

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

Governor Josh Shapiro and The)	
Commonwealth of Pennsylvania)	
)	
Complainants,)	
)	Docket No. EL25-46
v.)	
)	
PJM Interconnection, L.L.C.,)	
)	
Respondent.)	

**COMMENTS OF PUBLIC INTEREST ORGANIZATIONS
IN SUPPORT OF COMPLAINT**

Pursuant to Rule 211 of the Commission’s Rules and Regulations,¹ Earthjustice, Natural Resources Defense Council, Sierra Club, and Sustainable FERC Project (“Public Interest Organizations” or “PIOs”) submit these comments in support of the Complaint filed on December 30, 2024 by Pennsylvania Governor Josh Shapiro and the Commonwealth of Pennsylvania² (“Complaint”). PIOs agree with Governor Shapiro and Pennsylvania that past constraints on new interconnection and resulting artificial scarcity together render a price cap and curve tied to the estimated cost to generators of *entering* the PJM capacity market wholly arbitrary and therefore unjust and unreasonable. No price, however high, can currently induce timely new entry into the PJM capacity market due to PJM’s interconnection study delays (and

¹ 18 C.F.R. § 385.211 (2024).

² Governor Josh Shapiro and The Commonwealth of Pennsylvania v. PJM Interconnection, LLC, *Complaint*, Docket No. EL25-46 (Dec. 30, 2024), Accession No. 20241230-5225 (“Complaint”).

indeed, more than a year-long moratorium on *any* interconnection studies). The gross-CONE-or-1.75 times Net CONE price cap to be implemented in the 2026/2027 Delivery Year Base Residual Auction (“BRA”) is well beyond what is necessary to provide the “missing money” to units that would otherwise retire. Without Commission intervention to order PJM to lower the capacity market price cap and reduce the slope of the administratively set demand curve, customers will pay exorbitant capacity prices in the 2026/2027 BRA, while receiving no added reliability benefit for costs ten or more times what they paid for capacity in the 2024/2025 Delivery Year. This is unjust and unreasonable. PIOs, like Pennsylvania, are endorsing remedies in these comments for the next auction, while recognizing that the next Quadrennial Review is ongoing and will produce longer-term solutions. As such, PIOs support Pennsylvania’s request for Commission action in time to implement these remedies prior to the 2026/2027 BRA.

I. Background

A. RPM is Designed for BRA Clearing Prices to Reflect New Entry of Competitive Resources.

The purpose of PJM’s capacity market (known as the “Reliability Pricing Model” or “RPM”) is “to obtain forward binding commitments from capacity resources to be available in order to ensure reliability, and to create sufficient incentives for new generation projects and demand resources to participate in the program.”³ In other words, the RPM serves two purposes: to supply the “missing money” needed to ensure resources required for reliability, but unable to earn sufficient revenue in the energy and ancillary markets, remain in operation;⁴ and to

³ *Maryland Pub. Serv. Comm’n et al. v. PJM Interconnection LLC*, 124 FERC ¶ 61,276 (2008) at P 26.

⁴ *See New York State Pub. Serv. Comm’n, New York Power Auth., Long Island Power Auth., New York State Energy Rsch. & Dev. Auth., City of New York, Advanced Energy Mgmt. All., & Nat.*

“provide[] long-term price signals to attract needed investment in the PJM region through a competitive auction process three years in advance.”⁵

The RPM accomplishes these goals through a competitive market mechanism, “using competitive bidding for future capacity contracts to both incentivize and account for new entry by more efficient generators, while ensuring a price both adequate to support reliability and fair to consumers.”⁶ The use of a market mechanism incentivizes the replacement of relatively economically inefficient generators with new entrants who, through higher net energy and ancillary market revenues, can submit lower capacity market bids and still remain economically viable. Moreover, as with any tariff subject to the FPA’s “just and reasonable” standard, the Commission has an obligation to ensure that the PJM market “protect[s] consumers from excessive rates and charges,” as well as promoting reliability through incentives for new entrants and securing adequate revenue for needed resources.⁷

Moreover, and importantly, the RPM is designed to secure capacity commitments well in advance of the date of delivery, such that resources that have not yet begun to operate can participate in, and secure guaranteed revenue from the capacity market prior to entry.

Res. Def. Council, 170 FERC ¶ 61,120 (2020) (Glick, Comm’r, dissenting at 4); *PJM Interconnection, L.L.C.*, 176 FERC ¶ 61,056 (2021) (Glick, Comm’r, dissenting at 8) (capacity market “is an administrative construct, with some market features, that exists to pay money to resources to replace the ‘missing money’ that generating resources lost when restructuring took resources out of rate base—with its guaranteed revenue stream—to pay for the all-in costs of a resource, including capital costs).

⁵ *PJM Interconnection, LLC*, 132 FERC ¶ 61,173, 61,870 (2010).

⁶ *NextEra Energy Res., LLC v. FERC*, 898 F.3d 14, 20 (D.C. Cir. 2018) (cleaned up).

⁷ *See id.* (citing *Xcel Energy Servs. Inc. v. FERC*, 815 F.3d 947, 952 (D.C. Cir. 2016)).

Historically, the Base Residual Auction for a given delivery year has taken place three years in advance. The purpose and result of this design choice is that potential new resource entrants can compete with incumbent resources in the capacity market. As the D.C. Circuit has recognized, “the RPM encourages the entry of new suppliers into the market with auctions that set rates three years in advance of delivery....This lag time allows competition from new suppliers that lack the capacity to deliver electricity now but could develop that capacity within three years of winning a bid.”⁸ This competition between new entrants and incumbents exerts downward pressure on capacity market prices, both to the extent it decreases the ability of incumbent generators to exercise market power (inasmuch as new entrants do not share common ownership with incumbent resources) and to the extent new resources are more economically efficient than incumbents.

B. The Last Quadrennial Review Changed the Price Cap from 1.5 Times Net CONE to the Greater of Gross CONE or 1.75 Times Net CONE.

PJM conducts quadrennial reviews of its capacity market to review key market rules and parameters, including the Variable Resource Requirement (“VRR”) curve. In PJM’s most recent review, the Fifth Quadrennial Review, The Brattle Group recommended that PJM increase its price cap to the greater of the Gross Cost of New Entry (“CONE”) or 1.75 times the greater of Net CONE.⁹ The previous price cap was 1.5 times the Net CONE. This change was responding to over-procurement in the BRAs that took place while delays in the interconnection queue accumulated. The express goal of this change was to steepen the VRR supply curve and thus

⁸ *Maryland Pub. Serv. Comm'n v. FERC*, 632 F.3d 1283, 1284–85 (D.C. Cir. 2011).

⁹ Fifth Review of PJM’s Variable Resource Requirement Curve for Planning Years Beginning 2026/2027 (April 19, 2022), available at <https://www.brattle.com/wp-content/uploads/2022/05/Fifth-Review-of-PJMs-Variable-ResourceRequirement-Curve.pdf>.

reduce the potential for procurement of capacity beyond the reliability requirement. This change was explicitly tied to a period of over-procurement risk.

C. PJM's Interconnection Queue is Severely Backlogged and Delayed.

In 2022, FERC approved changes to PJM's Open Access Transmission Tariff ("OATT") which created new interconnection process rules to move from a "first-come, first-served" model to a "first-ready, first-served" model.¹⁰ As part of this filing, PJM proposed to stop accepting New Service Requests to join the interconnection queue for four years, until 2026, in order to process the interconnection queue backlog. PJM is processing New Service Requests filed between April 1, 2018 and September 30, 2021 using specific "Transition Period Rules."¹¹ New Service Requests filed between October 1, 2021 and March 31, 2022 will be studied under the approved "New Rules" which will commence in early 2026.¹² After PJM transitions to using the New Rules in early 2026, it will begin accepting New Service Requests. While PJM maintained that this is not a "pause" on New Service Requests and that there would be "no periods in which applications will not be accepted,"¹³ PJM also admitted that New Service Requests submitted after October 2021 would need to supplement with additional information to comply with the New Rules and "[t]hese projects will essentially be in the process but, by necessity, on hold."¹⁴ PJM will only enter into final agreements in Summer 2025 for a subset of projects that entered

¹⁰ *PJM Interconnection, L.L.C.*, 181 FERC ¶ 61,162, 62,133 (2022).

¹¹ *Id.* at P 37. Capitalized terms have the meaning given to them in the cited filing.

¹² *Id.* at P 41.

¹³ *Id.* at P 39-40.

¹⁴ *Id.*

the queue between April 1, 2018 and September 30, 2021.¹⁵ Notably, the interconnection study process for these resources did not begin until January 2024—more than a year after PJM’s interconnection queue transition was approved by this Commission.

In 2023, FERC issued Order No. 2023, which directed all RTOs to reform interconnection processes for efficiency, including moving to a first-ready, first-served process.¹⁶ As described in a protest filed by the undersigned organizations, PJM’s compliance filing failed to meet crucial requirements in Order No. 2023.¹⁷ Notably, PJM refused to comply with the 150-day timeline for completing cluster studies, instead maintaining that its 480-day interconnection study timelines were sufficient.¹⁸ PJM also refused to update its rules to realistically study storage technologies seeking interconnection. Battery storage will play a growing role in PJM’s energy system, and PJM must update its procedures to study these resources appropriately.

¹⁵ See *PJM Interconnection, L.L.C.*, 181 FERC ¶ 61,162 at P 8 (eligibility for transition projects limited to those entering the queue between April 1, 2018 and September 30, 2021); PJM Interconnection, LLC, Transition Cycle #1 Phase 1 System Impact Study Results: FAQ for Developers (May 20, 2024) at 1, available at <https://www.pjm.com/planning/m/-/media/782894D7B1F24ECE91D13F36BCC6C63B.ashx>.

¹⁶ Improvements to Generator Interconnection Procedures and Agreements, 88 Fed. Reg. 61,014, (Sept. 6, 2023) (“Order No. 2023”).

¹⁷ Environmental Law and Policy Center, Illinois Citizens Utility Board, Sierra Club, Natural Resources Defense Council, Penn Future, Union of Concerned Scientists, and Sustainable FERC Project, *Protest of Public Interest Organizations*, Docket No. ER24-2045 (June 20, 2024), Accession No. 20240620-5242.

¹⁸ PJM Interconnection, LLC, Order Nos. 2023 and 2023-A Compliance Filing of PJM Interconnection, LLC, Docket No. ER24-2045 at 33-34, (May 16, 2024), Accession No. 20240516-5155.

PJM still faces a mountain of interconnection requests, and PJM's queue is one of the most backlogged in the nation. Today, there are over 3,300 projects active in PJM's interconnection queue representing 286 GW of capacity.¹⁹ According to a study conducted by RMI, as of July 2023, the majority of projects with signed interconnection agreements had entered the queue between 2017 and 2019, with the most recent entrants (approximately 10 projects) having entered in 2021.²⁰ The median wait time to an Interconnection Service Agreement ("ISA") varied from 2.5 years for natural gas resources to more than 4 years for wind resources.²¹ After receiving an ISA, renewable projects took approximately less than another year to come online, and gas another two years.²²

The upshot of this history is that those projects that could have expected to come online in the 2025/2026 delivery year, and to have participated in the 2025/2026 BRA as new entrants, are those whose interconnection process was either delayed by the backlog PJM identified as the basis for *changing* its queue-processing methodology, or were left in limbo for more than a year between this Commission's approval of PJM's new interconnection queue study methodology and PJM's initial review of Transition Cycle 1 ("TC1") (or close to two years in the case of those projects to be studied as part of Transition Cycle 2 ("TC2")). The result, as PJM has described in

¹⁹ Lawrence Berkeley National Laboratory, *Queued Up: 2024 Edition*, (Apr. 2024) at 9, available at https://emp.lbl.gov/sites/default/files/2024-04/Queued%20Up%202024%20Edition_1.pdf.

²⁰ Claire Wayner, *Analysis of PJM Interconnection Queue Projects with Signed ISAs* (July 2023), available at https://rmi.org/wp-content/uploads/2023/07/pjm_queued_projects_isa_analysis_v3.pdf.

²¹ *Id.* at 15.

²² *Id.*

a separate filing, was “among the lowest annual amounts of” of new entry “in PJM’s experience,” approximately 230 MW of Unforced Capacity.²³

D. The Absence of New Entry Due to PJM’s Queue Processing Delays Means That Capacity Auctions are Not Functioning as Intended.

As the PA Complaint describes, the PJM capacity market is effectively closed to new entrants.²⁴ More pointedly, the unprecedented capacity price spike in the 2025/2026 auction corresponds to the effective moratorium on new entry that resulted from PJM’s transition to a new interconnection methodology, described in the previous section.²⁵ The 2025/2026 BRA market-clearing price reflects scarcity created by PJM’s interconnection process, in which (as Joint Consumer Advocates explain in a separate Complaint, EL25-18) incumbent generators can exercise seller market power at consumers’ expense. Nor is the exceptionally high clearing price of the 2025/2026 BRA needed to induce new entry: PJM estimates the projects in the TC2 (which entered the queue between 2018 and 2021) total 96 GW of nameplate capacity.²⁶ These projects entered the queue when the most recent BRA auctions had a clearing price of \$140.00, or a little more than half the 2025/2026 clearing price.²⁷ The problem is not that prior auction

PJM Interconnection LLC, *Tariff Revisions for Reliability Resource Initiative*, Docket No. ER25-712-000 (Dec. 13, 2024), Accession No. 20241213-5271 at 6-7.

²⁴ Complaint at 18.

²⁵ See *PJM Interconnection, LLC*, 181 FERC ¶ 61,162 (2022) at PP 6-16.

²⁶ PJM, “Reliability Resource Initiative MRC Update,” Markets and Reliability Committee, November 7, 2024 at 7, available at <https://www.pjm.com/-/media/committees-groups/committees/mrc/2024/20241107-special/item-04---reliabilityresource-initiative---presentation.ashx>.

²⁷ See PJM, 2025/2026 Base Residual Auction Report (Jul. 30, 2024) at 4, available at <https://www.pjm.com/-/media/DotCom/markets-ops/rpm/rpm-auction-info/2025-2026/2025->

results failed to incentivize new entry. The need for the moratorium on interconnection studies and transition to a new queue study process was precisely—according to PJM itself—the “exponential increase in New Service Requests.”²⁸

High prices will continue to reflect PJM-created scarcity that generators cannot respond to due to PJM’s clogged queues and market power for the next several delivery years. And continued high (or even higher) clearing prices in the 2026/2027 delivery year BRA (as both the PA Complaint and JCA Complaint explain) cannot induce new entry, either. Even if PJM achieves historically high rates of new entry from TC1 and TC2 due to high capacity prices, these projects will not receive ISAs until 2027 at the earliest.²⁹ Until we enter an era in which timely new entry can respond quickly to capacity price signals, the auctions will not provide enough additional reliability benefit to justify tens of billions of dollars in consumer costs.

The result has subverted those customer-protection elements on which this Commission relied in approving the RPM. As this Commission has recognized, the market design features that “operate to limit the potential for the exercise of market power” include the “three year forward market [that] permits competitive entry in the event that existing generators are seeking to raise prices above competitive levels” and the VRR price caps.³⁰ But, as explained above, the

[2026-base-residual-auction-report.pdf](#). PJM held a Base Residual Auction for the 2021/2022 delivery year in May 2018 and did not hold the 2022/2023 delivery year auction until January 2022. See PJM, *Capacity Market (RPM)*, <https://www.pjm.com/markets-and-operations/rpm>.

²⁸ *PJM Interconnection, L.L.C.*, 181 FERC ¶ 61,162 at PP 5, 31.

²⁹ See PJM Interconnection, LLC, *Transition Cycle #1 Phase 1 System Impact Study Results: FAQ for Developers* (May 20, 2024) at 1, *supra* n. 19.

³⁰ *PJM Interconnection, L.L.C.*, 117 FERC ¶ 61,331 (2006) at P 101.

BRA no longer takes place three years before the relevant delivery year and even if it did, the inability of new generators to obtain ISAs in a timely manner makes new entry impossible. The result is the type of price volatility the sloped VRR was designed to avoid, with the BRA clearing price increasing close to ten-fold in a single year.³¹

II. The Current VRR Curve is Unjust and Unreasonable Because It Allows Customers to Pay Unreasonably High Prices with No Corresponding Reliability Benefit Due to an Arbitrary Price Cap and Vulnerability to Seller Market Power.

As the Complaint describes, PJM’s delayed interconnection process—which stopped accepting new projects in November 2022 and will not begin reviewing projects that applied *after* September 2021 until early 2026—has “foreclose[d] any realistic possibility of market participants responding to the [capacity market] auction’s clearing price.”³² At the same time, as described in the previous section, the Commission approved PJM’s revision to the VRR curve to set the price cap of capacity equal to the greater of Gross CONE or 1.75 times the Net CONE, which would steepen the slope of the supply curve. But under the conditions of highly constrained new entry that have developed since the revised cap was approved in 2023, neither the higher cap nor the steeper slope can fulfill intended their purposes, namely, induce new generators to enter the PJM capacity market *or* prevent against over-procurement. Thus, as

³¹ *Cf. id.* at P 75 (“This is because, with a sloped demand curve, as capacity supplies vary over time, capacity prices would change gradually. By contrast, under the current capacity market, capacity prices vary substantially between the deficiency charge and zero even though supply varies only slightly between a slight deficit below the Installed Reserve Margin and a slight surplus above the Installed Reserve Margin. The lower price volatility under the sloped demand curve would render capacity investments less risky, thereby encouraging greater investment and at a lower financing cost.”).

³² Complaint at 1.

Pennsylvania argues, this soon-to-be-implemented revision will produce outcomes in the 2026/2067 BRA that are unjust and unreasonable.

To be sure, increased BRA clearing prices may incentivize units on the bubble economically to continue operating rather than retire by increasing the amount of “missing money.” But seller market power has also produced a situation in which high prices do not serve *this* purpose either. As described in expert testimony introduced by Joint Consumer Advocates in their separate Complaint challenging different aspects of the PJM capacity market as unjust and unreasonable, the Independent Market Monitor (“IMM”) has described seller market power as “endemic” throughout PJM.³³ Under such conditions, as Pennsylvania Witness Aksomitis describes, increasing the amount of “missing money” in the PJM capacity market may not actually forestall retirements. Because marginal resources are frequently owned by entities with portfolios of resources within the PJM market, even record-high clearing prices will not forestall deactivations if owners benefit more from higher capacity payments for their entire portfolios than lost revenue on a single source.³⁴ Indeed, only a single resource—the Elgin Energy Center—canceled its deactivation notice in response to the 2025/2026 BRA results (where the auction cleared at a price nearly ten times higher than the prior auction). That unit’s 483 MW of ICAP represents only a little more than 10% of the total nameplate capacity with planned

³³ Monitoring Analytics, Analysis of the 2025/2026 RPM Base Residual Auction Part B (Oct. 15, 2024), at 3-4, *available at* https://www.monitoringanalytics.com/reports/Reports/2024/IMM_Analysis_of_the_20252026_RPM_Base_Residual_Auction_Part_B_20241015.pdf.

³⁴ See Complaint, Exhibit 1 Attachment A (Kris Aksomitis, *PJM Capacity Auction Evaluation*) at 35-38.

retirement dates before December 31, 2027.³⁵ Witness Aksomitis explains that the lack of response among units with outstanding deactivation notices is because, under conditions of seller concentration and a steep VRR curve, owners of generator portfolios stand to lose as much or more if prices *decrease* as they might gain by maintaining operation of a marginal unit that is able to survive solely through the payment of extraordinarily high capacity costs.

As the Pennsylvania Complaint demonstrates, the price cap and slope of the VRR to be applied in the 2026/2027 auction were designed to address, and approved on the assumption of, market conditions that are no longer in existence. The price cap is tied to the cost of *new* entry; but no timely new entry is possible given PJM's interconnection delays—which culminated in PJM's decision to stop accepting all new projects for interconnection studies while the RTO began its transition to a more efficient interconnection study process. The use of Gross CONE as an alternative cap is designed to ensure new entrants are not deterred by aberrantly low Net CONE-based market caps due to energy price spikes; but again, because new entry is not a practical possibility, incumbent generators will have already benefitted from those higher energy prices. And PJM's proposal to increase the slope of the VRR in 2022 was a direct response to the problem of *over*-procurement and acknowledged that the slope increased the benefit to sellers of capacity withholding but found that concern was outweighed in then-capacity-rich market conditions; without the possibility of new entry and under conditions of seller concentration, the 2026/2027 auction is highly vulnerable to the exercise of seller market power that could tighten the capacity market further and result in the transfer of billions of dollars from customers to incumbent generators with no corresponding reliability benefit.

³⁵ *Id.* at 35.

Under these circumstances, customers will not see any added reliability benefits for the projected \$37 billion they will pay for capacity in the 2026/2027 delivery year—more than 15 *times* what customers paid in 2024/2025—if the capacity market clears at the projected \$696/MW-day cap under PJM’s current VRR.³⁶ The planned VRR curve and offer cap thus threaten to provide a windfall to incumbent generators at customers’ expense.³⁷ The exorbitant sum in potential capacity payments if the 2026/2027 BRA proceeds under current rules is unreasonable and will cause real hardship for the retail customers from whom capacity payments to generators will ultimately come. The VRR price cap of Gross CONE or 1.75 times Net CONE is therefore unjust and unreasonable, and must be reduced to 1.5 time Net CONE or an empirical Net CONE to protect customers.

A. In the Absence of New Entrants, a Price Cap Tied to the Cost of New Entry is Arbitrary and therefore Unjust and Unreasonable.

According to PJM, “the chief objective” of the VRR Curve “is to procure enough capacity to maintain resource adequacy” while “avoid[ing] excessive price volatility and

³⁶ See Complaint at 33 (citing Joint Consumer Advocates v. PJM Interconnection, LLC, *Complaint*, at 49, 52, Docket No. EL25-18 (Nov. 18, 2024), Accession No. 20241118-5200 (“JCA Complaint”); Exhibit 1 to JCA Complaint (Affidavit of Marc D. Montalvo) (“Montalvo Aff.”) at 16 (total capacity costs under the 2024/2025 delivery year RPM were \$2.2 billion). This same market vulnerability—the incentive for owners of large portfolios to retire resources to maintain high prices—also counsels for reforms that better protect the capacity market against market manipulation, as Joint Consumer Advocates have stressed, and as the complaint of Public Interest Organization in Docket No. EL24-148 also highlights. See Sierra Club, Natural Resources Defense Council, Public Citizen, Sustainable FERC Project and Union of Concerned Scientists, *Complaint* at § III(C), Docket No. EL24-148 (Sept. 27, 2024), Accession No. 20240927-5073.

³⁷ See Complaint at 33 (citing JCA Complaint at 49, 52); Exhibit 1 to JCA Complaint (Affidavit of Marc D. Montalvo) (“Montalvo Aff.”) at P 16 (total capacity costs under the 2024/2025 delivery year RPM were \$2.2 billion).

susceptibility to market power abuse.”³⁸ The Commission has repeatedly reaffirmed that “the central question” when evaluating the price cap and slope of a VRR curve proposed by PJM to serve this purpose, is whether the proposed demand curve ‘will attract sufficient generation to meet its capacity obligations at a just and reasonable price.’”³⁹ Assuming the RPM is functioning as intended, *i.e.* on a forward basis to allow potential new entrants to bid for Delivery Years in which they can reasonably expect to be able to come online, a VRR curve price cap tied to the cost needed to make such new entry economically viable can be just and reasonable. A CONE-based cap ensures that customers do not pay any *more* for an additional MW-day of capacity than a developer contemplating entry would need to have an economic incentive to join the market.

But, as described, new entry has become functionally impossible. For the reasons described above there is *no* price that can “attract” new entrants into the PJM market because physical entry to PJM’s grid takes years under current interconnection processes. Any price paid for capacity under conditions of highly constrained new entry beyond what is necessary to maintain reliability serves no forward-looking purpose and is deadweight loss, paid by customers. Moreover, the compression of the timing between BRAs and the Delivery Year to which they correspond means that even *if* a new resource (*i.e.* one not already in the queue as of September 2021) could enter the PJM interconnection study process in the near future, there is no reasonable possibility of completing the process between the BRA and corresponding

³⁸ *PJM Interconnection, L.L.C.*, 149 FERC ¶ 61,183 (2014) at P 20.

³⁹ *PJM Interconnection, L.L.C.*, 182 FERC ¶ 61,073 (2023) at P 160 (quoting *PJM Interconnection, L.L.C.*, 119 FERC ¶ 61,318 at P 110 and *PJM Interconnection, L.L.C.*, 117 FERC ¶ 61,331 at P 82).

Delivery Year. The use of CONE (whether Net or Gross) as the price cap under such circumstances, is arbitrary.

Thus, as the Pennsylvania Complaint correctly explains, the appropriate basis for a price cap is the amount needed to retain sufficient resources by supplying the “missing money” those resources need to stay online but cannot earn in the energy and ancillary markets.⁴⁰ While the 1.5 time Net CONE cap Pennsylvania proposes as a remedy is still conceptually tied to *new* entrants and may still be higher than necessary for PJM to meet its reliability goals, it is also the cap PJM has previously used and thus is demonstrably sufficient to retain those resources that have not already submitted deactivation notices on the basis of past capacity market results.⁴¹

The Commission has previously held that market rules that purport to incentivize generator behavior at customers’ expense, but that fail to achieve their putative goals, are unjust and unreasonable. For example, to address ongoing fuel security challenges, ISO-NE proposed in 2020 to establish a market for three ancillary products, collectively intended to shore up reliability by filling gaps between the day-ahead market and real-time needs.⁴² But, the Commission found, this new market “would impose substantial costs on consumers without meaningfully improving fuel security” because the proposed products “[would] not provide enough time for resources to take the steps necessary to perform during stressed conditions if

⁴⁰ Complaint at 19.

⁴¹ PIOs describe below an alternative price cap based on empirical net cost of new entry, that could be utilized in the event that Net CONE is unreasonably low. PIOs also recognized that PJM has initiated its Quadrennial Review process, which will develop more comprehensive reforms to the demand curve to reflect the dramatically changed conditions in PJM.

⁴² See *ISO New England Inc.*, 173 FERC ¶ 61,106 (2020) at P 6.

they had not already taken them,” the market would allow non-participation, and there was no showing that the market would “materially reduce reserve shortages or the potential loss of load.”⁴³ Nevertheless, the costs associated with the proposed program were estimated to be approximately \$230 million.⁴⁴ The Commission determined the proposal to be unjust and unreasonable.

The increase of the VRR price cap to 1.75 time Net CONE,⁴⁵ like ISO-NE’s ESI proposal, will similarly “impose substantial costs on consumers.” Pennsylvania Witness Aksomitis estimated the increased cost for capacity as a result of this change at \$100/MW-day compared to a 1.5 Net CONE price cap and CT reference unit, or \$6 million per MWh of improved reliability.⁴⁶ (According to Witness Aksomitis, the comparable value for MISO is \$35,000/MWh.⁴⁷) But, also like ISO-NE’s ESI, structural factors within the market prevent generators from responding to the putative incentive of higher BRA clearing prices, leaving customers with an unprecedentedly large capacity bill and nothing to show for it. Just as the Commission recognized the fundamental timing mismatch between the proposed day-ahead

⁴³ *Id.* at P 49.

⁴⁴ *Id.*

⁴⁵ See *PJM Interconnection, LLC*, Transmittal Letter, Docket No. ER22-2984 (Sept. 30, 2022) at 1, Doc. Accession No. 20220930-5374 (the 2026/2027 Delivery Year BRA will be the first auction to adopt this higher price cap proposed).

⁴⁶ Complaint Exhibit 1 (“Aksomitis Aff.”) at P 10.

⁴⁷ “MISO Update to PJM Reserve Certainty Task Force,” Nov. 2024, at 16, 20; available at <https://www.pjm.com/-/media/DotCom/committees-groups/task-forces/rcstf/2024/20241113/20241113-item-04---miso-shortage-pricing-update-to-pjm-rcstf.pdf> (MISO reports a range of VOLL from \$10,000/MWh to \$35,000/MWh).

incentive market, and the period over which a generator would have to take steps to increase reliability, so here BRA clearing prices announced in June 2025 cannot act as a signal to new entrants when PJM has already announced it will not provide interconnection service agreements to any of these potential market participants until late 2027 at the earliest.⁴⁸

Although higher BRA prices cannot incentivize new entry, the higher the price cap and the steeper the slope *will* increase the ability of and incentive for sellers with market power to exercise that power to customers' detriment.⁴⁹ Under the steeper VRR curve every MW withheld or bid at the price cap will cause a marginally greater increase in the clearing price that results. This risk is real and growing: As the IMM has repeatedly emphasized, every or nearly every LDA in PJM includes sellers capable of exercising this market power and have been able to even before the slowdown in interconnection beginning in 2018.⁵⁰ The possibility of new entry, which might otherwise discipline incumbent generators through the threat of underbidding in a forward

⁴⁸ PJM Interconnection, LLC, Transition Cycle #1 Phase 1 System Impact Study Results: FAQ for Developers (May 20, 2024) at 1, *supra* n. 19.

⁴⁹ PJM itself has previously recognized this aspect of VRR curve slope. *See PJM Interconnection, L.L.C.*, 149 FERC ¶ 61,183 (2014) at 20 (“PJM argues that adopting a flatter, i.e., less steep, VRR Curve serves these objectives by limiting the price effect of withholding supply.”).

⁵⁰ *See* Exhibit 1 to JCA Complaint (Affidavit of Marc D. Montalvo), P 24 & n. 17 (“The exceptions [to a finding of structural market power] are rare enough to list in footnote, as the IMM does in footnotes 17 and 18 of the most recent Quarterly State of the Market Report for PJM: January through June. For the region as a whole, at least some participants passed in the 2008/2009 RPM Third Incremental Auction, the 2018/2019 RPM Second Incremental Auction, and the 2023/24 RPM Third Incremental Auction. At the LDA level, in EMAAC, at least some participants passed the TPS test in the 2012/2013 RPM BRA and in the 2021/2022 RPM Second Incremental Auction. In MAAC, at least some participants passed the TPS test in the 2021/2022 First Incremental Auction and in the 2023/2024 RPM Third Incremental Auction.”)

capacity market, has subsequently been practically nullified. Under these conditions of limited competition, portfolio owners may receive greater net revenue if, by choosing not to bid a resource, or bidding it at the price offer cap (and failing to clear), they shift the clearing price up the VRR curve to increase revenue for their remaining resources. There is, moreover, strongly suggestive evidence that sellers are, or anticipate, exercising this power. Witness Aksomitis's testimony describes the relative dearth of deactivation reversals following a near ten-fold increase in the BRA clearing price between the 2024/2025 and 2025/2026 delivery years and why a portfolio owner would maximize its capacity revenue through following through with the planned retirement notwithstanding the purported market signal of a spiking clearing price.⁵¹

PJM will likely appeal to the intuitive argument that under widely recognized conditions of potential capacity shortfall, high prices are necessary or salubrious. But this argument, to the extent advanced by PJM, misses the point: Under the RPM capacity market construct, the purpose of rapid rates of price increases in conditions of constrained capacity, according to PJM itself, to send “a correspondingly stronger price signal” to generators and potential new entrants.⁵² Until and unless PJM conforms its interconnection process to the Commission's Order No. 2023 or addresses the longstanding delays and accelerates the timeline for its transition to its new methodology, any such signals will flash unheeded. The current VRR curve will not produce a “just and reasonable price” for capacity in the 2026/2027 auction, and the Commission must, consistent with past precedent, order a lower price cap that will protect customers from billions in pointless capacity payments.

⁵¹ Complaint, Exhibit 1 Attachment A (Kris Aksomitis, *PJM Capacity Auction Evaluation*) at PP 35-38.

⁵² *PJM Interconnection, L.L.C.*, 149 FERC ¶ 61,183, 62,123 (2014).

B. The Market Conditions Under which the Commission Approved PJM's Proposal to Increase the Slope of the VRR Curve are No Longer Applicable, Rendering the 1.75 times Net CONE Price Cap Unjust and Unreasonable.

The Commission approved PJM's proposal to increase the VRR price cap to 1.75 times Net CONE (replacing 1.5 times Net CONE) and correspondingly increase the slope of the VRR curve in early 2023. PJM proposed the increase to address the problem of *over*-procurement in recent auctions, and that under current market conditions, the increase did not “represent[] an unreasonable balance of price and quantity purchased.”⁵³ As PJM's flurry of filings this past month make clear, the RPM no longer has a problem with over-procurement. To the contrary, PJM has raised the possibility of a reserve margin shortfall below the required 17.8 percent beginning in the 2026/2027 Delivery Year.⁵⁴ To be sure, PIOs disagree with PJM as to what measures to address this putative shortfall are just and reasonable, as well as the extent to which the shortfall represents a lack of physical resources on the grid or is an artifact of RPM rules that permit withholding or fail to account for existing physical capacity.⁵⁵ But there is no question that the problem of over-procurement that the Commission cited as a basis for increasing the VRR price cap is no longer a salient characteristic of the market. The empirical premise of the

⁵³ *PJM Interconnection, L.L.C.*, 182 FERC ¶ 61,073, 61,592 (2023)

⁵⁴ PJM Interconnection LLC, *Tariff Revisions for Reliability Resource Initiative*, at 9, Docket No. ER25-712-000 (Dec. 13, 2024), Accession No. 20241213-5271.

⁵⁵ *See, generally*, Sierra Club and Appalachian Voices, *Protest to PJM Interconnection, LLC Tariff Revisions for Reliability Resource Initiative*, Docket No. ER25-712 (Jan. 8, 2025), Accession No. 20250108-5184; Natural Resources Defense Council, Sierra Club, and Sustainable FERC Project, *Protest to PJM Interconnection, LLC Tariff Revisions Extending the Capacity Must-Offer Requirement to All Generation Capacity Resources*, Docket No. ER25-785 (Jan. 10, 2025), Accession No. 20250110-5357.

proposed change to a 1.75 Net CONE price cap has evaporated and, accordingly, the Commission should order PJM to revert to the prior cap.

C. The Commission Should Direct PJM to Incorporate an Empirical Net CONE Calculation Rather than the Gross CONE to Address the Risks of Energy Market Price Spikes Producing an Unreasonably Low Net CONE.

Under current conditions of constrained new entry and seller market power, the use of Gross CONE to set the price cap for the VRR is unjust and unreasonable. Reliance on Gross CONE where it exceeds the Net CONE times a multiplier no longer serves PJM's purpose in adopting it as an alternative price cap nor is consistent with the Commission's reasoning in approving the RPM in the first place. When this Commission initially approved the RPM capacity construct, it agreed with PJM that, although the RPM should be a permanent fixture to establish regulatory certainty, "an administratively-determined capacity market is likely, of its own nature, to devolve in importance as revenues from the energy market increase, and enable generators to obtain sufficient revenue from energy sales that a capacity market mechanism may no longer be necessary."⁵⁶ Using the Gross CONE for the price cap of the VRR curve is inconsistent with this fundamental premise and assumption, as it thwarts the tendency of the RPM—as originally approved—to automatically produce smaller capacity payments as energy market revenues became sufficient to support the operation of sufficient generators to secure resource adequacy.

Despite this, the Commission subsequently approved PJM's proposal to incorporate Gross CONE as an alternative price cap in response to concerns about energy market volatility threatening new entry. PJM first introduced Gross CONE as an alternative price cap in late 2011

⁵⁶ *PJM Interconnection, L.L.C.*, 115 FERC ¶ 61,079 (2006) at P 170.

and the Commission approved it in a January 2012 Order.⁵⁷ The purpose of including Gross CONE as an alternative price cap was to ensure a continued incentive for new entrants under conditions of high energy prices and constrained capacity.⁵⁸ As PJM explained, for new entrants considering whether to invest in generation in the PJM market, an energy market spike—and correspondingly low capacity market price cap—might create uncertainty or deter those entrants.⁵⁹ The Commission accepted the Gross CONE alternative in part based on PJM’s characterization of the change as a “safeguard,” and observed that under “normal...E&AS revenue conditions, the VRR Curve will not deviate from its current threshold.”⁶⁰

But for the reasons described above, in the absence of the realistic possibility of new entry (a possibility foreclosed, ironically, due to PJM’s claimed inability to process an overwhelming number of interconnection requests) PJM’s concern with the effect of energy price volatility and corresponding uncertainty as to capacity market prices are irrelevant. Instead, the primary practical purpose of the capacity market in the 2026/2027 BRA is to provide the “missing money” required by incumbent resources to prevent retirements that threaten reliability. But there is no logical relationship between that amount of “missing money” and Gross CONE. Instead, the Commission should order PJM to adopt an empirical Net CONE methodology to set an alternative price cap in the event a Net CONE-based cap is too low to produce a workable demand curve. An empirical Net CONE approach is consistent with the Commission’s findings

⁵⁷ *PJM Interconnection, L.L.C.*, 138 FERC ¶ 61,062 (2012) at PP 80-85.

⁵⁸ *Id.* at P 80

⁵⁹ *Id.* at P 72.

⁶⁰ *Id.* at P 85.

as to the relationship between the energy and ancillary markets, on the one hand, and capacity market, on the other, in approving PJM's RPM construct and the practical reality of constrained new entry the capacity market for the 2026/2027 Delivery Year. PIOs therefore urge the Commission to adopt the empirical Net CONE methodology proposed by Marc D. Montalvo in his affidavit in support of the JCA Complaint. Such an approach has also been endorsed by other capacity market experts.⁶¹

Montalvo proposes setting the VRR price cap as a function of the historic average of the last five years' BRA clearing prices, weighted by the UCAP of total *new* generation cleared in that auction, and adjusted for inflation.⁶² To account for variation in E&AS revenues across the historical period, Montalvo proposes an adder of one-half the range between the minimum and maximum clearing price from the same five-year period. The resulting market cap would therefore reflect, on average, the prices both *new and incumbent* generators were willing to accept in exchange for remaining (or becoming) capacity resources on a going-forward basis. Had such a methodology been applied in 2025/2026, as Montalvo demonstrates, the market cap would have been \$146.60, decreasing the total capacity costs to customers by \$4.0 billion.⁶³ Because it would reflect actual revenue received by incumbent resources over the past five years, adjusted to account for the degree to which clearing prices actually induced new entry, and because the methodology incorporates past outcomes in a recursive calculation; the proposed

⁶¹ See, e.g. James Wilson, *Over-Procurement of Generating Capacity in PJM: Causes and Consequences* (Feb. 2020), available at <https://www.sierraclub.org/sites/default/files/blog/Wilson%20Overprocurement%20of%20Capacity%20in%20PJM.PDF>.

⁶² Montalvo Aff. at PP 83-87.

⁶³ *Id.* at P 86.

empirical Net CONE would reflect variation in E&AS revenue; tie what customers pay to the empirically demonstrated "missing money" required for reliability resources to remain economically viable; and (if incorporated into the Tariff for auctions past the 2026/2027 BRA), reduce volatility in capacity markets over time, to the benefit of both customers *and* potential new entrants seeking to minimize risk and thus the cost of capital.

As the PA Complaint shows, the Gross CONE "safeguard" no longer functions as intended and will produce an unreasonably high market cap in the 2026/2027 Delivery Year with no corresponding reliability benefit for customers. Rather than Gross CONE, the Commission should order PJM to adopt an empirical Net CONE calculated according to Montalvo's methodology or a similar approach that incorporates at least five years of market clearing prices as an alternative market cap to 1.5 times Net CONE.

III. Conclusion

PIOs agree with Pennsylvania that the PJM capacity market under current conditions and VRR curve has produced rates that are unjust and unreasonable and will continue to do so without Commission intervention; that PJM's unjustifiable delays in facilitating new entry have rendered meaningless those aspects of its VRR curve designed to incentivize, and premised upon the possibility of, new entry; that without new entry to discipline incumbent generators there is a risk that the exercise of seller market power will drive capacity market prices even higher; and that PJM must apply a price cap and VRR curve in the 2026/2027 auction that reflects these market realities and prevents incumbent generators from abusing the artificial scarcity created by PJM to charge customers tens of billions of dollars more for capacity than needed to secure resource adequacy. PIOs thus urge the Commission to grant Pennsylvania's Complaint, find the current Variable Resource Requirement ("VRR") price cap of the greater of 1.75 times Net

CONE or Gross CONE unjust and unreasonable, and order PJM to set the price cap no greater than 1.5 Net CONE or the empirical Net CONE, calculated as described by Witness Montalvo in the JCA Complaint, for the 2026/2027 Base Residual Auction, currently scheduled for June of this year.

PIOs also believe the underlying cause of the 2025/2026 BRA auction results, and the long-term threat to the viability of the PJM capacity market, is PJM's failure to facilitate new resource entry through its interconnection queue. Thus, in addition to granting Pennsylvania's request and ordering PJM to use a VRR curve with a price cap no greater than 1.5 times Net CONE in the 2026/2027 BRA, PIOs urge the Commission to initiate proceedings to consider, in conjunction with the Joint Consumer Advocates' Complaint, EL25-18, longer-term steps to address PJM's recalcitrance on Order No. 2023 and encourage new entry of economically efficient generators into the PJM capacity market and the accuracy of PJM's load forecasting (particularly in the context of rapid growth of large-load data centers in Virginia and Illinois). While these longer-term steps require careful consideration, we urge the Commission to act swiftly to grant Pennsylvania's request in order for the remedied price cap to be implemented prior to the next BRA.

Dated: January 21, 2025

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CERTIFICATE OF SERVICE

I hereby certify that the foregoing has been served in accordance with 18 C.F.R. § 385.2010 upon each party designated in the official service list compiled by the Secretary in this proceeding, by email.

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