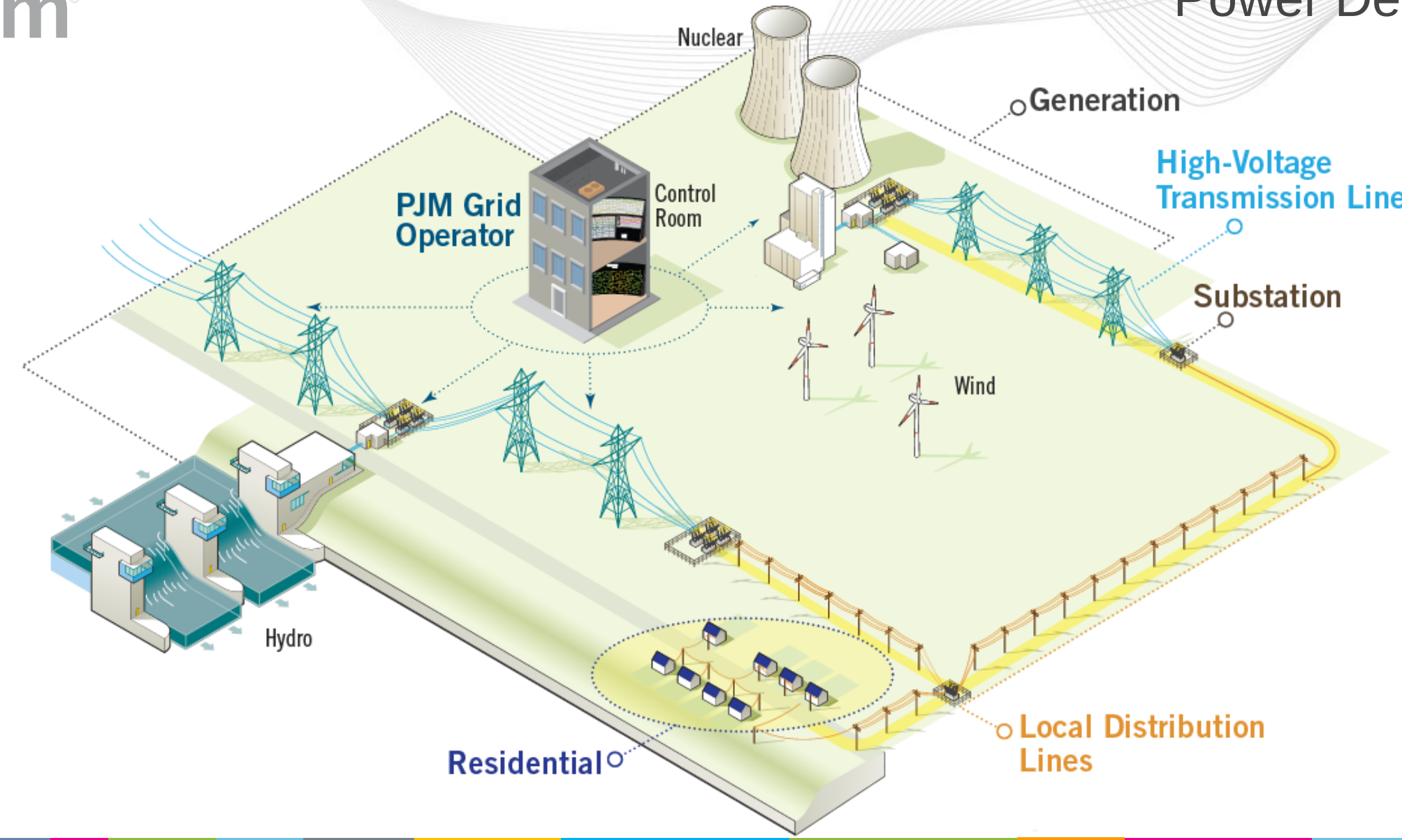
PJM Introduction

Tim Burdis

Director, State Policy Solutions

Feb. 20, 2025

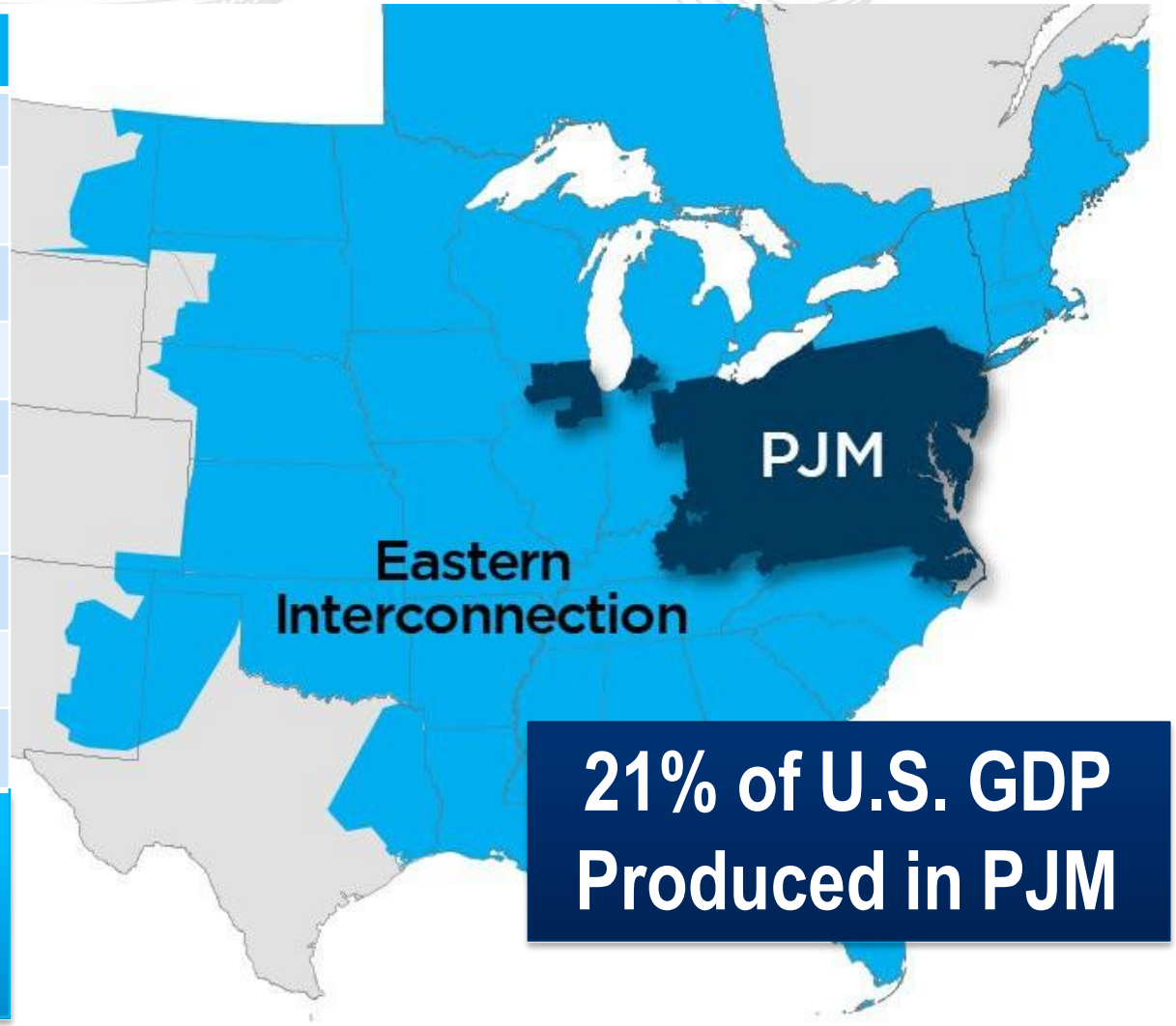
Power Delivery



PJM as Part of the Eastern Interconnection

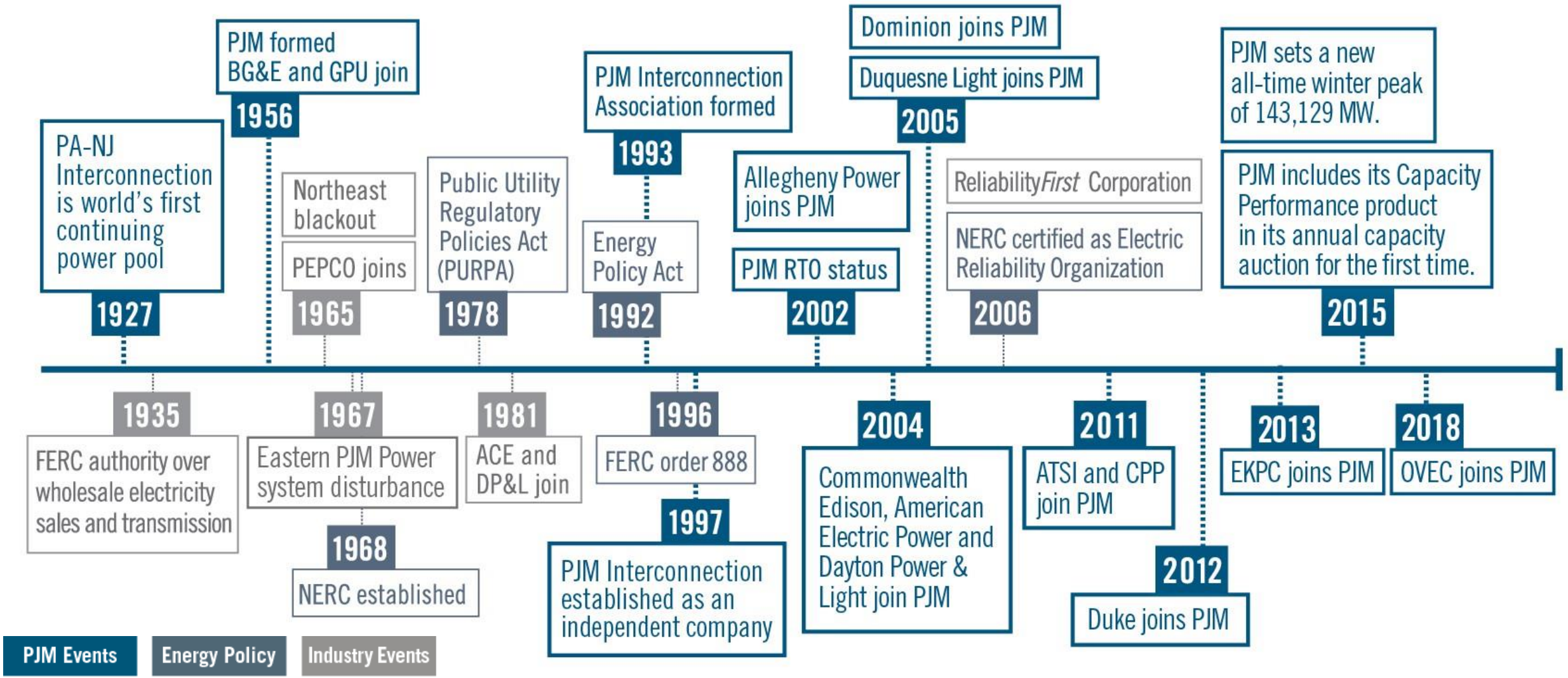
Key Statistics	
Member companies	1,090
Millions of people served	65+
Peak load in megawatts	165,563
Megawatts of generating capacity	180,785
Miles of transmission lines	88,185
Terawatt hours of annual energy	770
Generation sources	1,439
Square miles of territory	368,906
States served	13 + DC

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



As of 2/2024

The History of PJM



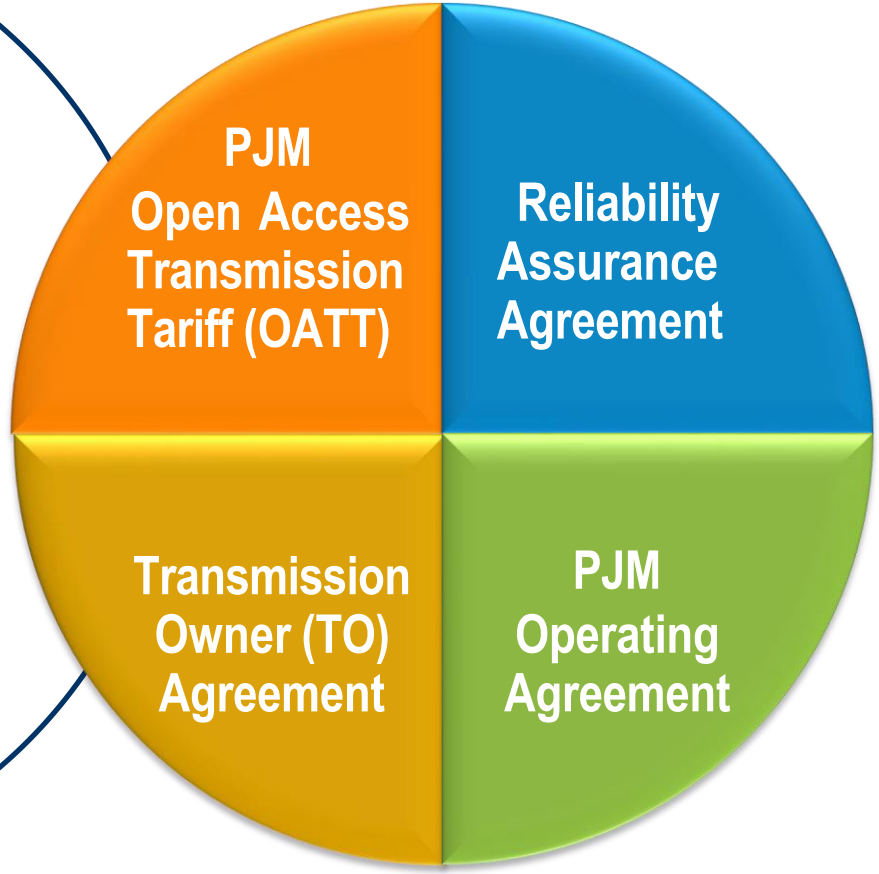
How Is PJM Different from Other Utility Companies?

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)



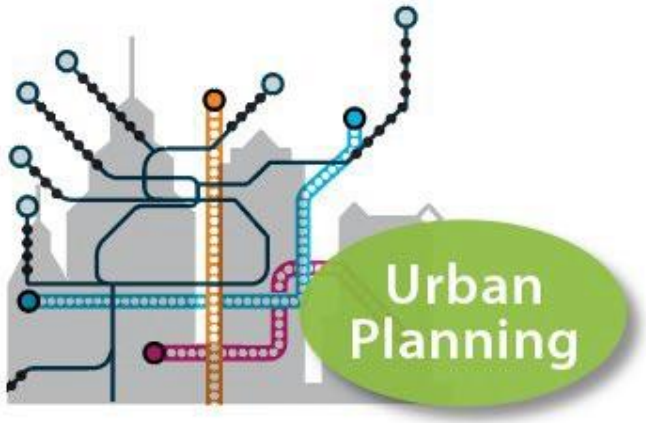
PJM – Primary Focus

RELIABILITY

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...

Reliability Through Extreme Conditions

Home › Markets › PJM, Members Preserve Reliability Through Arctic Outbreak

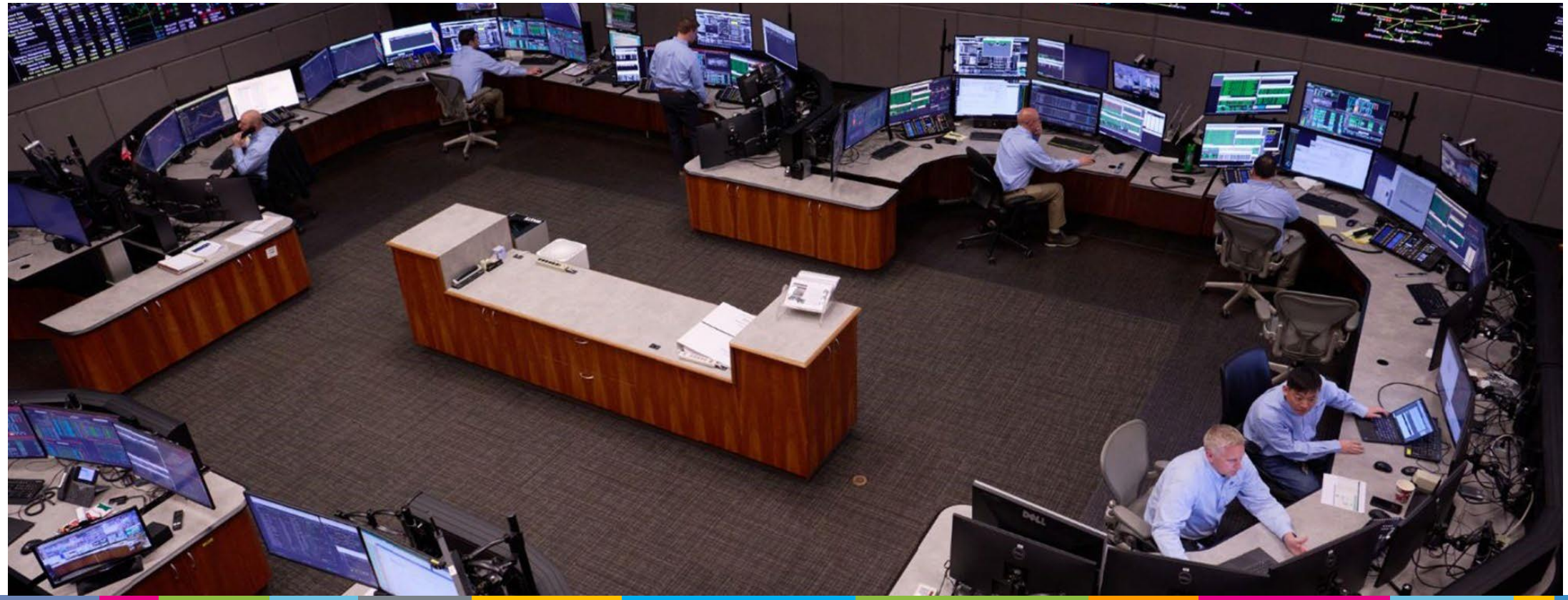
Markets | News | Operations

PJM, Members Preserve Reliability Through Arctic Outbreak

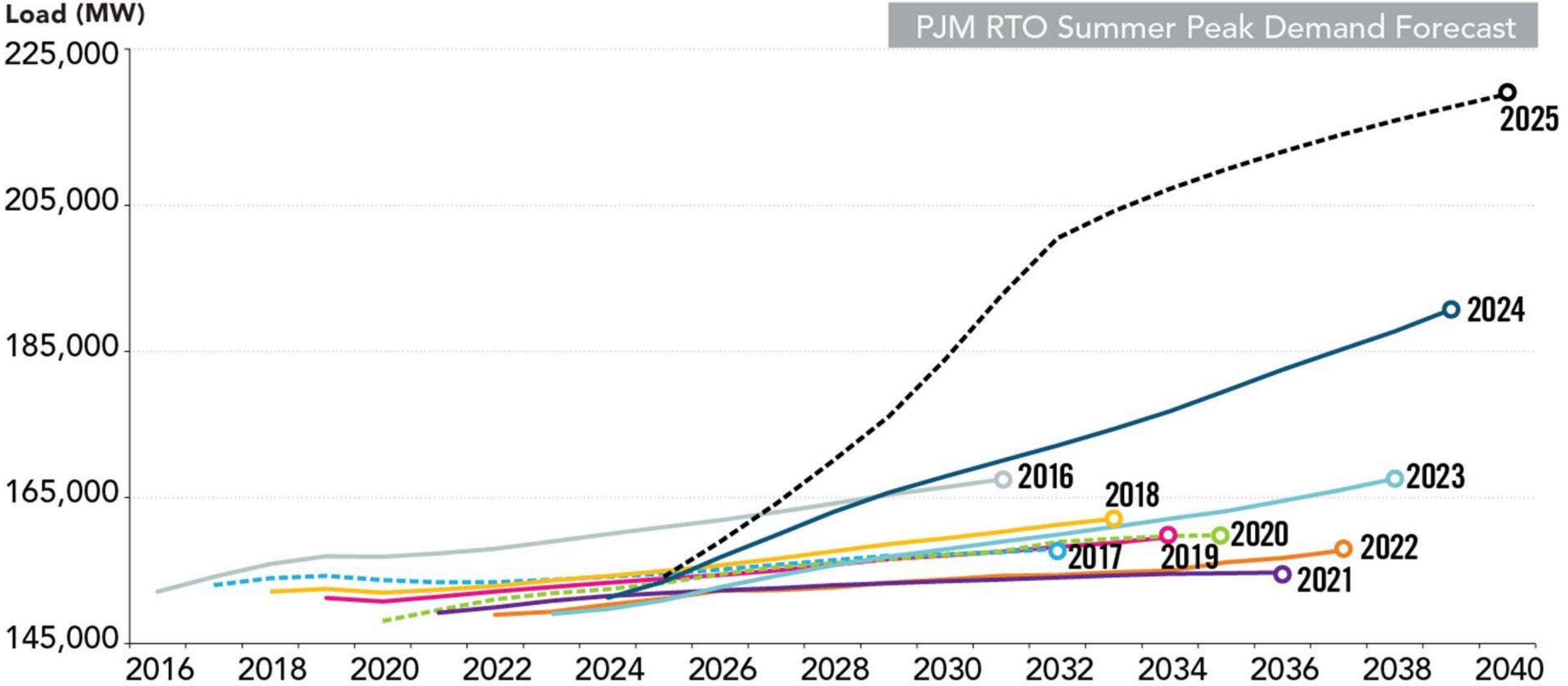
Load Forecasting, Communications, Generator/Transmission Performance Were Strengths

February 7, 2025 4

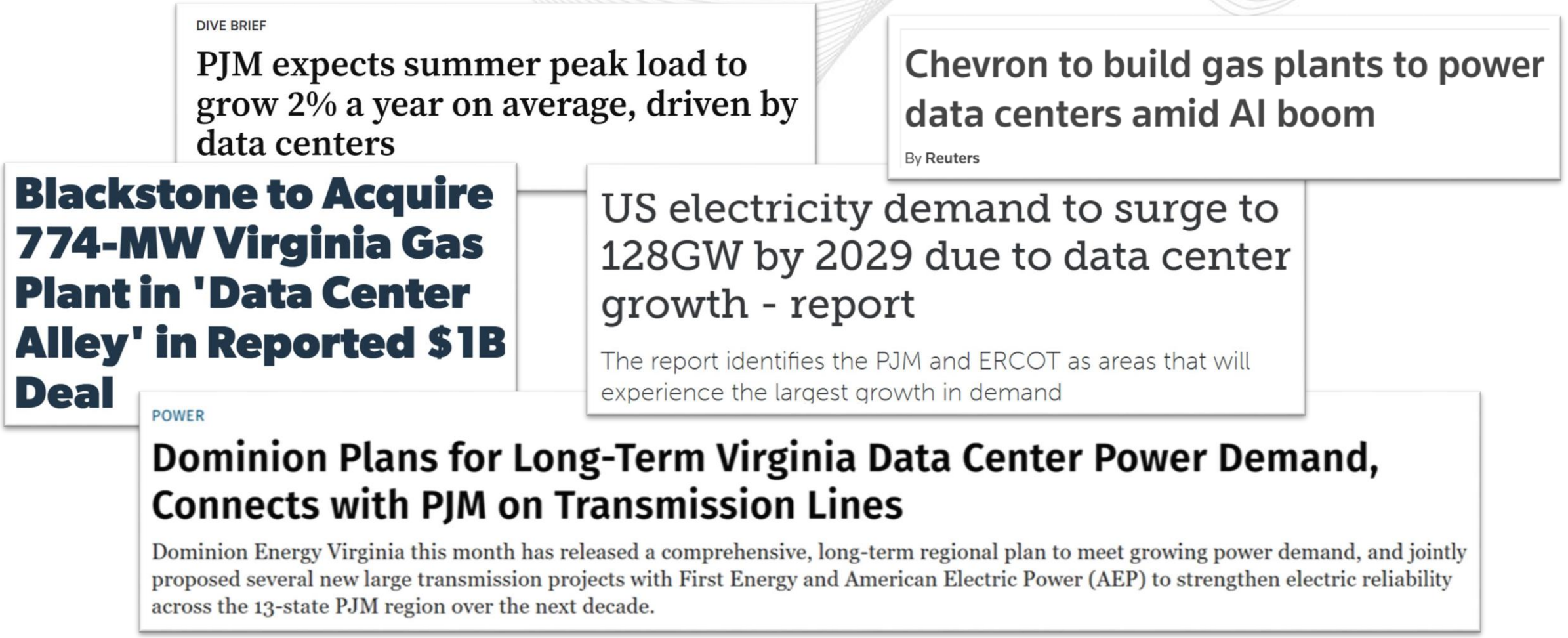
PJM on Thursday reviewed the extensive actions taken by the grid operator and its members to successfully maintain reliability through the record-breaking, extended cold temperatures that swept through the region through the Martin Luther King Jr. holiday period.



Electricity Demand Growth



Data Center Proliferation



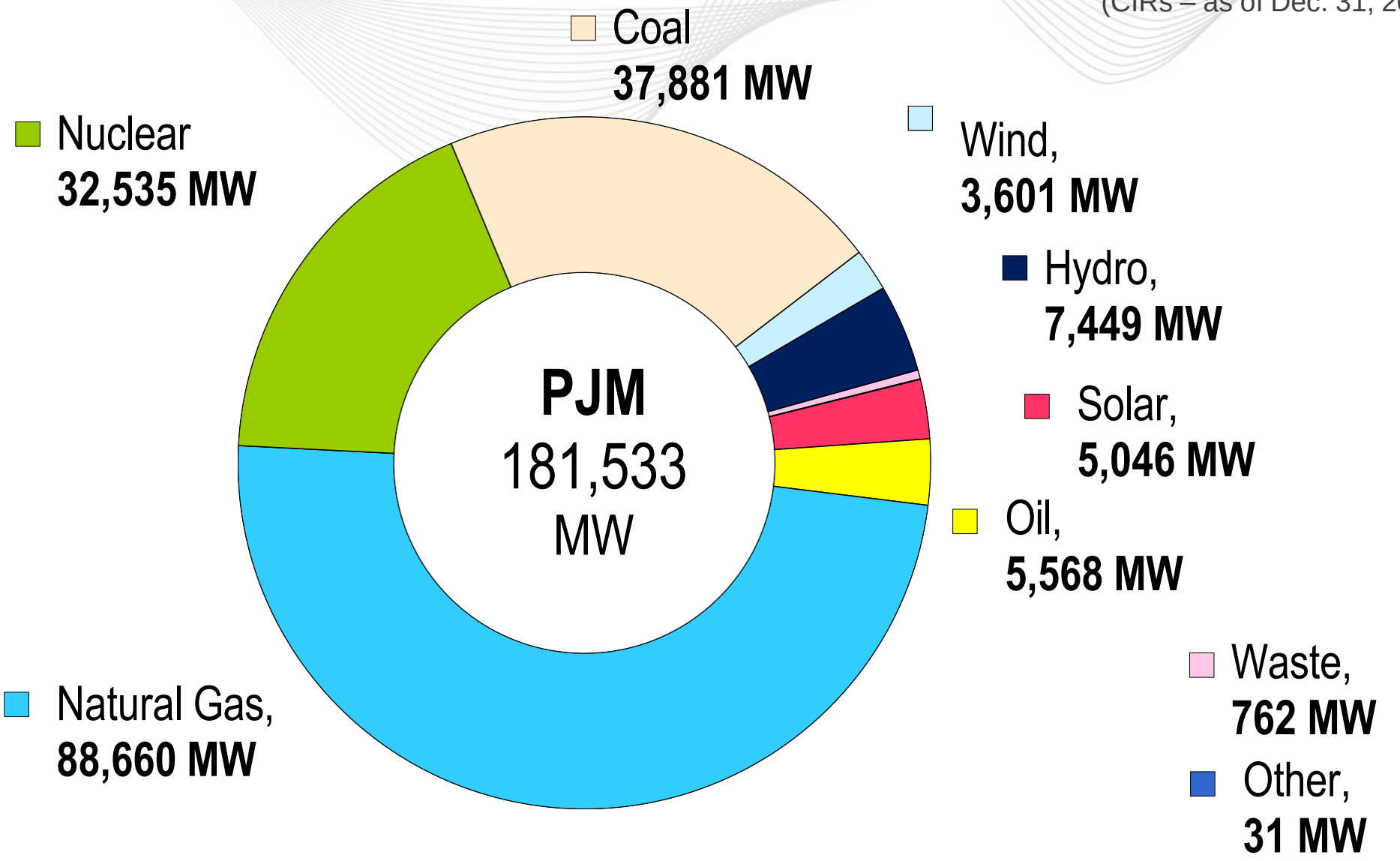
"Over the 2024-2025 forecast period of this report, global electricity consumption is expected to increase at the fastest pace in years, fueled by robust economic growth, intense heatwaves and continued electrification worldwide."

The rise of artificial intelligence (AI) has put the electricity consumption of data centers in focus, making better stocktaking more important than ever.	The 4% growth expected for 2024 is the highest since 2007, with the exceptions of the sharp rebounds in 2010 after the global financial crisis and in 2021 following the Covid-induced demand collapse. We expect this demand trend to continue in 2025, with growth also at 4%. In both 2024 and 2025, the rise in the world's electricity use is projected to be significantly higher than global GDP growth of 3.2%. In 2022 and 2023, electricity demand grew more slowly than GDP.

https://www.iea.org/reports/electricity-mid-year-update-july-2024

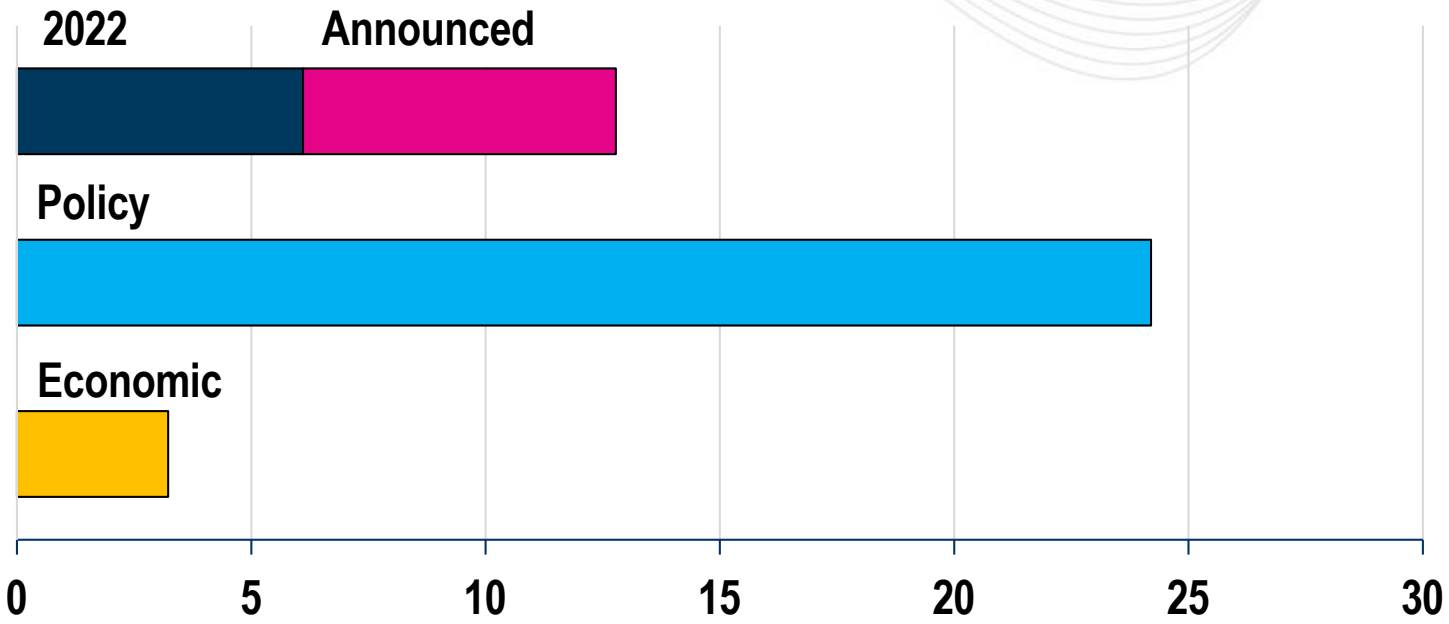
PJM Existing Installed Capacity Mix

(CIRs – as of Dec. 31, 2024)

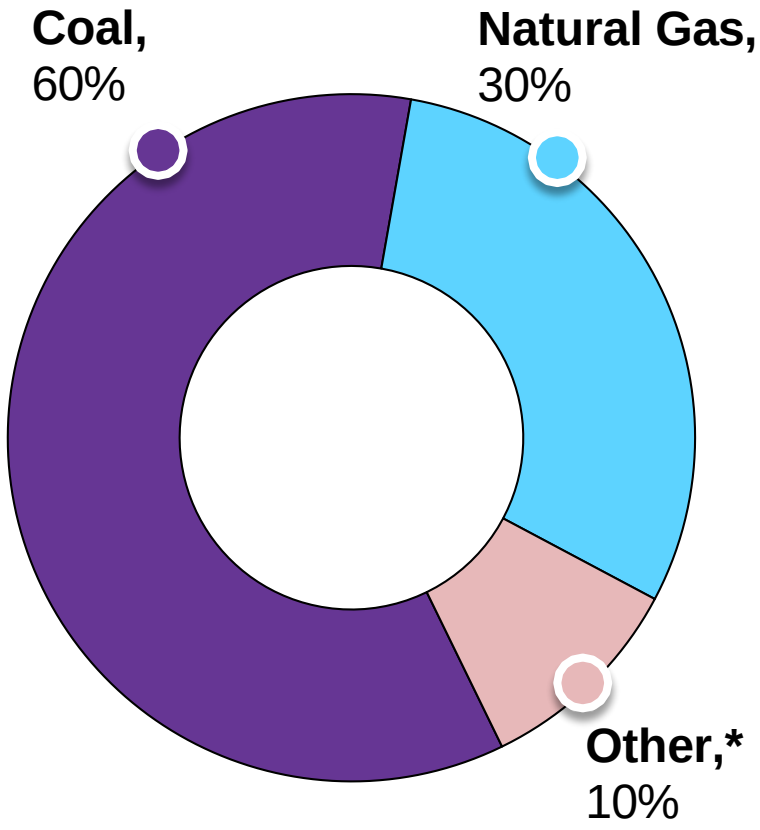


Forecasted Retirements (2022–2030)

Total Forecasted Retirement Capacity (GW)

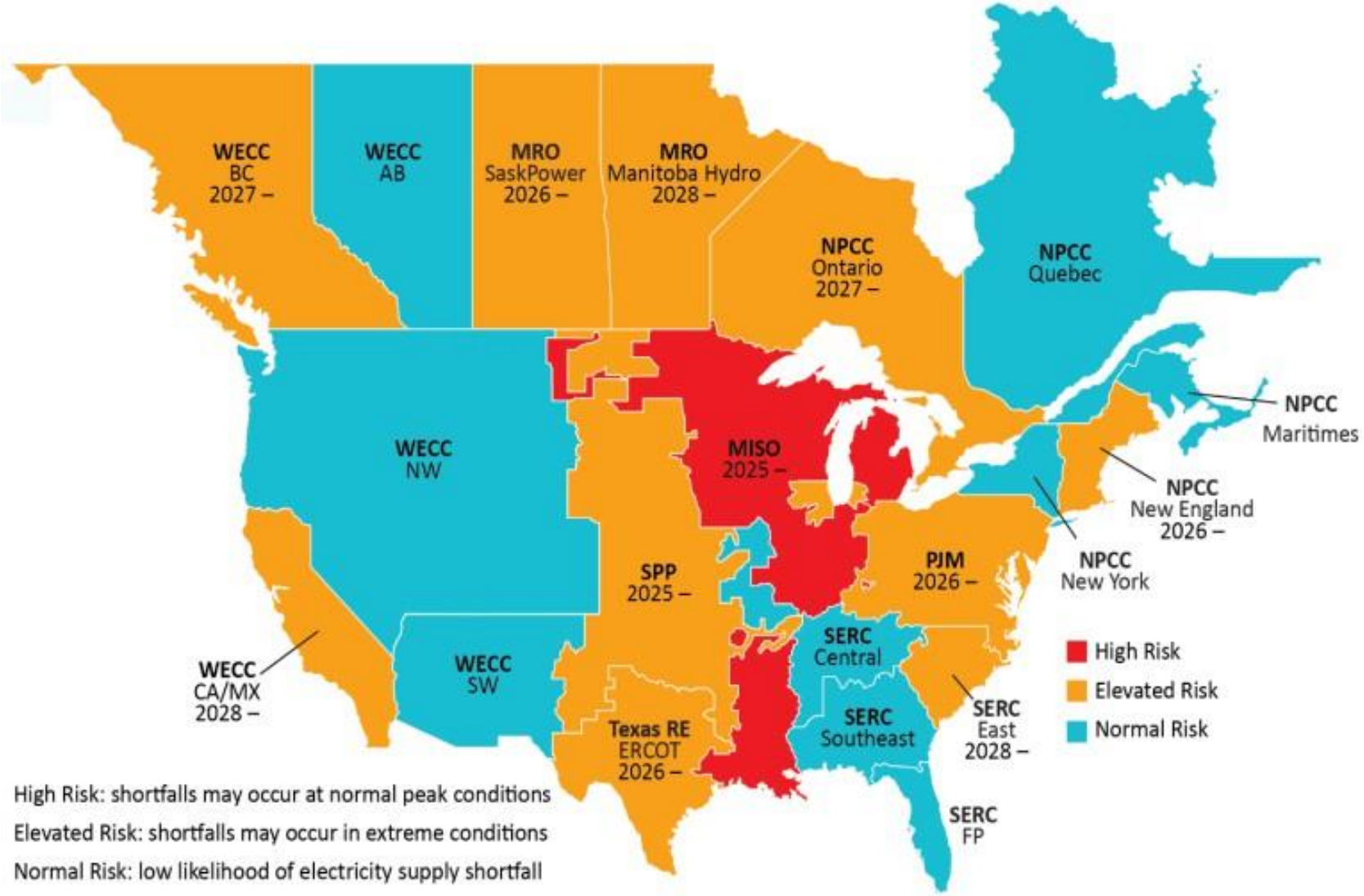


This **40 GW** represents
21% of PJM's current
192 GW of installed generation



**Other includes diesel, etc.*

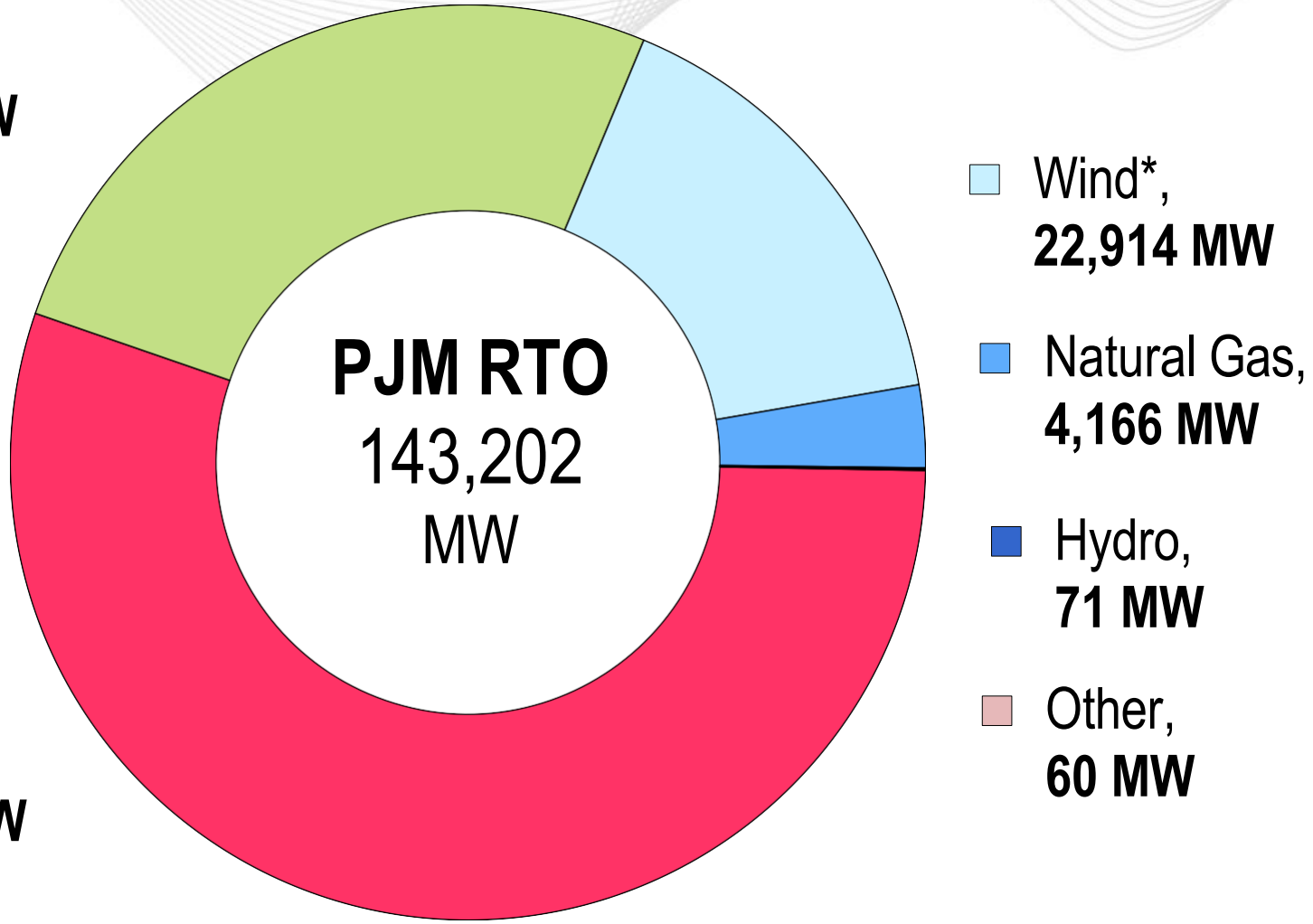
NERC: Long-Term Reliability Assessment



Graphic: NERC

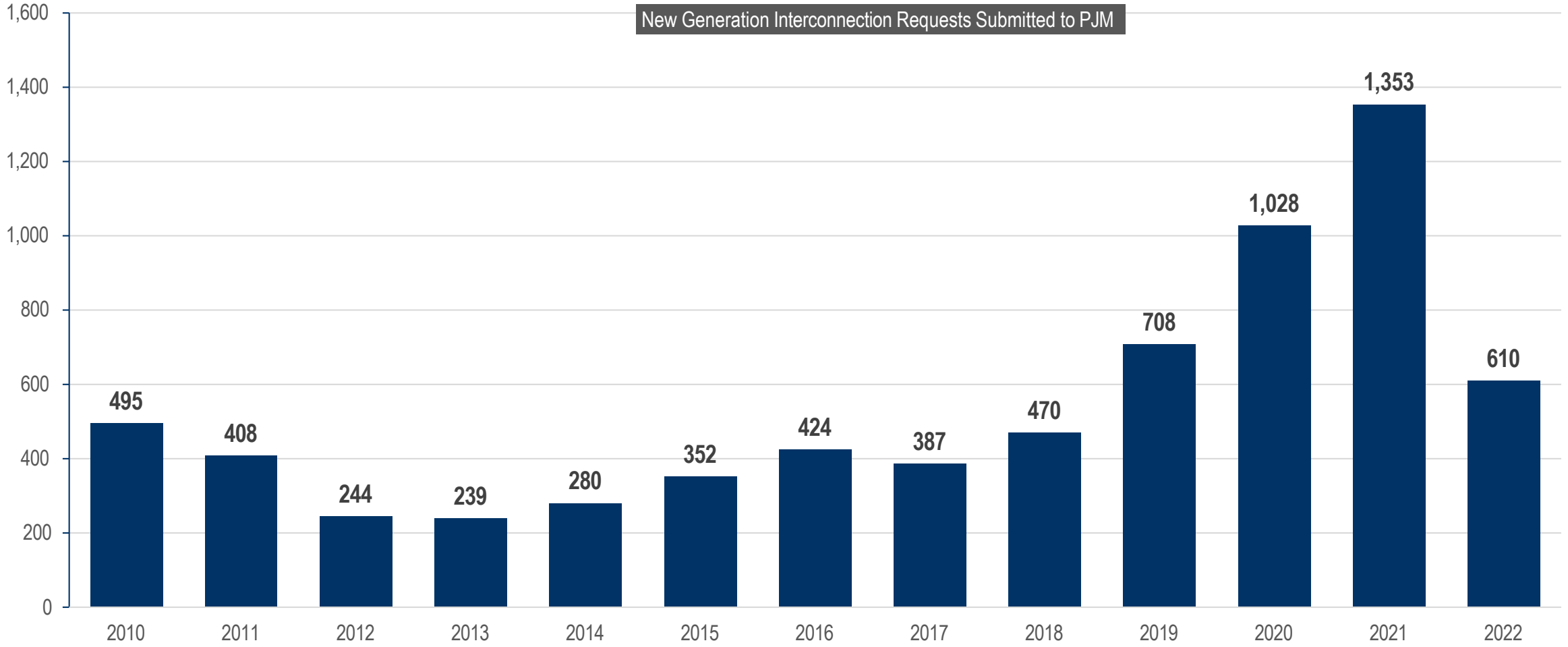
PJM Queued Capacity (Nameplate) by Fuel Type

("Active" in the PJM Queue as of Jan. 31, 2025)



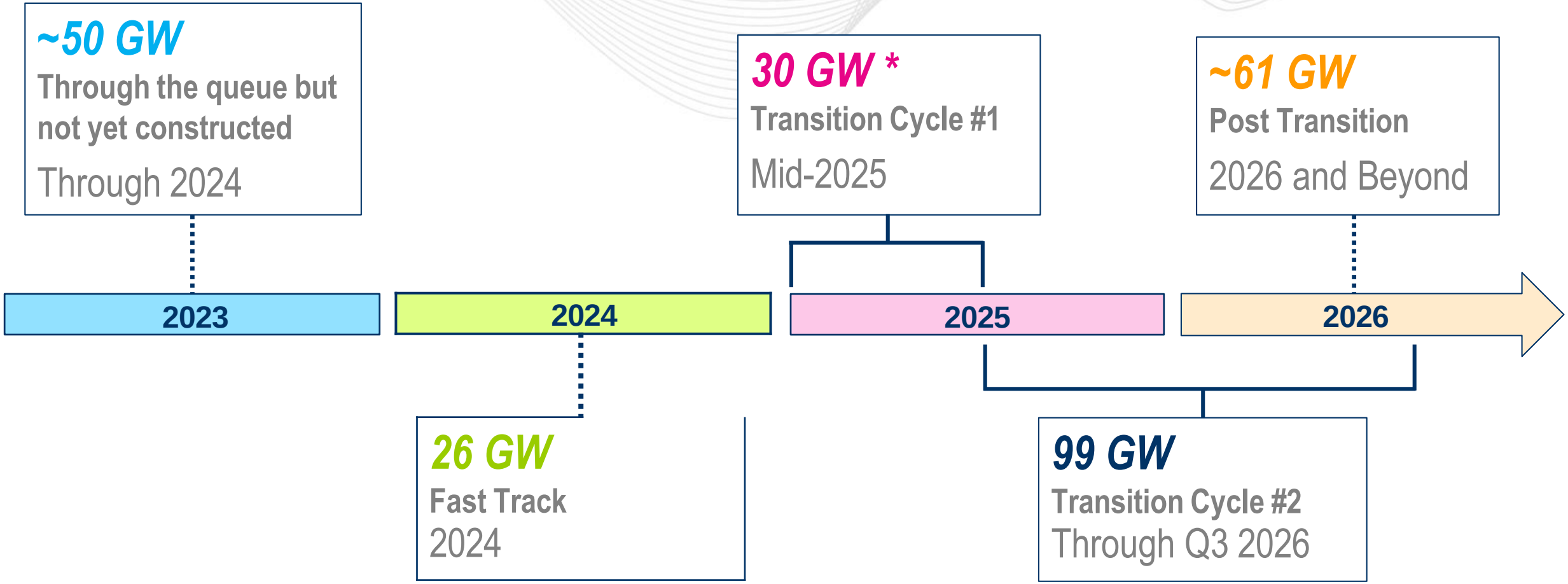
*Includes offshore wind

Interconnection Queue Projects By Year



Implemented Interconnection Reforms

Initial Queue Breakdown and Timeline



** TC1 was 46 GW prior to Decision Point 1.*

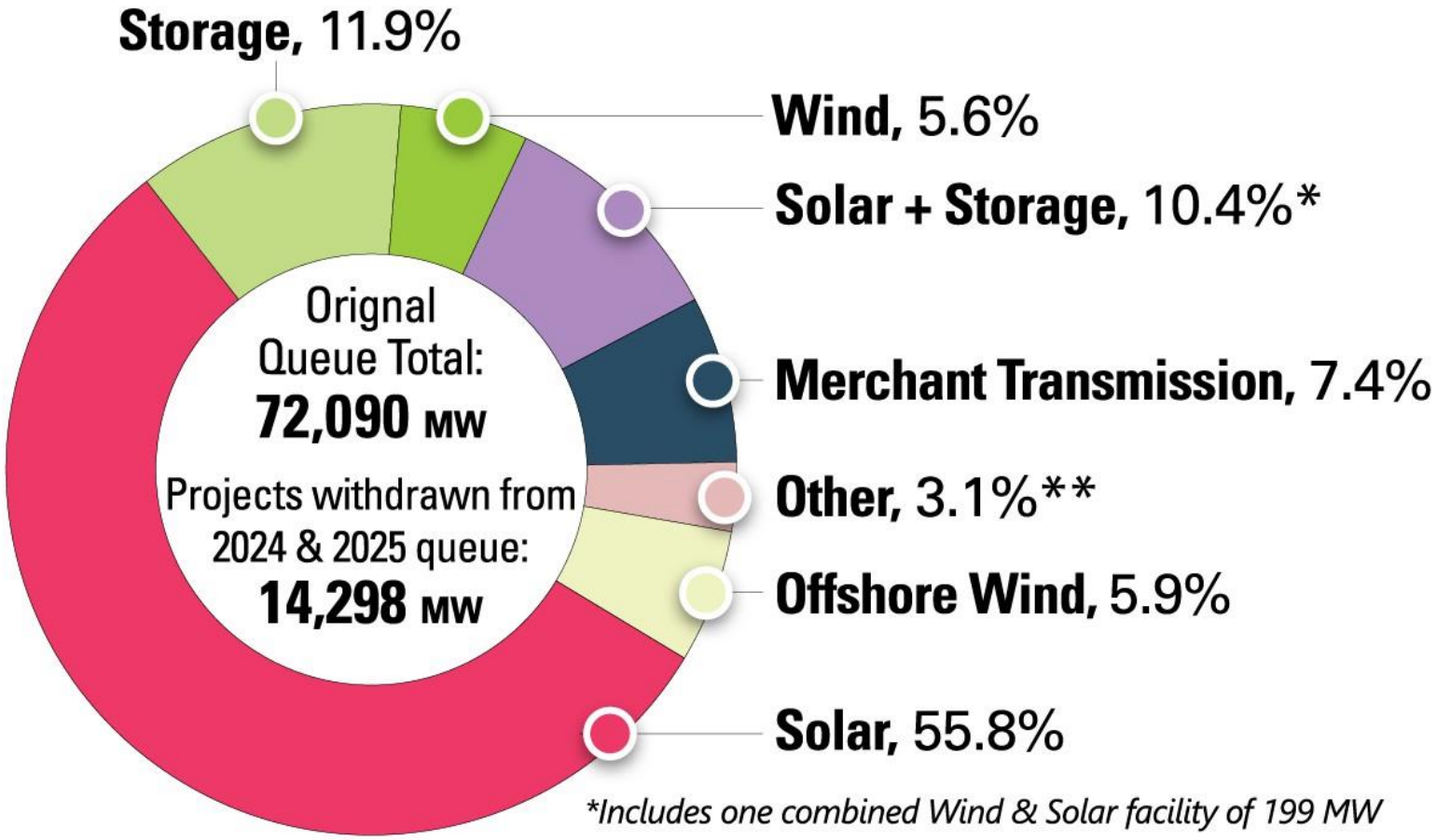
Projects To Clear PJM Interconnection Process in 2024 and 2025

Projects To Clear PJM Interconnection Process in 2024 and 2025

(Updated for Transition Cycle 1 as of Aug. 1, 2024)

By State	Number of Projects	Total Nameplate Capacity (in MW)
DE	1	120.00
IL	62	10,861.95
IN	63	11,568.64
KY	33	3,568.50
MD	6	1,245.00
MI	8	887.20
NC	21	1,542.90
NJ	20	1,204.80
OH	62	7,829.49
PA	91	3,696.10
VA	107	11,967.50
WV	14	1,154.00
Total	488	55,646.00

Please note some projects have reduced project megawatts.



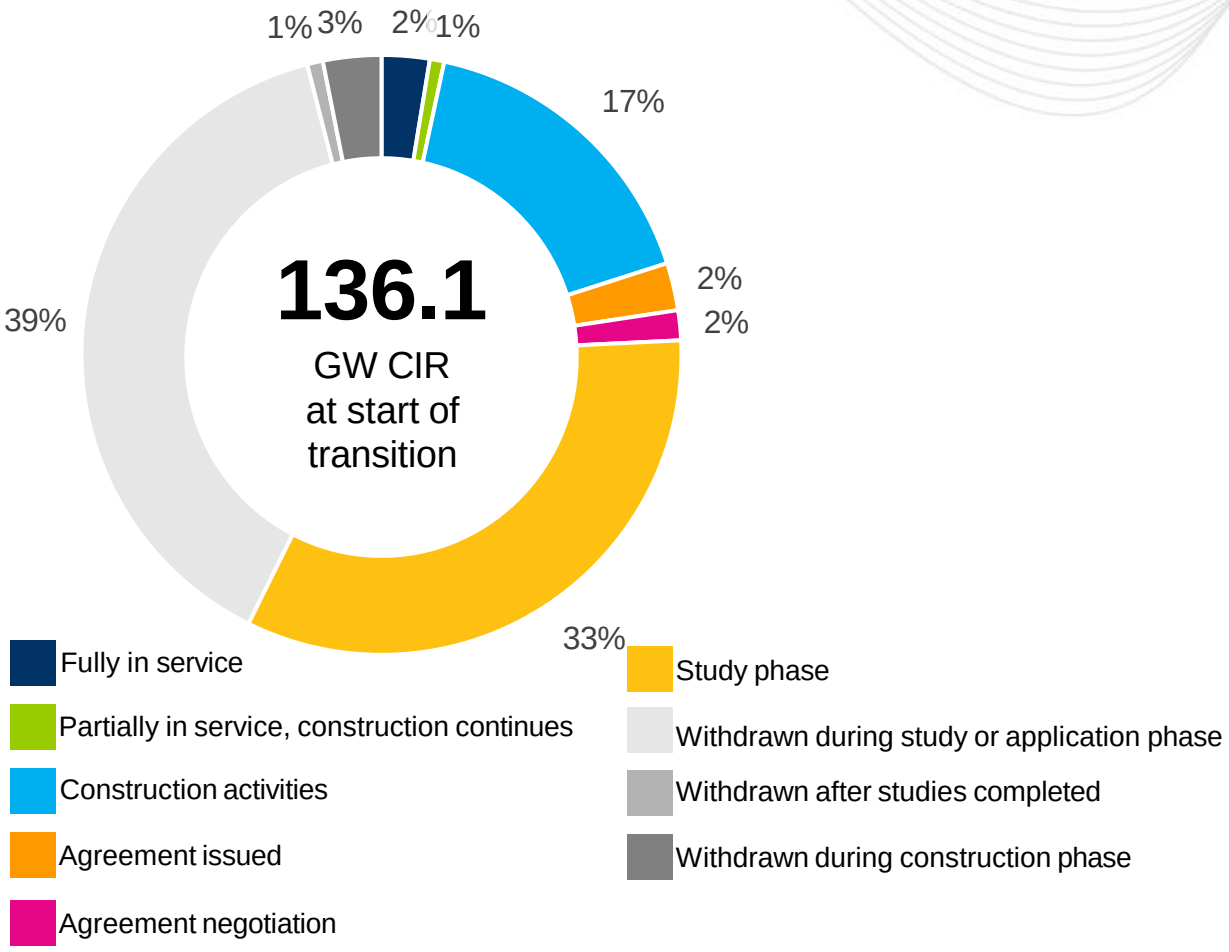
**Includes one combined Wind & Solar facility of 199 MW*

***Other: Natural Gas (1,646.7 MW, 3.0%) and Hydro (51 MW, 0.1%)*

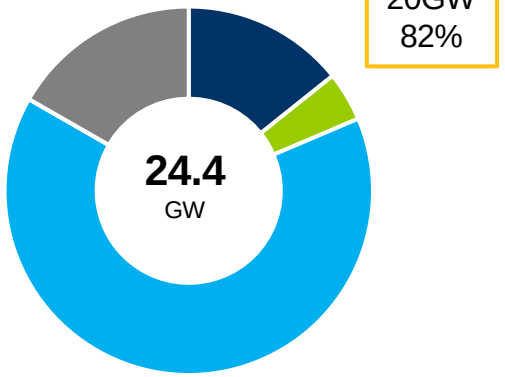
Cluster Study Progress

Capacity Interconnection Rights (MW CIR)

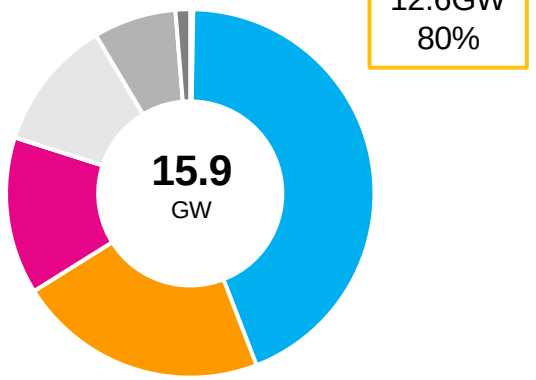
All Clusters



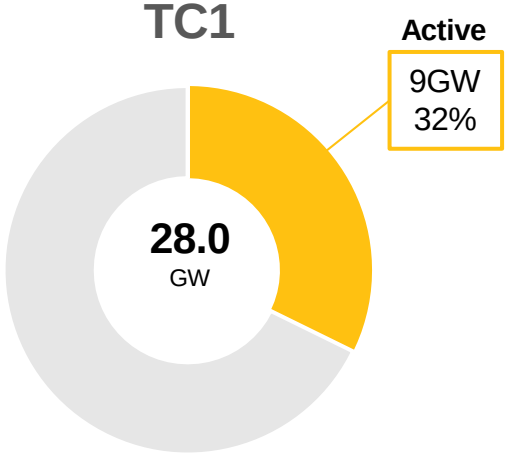
Serial Process



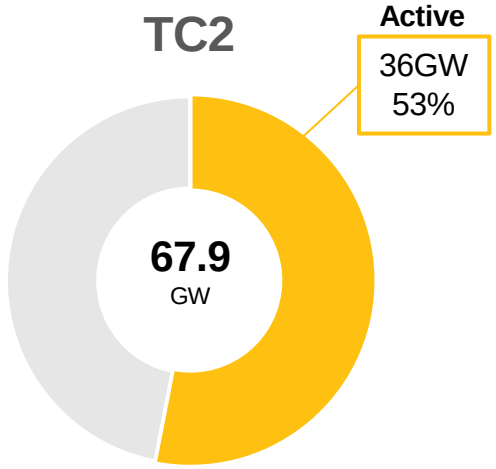
Fast Lane



TC1



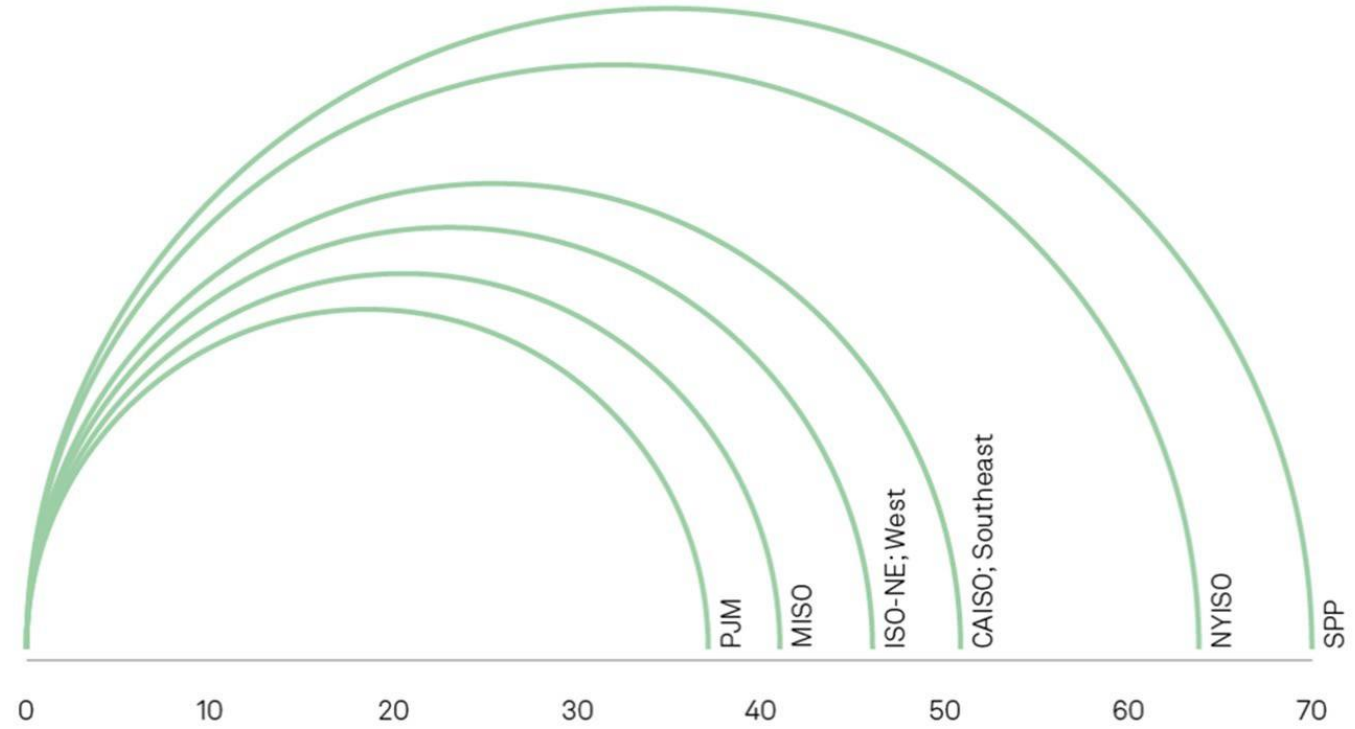
TC2



As of 2/10/2025

U.S. Interconnection Queues – S&P Global

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

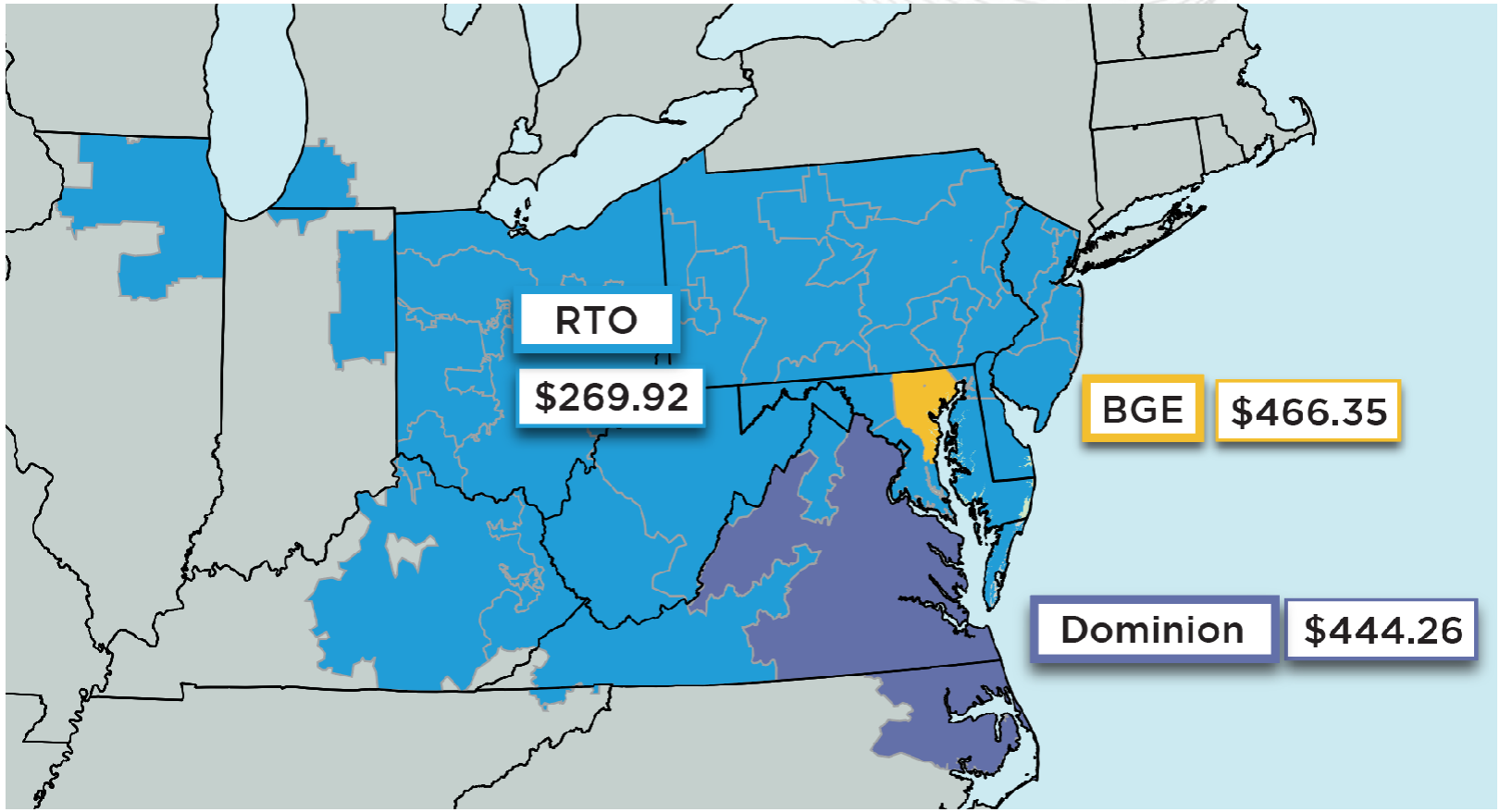


As of June 28, 2023.
Active queues only.
Only includes interconnection queues for which sufficient details were available.
Source: Public company reports (see Excel attachment for details).

PJM Efforts to Expedite Supply

CIR Transfer	**Target:** New generation resources swapping-in for a deactivating generator that then don't need to go through queue **Potential Outcome**: Permanent modifications to the process
Reliability Resource Initiative	**Target:** Queue opened for new shovel-ready resources that can come online quickly and contribute to reliability **Potential Outcome:** One-time expansion of the eligibility criteria for Transition Cycle #2 beyond active requests received prior to September 2021
Surplus Interconnection Service	**Target:** Making it easier to add more generation to an existing site for generators that are not able to operate continually 24/7/365 (e.g. adding storage to renewable site) **Potential Outcome:** Permanent modification to Surplus Interconnection Service criteria

RTO & LDA Prices



RTO Price Comparison

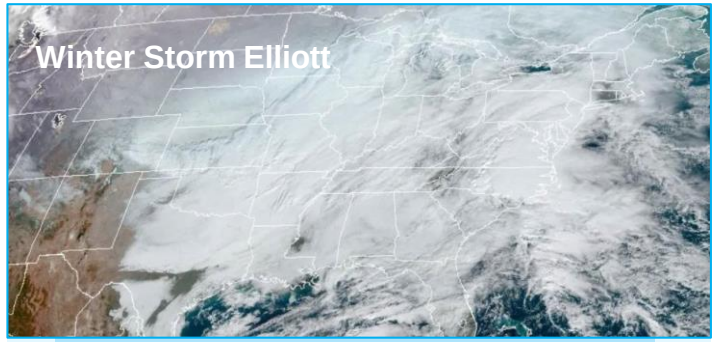
	2025/2026	2024/2025
RTO Price:	**$269.92/** MW-day	**$29/** MW-day
Reserve Margin	**18.5%**	**20.5%**
with IRM of:	*17.8%*	*14.7%*

ELCC – Capability of Generator Classes

	2025/2026 BRA ELCC Class Ratings
Onshore Wind	35%
Offshore Wind	60%
Fixed-Tilt Solar	9%
Tracking Solar	14%
Landfill Intermittent	54%
Hydro Intermittent	37%
4-hr Storage	59%
6-hr Storage	67%
8-hr Storage	68%
10-hr Storage	78%
Demand Resource	76%
Nuclear	95%
Coal	84%
Gas Combined Cycle	79%
Gas Combustion Turbine	62%
Gas Combustion Turbine Dual Fuel	79%
Diesel Utility	92%
Steam	75%

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

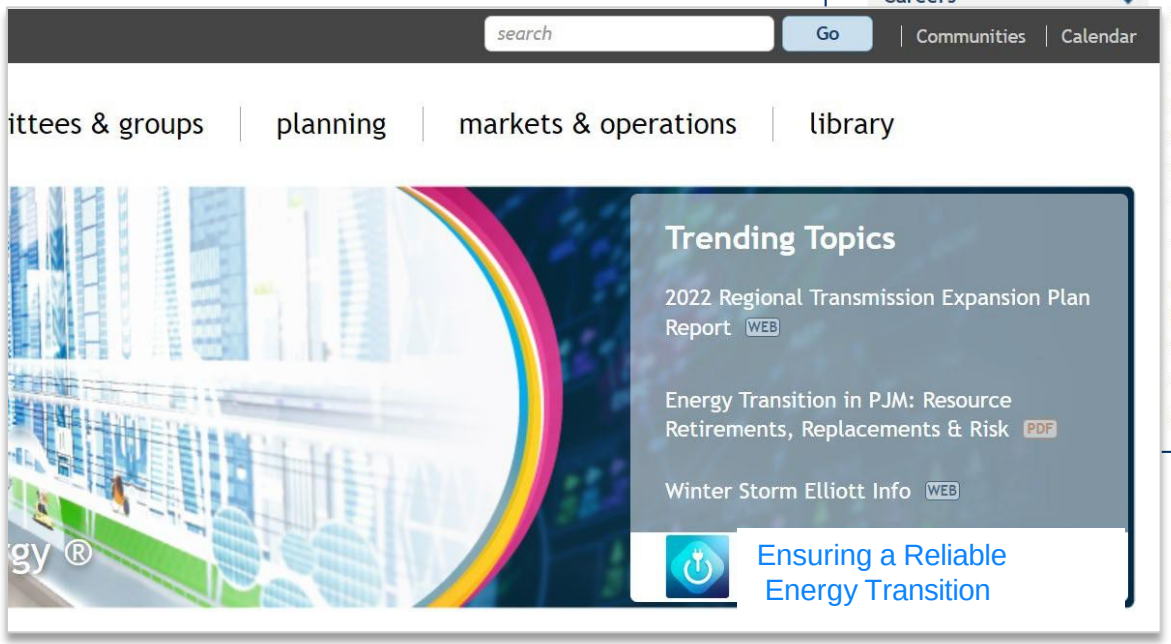
Resource Adequacy

The Upcoming Concern

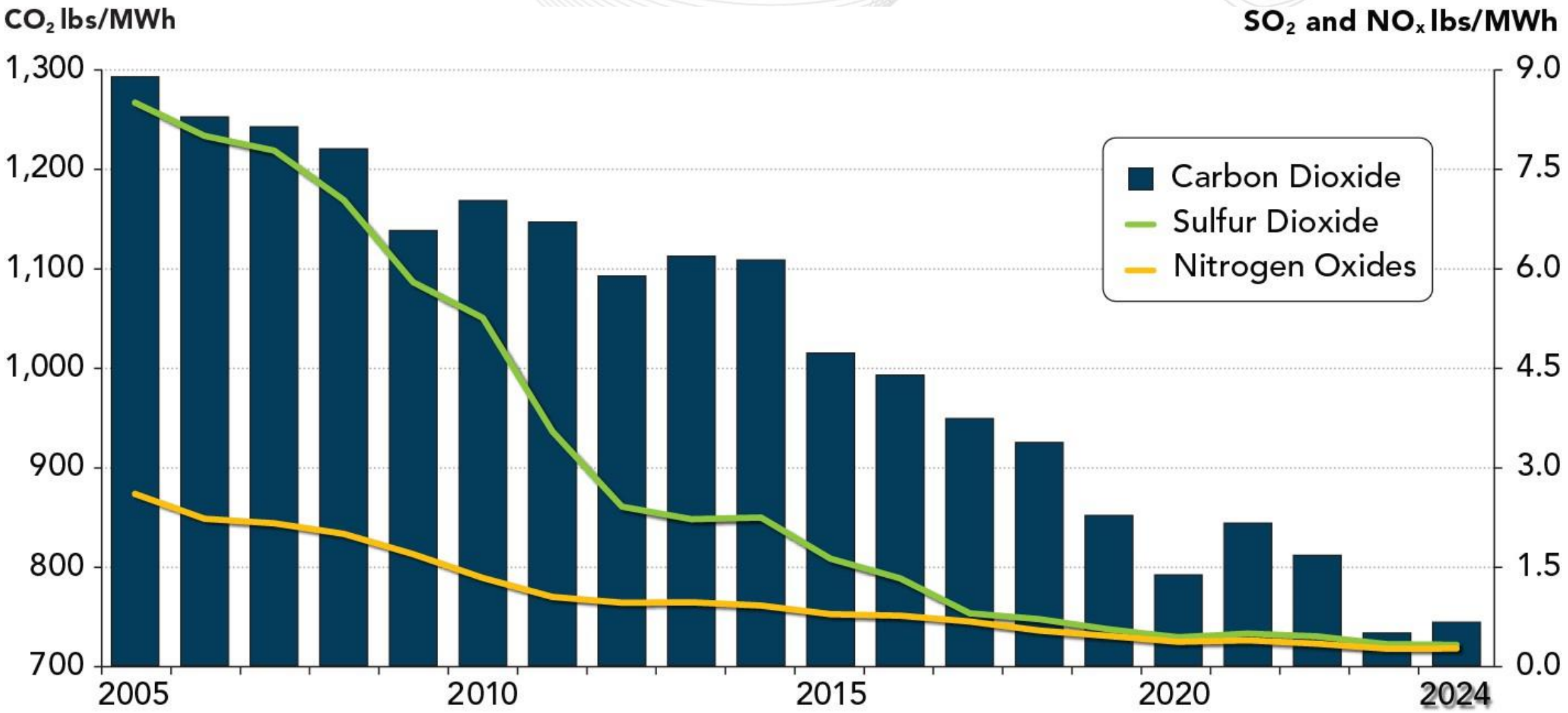
Maintain & Attract

Essential Reliability Services

Ensuring a Reliable Energy Transition



PJM System Average Emission Rates



Policy Takeaways

- **States should avoid policies intended to push *existing generation resources* off of the system until an adequate quantity of replacement generation is online and has been shown to be operating**
- **States should help to bring *new generation resources* onto the system as soon as possible**
- **States should address state and local challenges in the siting/permitting of all electricity infrastructure including *transmission infrastructure***
- **Consider consumer *cost increases* as a natural byproduct of policies that exacerbate the supply/demand imbalance.**