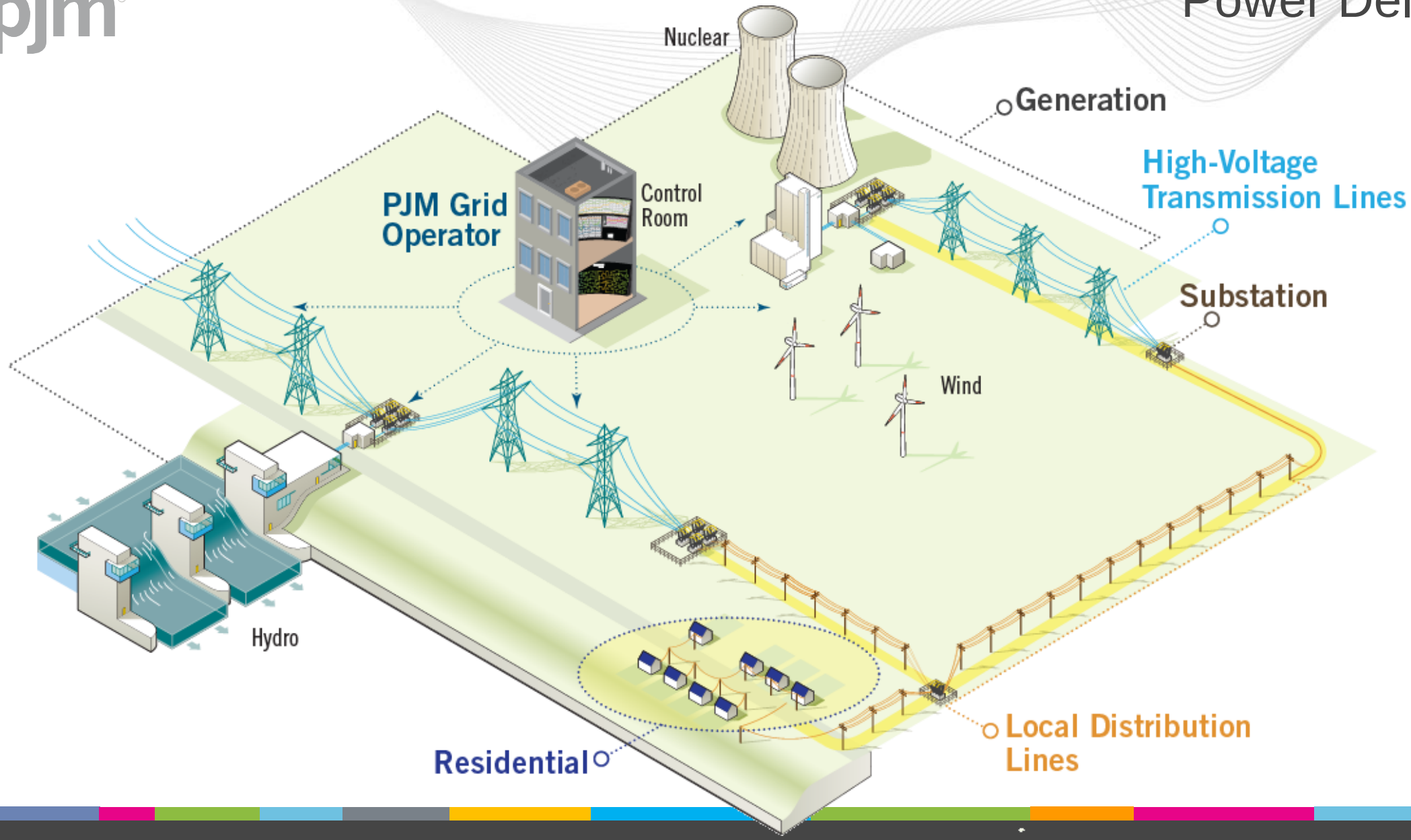
PJM: Introduction · Resource Adequacy · New Demand Projections

Virginia General Assembly
Commission On Electric Utility Regulation

Asim Z. Haque
Sr. Vice President, Governmental & Member Services

May 22, 2025

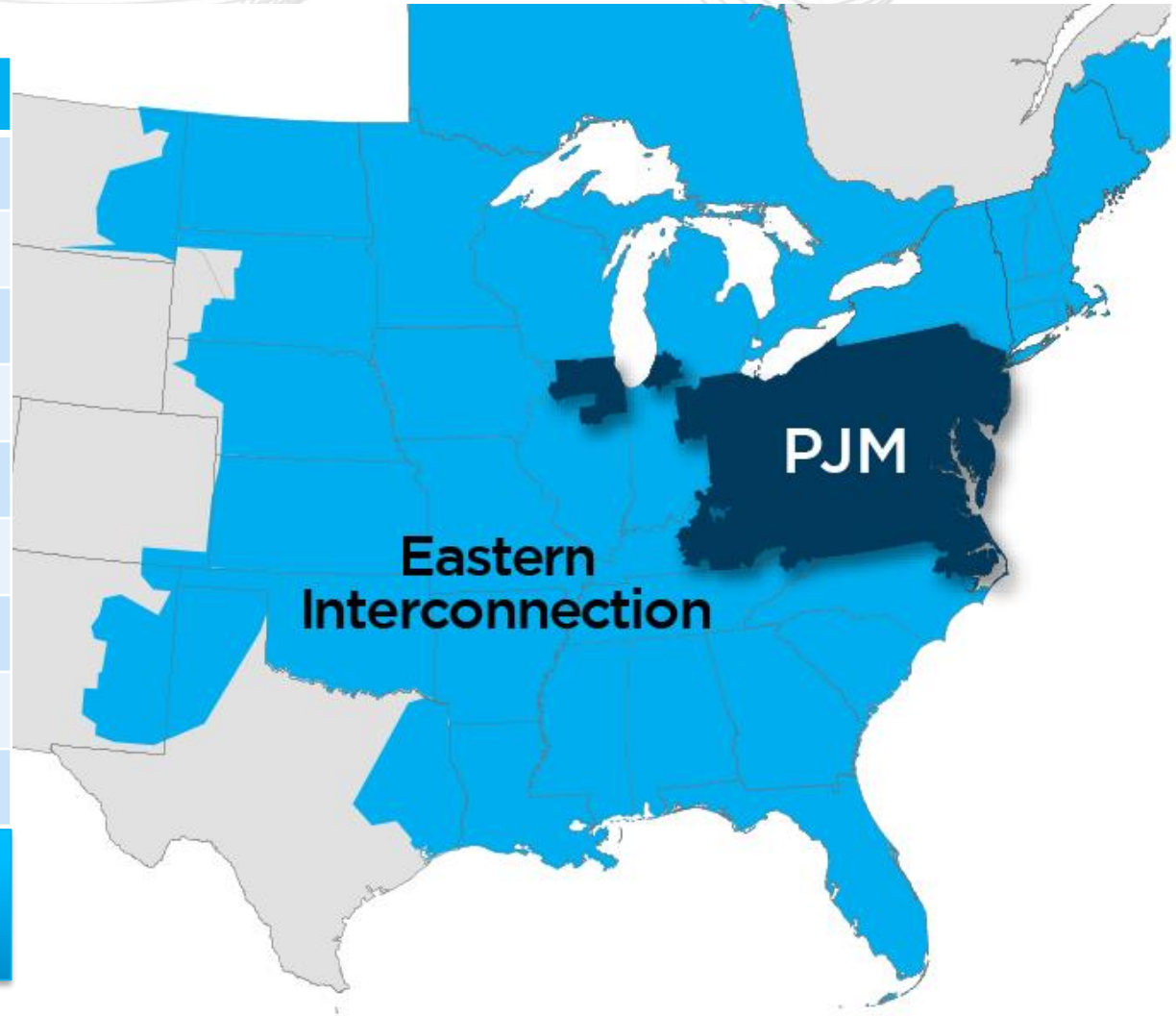
Power Delivery



PJM as Part of the Eastern Interconnection

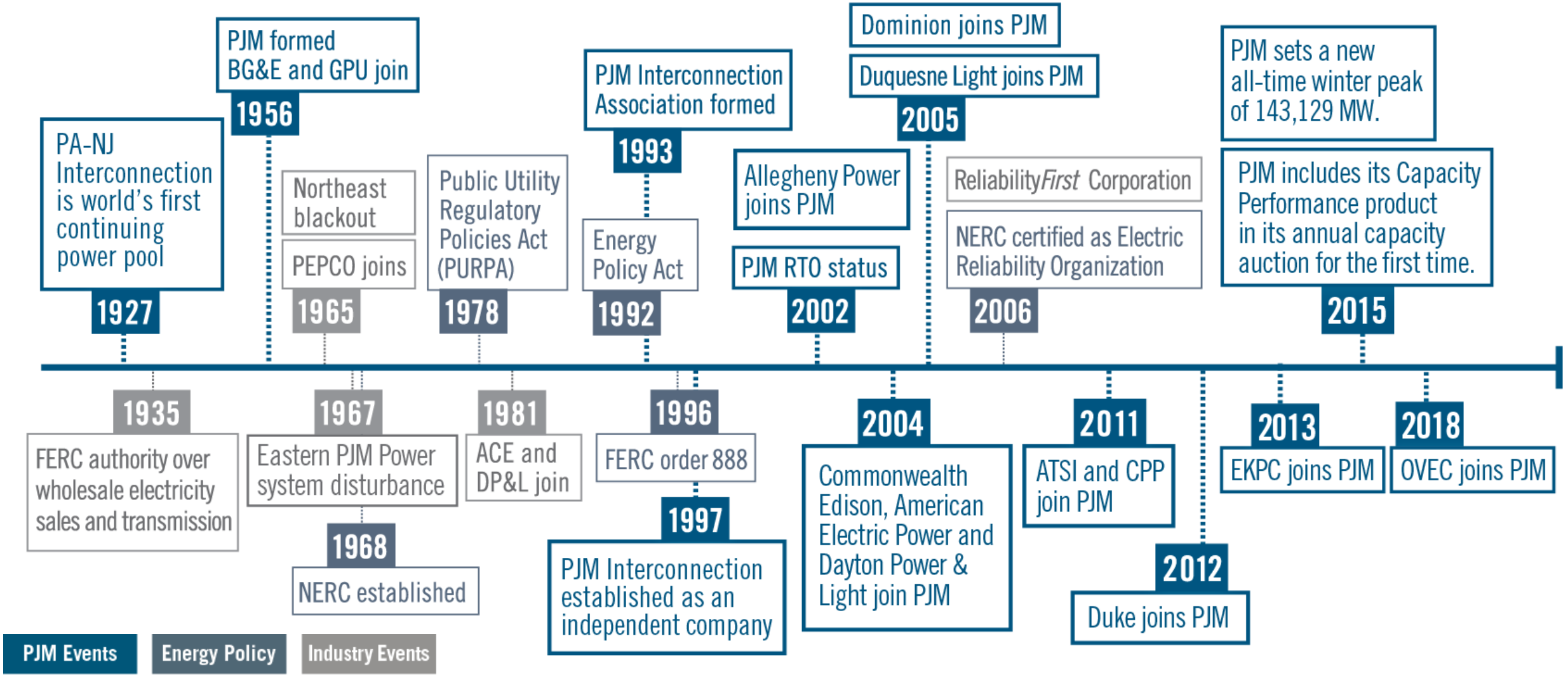
Key Statistics	
Member companies	1,110
Millions of people served	67+
Peak load in megawatts	165,563
Megawatts of generating capacity	182,036
Miles of transmission lines (BES)	88,333
Gigawatt hours of annual energy	800,004
Generation sources	1,486
Square miles of territory	369,054
States served	13 + DC

- 27% of generation in Eastern Interconnection
- 24% of load in Eastern Interconnection



As of 2/2025

The History of PJM



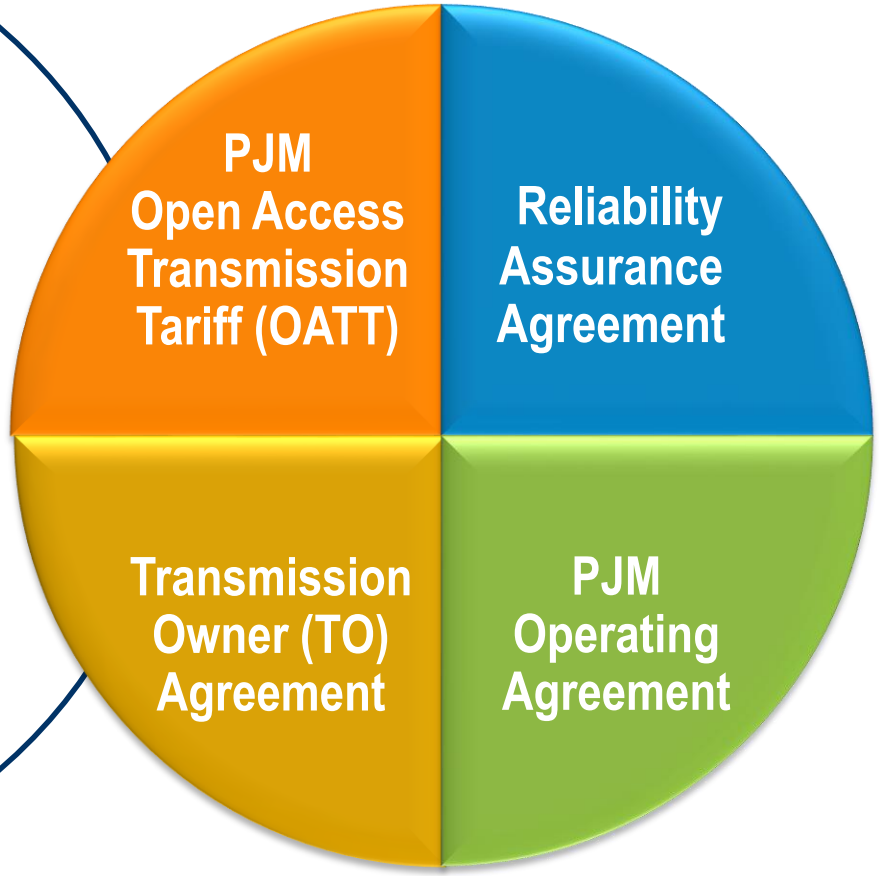
How Is PJM Different from Other Utility Companies?

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

Reliability Through Extreme Conditions

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

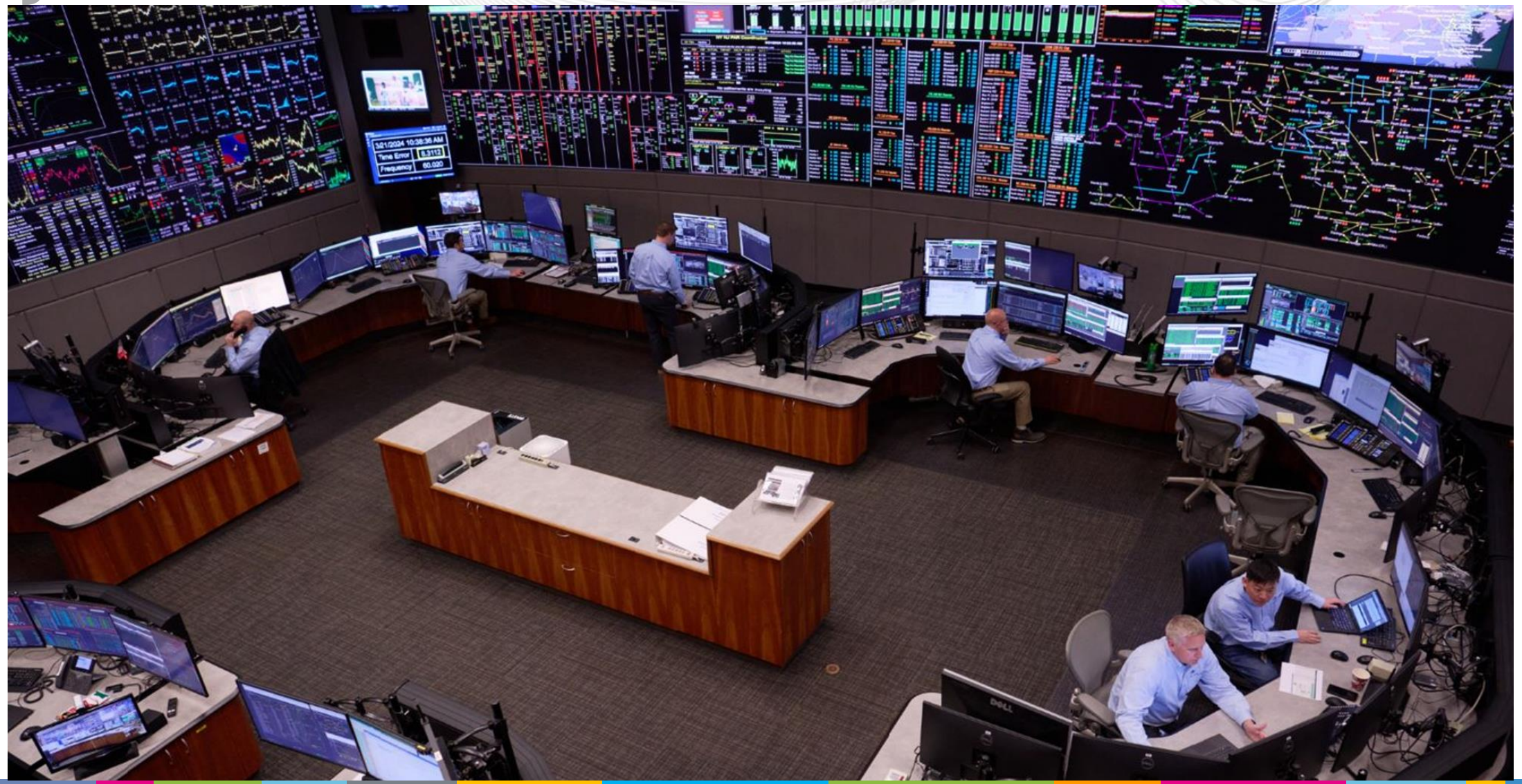
Markets | News | Operations

PJM, Members Preserve Reliability Through Arctic Outbreak

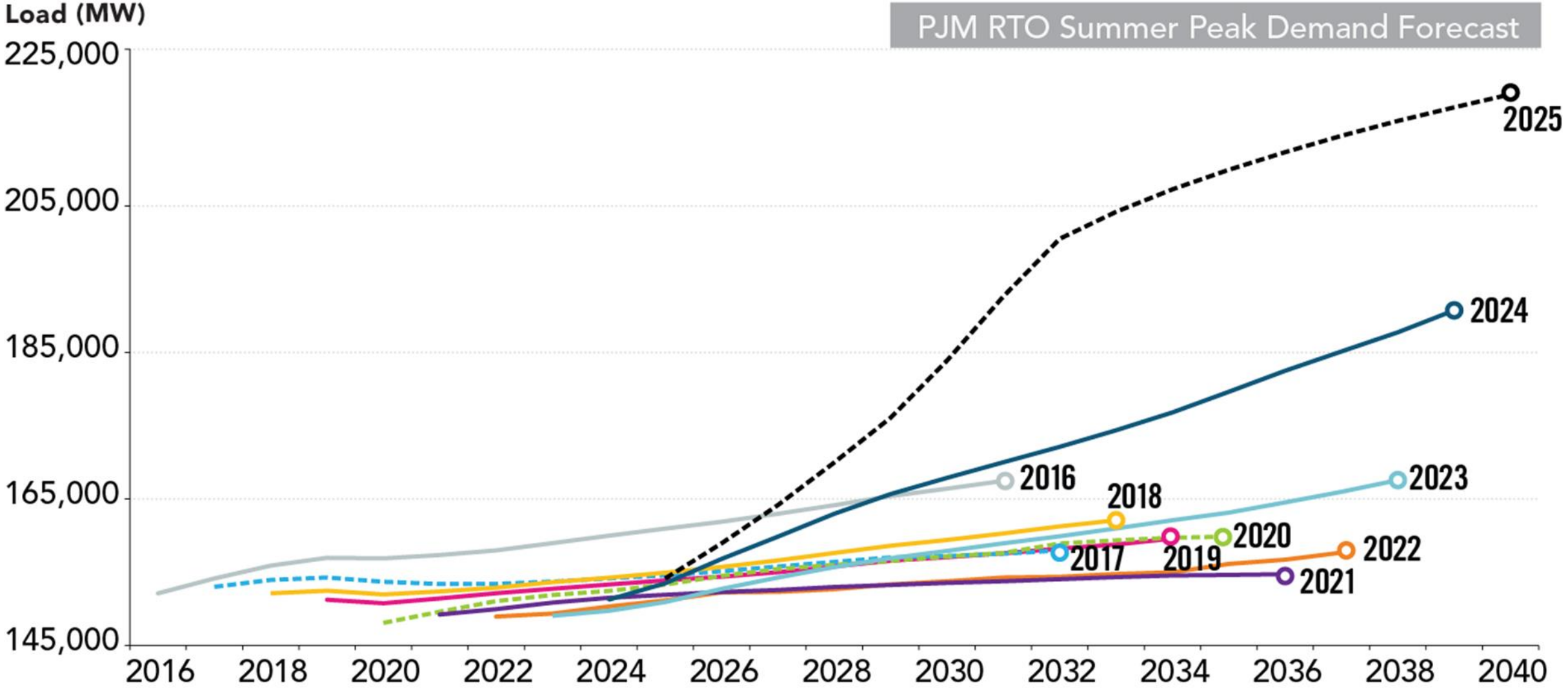
Load Forecasting, Communications, Generator/Transmission Performance Were Strengths

February 7, 2025 4

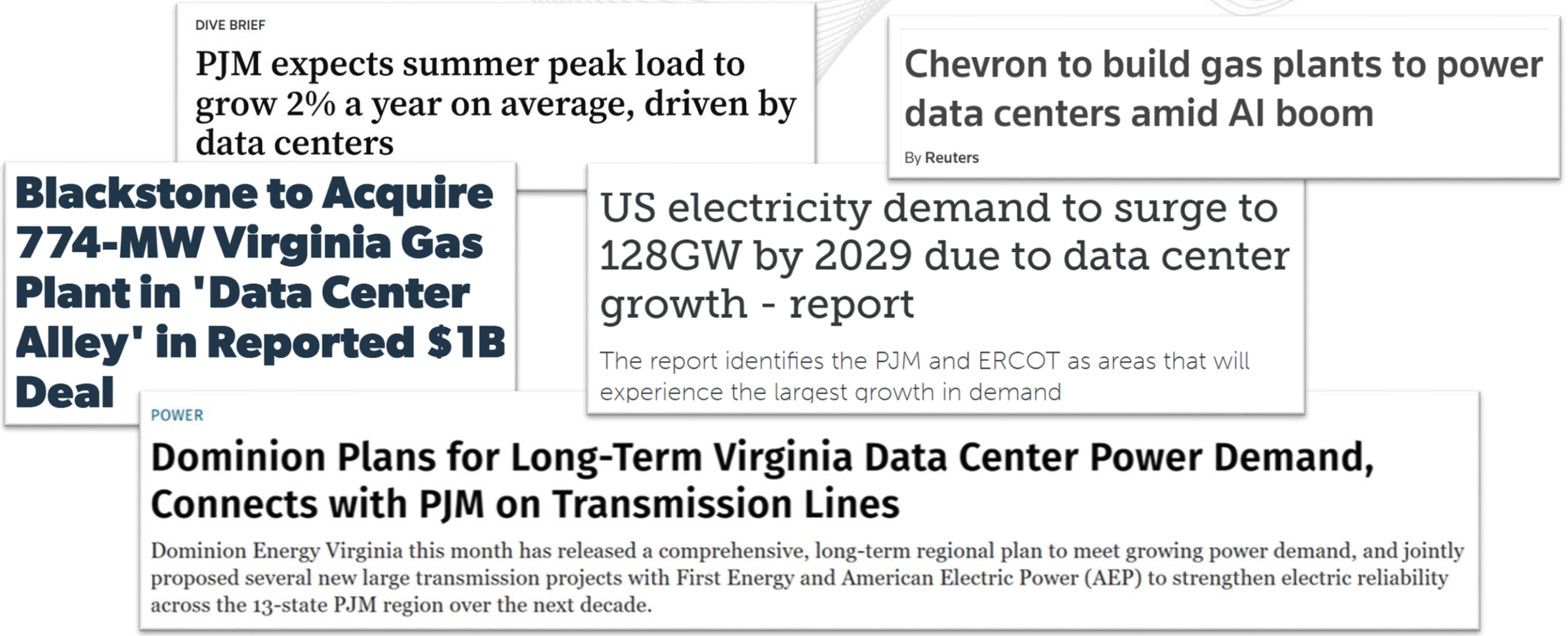
PJM on Thursday reviewed the extensive actions taken by the grid operator and its members to successfully maintain reliability through the record-breaking, extended cold temperatures that swept through the region through the Martin Luther King Jr. holiday period.



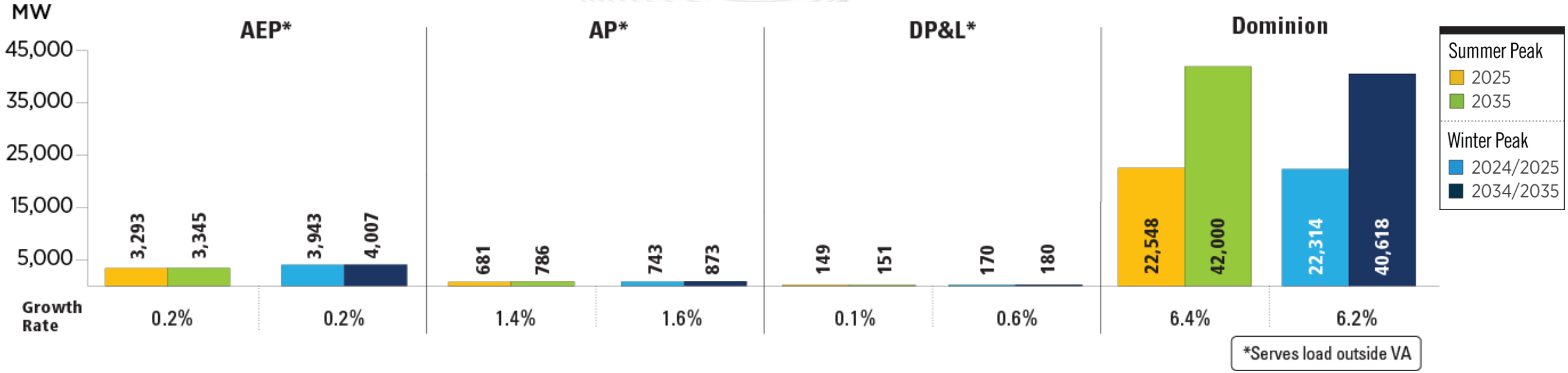
Electricity Demand Growth



Data Center Proliferation



VA – 2025 Load Forecast Report



The summer and winter peak megawatt values reflect the estimated amount of forecast load to be served by each transmission owner in the noted state/district. Estimated amounts were calculated based on the average share of each transmission owner's real-time summer and winter peak load in those areas over the past five years.

PJM RTO Summer Peak

2025	2035
154,144 MW	209,923 MW

Growth Rate 3.1%

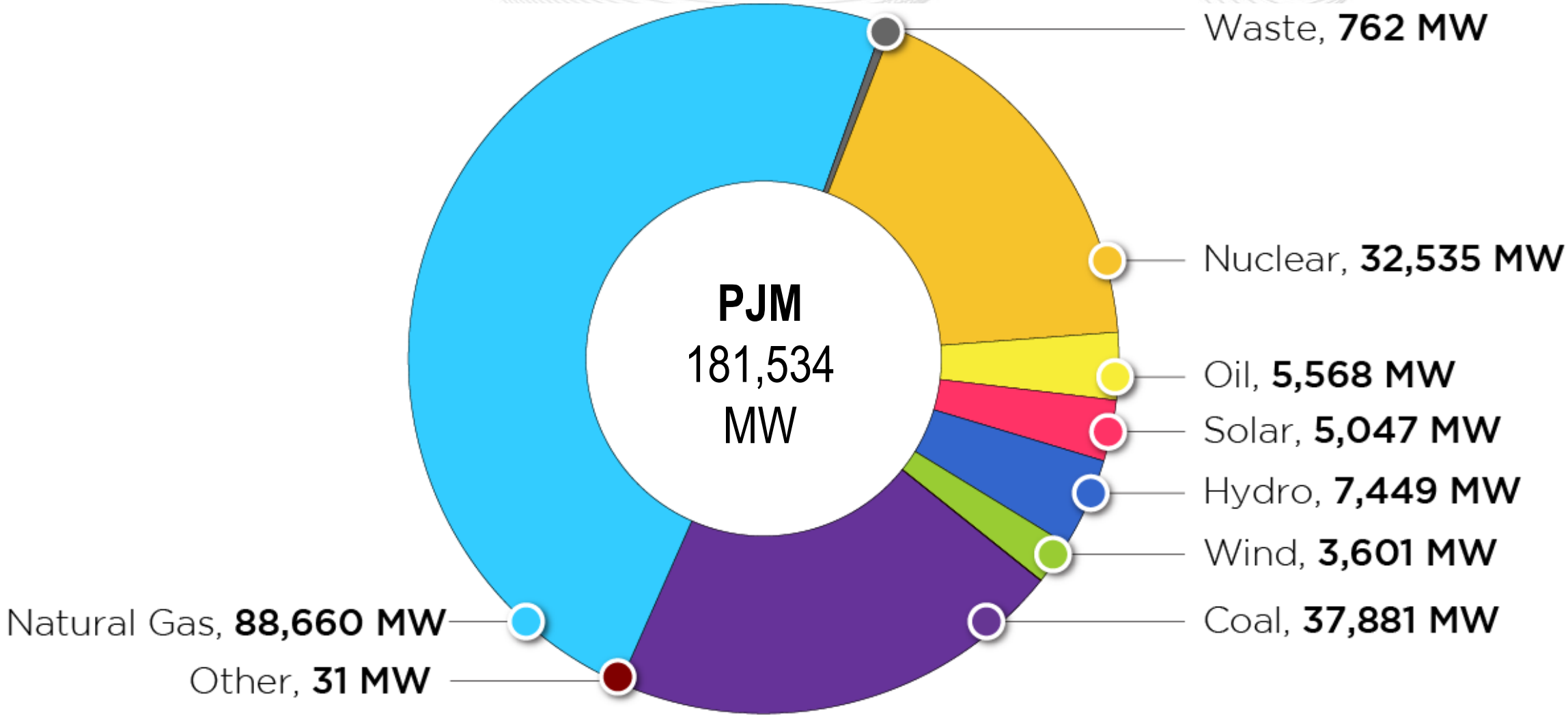
PJM RTO Winter Peak

2024/2025	2034/2035
136,127 MW	198,175 MW

Growth Rate 3.8%

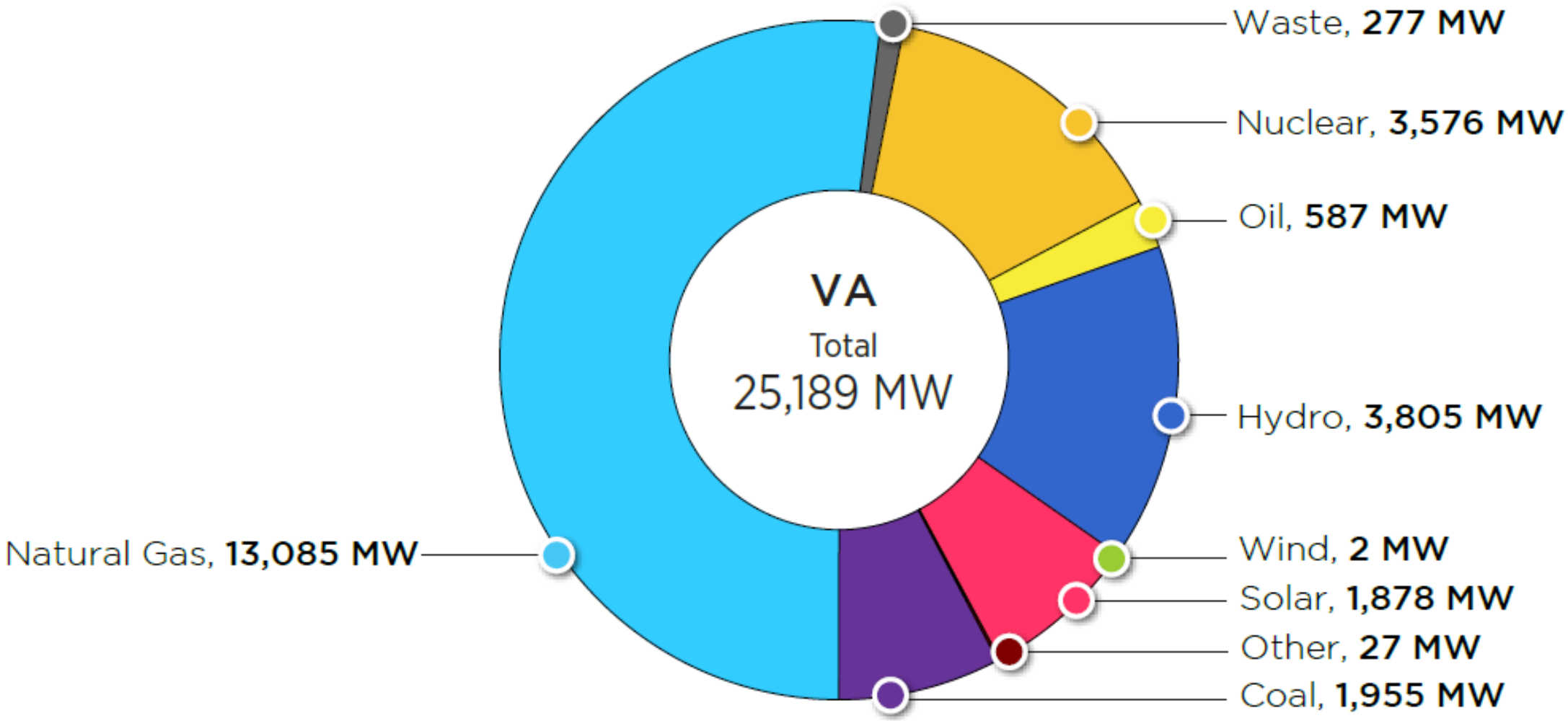
PJM Existing Installed Capacity Mix

(CIRs – as of Dec. 31, 2024)



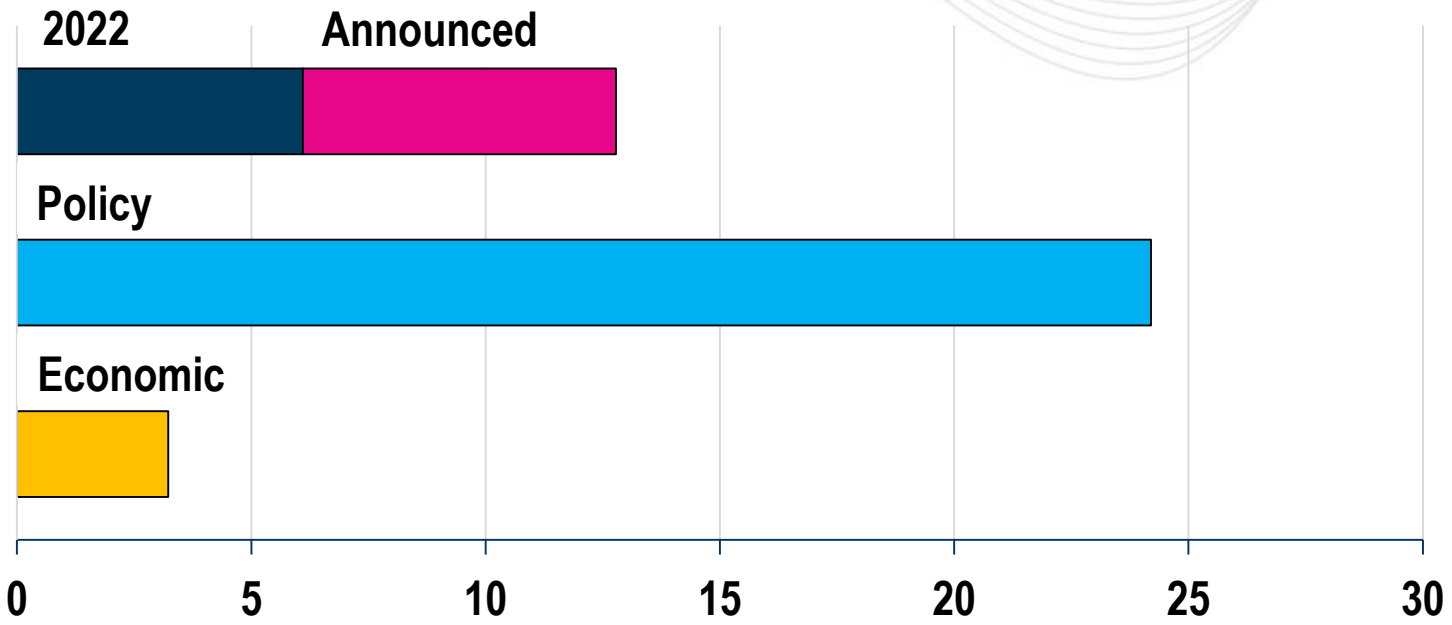
Virginia – Existing Installed Capacity (MW) by Fuel Type

(as of Dec. 31, 2024)

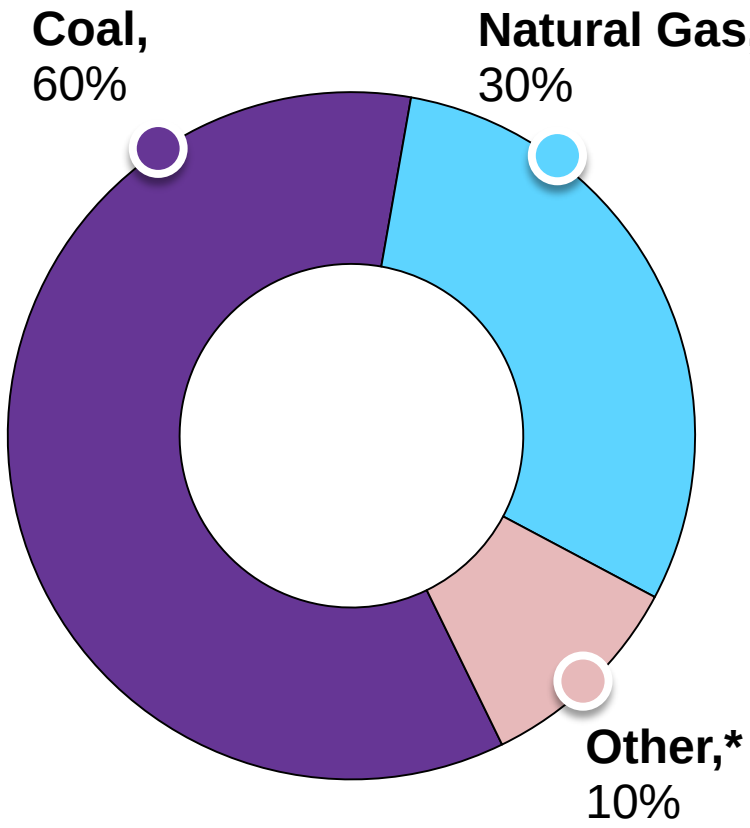


Forecasted Retirements (2022–2030)

Total Forecasted Retirement Capacity (GW)



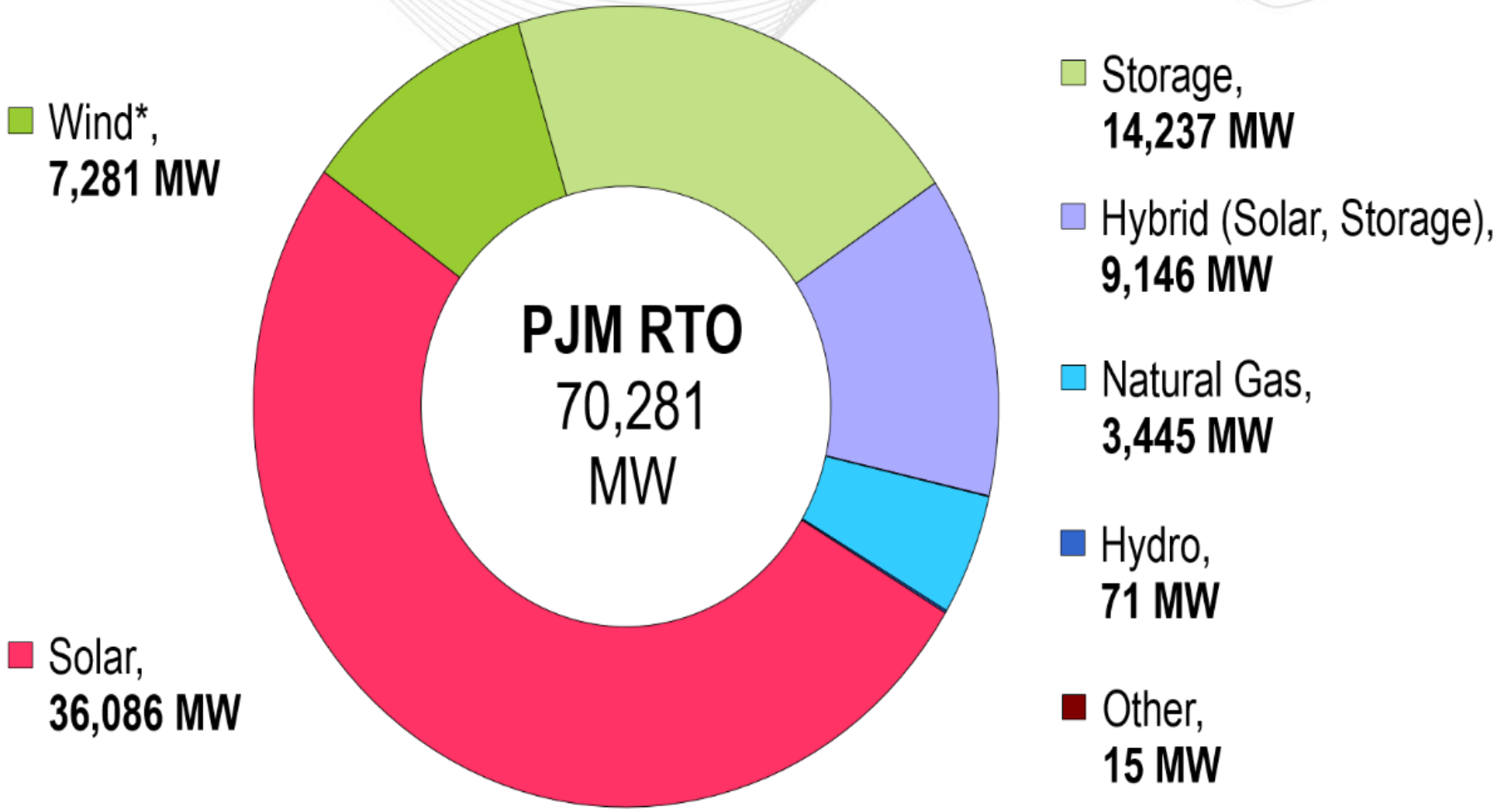
This **40 GW** represents
21% of PJM's current
192 GW of installed generation



*Other includes diesel, etc.

PJM Queued Capacity (Nameplate) by Fuel Type

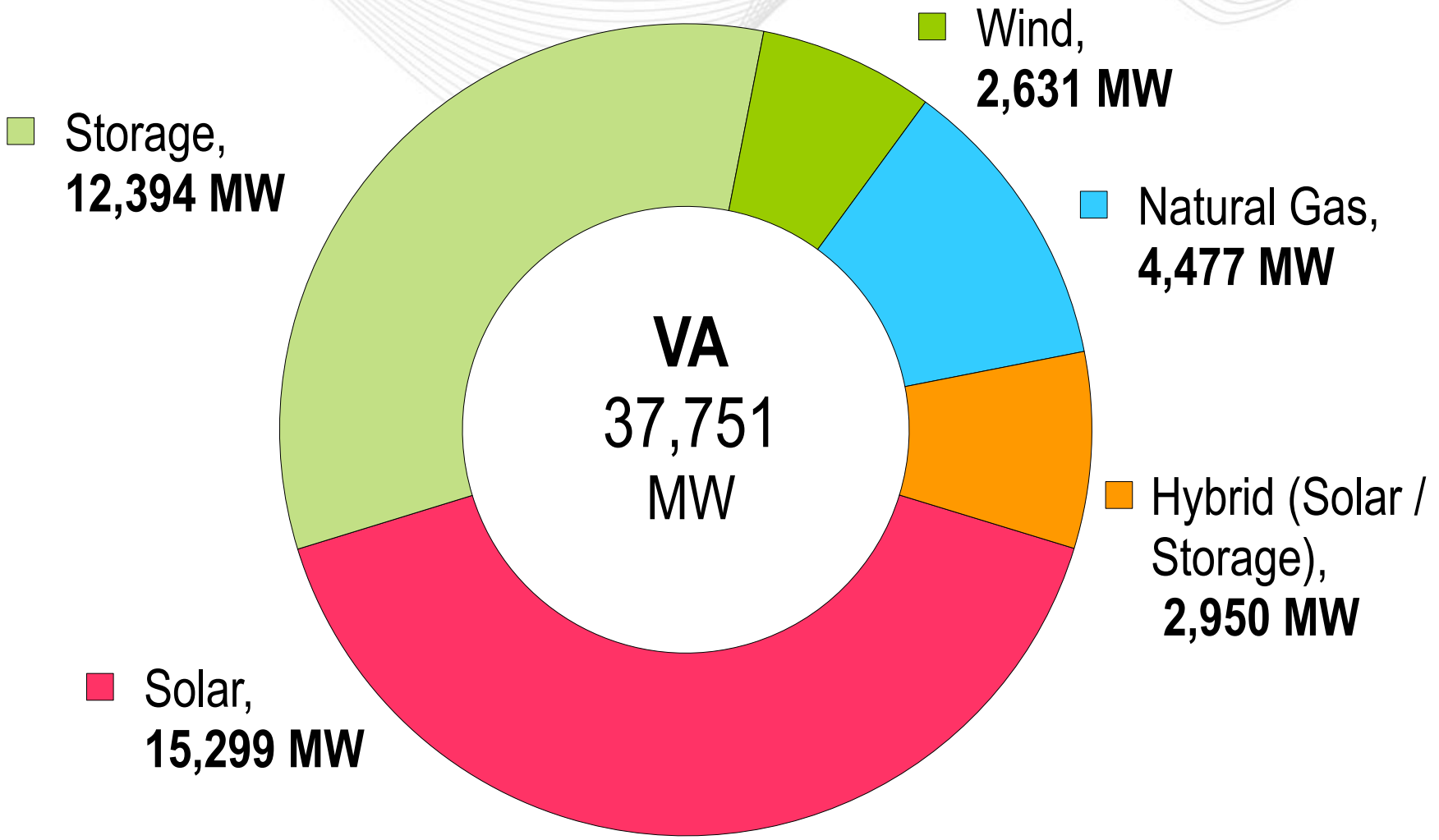
("Active" in the PJM Queue as of Mar. 11, 2025)



*Includes offshore wind

Virginia Queued Capacity (Nameplate) by Fuel Type

(Includes projects under study and with interconnection agreements of May 7, 2025)

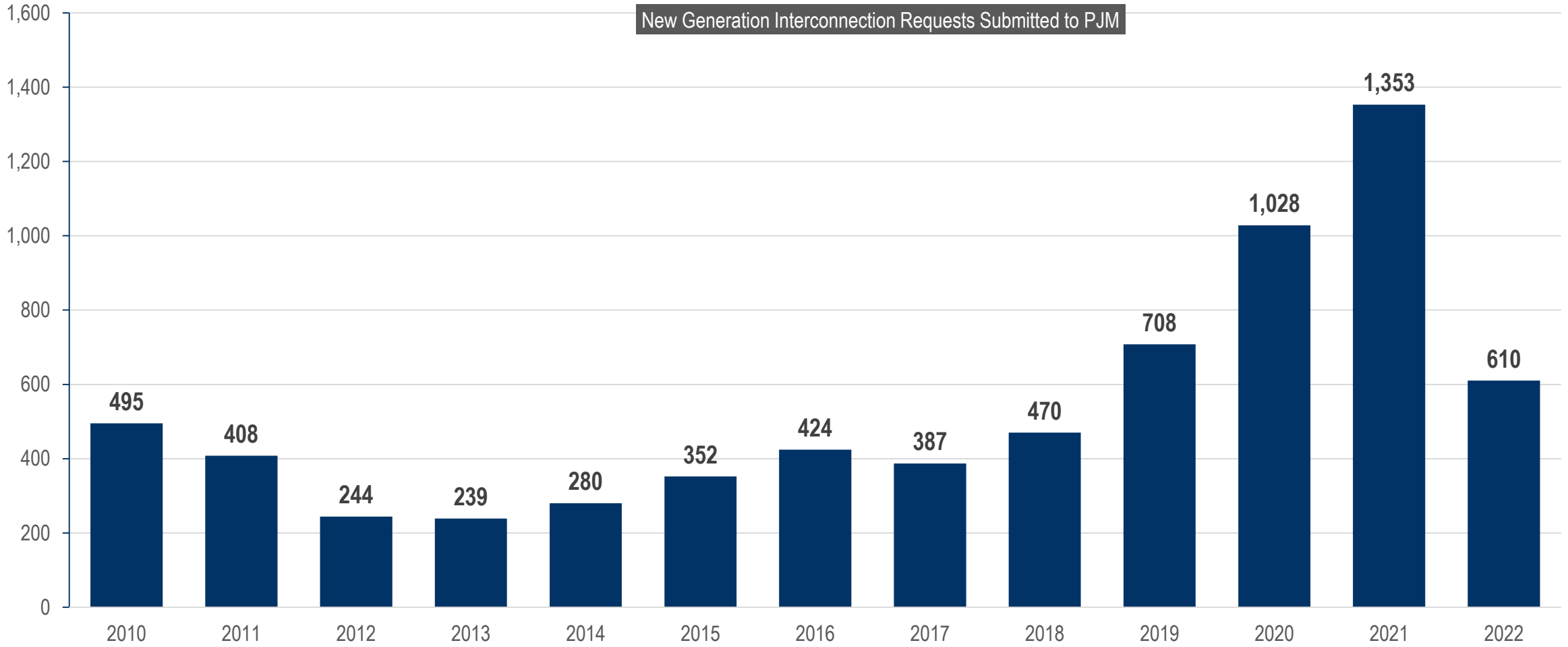


*Wind includes both onshore and offshore wind

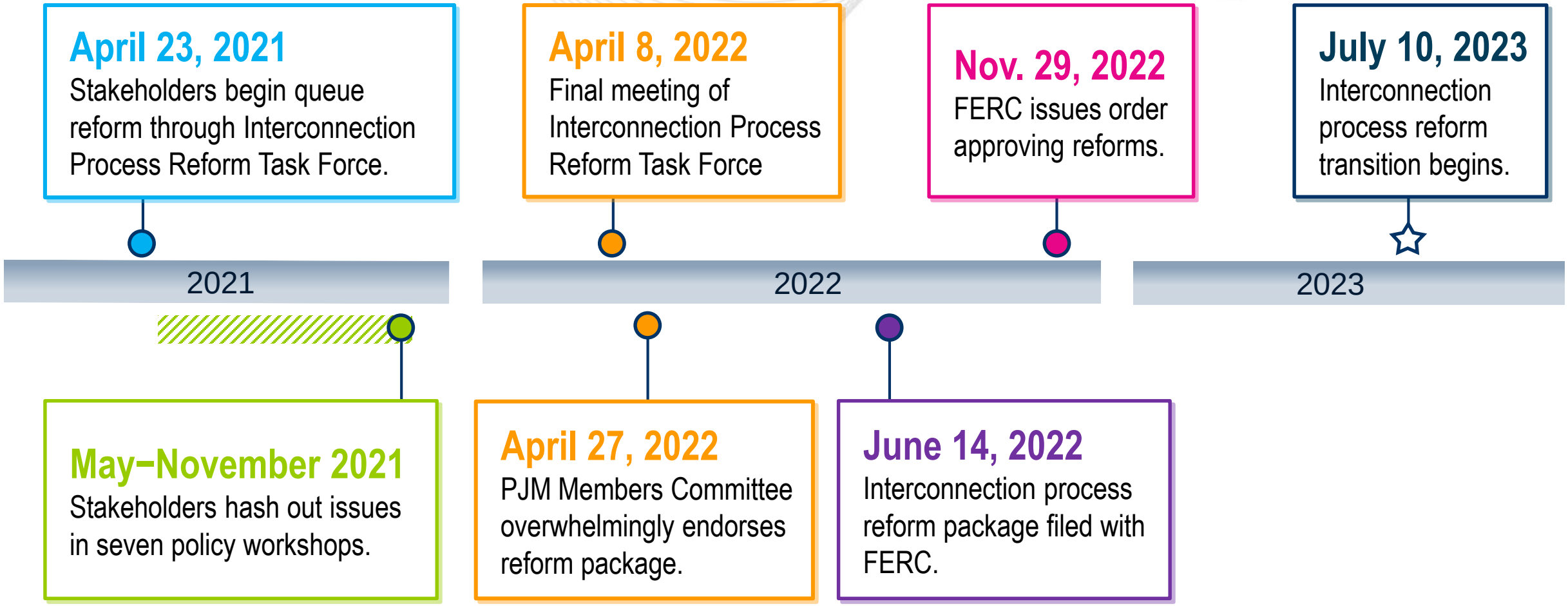
ELCC – Capability of Generator Classes

	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%

Interconnection Queue Projects By Year



Implemented Interconnection Reforms

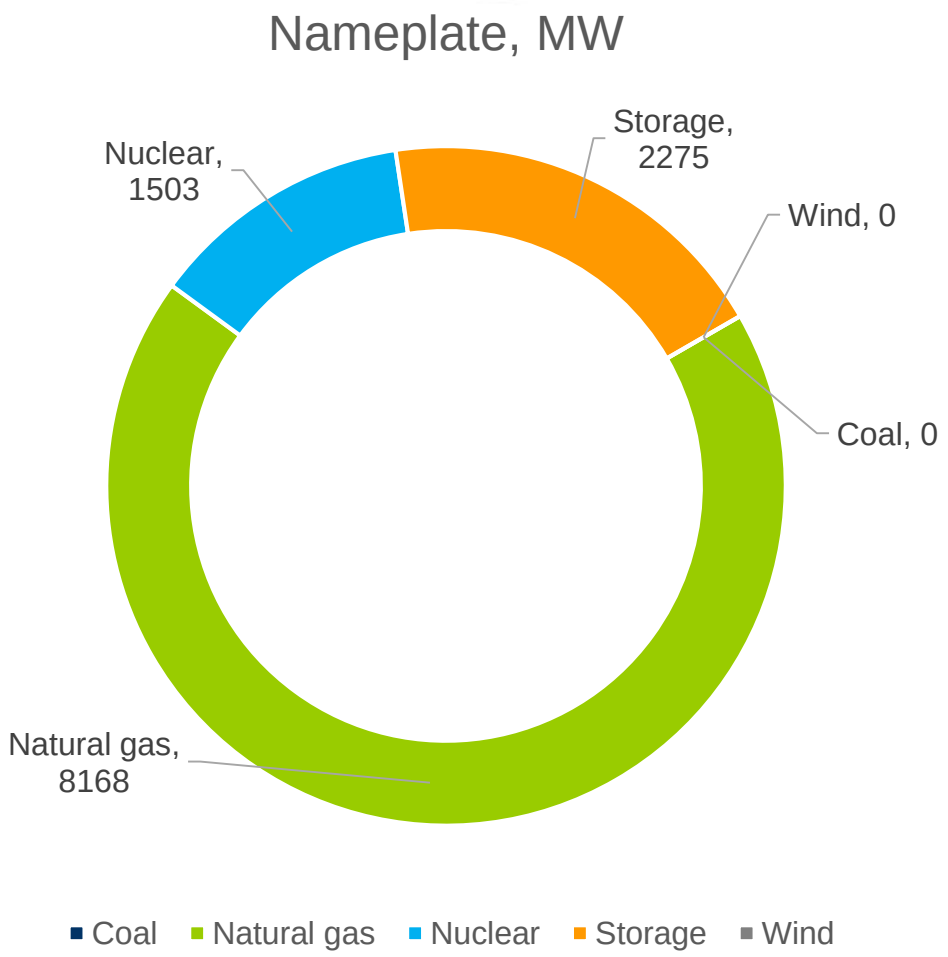


PJM Efforts to Expedite Supply

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

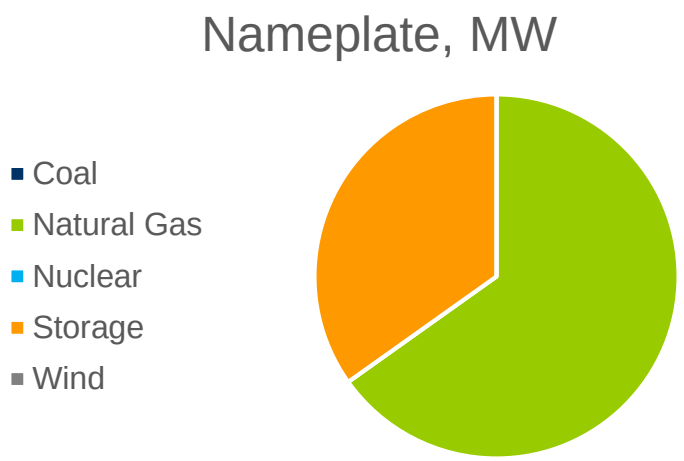
RRI - All Projects by State

	Number	Nameplate	CIR
Delaware			
Illinois	4	398	313
Indiana			
Kentucky	1	786	759
Maryland	2	554	548
Michigan			
North Carolina			
New Jersey	5	550	607
Ohio	9	3,363	3,242
Pennsylvania	7	1,201	1,293
Tennessee			
Virginia	22	5,095	5,309
West Virginia	1	0	14
Total	**51**	**11,945**	**12,085**



Virginia

Fuel	Number	Nameplate	CIR
Coal			
Natural Gas	18	3,320	3,534
Nuclear			
Storage	4	1,775	1,775
Wind			
Total	**22**	**5,095**	**5,309**



Queue	County	Fuel	Type	Nameplate	CIR
AH1-676	Orange	Nat gas	New	1,295	1,295
AH1-677	Greensville	Nat gas	Uprate	0	67
AH1-678	Brunswick	Nat gas	Uprate	0	34
AH1-679	Hanover	Nat gas	Uprate	20	20
AH1-681	Fluvanna	Nat gas	Uprate	0	27
AH1-682	Caroline	Nat gas	Uprate	0	21
AH1-683	Caroline	Nat gas	Uprate	0	25
AH1-684	Fauquier	Nat gas	Uprate	0	23
AH1-685	Fauquier	Nat gas	Uprate	0	26
AH1-687	Buckingham	Nat gas	Uprate	0	51
AH1-691	Caroline	Nat gas	Uprate	0	26
AH1-692	Caroline	Nat gas	Uprate	0	26
AH1-693	Fauquier	Nat gas	Uprate	0	20
AH1-694	Caroline	Nat gas	Uprate	0	18

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Virginia

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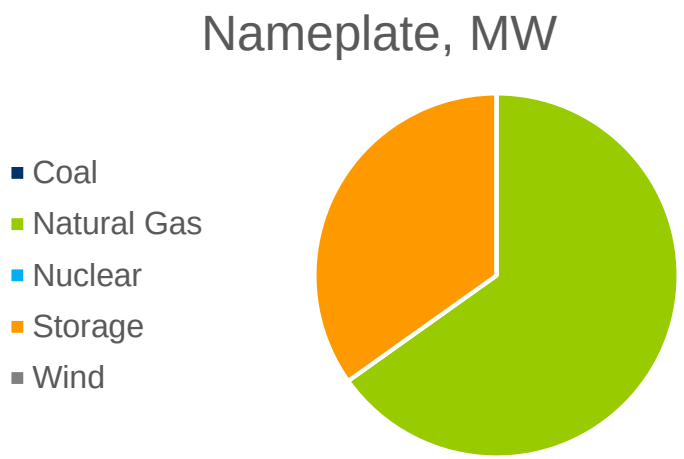
Queue	County	Fuel	Type	Nameplate	CIR
AH1-696	Prince William	Nat gas	Uprate	0	94
AH1-712	Fluvanna	Nat gas	New	776	611
AH1-716	James City	Storage	New	650	650
AH1-717	Surry	Nat gas	New	453	438
AH1-723	Fluvanna	Nat gas	New	776	712
AH1-726	James City	Storage	New	600	600
AH1-727	Loudon	Storage	New	425	425
AH1-729	Loudon	Storage	New	100	100



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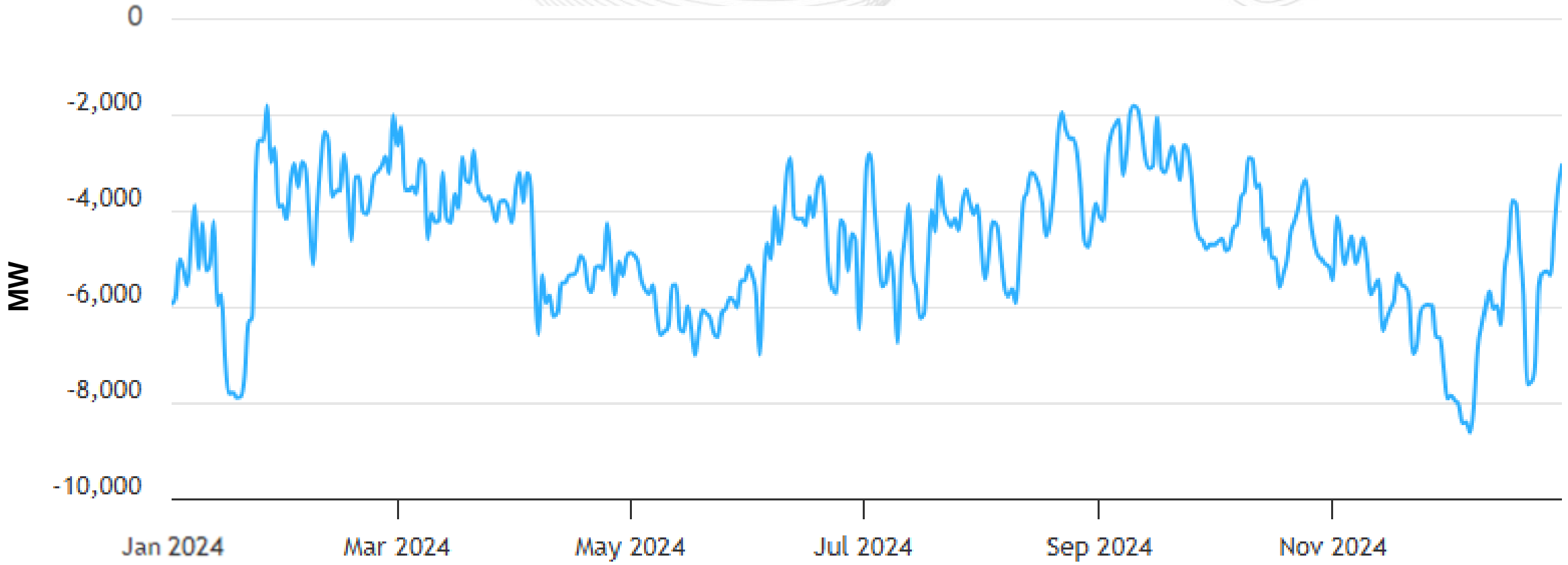
Virginia – Net Energy Import/Export Trend

(Jan. 2024 – Dec. 2024)



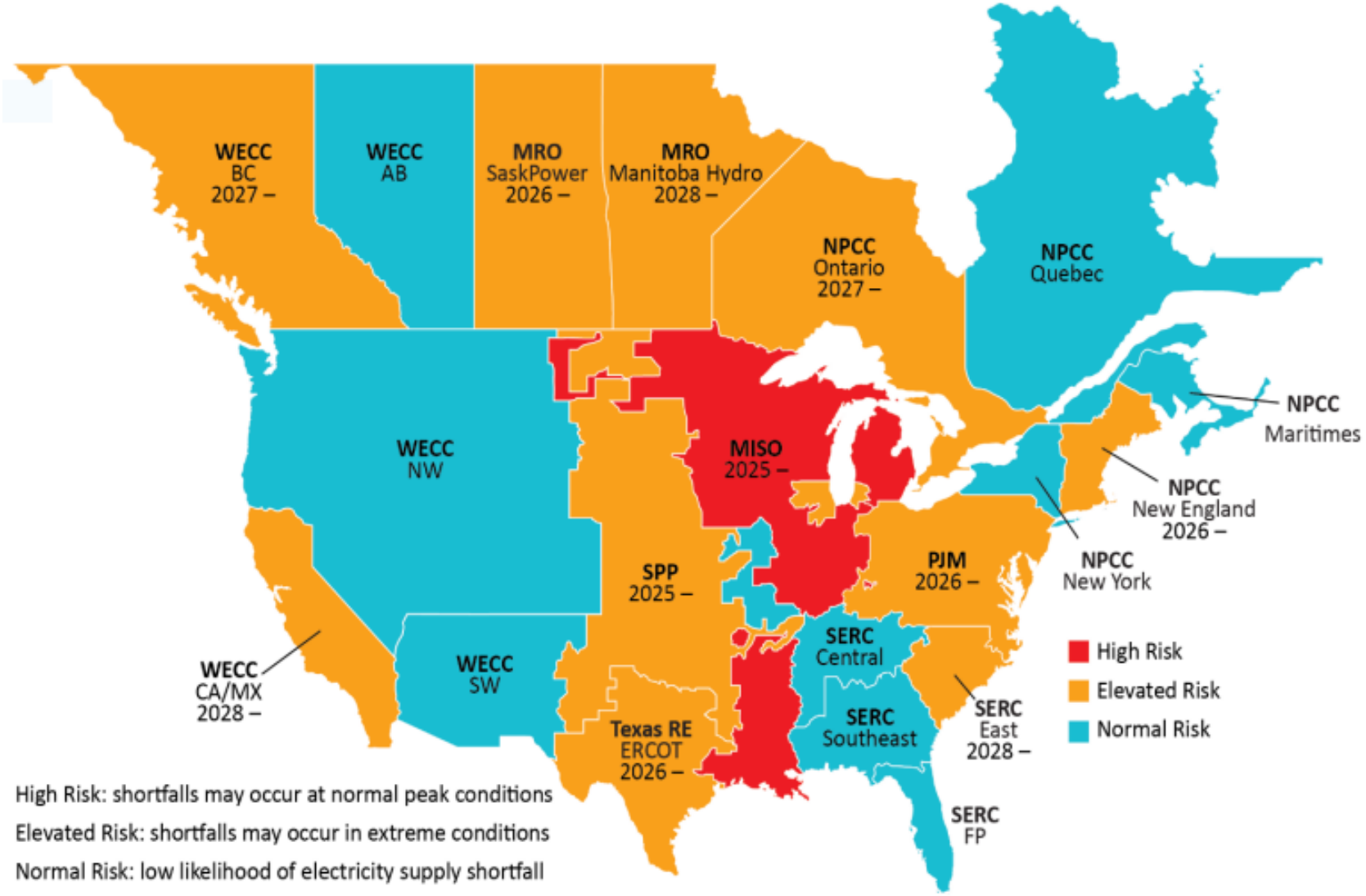
This chart reflects the portion of Virginia that PJM operates. Positive values represent exports and negative values represent imports.

Note – A significant amount of generation from units owned by Virginia jurisdictional utilities and included in regulated rates charged to Virginia customers are physically located outside of Virginia. They are categorized as imports in the chart.

NERC: Summer Reliability Assessment

raphic: NERC

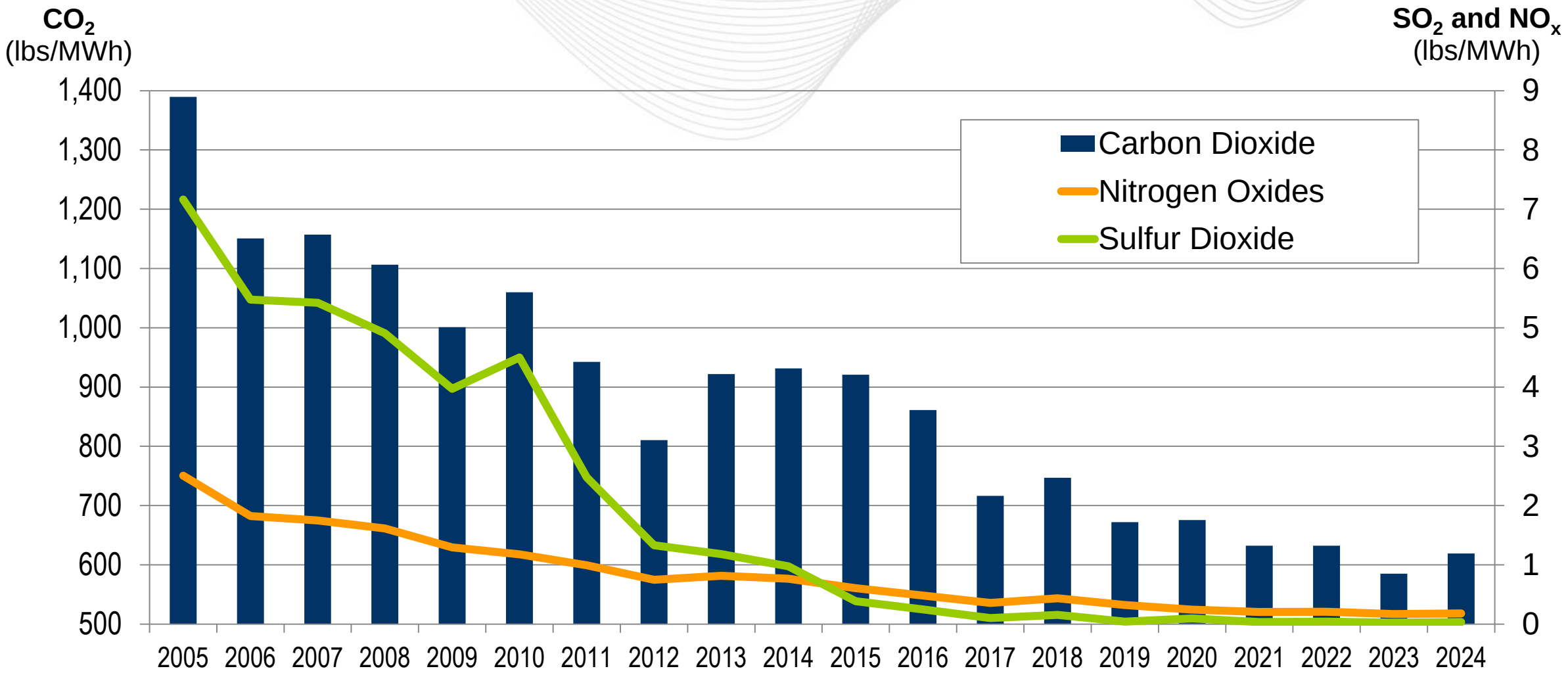
NERC: Long-Term Reliability Assessment



Graphic: NERC

Virginia – Average Emissions (lbs/MWh)

(Feb. 2025)



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***
- **Assist in facilitating *demand response* efforts for data centers and other large demand users**
- **Consider consumer *cost increases* as a natural byproduct of policies that exacerbate the supply/demand imbalance.**