PJM Introduction
and
Ensuring a Reliable Energy Transition

Maryland Senate Education, Energy & Environment Committee

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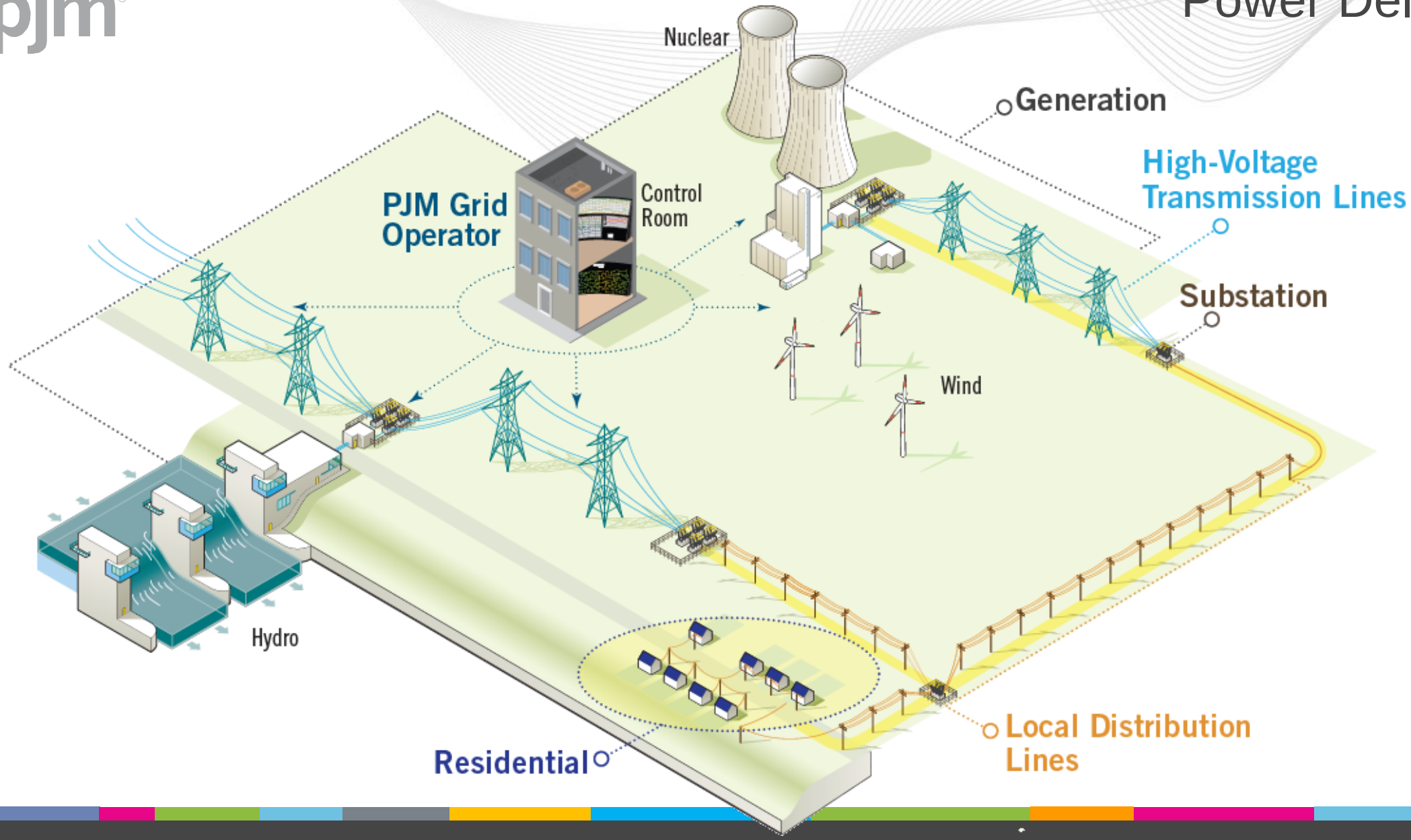
SVP, State Policy and Member Services

January 11, 2024

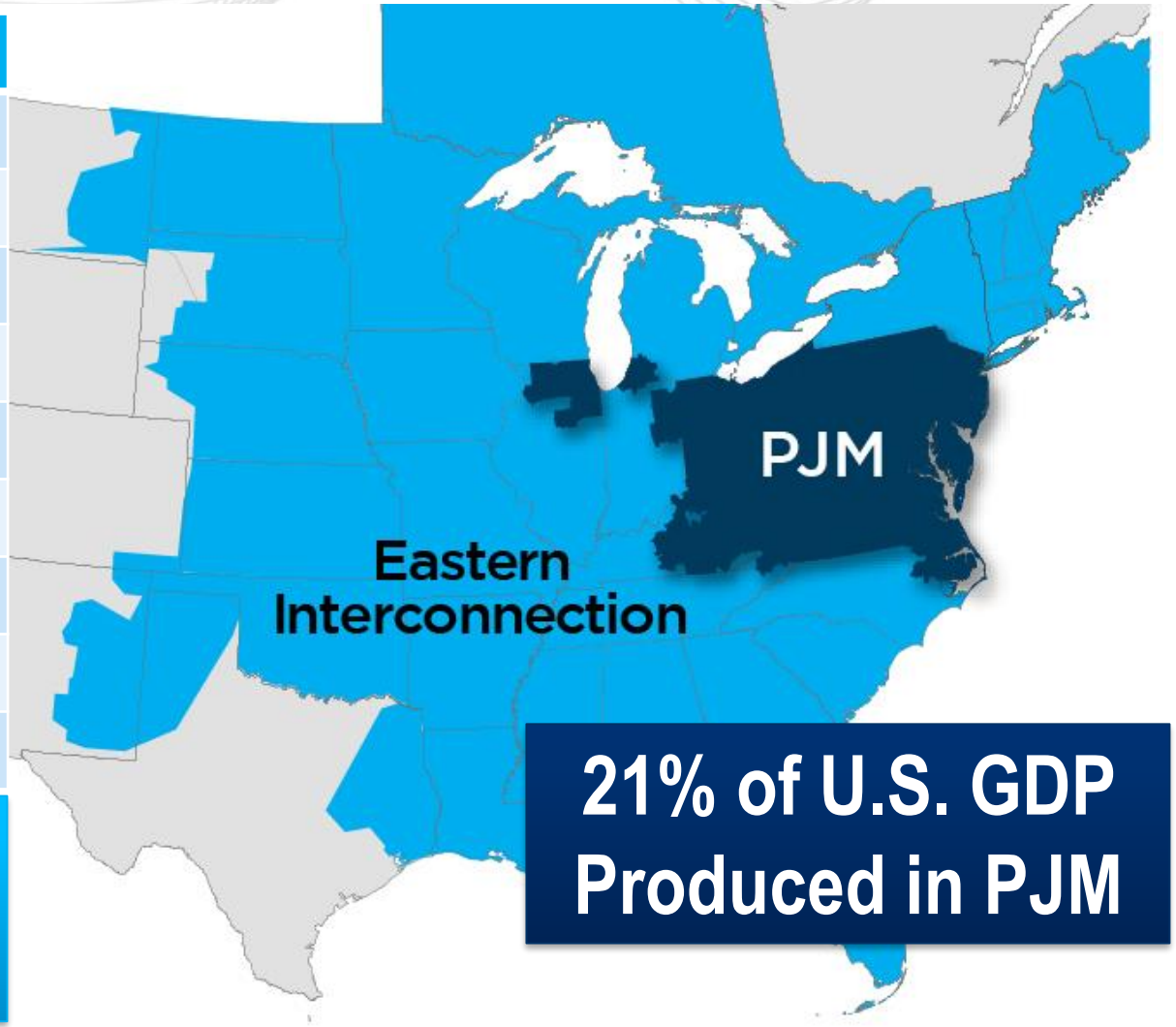
Power Delivery



PJM as Part of the Eastern Interconnection

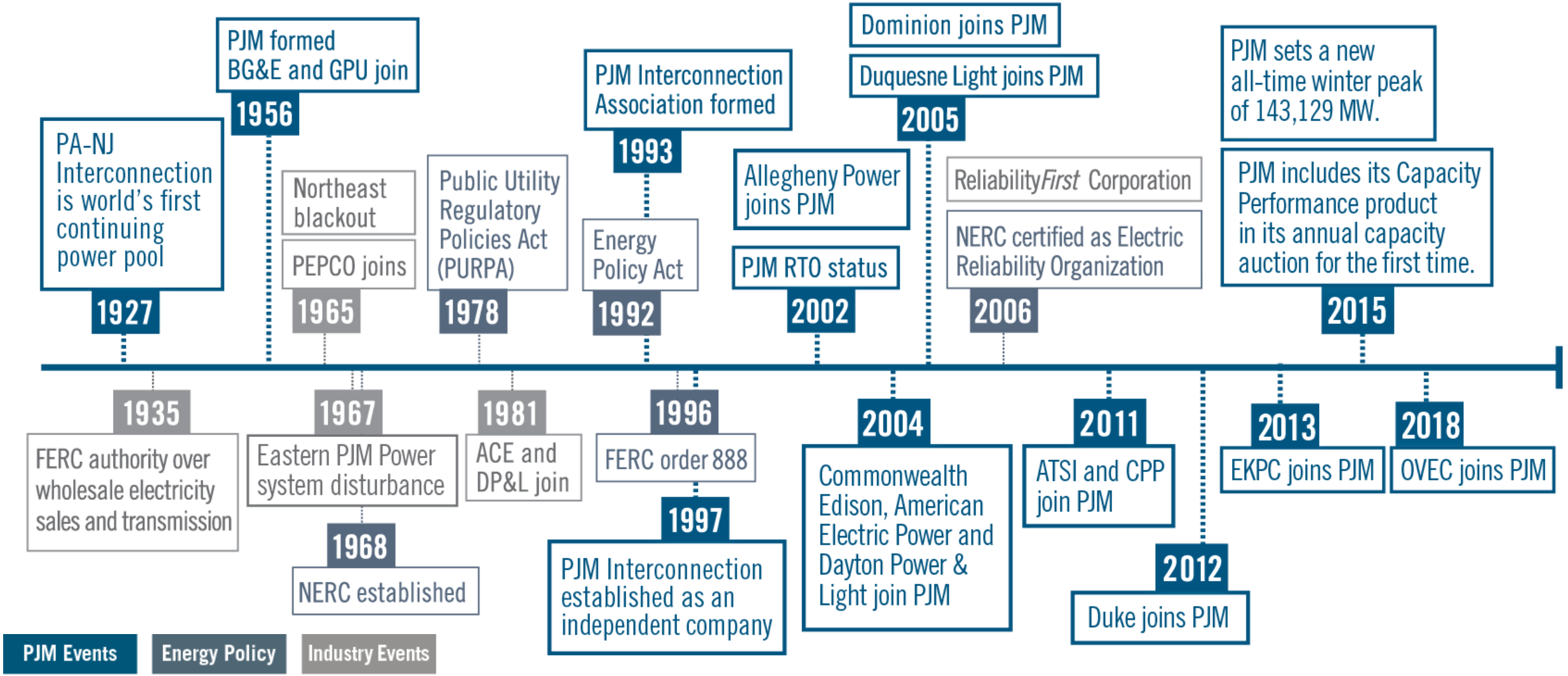
Key Statistics	
Member companies	1,110+
Millions of people served	65+
Peak load in megawatts	165,563
Megawatts of generating capacity	183,254
Miles of transmission lines	88,115
Gigawatt hours of annual energy	795
Generation sources	1,419
Square miles of territory	368,906
States served	13 + DC

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



As of 2/2023

The History of PJM



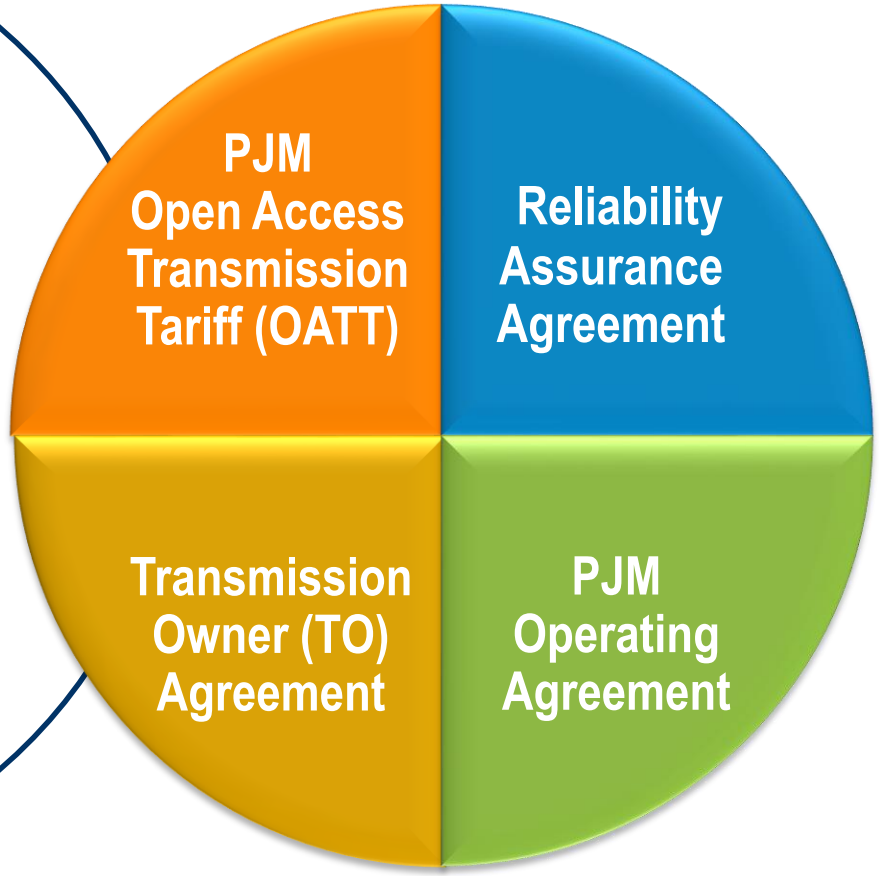
How Is PJM Different from Other Utility Companies?

PJM Does:

- Direct operation of the transmission system
- Remain profit-neutral
- Maintain independence from PJM members
- Coordinate maintenance of grid facilities

PJM Does *NOT:*

- Own any transmission or generation assets
- Function as a publicly traded company with shareholders and concerns around “earnings”
- Perform maintenance on generators or transmission systems (e.g., repair power lines)
- Serve or direct any end-use customers (retail)



PJM – Primary Focus

PJM's Role as a Regional Transmission Organization

PLANNING

Planning for the future like...

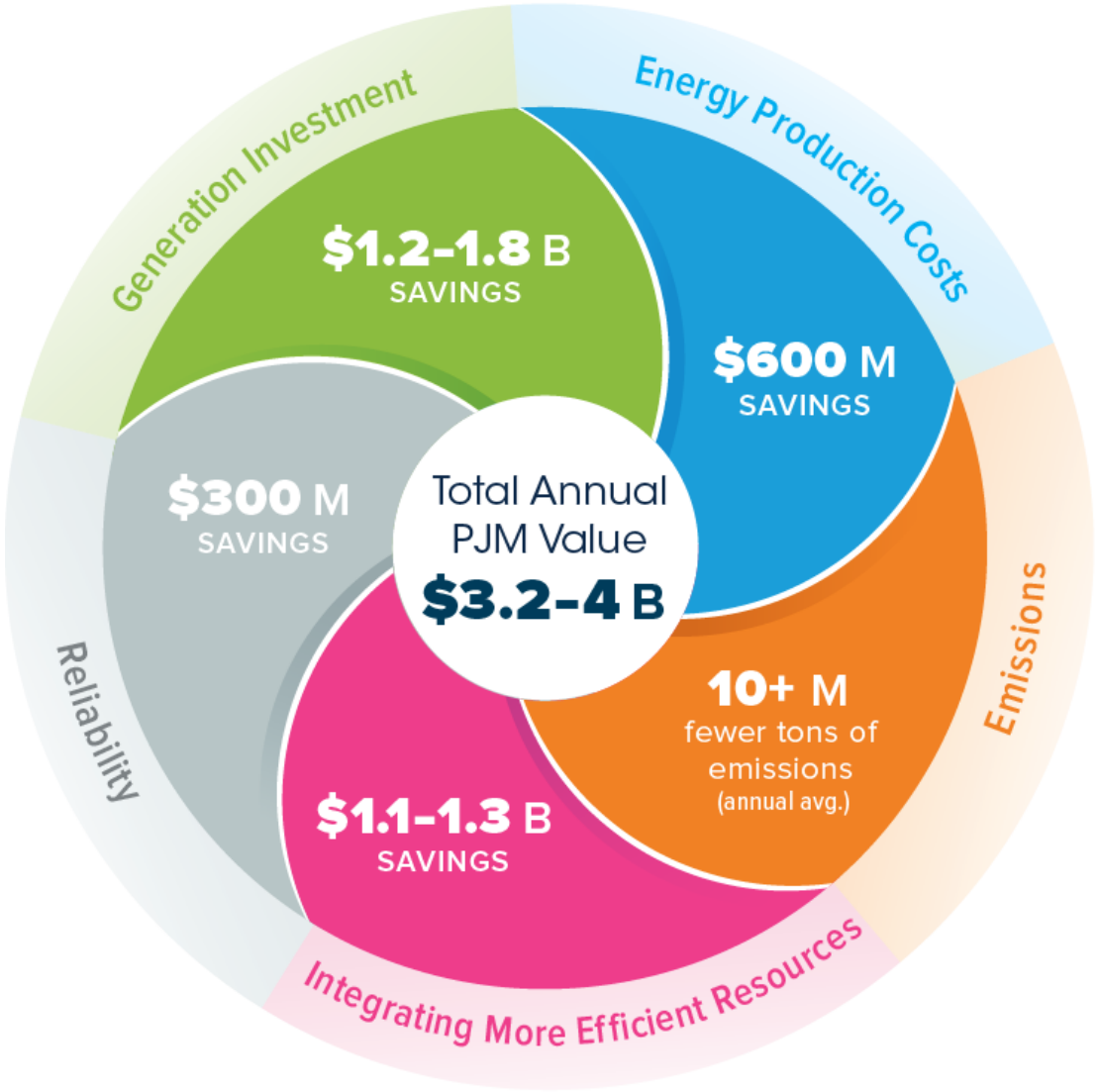
OPERATIONS

Matches supply with demand like...

MARKETS

Energy Market Pricing like...

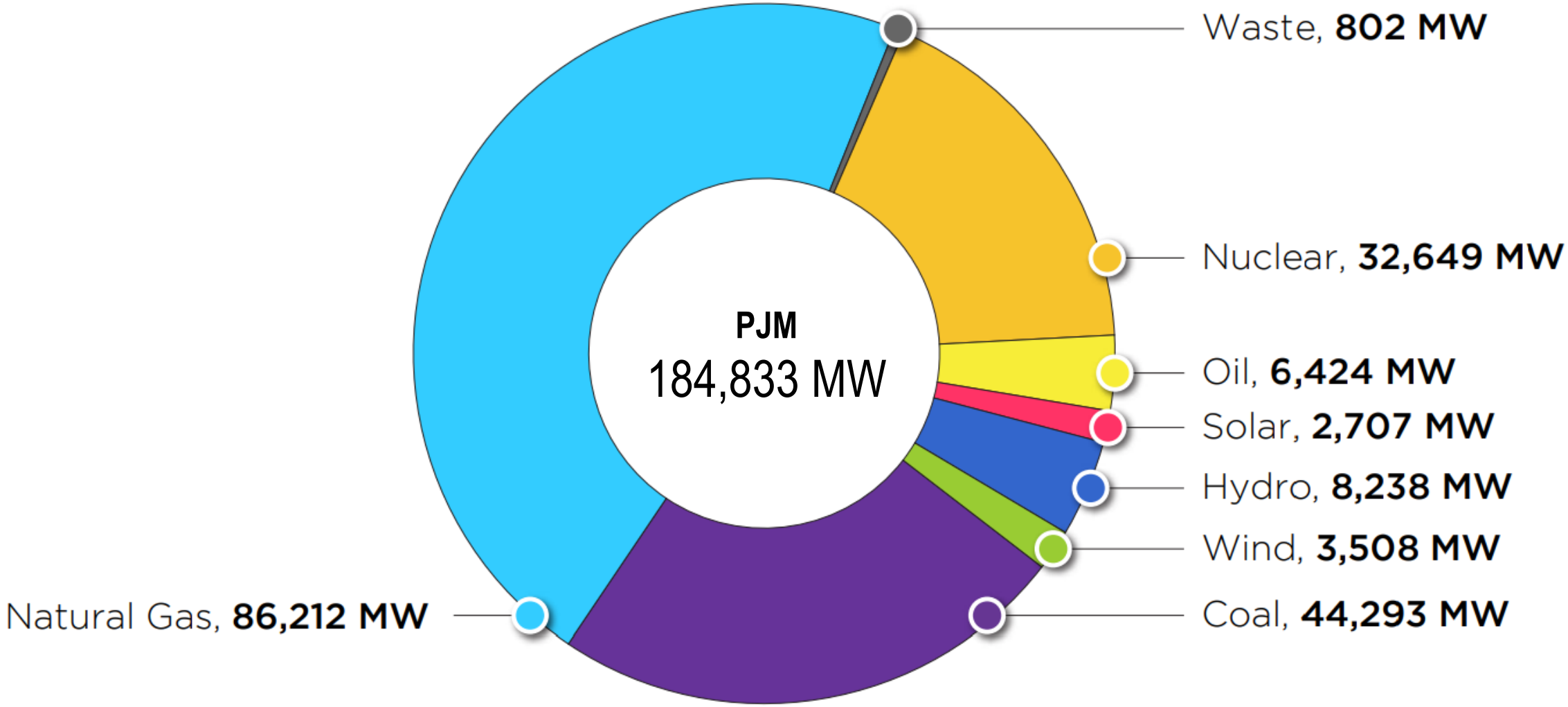
Consumer Savings Value Proposition



All numbers are estimates.

PJM – Existing Installed Capacity

(CIRs – as of Dec. 31, 2022)



Maryland – Existing Installed Capacity

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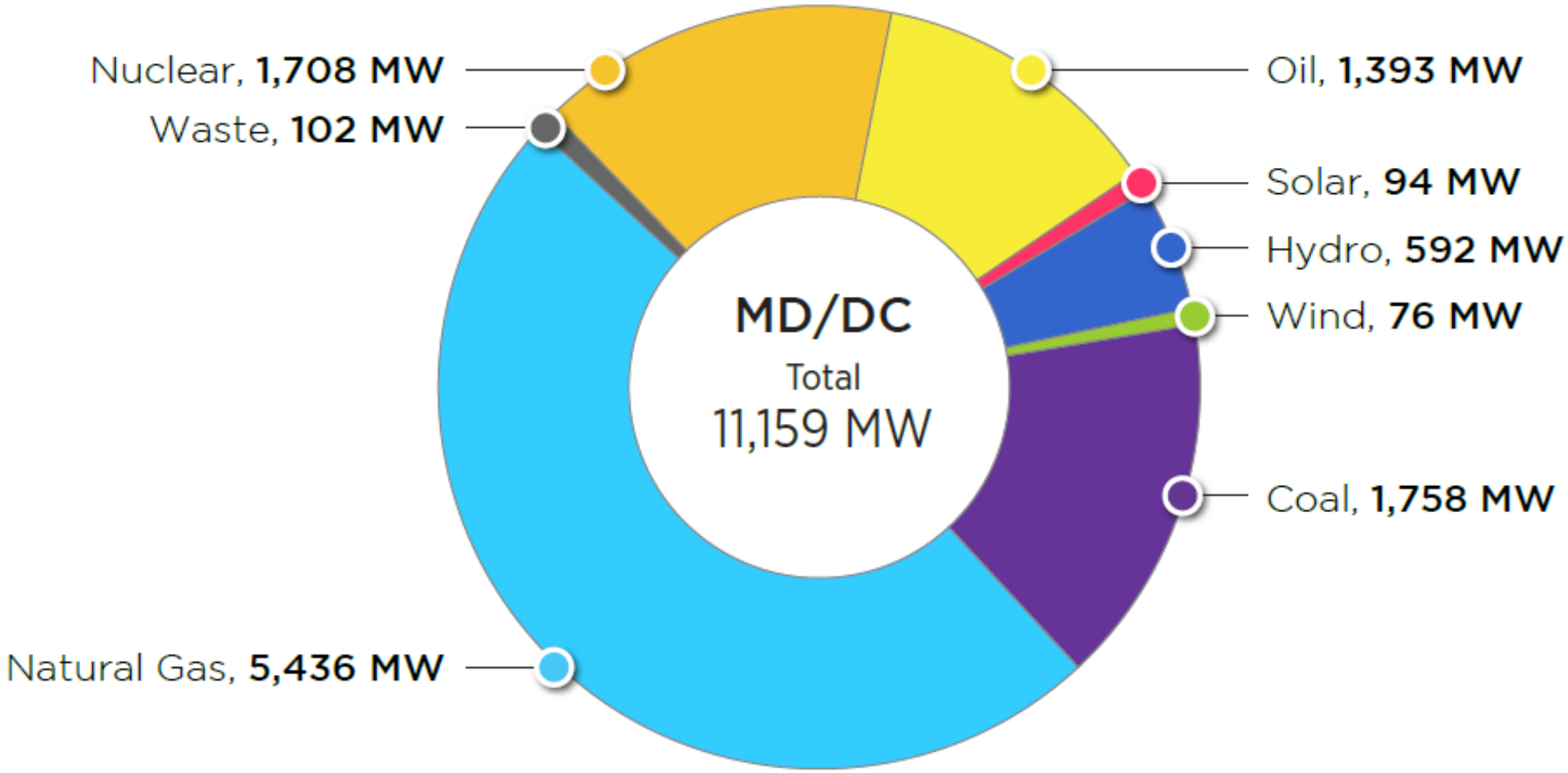
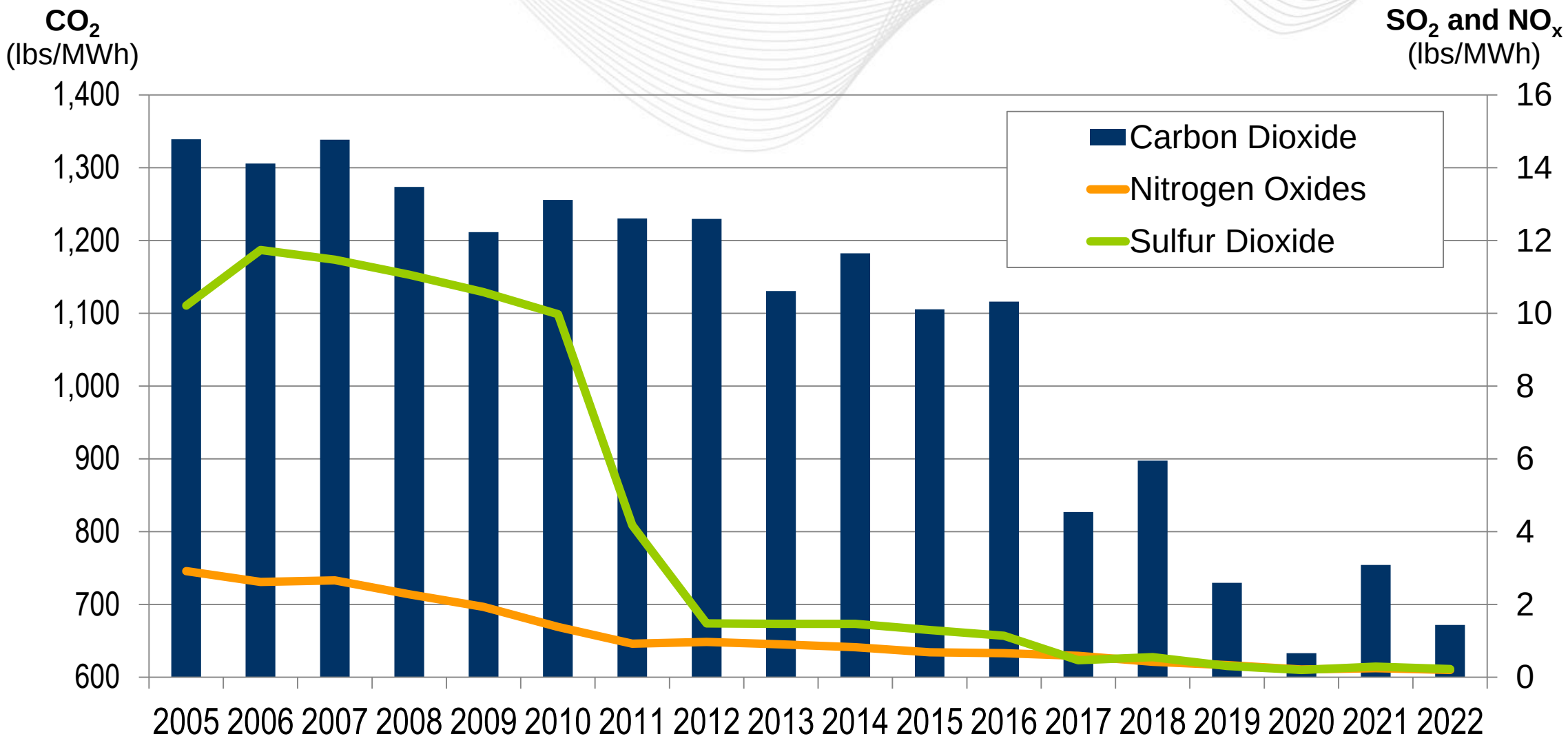


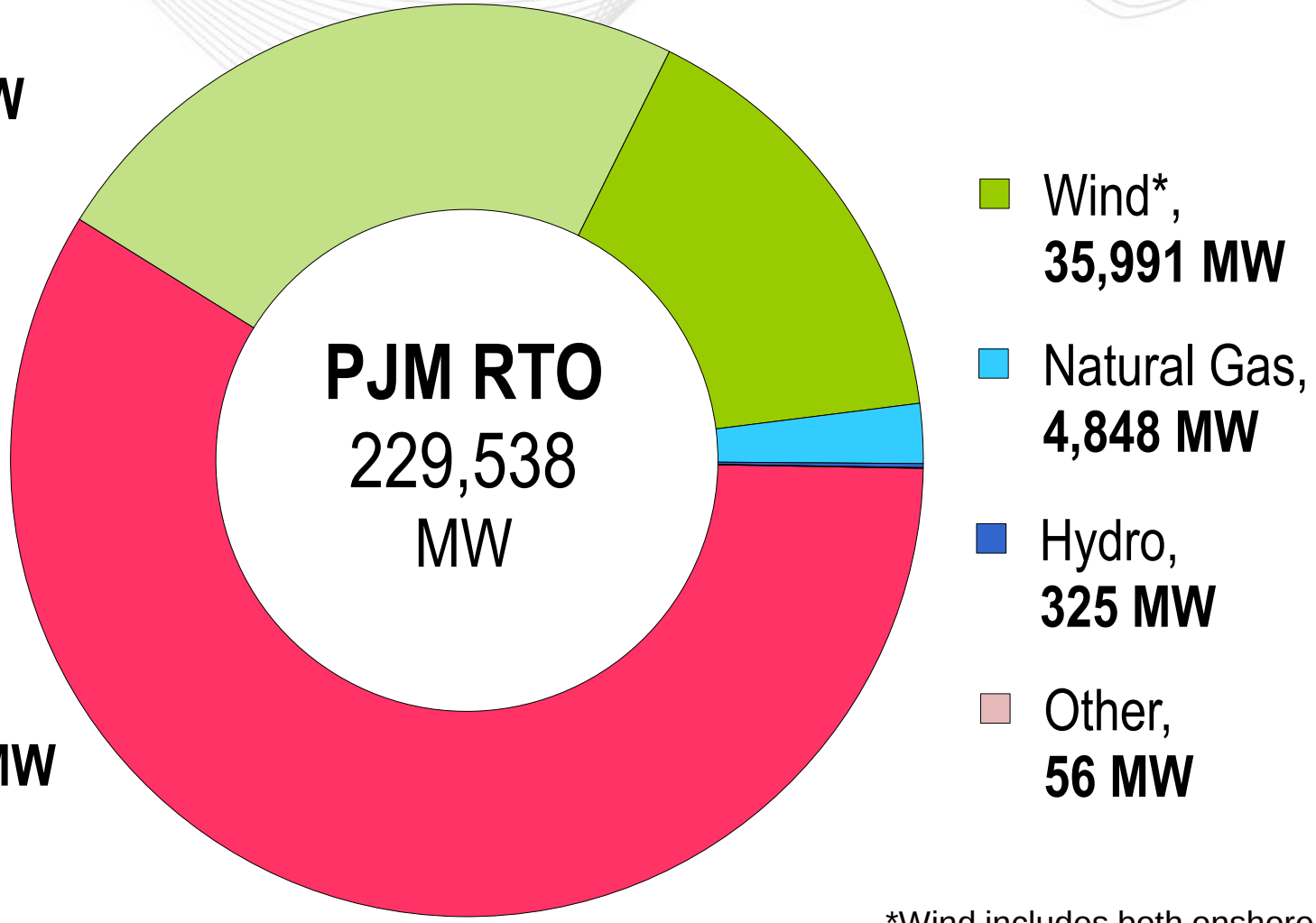
Maryland – Average Emissions (lbs/MWh)

(March 2023)



PJM Queued Capacity (Nameplate) by Fuel Type

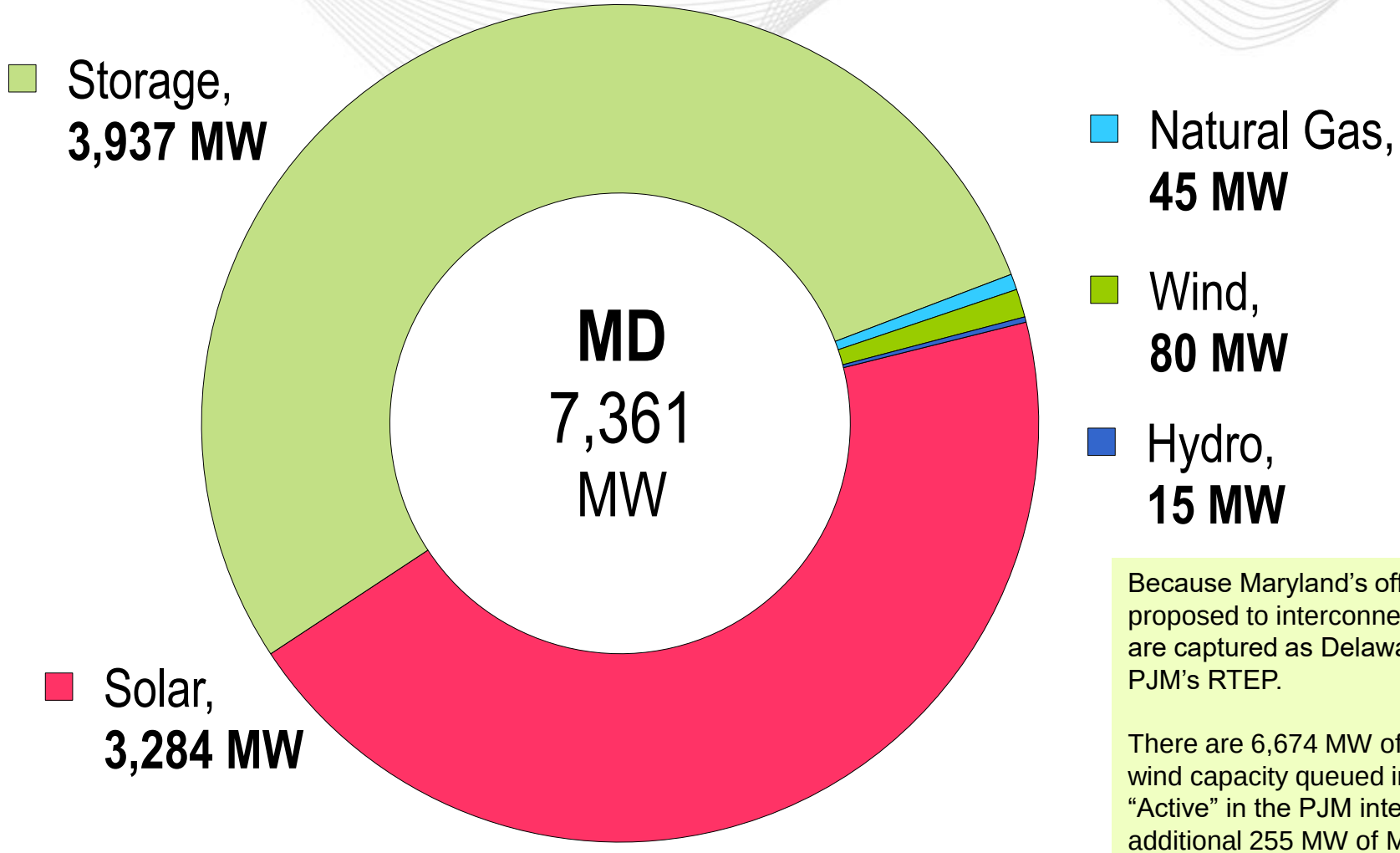
("Active" in the PJM Queue as of Dec. 31, 2023)



*Wind includes both onshore and offshore wind

Maryland Queued Capacity (Nameplate) by Fuel Type

("Active" in the PJM Queue as of Dec. 31, 2023)



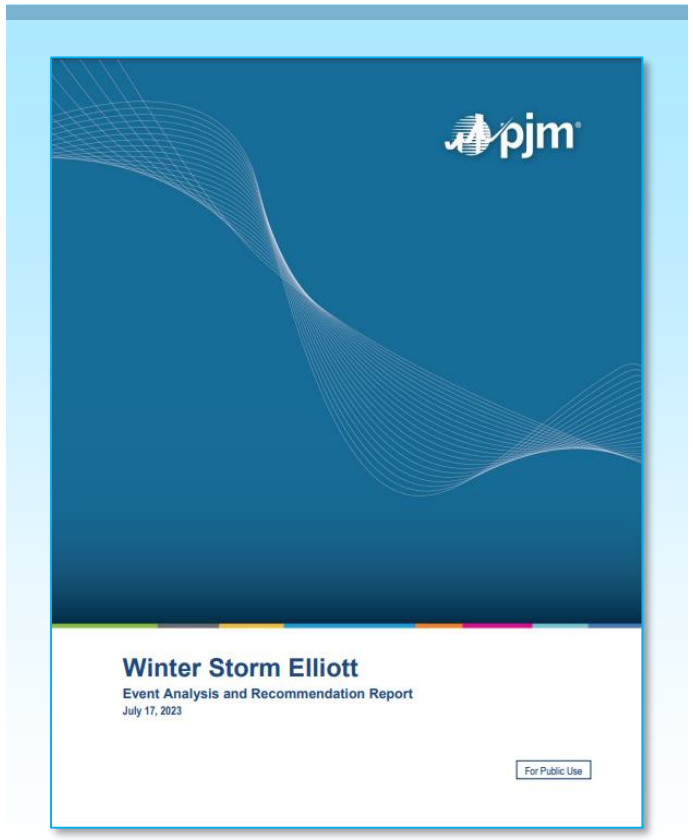
Because Maryland's offshore wind projects are proposed to interconnect into Delaware, they are captured as Delaware's queued capacity in PJM's RTEP.

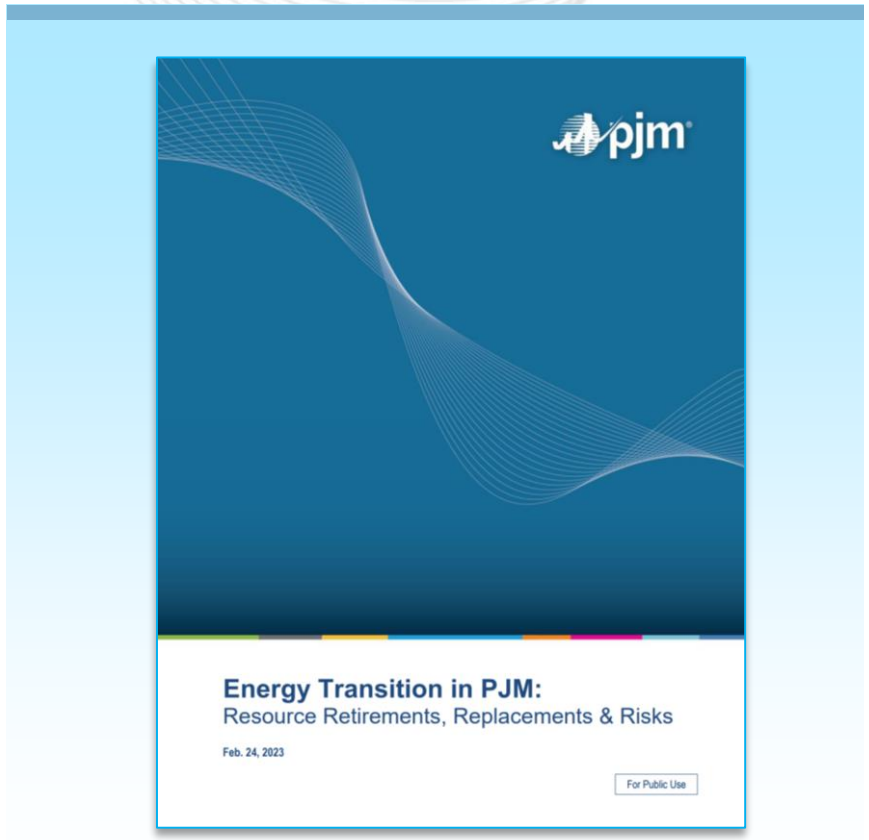
There are 6,674 MW of nameplate offshore wind capacity queued in Delaware currently "Active" in the PJM interconnection queue. An additional 255 MW of Maryland offshore wind has signed an interconnection agreement.

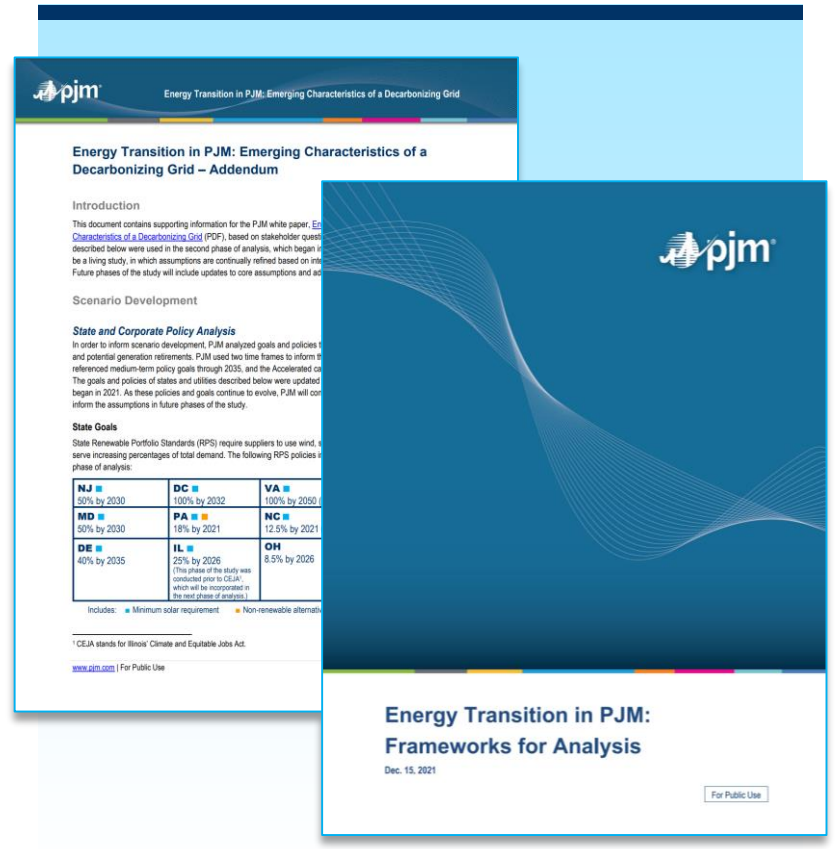
PJM Strategic Pillars

Reliably And Cost Effectively

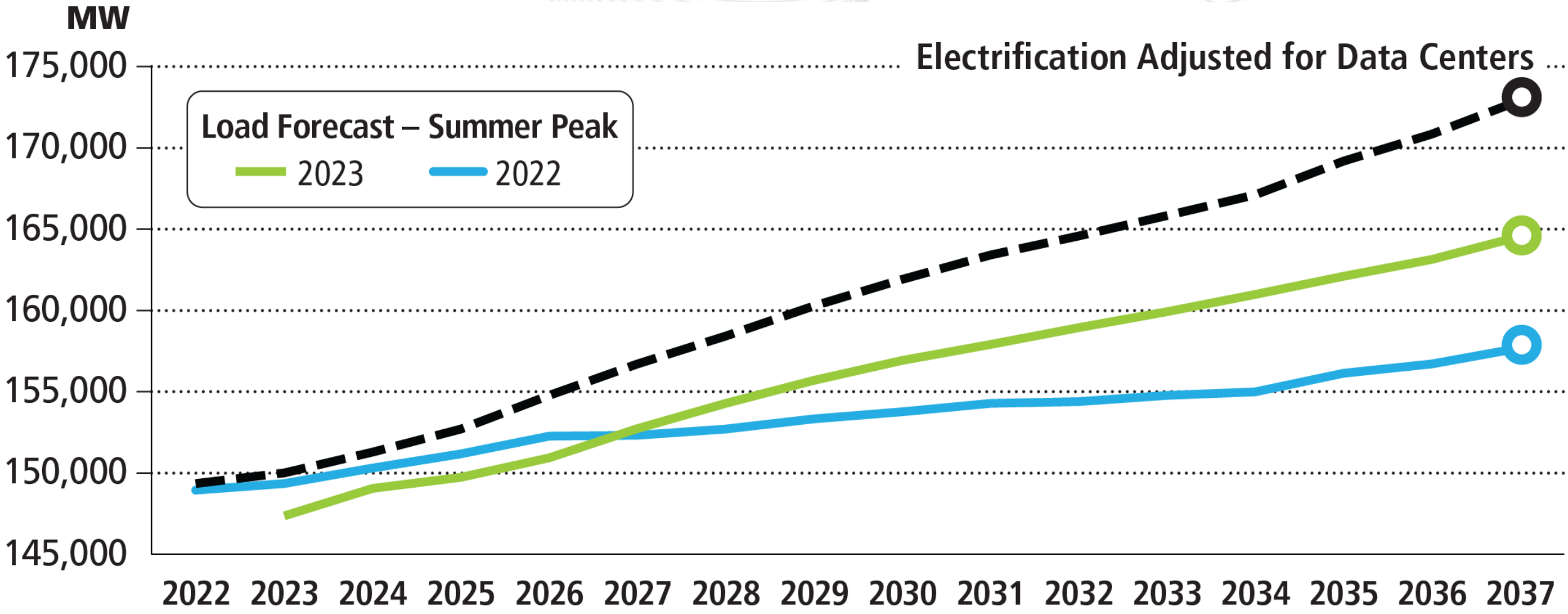
Reliability Papers and Studies





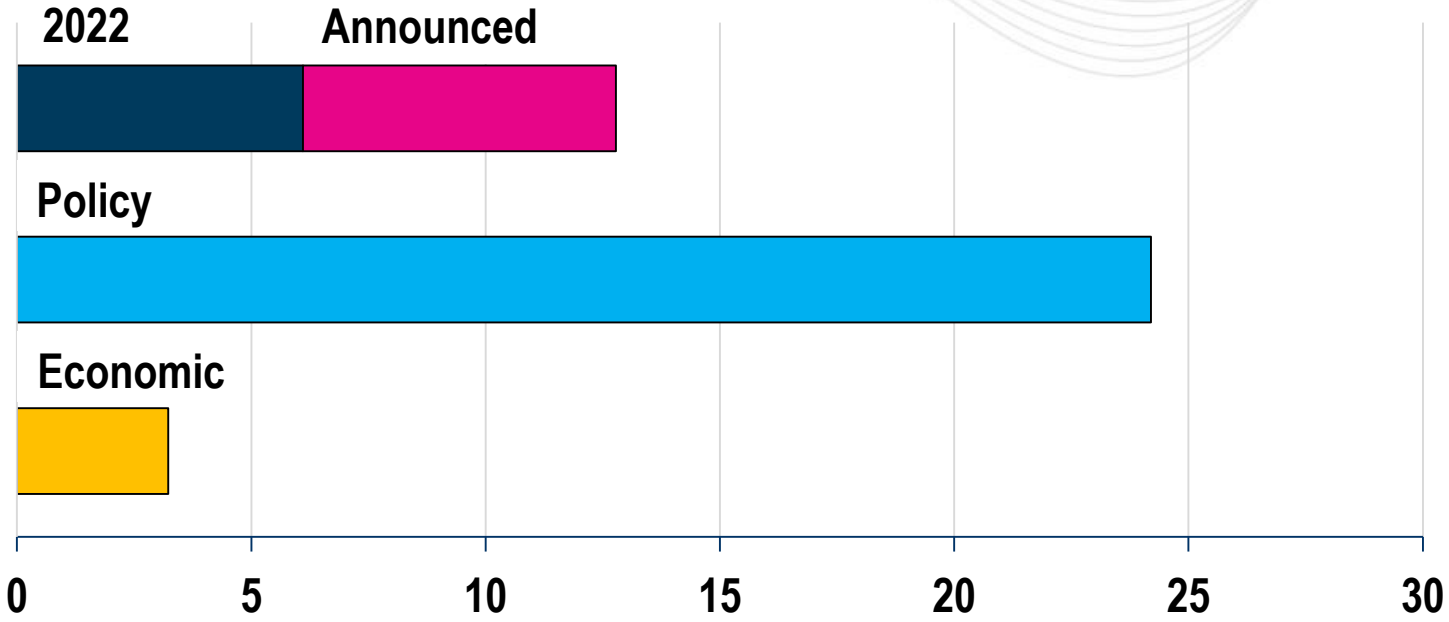


Load Growth Forecasts

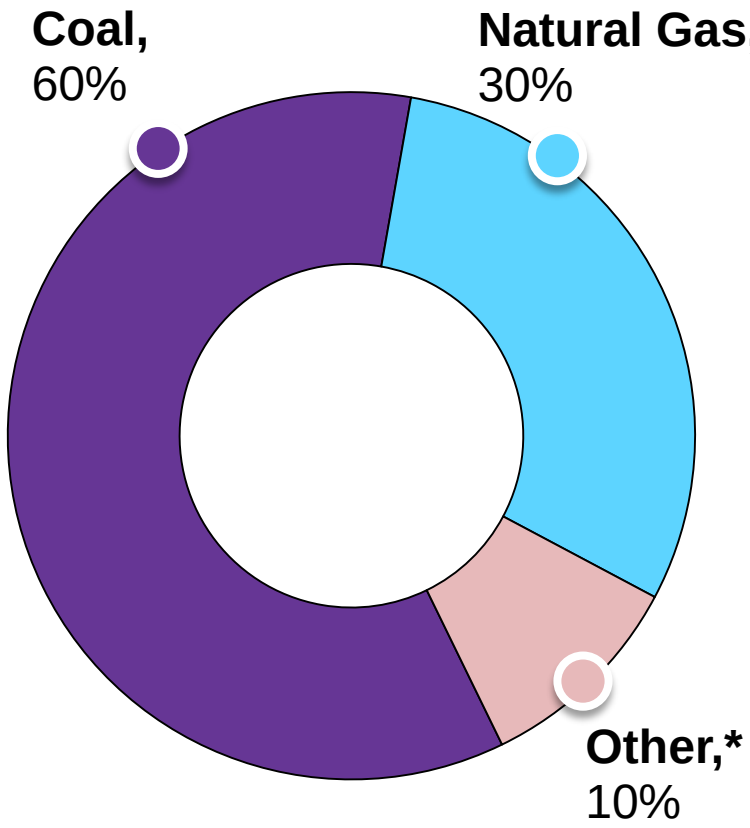


Forecasted Retirements (2022–2030)

Total Forecasted Retirement Capacity (GW)

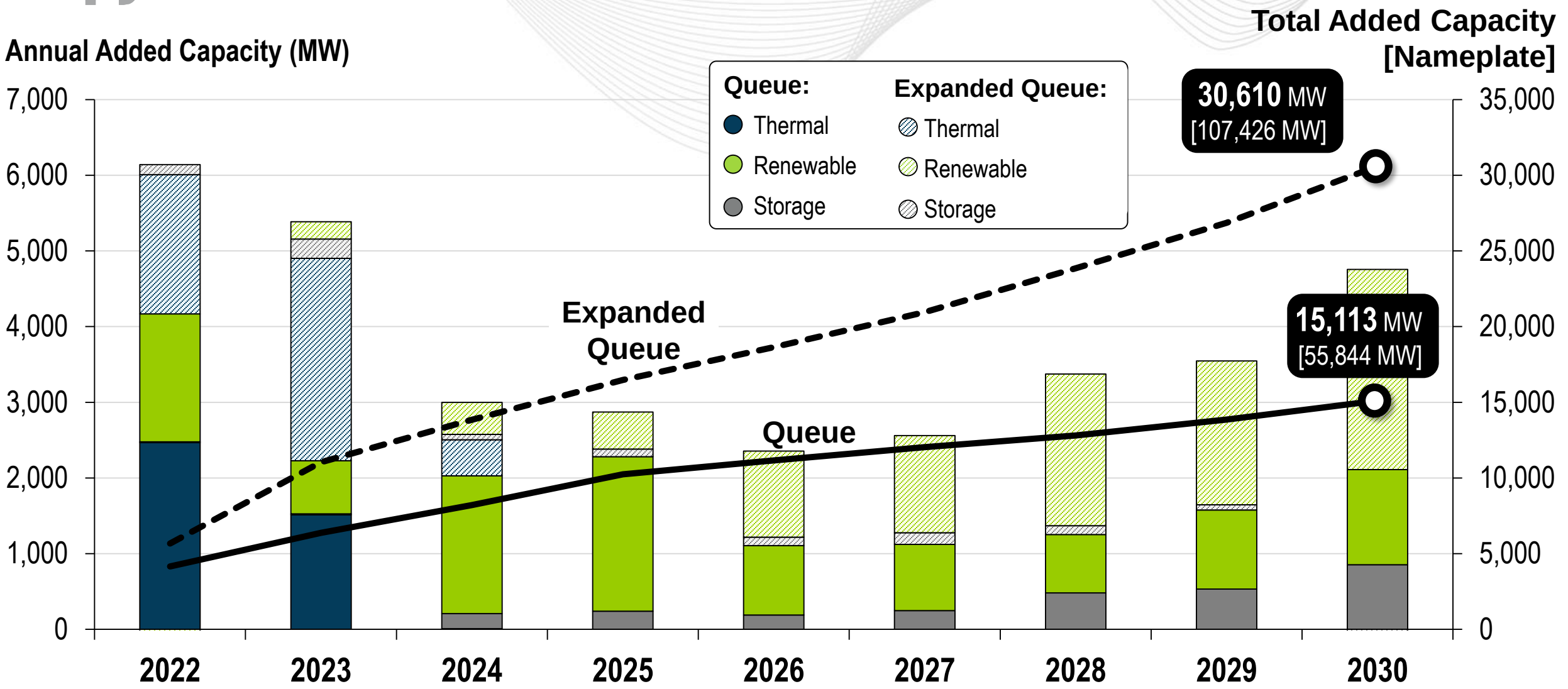


This **40 GW** represents
21% of PJM's current
192 GW of installed generation

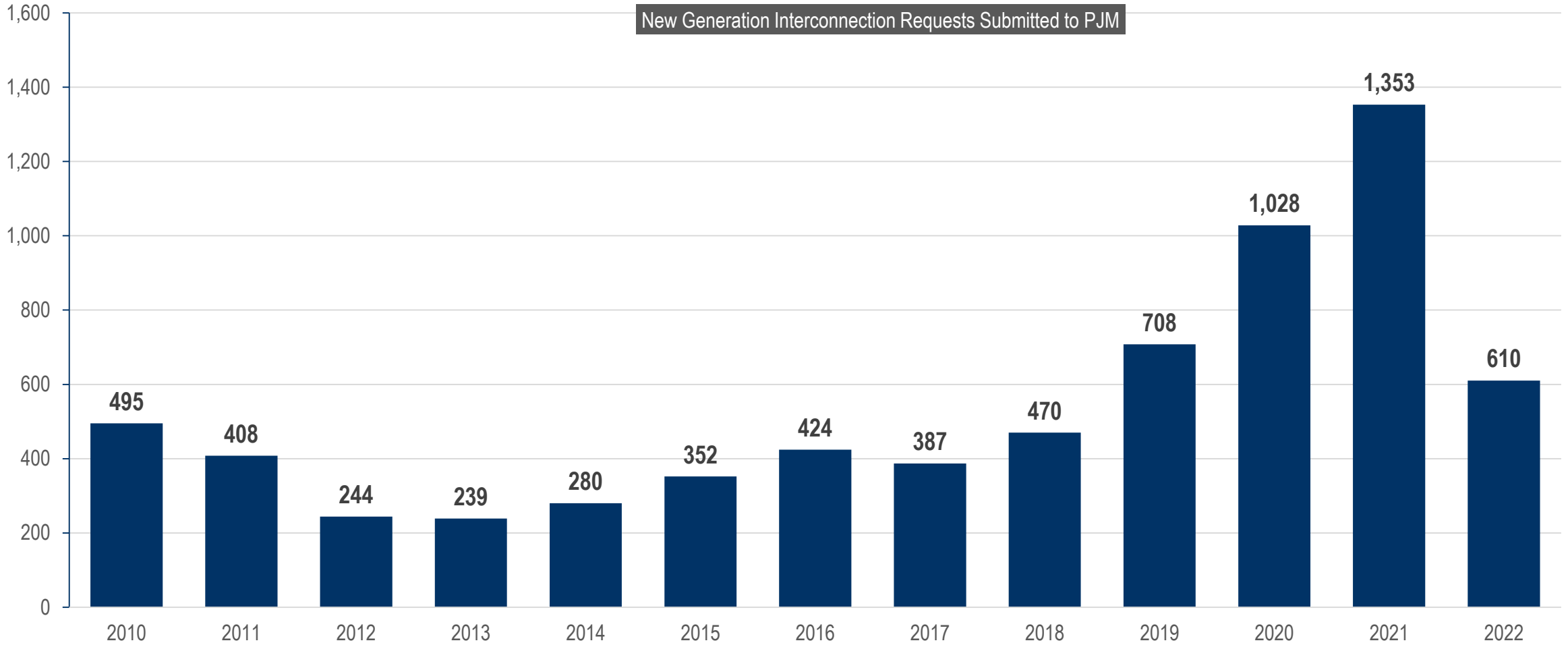


*Other includes diesel, etc.

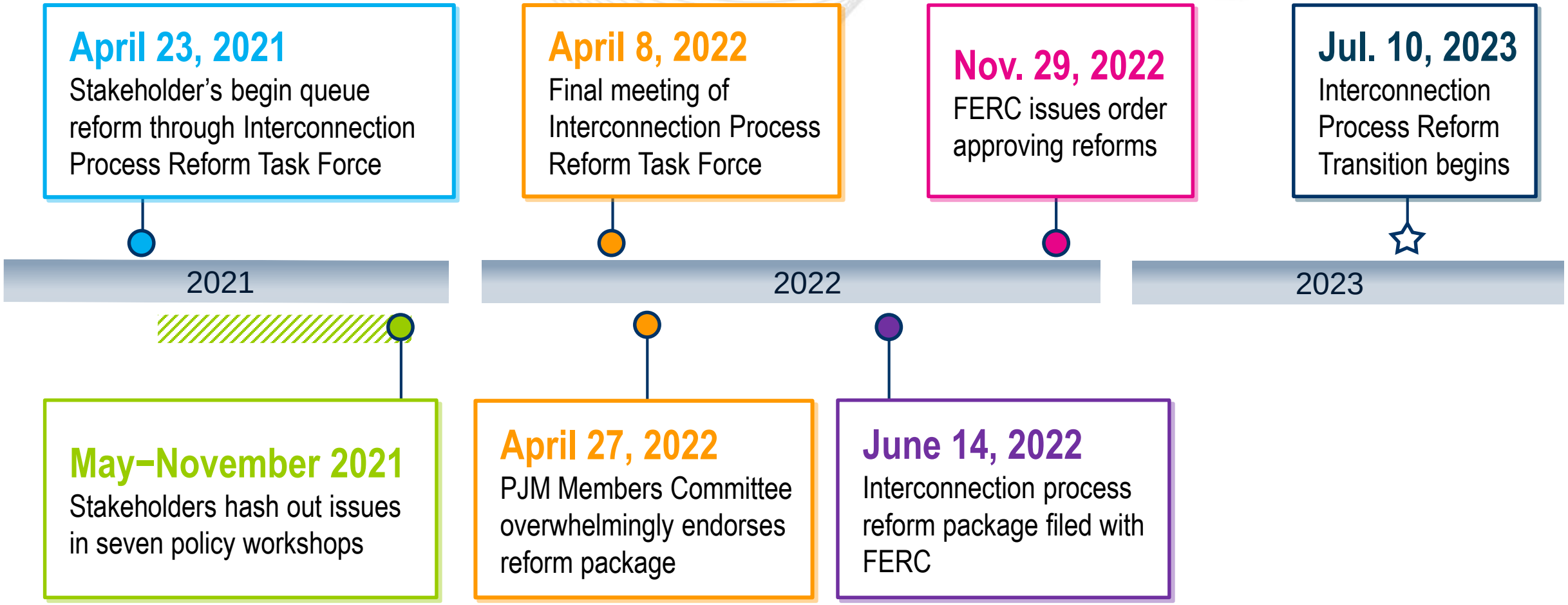
PJM Forecasted New Entry (2022–2030)



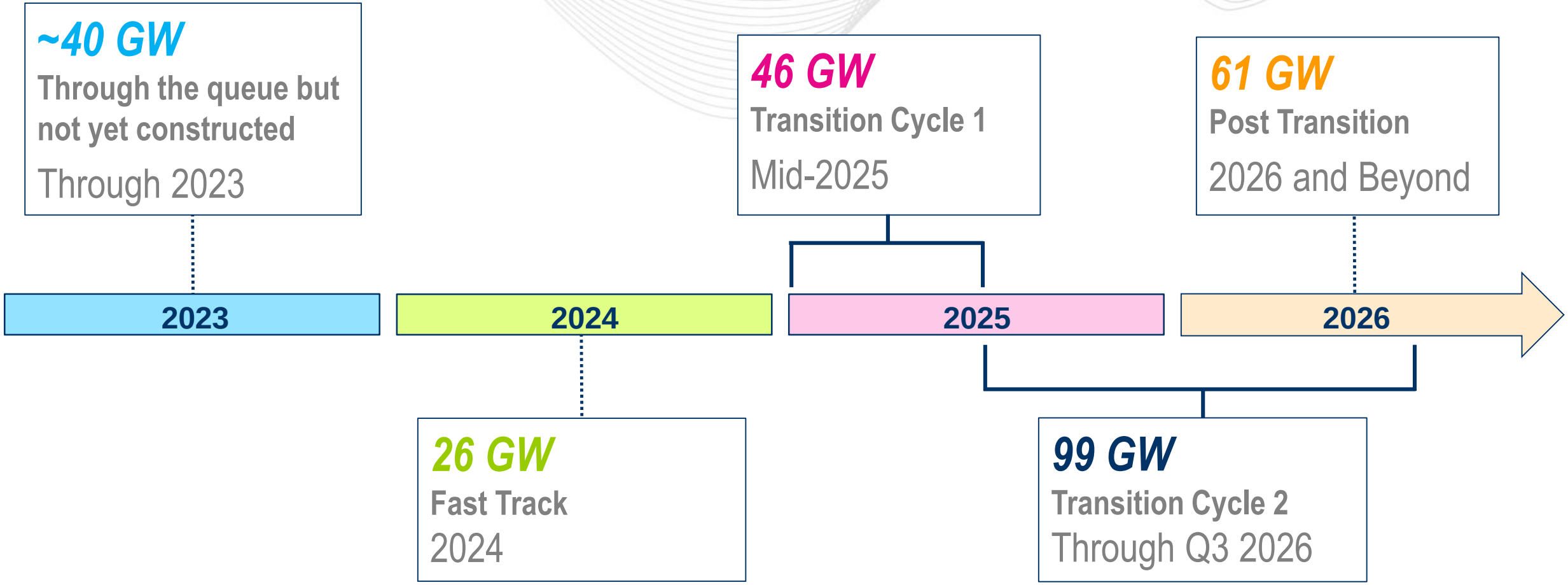
Interconnection Queue Projects By Year



Interconnection Process Reform Timeline

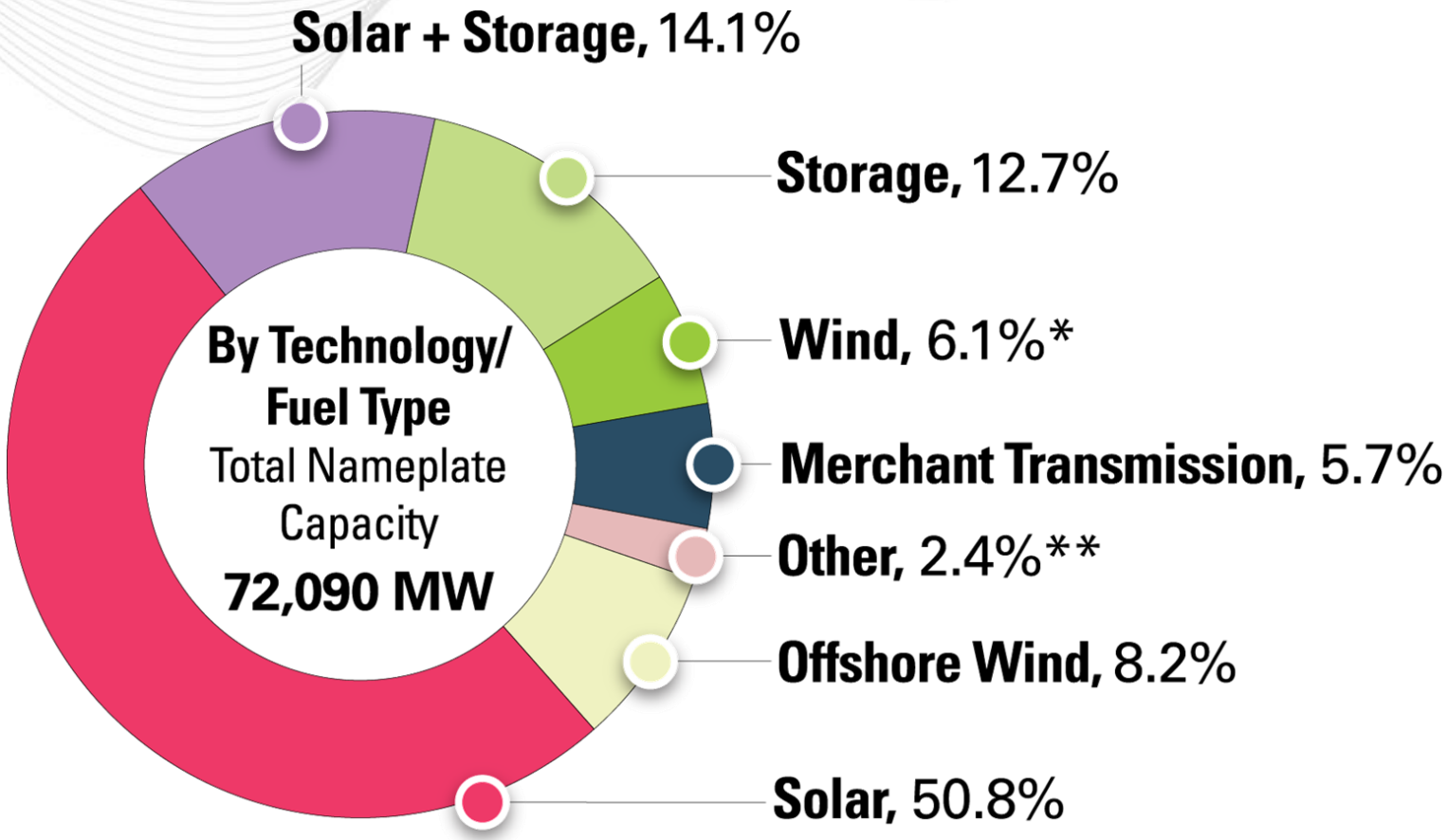


Interconnection Queue Breakdown and Timeline



Projects To Clear PJM Interconnection Process in 2024 and 2025

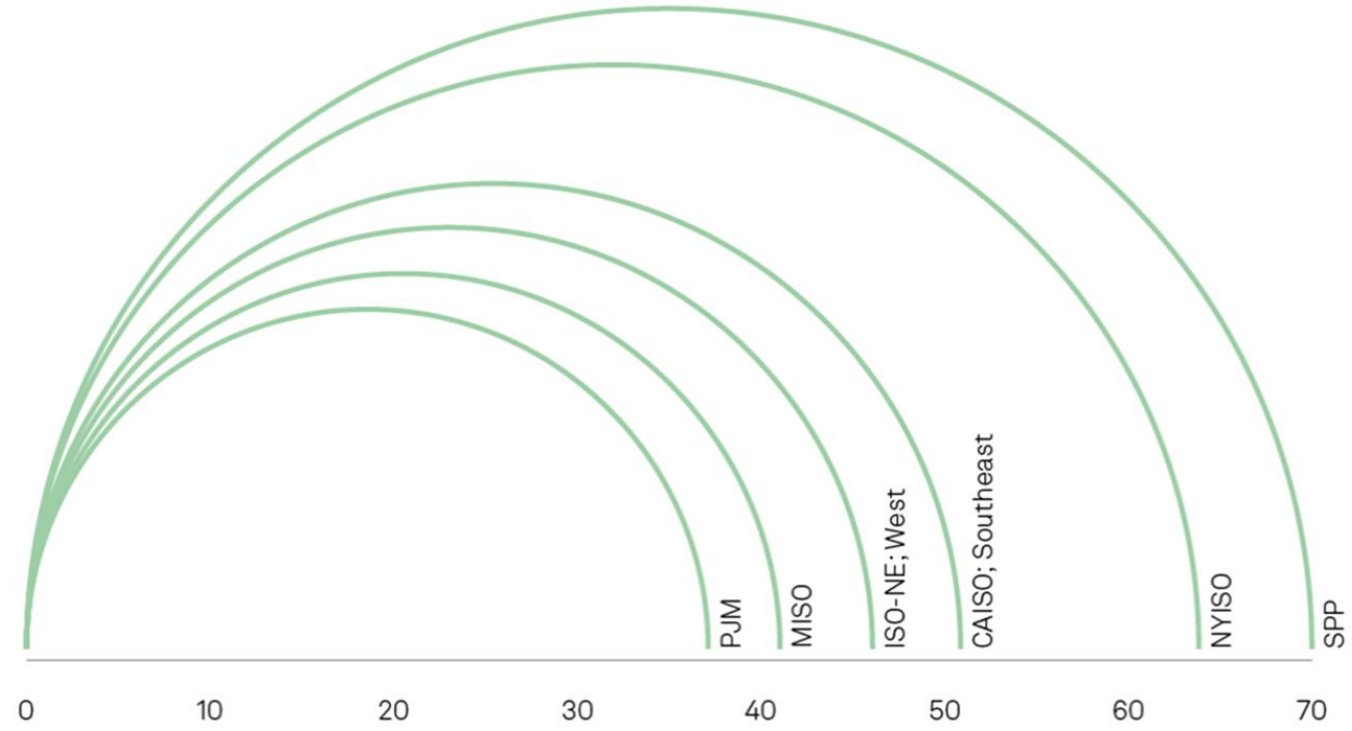
By State	Number of Projects	Total Nameplate Capacity (in MW)
DE	5	1,184
IL	82	13,798
IN	69	13,475
KY	39	4,125
MD	6	1,288
MI	8	887
NC	25	1,775
NJ	25	1,528
OH	72	8,613
PA	108	5,055
VA	162	19,012
WV	15	1,350
Total	616	72,090



*Includes one combined Wind & Solar facility of 199 MW
**Other: Natural Gas (1,647 MW, 2.3%) and Hydro (51 MW, 0.1 %)

U.S. Interconnection Queues – S&P Global

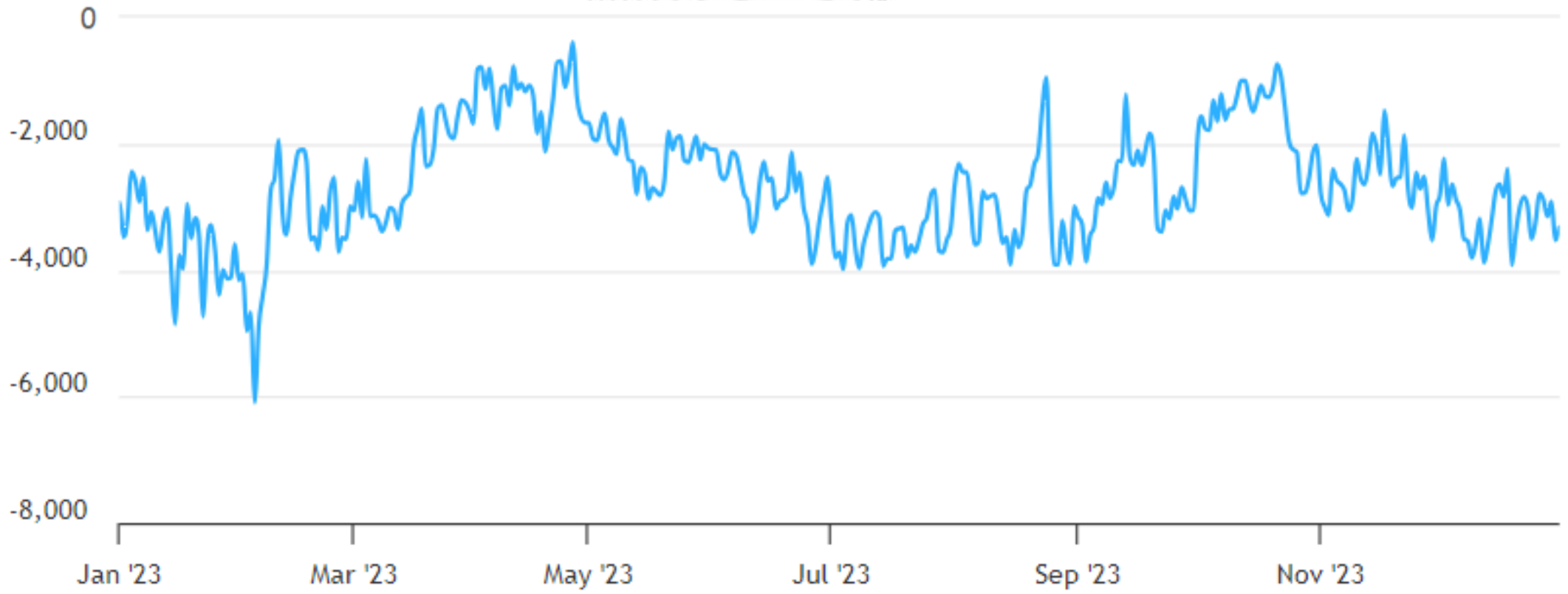
Average time from queue date
to proposed online date (months)



As of June 28, 2023.
Active queues only.
Only includes interconnection queues for which sufficient details were available.
Source: Public company reports (see Excel attachment for details).

Maryland – Net Energy Import/Export Trend

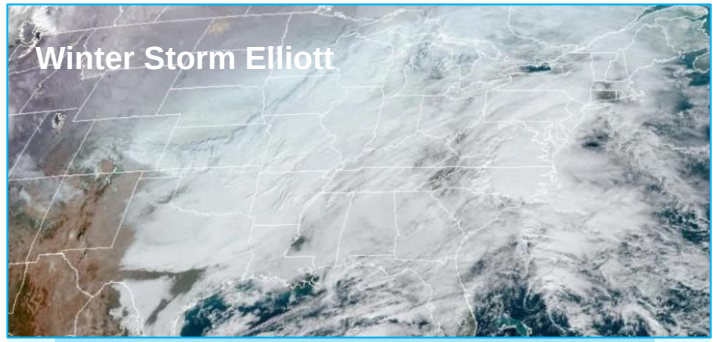
(Jan. 2023 – Dec. 2023)



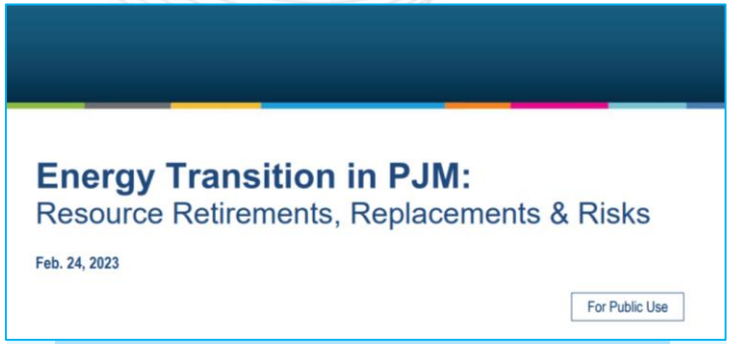
Positive values represent exports and negative values represent imports.

What Problem(s) Are We Solving For?

RELIABILITY



The PJM fleet has adequate resources and enough essential reliability services, but we need our generators to perform when called upon.



Generation retirements may outpace new entry with a simultaneous likelihood of load increasing, thereby creating resource adequacy concerns.

We will continue to need some amount of thermal generation to provide certain essential reliability services until a replacement technology is deployable at scale.

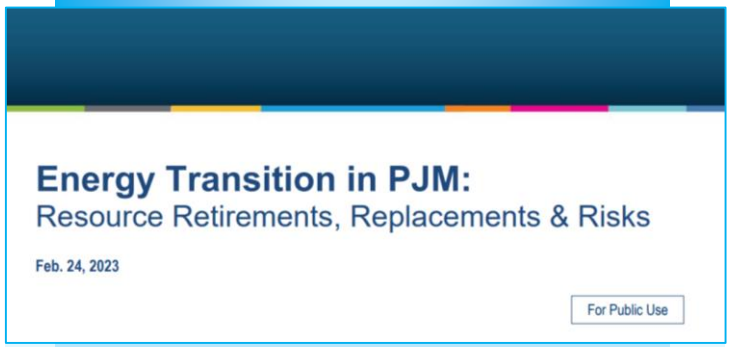
Our Reliability Concerns

The Immediate Concern

Support

Resource Performance

The Near-Term Concern



Ensure

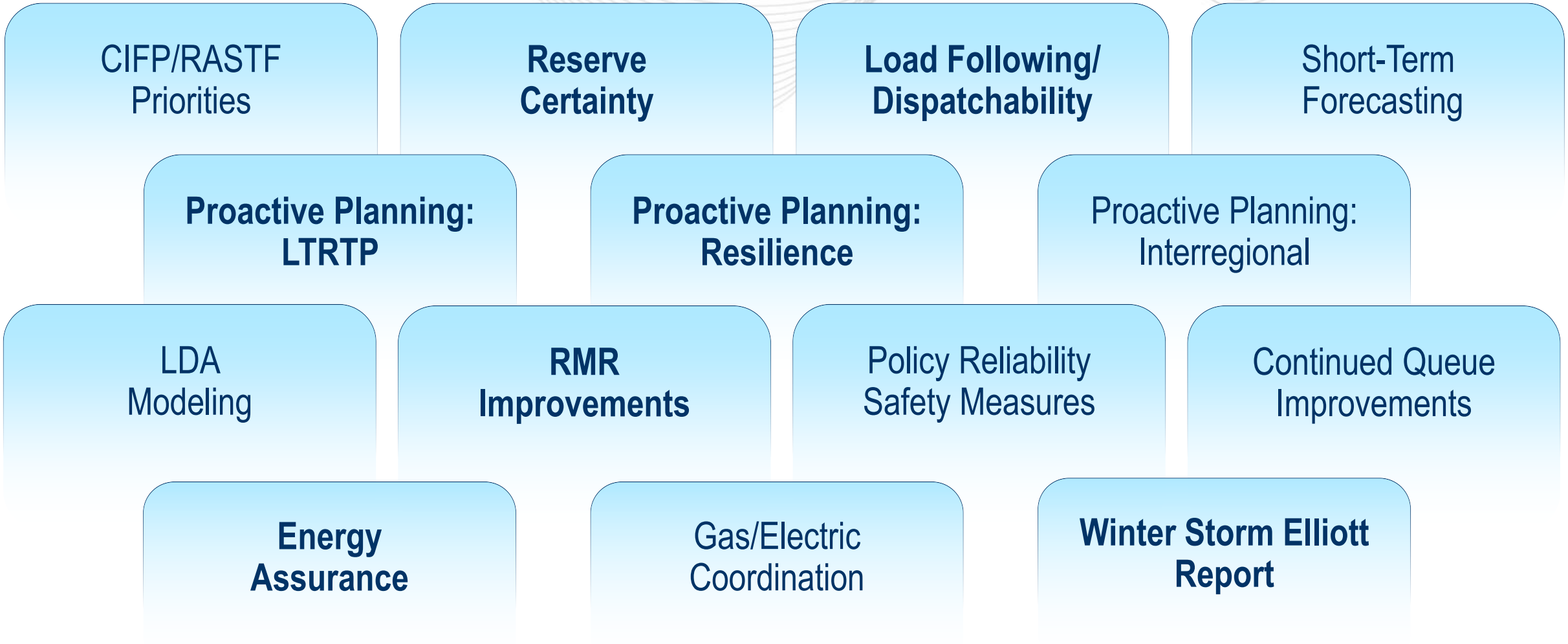
Resource Adequacy

The Upcoming Concern

Maintain & Attract

Essential Reliability Services

Initial Actions To Support Reliability



Ensuring a Reliable Energy Transition

Maryland Policy Takeaways

- *Avoid* policies meant to push generation resources off of the system during these years where we are waiting for significant renewable construction.

- *Analyze* your state/local challenges in the deployment of new generation resources and electricity infrastructure, and *enact* policy to facilitate greater/quicker construction.

- PJM is a resource to assist in your policy discussions.

- Government intervention in Brandon Shores/Wagner issue is required to allow for units to run until 2028 to avoid the risk of customer shut-offs.