PJM Introduction
and
Ensuring A Reliable Energy Transition

Pennsylvania House Environmental Resources & Energy Committee

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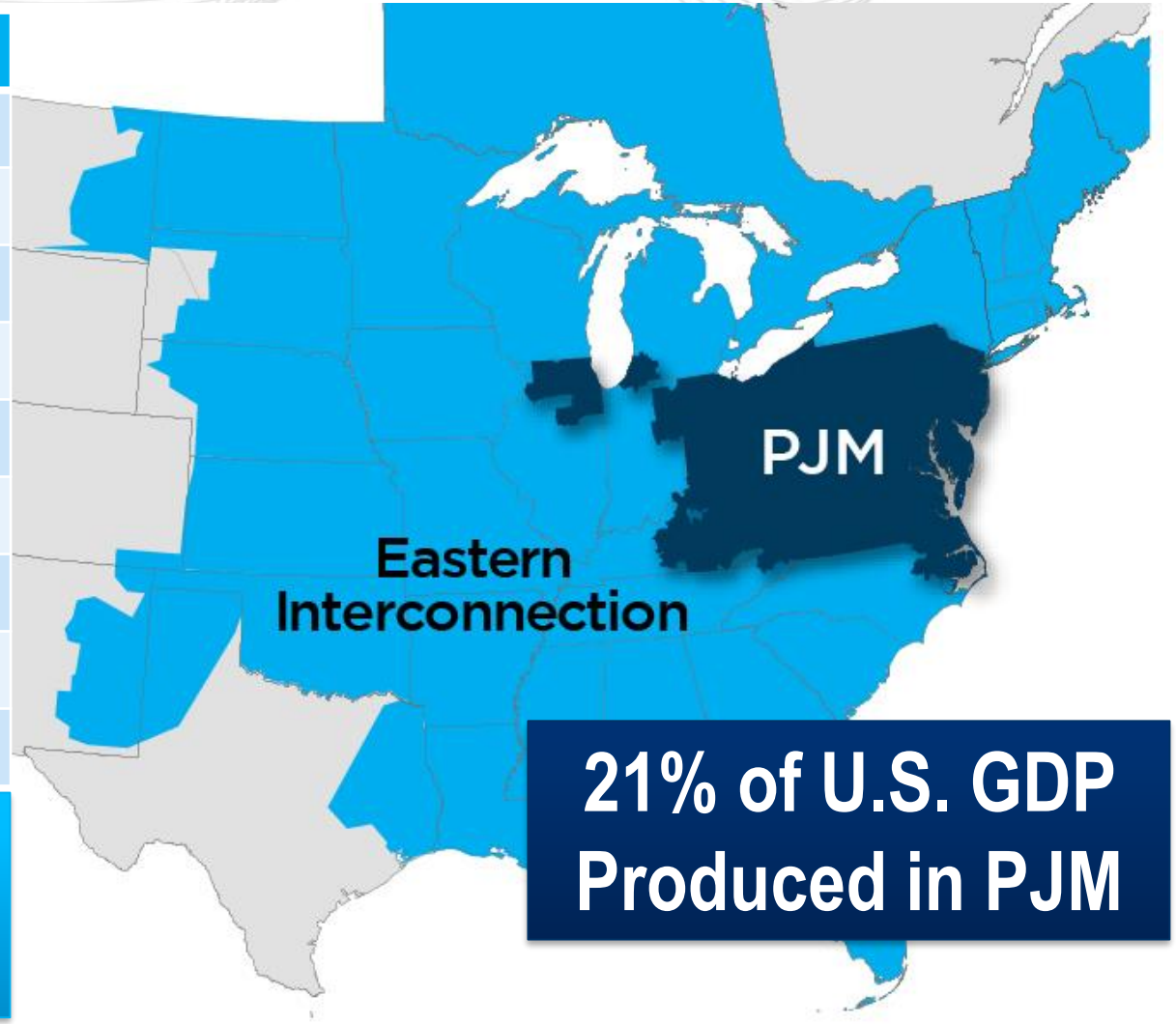
SVP, State Policy and Member Services

December 11, 2023

PJM as Part of the Eastern Interconnection

Key Statistics	
Member companies	1,060+
Millions of people served	65
Peak load in megawatts	165,563
Megawatts of generating capacity	185,442
Miles of transmission lines	85,103
2020 gigawatt hours of annual energy	782,683
Generation sources	1,436
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



21% of U.S. GDP Produced in PJM

As of 2/2022

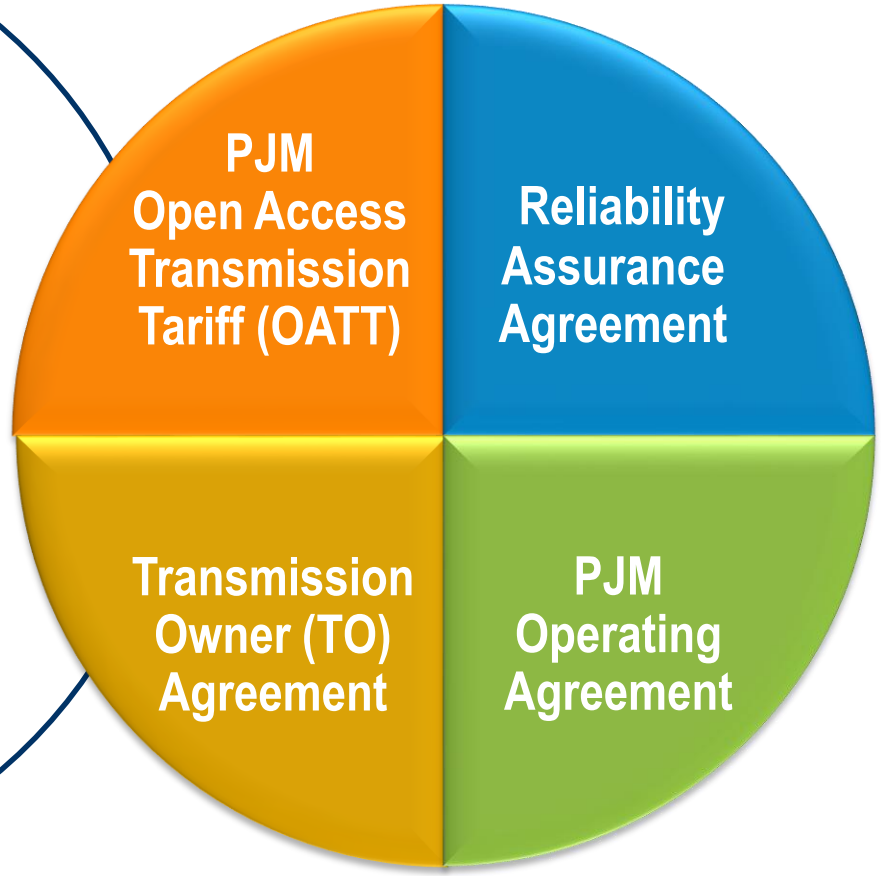
How Is PJM Different from Other Utility Companies?

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

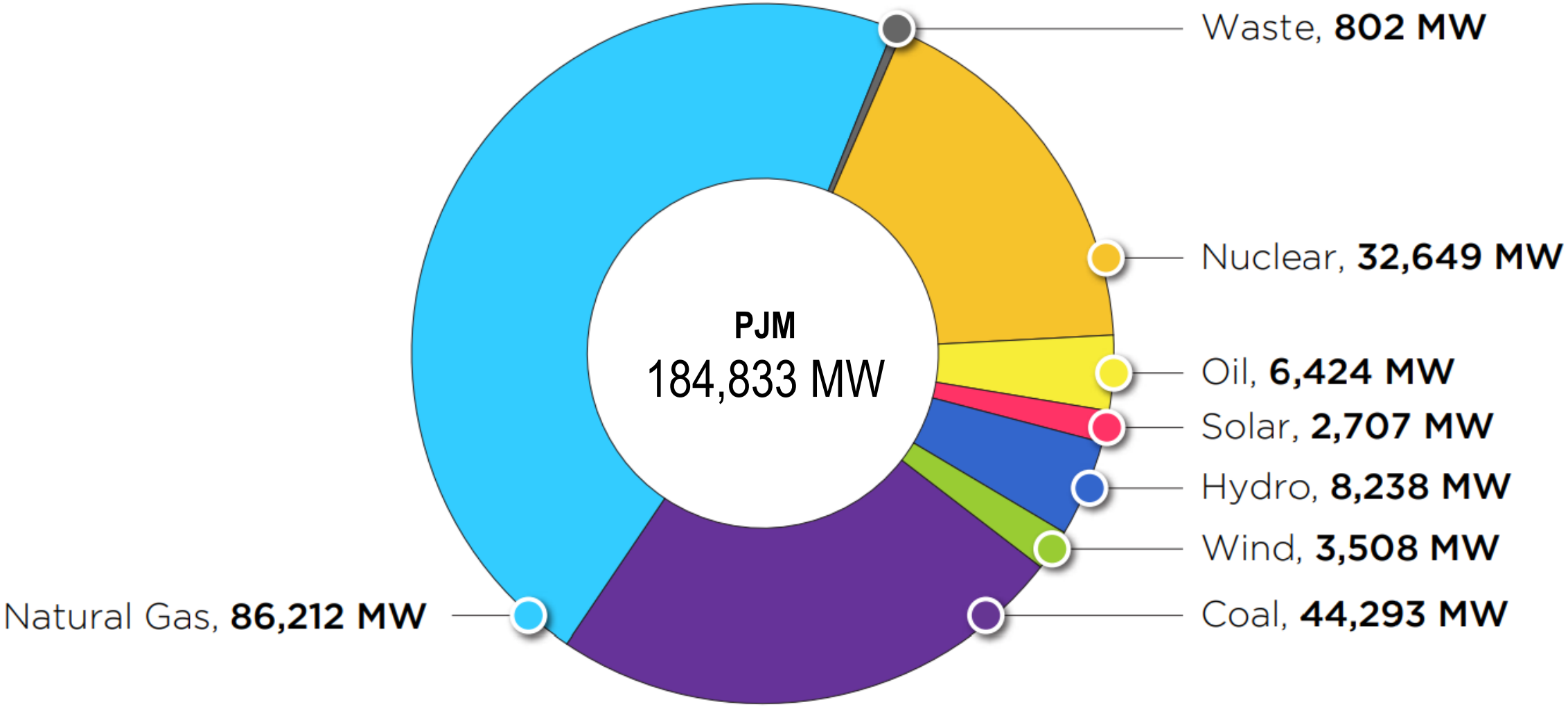
Markets
- Energy
- Capacity
- Ancillary services

Operations
- Grid operations
- Supply/demand balance
- Transmission monitoring

Regional Planning
- 15-year outlook

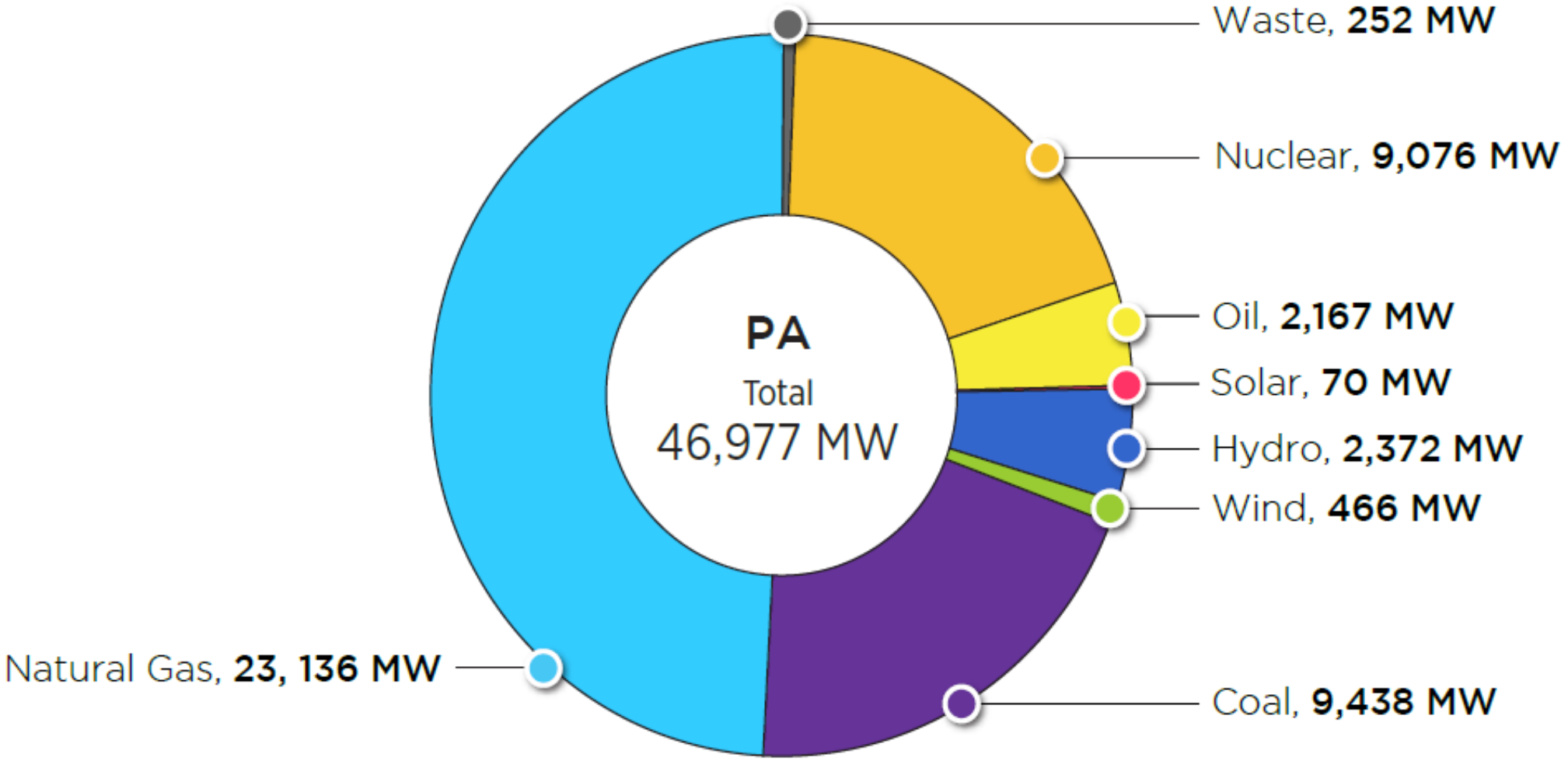
PJM – Existing Installed Capacity

(CIRs – as of Dec. 31, 2022)



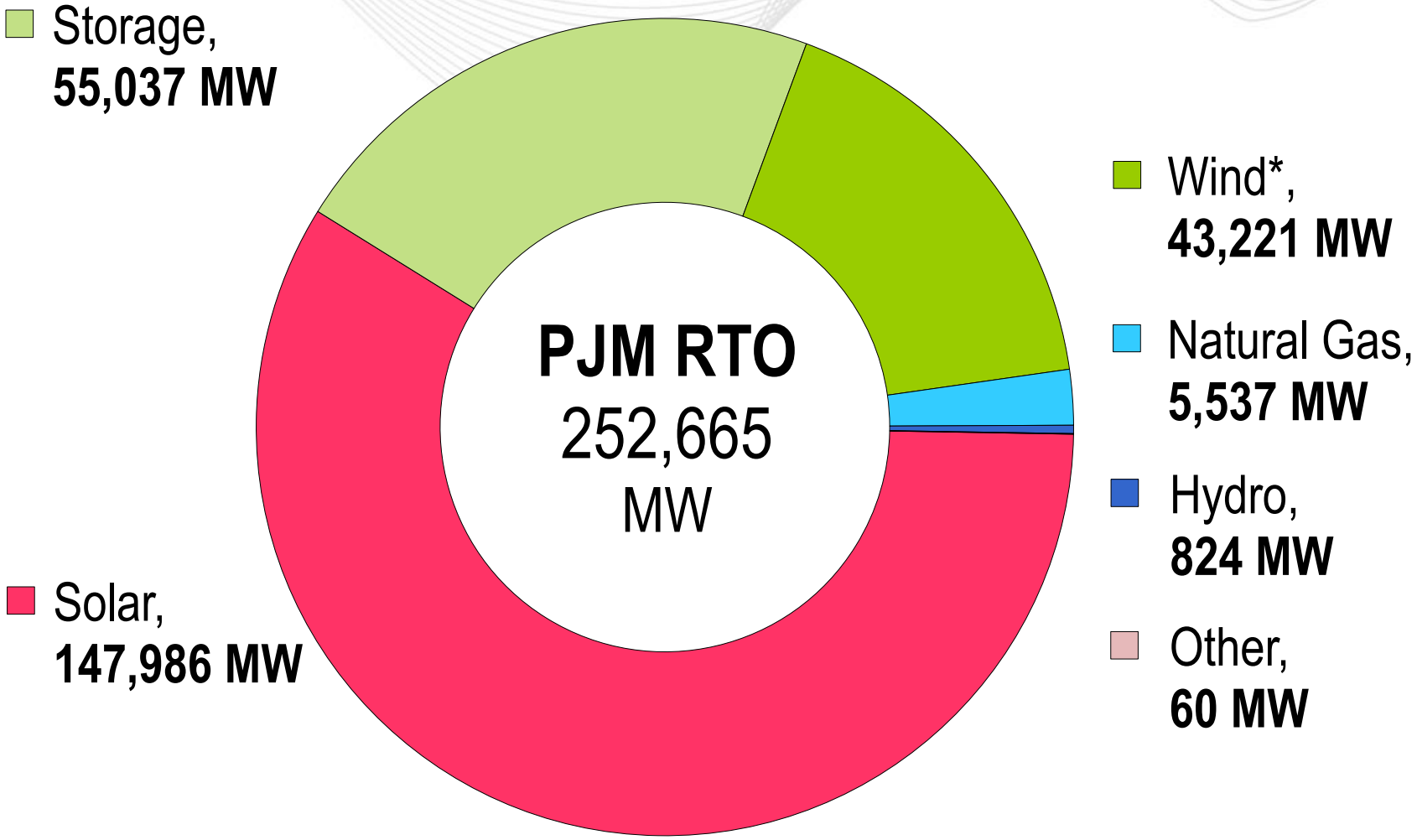
Pennsylvania – Existing Installed Capacity

(CIRs – as of Dec. 31, 2022)



PJM Queued Capacity (Nameplate) by Fuel Type

("Active" in the PJM Queue as of April 1, 2023)



*Wind includes both onshore and offshore wind

Pennsylvania Queued Capacity (Nameplate) by Fuel Type

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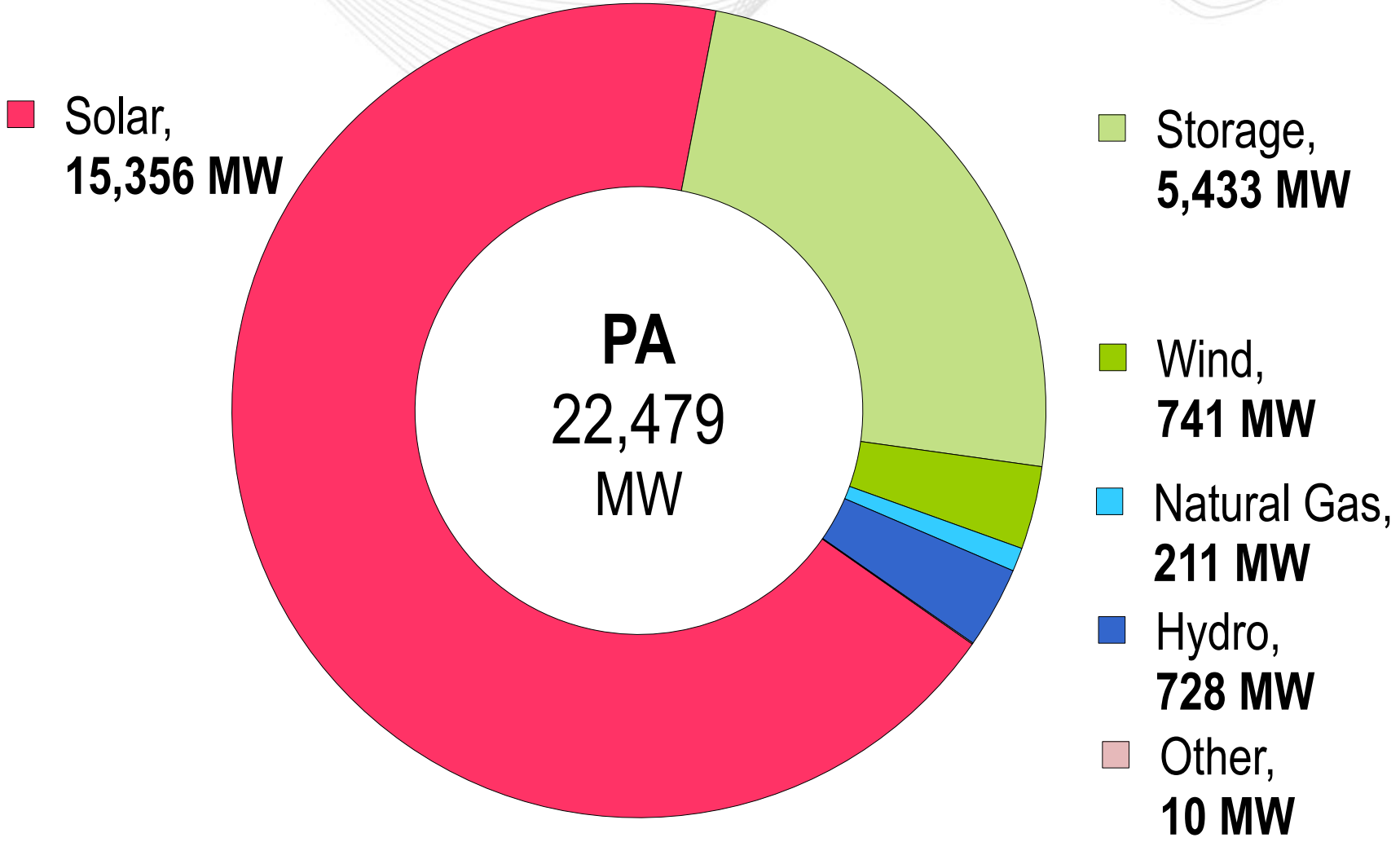
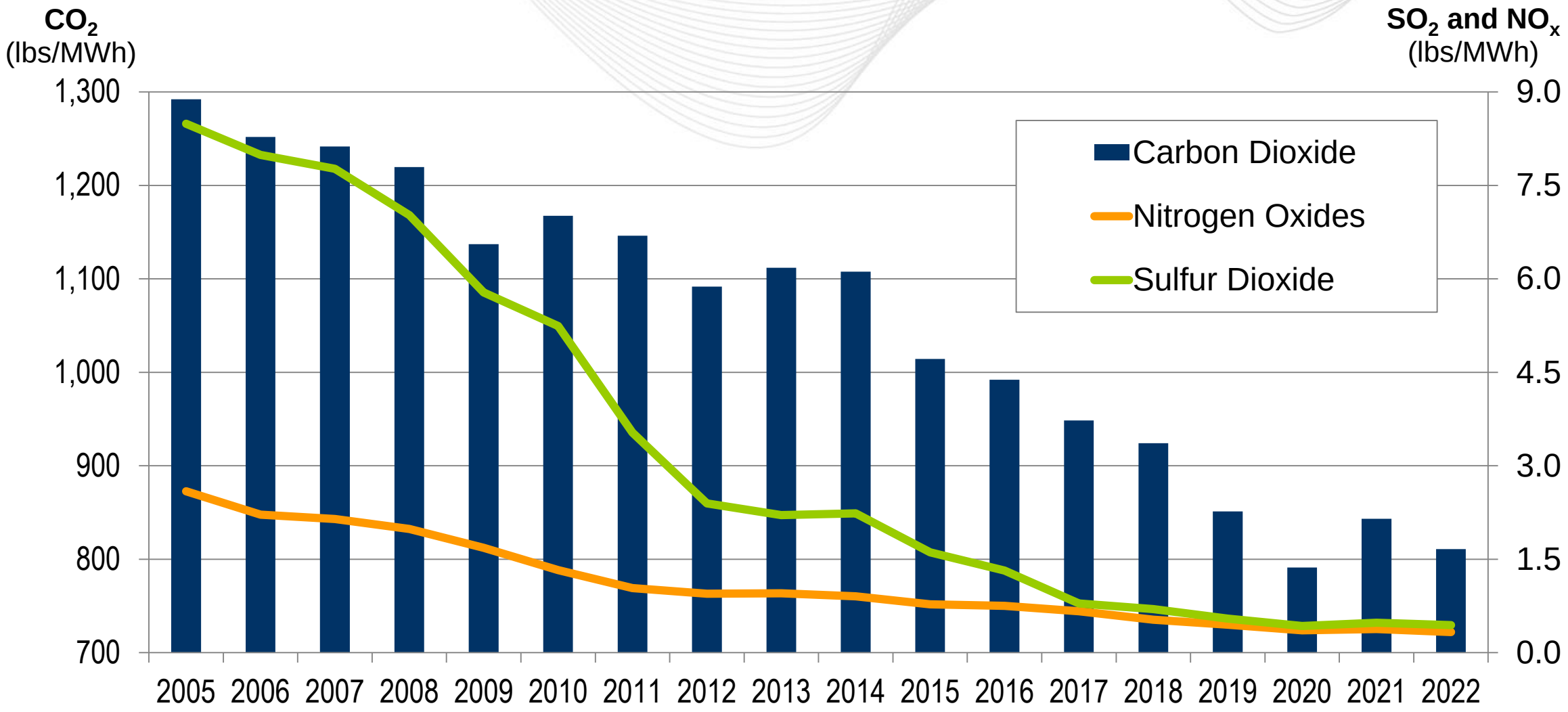


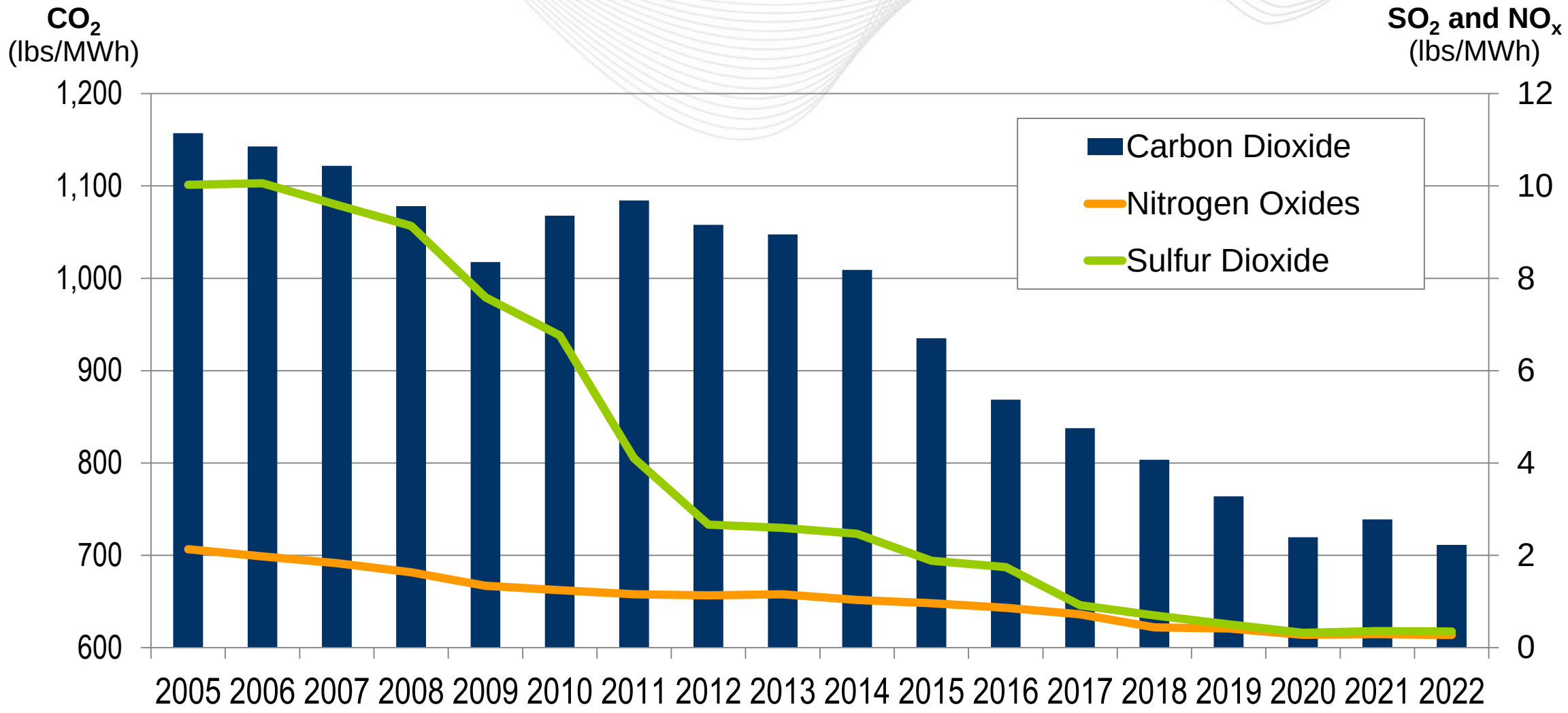
2005 – 2022 PJM Average Emissions

(March 2023)

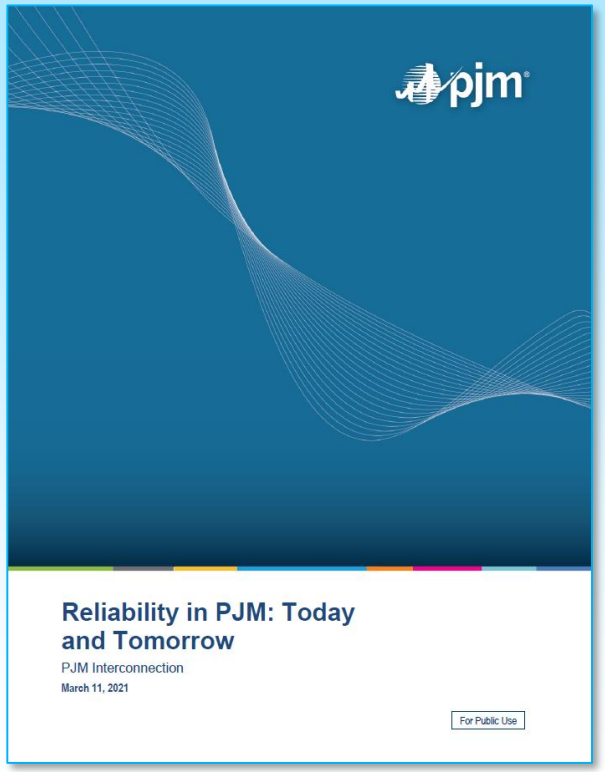


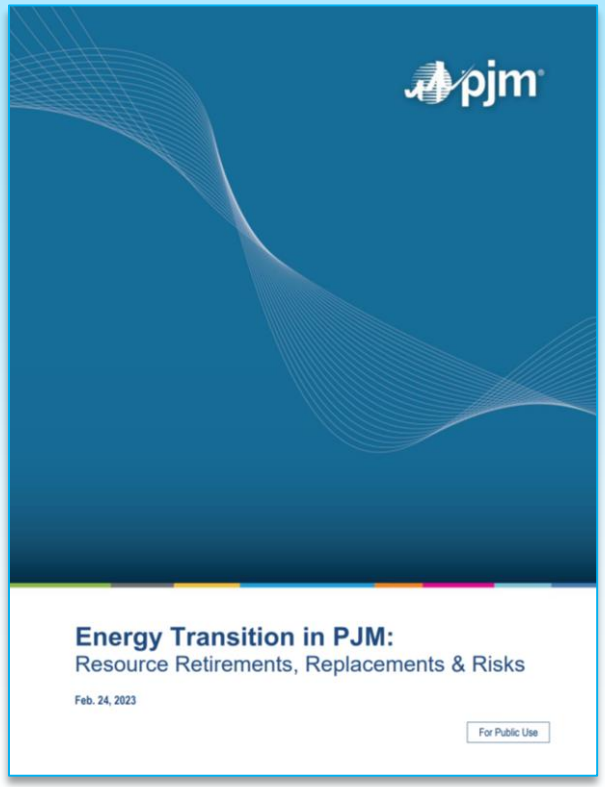
Pennsylvania – Average Emissions (lbs/MWh)

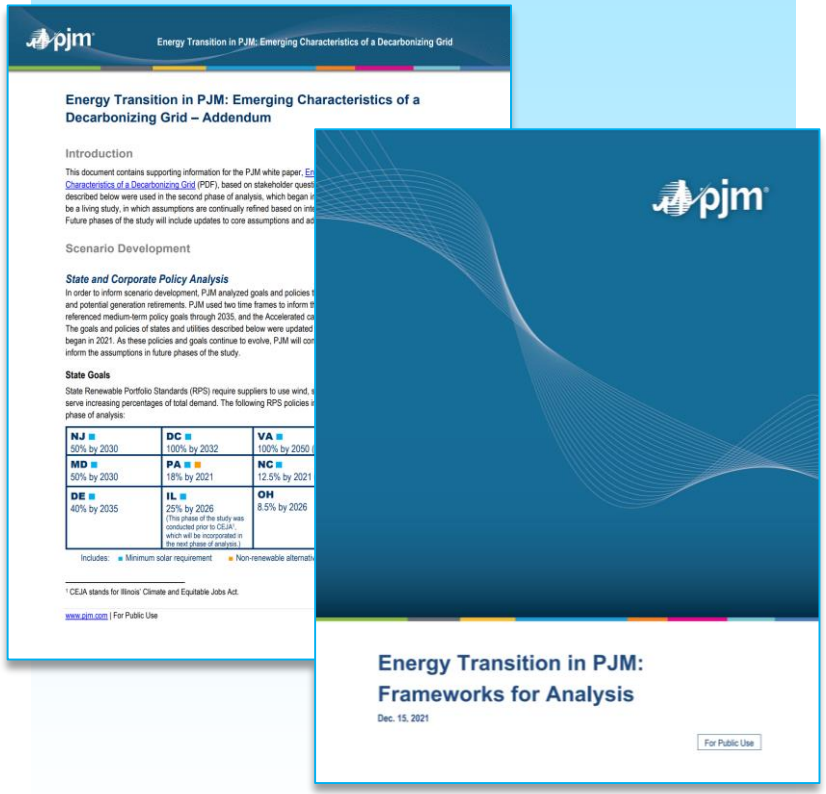
(March 2023)



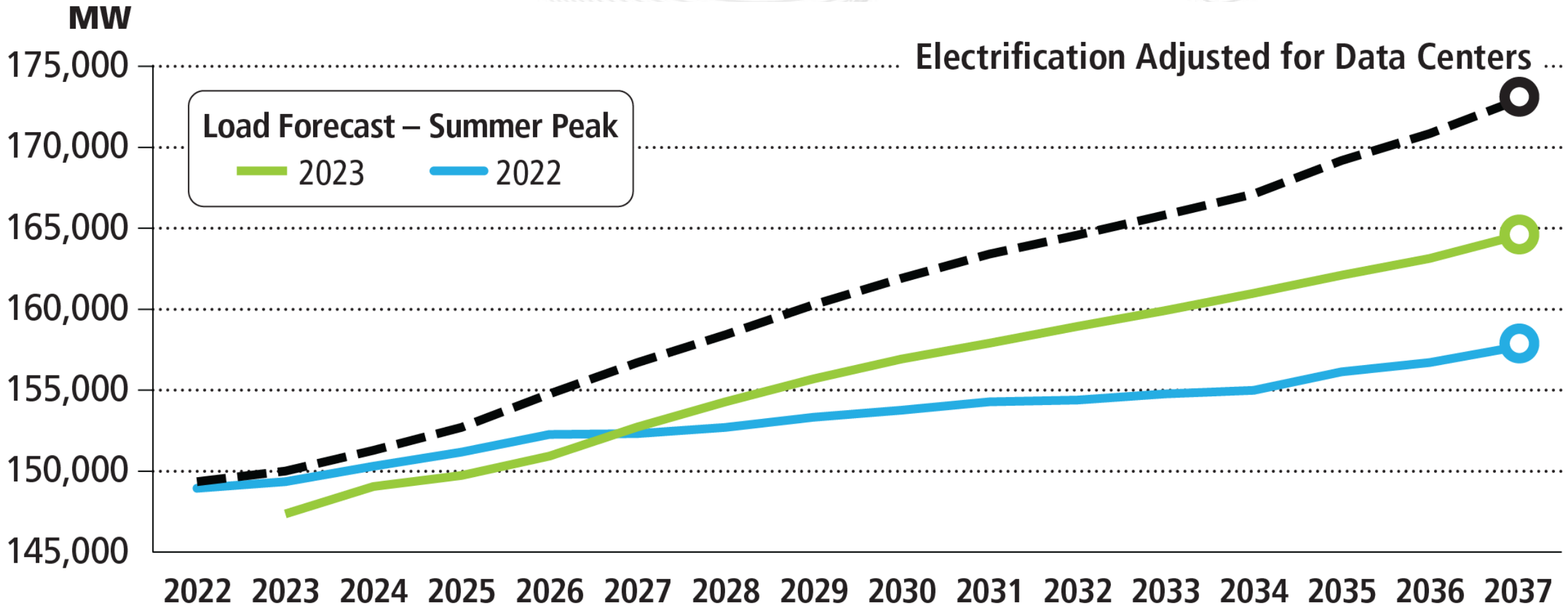
Reliability Papers and Studies





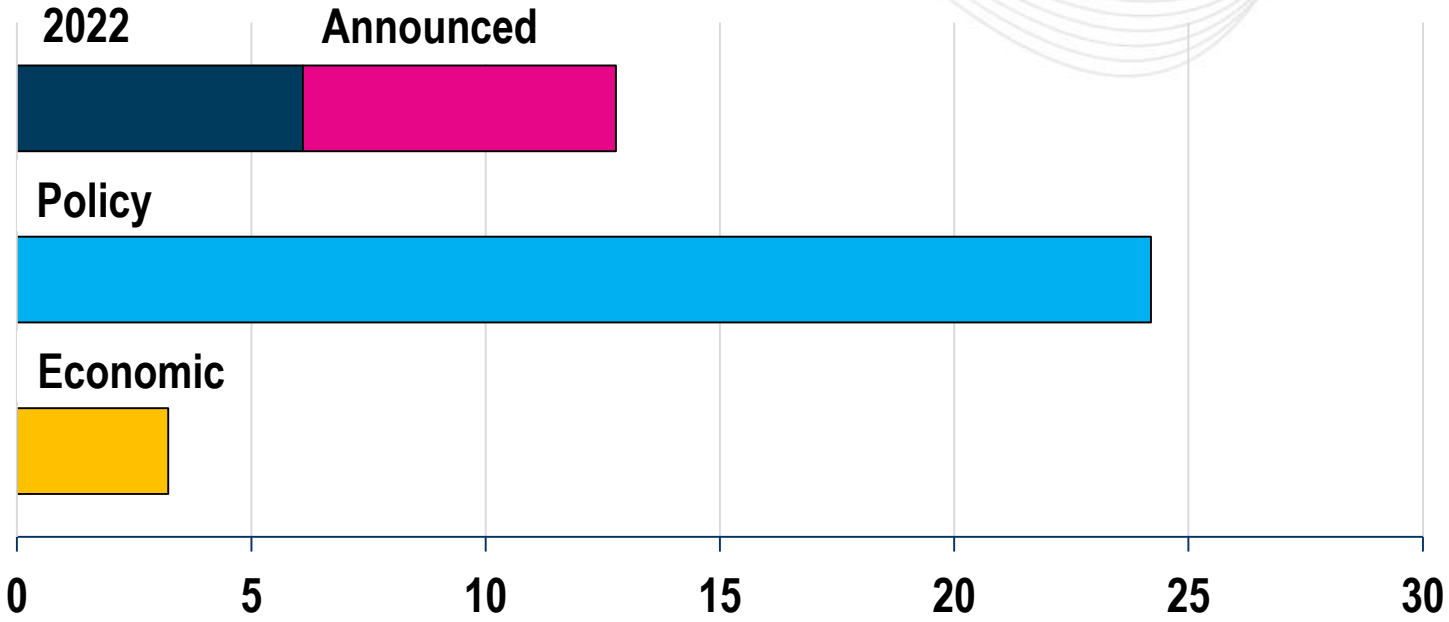


Load Growth Forecasts

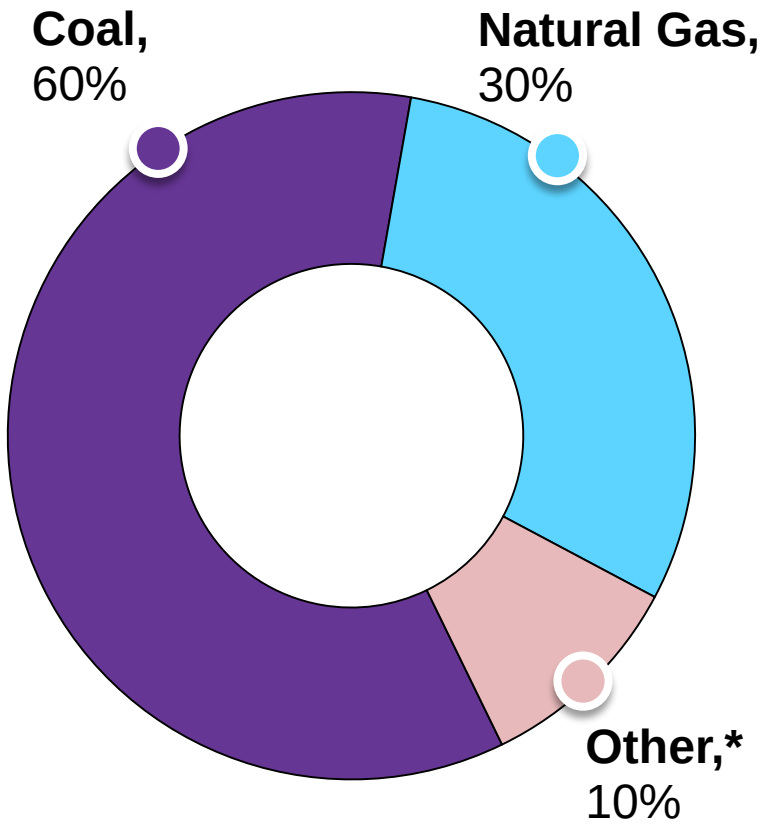


Forecasted Retirements (2022–2030)

Total Forecasted Retirement Capacity (GW)

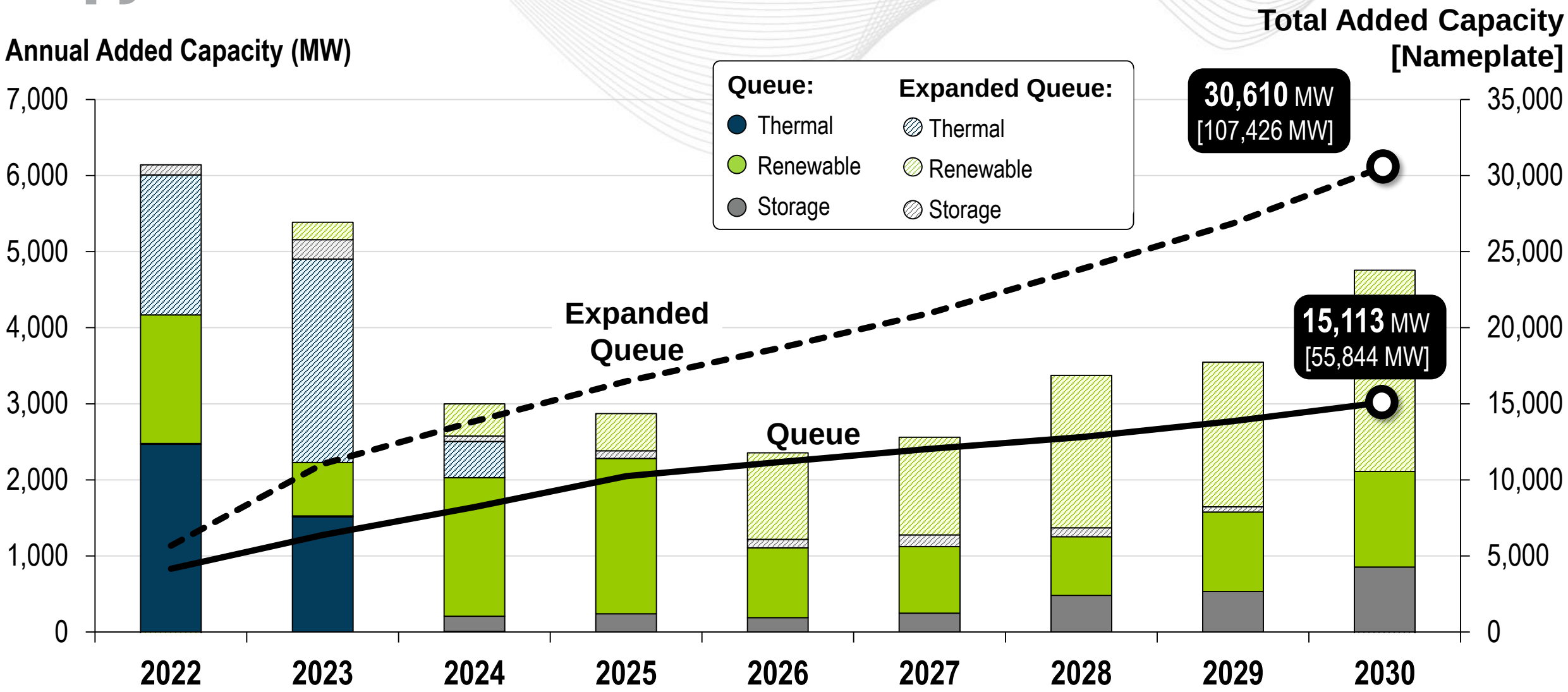


This **40 GW** represents
21% of PJM's current
192 GW of installed generation

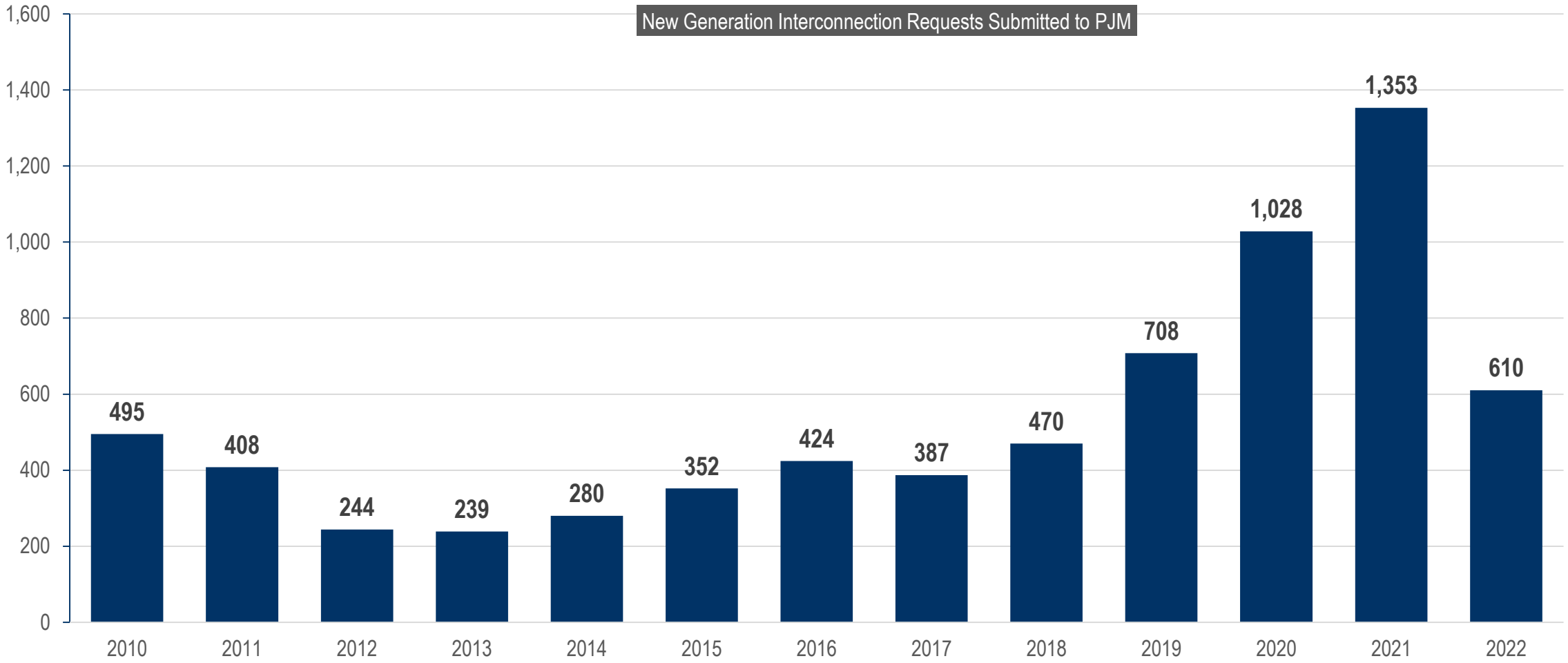


*Other includes diesel, etc.

PJM Forecasted New Entry (2022–2030)



Interconnection Queue Projects By Year



Interconnection Process Reform Timeline

April 23, 2021
Stakeholder's begin queue reform through Interconnection Process Reform Task Force

April 8, 2022
Final meeting of Interconnection Process Reform Task Force

Nov. 29, 2022
FERC issues order approving reforms

Jul. 10, 2023
Interconnection Process Reform Transition begins

2021

2022

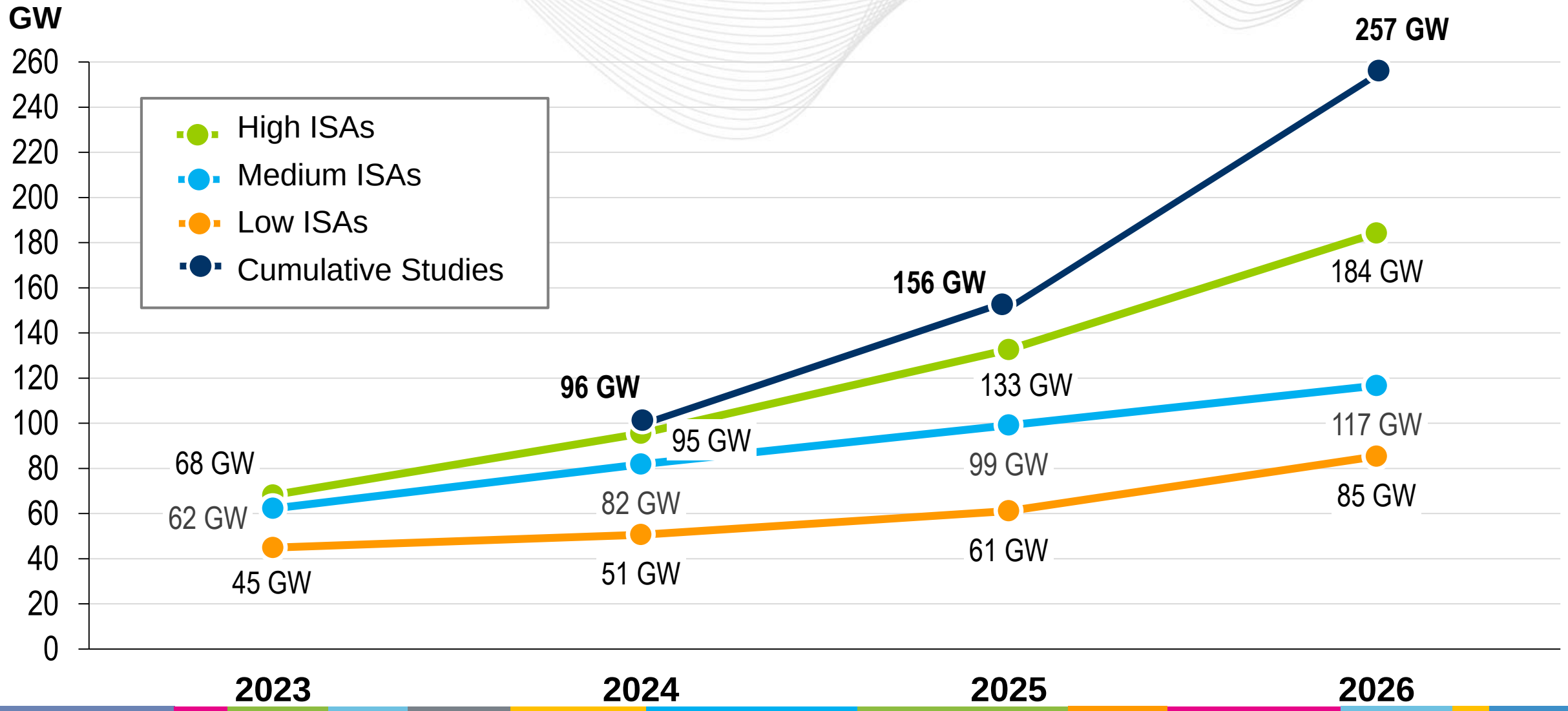
2023

May–November 2021
Stakeholders hash out issues in seven policy workshops

April 27, 2022
PJM Members Committee overwhelmingly endorses reform package

June 14, 2022
Interconnection process reform package filed with FERC

Study Projections



Pennsylvania Interconnection Projects

Interconnection Projects with Interconnection Service Agreement (ISA), not in service:

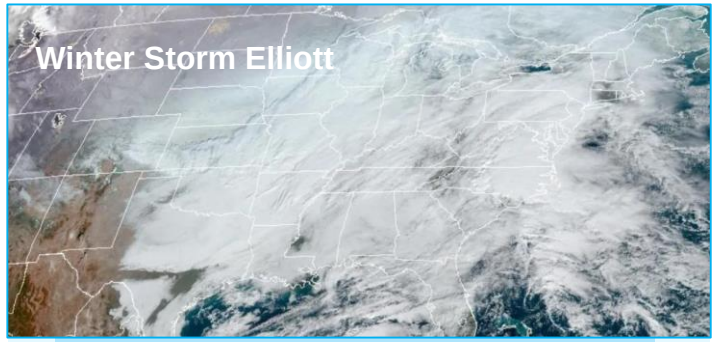
ISA Status	Project Status	# Projects	MW Energy
Post ISA	Engineering and Procurement	65	2,097
Post ISA	Partially in Service - Under Construction	7	76
Post ISA	Suspended	55	1,561
Post ISA Total		127	3,734

Active Generation Interconnection Projects in AE1 thru AG1

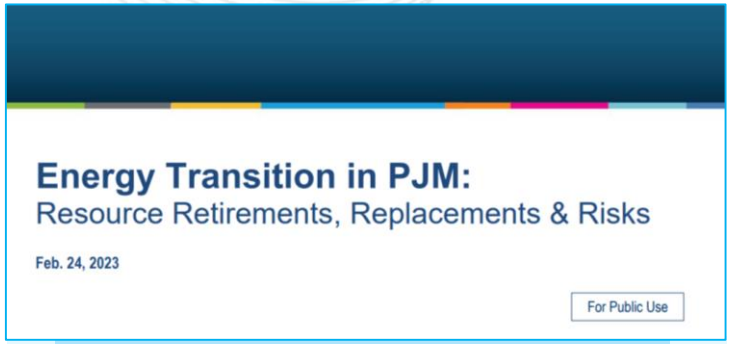
ISA Status	Project Status	# Projects	MW Energy
Pre ISA	Active	109	5,255
Pre ISA Total		109	5,255

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.

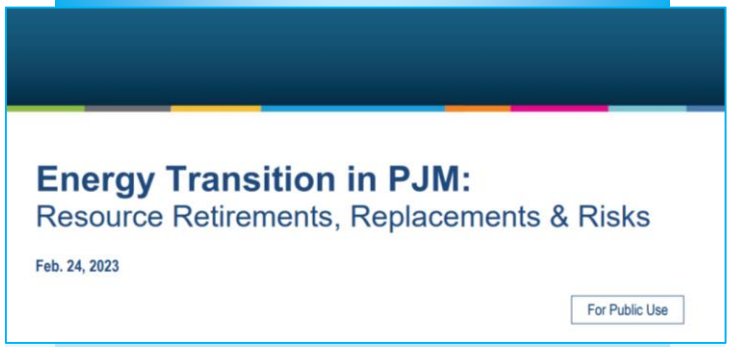
Our Reliability Concerns

The Immediate Concern

Support

Resource Performance

The Near-Term Concern



Ensure

Resource Adequacy

The Upcoming Concern

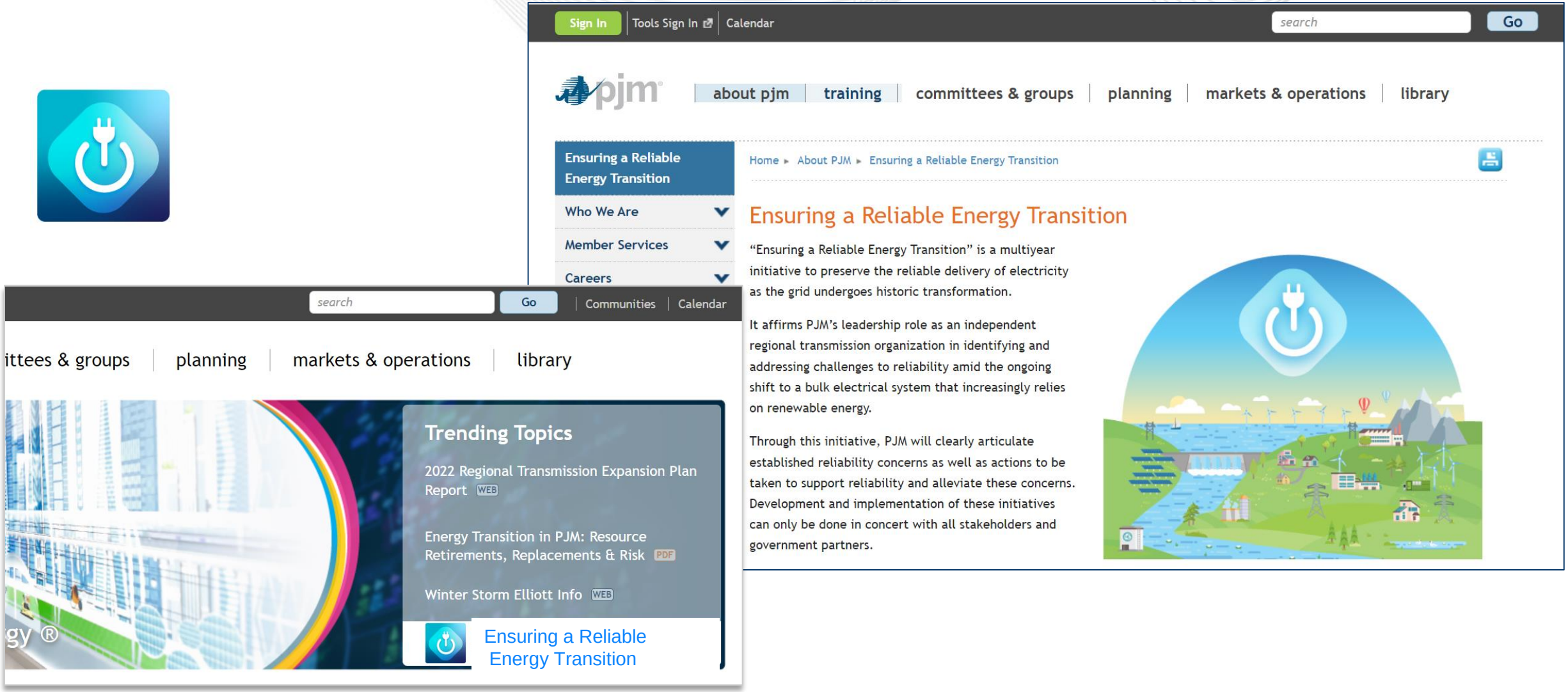
Maintain & Attract

Essential Reliability Services

Initial Actions To Support Reliability

- CIFP/RASTF Priorities
- **Reserve Certainty**
- **Load Following/ Dispatchability**
- Short-Term Forecasting
- **Proactive Planning: LTRTP**
- **Proactive Planning: Resilience**
- Proactive Planning: Interregional
- LDA Modeling
- **RMR Improvements**
- Policy Reliability Safety Measures
- Continued Queue Improvements
- **Energy Assurance**
- Gas/Electric Coordination
- **Winter Storm Elliott Report**

Ensuring a Reliable Energy Transition



Thank You!

and

Questions