Monitoring Analytics

Potential Impacts of the MOPR Order

The Independent Market Monitor for PJM

March 20, 2020

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Summary

The Independent Market Monitor for PJM (IMM or MMU) analyzed in detail the expected impacts of the December 19, 2019, Minimum Offer Price Rule (MOPR) Order (December 19th Order) on the PJM Reliability Pricing Model (RPM) Base Residual Auction (BRA) for the 2022/2023 Delivery Year.[1] Based on the analysis, the IMM concludes that the December 19th Order is not expected to have an impact on the clearing prices and auction revenues in the 2022/2023 RPM BRA.

The IMM does not include detailed Locational Deliverability Area (LDA) prices or cleared quantities in this report for confidentiality reasons. Including detailed pricing and quantity information would be equivalent to the IMM using confidential information about offers to forecast the prices in the 2022/2023 BRA.

The conclusions of the IMM analysis do not mean that the IMM expects that prices in the 2022/2023 BRA will be unchanged from the 2021/2022 BRA. For example, the IMM found that market power was exercised in the 2021/2022 BRA.[2] The IMM filed a complaint with the Commission asserting that the market seller offer cap is overstated.[3] That complaint has not been ruled on. The outcome of the complaint could have a standalone impact on clearing prices in the 2022/2023 BRA. The IMM's report on the 2021/2022 BRA concluded that market power resulted in a $1.2 billion increase in customer payments compared to the competitive level. Those overpayments would be eliminated if the Commission modifies the market seller offer cap as requested. The offer behavior of participants could have a significant impact on clearing prices in the 2022/2023 BRA. The significant changes in the PJM auction parameters and the corresponding changes in the capacity market demand curve plus the changes in the supply curve can have significant impacts on the prices in the 2022/2023 BRA even without new MOPR rules. The IMM impact analysis addressed the differences in the 2022/2023 BRA prices that would result from application of the new MOPR rules.

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1 *PJM Interconnection, L.L.C. et al.*, 169 FERC ¶ 61,239.

2 Participant behavior and market performance were evaluated as not competitive in the 2021/2022 RPM Base Residual Auction. See Monitoring Analytics, LLC, "Analysis of the 2021/2022 RPM Base Residual Auction - Revised," <http://www.monitoringanalytics.com/reports/Reports/2018/IMM_Analysis_of_the_20212022_RPM_BRA_Revised_20180824.pdf> (August 24, 2018).

3 Complaint of the Independent Market Monitor for PJM, in Docket No. EL19-47-000 (February 21, 2019).

Analysis

The analysis included a base case which used the offers from the 2021/2022 RPM Base Residual Auction, the last cleared capacity market. The capacity market supply curve was adjusted for retirements and must offer exceptions, projected new supply, and updated offer caps for the 2022/2023 Delivery Year. The capacity market demand curve was updated using the 2022/2023 planning parameters. The current MOPR rules were applied.[4] [5]

The MOPR impact analysis applied the new MOPR rules defined in the December 19th Order to the base case supply. No changes were made to Fixed Resource Requirement (FRR) elections. The MOPR changes included expanding the MOPR to cover existing capacity resources and state subsidized capacity resources; establishing a competitive exemption for new and existing resources other than natural gas fired resources while also retaining the unit specific exception process for those that do not qualify for the competitive exemption; defining limited categorical exemptions for renewable resources participating in renewable portfolio standards (RPS) programs, self supply, Demand Resources (DR), Energy Efficiency EE resources, and capacity storage; expanding the region subject to MOPR from only modeled LDAs to the entire RTO; and increasing the default offer price floor from 90 percent to 100 percent of the applicable net CONE or net Avoidable Cost Rate (ACR) values.[6]

Comparing the MOPR impact case to the base case, the IMM concludes that the December 19th Order is not expected to have an impact on the clearing prices and auction revenues in the 2022/2023 RPM BRA. This conclusion is based on a detailed analysis of all the capacity market inputs, a full simulation of the auction, and is a result,

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4 PJM's current MOPR refers to the MOPR reinstated in 2017 following the remand from the D.C. Circuit in *NRG Power Marketing, LLC v. FERC*. 862 F.3d 108 (D.C. Cir. 201) (*NRG*); *see PJM Interconnection, L.L.C.*, 161 FERC ¶ 61,252 (2017) (2017 MOPR Remand Order).

5 Effective December 8, 2017, FERC issued an order on remand rejecting PJM's MOPR proposal in Docket No. ER13-535, and as a result, the rules that were in effect prior to PJM's December 7, 2012, MOPR filing were reinstated. These changes include eliminating the Competitive Entry and Self Supply Exemptions and retaining only the Unit Specific Exception request; narrowing the region subject to MOPR from the entire RTO to only modeled LDAs; eliminating the 20.0 MW threshold for applicability; decreasing the screen from 90 percent to 100 percent of the applicable net CONE values; redefining the applicability criteria to exclude nuclear, coal, IGCC, hydroelectric, wind and solar facilities; modifying the duration of mitigation criteria from clearing in a prior delivery year to clearing in any delivery year; and changing the procedural deadlines.

6 Existing for MOPR purposes means capacity that has previously cleared an RPM auction. New for MOPR purposes means capacity that has not previously cleared an RPM auction.

in part, of the impact of the categorical exemptions, the fact that the treatment of gas fired resources does not change significantly, and the competitiveness of unit specific offers for existing subsidized nuclear resources.

The possibility of impacts on the inclusion of renewable resources in the capacity market in the longer term is a function of the competitiveness of renewables. If renewables are competitive, they will be included in the capacity market at appropriate MW levels. Although preliminary estimates of the default MOPR floor prices for new renewables are relatively high, those estimates are based on existing renewable facilities in PJM and based on standard assumptions about technologies, financing costs, capacity factors and revenues. Renewables suppliers assert convincingly that many new renewables are competitive now and will demonstrate that fact through requests for unit specific exceptions to default MOPR floor prices.[7] Renewables suppliers also assert that they will become even more competitive in the future and for the 2024/2025 RPM BRA.

Others' Estimates

There have been estimates of the impact of the December 19th Order on capacity market prices in the near term. The two primary ones are from Commissioner Glick's dissent in the December 19th Order and from the testimony of Grid Strategies in Illinois. Neither are based on supportable, detailed analysis of the capacity market.

Commissioner Glick

Commission Glick estimated that the impact of the December 19th Order would be to increase the capacity payments by $2.4 billion per year or more.[8] Commissioner Glick's estimated impact has been cited by commenters.[9] [10] [11] [12] [13] [14] [15] [16] [17]

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7 "Minimum Offer Price Rule Unit-Specific Inputs," Gabel Associates; presented to the PJM MIC MOPR Special Session on February 28, 2020.

8 169 FERC ¶ 61,239 (Glick, Commissioner, *dissenting*).

9 "Request for Rehearing of FirstEnergy Solutions Corp.," Docket No. ER18-1314-000, et al. (January 17, 2020) at footnote 57.

10 "Request for Rehearing of the Office of the Attorney General of Maryland," Docket No. ER18-1314-000, et al., (January 21, 2020) at 14.

11 "Petition for Rehearing of New Jersey Division of Rate Counsel, Office of the People's Counsel for the District of Columbia, and the Maryland Office of People's Counsel," Docket No. ER18-1314-000, et al., (January 21, 2020) at footnote 3 and footnote 106.

12 "Request for Rehearing and Clarification of the American Public Power Association, American Municipal Power, Inc., and the Public Power Association of New Jersey," Docket No. ER18-1314-000, et al., (January 21, 2020) at footnote 191.

The Commissioner explained the $2.4 billion calculation in footnote 92 of the dissent:

> "Our estimate of the cost impact of today's order is a 'back-of-the-envelope' calculation. I assume that all previously-cleared nuclear power plants that receive zero-emissions credits in Illinois and New Jersey (totaling 6,670 MW) are unlikely to clear the next auction. I also assume there would be a 25 percent reduction of the demand response resources that previously cleared the Base Residual Auction. See supra Section III.B.3.a. Together, these resources total 9,340 MW of capacity. I relied on PJM's finding that "[a]dding less than 2% of zero-priced supply to the area outside MAAC, for example, reduces clearing prices in the RTO by 10%" which provides some insight to the slope of the demand curve and the associated price sensitivity. See PJM Transmittal Letter, Docket No. ER18-1314-000, at 28 (2018). Applying this slope to the last capacity auction clearing price of $140/MW-day and removing 9,300 MW, assuming all else remains constant, the capacity clearing price could increase $40/MW-day resulting in a cost of $2.4 billion. See PJM Interconnection, 2021/2022 RPM Base Residual Auction Results, https://www.pjm.com/-/media/markets-ops/rpm/rpm-auction-info/2021-2022/2021-2022-base-residual-auction-report.ashx (last visited Dec. 19, 2019)."

The calculation was an effort to estimate the impact of the order with very limited information. The calculation depends on explicit assumptions which are not correct:

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[13] "Request for Rehearing of Clean Energy Advocates," Docket No. ER18-1314-000 et al., (January 21, 2020) at 25.

[14] "Request for Rehearing of the Office of the Attorney General for the District of Columbia," Docket No. ER18-1314-000, et al., (January 21, 2020) at 19.

[15] "Comments of EDF Renewables, Inc. in Support of the Request for Rehearing and Clarification of the Clean Energy Associations," Docket No. ER18-1314-000, et al., (January 21, 2020) at 13.

[16] "Request for Rehearing and/or Clarification of Exelon Corporation," Docket No. ER18-1314-000, et al., (January 21, 2020) at 1 and 22.

[17] "Request for Rehearing and Clarification of the Maryland Public Service Commission," Docket No. ER18-1314-000, et al., (January 21, 2020) at footnote 4.

1. The assumption that the total capacity associated with "previously-cleared nuclear power plants that receive zero-emissions credits in Illinois and New Jersey" equals 6,670 MW is not correct. Table 1 shows installed capacity (ICAP) and unforced capacity (UCAP) of these nuclear resources in the 2021/2022 BRA.[18]

Table 1 Capacity of subsidized PJM nuclear resources in Illinois and New Jersey

	LDA	ICAP (MW)	UCAP (MW)
Hope Creek 1	EMAAC	1,172.0	1,156.8
Salem 1	EMAAC	1,153.0	1,138.0
Salem 2	EMAAC	1,147.6	1,132.7
Quad Cities 1	ComEd	681.0	672.2
Quad Cities 1	ComEd	683.3	674.4
Total		4,836.9	4,774.1

2. The assumption that the December 19th Order would result in a 25 percent reduction in cleared demand resources is not supported. The December 19th Order provided for a categorical exemption for existing demand resources.
3. The assumption about the slope of the demand curve is based on a PJM filing.[19] The dissent recognized that this is a back of the envelope calculation. The PJM analysis referenced supply and demand outside the MAAC LDA. But most (72 percent) of the referenced nuclear resources are in MAAC, and demand resources are spread across all LDAs. In addition, the relationship between offered quantity and clearing prices is generally nonlinear and discontinuous due to the nested LDA structure, capacity transfer limits between LDAs, and inflexible offer parameters.
4. The estimated price impact uses the 2021/2022 BRA as the baseline rather than a baseline adjusted for known changes to the PJM markets on both the supply side and the demand side.

Grid Strategies

Grid Strategies published a report, "Consumer Impacts of FERC Interference with State Policies," on August 26, 2019, that concluded that the consumer cost due to an expanded MOPR could be as high as $5.7 billion.[20] The IMM response to that Grid Strategies report

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18 To protect confidentiality, the UCAP is calculated using PJM's class weighted average EFORd values for nuclear resources <https://www.pjm.com/planning/resource-adequacy-planning/resource-reports-info.aspx>.

19 Docket No. ER18-1314-000. "Attachment 1 to Affidavit of Adam J. Keech 2018-2021 BRA Scenario Analysis," included with PJM's Capacity Repricing or in the Alternative MOPR-Ex Proposal: Tariff Revisions to Address Impacts of State Public Policies.

20 "Consumer Impacts of FERC Interference with State Polices: An Analysis of the PJM Region," Grid Strategies LLC, (August 26, 2019) <https://gridprogress.files.wordpress.com/2019/

noted that the broad and incorrect conclusions in the Grid Strategies report were attributable to a conflation of the IMM's analysis of the PJM extended resource carve out proposal (RCO) with all proposals to modify PJM capacity market rules.[21] [22] Grid Strategies repeated this error in testimony to the Illinois legislature.[23] The testimony stated with respect to the cost of MOPR that the "Independent Market Monitor for PJM, while a proponent of broad MOPR application, has stated, ""If only half the units at risk of retirement were subsidized, the increase would be $1.6 billion (17.4 percent).""[24] The full statement from the IMM response shows that Grid Strategies used the IMM's calculation of a $1.6 billion cost increase for one scenario under the PJM RCO proposal as the basis for a broad conclusion about the impact of the December 19th Order.[25] The IMM report shows that the impact of the PJM RCO proposal, if all units at risk of retirement were subsidized to remain in the market, would be an $8.4 billion increase (90.8 percent), almost doubling capacity market payments. If only half the units at risk of retirement were subsidized, the increase would be $1.6 billion (17.4 percent).

The IMM's analysis of the PJM RCO proposal is not relevant to evaluating the impacts of the December 19th Order. The PJM RCO proposal incorporated resource specific FRR using a two stage clearing mechanism that established the capacity obligation in stage 1 and the clearing price in stage 2 and lost opportunity payments to resources that cleared in stage 2 but would not receive a capacity obligation. The Commission explicitly rejected the PJM RCO proposal. The expanded MOPR policy established in the December 19th Order and the PJM RCO proposal are not comparable.

08/consumer-impacts-of-ferc-interference-with-state-policies-an-analysis-of-the-pjm-region.pdf>.

21 "IMM Response to Grid Strategies Report," Monitoring Analytics LLC. (September 17, 2019) <http://www.monitoringanalytics.com/reports/Market_Messages/Messages/IMM_Response_to_Grid_Strategies_Report_201909217.pdf>.

22 See "MOPR/FRR Sensitivity Analyses of the 2021/2022 Base Residual Auction," Monitoring Analytics, LLC, (September 26, 2018) at 18. <http://www.monitoringanalytics.com/reports/Reports/2018/IMM_MOPR_FRR_Sensitivity_Analyses_Report_20180926.pdf>.

23 "Testimony before Illinois State Senate, Energy and Public Utilities Committee," Rob Gramlich, Grid Strategies LLC (March 5, 2020).

24 Id. at 1.

25 "IMM Response to Grid Strategies Report," Monitoring Analytics LLC, (September 17, 2019) at 1. <http://www.monitoringanalytics.com/reports/Market_Messages/Messages/IMM_Response_to_Grid_Strategies_Report_201909217.pdf>.