UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION

PJM Capacity Market Forum) Docket No. AD23-7-000

COMMENTS OF
AMERICAN MUNICIPAL POWER, INC.

Pursuant to the Federal Energy Regulatory Commission's ("FERC" or "Commission") notice[1] issued in the captioned proceeding, American Municipal Power, Inc. ("AMP") hereby submits comments regarding topics discussed at the Commission's June 15, 2023 forum addressing PJM Interconnection, L.L.C.'s ("PJM") Reliability Pricing Model ("RPM") capacity construct.

I. INTRODUCTION

AMP has been an active participant in PJM's resource adequacy-related stakeholder processes and in related proceedings before the Commission because AMP supports competitive markets. AMP has advocated for wholesale changes to the PJM capacity construct for years as counterpoint to the efforts of market participants who dominate regional transmission organization ("RTO") stakeholder processes and FERC proceedings and seek solely to protect their own economic interests. "[T]he interests of 'load'—retail consumers and those charged with protecting them—often are drowned out by the self-interested concerns of larger and better-financed participants. It is up to the Commission to ensure that PJM's capacity construct treats fairly the consumers that ultimately bear the costs and does not create windfalls for those market participants with the most resources to devote to administrative processes."[2]

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1 Notice of Request for Comments, Docket No. AD23-7-000 (June 30, 2023).

2 AMP, Pre-Conference Statement, Docket No. AD17-11-000, at 5 (April 25, 2017).

However, instead of productive fundamental changes, we continue to see multiple tweaks every year. In calendar year 2023 alone, Commission proceedings have addressed PJM's filings related to the RPM Performance Assessment Interval trigger,[3] delay of RPM auctions,[4] Capacity Interconnection Rights for Effective Load Carrying Capability ("ELCC") Resources,[5] nonperformance charge billing timelines,[6] planned Generation Capacity Resource participation in RPM,[7] and a complaint alleging that PJM improperly accredits ELCC resources.[8] This is in addition to the thirteen or more complaint proceedings pending before the Commission that address nonperformance charges assessed in connection with Winter Storm Elliott, and PJM's Critical Issue Fast Path stakeholder proceeding that PJM intends will result in a major overhaul of RPM. While AMP remains disappointed that no member of the public power sector was invited to participate in the June 15 forum, AMP appreciates the opportunity to offer these post-forum comments to the Commission and continues to believe that wholesale changes are needed, as described below.

II. OBJECTIVES AND OUTCOMES OF RPM (PANEL 1)

A. RPM has so far fulfilled its resource adequacy objectives but has caused customers to bear unnecessary costs of over-procurement.

RPM has historically yielded procurement of sufficient capacity to meet PJM's target reserve margin (or forecast pool requirement). But the only constant since the

[3] *See* AMP, et al., Answer, Docket No. ER23-1996-000 (July 5, 2023); AMP, Comments, Docket Nos. ER23-1996-000, AD23-7-000 (June 9, 2023).

[4] *See* AMP-ODEC, Answer, Docket No. ER23-1609-000 (May 17, 2023); AMP-ODEC, Protest, Docket No. ER23-1609-000 (May 2, 2023).

[5] *See* AMP, Comments, Docket No. ER23-1067-000 (March 1, 2023).

[6] *See* AMP, Comments, Docket No. ER23-1038-000 (February 23, 2023).

[7] *See* AMP, Comments, Docket Nos. ER23-729-000, EL23-19-000 (January 20, 2023).

[8] *See* AMP, Protest, Docket No. EL23-13-000 (January 17, 2023).

inception of RPM is that it consistently requires changes, necessitating dozens of FERC filings, with more on the way no later than October 2023, as highlighted by PJM during the June 15 forum. Many of these filings respond to exogenous stresses, which may be temporary. For example, in the 2014 RPM triennial review, PJM administratively shifted the Variable Resource Requirement curve to the right by 1%[9] due to resource adequacy concerns associated with potential power plant retirements resulting from the U.S. Environmental Protection Agency's ("EPA") Mercury and Air Toxics Standard and EPA's Clean Power Plan, among other concerns.[10] In 2018, PJM then unwound the 1% percent shift because it felt the uncertainties had subsided.[11] This constant "rules churn" has produced an unduly complicated mechanism and denies market participants the stability required to better support long-term investments in generating resources. In this sense, RPM has historically not been a durable resource adequacy construct.

PJM describes the purpose of its capacity construct as follows: "PJM's capacity market, called the Reliability Pricing Model, ensures long-term grid reliability by securing the appropriate amount of power supply resources needed to meet predicted energy demand in the future."[12] Viewed through this lens, RPM has not fulfilled its objective as it continually over-procures capacity significantly above the amount needed to meet predicted demand.[13] Consumers pay the price of this over-procurement, which may

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9 *See* PJM, Filing, Docket No. ER14-2490-000, at 23 (September 25, 2014).

10 *See id.*, Attachment C, Sotkiewicz Affidavit, at 11; Attachment E, Newell-Spees Affidavit and 2014 VRR Report, at 36 n.44.

11 PJM, Filing, Docket No. ER19-105-000, at 2 (October 12, 2018).

12 PJM, Capacity Market (RPM), https://www.pjm.com/markets-and-operations/rpm.

13 *See* Table 1, *infra.*

exceed $4 billion annually.[14] And yet, as we saw during Winter Storm Elliott, in spite of generators receiving capacity payments, their availability is not guaranteed. The stakeholder process should be utilized to make adjustments to the Variable Resource Requirement curve to mitigate over-procurement.

B. Changes to the resource mix and load, including wide-spread electrification and increased risks due to extreme weather, require changes to the structure of PJM's RPM capacity construct.

RPM, as currently designed, is not well-suited to accommodating the energy transition. Although RPM has historically over-procured capacity, it needs serious reform to be an efficient mechanism toward ensuring long-term grid reliability, particularly as the industry navigates through the energy transition, where the overwhelming majority of projects in the development queue are intermittent in nature. PJM's Vice President of Planning, Ken Seiler, has noted that, "[o]f about 265,000 MW worth of projects seeking to interconnect in PJM, more than 95% are renewables."[15] By way of comparison, PJM's all-time system peak is 165,563 MW, reached in the summer of 2006.[16]

But RPM has included a flawed premise since day one: that all megawatts are fungible, regardless of where and how each megawatt is generated. Although this premise sufficed when the vast majority of capacity resources in PJM were thermal, as the current energy transition makes abundantly clear, all megawatts are not the same.

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[14] *See, e.g.,* Letter from National Caucus of Environmental Regulators to PJM Board of Managers, (June 16, 2022), http://www.ncelenviro.org/app/uploads/2022/06/NCEL-Over-Procurement-Letter.pdf.

[15] *New Interconnection Process Aims to Ensure Reliability, Enable State Policies*, PJM Inside Lines, June 30, 2023, https://insidelines.pjm.com/new-interconnection-process-aims-to-ensure-reliability-enable-state-policies/.

[16] PJM, News Release, *PJM Summer Outlook: Sufficient Supply To Serve Electric Demand Under Anticipated Conditions* (May 11, 2023), https://www.pjm.com/-/media/about-pjm/newsroom/2023-releases/20230511-pjm-summer-outlook-sufficient-supply-to-serve-electric-demand-under-anticipated-conditions.ashx#:~:text=PJM's%20all%2Dtime%2C%20one%2D,can%20power%20about%20800%20homes.

The sun does not shine at night and the wind does not always blow. Accordingly, RPM must be revised to account for the intermittent output of these resources to ensure that capacity procured is available when needed. Accreditation mechanisms, such as ELCC, are intended to more accurately reflect resources' true contribution to resource adequacy, and seasonal capacity product definitions can help address these concerns as well by allowing resources to more accurately reflect the seasonal nature of their available output in their capacity auction offers.

C. Load-Serving Entities must be able to self-supply capacity resources through bilateral contracts.

RPM limits the ability of Load-Serving Entities ("LSE") to self-supply capacity resources in any appreciable way. RPM is an administrative construct, not a market in any meaningful sense. While the purpose of an efficient market is to arrive at the least-cost utilization of economic resources, one of RPM's acknowledged goals is to provide a stream of revenues to suppliers to make up for "missing money." This inherently limits RPM's ability to achieve efficient market outcomes. Forcing LSEs into RPM and precluding LSEs from satisfying their resource adequacy obligation through bilateral contracting ensures that LSE customers pay uneconomic rates for capacity.

RPM does not have willing buyers and sellers that are able to negotiate terms between themselves. Instead, the vast majority of buyers (load) have their requirements met via the Base Residual Auction ("BRA") for one year at the price the BRA clears, inclusive of the over-procurement previously discussed.[17] The administratively-determined Variable Resource Requirement curve provides the price-quantity pairs

[17] *See supra* section II.A.

making up the demand curve used in clearing the BRA. While the supply offers submitted by generation resources make up the BRA supply curve, these offers are administratively mitigated through the Minimum Offer Price Rule and Market Seller Offer Cap mechanisms.

The existing PJM Fixed Resource Requirement ("FRR") option is not viable for public power entities. The existing FRR option was part of the original RPM settlement and was designed as an accommodation for LSEs that were net long on capacity resources and capable of supplying all capacity obligations plus reserve requirements for the entire FRR service area for a five year period.[18] "[P]articipating in the FRR option is an all-or-nothing proposition, and appeals as a practical matter only to large utilities that still follow the traditional, vertically integrated model."[19] Most public power LSEs satisfy only a portion of their capacity obligations with member-owned generation and are net buyers of capacity who purchase from third-parties or the RPM auction to satisfy the balance of their capacity requirements, and are therefore unable to utilize the FRR option.

In contrast to PJM's existing capacity construct, a more efficient design would provide expanded opportunities for load to self-supply, procuring the quantity and type of capacity it desires, while ensuring the system maintains adequate levels of reserves. LSEs should be allowed to satisfy most or all of their capacity needs through bilateral arrangements, in a real marketplace where willing buyers and willing sellers negotiate arrangements tailored to meet the parties' individual requirements. A capacity auction would be available to satisfy any residual needs.

[18] *See* PJM Reliability Assurance Agreement ("RAA") at Schedule 8.1.

[19] *N.J. Bd. of Pub. Utils. v. FERC*, 744 F.3d 74, 84 (3rd Cir. 2014) (footnote omitted).

Under such an approach, PJM would retain its role of developing and specifying resource adequacy requirements for its footprint and Local Distribution Companies ("LDCs") of concern. Each LSE or LDC (subject to Relevant Electric Retail Rate Authority ("RERRA") oversight) would be responsible for securing capacity to meet its peak load obligation plus a predetermined reserve margin and would face significant penalties for failing to do so. LSEs or LDCs could procure resources bilaterally on a long-term portfolio basis in compliance with their respective resource adequacy requirements.

This alternative has numerous advantages over PJM's current RPM capacity construct, including the following:

- **Fewer Moving Parts and Administrative Judgments**. Because the primary procurement construct is decentralized and bilateral, it eliminates the onerous stakeholder processes, disputes, and subsequent litigation over discrete features of mandatory capacity constructs.
- **Harmonization with State and Local Public Resource Policies**. This approach appropriately honors state and local resource portfolio and public policy choices and does not bias market rules toward or against specific resource types.
- **Avoidance of Jurisdictional Disputes**. By appropriately involving state and local authorities in addressing resource adequacy, constrained zone mitigation, and market power issues, this alternative sidesteps controversy over the respective limits of state and federal jurisdiction in the capacity market area.
- **Flexibility for Individual States and RERRAs**. This approach provides each individual state and RERRA within an RTO region with the flexibility to address

resource adequacy issues for its retail customers that may result from decisions regarding retail access, Renewable Portfolio Standard ("RPS") mandates,[20] and other policies implicating resource selection. An RTO-administered, centralized voluntary capacity market still would be available to satisfy residual needs.

- **Improved Product Differentiation and Resource Performance**. Bilateral contracting enables the development of tailored products and services that will meet specific needs rather than relying solely on generic, lowest common denominator-type capacity products. For example, resources with desirable characteristics, such as those with dual-fuel capability or firm gas transportation contracts that allow for more certainty during winter peaks, could be appropriately valued and supported without complex and costly performance penalties or other arbitrary administrative regimes.
- **Choice of Business Models for Merchant Generators**. This proposal provides merchant generators and resource suppliers a choice as well: they can enter into individualized bilateral supply arrangements with LSEs, rely on sales into the residual capacity auction (and/or the energy and ancillary services markets) to obtain their revenues, or pursue any combination of these approaches.

In evaluating the viability of the bilateral contracting model, the Commission should use as its benchmark the value bilateral contracting would bring to market efficiency and

[20] Ten PJM states already have RPS requirements; three do not (Kentucky, West Virginia, Tennessee). *See* DSIRE, Summary Maps (RPS filter applied), https://programs.dsireusa.org/system/program/maps.

reliability and its amenability to implementing varying state policies, rather than its implications for existing centralized capacity constructs. Moreover, in considering this alternative to centralized capacity constructs, the Commission should bear in mind, first, that the policy concerns that might lead LSEs, states, or local regulatory bodies to favor local generation over distant generation, newer, more efficient resources over older, less efficient ones, lower-emitting resources over higher-emitting resources, etc., are legitimate concerns deserving of recognition and weight, and, second, that policymakers will continue pursuing policies at the direction of their constituents. Market rules imposed by RTOs to protect administratively derived prices under centralized capacity procurement constructs should not erect barriers to meeting such policy goals.

Finally, it bears noting that capacity prices developed in isolation from local consumer input will be wrong. Capacity is not fungible and not all capacity is created equally. Consumers are in a better position to determine their value for a particular fuel or resource. Long-term bilateral contracts support legitimate public policy and should be encouraged, rather than erroneously being considered “out-of-market” subsidies. RPM rules that effectively penalize long-term bilateral contracting and self-supply should be reformed.

D. Other drivers may be preventing PJM’s capacity construct from achieving its objectives, including its overly-complex design and PJM’s unwillingness to embrace improvements developed by PJM members.

Operation of and participation in RPM is administratively overly burdensome, further impeding efficiency. For example, before the Third Incremental Auction for Delivery Year 2024/2025 opens, there are forty-three separate deadlines and notifications

that occur.[21] PJM's capacity construct should be simplified, including, for example, by reducing the number of incremental auctions.

PJM has filing rights under Federal Power Act ("FPA") section 205[22] over the RPM provisions included in its tariff and this empowers PJM to implement changes to the capacity construct, often for reasons that are not always evident or satisfactory to PJM members. PJM has also used this authority to block stakeholder initiatives that were intended to improve RPM. Most recently, PJM declined to file a whole package of RPM reforms approved by the PJM Members Committee; the excluded reforms would have better aligned the Capacity Performance ("CP") penalty structure with RPM auction revenues.[23] PJM's imprudent exercise of its FPA section 205 authority suggests that customers may be better served if this authority were returned to PJM's members.

III. CAPACITY CONSTRUCT DESIGN REFORMS (PANEL 2)

A. Reforms are necessary to improve RPM's ability to send efficient signals toward resource entry and exit.

RPM currently is designed to procure capacity via the BRA and incremental auctions for one year only, three years in advance of the start of each delivery year. This one-year pricing timeline significantly muddies the water for generator owners. It is nearly impossible to know what investment decisions to make based on a one-year pricing signal. As a result, existing resource owners are often unwilling to retire their units even if they are not awarded a capacity commitment in a particular auction. Similarly, even if prices are below the Net Cost of New Entry ("Net CONE"), generation developers typically

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[21] *See* PJM, 24/25 Third IA Activity Dates, 24-25 3rd IA Post worksheet, at rows 8-50, (July 7, 2023) https://pjm.com/-/media/markets-ops/rpm/rpm-auction-info/rpm-auction-schedule.ashx.

[22] 16 U.S.C. § 824d.

[23] *See, e.g.,* AMP, Comments, Docket Nos. ER23-1996-000, AD23-7-000, at 3-11 (June 9, 2023).

have investment horizons that extend out decades and thus they are more concerned with clearing the auctions in which their resources are expected to be online, rather than the clearing price for any earlier one-year auction.

PJM's Independent Market Monitor, Monitoring Analytics, publishes a State of the Market ("SoM") report each quarter and annually. The most recent SoM includes the following table, which demonstrates the longer-term views of generator owners (in this case nuclear resources) and how RPM revenues affect generators' cost recovery.[24]

Table 7-19 Nuclear unit surplus (shortfall) based on public data: 2008 through 2022

	ICAP	Surplus (Shortfall) ($/MWh)														
	(MW)	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Beaver Valley	1,808	$26.3	$6.3	$10.5	$8.8	($3.3)	$1.4	$11.7	$3.2	($0.4)	$2.6	$13.9	$3.7	($2.7)	$15.0	$45.1
Braidwood	2,337	$24.9	$2.5	$6.4	$3.4	($6.1)	($2.6)	$7.2	($1.2)	($3.2)	($1.6)	$5.9	$3.9	($0.0)	$15.1	$39.1
Byron	2,300	$24.5	($1.3)	$3.4	($0.6)	($9.4)	($3.6)	$4.9	($6.1)	($9.6)	($2.8)	$5.8	$3.2	($0.6)	$14.1	$38.7
Calvert Cliffs	1,726	$60.6	$20.9	$28.6	$17.9	$4.5	$14.6	$31.6	$14.1	$7.2	$6.1	$16.3	$5.4	($0.9)	$19.4	$57.6
Cook	2,177	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Davis Besse	894	NA	NA	NA	NA	($13.2)	($7.0)	$6.6	($1.2)	($4.0)	($8.4)	($0.9)	($6.3)	($15.1)	$5.9	$36.5
Dresden	1,797	$25.6	$3.0	$7.6	$4.4	($5.2)	($1.0)	$9.1	$0.3	($1.5)	($0.1)	$7.1	$4.5	$0.5	$15.7	$40.3
Hope Creek	1,172	$54.0	$17.0	$24.5	$16.9	$2.6	$12.4	$26.0	$6.3	($1.9)	$1.6	$12.3	$1.8	($2.2)	$11.0	$40.6
LaSalle	2,265	$24.8	$2.5	$6.4	$3.3	($6.1)	($1.9)	$7.7	($0.9)	($3.6)	($1.9)	$6.0	$3.7	($0.2)	$14.8	$38.8
Limerick	2,242	$54.1	$17.1	$24.7	$16.6	$2.6	$12.2	$25.7	$6.5	($2.1)	$1.5	$12.1	$1.6	($2.6)	$11.6	$41.0
North Anna	1,892	$52.0	$14.6	$25.5	$16.8	$0.2	$5.7	$23.2	$10.9	$3.0	$4.7	$16.0	$4.8	($2.0)	$17.9	NA
Oyster Creek	608	$47.5	$8.4	$15.9	$7.2	($8.2)	$3.3	$16.4	($4.7)	($11.6)	($9.9)	NA	NA	NA	NA	NA
Peach Bottom	2,550	$53.7	$16.9	$24.2	$16.1	$2.3	$12.3	$25.5	$5.8	($2.2)	$1.4	$11.9	$0.7	($2.7)	$11.5	$41.1
Perry	1,240	NA	NA	NA	NA	($13.2)	($6.4)	$5.5	($0.3)	($4.0)	($7.4)	$1.9	($5.8)	($15.1)	$6.3	$37.1
Quad Cities	1,819	$24.1	($0.4)	$2.4	($1.8)	($13.2)	($6.9)	$0.6	($7.7)	($9.5)	($3.5)	$4.3	$2.1	($2.4)	$12.7	$38.9
Salem	2,285	$54.0	$17.1	$24.5	$16.9	$2.6	$12.4	$26.0	$6.2	($2.1)	$1.5	$12.2	$1.6	($2.3)	$10.9	$40.4
Surry	1,676	$48.8	$13.8	$24.2	$16.4	($0.0)	$5.1	$21.6	$10.8	$2.6	$4.5	$16.0	$4.1	($2.6)	$17.2	NA
Susquehanna	2,494	$46.8	$15.2	$22.4	$16.1	$1.4	$11.1	$24.6	$6.3	($1.6)	$1.8	$10.1	($1.4)	($6.6)	$8.6	$38.6
Three Mile Island	803	$40.7	$6.5	$13.3	$4.6	($9.6)	$0.9	$13.7	($6.8)	($12.4)	($10.3)	($3.8)	NA	NA	NA	NA

The table shows that as a group these existing resources are more likely than not to be recovering their costs in a particular Delivery Year and, in at least some cases, may be significantly over-recovering, but that particular existing resources continue to participate in RPM even after successive years of under-recovery.

The sloped demand curve utilized in clearing RPM BRAs disincentivizes resource retirements because it allows PJM to significantly over-procure capacity. Simultaneously, the sloped demand curve incentivizes new resource market entry because it allows PJM

[24] Monitoring Analytics, Q2 State of the Market Report for PJM, at 433 (August 10, 2023), https://pjm.com/-/media/markets-ops/rpm/rpm-auction-info/rpm-auction-schedule.ashx.

to significantly over-procure capacity. In combination, however, these factors present mixed signals: prices are high enough (*i.e.*, greater than $0 per megawatt) to keep existing resources on the system, but because of the significant capacity resource surplus procured in the BRAs (measured as surplus relative to the Installed Reserve Margin ("IRM") target), prices are below Net CONE, which causes financial stress on new entry.

For-profit stakeholders argue that clearing prices are "too low," but they ignore the surplus capacity (relative to the IRM target) on the system, which correctly puts downward pressure on clearing prices. Said differently, with reserves clearing about 33% above the IRM target and a downward-sloping demand curve, the result will not be high clearing prices (*i.e.,* prices at or near Net CONE). The table below shows PJM's over-procurement has historically caused BRA prices to clear below Net CONE.

Table 1 – PJM RPM BRA Results:

DY	IRM Target	BRA Cleared	Surplus/(Shortfall)	% Surplus Relative to IRM Target	RTO Clearing Price ($/MW-day)	RTO Net CONE ($/MW-day, UCAP)	RTO Clearing Price Above/(Below) Net CONE ($/MW-day, UCAP)
2016/17	15.60%	21.10%	5.50%	35.26%	$59.37	$330.53	($271.16)
2017/18	15.70%	19.70%	4.00%	25.48%	$120.00	$351.39	($231.39)
2018/19	15.70%	19.80%	4.10%	26.11%	$164.77	$300.57	($135.80)
2019/20	16.50%	22.40%	5.90%	35.76%	$100.00	$299.30	($199.30)
2020/21	16.60%	23.30%	6.70%	40.36%	$76.53	$292.95	($216.42)
2021/22	15.80%	21.50%	5.70%	36.08%	$140.00	$321.57	($181.57)
2022/23	14.50%	19.90%	5.40%	37.24%	$50.00	$260.50	($210.50)
2023/24	14.80%	20.30%	5.50%	37.16%	$34.13	$274.96	($240.83)
2024/25	14.70%	20.40%	5.70%	38.78%	$28.92	$293.19	($264.27)

Note
Data compiled from BRA DY-specific planning parameters and BRA reports
Data source: https://www.pjm.com/markets-and-operations/rpm

The question posed to the panel regarding RPM's ability to send efficient price signals toward entry and exit is not, however, the most critical question. Procurement levels can be adjusted as necessary by shifting and reshaping the demand curve. This is demonstrated by the following passage from the aforementioned 2023 SoM report:

> While the market may be long at times, that is not the equilibrium state. Capacity in excess of demand is not sold

> and, if it does not earn or does not expect to earn adequate revenues in future capacity markets, or in other markets, or does not have value as a hedge, may be expected to retire, provided the market sets appropriate price signals to reflect the availability of excess supply. The demand for capacity includes expected peak load plus a reserve margin, and points on the demand curve, called the Variable Resource Requirement (VRR) curve, exceed peak load plus the reserve margin. The shape of the VRR curve results in the purchase of excess capacity and higher payments by customers. The impact of the VRR curve shape used in the 2024/2025 BRA compared to a vertical demand curve was a significant increase in customer payments for load as a result of buying more capacity than needed for reliability and paying a price above the competitive level as a result. The defined reliability goal is to have total supply greater than or equal to the defined demand for capacity. The level of purchased demand under RPM has generally exceeded expected peak load plus the target reserve margin, resulting in reserve margins that exceed the target. Demand for capacity is almost entirely inelastic because the market rules require loads to purchase their share of the system capacity requirement. The VRR demand curve is everywhere inelastic.[25]

The more pertinent question is whether RPM is structurally capable of sending the right signals to promote development of resources with the attributes the system needs as the energy transition unfolds. The answer to this question is no. RPM, as previously discussed,[26] wrongly treats all capacity that clears the auction as fungible. PJM needs a market design that sends price signals for necessary and useful attributes, not meaningless generic capacity.[27]

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[25] *Id.* at 43.

[26] *Supra* section II.B.

[27] *See* Transcript of PJM Capacity Forum, Docket No. AD23-7, at 87:14-24 (Dr. Bowring stated, “we're not trying to make capacity fungible. It is not. A solar resource at 2:00 in the morning is not the same thing as a gas fired resource at 2:00 in the morning.”).

B. Changes to PJM's capacity construct and reserve product definitions are required to send more efficient signals for resources to perform in real-time and would facilitate shifting RPM to a residual capacity market.

PJM's procurement scheme is currently divided into: (1) the energy market; (2) the mandatory RPM capacity construct; and (3) the ancillary services markets, including markets for reserve services. PJM's markets need a major redesign that sends accurate price signals for each reserve product and unwinds the current mandatory capacity construct. Stakeholders and observers conflate "reserves" and "capacity." Simply procuring a particular amount of capacity in megawatts or a certain percentage above a planning criterion like IRM does not mean that capacity is available as operationally effective reserves that may be called on in real-time.

Reserves are what the system needs on an instantaneous basis to maintain load-resource balance and reliability. When the system is short reserves and resources are not able to respond to near-instantaneous fluctuations (*e.g.*, in voltage or frequency), bulk electric system disturbances result. Reserves should be redefined based on a number of operational criteria that affect the resource adequacy value each resource is capable of providing, including:

- ramping – how quickly a resource can ramp output up and down;
- start time – how quickly a resource can start generating;
- runtime – how long a resource can generate at a given level of output;
- load following; and
- seasonality.

System operators need a high level of confidence that resources with capacity commitments can generate in real time. Ensuring that these commitments are aligned with actual capability is a sorely needed reform. Revisions to PJM's capacity construct must address fuel availability requirements, modeling accuracy, alignment of the physical

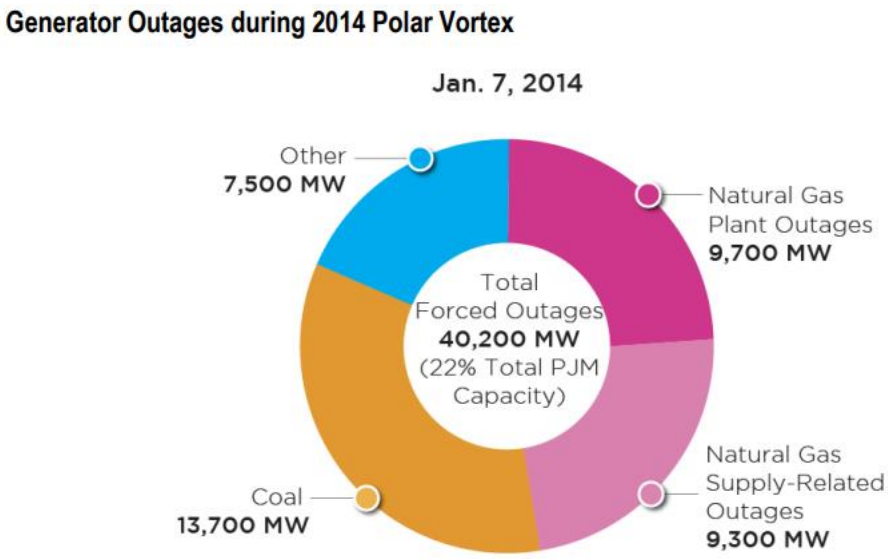
characteristics of the resource with the time of day, and locational awareness of transmission capability.

C. The unavailability of substantial portions of PJM's Capacity Resources during Winter Storm Elliott demonstrates that CP is a failure.

The CP experiment applied a carrot and stick approach intended to incentivize investment in resources that would ensure outage rates decrease when the system is stressed. Committed Capacity Resources that under-perform during defined times of system stress (*i.e.*, Performance Assessment Intervals, or "PAIs") are assessed an extreme penalty, and resources that over-perform during those PAIs collect that penalty revenue as a "bonus." The unavailability of resources during Winter Storm Elliott demonstrates that CP is a failure. It is time to recognize this reality, learn from it, and move on to a better concept. It is a fool's errand to double-down on CP, throw more consumer money after this bad idea, and expect a different result.

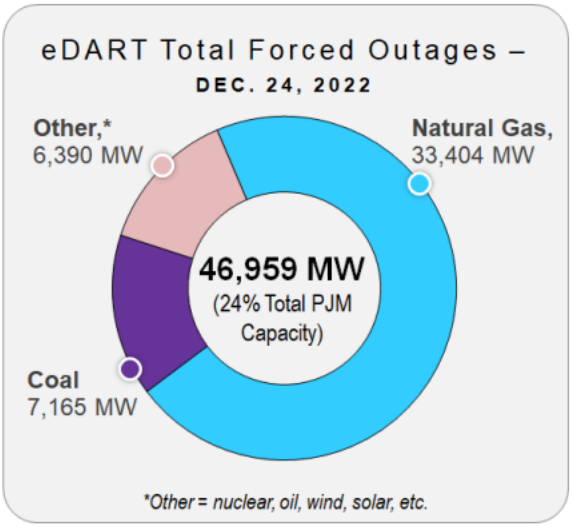
In the Polar Vortex of January 2014, PJM reported that over 40 gigawatts ("GW") of Capacity Resources, representing about 22% of the fleet, failed to perform.[28]

[28] PJM, *Strengthening Reliability: An Analysis of Capacity Performance*, at 3 (June 20, 2018), https://www.pjm.com/-/media/library/reports-notices/capacity-performance/20180620-capacity-performance-analysis.ashx.



In Winter Storm Elliott of December 2022, PJM reported that nearly 46 GW of Capacity Resources, or about 24% of the fleet, failed to perform.[29]

Figure 29. Forced Outages



[29] PJM, *Winter Storm Elliott Event Analysis and Recommendation Report*, at 49 (July 17, 2023) https://www.pjm.com/-/media/library/reports-notices/special-reports/2023/20230717-winter-storm-elliott-event-analysis-and-recommendation-report.ashx.

In between, consumers paid additional billions of dollars[30] associated with PJM's attempt to improve resource performance via CP. The 2018 Base Residual Auction for Delivery Year 2021/2022 was the first transitional auction to include an option for resources to offer capacity under CP rules. As seen in the table below, CP resources cleared at about a $15/MW-day premium in the majority of the RTO.[31]

Capacity Type	2018/19 BRA Resource Clearing Prices ($/MW-day)					
	Rest of RTO	EMAAC	SWMAAC	PEPCO	COMED	PPL
Capacity Performance	$164.77	$225.42	$164.77	$164.77	$215.00	$164.77
Base Generation	$149.98	$210.63	$149.98	$149.98	$200.21	$75.00
Base DR/EE	$149.98	$210.63	$59.95	$41.09	$200.21	$75.00

The 2019 BRA for Delivery Year 2022/2023 was the second transitional auction to include an option for resources to offer capacity under CP rules. As seen in the table below, CP resources cleared at a $20/MW-day premium throughout the RTO.

Capacity Type	2019/20 BRA Resource Clearing Prices ($/MW-day)				
	Rest of RTO	EMAAC	PEPCO	COMED	BGE
Capacity Performance	$100.00	$119.77	$100.00	$202.77	$100.30
Base Generation	$80.00	$99.77	$80.00	$182.77	$80.30
Base DR/EE	$80.00	$99.77	$0.01	$182.77	$80.30

Consumers in the PJM region have paid these substantial CP premiums and actually received less reliable service during Winter Storm Elliott than during the 2014 Polar Vortex.

D. Changes to PJM's current capacity construct design would better achieve its objectives.

The Commission should convene a technical conference focused on developing a replacement for CP and potentially for RPM altogether. The technical conference should

[30] *See, e.g.,* Letter from National Caucus of Environmental Regulators to PJM Board of Managers, (June 16, 2022), http://www.ncelenviro.org/app/uploads/2022/06/NCEL-Over-Procurement-Letter.pdf.

[31] PJM, 2018/2019 RPM Base Residual Auction Results, at 2 (August 28, 2015), https://www.pjm.com/-/media/markets-ops/rpm/rpm-auction-info/2018-2019-base-residual-auction-report.ashx.

include participation from a broad range of stakeholders, and especially those from the public power sector, as this group owns generation, high-voltage transmission, and distribution assets, and is responsible directly or indirectly for managing consumer demand.

In considering a replacement PJM capacity construct, the technical conference should address at least the following design components, many of which are lacking in PJM's capacity construct today:

- Robust opportunities for self-supply by LSEs beyond the Fixed Resource Requirement option;
- A bilateral market for capacity;
- Granular reserve market and capacity market product definitions that provide assurance that the physical capabilities of the supply resources meet the specifications of the product procured;
- Auctions beginning closer to the start of the delivery year, moving from thirty-six months in advance of the start of the delivery year to, for example, twenty-four months in advance;
- Requiring any non-performance penalty risk premium (*i.e.*, CP Quantifiable Risk) component permitted in capacity auction offers to be a unit-specific value;
- Auction procurement of both sub-annual and annual products;
- Auction clearing mechanisms that address locational differences affecting availability of capacity resources;
- Accounting for operational challenges posed by planned and unplanned imports and exports during times of system stress;
- Improved opportunities for DR and Distributed Energy Resource participation in energy and ancillary services markets, rather than as capacity resources; and
- Replacing the CP nonperformance penalty structure with a rigorous testing regime for committed capacity resources.

IV. CONCLUSION

WHEREFORE, for the foregoing reasons, American Municipal Power, Inc. respectfully requests that the Commission consider the foregoing comments in fashioning any relief that the Commission directs in this and related dockets.

Respectfully submitted,

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Dated: August 14, 2023

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.

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Dated at Columbus, Ohio, this 14th day of August, 2023.

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