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

POST-TECHNICAL CONFERENCE COMMENTS OF AMERICAN MUNICIPAL POWER, INC.

American Municipal Power, Inc. ("AMP") submits these post-technical conference comments pursuant to the Federal Energy Regulatory Commission's ("FERC" or "Commission") notice.[1] The Commission's focus on resource adequacy is timely and the dialogue at the June 4 and 5 technical conference provided valuable insights. AMP urges the Commission to prioritize addressing the critical issues at the root of the looming resource adequacy crisis. While progress has been made, there is much more to do.

I. COMMENTS

A. Dispatchable resources face obstacles to recovering costs in energy markets as near-zero marginal cost renewable resources trend toward setting price.

A foundational principle of Locational Marginal Pricing ("LMP") in wholesale markets for electric energy is that the marginal unit sets the price.[2] This model has been effective in dispatching more efficient resources based on variable operating costs. Historically, the marginal unit was most often a thermal generator with significant fuel costs. However, renewable resources, such as wind and solar, are proliferating and their marginal cost of operation is near-zero because their "fuel" (i.e., wind and sunlight) is

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1 Notice Requesting Post-Conference Comment, Docket No. AD25-7 (June 5, 2025).

2 *See, e.g.*, *Midwest Independent Transmission System Operator, Inc.*, 140 FERC ¶ 61,067, at PP 1-9 (2012).

free.[3] Thus, LMP will be depressed when these renewable resources are marginal, and this creates a challenging environment for dispatchable thermal units seeking to recover their costs through energy sales.

Midcontinent Independent System Operator, Inc. ("MISO") has recognized these concerns in its Reliability Imperative, and has implemented or is in the process of implementing multiple reforms, including its Reliability Based Demand Curve ("RBDC"), applicable to its capacity auctions and its Direct Loss of Load ("DLOL") accreditation methodology for capacity resources. RBDC implementation involved switching from a vertical to a sloped demand curve, which emphasizes the marginal reliability impact of incremental capacity, and defining the net cost of new entry as the cost of building a new generating resource, minus inframarginal rents (i.e., expected revenue from the sale of energy and ancillary services).[4] PJM Interconnection, L.L.C. ("PJM") has taken a conceptually similar approach to this problem.[5]

As the grid evolves further and the resource stack continues shifting toward renewables at the margin, it is critical that these mechanisms (and others discussed below) ensure that dispatchable generators receive proper price signals. Policymakers must therefore take affirmative steps to preserve the operational flexibility needed to maintain resource adequacy, while ensuring affordability. The path to achieving this balance is to appropriately value the attributes provided by capable resources, whether

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[3] Indeed, the price could be negative due to federal or state incentives, further exacerbating the market distortion.

[4] MISO Open Access Transmission Tariff, Module E-1, Section 69A.8.

[5] PJM, *Manual 18*, Section 3.3.3.

through capacity constructs or energy and ancillary services markets, without over-compensating resources that do not provide these attributes.

B. Maintaining resource adequacy requires a well-functioning capacity construct.

The capacity construct design principles that panelist Steven Lieberman identified in AMP's pre-conference statement[6] apply. The principles include flexibility to address exogenous situations; viable options for self-supply; actionable price signals; granular capacity valuation; and attribute-based capacity procurement. The following comments provide additional observations regarding application of those principles in MISO and PJM.

1. Flexibility and Optionality

Changes in resource adequacy constructs are necessary to avoid imposing rate shock on customers and maintain affordability while growing demand threatens to outstrip net increases in supply. Viable options for load-serving entities ("LSE") to effectively utilize self-supplied capacity resources are critical. MISO's residual capacity construct meets this requirement because most MISO LSEs procure capacity outside of the residual Planning Resource Auction process using either self-supply from their own resources or through bilateral contracts,[7] but PJM's Reliability Pricing Model ("RPM") does not. *The Commission should support efforts to make RPM residual* because doing so would provide LSEs with the ability to hedge capacity costs over the longer term and proactively manage the impact of exogenous forces driving volatility in capacity construct auction

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[6] AMP, Pre-Technical Conference Statement of Steven Lieberman, Docket No. AD25-7-000 (May 16, 2025).

[7] MISO, *Planning Resource Auction Results for Planning Year 2025-26*, at 2 (May 29, 2025) ("Planning Resource Auction Results").

clearing prices, while allowing LSEs to take responsibility for procurement of capacity to serve their own load.[8]

2. Actionable

Price signals. Sending long-term price signals to resource developers is critical. The RTOs cannot mandate construction of new capacity or the types of capacity that are brought online. However, they can create mechanisms that send appropriate price signals to encourage construction of the right resources at the right time in the right place, along with economic retirement of obsolete units.

While some contend that current capacity constructs are adequate to accomplish this goal, the investment lifespan of the dispatchable units needed to maintain flexibility consistent with achieving operationally effective resource adequacy may be inconsistent with the shorter-term price signals that MISO's Planning Resource Auction ("PRA") and PJM's RPM send. These resources come with big price tags, take a long time to build, and are expected to operate for decades. If capacity price signals are short-term and are combined with LMP levels that are insufficient to support cost recovery as more renewable resources are integrated, despite efforts of MISO and PJM to prevent such an outcome, resource adequacy will suffer.

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[8] In fact, PJM executives have testified in this proceeding that the intent was for RPM to be residual in spite of capacity must-offer requirements. PJM, Pre-filed Statement of Manu Asthana, Docket No. AD25-7-000, at 6, 14 (May 20, 2025) ("Load serving entities in some regions appear to be primarily relying on the spot capacity market rather than using bilateral contracting first, and using the capacity market as a secondary, residual market."); PJM, Pre-filed Statement of Adam Keech, AD25-7-000, at 2 (May 20, 2025) ("the Reliability Pricing Model (RPM) has always been designed as a residual market [as explicitly referenced by the Base Residual Auction (BRA)] – not as a mandatory market Load Serving Entity to secure resource adequacy. It is intended to procure capacity for those entities that do not fully self-supply their needs and to provide clear price signals that are designed to transparently inform self-supply and bilateral contracting decisions in the form of contracts for differences or other similar price risk allocation agreements."); *id.* at 12 ("PJM does not operate a mandatory capacity market construct and does not intend to at this time. Rather, the RPM is and always has been designed to be a residual market to support Load Serving Entities in maintaining resource adequacy, which they are able to do achieve through self-supply arrangements including bilateral contracting outside of the RPM auctions.").

Rate stability. Capacity construct changes that are made to effectuate resource adequacy should be accomplished in a way that allows time to observe and assess impacts holistically. Responsible, proactive changes that allow customers to see forward pricing trends and plan for them is critical. Large price swings are challenging to navigate, especially for communities with municipal power systems that may be net short and must engage in market transactions to ensure adequate supplies of energy and capacity. Appropriately valuing capacity must be balanced against affordability. Work is needed to ensure that price swings are not drastic, and that customers and generators can plan farther in advance.

Rule churn versus holistic reforms. Capacity construct rules must provide clarity and consistency over time to support needed investment. While a continued focus on capacity construct reforms to support resource adequacy is imperative, rule churn must be minimized. Highly iterative rule revisions without time to observe impacts fail to send meaningful price signals to states, consumers, and resource developers. Pulling together a set of comprehensive reforms that can be proposed and implemented as a whole may take time to work through stakeholder or settlement processes, but will pay dividends in the future. Intentionality is required, with thinking applied across the entire set of resource adequacy variables. MISO's Reliability Imperative and strategic planning initiatives are a step in the direction of strategic coordinated action. However, continued focus on incentives to encourage resource adequacy is required.

While proposals for additional reform of RTO capacity constructs may seem facially contradictory to the avoidance of rule churn, comprehensive reform is needed to solve the complex problems identified herein and at the technical conference.

Engagement among stakeholders, the Commission, and the RTOs can avoid piecemeal, reactionary reforms responding to exogenous issues and the constant tweaks that have overwhelmed, exhausted, and frustrated participants in RTO-administered capacity constructs, at least those of MISO and PJM. In addressing future resource adequacy proposals, the Commission should recognize that the three legs of RTO responsibilities – planning, operations, and markets – are all integrated and capacity constructs must balance the requirements of each. Doing so will lead to durable, comprehensive, and coordinated change.

3. Attributive & Granular

Resource adequacy requires capacity construct rules that ensure the combination of energy market LMP, ancillary services compensation, and capacity revenues reflect an appropriate value for desired attributes and do not inadvertently signal that the dispatchable resources providing critical reliability attributes should retire, or simply not be constructed due to an inability to recover costs or otherwise provide appropriate compensation. In states with vertically integrated utilities operating under state-mandated Integrated Resource Plans ("IRP"), investment decisions take into account capacity construct price signals and state policy goals. This contrasts with energy-only markets, such as that of the Electric Reliability Council of Texas ("ERCOT"), which relies primarily on energy and ancillary service revenues to incentivize investment.

All signs point to increasing demand coincident with the proliferation of intermittent inverter-based resources. Resource development projections, including the rate of increase in renewables and conclusions about the current state of resource adequacy, may vary from source-to-source and study-to-study, but the trend is undeniable. While reform efforts have addressed certain problematic aspects of capacity constructs as

discussed above, continued focus is required to ensure prices remain affordable while capacity values appropriately reflect attributes including: (1) inertia; (2) ramping capability; (3) quick-start capability; and (4) fuel security and diversity.

MISO's attributes roadmap and the reforms MISO has already implemented are a start. Early signs show that MISO's DLOL accreditation methodology appears to encourage construction of more dispatchable generation with attributes that are needed to balance the growth of renewable capacity.[9] But more work is needed because these attributes and others that are more granular will become increasingly important as renewable and storage resources continue to proliferate and technology advances. The Commission should therefore direct the RTOs to look holistically at energy, ancillary services, and capacity prices to ensure that the entire package of market signals results in compensation that appropriately incentivizes the attributes needed to maintain resource adequacy while balancing affordability.

C. Capacity constructs must support investment through appropriate price signals.

The recent technical conference was a welcome sign of the Commission's recognition that resource adequacy is its paramount challenge today. While MISO's efforts to create more efficient capacity pricing to date have moved generally in the right direction, further intentional and measured steps are key. Energy, capacity, and ancillary services prices work together to send the signals that will maintain resource adequacy. Reform efforts must appropriately balance these pricing elements as renewable resources increasingly proliferate. When price (high or low) becomes a motivating factor

[9] MISO, *Strategy Update: Reliability Imperative*, at 4 (June 11, 2025) ("Reliability Imperative Update").

for market design changes, or when prices are hailed as a sign of a successful rule change, inevitably there will be consequences. Reliability and affordability must be balanced. Consistent, long-term price signals will result from avoiding rule churn and will facilitate long-term investment in new resources that are required to maintain resource adequacy.

In MISO, the implementation of RBDC yielded annualized clearing prices for MISO North of $217/MW-day and for MISO South of $212/MW-day for Planning Year 2025/2026[10] in spite of MISO clearing in excess of its reliability target for all seasons.[11] MISO's Independent Market Monitor ("IMM") noted that absent the move to a RBDC, prices would have been $20/MW-day.[12] The roughly ten-fold increase in capacity prices compared to the IMM's estimate is material to both consumers and those who own existing or develop new capacity resources.

However, MISO faces resource adequacy challenges in forward years[13] and thus it is reasonable to hypothesize that MISO may need forward prices that are higher than those from the 2025/2026 PRA to encourage new generation and retain the existing generation needed for resource adequacy. A price signal that is in effect for only one year may not provide the certainty generation developers need to invest in new projects, even if it influences forward purchase prices in the bilateral capacity market. While MISO permits long-term bilateral capacity contracting and has made its PRA voluntary, there is more work to do to create longer-term price signals that will incent construction of

[10] Planning Resource Auction Results at 2

[11] *Id.* at 5.

[12] *IMM Quarterly Report: Spring 2025*, at 8 (June 10, 2025) ("IMM Report").

[13] Reliability Imperative Update at 6.

sufficient capacity resources with the attributes needed to maintain resource adequacy. The Commission should encourage MISO to explore its options.

When PJM implemented its Effective Load Carrying Capability ("ELCC") capacity accreditation methodology, capacity auction clearing prices jumped about nine-fold across the RTO despite the majority of the RTO clearing at volumes above the planning reserve margin.[14] These price increases were anticipated following ELCC implementation because of the expected decrease in accredited capacity eligible to participate in RPM.[15] PJM's Base Residual Auction ("BRA") Report for Delivery Year 2025/2026 shows in Table 6 (see below) that overall accredited capacity has been significantly impacted by implementation of the marginal ELCC accreditation methodology. The impact of ELCC on the quantity of accredited capacity that could offer and ultimately cleared in the BRAs from Delivery Year 2024/2025 (pre-ELCC) to Delivery Year 2025/2026 (post-ELCC) was a decrease in offered capacity for all resources of about 41,500 MW, and a decrease in cleared capacity of about 33,000 MW.

[14] *See* PJM, *2025/2026 Base Residual Auction Report*, at 11 (July 30, 2024) ("2025/2026 BRA Report").

[15] *Id.* at 3.

Table 6. Offered and Cleared MWs by Type for RPM and Committed FRR for Previous BRAs

	Offered and Cleared UCAP							
	2022/23		2023/24		2024/25		2025/26 (Reflects ELCC Accreditation)	
Type	Offered	Cleared	Offered	Cleared	Offered	Cleared	Offered	Cleared
Coal	45,754	39,230	37,164	31,811	35,114	31,532	30,081	30,081
Distillate Oil (No.2)	3,178	2,897	2,894	2,855	2,776	2,674	2,408	2,408
Gas	85,562	79,329	85,217	81,643	85,469	83,258	66,354	66,354
Nuclear	31,944	26,140	31,960	31,960	31,835	31,629	30,549	30,549
Oil	2,674	2,527	2,350	2,269	2,493	2,220	578	578
Solar	2,633	2,096	2,945	2,935	4,234	4,232	1,337	1,337
Water	6,917	6,749	6,375	6,375	6,137	6,137	5,365	5,361
Wind	2,595	1,839	1,608	1,416	1,396	1,396	2,618	1,676
Battery/Hybrid	-	-	16	16	36	36	14	14
Other	1,205	1,168	1,185	1,185	1,153	1,153	911	911
Demand Response	10,604	8,903	10,652	8,631	10,334	8,180	6,363	6,342
Aggregate Resource	484	386	511	511	503	503	327	273
Total (without EE)	**193,551**	**171,263**	**182,875**	**171,605**	**181,481**	**172,951**	**146,905**	**145,883**
Energy Efficiency	5,057	4,811	5,471	5,471	8,417	7,669	1,460	1,460
Total (with EE)	198,608	176,073	188,346	177,076	189,898	180,620	148,364	147,343

*The table shows the UCAP MW quantities that offered and cleared in the BRA of each DY plus the UCAP MW committed to FRR Capacity Plans. Notes: Offered and Cleared MW quantities include Annual, Summer-Period, and Winter-Period Capacity Performance sell offers. Other consist of: Kerosene, Other Gas, Other Liquid, Other Solid, Wood. *Starting in 2020/2021, Generation, DR, and EE offered and cleared values include Annual, Summer-Period, and Winter-Period Capacity Performance*

PJM has been warning of resource adequacy shortages starting toward the end of this decade, if not sooner, yet RPM auctions, and specifically the BRAs, are still clearing above reserve margins. The reserve margin for the entire RTO, which includes Fixed Resource Requirement ("FRR") entities, is 18.5%; this is 0.7% higher than the target reserve margin of 17.8%.[16]

[16] *Id.*

Potential UCAP Shortfalls for Delivery Years 2027/2028 – 2034/2035[17]

Delivery Year	FPR	Forecasted Peak Load	Reliability Requirement (UCAP MW)	Total UCAP (UCAP MW)	Potential Shortfall (UCAP MW)
2027/28	0.9269	159,859	148,173	155,158	0
2028/29	0.9275	162,972	151,156	155,778	0
2029/30	0.9347	165,681	154,862	153,199	1,663
2030/31	0.9296	167,873	156,054	153,625	2,430
2031/32	0.9272	170,008	157,631	152,760	4,871
2032/33	0.9210	172,109	158,512	154,039	4,473
2033/34	0.8999	174,366	156,912	152,113	4,799
2034/35	0.8709	176,822	153,994	148,432	5,562

As in MISO, the availability of resources in quantities above PJM's target reserve margin means that prices for the prompt year signal that new capacity is not needed today. However, these capacity construct price signals are misaligned with the time required to build new generating resources, which is much longer than one year. During the extended period required to bring new resources online, new large load additions may cause available capacity to be insufficient. This misalignment must be corrected.

PJM points to its members[18] and the states[19] for not taking responsibility for procuring sufficient capacity outside of RPM, yet RPM participation is mandatory for Load Serving Entities,[20] RPM currently has a must-offer requirement for all capacity resources,[21] and PJM procures capacity in the auctions in amounts determined by PJM's

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17 PJM, *Supplementary Information about ELCC Class Ratings calculated for DY 2027/28 – DY 2034/35*, at 6 (August 6, 2024).

18 *See supra* note 8 (quoting pre-filed statements of PJM executives Manu Asthana and Adam Keech).

19 *E.g.*, Asim Haque, *Setting the record straight on New Jersey's energy dilemma*, NJBIZ (May 22, 2025).

20 PJM, Manual 18, Section 1.2.1 ("Participation by Load Serving Entities (LSEs) in the RPM for load served in the PJM region is mandatory, except for those LSEs that have elected the [FRR] Alternative . . . .").

21 *Id.* Section 1.2.2 ("Participation is mandatory for resource providers with: Available unforced capacity from Existing Generation Capacity Resources located within the PJM market footprint; or Bilateral

own load forecasting (unlike MISO).[22] This severely limits customers' ability to hedge volatile capacity costs over time. To achieve a more affordable and secure approach to resource adequacy, PJM should implement the following reforms:

- Move RPM to a residual capacity construct, reflecting the original intent of the BRA, as opposed to the mandatory design that PJM has used since 2007.
- Facilitate bilateral agreements to allow LSEs to contract for capacity from new and existing resources for periods substantially exceeding the one-year term of commitments obtained through capacity auctions because it would allow LSEs to insulate themselves from potential large swings in capacity prices.

D. The Commission should maintain continued oversight and require reforms to ensure that capacity constructs send appropriate price signals.

It is critical for FERC to recognize now that while some improvements have been made, the status quo model of RTO-administered mandatory capacity constructs that produce at most one-year price signals will be challenged to produce affordable resource adequacy with non-dispatchable resources predominating the interconnection queues, planning projections showing extraordinary demand growth, and a large number of dispatchable resources retiring due to reasons other than economics. Parties arguing for the status quo (or continued piecemeal rule changes) in PJM now are the same parties that most vocally argued for changes when lower auction clearing prices were not

contracts for available unit-specific Capacity Resources that are Existing Generation Capacity Resources located within the PJM market footprint.").

[22] *Id.* Section 2.1.2 ("PJM produces peak load forecasts for use in the RPM auction clearing processes and for planning purposes. In RPM, the load forecasts will be used to determine the RTO Reliability Requirement. PJM will determine *annual peak load forecasts* for the RTO and zones for use in the RPM Auction clearing process.").

favorable to their business model. With prices higher now than in prior periods, despite single-year capacity auctions clearing above planning reserve margin targets, these parties seek to avoid comprehensive reform in favor of short-term price outcomes.

Foundational questions the Commission should consider in the course of overseeing resource adequacy in RTOs include: what reforms to the capacity constructs are required to facilitate sending price signals that will encourage the mix of generation necessary to ensure reliable grid operations at an affordable cost? Should the “correct” clearing price for a particular auction be based on the balance of supply and demand associated with the relevant delivery (or planning) year or should the price signal instead reflect expected future conditions beyond that delivery year? If it is the former, prices should be relatively stable when the auctions clear above the reserve margin, but they are not. If it is the latter, these capacity constructs are not designed for that purpose. In either case, while progress has been made to date, strategic coordinated reforms are required.

II. CONCLUSION

WHEREFORE, for the foregoing reasons, American Municipal Power, Inc. respectfully requests that the Commission consider these comments in taking further action in this proceeding.

Respectfully submitted,

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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.

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Dated at Columbus, Ohio, this 7th day of July, 2025.

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