
A decorative graphic of white, thin, wavy lines flows across the top half of the page, starting from the left and curving towards the right.A horizontal bar with segments of green, grey, yellow, blue, orange, pink, and light blue spans the width of the page.

**PJM Response to the IMM Analysis
of the 2022/2023 RPM Base Residual
Auction Report**
March 18, 2022

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PJM Response to the IMM Analysis of the 2022/2023 RPM Base Residual Auction Report

Introduction

The Independent Market Monitor (IMM) recently published the “Analysis of the 2022/2023 RPM Base Residual Auction” report regarding the capacity auction executed in June 2021. The report includes an analysis of the Base Residual Auction (BRA) results as well as the IMM’s opinions about the market design and associated rules. Many of the IMM’s opinions were also published in the IMM’s State of the Market Report, discussed in the stakeholder process, or previously deliberated at FERC.

Stakeholder opinions are a critical part of refining the market rules, it is important to distinguish opinions from facts regarding the outcome of the auction. Much of the “sensitivity analysis” appears to be designed around the IMM’s opinion on how the market should operate, and therefore can be misinterpreted or represent an unrealistic outcome.

This response does not reiterate the many points discussed in the stakeholder process, deliberated at FERC or already expressed by PJM in a response to the IMM’s State of the Market Report. PJM believes that the inclusion of the IMM’s opinions regarding changes to market design in the Base Residual Auction report are potentially confusing for stakeholders. Thus, it would be helpful if future reports more clearly differentiated facts specifically related to auction results from advocacy positions related to market design.

There is a robust stakeholder process to share opinions on how to evolve the capacity market. The capacity market has helped to ensure resource adequacy in PJM during a time of unprecedented change.

The lack of a statement by PJM in this response should not be interpreted as an agreement by PJM to statements published in the IMM’s report.

Focus Areas From the IMM Analysis of the 2022/2023 RPM Base Residual Auction Report

The Sloped Variable Resource Requirement (VRR) Curve

Various IMM statements imply that the downward-sloping VRR curve is not justified and results in higher costs to consumers compared to a vertical curve. In fact, a sloped VRR curve is well supported for multiple complementary reasons. Compared to a vertical VRR curve, a sloped curve:

- Better reflects the non-zero marginal reliability value of incremental capacity beyond the IRM.
- Reduces year-to-year price volatility, which tends to improve the stability of capacity revenues and reduces risks to investors, thus reducing the cost of financing new investment.¹

¹ See Docket Nos. ER05-1410-000 and EL05-148-000 and answers filed by PJM on Nov. 8, 2005. This also included a summary of the previous analysis and affidavit provided by Professor Hobbs regarding downward sloping demand curve.

- Reduces structural market power, as it becomes more costly for a seller with market power to effectuate a given increase in the market clearing price.

The downward-sloping nature of PJM's VRR curve is consistent with practices in other jurisdictions, including NYISO, ISO-NE, Ireland, and the UK, and has been affirmed by FERC on numerous occasions. FERC has held that the sloped shape of the VRR curve "is just and reasonable because ... as supply varies over time, capacity prices under a sloping demand curve would change gradually, in contrast to the drastically changing prices that buyers must pay for varying amounts of capacity under the current capacity construct. In other words, no matter what slope a supply curve has, any movement of the supply curve will create a larger change in price with a vertical as compared to a downward sloping demand curve."²

FERC has also affirmed PJM's view that "the value of capacity does not plummet to zero simply when supply equals the Installed Reserve Margin. Capacity above the Installed Reserve Margin still has value because it makes the system even more reliable, albeit at a declining level. Therefore, it is reasonable for additional capacity to be purchased if the offered price is less than the additional reliability benefits."³

The shape of the PJM VRR curve is currently being discussed as part of the normal Quadrennial Review stakeholder process, and PJM welcomes stakeholder and IMM feedback on the specifics of the demand curve definition in that forum.

Sale of Excess Capacity in Incremental Auctions

The IMM report could be read to imply that PJM offers for sale all capacity procured over and above the Installed Reserve Margin in Incremental Auctions. In fact, PJM will only sell back capacity in an Incremental Auction if there is a reduction in the reliability requirement because of a change in the load forecast amount. The amount sold back is based on the change in the reliability requirement, not the amount procured above the reserve margin in the BRA based on the slope of the VRR curve. The description of the process used to sell back capacity in an Incremental Auction is contained in the Tariff and documented on page 9 of [Third IA Report](#).

Effective Load Carrying Capability

The 2022/2023 BRA did not use the Effective Load Carrying Capability (ELCC) process. ELCC is effective with the 2023/2024 BRA, and the Monitoring Analytics report could be misconstrued to imply that ELCC was effective in 2022/2023. Monitoring Analytics implies that intermittent resources offer capacity above their CIRs, or otherwise are not deliverable.⁴ All Generation Capacity Resources, including intermittent resources like wind and solar, are fully deliverable, and are required to meet PJM's current, robust deliverability testing before offering to provide capacity.

² 119 FERC P 61318 at P 102 (2007).

³ *Id.* at P 106.

⁴ "The MMU recommends that intermittent resources, including storage, not be permitted to offer capacity MW greater than the CIR values assigned to such resources."

Wind and solar may not offer capacity in the RPM auctions in excess of their CIRs⁵. PJM is discussing with stakeholders improvements to generation deliverability tests, including an increase to the summer deliverability of wind and solar. PJM has demonstrated that existing wind and solar already meet these higher deliverability thresholds but for a de minimis 5MW quantity⁶. Monitoring Analytics' sensitivity analysis that removes 50% of the wind and solar capacity from the auction is not a relevant scenario and could be confusing⁷. Further, Monitoring Analytics uses this sensitivity to support its claimed "overstatement of ELCC MW offers," including it with other factors in another scenario as if it is a definitive value, which could be confusing to readers.

Demand Response Participation on the Supply Side of the Capacity Market

The rationale for the IMM's opinion that Demand Response (DR) is not a physical resource and should be moved to the "demand side" is not clear. PJM does not believe that DR participation in the capacity market is an "inferior" resource. Demand Response operational requirements have been enhanced over time based on changes to the overall capacity market requirements. PJM's opinion regarding future DR, including the role in the capacity market, is included in the [DR Strategy Report](#).

Further, it is misleading to suggest that almost all the excess capacity is from DR. The capacity procured above the reserve requirement is based on resources with higher offers up to the intersection of the VRR curve. This may or may not be DR. Said another way, if you had a vertical demand curve, the amount of DR may not change since the excess is based on offer prices and not a resource type.

⁵ The IMM indicated, "There is no exact calculation at present of the extent to which intermittent resources offered capacity MW in excess of their CIR values."

⁶ The 5 MW number refers to generators with signed ISAs using the new test. However, the results of the analysis do not include 174 MW of solar generation in the 2023/2024 Base Residual Auction as such generators do not have a signed ISA. See February 23, 2022, PC Special Session at <https://www.pjm.com/-/media/committees-groups/committees/pc/2022/20220223-special/20220223-item-04-generator-deliverabilityproposal-analytical-results.ashx>.

⁷ The Monitoring Analytics report is clear about the lack of basis for the 50% reduction in capacity value in this sensitivity. On page 67, the report states: "The MMU is not asserting that the actual capacity value of intermittents is 50 percent of the level assumed in the ELCC analysis ..."

PJM Application of the Minimum Offer Price Rule

PJM applied the then-current MOPR rules consistent with the Tariff. A disagreement between the IMM and PJM on a unit-specific MOPR floor price does not mean that the MOPR rules were applied incorrectly. PJM appreciates the IMM's input and advice but ultimately makes the final determination on the unit-specific floor price in accordance with the Tariff. Regarding the new MOPR rules that go into effect for the 2023/2024 BRA, PJM discussed the rules with stakeholders, and comments were provided to FERC regarding such change⁸.

Winter Capacity Injection Rights (CIRs)

The quantity of awarded winter CIRs is based on an analysis of a given resource's operating pattern. The IMM seems to suggest that winter CIRs should not be allocated (or "given away") to such resources. The allocation of winter CIRs is based on the additional transmission capability that is available during a given Delivery Year. If this additional capability is not recognized, it would likely lead to the underutilization of these resources in the capacity market. This would result in fewer resources in the capacity market during the winter period to align with summer-only resources to meet the capacity performance annual availability requirements. Fewer resources in the capacity market may lead to a less competitive market outcome.

External Resource Participation

It appears the MMU recommends that external resources not be allowed to participate in the PJM capacity market. Stakeholders discussed this question, and the PJM Tariff was changed to require a pseudo-tie to ensure deliverability into PJM for external resources. This was addressed by FERC and reaffirmed through multiple challenges over the last several years.

The pseudo tie requires an external resource deliverability to be comparable to deliverability of an internal resource. Further, the IMM's assertion that an external resource must be deliverable to an internal LDA other than the "Rest of RTO" seems anti-competitive and discriminatory. This would constitute a higher standard than internal resources located in the "Rest of RTO," which are by definition not equivalent to resources internal to any particular LDA on the basis of their location.

⁸ The report also indicates that the capacity clearing price declined because of DR which suggest the DR offer price are not on the margin or above the intersection point with a vertical demand curve.