Watchlist for PJM 2024-2025 Base Residual Auction

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PJM is scheduled to hold the Base Residual Auction (BRA) for the 2024-2025 Delivery Year in December 2022. Overall, there have been minimal developments on the supply-side, demand-side, and market rules compared to the 2023-2024 BRA, held earlier this year in June 2022. As a result, ICF expects prices and the LDA dynamics in the 2024-2025 BRA to remain generally similar to what was seen in the 2023-2024 BRA, with some potential for slight price upside.

The 2023-2024 BRA cleared at a price of $34.13/MW-day at the RTO level, with the MAAC, DPL-South, and BGE LDAs separating at prices of $49.49/MW-day, $69.95/MW-day, and $69.95/MW-day, respectively. The prior BRA included several significant changes to the market rules, including revisions to the Minimum Offer Price Rule (MOPR), the Market Seller Offer Cap (MSOC), and implementation of an Effective Load Carrying Capability (ELCC) capacity accreditation approach for intermittent and energy-limited resources. There were also notable developments on the supply-side, such as state and federal policy updates that provided support to existing nuclear resources. The commodity markets also saw major shifts in the year leading up to the 2023-2024 BRA, with both gas price and power price futures increasing substantially.

Auction parameter updates

PJM updates several key parameters ahead of each auction, including forecasted coincident peak load, the reserve margin requirements, the Net CONE values, and the assumed import limits for each LDA. The auction parameters are used to calculate the LDA-specific Variable Resource Requirement (VRR) curves, which determine the capacity demand at every price point.

Compared to the values used for the 2023-2024 BRA, the 2024-2025 BRA parameters have a slightly higher RTO peak load, going from 149.7 GW to 150.6 GW (a 0.6% increase), and a slightly lower Installed Reserve Margin target, going from 14.8% to 14.7% (a 0.1% decrease). The Reliability Requirement at the RTO level, after FRR adjustments, has increased, going from 131.82 GW to 132.05 GW for 2024-2025 BRA (a 0.2% increase).

Table 1: Reserve Requirement and Peak Load for 2023/2024 and 2024/2025 BRAs

LDAs	2023-2024 BRA		2024-2025 BRA		Delta	
	Peak Load (MW)	Reliability Requirement (UCAP MW)	Peak Load (MW)	Reliability Requirement (UCAP MW)	Peak Load (%)	Reliability Requirement (%)
RTO	120,925	131,820	121,218	132,055	0.24%	0.18%
MAAC	54,046	63,819	54,082	63,518	0.07%	-0.47%
EMAAC	29,543	35,590	29,540	35,415	-0.01%	-0.49%
SWMAAC	11,930	14,329	11,945	14,299	0.13%	-0.21%

The Net CONE values have substantially increased, with the RTO Net CONE increasing from $274.96/MW-day to $293.19/MW-day, a 6.6% increase, while the LDA-specific Net CONE values have seen increases ranging from 6.2% to 7.2%. The Net CONE increase is driven by an increase to the Gross CONE values, which are escalated based on a composite price index derived from values reported by the U.S. Bureau of Labor Statistics, along with further adjustments to account for the bonus depreciation phase-out. The Net E&AS values, which are calculated based on historical power prices, have also increased, reducing the impact of the Gross CONE increase on the final Net CONE values.

Table 2: Gross CONE and Net CONE

LDAs	2023-2024 BRA		2024-2025 BRA		Change in Net CONE	
	Gross CONE UCAP Terms ($/MW-Day)	Net CONE UCAP Terms ($/MW-Day)	Gross CONE UCAP Terms ($/MW-Day)	Net CONE UCAP Terms ($/MW-Day)	Gross CONE UCAP Terms (%)	Net CONE UCAP Terms (%)
RTO	327.6	275.0	348.9	293.2	6.1%	6.2%
MAAC	329.7	275.1	351.9	294.1	6.3%	6.5%
EMAAC	331.8	291.4	355.1	312.4	6.6%	6.7%
SWMAAC	335.5	244.7	357.5	261.1	6.1%	6.3%

The Capacity Emergency Transfer Limits (CETL) values, which determine the capacity import limit into each LDA, have also been updated for the 2024-2025 BRA. The LDA CETL values for the 2024-2025 BRA vary significantly in some cases from those of the 2023-2024. Several decreases in CETL are worth noting among LDAs that have seen price separation historically, including COMED, going from 5,781 MW to 4,640 MW (-20%), MAAC, going from 6,381 MW to 5,965 MW (-7%), PSEG, going from 9,022 MW to 8,287 MW (-8%), and DEOK, going from 5,632 MW to 4,999 MW (-11%).

With these parameter changes, the RTO-level VRR curve has shifted slightly to right, indicating overall increase in demand for capacity at every price level. A similar shift has occurred at the MAAC-level.

Figure 1: RTO VRR Curve for 2023-2024 BRA and 2024-2025 BRA

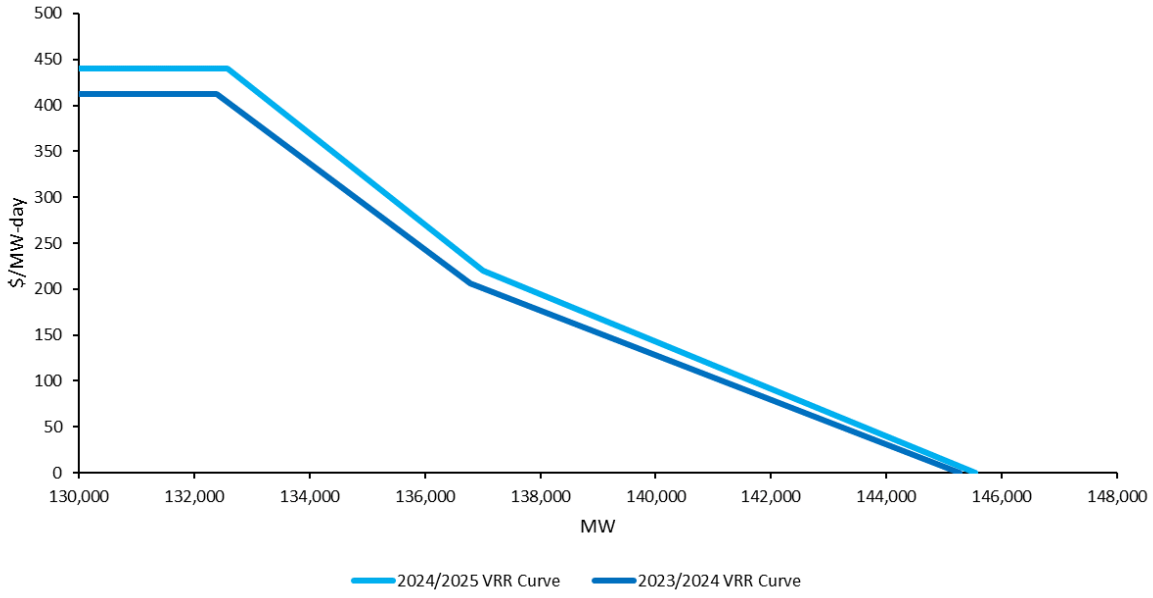
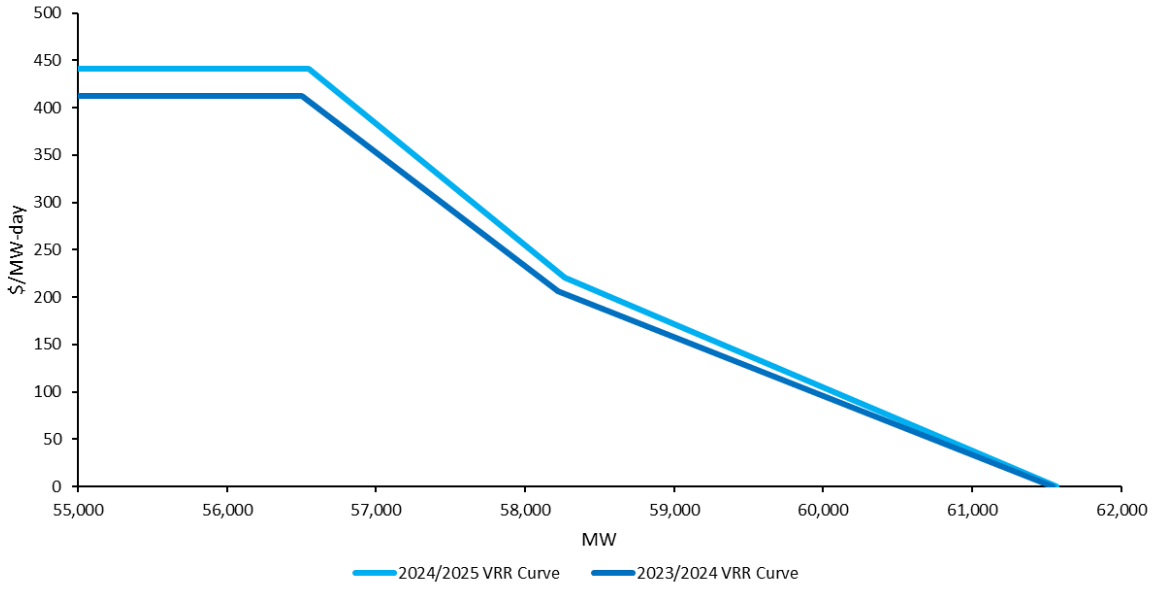


Figure 2: MAAC VRR Curve for 2023-2024 BRA and 2024-2025 BRA



Supply-side developments

Unlike recent auctions, there are no major developments on the supply-side which are expected to impact the auction. The largest supply-side development over the past six months, the passage of the Inflation Reduction Act, is not expected to have a notable impact until further ahead in the future.

On the new resource side, some amount of incremental wind and solar capacity is expected to participate in the auction, though these near-term builds are predominantly limited by supply chain constraints and interconnection queue delays, which are ongoing.

The capacity market impacts from wind and solar resources are also limited by the ELCC-based capacity accreditation, which results in effective capacity values for these resources that are well below their nameplate capacity ratings. While PJM has updated their ELCC class ratings for the 2024-2025 BRA, these values are largely similar to those used in the 2023-2024 BRA[1]. Based on resources that have received their interconnection agreements, ICF expects up to 5 GW (nameplate) of incremental wind and solar capacity additions to enter the market through 2024, some portion of which may participate in the 2024-2025 BRA.

On the existing resource side, ICF projects that a sizeable portion of resources are at risk of retirement in the near-to-mid-term. This is caused by various factors, including rising costs with age, tightening energy margins due to expected commodity price normalization and increased renewable penetration, and legislative and regulatory pressures on the state and federal level. The State of the Market Report indicates that, by the IMM's estimates, many resources have not been able to recover their avoidable costs between the energy, ancillary services, and capacity markets in recent years[2], particularly coal and oil/gas steam units. PJM appears to have similar expectations, with PJM President and CEO Manu Asthana stating at the 2022 PJM Annual Meeting of Members that PJM sees "up to 40 GW of retirements" by 2030[3]. At some point, this will result in resources failing to clear in the BRA and exiting the market, tightening reserve margins and putting upward pressure on capacity prices, though it is difficult to say when exactly this will come to pass.

Commodity market developments

As mentioned previously, the forwards prices for gas and power for the auction Delivery Year saw major shifts between the 2022-2023 BRA and the 2023-2024 BRA. This likely resulted in elevated energy margin expectations for resources participating in the 2023-2024 BRA, compared to the prior auction, and was a major factor highlighted by the IMM in their 2023-2024 post-auction report. However, the recent forwards for the 2024-2025 Delivery Year have remained largely similar to the forwards price to the 2023-2024 BRA, at least in spark spread terms, indicating that energy margin expectations might remain in a similar range compared to the prior auction.

Table 3: Indicative PJM Forwards (Using 7,000 Btu/kWh for Spark Spread)

Data Item	Unit	2022/2023 DY Average (May 2021 Trades)	2023/2024 DY Average (May 2022 Trades)	2024/2025 DY Average (Nov 2022 Trades)
Western Hub – On Peak	$/MWh	33.57	72.41	67.24
Western Hub – Off Peak	$/MWh	24.59	49.45	47.63
TETCO M3	$/MMBtu	2.66	5.35	4.83
Spark Spread – On Peak	$/MWh	14.95	34.96	33.43
Spark Spread – Off Peak	$/MWh	5.97	12.00	13.82

Source: Argus Media group

[1] ELCC values for solar have decreased from 38% to 36% for fixed panel resources and remained at 54% for tracking panel resources, while values for onshore wind have increased slightly from 15% to 16%.
[2] 2021 State of the Market Report for PJM, Table 7-38
[3] https://insidelines.pjm.com/pjm-ceo-asthana-opens-2022-annual-meeting/

Price expectation

Given the overall lack of major changes in the market, ICF expects prices for the 2024/2025 BRA to clear in largely the same range as the 2023/2024 BRA. ICF does not anticipate much potential for a further decrease in prices, absent some unexpected shift in offer behavior. Meanwhile, the main factor that ICF sees as providing some potential for price upside is changes in offer behavior, particularly from any existing resources that are at risk of retirement in the near-to-mid-term. Based on ICF's cost outlooks, ICF does not view the current market prices as sustainable for many resources in the mid-to-long-term, but it is challenging to project individual participant behavior in the immediate term given the number of factors that can influence their behavior.

On the RTO level, ICF expects the prices to clear in the $25/MW-day to $55/MW-day range. ICF continues to expect MAAC to separate from RTO, with MAAC prices expected to clear in the $45/MW-day to $85/MW-day range.

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