Ensuring A Reliable Energy Transition

PA Senate Environmental Resources and Energy Committee with Guests from the Ohio Public Utilities Committee

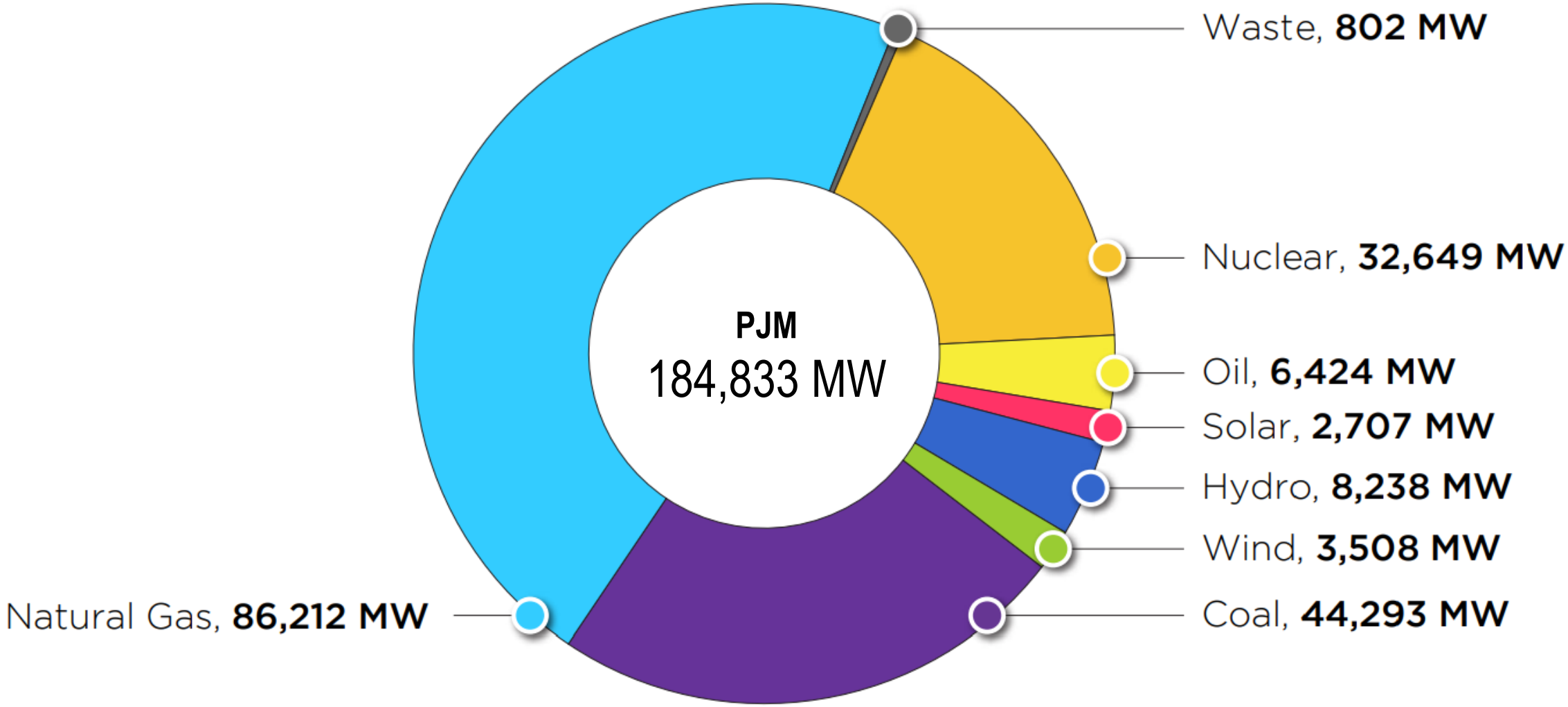
Asim Z. Haque

SVP, State Policy and Member Services

November 2, 2023

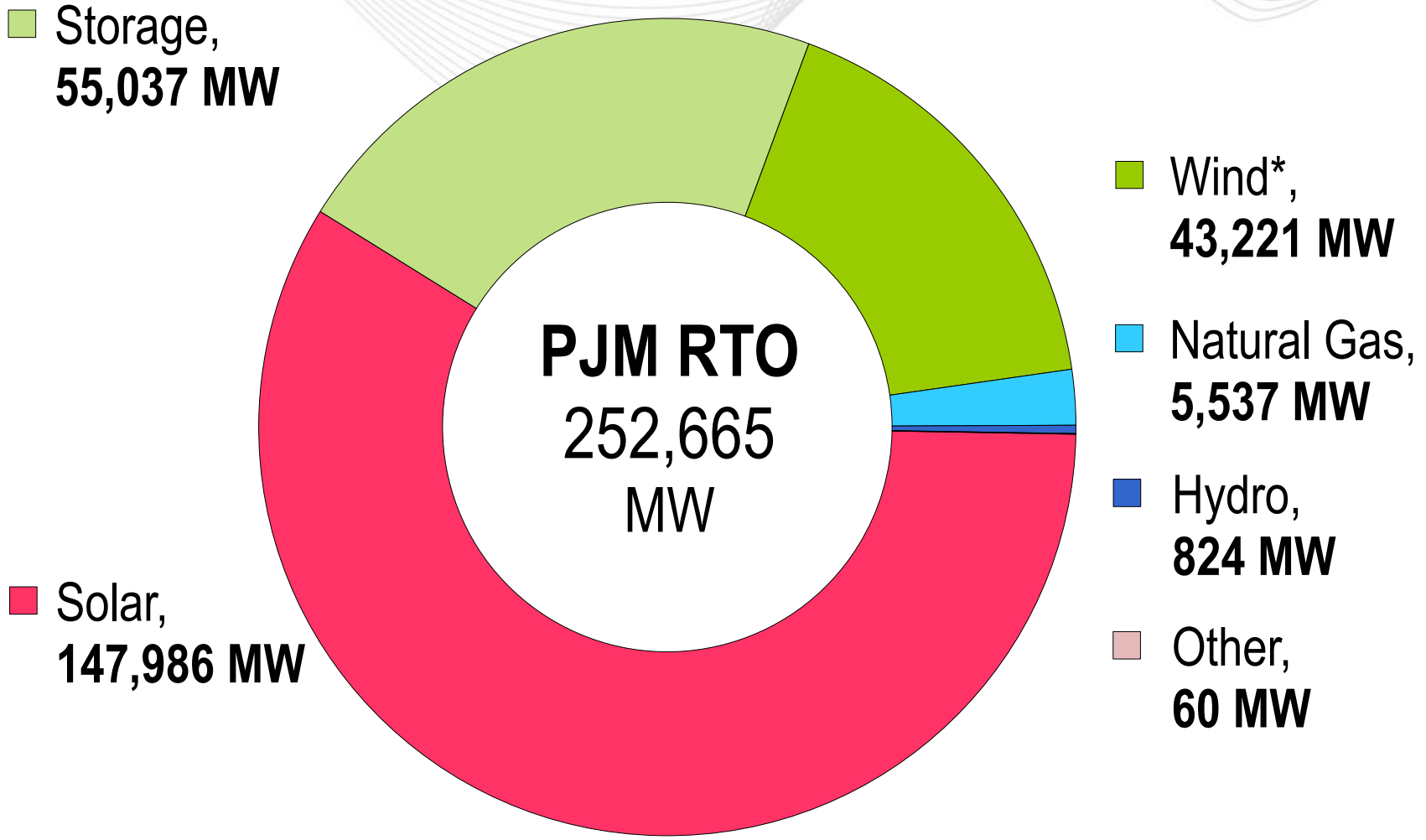
PJM – Existing Installed Capacity

(CIRs – as of Dec. 31, 2022)



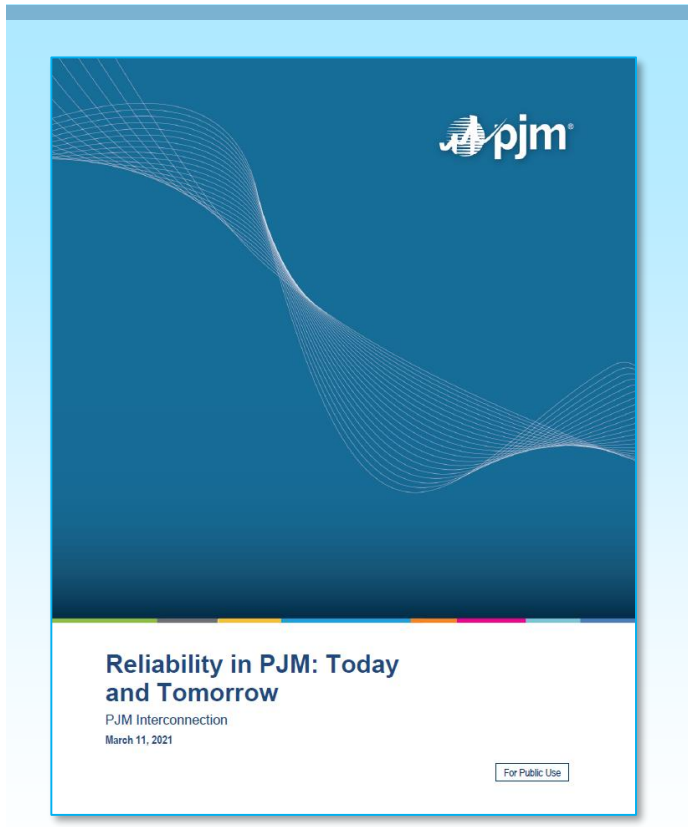
PJM Queued Capacity (Nameplate) by Fuel Type

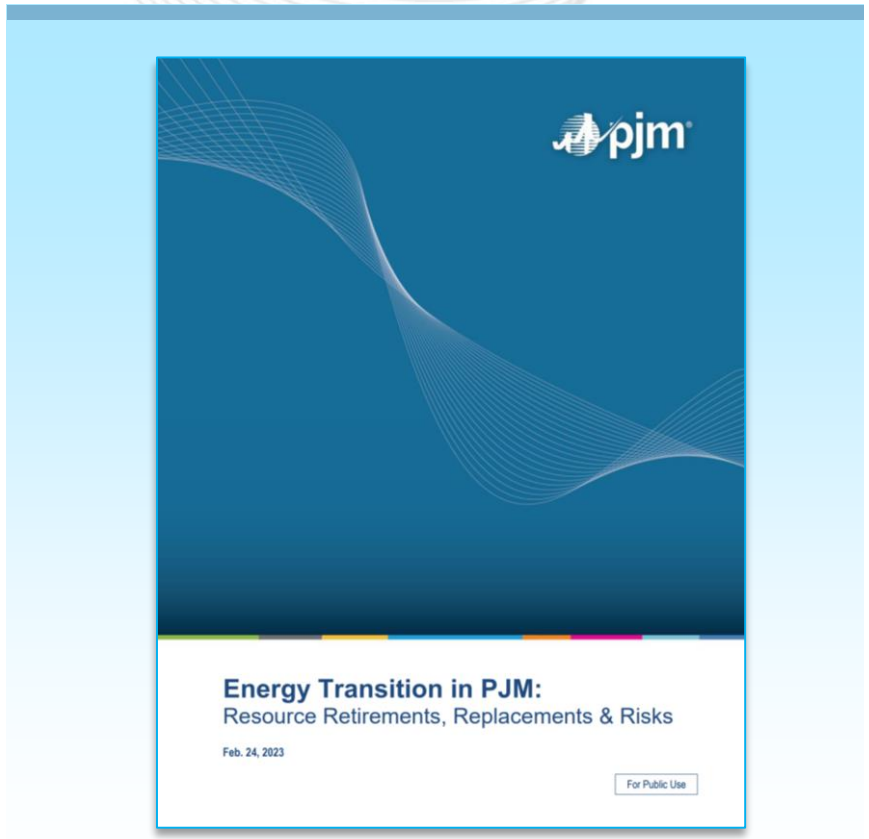
("Active" in the PJM Queue as of April 1, 2023)



*Wind includes both onshore and offshore wind

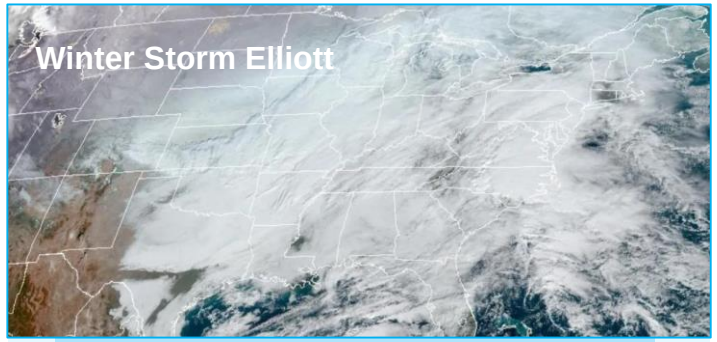
Reliability Papers and Studies



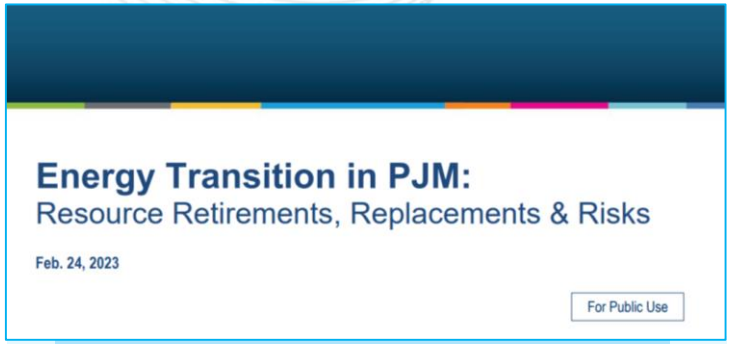


What Problem(s) Are We Solving For?

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.

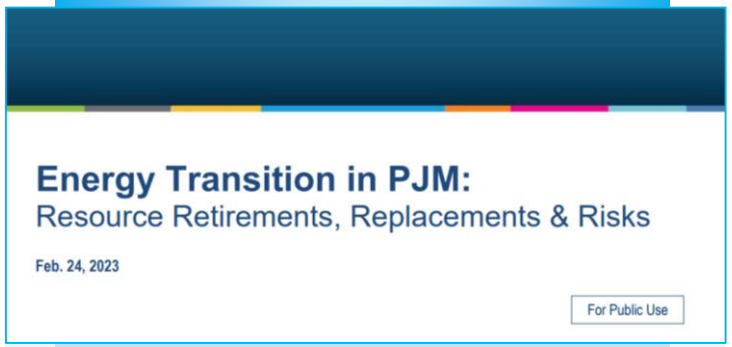
Our Reliability Concerns

The Immediate Concern

Support

Resource Performance

The Near-Term Concern



Ensure

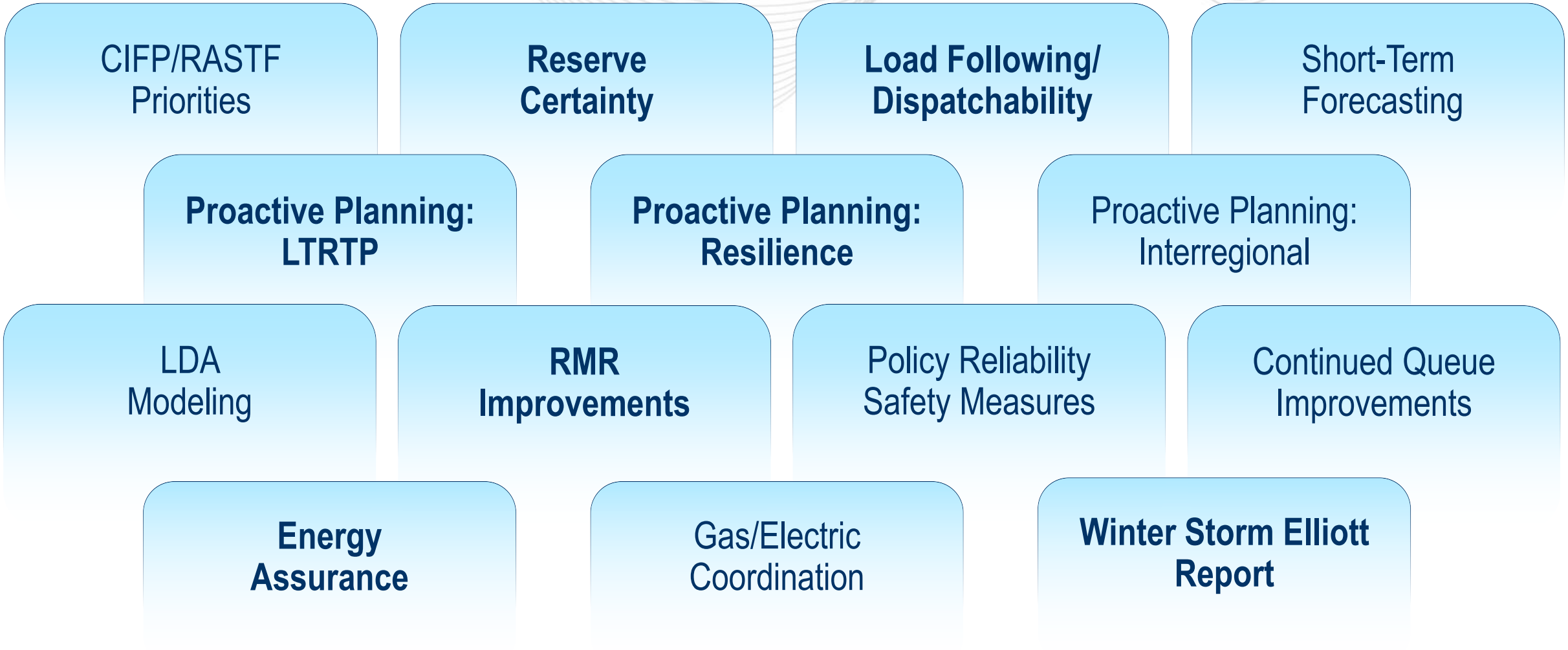
Resource Adequacy

The Upcoming Concern

Maintain & Attract

Essential Reliability Services

Initial Actions To Support Reliability



Ensuring a Reliable Energy Transition

CIFP Capacity Market Proposal

PJM made two filings on October 13, 2023 to make enhancements to its capacity market.

The motivation for these changes primarily comes from opportunities to:

- Enhance the modelling methods used to identify resource adequacy risks and accredit resources.
- Refine market rules from experiences with operating and participating in the capacity market.
- Improve rules in response to recent operational experiences and market outcomes during cold weather events.

Filing #1: Risk Modeling, Accreditation & Stop-Loss

- Enhanced Resource Adequacy Risk Modeling
- Marginal Accreditation
- Notice of Intent to Offer for Planned Resources
- Winter Deliverability Changes for Solar
- Increased Testing Requirements
- Stop-Loss Reduction
- Fixed Resource Requirement (FRR) Option Transition and Changes to Deficiency and Insufficiency Charges

Filing #2: Capacity Performance & Market Seller Offer Cap (MSOC) Filing

CAPACITY PERFORMANCE

- Bonus Eligibility[1]
- Balancing Ratio Changes [1, 2]
- Performance Excusal Clarifications
- Performance Obligation Transfer
- Removal of FRR “Physical Option”

MARKET SELLER OFFER CAP

- Risk Incorporation In MSOC
- Standardized/Default Risk Calculation
- PJM Feedback During MSOC Process
- Segmented Offer Caps
- Planned Resource Mitigation Provisions

[1] PJM offered to allow the FERC to sever this portion of the filing from the others

[2] Only a portion of these changes are severable along with the Bonus Eligibility

Comprehensive Topics on Reserve and Energy Market

- Having the appropriate suite of ancillary service products procured at the necessary level
- Having the confidence in resources with an assignment to provide reserves to perform when called upon

Immediate-Need

Addresses current Synchronized Reserve performance concerns, observation on reserve price formation implementation, and deployment of reserves

Longer-Term Need

Addresses future system needs for reserve and flexibility, with evaluation of the Operating Reserve Demand Curve (ORDC), operational metrics, and enhancements or additional market solutions (ramping, multi-interval, etc.)

Enhancements to Deactivation Rules

- Address the anticipated volume of generation resource retirements expected in the coming years
- Address confusion about how the current compensation mechanisms operate and should operate

Deactivation Timeline

PJM and the IMM believe that stakeholders should consider extending the prior notice period for generation deactivations to increase the opportunity for required transmission upgrades, to allow potential new competitive entry, and to allow the deactivation to proceed as requested.

Compensation Mechanism

PJM and the IMM also believe the compensation mechanism for resources agreeing to operate beyond their requested deactivation date at PJM's request needs to be redesigned.

Thank You!

and

Questions

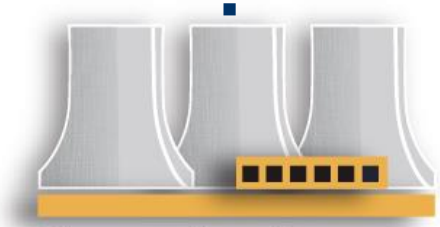
Additional Information and References

Independence and Governance Process

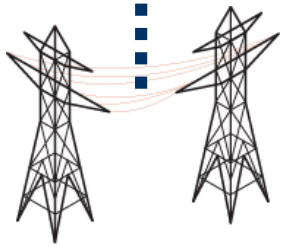
Independent Board of Managers

Market Monitor

Members Committee

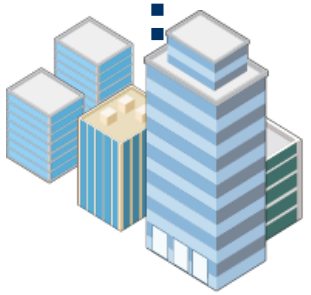


Generation Owners

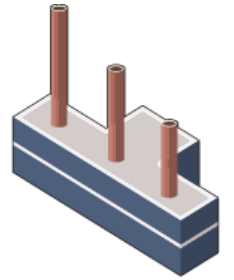


Transmission Owners

Competitive Retail Companies & Trading Companies



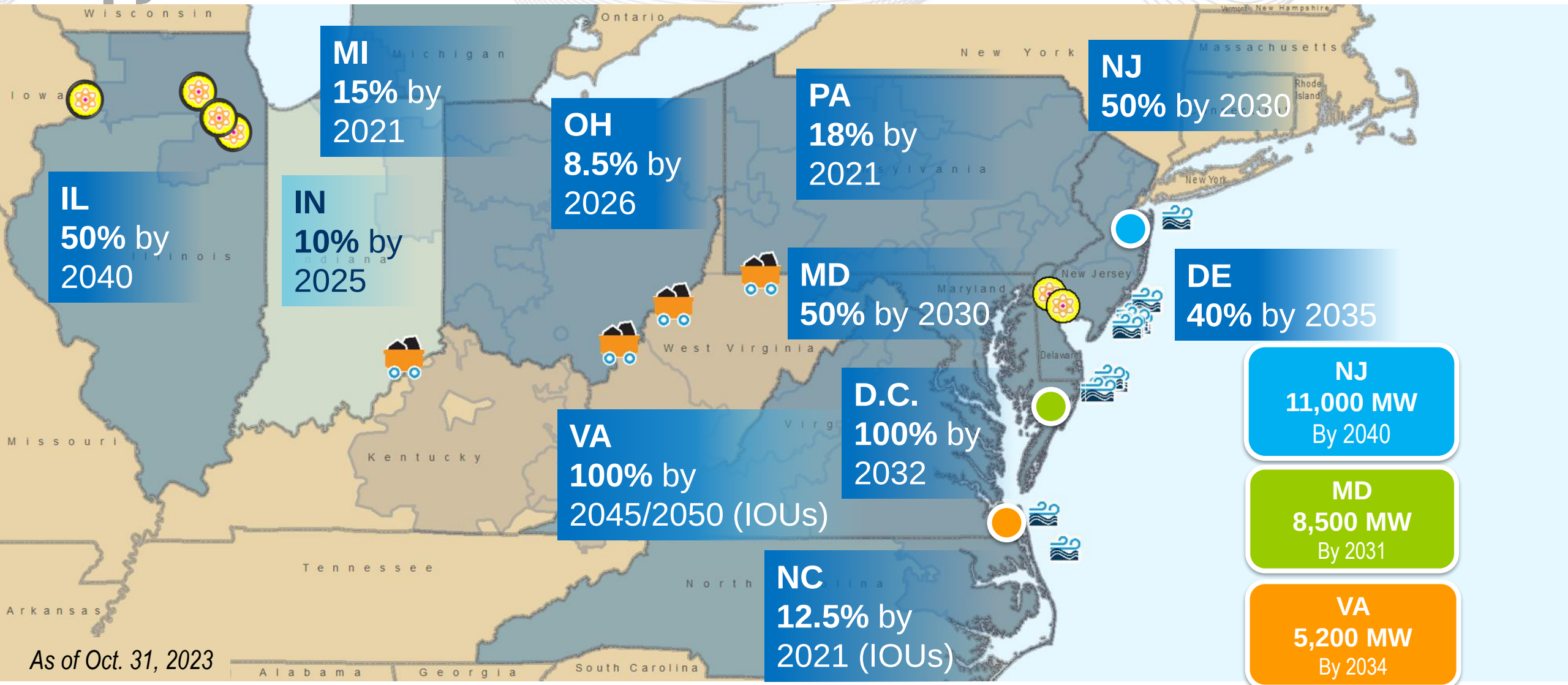
Utility Electric Distributor & Retail Business



Wholesale End Use Customers (Industrial)

- Independent Board of Managers
- Stakeholder process – provide balanced stakeholder input
- Established process for discussion of market evolution
- ISO funding and startup

State Activity in PJM Footprint



Hughes v. Talen

The *Hughes v. Talen* case identified the following criteria for pre-emption

- ***Targeting:*** The state policy has the effect of replacing the wholesale rate for a FERC-jurisdictional product (capacity, energy, ancillary services), and;
- ***Tethering:*** The payment or level of payment is contingent on clearing in the capacity market

State Policy = Renewable Portfolio Standard

Subsidy = Renewable Energy Credit (REC) Payment

- The REC is ***not Targeted*** at a FERC jurisdictional product.
- The REC is ***not Tethered*** to a commitment in the capacity market.

Illustrative Example

State Policy = State targets lowering capacity prices to consumers.
Subsidy = Lump sum payment contingent on a capacity commitment

- The subsidy is ***Targeted*** at a FERC jurisdictional product. It is capacity in PJM's Tariff.
- The subsidy is ***Tethered*** to a commitment in the capacity market.

Illustrative Example