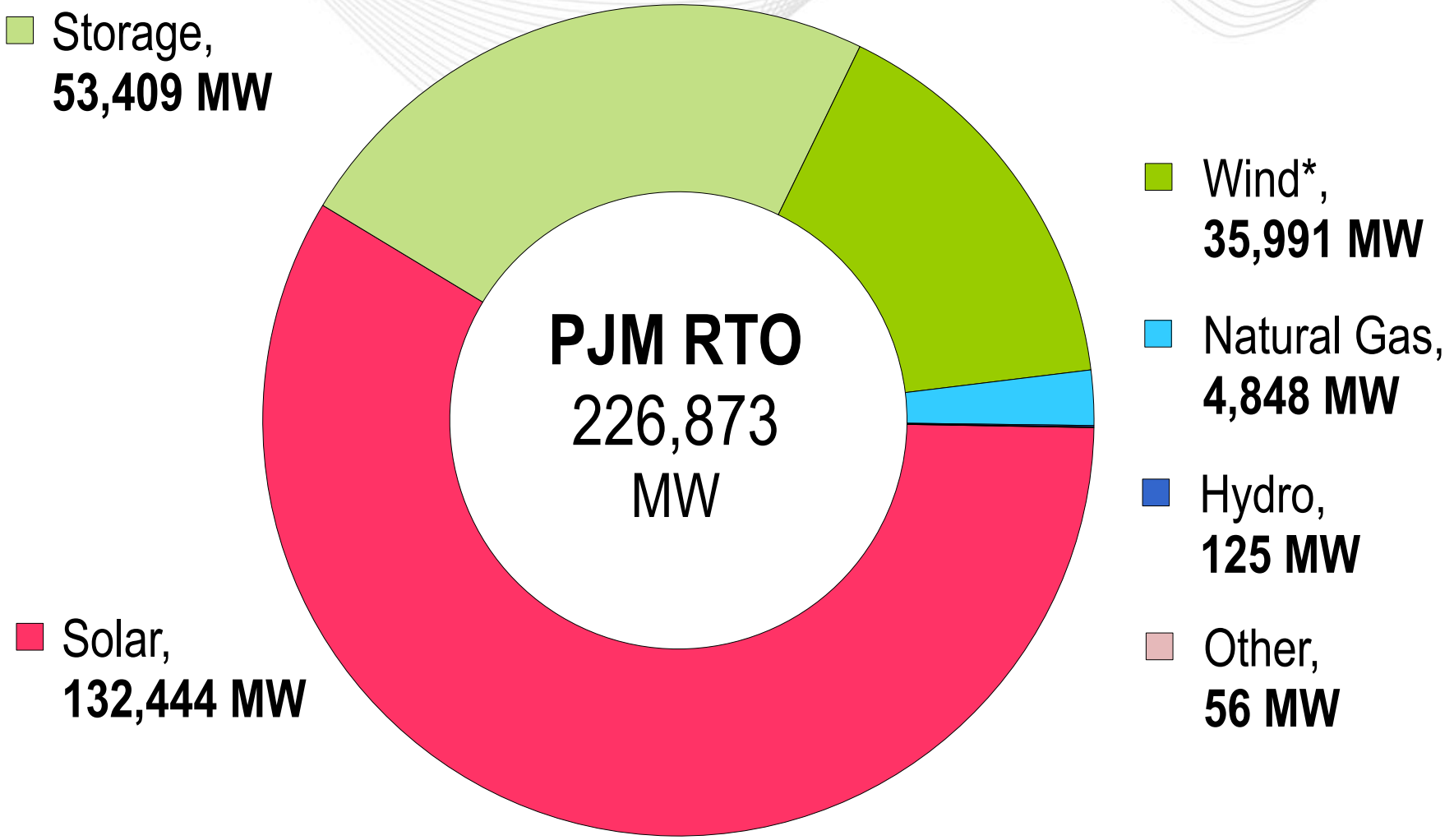
MD/DC – Existing Installed Capacity (MW) by Fuel Type

(Dec. 31, 2023)



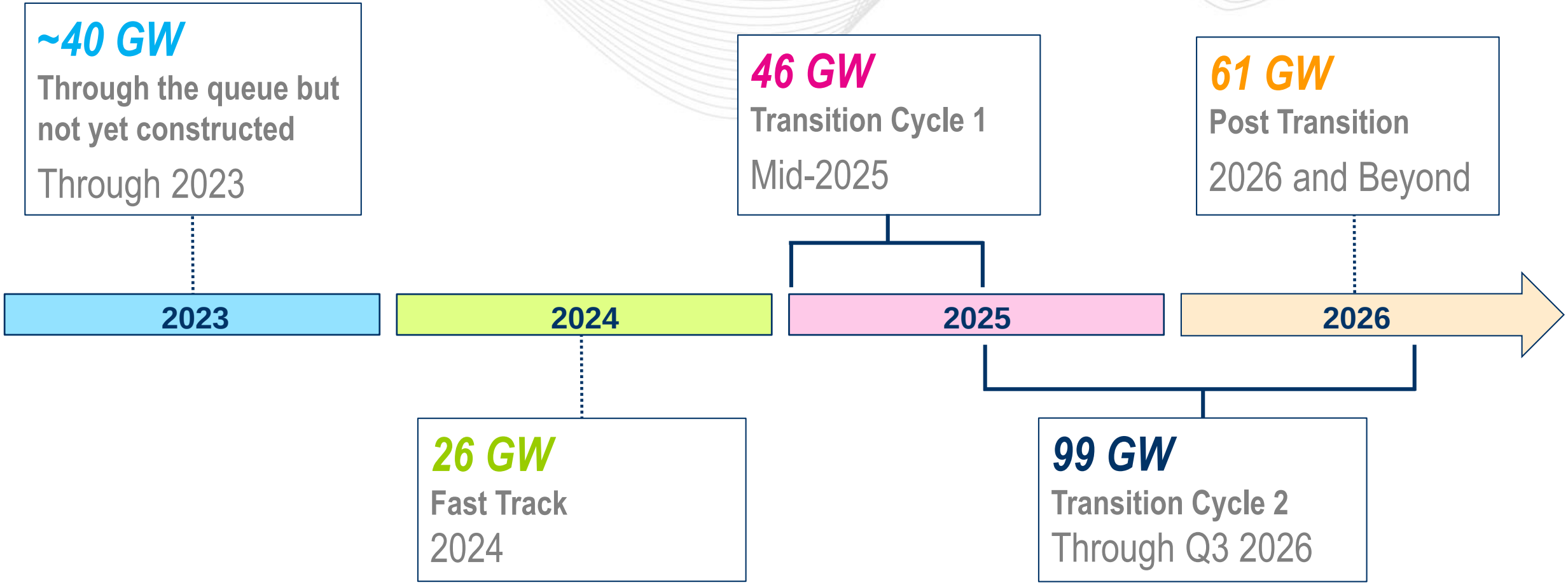
PJM Queued Capacity (Nameplate) by Fuel Type

("Active" in the PJM Queue as of April 1, 2024)



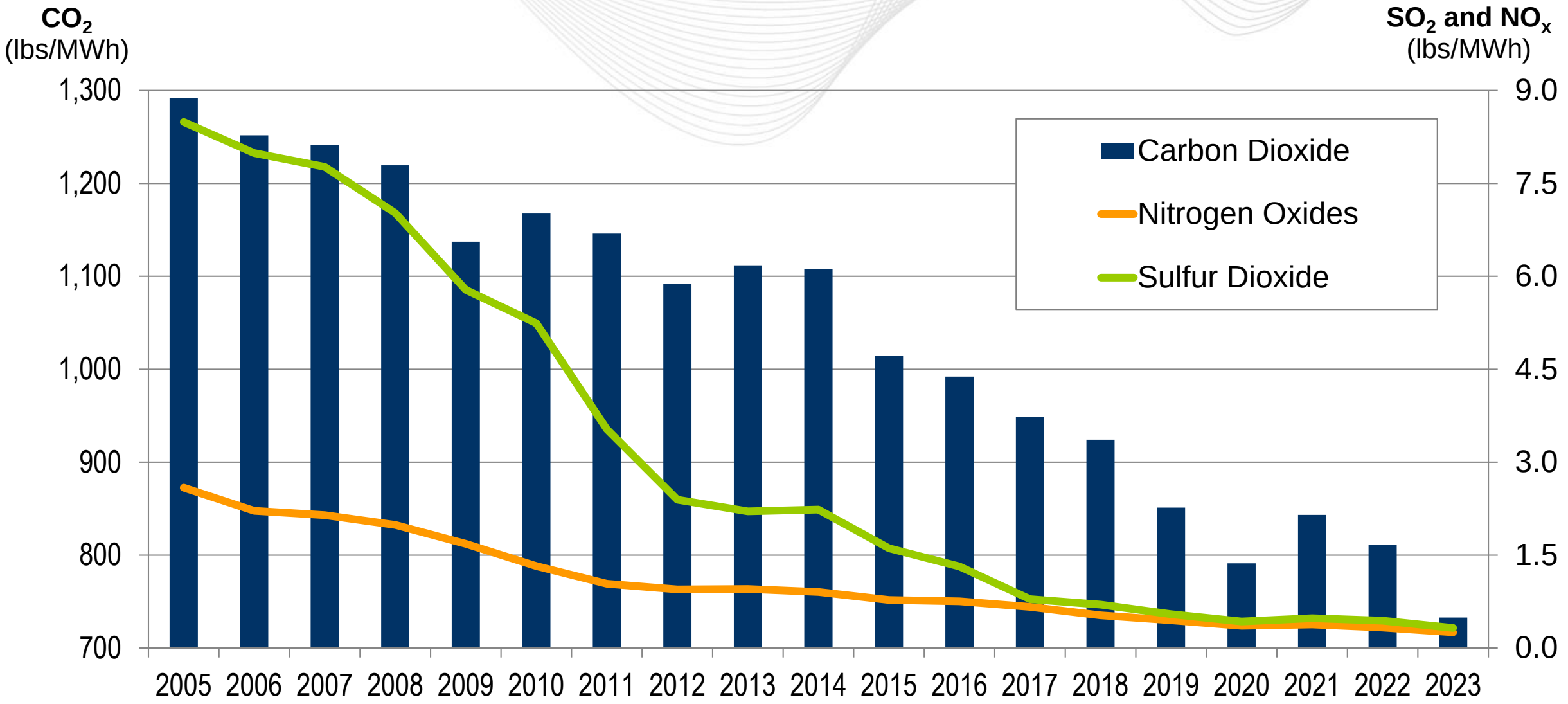
*Wind includes both onshore and offshore wind

PJM's Interconnection Queue Reform and Timeline



2005 – 2023 PJM Average Emissions (lbs/MWh)

(March 2024)



PJM's Deactivation Process

Generating source requests deactivation from PJM with a specified date.

PJM undertakes modeling analyses.

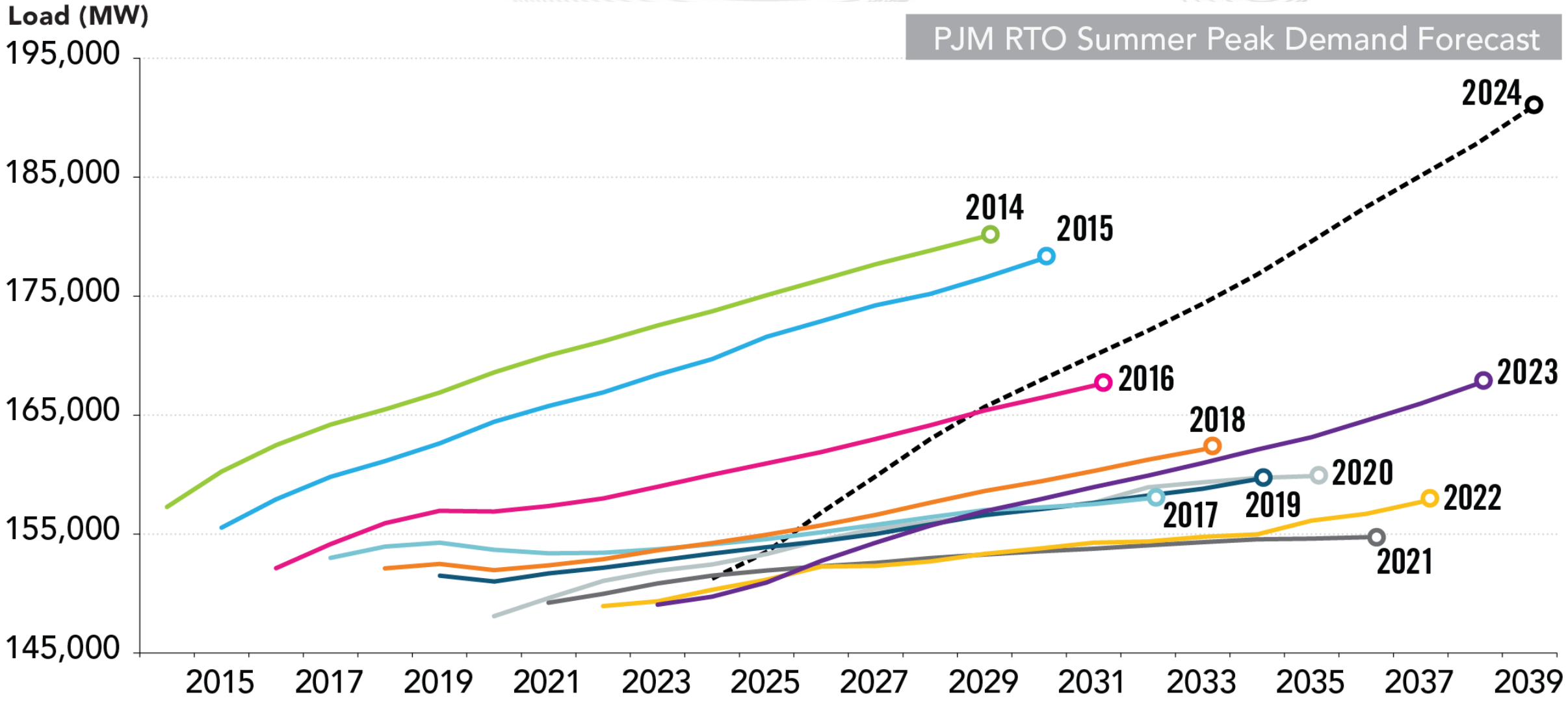
PJM notifies source of deactivation acceptability, or if issues exist, offers a Reliability Must Run (RMR) Agreement for specified time to implement necessary fixes.

RMR Agreement approved by FERC.

Working with affected Transmission Owners, new additions permitted, procured, constructed, tied-in and placed in service.

Generating unit deactivates.

PJM Electricity Demand Growth



FERC Order 1920 Overview

- On May 13 FERC issued Order No. 1920 on Long Term Planning

Engage in regional long-term transmission planning to identify transmission needs.	Develop processes and criteria, including enumerated benefits, for selecting transmission facilities to resolve those needs.	Devise and file ex ante cost allocation methods to apportion the cost of the facilities.

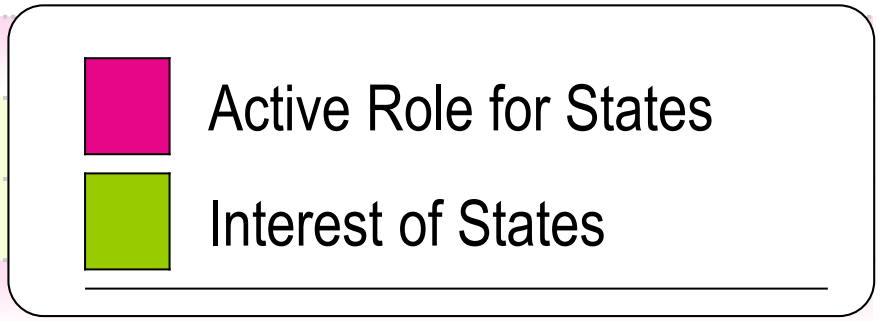
Transmission providers must develop at least three distinct long-term scenarios that utilize enumerated factor categories and a planning horizon of not less than 20 years.

Long-term scenarios must be reviewed and updated at least once every five years.

- Enhancing long-term planning is needed to maintain reliability affordably amid unprecedented future changes
- PJM has worked with stakeholders since 2022 on LTRTP

Order 1920 – State Roles and Interest

I	Long-Term Regional Transmission Planning
A	Requirement to participate in Long-Term Regional Transmission Planning
B	Development of Long-Term Scenarios
C	Long-Term Scenarios Requirements
D	Evaluation of the Benefits of Regional Transmission Facilities
E	Evaluation and Selection of Long-Term Regional Transmission Facilities
F	Implementation of LTRTP
II	Coordination of Regional Transmission Planning and Generator Interconnection Processes
III	Consideration of Dynamic Line Ratings and Advanced Power Flow Control Devices
IV	Regional Transmission Cost Allocation
V	Construction Work in Progress Incentive
VI	Exercise of a Federal Right of First Refusal in Commission-Jurisdictional Tariffs and Agreements
VII	Local Transmission Planning Inputs in the Regional Transmission Planning Process
VIII	Interregional Transmission Coordination
IX	Compliance Procedures

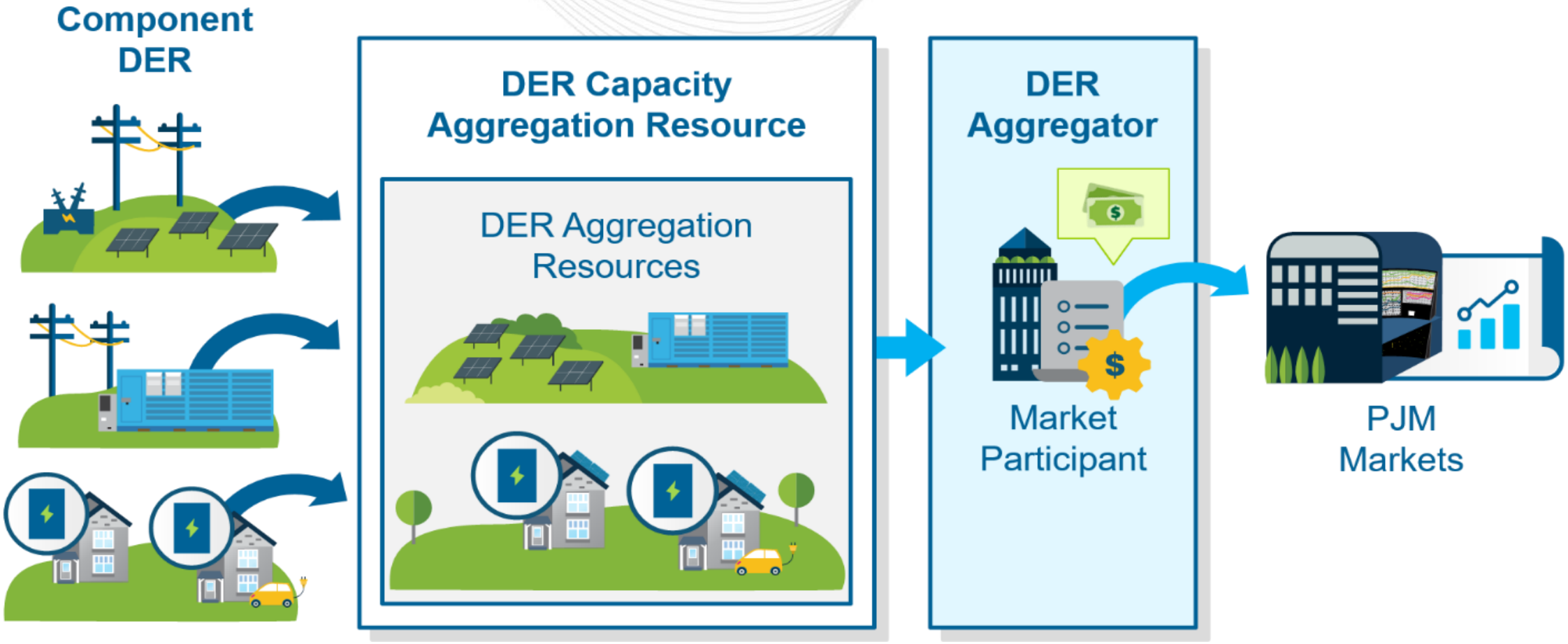


FERC Order 2222

FERC in September 2020 issued Order 2222 – directs PJM and other bulk power system operators to create market rules enabling the participation of distributed energy resource aggregations in the wholesale energy, capacity and ancillary services markets.

- Following extensive stakeholder engagement, PJM filed a comprehensive proposal Feb. 1, 2022.
- PJM's proposed effective dates for Order 2222 is February 1, 2026 and July 1, 2025 (capacity market provisions only).

Order 2222 Participation Model



Ensuring a Reliable Energy Transition

PJM has a dedicated landing page to track various initiatives related to the energy transition occurring at PJM and within the PJM stakeholder community.

"Ensuring a Reliable Energy Transition" can be accessed on the pjm.com homepage.

Contact

Presenter:
Matthew Bernstein,
Matthew.Bernstein@pjm.com

Presented to the Maryland Climate Change Commission's Energy Resilience and Efficiency Working Group

Member Hotline

(610) 666-8980

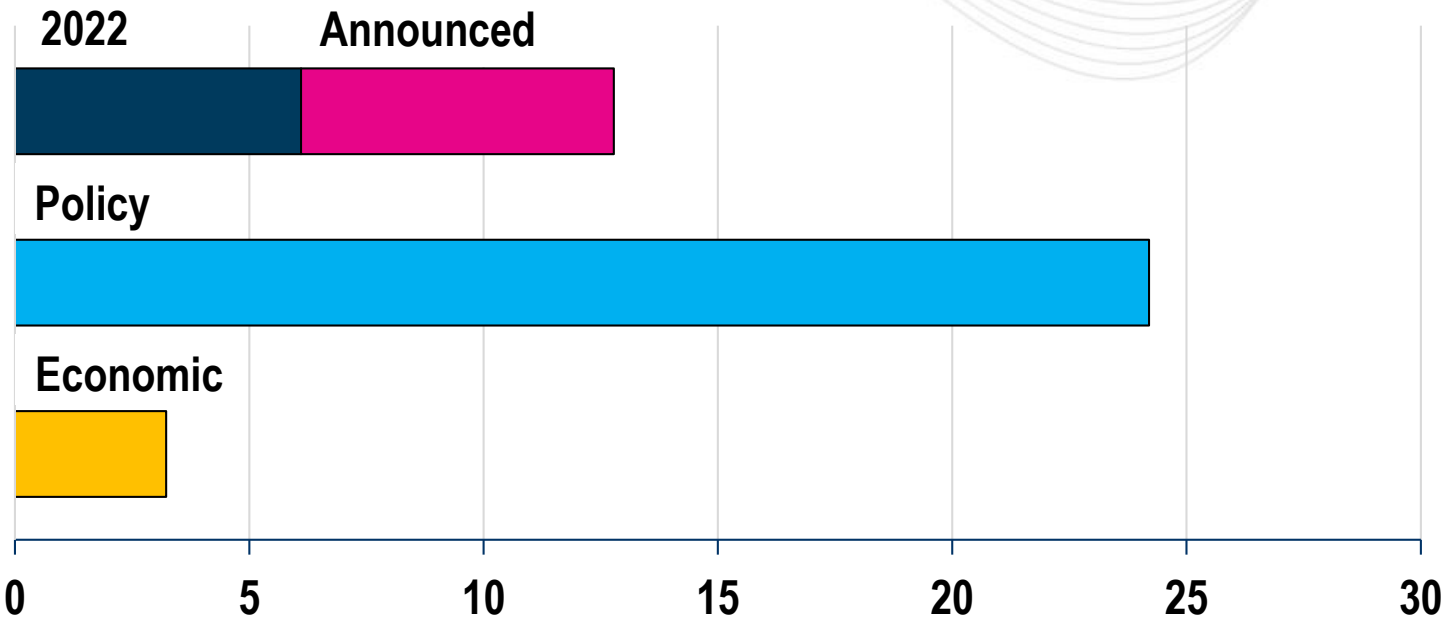
(866) 400-8980

custsvc@pjm.com

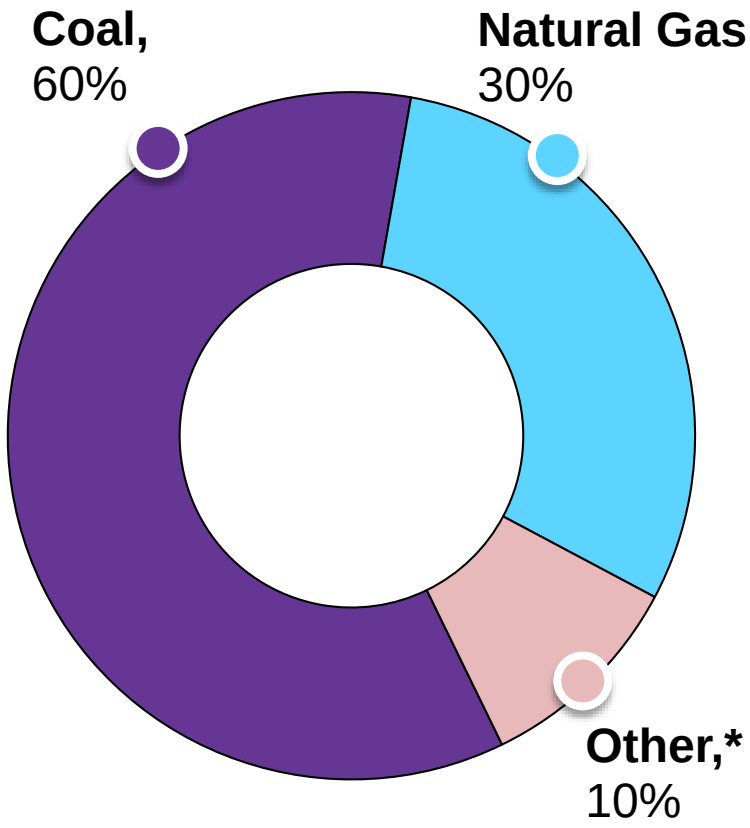
Appendix

Forecasted Retirements (2022–2030)

Total Forecasted Retirement Capacity (GW)



This **40 GW** represents
21% of PJM's current
192 GW of installed generation



*Other includes diesel, etc.