

**UNITED STATES OF AMERICA  
BEFORE THE  
FEDERAL ENERGY REGULATORY COMMISSION**

Meeting the Challenge of Resource Adequacy in Regional Transmission Organization and Independent System Operator Regions	)	Docket No. AD25-7-000
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**POST TECHNICAL CONFERENCE COMMENTS  
OF THE INDEPENDENT MARKET MONITOR FOR PJM**

Pursuant to the Commission’s April 3, 2025, notice, Monitoring Analytics, LLC, acting in its capacity as the Independent Market Monitor (“Market Monitor”) for PJM Interconnection, L.L.C. (“PJM”) submits these comments addressing resource adequacy challenges in PJM following the Commissioner led technical conference scheduled for June 4–5, 2025.<sup>1</sup>

The Market Monitor appreciates the opportunity to submit comments following the June 4-5 technical conference.<sup>2</sup> The Market Monitor continues its support for competitive PJM markets. There is a market solution to the issues created by the addition of unprecedented amounts of large data center loads that does not require a massive wealth transfer. That solution is to require large data center loads to bring their own generation. It is essential to have a pragmatic market solution that is consistent with and sustains efficient and

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<sup>1</sup> See Notice Requesting Post-Conference Comment, Docket No. AD25-7-000 (June 5, 2025).

<sup>2</sup> See Pre Technical Conference Comments of the Independent Market Monitor for PJM, Docket No. AD25-7 (May 20, 2025).

competitive PJM markets rather than to create the conditions for a return to cost of service regulation.

In summary, the current tight conditions in the PJM Capacity Market are almost entirely the result of large data center load additions, both actual historical and forecast. The current supply of capacity in PJM is not adequate to meet the demand from large data center loads and will not be adequate in the foreseeable future. The solution is not to create reliability issues and wealth transfer issues by clearing the capacity market at the maximum price and at a quantity less than the reliability requirement. Status quo, co-location, and cost of service options all ignore the real issue and exacerbate reliability issues and customer cost issues. The market solution is to require new large data center loads to bring their own new generation with locational and temporal characteristics reasonably matched to their load profile.

A table introduced in PJM's pre conference comments was the subject of discussion at the technical conference.<sup>3</sup> In order to provide more information to the Commission and all the parties, the Market Monitor provides two additional approaches to that data in an Appendix to these comments. Table 1 is PJM's data as presented in PJM's comments. The PJM data is in UCAP terms and thus reflects changes both in ICAP values and changes in accreditation approaches over time. The Market Monitor's Table 2 includes the same basic data elements as PJM, but shows the results in ICAP terms. ICAP is a more stable metric of installed capacity because it does not change with accreditation methods, defines the must offer obligation in the energy market, and is a better measure of the obligation to perform. The Market Monitor's Table 3 expands the data elements to include all sources of increases and decreases in capacity, i.e. derates, deactivations, uprates and reactivations, all in ICAP terms. Increases and decreases in capacity result from all these sources. While the basic

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<sup>3</sup> See Prefiled Statement of Manu Asthana on Behalf of PJM Interconnection, L.L.C., Docket No. AD25-7 (May 20, 2025).

pattern of the results by state are similar to the PJM table, Table 3 shows that the net reduction in capacity is 1,340.8 MW rather than the 5,671.0 MW in the PJM table (Table 1).

## I. DATA CENTER LOAD GROWTH

On June 3, 2025, the day before the technical conference, the Market Monitor published Part G of the analysis of the 2025/2026 BRA and sensitivity analyses related to the implications for the 2026/2027 BRA.<sup>4</sup>

The basic conclusion of Part G is that data center load growth is the primary reason for recent and expected capacity market conditions, including total forecast load growth, the tight supply and demand balance, and high prices. But for data center growth, both actual and forecast, the PJM Capacity Market would not have seen the tight supply demand conditions, the high prices observed in the 2025/2026 BRA or the high prices expected for the 2026/2027 and subsequent capacity auctions. Holding aside all the other issues raised by the Market Monitor in parts A through F of this report, data center load by itself resulted in an increase in the 2025/2026 BRA revenues of \$9,332,103,858 or 174.3 percent (Scenario 88).

It is misleading to assert that the capacity market results are simply just a reflection of supply and demand, as some at the technical conference did. The current conditions are not the result of organic load growth. The current conditions in the capacity market are almost entirely the result of large load additions from data centers, both actual historical and forecast. The growth in data center load and the expected future growth in data center load are unique and unprecedented and uncertain and require a different approach than simply asserting that it is just supply and demand.

It is equally misleading to assert that the PJM Capacity Market does not work as a result of the impact of existing and forecast large data center load additions. Despite all the

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<sup>4</sup> See "Analysis of the 2025/2026 RPM Base Residual Auction - Part G Revised," ("Part G") (June 3, 2025) <[https://www.monitoringanalytics.com/reports/Reports/2025/IMM\\_Analysis\\_of\\_the\\_20252026\\_RPM\\_Base\\_Residual\\_Auction\\_Part\\_G\\_20250603\\_Revised.pdf](https://www.monitoringanalytics.com/reports/Reports/2025/IMM_Analysis_of_the_20252026_RPM_Base_Residual_Auction_Part_G_20250603_Revised.pdf)>.

issues with PJM's changes to the capacity market design, the PJM Capacity Market would have provided for reliability at prices consistent with organic load growth and the cost of new capacity were it not for the paradigm shift represented by the almost inexhaustible demand for power from data centers.

Data center load growth is the core reliability issue facing PJM markets at present. There is still time to address the issue but failure to do so will result in very high costs for other PJM customers and could also result in a switch from competitive markets to cost of service regulation. Customers are already bearing billions of dollars in higher costs as a direct result of existing and forecast data center load as the Market Monitor demonstrated in Part G of the BRA Analysis report.

## II. SOLUTIONS

### A. Bring Your Own Generation.

The Market Monitor recommends that new data center load be required to bring their own new generation. If that recommendation were adopted, the impact of data center load growth on other customers would be limited, although the existing impact of the already embedded data center load would remain. In addition, the impact of the uncertain forecast of data center load on other customers would be limited or eliminated, and the slower underlying dynamic of organic load growth and incentives would play out.<sup>5</sup> Under this option, data centers would enter into bilateral contracts with developers to build generation with locational and temporal characteristics reasonably matched to their load profile. The capacity would be offered into and clear in the PJM Capacity Market. Both the data center

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<sup>5</sup> See "Pre Technical Conference Comments of the Independent Market Monitor for PJM," *Meeting the Challenge of Resource Adequacy in Regional Transmission Organization and Independent System Operator Regions*, Docket No. AD25-7.

load and the associated generation would have an expedited queue option that would permit both the load and the generation to be added without delays.

It has been asserted that requiring large new data center loads to bring their own generation would be discriminatory. The relevant standard for prohibited discrimination is unduly discriminatory.<sup>6</sup> It is not unduly discriminatory to identify the class of large data centers and impose requirements on that class that match the impact of that class on all other customers. It would be unduly discriminatory to all other customers, from the smallest residential customer to the largest industrial customer, to allow large data centers to add massive amounts of load to the system with resulting price impacts and reliability impacts on those other customers. Preventing undue discrimination requires that data center loads bring their own new generation.

It is not an overstatement to assert that the ongoing addition of large data center loads will put PJM competitive markets at risk unless there is a solution that requires large data center loads to pay for the costs that they would otherwise impose on other customers. This does not mean just the costs of a substation or a large financial commitment to purchase power. Bringing the generation needed to meet the data center load is a long term investment required for reliable service that signals that data centers are in the markets for the long haul and committed to the competitive market design. The other options put PJM competitive markets at risk.

## **B. Other Options**

There are a number of other proposed options for addressing the reliability issues that result from the addition of large data center loads, including doing nothing, a return to cost

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<sup>6</sup> See Federal Power Act § 205, 16 U.S.C. § 824d(b) (“No public utility shall, with respect to any transmission or sale subject to the jurisdiction of the Commission, (1) make or grant any undue preference or advantage to any person or subject any person to any undue prejudice or disadvantage, or (2) maintain any unreasonable difference in rates, charges, service, facilities, or in any other respect, either as between localities or as between classes of service.”).

of service regulation, imposing more financial commitments on new data center loads, allowing co-located load, and allowing bilateral contracts for existing generation. Each of the other options creates a risk of ending competitive markets either directly or as a result of the high costs imposed on other customers that would create pressure to leave competitive markets.

### **1. Status Quo.**

The option characterized as just letting the markets work is the doing nothing option or the status quo. This option does not directly address the fact that the doing nothing option will result in capacity market prices being at their maximum level for the foreseeable future, recognizing that the maximum price and minimum price have been established for the 2026/2027 BRA to occur in July 2025 and the 2027/2028 BRA scheduled to occur in December 2025. The costs of the doing nothing option for all other customers in PJM will be very high.

The maximum price in the 2025/2026 BRA was \$451.61/MW-day for the RTO. The RTO cleared at \$269.92/MW-day while the BGE LDA cleared at its maximum price of \$466.35/MW-day and the Dominion LDA cleared at its maximum price of \$444.26/MW-day. The maximum price in the 2026/2027 BRA will be \$329.17/MW-day. PJM's currently proposed maximum capacity market prices for the future, after the 2027/2028 BRA, range from \$587/MW-day to \$1,261/MW-day, although PJM is expected to update the results based on Gross CONE and the EAS.<sup>7</sup>

PJM does not currently study the addition of large data center loads to ensure that the loads can be met reliably.<sup>8</sup> In other words, PJM does not determine whether there is enough capacity with the right attributes and in the right location to serve the load when a new large data center load is proposed by a utility. PJM's studies are limited to the adequacy of the

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<sup>7</sup> See PJM's presentation to the June 16, 2025 MIC- Quadrennial Review meeting. "Quadrennial Review Proposal," at 11 <<https://www.pjm.com/-/media/DotCom/committees-groups/committees/mic/2025/20250616-special/20250616-pjm-quad-review-proposal.pdf>>.

<sup>8</sup> See, e.g., OATT § 32.

transmission system to deliver energy from either existing generation or generation that is simply assumed to exist in the future. The addition of large data center loads without the assurance that the loads can be met reliably with existing generation puts the reliability of the system for other customers at risk.

If the additional data center load is not matched by increased capacity, PJM will fall short of its required reserve margin. Prices will be at the maximum price defined by the VRR curve with the likely result that billions of dollars of data center related costs will be imposed on other customers. Customers could perceive that they would be better off in an average cost design rather than a marginal cost design and choose to leave PJM markets.

In addition, the tariff provides that the capacity market reliability backstop option will be triggered if PJM falls short of its target reserve margin for three consecutive BRAs.<sup>9</sup> The tariff also triggers the backstop option if PJM is short of “baseload generation” compared to forecasted minimum hourly load for three consecutive BRAs.<sup>10</sup> PJM’s consultant proposed an earlier triggering of the backstop auction.<sup>11</sup> The backstop option provides that PJM may sign contracts for capacity resources for up to 15 years at full cost of service rates.

Implementation of such long term cost of service contracts would undermine competitive markets and suppress prices for competitive entrants because the backstop capacity is required to be offered in the capacity auctions at zero price.

## **2. Cost of Service Regulation**

The return to cost of service regulation urged by some current regulated utilities at the technical conference would be equivalent to a pay as bid, guaranteed long term cost

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<sup>9</sup> See OATT Attachment DD § 16.3.

<sup>10</sup> *Id.*

<sup>11</sup> See Brattle’s presentations to the April 11, 2025 MIC – Quadrennial Review meeting, “Sixth Review of PJM’s RPM VRR Curve Parameters,” <<https://www.pjm.com/-/media/DotCom/committees-groups/committees/mic/2025/20250411-special/item-01-1-cone-and-vrr-curve-final-recommendations.pdf>> .

recovery contract for those regulated utilities. The attractiveness to those utilities of adding to rate base and receiving a guaranteed stream of revenues is clear. The results for customers would include imposing the costs of data center load solely on the customers of the utility that builds the generation and would include customers guaranteeing the payment of the current high cost of building new generation. The impact on the market and all PJM customers would depend on which utilities requested and received approval to build new generation and how the new generation is included in the PJM markets.

The cost of service approach would require the customers of the utility to subsidize investors in the data centers by paying for the capacity needed to serve the data centers rather than requiring those investors to pay directly for the capacity they need.

Proponents of the cost of service approach explicitly reject the PJM market approach, confusing legitimate issues with the current market design and historical interconnection issues with a failure of PJM markets overall.<sup>12</sup> While many of the specifics of the critique of the market design and implementation are legitimate, the conclusion that competitive markets should be eliminated in favor of a return to cost of service regulation is not supported.

If the utilities assigned the costs of the new generation directly to data centers, it would be the equivalent of a bilateral contract with the data centers and qualify as data centers bringing their own generation. Instead, the utilities' cost of service approach would impose these costs on all other customers.

### **3. Financial Commitments.**

Some have suggested that the problem can be solved by requiring new large data center loads to enter into contracts requiring the data centers to pay for local transmission upgrades like substations and/or to commit to paying minimum fees to cover the costs of

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<sup>12</sup> See Pre-Conference Statement of Wendy Stark on Behalf of PPL Corporation Panel 2: PJM's Resource Adequacy Challenge Docket No. AD25-7 (May 16, 2025).

broader transmission system upgrades. Others have proposed additional financial or contractual requirements for data center customers, such as upfront collateral requirements or minimum demand provisions that require a customer to pay for a certain level of service regardless of current demand upfront collateral payments or commitments to paying for a minimum level of demand.<sup>13</sup> None of those proposals have included paying to hold other customers harmless from the impact on energy and capacity prices that result from the addition of data center loads.

A positive result of this approach would be to reduce some or all the speculative load growth from PJM forecasts. That would limit the forecasting excesses but not eliminate the impact on PJM capacity and energy markets. While the uncertainty and excesses included in current forecasts exacerbate the underlying issue, that underlying issue is a result of the real forecasts for real load growth based on the addition of real data centers.

#### **4. Co-Located Load.**

While it is hoped that the fundamental flaws in the co-located load approach have meant the demise of the co-located approach, the ongoing flood of requests for Necessary Studies and the associated filed Necessary Study Agreements (NSA) mean that some still hold out hope that this option can be pursued.<sup>14</sup>

The co-located load approach is worse than the do nothing approach because it can be implemented more quickly and because it fails to draw clear lines between actual reliance

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<sup>13</sup> See Pre-Filed Statement of Brian D. George on behalf of Google LLC, Docket No. AD25-7-000 (May 16, 2025) at 3–4.

<sup>14</sup> See Answer and Motion for Leave to Answer of the Independent Market Monitor for PJM, Docket No. ER25-1623-000 (April 21, 2025); *see also, e.g.*, Dockets Nos. ER25-1089-000, ER25-1226-000, ER24-1377-000, ER25-1385-000, ER25-1520-000, ER25-1754, ER25-1762-000, and ER25-1855-000.

on market capacity resources for backup and on the grid for grid services, and the pretense that the load is completely disconnected from the grid.<sup>15</sup>

The co-located approach if implemented broadly in PJM would result in a failure to meet reliability standards, favoring new data center load over reliable service to other customers, and extreme price impacts on other customers in the energy and capacity markets.<sup>16</sup>

## 5. Bilateral Contracts for Existing Resources.

Bilateral contracts for existing resources have many but not all of the downsides of the co-located load approach. Bilateral contracts for existing resources facilitate the short term addition of large data center loads to the system without adding generation. Such data center loads claim, in the case of bilateral contracts with existing nuclear plants, that they are served with 100 percent clean energy. Those claims are not correct. Such data centers are simply claiming rights to existing nuclear output while requiring, in fact, the addition of new emitting resources to meet their 8,760 hour load profile. Such data center additions also assert that they do not need regulatory approval for such bilateral contracts with existing resources.<sup>17</sup> The bilateral contract approach is better than the co-located approach because it

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<sup>15</sup> See, e.g., Comments of the Independent Market Monitor for PJM, Docket No. EL25-49-000 (April 23, 2025); Comments of the Independent Market Monitor for PJM, Docket No. ER24-2888-000, et al. (October 2, 2024); Answer and Motion for Leave to Answer of the Independent Market Monitor for PJM, Docket No. ER24-2172-000 (July 10, 2024).

<sup>16</sup> See Monitoring Analytics, LLC, “Potential Impacts to the Creation of Maryland FRRs,” (April 16, 2020) <[https://www.monitoringanalytics.com/reports/Reports/2020/IMM\\_Potential\\_Impacts\\_of\\_the\\_Creation\\_of\\_Maryland\\_FRRs\\_20200416.pdf](https://www.monitoringanalytics.com/reports/Reports/2020/IMM_Potential_Impacts_of_the_Creation_of_Maryland_FRRs_20200416.pdf)>; Comments to the Maryland PSC Senate Bill 1 Co-location Study Administrative Docket PC 61 (September 24, 2024) <[https://www.monitoringanalytics.com/filings/2024/IMM\\_Comments\\_MDPSC\\_PC61\\_20240924.pdf](https://www.monitoringanalytics.com/filings/2024/IMM_Comments_MDPSC_PC61_20240924.pdf)> ; Supplemental Comments to the Maryland PSC Senate Bill 1 Co-location Study Administrative Docket PC 61, (December 13, 2024) <[https://www.monitoringanalytics.com/filings/2024/IMM\\_Supplemental\\_Comments\\_re\\_MDPSC\\_PC61\\_Co\\_Located\\_Load\\_20241213.pdf](https://www.monitoringanalytics.com/filings/2024/IMM_Supplemental_Comments_re_MDPSC_PC61_Co_Located_Load_20241213.pdf)>.

<sup>17</sup> See Talen Energy Expands Nuclear Energy Relationship with Amazon (June 11, 2025), which can be accessed at: <<https://ir.talenenergy.com/news-releases/news-release-details/talen-energy-expands-nuclear-energy-relationship-amazon-with-Amazon>>.

recognizes that the load is part of the market and it does not pretend that the load is disconnected from the grid.

The bilateral contract approach is a variant of the do nothing approach but worse because it happens faster and without regulatory oversight and therefore brings negative consequences to the market for other customers.

### III. CONCLUSION

The Market Monitor looks forward to a resolution of these difficult issues that is consistent with the continued operation of the efficient and competitive PJM markets.

Respectfully submitted,



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Dated: July 7, 2025

## CERTIFICATE OF SERVICE

I hereby certify that I have this day served the foregoing document upon each person designated on the official service list compiled by the Secretary in this proceeding.

Dated at Eagleville, Pennsylvania,  
this 7<sup>th</sup> day of July, 2025.



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## Appendix

**Table 1 PJM Table (UCAP)<sup>18</sup>**

State	New Entry Placed into Service Since 2015/2016 (UCAP MW)	Deactivations Since 2015/2016 (UCAP MW)	Net New Entry Placed Into Service Since 2015/2016 (UCAP MW)
DC	0.0	0.0	0.0
DE	243.0	441.0	(198.0)
IL	3,277.0	3,016.0	261.0
IN	915.0	820.0	95.0
KY	60.0	907.0	(847.0)
MD	2,078.0	3,114.0	(1,036.0)
MI	933.0	0.0	933.0
NC	196.0	270.0	(74.0)
NJ	2,074.0	4,696.0	(2,622.0)
OH	5,582.0	9,663.0	(4,081.0)
PA	9,025.0	5,543.0	3,482.0
TN	0.0	33.0	(33.0)
VA	3,850.0	4,211.0	(361.0)
WV	163.0	1,353.0	(1,190.0)
Total	28,396.0	34,067.0	(5,671.0)

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<sup>18</sup> Prefiled Statement of Manu Asthana on behalf of PJM Interconnection, L.L.C., Docket No. AD25-7-000 (May 16, 2025) at 9.

**Table 2 PJM Table in ICAP**

State	New Entry Placed into Service Since 2015/2016 (ICAP MW)	Deactivations Since 2015/2016 (ICAP MW)	Net New Entry Placed Into Service Since 2015/2016 (ICAP MW)
DC	0.0	0.0	0.0
DE	341.9	546.0	(204.1)
IL	3,716.3	2,895.2	821.1
IN	1,304.6	982.0	322.6
KY	385.7	949.0	(563.3)
MD	2,694.8	3,792.6	(1,097.8)
MI	2,122.3	1,055.0	1,067.3
NC	814.7	209.0	605.7
NJ	2,176.4	5,621.3	(3,444.9)
OH	7,590.5	10,614.1	(3,023.6)
PA	10,338.4	7,577.4	2,761.0
TN	45.0	45.0	0.0
VA	6,097.3	5,613.3	484.0
WV	86.7	1,228.4	(1,141.7)
<b>Total</b>	<b>37,714.6</b>	<b>41,128.3</b>	<b>(3,413.7)</b>

**Table 3 PJM Table with Additional Capacity Changes (ICAP)**

State	New Entry Placed into Service Since 2015/2016 (ICAP MW)	Reactivated Since 2015/2016 (ICAP MW)	Uprates Since 2015/2016 (ICAP MW)	Deactivations Since 2015/2016 (ICAP MW)	Derates Since 2015/2016 (ICAP MW)	Net Capacity Into Service Since 2015/2016 (ICAP MW)
DC	0.0	0.0	0.0	0.0	0.0	0.0
DE	341.9	0.0	31.9	546.0	45.9	(218.1)
IL	3,716.3	103.3	671.3	2,895.2	253.0	1,342.7
IN	1,304.6	0.0	223.8	982.0	90.8	455.6
KY	385.7	0.0	35.2	949.0	46.9	(575.0)
MD	2,694.8	0.0	161.6	3,792.6	167.2	(1,103.4)
MI	2,122.3	0.0	168.6	1,055.0	48.1	1,187.8
NC	814.7	0.0	58.8	209.0	196.7	467.8
NJ	2,176.4	5.0	460.1	5,621.3	400.7	(3,380.5)
OH	7,590.5	0.0	751.9	10,614.1	372.3	(2,644.0)
PA	10,338.4	538.0	1,368.6	7,577.4	689.7	3,977.9
TN	45.0	0.0	0.0	45.0	0.0	0.0
VA	6,097.3	15.6	977.2	5,613.3	1,062.6	414.2
WV	86.7	0.0	91.7	1,228.4	215.8	(1,265.8)
<b>Total</b>	<b>37,714.6</b>	<b>661.9</b>	<b>5,000.7</b>	<b>41,128.3</b>	<b>3,589.7</b>	<b>(1,340.8)</b>