



The Road to Reliability: PJM Reliability Backstop Procurement

June 15, 2026



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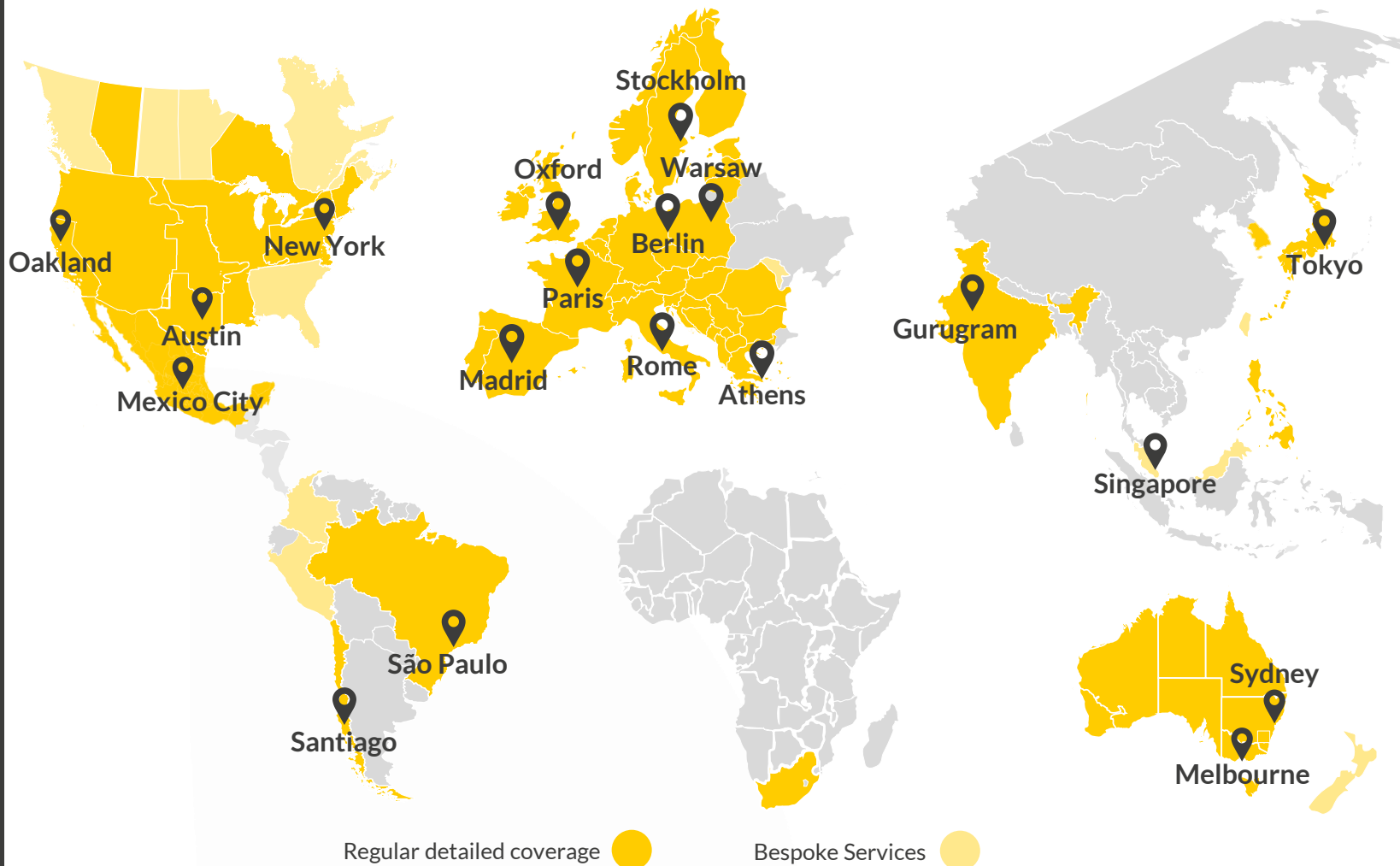
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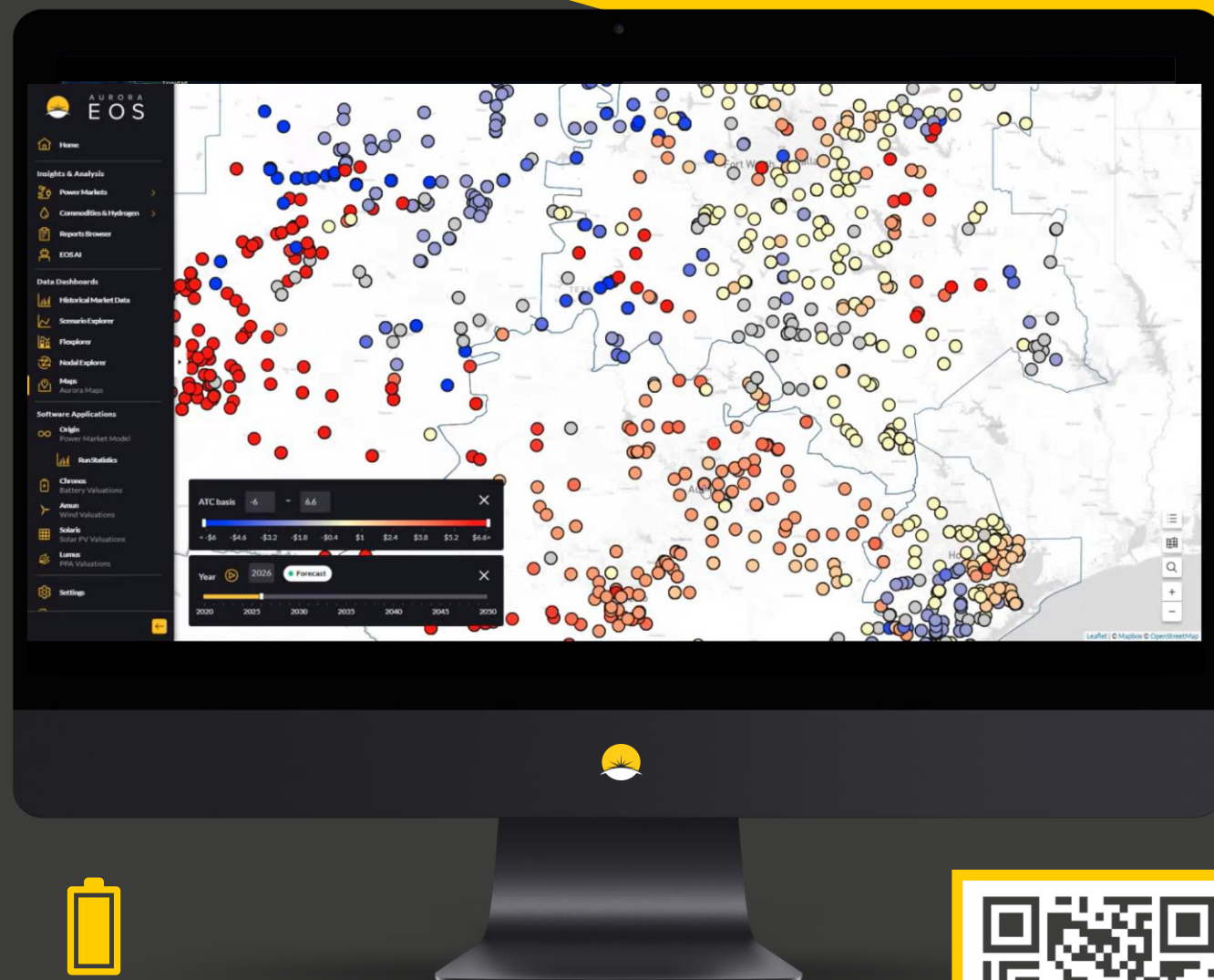
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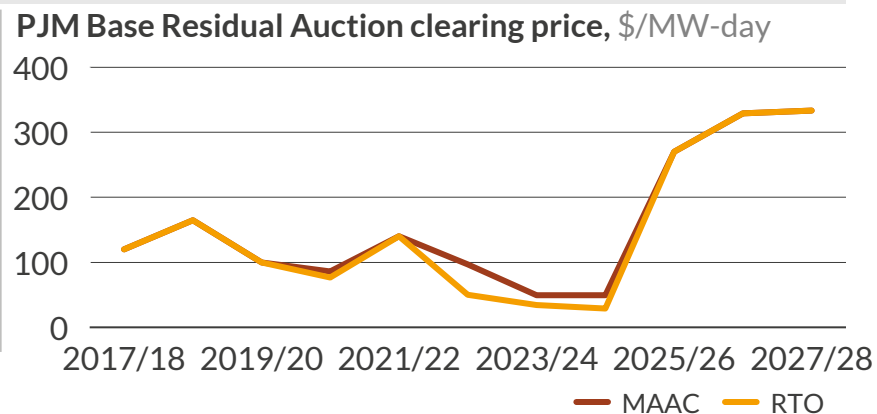
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High BRA clearing prices and large load growth in PJM have led to unanimous calls for short-term and long-term reform

1

PJM's capacity prices began spiking in 2025...

The prior two Base Residual Auctions both cleared at the price cap, with the 2027/28 BRA falling 6.5GW UCAP below the Reliability Requirement.



3

Prompting reform efforts for the short term...¹

White House and PJM Governors “Statement of Principles”:
[PJM should hold] a Reliability Backstop Auction to procure **new** capacity resources commencing no later than September 2026.

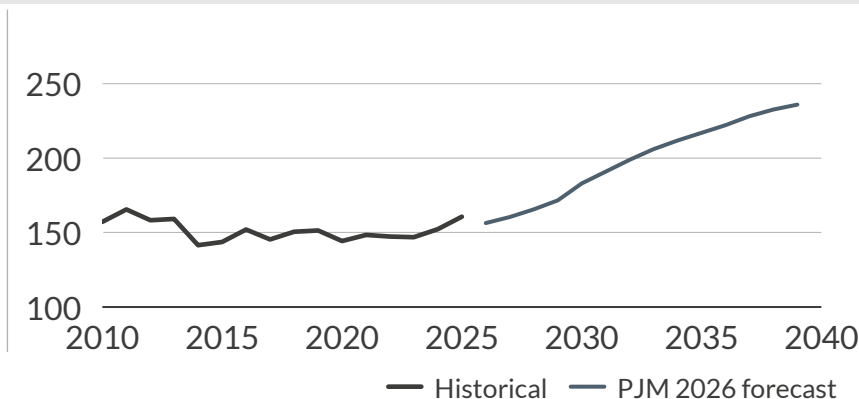
PJM Board January 2026 “Decisional Letter”:

The Board directs PJM staff to both accelerate and execute [the Reliability Backstop Procurement]... as a **transitional measure**.

2

And (large) load growth will keep market conditions tight...

PJM’s 2026 load forecast anticipates ~30GW of load growth by 2030, with peak load increasing from 156GW to 183GW.



4

And for the long term

White House and PJM Governors “Statement of Principles”:
PJM should immediately embark on a stakeholder process to reform the capacity market to ensure long-term viability.

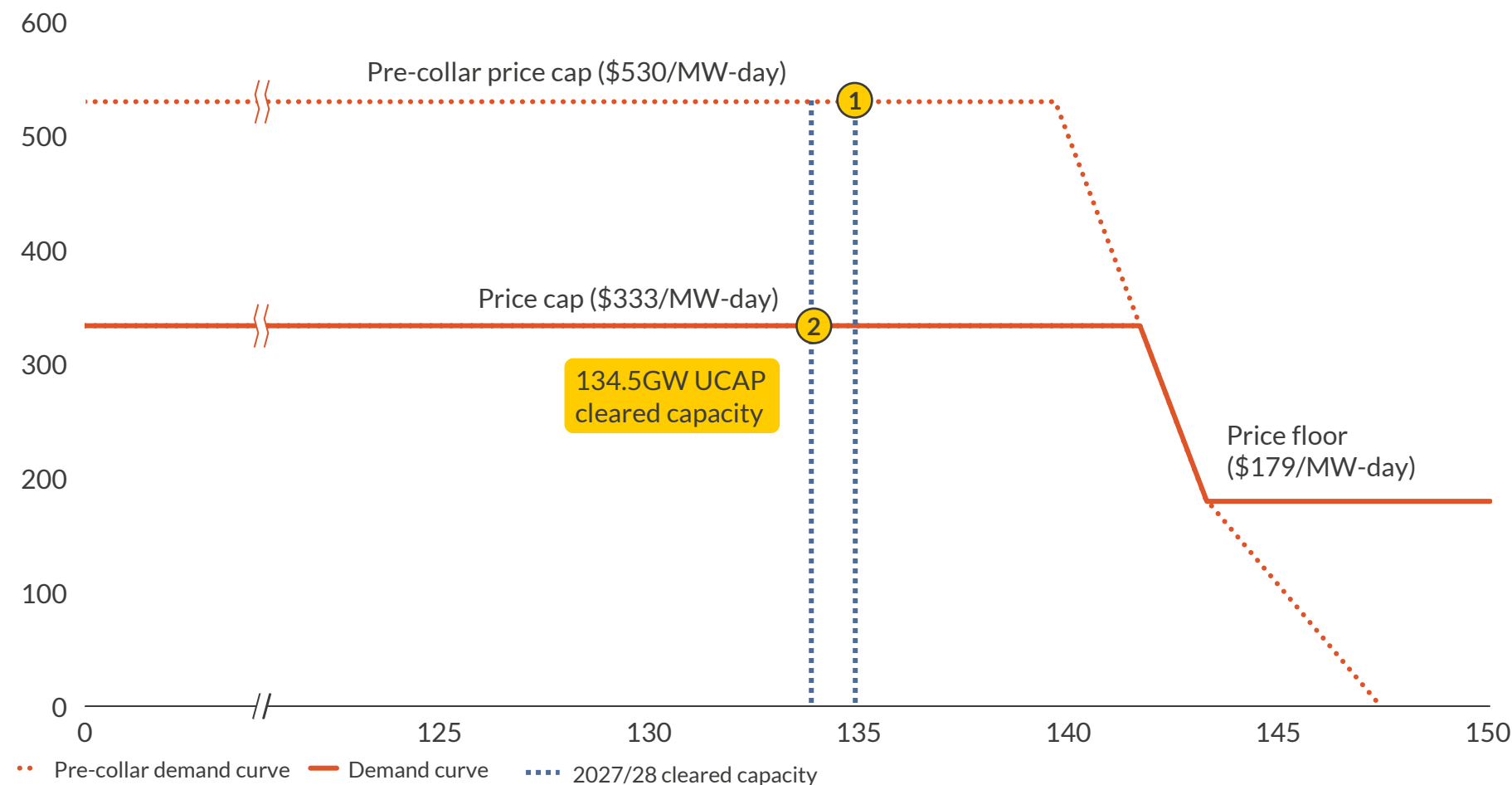
PJM Board January 2026 “Decisional Letter”:

The Board directs PJM to analyze how the energy, reserve and capacity markets can evolve in a coordinated manner to provide appropriate incentives for both investment and performance.

1) Emphasis in original.

The 2027/28 BRA cleared well short of the Reliability Requirement; the price would have reached \$530/MW-day without the Price Collar

Demand curve (VRR)¹
\$/MW-day (nominal)



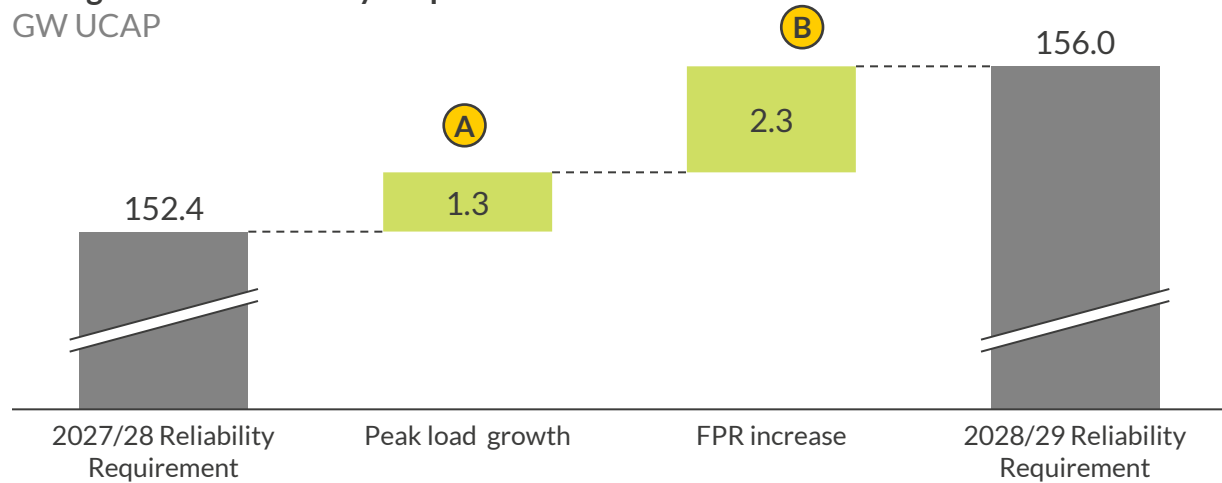
1) Variable Resource Requirement: PJM's capacity demand curve. This chart reflects the VRR curve which would have been used to clear the auction, if not for the temporary Price Collar. 2) Net of capacity served through the Fixed Resource Requirement alternative to the capacity market.

Sources: Aurora Energy Research, PJM

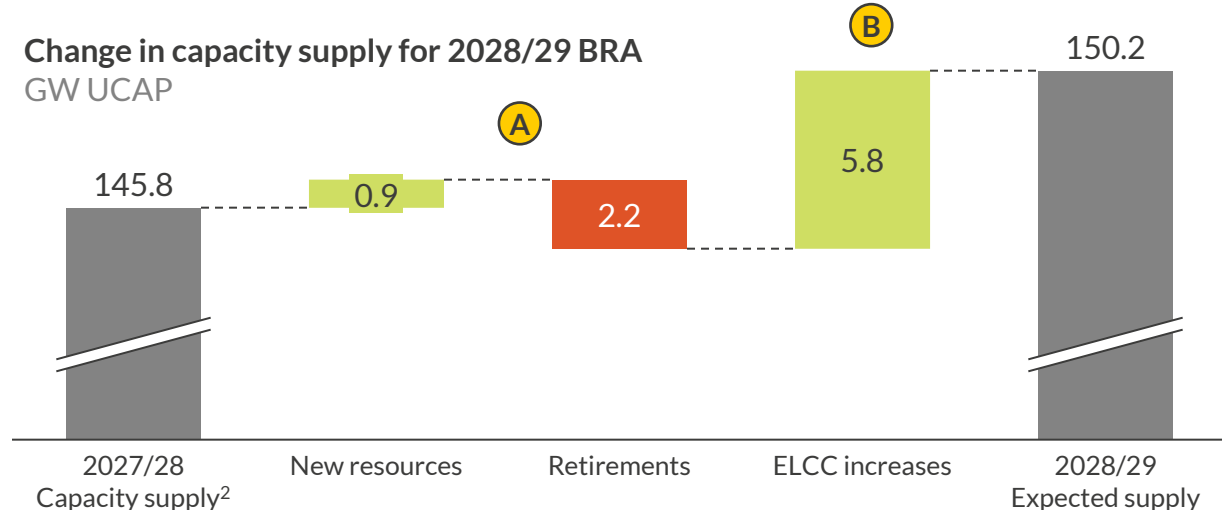
- The 2027/28 BRA cleared 134.5GW UCAP, 6.5GW short of the 141.1GW Reliability Requirement.²
 - The 2027/28 BRA was also the second of two auctions subject to the temporary “Price Collar” floor and cap, which resulted from negotiations with Pennsylvania and other states concerned about capacity price hikes.
- 1 If not for the Price Collar, the auction would have cleared at **\$529.80/MW-day**.
- 2 Instead, the 134.5GW which cleared the auction received the Price Collar cap price of **\$333.44/MW-day** (and approximately 800MW UCAP of capacity which bid above the Price Collar Cap did not clear).

The 2028/29 BRA will likely clear short of the Reliability Requirement, as changes between auctions do not overcome the 6.5GW shortfall from 2027/28

Change in PJM Reliability Requirement GW UCAP



Change in capacity supply for 2028/29 BRA GW UCAP



5.8GW
shortfall

- Forecast peak load increased from 164.2GW for 2026/27 to 165.5GW for 2027/28, reflecting approximately a 1.3GW UCAP increase.¹
- The Forecast Pool Requirement (FPR) also increased between the 2027/28 and 2028/29 auctions, from 92.6% to 94.0%. The FPR is multiplied by forecast peak load to determine the Reliability Requirement, so this shift results in a further 2.3GW UCAP increase in the Reliability Requirement.
- The 2027/28 BRA cleared ~6.5GW UCAP short of the Reliability Requirement.
- The 2028/29 BRA may see some additional supply, with most of the UCAP increase coming from new battery storage. However, the retirement of the Rockport coal plant would more than offset these additions.
- ELCC changes have a bigger impact on the total amount of supply, with an increase of nearly 6GW.

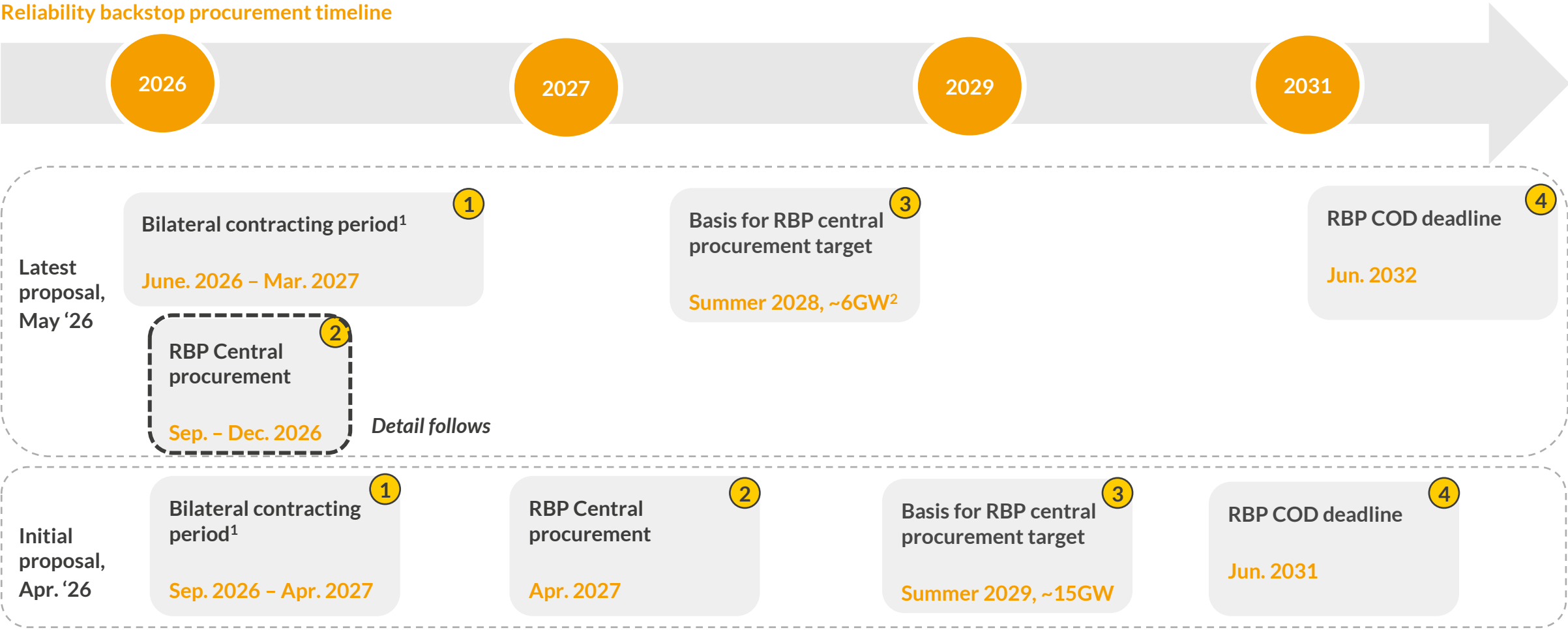
(A) Market fundamental change (B) Admin change

1) Translated to UCAP using the 92.6% FPR for the 2027/28 BRA. 2) Capacity that cleared the 2027/28 BRA, or that participated as FRR.

PJM will run the RBP central procurement in Sep. 2026 alongside a parallel bilateral contracting period, with a June 2032 COD deadline for new capacity

PJM received pushback from policymakers on its initial proposal to hold the RBP central procurement in April 2027, prompting it to advance the central procurement to September 2026. The latest proposal also moves forward the forecast year on which PJM will base the procurement target, while pushing back the commercial operations deadline (COD) by one year.

Reliability backstop procurement timeline



1) Refers to the facilitated bilateral contracting period; loads and generators may contract independently outside of this window. 2) Central procurement target will be based on the 2028/29 BRA, which is informed by the summer 2028 peak load estimate.

PJM will implement the RBP central procurement using a contract-for-difference structure with the Base Residual Auction

Reliability backstop procurement overview

Contracting and procurement

- Bilateral contracting between supply and load with PJM acting as intermediary to match load and new generation.
- PJM-administered central procurement intended to procure the shortfall seen in the 2028/29 BRA; expected contract tenors up to 15 years.

Eligibility criteria for Central procurement

- Newbuilds, uprates, and repowered generators.
- PJM is proposing to exclude delayed retirements, CIR-only uprates, and resources having participated in a BRA through 2028/29.
- COD required before June 2032. PJM proposes a “gating” assessment to ensure projects can feasibly meet the COD deadline.²

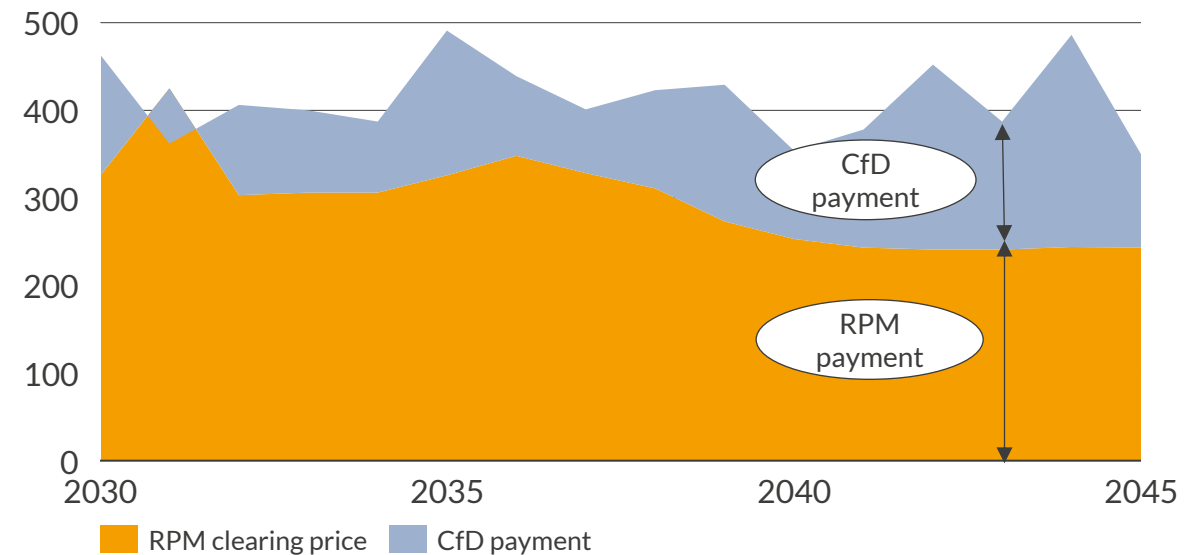
Procurement target and cost allocation

- Initial target set by PJM based on 2028/29 BRA shortfall; EDCs can decrement target for loads confirmed to be bilaterally contracting new capacity.
- Costs distributed to EDCs / LSEs pro-rata based on their share of the target MW. EDCs / LSEs responsible for cost allocation to individual loads.

Penalty structure

- Undelivered UCAP in a delivery year receives no compensation, with a 20% charge on RBP commitment price for shortfalls.
- Failure to come online within 3 years of first committed delivery year voids the RBP commitment.

Illustrative example | Contract for Difference (CfD) against RPM¹ - Payment structure \$/MW-day (real 2025)



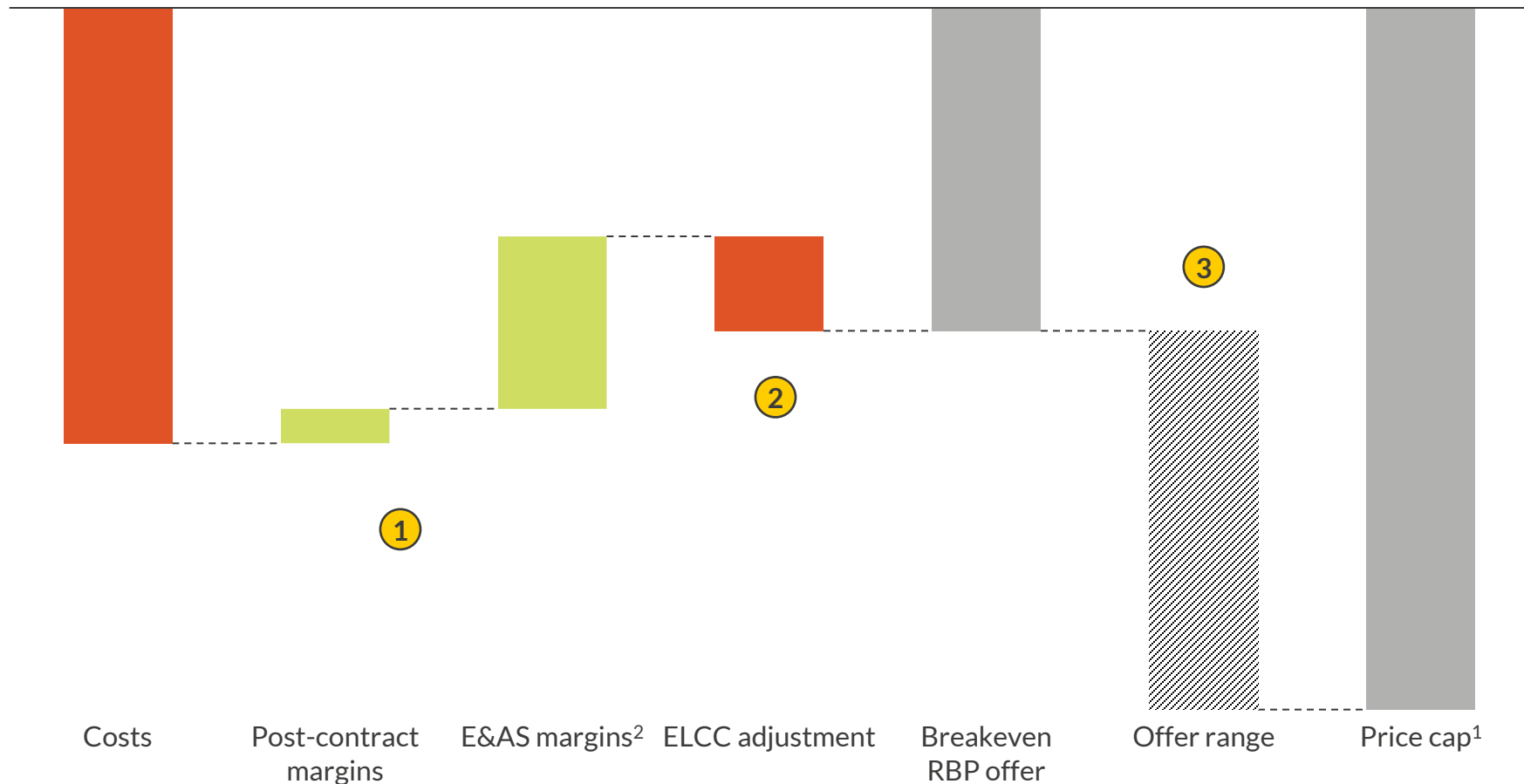
- Under RBP’s CfD structure, if an asset’s realized capacity revenues from the BRA fall below its contracted pay-as-bid strike price, the asset receives a top-up payment to meet the CfD level. Conversely, capacity revenues above the strike price are returned, ensuring symmetric settlement against RPM.
- Suppliers can differentiate their RBP offers through year-specific bidding, allowing strike prices to vary by delivery year.
- Notably, ELCC risk persists even with a fixed yearly strike price. Changes in ELCC over time can reduce accredited UCAP and associated revenues, creating potential under-recovery relative to the contracted level.

1) Reliability Pricing Model. 2) Gating assessment criteria include site control, financing and permitting plans, and demonstrated experience having constructed prior projects.

RBP offers should at a minimum cover resource costs, but the pay-as-bid structure could incentivize strategic bidding

Illustration of Reliability Backstop Procurement offer formation considerations

\$/kW

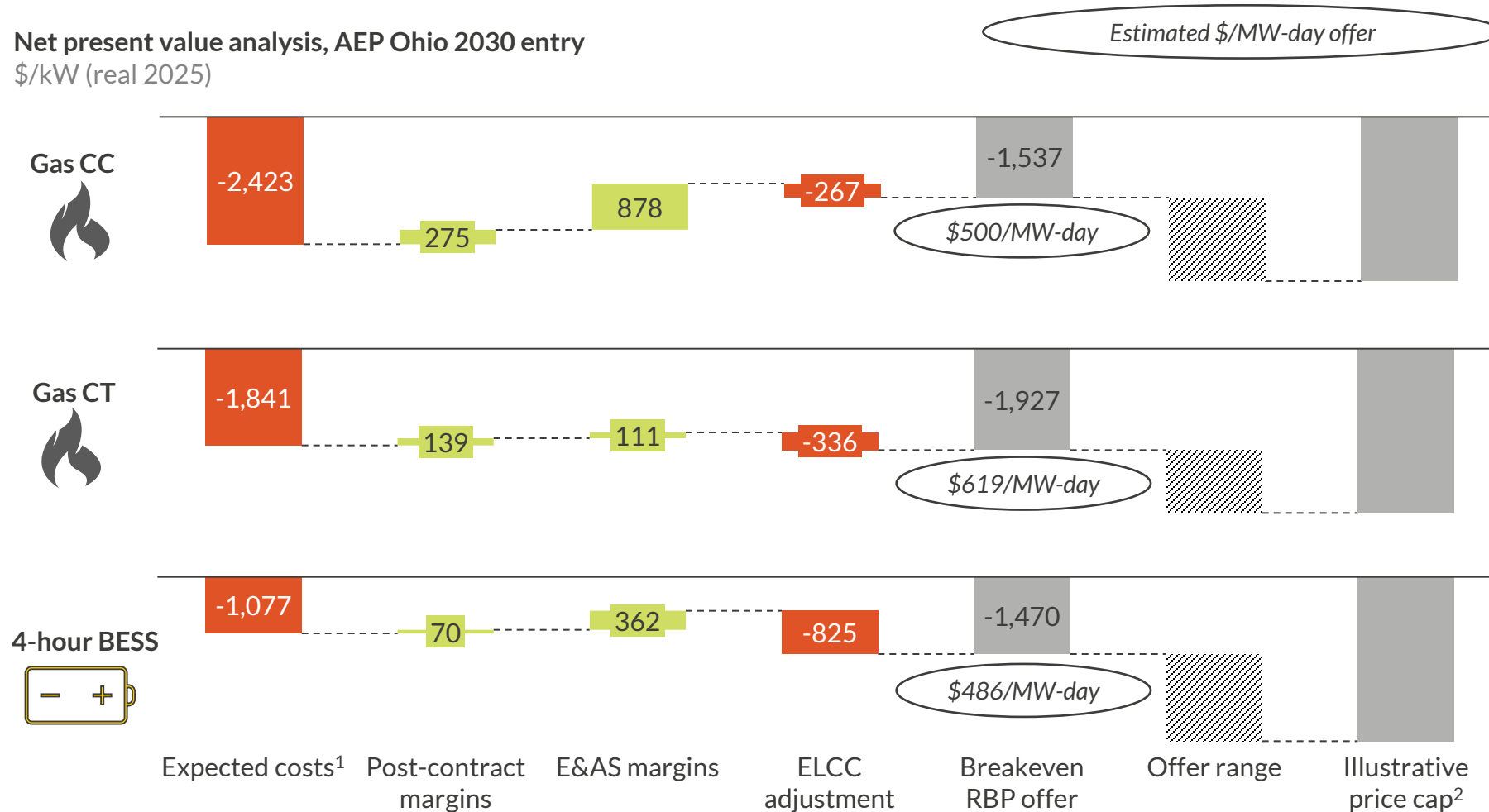


- 1 As the RBP is a capacity-only auction, the offer should, at a minimum, cover all fixed and operating costs, net of expected post-contract margins and energy and ancillary services margins.
- 2 The auction will procure UCAP, and thus bidders must account for ELCC, including ELCC changes over the tenure of the contract. Resources will be permitted to offer different UCAP amounts per year.
- 3 PJM has proposed a pay-as-bid structure for the RBP central procurement, and bidders are able to bid above their expectation of a breakeven offer. Potential considerations include:
 - Risks to the seller, such as ELCCs declining faster than expected or high interconnection costs.
 - Strategic bidding, e.g., if bidders expect PJM to fall short of the procurement target.

1) PJM's May 2026 proposal includes a price cap equal to the mean + 2 standard deviations, across the submitted offers. 2) Energy and Ancillary Services.

Example CCs and 4-hour BESS both see breakeven offers around \$500/MW-day, though sellers could offer higher prices

Net present value analysis, AEP Ohio 2030 entry
\$/kW (real 2025)



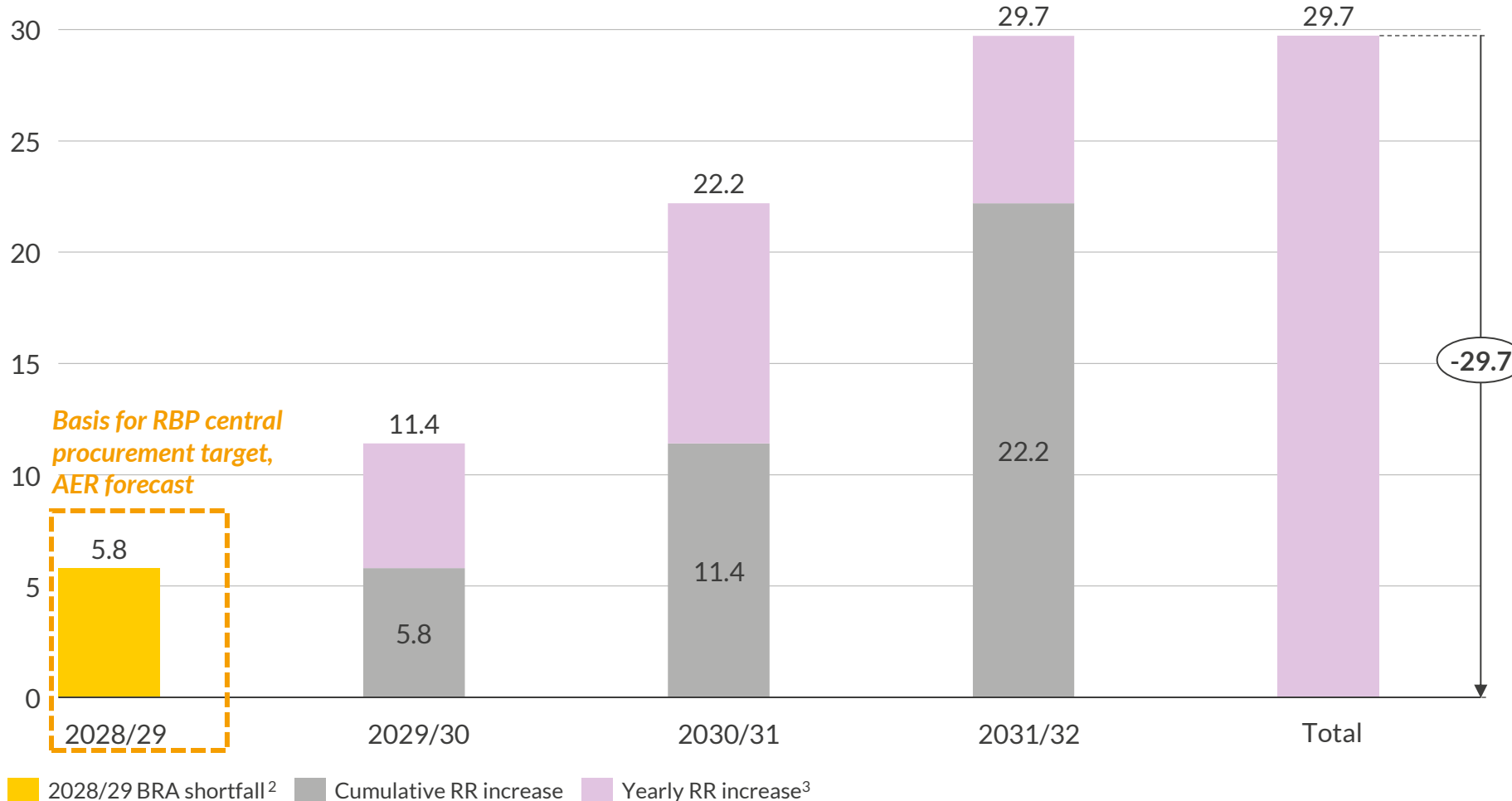
- Gas CCs and 4-hour batteries see the lowest breakeven offer prices, both around \$500/MW-day. Gas CTs see breakeven offers above \$600/MW-day, due to limited energy margins.
- Assumed cost of capital decreases from the 15-year capacity contract drives lower bids. With a discount rate of 11%, breakeven offer prices would increase from ~\$500/MW-day to ~\$600/MW-day.
- The breakeven offer prices here should be interpreted as a lower bound. For example, resources could offer high to reflect risks such as lower ELCCs or higher interconnection costs than expected.
 - Under the pay-as-bid structure, resources may also bid strategically to capture additional upside.

Methodology note: Margin forecasts based on Aurora 2026 Q2 Power and Renewables Market Forecast. Merchant margins converted to NPV assuming an 11% real discount rate. Breakeven RBP offers assume an 8% real discount rate on RBP revenues.

1) Reflects present values of both CAPEX and OPEX. For battery storage, CAPEX values are net of the Investment Tax Credit. 2) Chart reflects a price cap of \$1,000/MW-day. As of April 2026, PJM has not announced an approach to determining the price cap.

While the RBP procurement target is based on the 2028/29 BRA, PJM's load forecast implies a need for additional capacity by then

Reliability Requirement increase per PJM 2026 load forecast
GW, UCAP

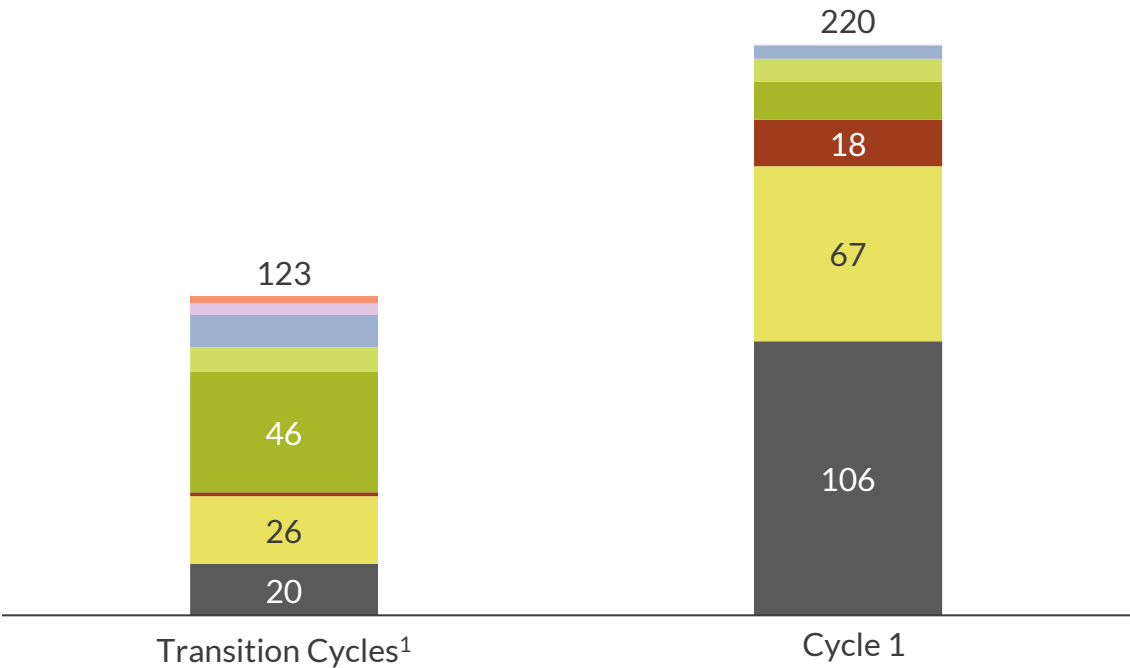


- PJM's May 2026 design proposes basing the RBP central procurement target on the **2028/29 BRA shortfall**, 5.8GW in Aurora's base case.
- However, PJM's 2026 load forecast implies a far more significant need for capacity, with summer peak load rising from 166GW to 191GW.
- Under this load trajectory, the total amount of new capacity required (inclusive of the ~6GW shortfall for the 2028/29 BRA) would be ~30GW, well above the anticipated procurement target for the RBP.

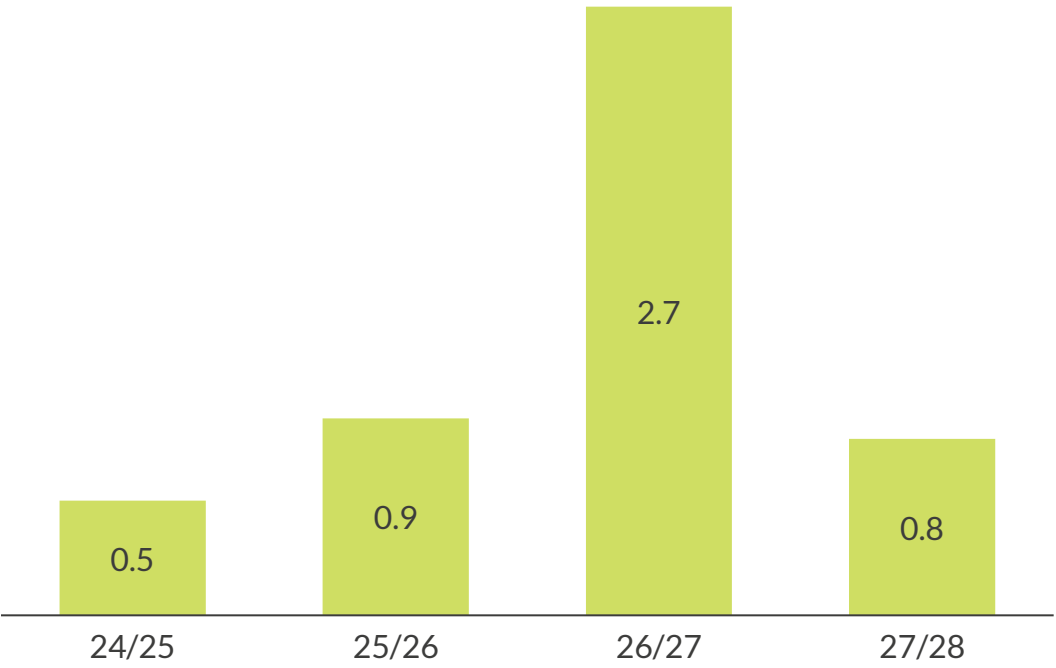
1) I.e., translating PJM's 2026 peak load forecast to the Reliability Requirement, assuming the Forecast Pool Requirement parameter from the 2028/29 BRA.

PJM's Cycle 1 received 220GW of project entries, suggesting strong interest in newbuild, but whether that capacity materializes is uncertain

Capacity in queue by technology
GW, nameplate



PJM new capacity additions, 24/25 through 27/28 Base Residual Auctions
GW, UCAP



- In April, PJM closed the Cycle 1 cluster – the first post "transition cycle" cluster, which PJM plans to process between April 2026 and April 2028. The cluster drew substantial interest, with 811 projects totaling **220GW** nameplate.
- Recent history suggests that interconnection queue capacity does not necessarily translate to new capacity additions. For instance, PJM's Transition Cycles 1 and 2 comprise 123GW of capacity which entered the interconnection queue between 2018 and 2021, and PJM reported in April that it has processed 103GW of capacity with signed interconnection agreement since 2020. However, the most recent four Base Residual Auctions have cleared less than 2GW UCAP of new capacity, on average.

■ Natural gas ■ Storage ■ Nuclear ■ Solar ■ Solar/Storage ■ Wind ■ Hydro ■ Other ■ Hybrid

1) Includes all projects studied in TC1 and TC2, including those withdrawn.

PJM's May 2026 paper sets the stage for long-term capacity market reform, laying out three possible paths forward

PJM offered a “holistic review” of its capacity market design, which PJM argued was effective at ensuring resource adequacy up until the current period of “structural tightness.”

PJM's conclusions of its holistic market review

PJM instituted the capacity market to provide the “missing money” needed for investment in new power capacity, which in PJM’s account, emerges from inelastic demand for electricity, an inability to selectively curtail end-use customers, and price caps in the energy market.

Recent capacity spikes results from “structural tightness,” caused by large load driven demand growth, higher CAPEX and longer timelines for new capacity, retirements due to “environmental policy and tightness,” interconnection queue delays, and financing issues.

These price spikes resulted in a “Credibility Trap.” While the higher prices were “correct and necessary” from an economic perspective, they resulted in political pushback (e.g., via the lowering of the market price cap via the Price Collar).

PJM’s paper does not explicitly recommend a specific plan of action, which PJM contends is a “deliberate choice,” rather than a “failure of resolve.” However, PJM proffers three potential “paths forward” for long-term market reform:

PJM-proposed paths forward (not mutually exclusive)

- 1 “Stabilized Markets”**- Maintain the capacity market as the primary mechanism for ensuring resource adequacy. However, to avoid capacity price volatility for consumers and generators, PJM would ensure long-term capacity contracting—either through PJM-administered procurements, or requirements on Load-Serving Entities.
- 2 “Differential Reliability”** – Develop a mechanism to “explicitly differentiate reliability,” which in practice would entail curtailing new large loads which have not “brought their own capacity” ahead of all other consumers.
- 3 “Energy Market Transition”**- A deliberate shift of revenues from the capacity market to the energy and ancillary services market. PJM clarifies that this pathway would not entail an “energy-only market,” but rather an “explicit and progressive shift of revenue recovery... through an increase in the E&AS market price limits (i.e., scarcity prices).”

Thank you to all the participants for attending today's session

▶ We look forward to continuing the conversation via bilateral sessions.

▶ For all comments and questions, you can reach Nikunj at Nikunj.Bhartia@auroraer.com.

▶ The next PJM subscriber webinar will be in **September 2026**.

▶ **Market Coverage:** In North America we cover **CAISO, WECC, ERCOT, MISO, SPP, PJM, NYISO, ISO-NE, Alberta, and Ontario**

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