Discussion Around Goals, Principles and Elements of a Reliability Backstop Procurement

Rebecca Carroll, Executive Director, Market Design & Economics

Danielle Croop, Sr. Manager, Market Design

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Reliability Backstop – Background

In the OATT (ATT DD Section 16), the Reliability Backstop is a reliability safeguard designed to allow PJM to procure long-term cost-of-service generation when the competitive market (RPM) falls below the Reliability Requirement.

The current Reliability Backstop is a multistage trigger process.

- **Trigger 1**: Shortfall Investigation when 1% short the RR or short Base Load Generation Resources

We are here

- **Trigger 2**: Facilitate the Reliability Backstop Auction after 3 years short (which would likely trigger in the 29/30 Auction schedule in December)

The Reliability Backstop written in the Tariff is not aligned with the Resource Adequacy Challenges PJM is facing.

Reliability Backstop – Background

The primary driver of the Resource Adequacy challenges in PJM is the acute load growth, year-over-year, driven by large loads; further complicated by the challenges of getting new generation online.

The Reliability Backstop written in the Tariff **– both the triggers and rules to facilitate the Auction –** did not envision addressing this large load issue.

This is recognized by the CIFP-LLA Board letter and the National Energy Dominance Council and PJM States Governors' Principles on a Reliability Backstop.

The focus on the backstop – as needed for the system's current challenges – will require new or largely modified Tariff language and an associated FERC filing.

Reliability Backstop – Background

- PJM's Board, in its January 16 letter to members, recognized the need to accelerate the Reliability Backstop and directs staff to develop a proposal.
  - "Immediate Initiation of Reliability Backstop Procurement"

- The National Energy Dominance Council and PJM's State Governors' Principles to facilitate a Reliability Backstop
  - Provide revenue certainty to new generation.
  - Protect residential customers from capacity price increases.
  - Allocate costs to data centers.
  - Improve load forecasting.
  - Accelerate ongoing generator interconnection studies.
  - Return PJM to market fundamentals.
  - Governors agree to use their authorities to allocate costs to data centers and protect residential customers.

Goals for a Reliability Backstop Process

Grid Reliability: Maximize the chance of selected projects getting developed – need to get the resources (UCAP) on the system.

- **Revenue Certainty:** Offer long-term contracts to encourage investment on the system.
- **Accelerated Interconnection:** "Fast track" PJM studies and reduce/remove barriers to siting and permitting to the extent possible.

Goals for a Reliability Backstop Process

Transitional Process

- **Prevent premature existing generation retirements.**
- **Transition to Market Reforms:** Design the process with a viable off-ramp – this is a transitional mechanism.
    - PJM will need to have a clear ability to transition out of this mechanism.

Goals for a Reliability Backstop Process

Any additional goals that need to be considered?

Principles for Reliability Backstop

Stakeholder engagement in defining the process

Keep it as simple and narrow as possible – as a transition mechanism for reliability

Clear and transparent communication of procurement requests

Comprehensive review and evaluation for deliverability and risk management

Successful and actionable results – bidders have clear understanding of performance expectations

Additional Considerations

The implementation of a Reliability Backstop will have an impact on several other areas in PJM and should be considered in the design of the backstop process.

1 RPM Auctions

Should auctions be run for a target DY *before* the backstop auction targeting the same DY?

2 Interconnection Queue

Will the resources selected from the backstop auction be ahead of existing queue resources?

3 Risk

What should the credit/collateral requirements be for participating parties?

4 Colocated Load Order

How or should a backstop process align or complement what was in the colocated load order?

Additional Considerations

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5 Others?

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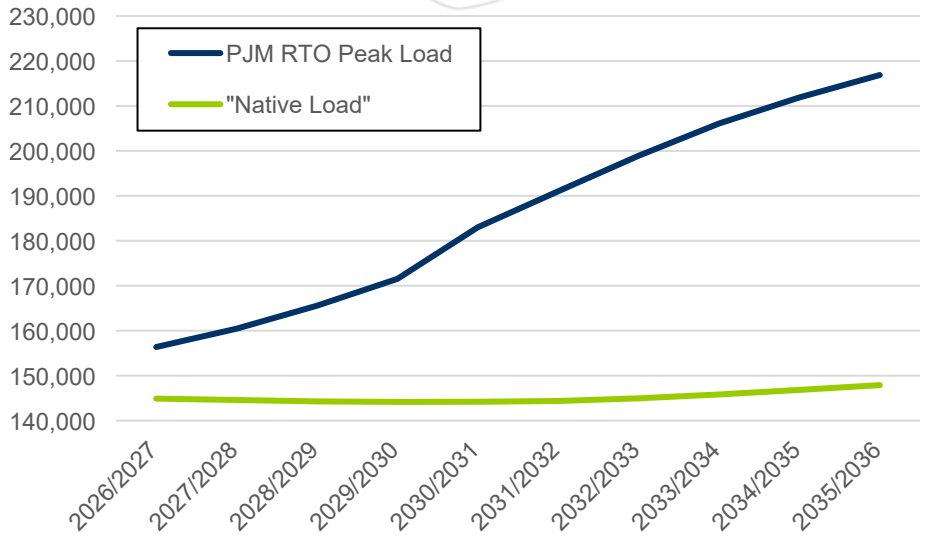
Reliability Backstop Elements

Major tenets of a Reliability Backstop for the system's current challenges

Defining the MW and delivery year targets	Eligibility for participation (and consideration of existing generation)	How to evaluate resources for selection (cost, reliability value, etc.)	Term of procurement
Obligations and non-performance consequences	Deliverability and transmission needs	Counterparty and cost allocation	Transition out of the long-term procurement mode

Procurement Targets: Quantifying Load

- The large shortfall is driven by large load/data centers; however, that is not the only shortfall potential.
  - PJM is expecting approximately 3 GW of “native load” growth by 2035/2036.
  - Any changes to the existing supply mix
- Backstop procurement can be for large load/data centers or the entire shortfall.



- Is the reliability value of procured backstop resources allocated to large load/data centers or the RTO?
- Short-term projections indicate a persistent shortfall for several delivery years. What to do with the “short” load?
  - Choices for large load/data centers is to connect and manage or BYOG.
  - Does the “native load” share a pool shortage?

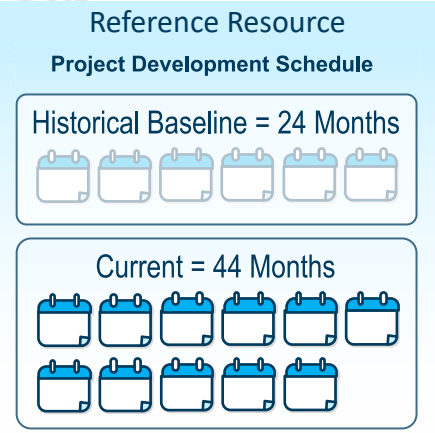
Which load is the backstop procurement buying for?
If backstop targets aren’t met, which load is the backstop resource allocated to?

Who Is the Reliability Backstop Procuring For?

Who will be the buyer and counterparty to long-term contracts procured through a Reliability Backstop Auction?

- Does the buyer inform how the procurement target is set?
  - Calculated demand target, bid-in demand, etc.?
- How does this impact the approach to cost allocation?
  - Should this consider a particular jurisdictions' incremental demand vs. incremental supply?
- How does this inform collateral requirements and risk management?

Potential Targeted Delivery Years



Considering project development schedules have increased beyond the normal 3-year forward BRA:

- Should the backstop target one or multiple delivery years?
- What is an appropriate amount to buy?

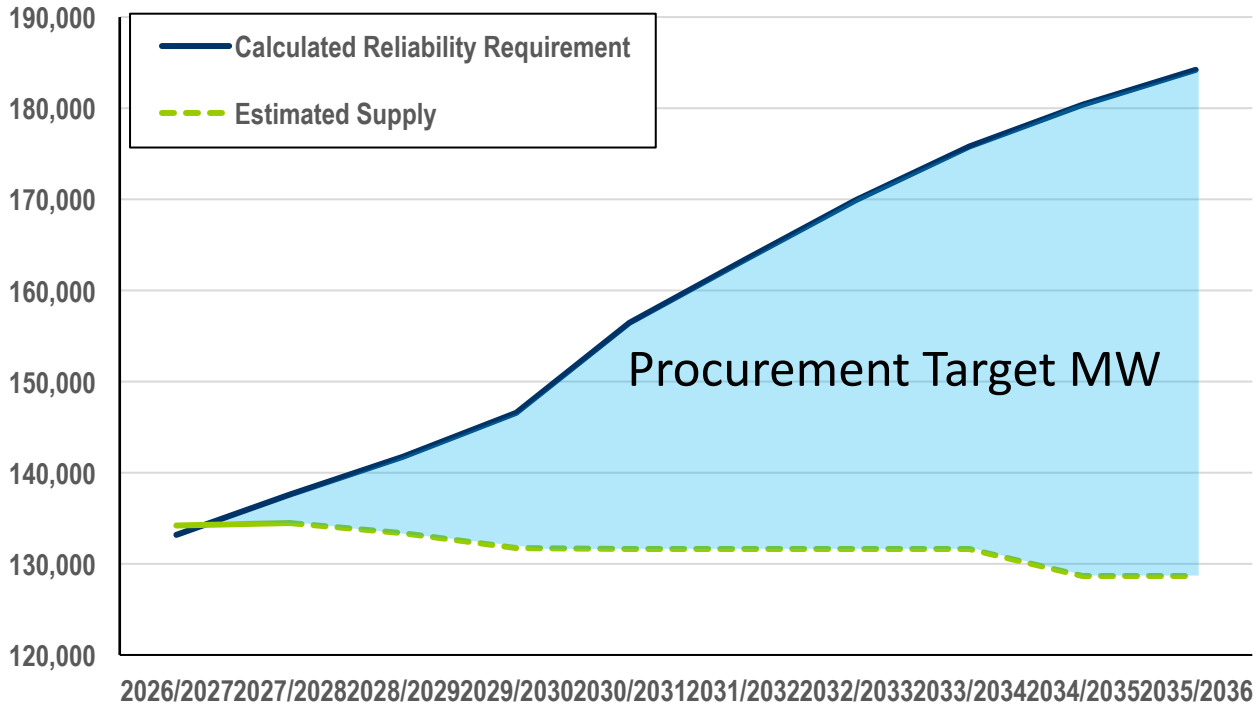
Timeframe	Projected Resources	Load Forecast
Early Delivery Years ***(2027/2028 – 2029/2030)***	Minimum involvement of projects not currently in the queue	
Medium-Term Delivery Years ***(2030/2031 – 2031/2032)***	Earliest time frame a new theoretical CT Reference Resource could be operational, and Energy Storage Resources	
Longer-Term Delivery Years ***(2032/2033+)***	New Combined Cycles and other new builds with longer project development schedules	

What are the targeted delivery years for procurement?

The size of the problem…

- Estimated Backstop Target MW as the difference between the 50/50 peak load forecast in the latest Load Forecast, multiplied by the most recent FPR, and the existing supply mix in UCAP

	Estimated Reliability Requirement	Estimated Supply♦	Potential Backstop Target
2026/2027	133,000	134,000	0
2027/2028	138,000	134,000	4,000
2028/2029	142,000	133,000	9,000
2029/2030	147,000	132,000	15,000
2030/2031	156,000	132,000	24,000
2031/2032	163,000	132,000	31,000
2032/2033	170,000	132,000	38,000
2033/2034	176,000	132,000	44,000
2034/2035	180,000	129,000	51,000
2035/2036	184,000	129,000	55,000



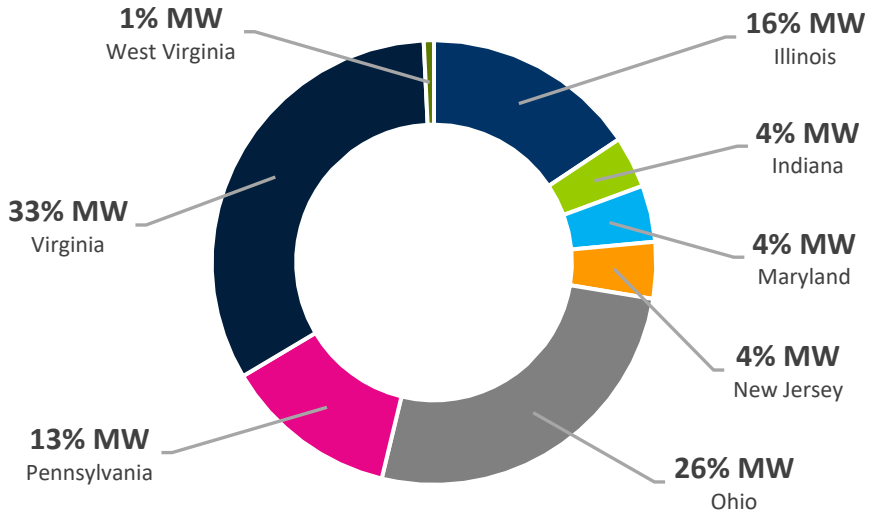
♦Estimated Supply is 27/28 Committed Capacity, less that of announced retirements

Approximate Large Load Growth by State

- Large Load Growth is prevalent throughout PJM and has an estimated impact of 68,977 MW by 2035/2036.
- These values are the Large Load increases, as shown in Table B9b of the 2026 Load Forecast Report.
- States and zones without additions are not included.

State	Large Load MW: 2035	Zones
Illinois	16%	ComEd
Indiana	4%	AEP♦
Maryland	4%	APS♦, BGE, PEPCO
New Jersey	4%	JCPL, PSEG
Ohio	26%	ATSI♦, AEP♦, Dayton
Pennsylvania	13%	APS♦, ATSI♦, METED, DLCO, PECO, PPL
Virginia	33%	APS♦, DOM
West Virginia	1%	APS♦
Total	68,977	

♦Portion of the Zone was allocated to the state



What Supply Is Eligible for the Reliability Backstop Auction?

PJM's capacity supply stack consists of Generation Resource and Demand Resources.

- Is the global supply chain able to meet the expected demand with generation resources?
- Are there attributes that need to be considered such as essential reliability services, future ELCC variability, etc.?
- Should expected operational profiles of generation aim to match the continuous 24/7 load profiles of data centers?
- How should state policies be considered within the selection process?
- Should there be a scoring metric similar to the RRI process with selecting backstop resources?

Does new supply include any incremental increases to PJM's supply stack?

Uprates, Surplus, Deferred Retirements, Imports (pseudo ties), Demand Response, Distributed Energy Resources (DER)

Backstop Procurement Term and Willingness To Pay

Backstop Term Limits

- Current rules in PJM's tariff allow for up to 15-year contracts.
- Statement of Principles Regarding PJM suggest 15-year terms.
- Long-term contracts less than 15 years, possibly 7–10 years, may be a more balanced term.

Willingness To Pay

- PJM's RPM has an estimated price cap at Point A of $550/MW-Day UCAP for the 2028/2029 BRA.
  - This value is calculated for the theoretical CT Reference Resource in PJM for a merchant generation owner.
- Is there a price above which PJM should not pay to maintain 1-10 reliability?.
  - Is Point A the maximum willingness to pay, or is it a greater value?

What should be consider with setting the term of bids and/or contracts?

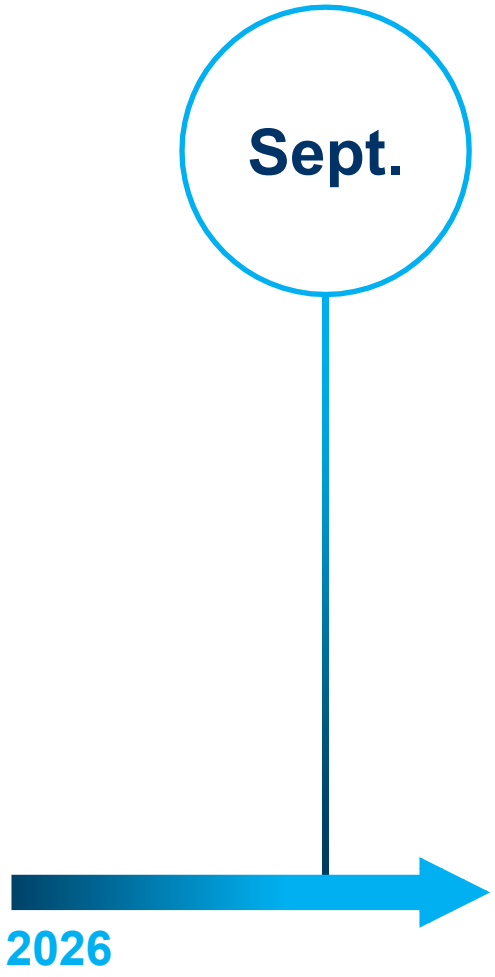
Backstop Resource Deliverability and System Upgrades

Transmission upgrades needed to ensure deliverability of a backstop resource have the potential to impact costs and timeliness of resources coming online

- How will assessment of deliverability be integrated into the process?
  - Separate accelerated study? Integration with existing processes?
- How will system upgrade costs for reliability backstop resources be allocated?
- Should the selection consider prioritizing backstop resources with less system impact and needs for transmission upgrades?

Should (and how) the process consider minimizing the system upgrades when selecting backstop resources?

Timing Considerations



The PJM Board letter and the Statement of Principles signed by the National Energy Dominance Council and PJM governors are targeting **September 2026.**

What other considerations are there when thinking about timing?

Contact

Presenter:
Rebecca Carroll,
Rebecca.carroll@pjm.com

Danielle Croop,
Danielle.croop@pjm.com

[Reliability Backstop Procurement]

Member Hotline

(610) 666 – 8980

(866) 400 – 8980

custsvc@pjm.com