Written Comments of LS Power Development, LLC

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Pennsylvania Public Utility Commission

Technical Conference on Resource Adequacy in Pennsylvania

Post-Technical Conference Comments

Docket Number M-2024-3051988

LS Power Development, LLC ("LS Power") appreciates the opportunity provided by the Pennsylvania Utility Commission (the "Commission") to file comments on its Technical Conference on Resource Adequacy (the "Conference"). As a panelist at that Conference, LS Power shared its views on the current state of the PJM Interconnection, L.L.C. ("PJM") capacity market and its likely impact on ratepayers in the Commonwealth of Pennsylvania, some of which we reiterate below. The discussion at the Conference was candid and informative, demonstrating the benefits of this type of forum to better understand the very complex challenges facing the electric industry as it transitions from firm dispatchable resources relied on for decades to intermittent resources that are not dispatchable and therefore less predictable.

Through its investment in power generation, LS Power plays a critical role in assuring such reliability and affordability in the Commonwealth and PJM. LS Power owns and operates approximately 13,500 MWs in PJM, of which approximately 4,900 MWs are located in Pennsylvania. LS Power added 1,140 MW of renewable resources, including wind power located in Pennsylvania, to its PJM portfolio on January 8, 2025, via its acquisition of Algonquin's renewable business, now known as Clearlight Energy. In addition to LS Power's significant and growing generation portfolio, LS Power's affiliate CPower, Inc., provides demand response in the Commonwealth and PJM. Furthermore, LS Power Grid provides transmission services in PJM through Silver Run Electric, LLC, which was the first competitively solicited transmission project selected by PJM.

LS Power supports its investments with private capital. Our investments do not have access to a utility rate base and our company bears the risks associated with development

of projects which include project delays, regulatory changes and supply chain issues. To support these investments, we have raised billions of dollars from private investors, and we deploy that capital after a comprehensive analysis of market and project fundamentals.

At the Conference, the Commission inquired how it can balance reliability and affordability for the Commonwealth,[1] and panelists spent significant time discussing whether the Commonwealth will have sufficient supply, as well as the "right" mix of resources, to meet its electric needs in the coming years. LS Power believes that the answer is yes to both questions, but our position is based on certain assumptions, including (1) retaining existing gas plants,[2] (2) adding more gas resources to the supply mix, and (3) PJM's capacity market construct reflecting the expected supply and demand balance through reasonable price outcomes to ensure continued investment in existing and new supply resources is supported.

LS Power has consistently believed that PJM's competitive markets have the capability to ensure the right mix of resources to maintain reliability and to support the deployment of renewables at the lowest cost to consumers. PJM's markets fostered a 43% reduction in carbon emissions between 2005 and 2024.[3] The capital for these cleaner resources, with natural gas replacing coal as the dominant fuel in PJM, came from

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[1] Pennsylvania Public Utility Commission, *Technical Conference on Resource Adequacy in Pennsylvania: Session 1*, YouTube (Nov. 25, 2024) ("RA Conference Video"), at 4:30 (Kimberly Barrow, Commission Vice Chair), https://www.youtube.com/watch?v=BVZSyp6FoKw.

[2] Even environmental organizations such as the Natural Resources Defense Council ("NRDC") that previously advocated for total elimination of gas plants on the electric system now acknowledge the need to retain them to ensure a successful energy transition. *See id.* at 32:00 (Tom Rutigliano, NRDC).

[3] PJM Inside Lines, *Emission Rates in PJM Reach All-Time Low* (Mar. 28,2024), https://insidelines.pjm.com/emission-rates-in-pjm-reach-all-time-low/.

independent power producers that did not require ratepayer guarantees. Instead, these companies accessed private and public markets for debt and equity, which in turn relied on PJM's markets to justify those investments.

Capacity clearing prices are critical to companies deciding whether to invest in the PJM market and the Commonwealth. Independent power producers will deploy capital and continue to invest if the PJM markets are structured to send reasonable price signals when new supply is needed, as the capacity market did in the most recent auction.

Table 1. PJM Base Residual Auction Results, RTO Clearing Prices[4]

	Auction Results				
Delivery Year	Resource Clearing Price	Cleared UCAP (MW)	RPM Reserve Margin	Total Reserve Margin[1]	Total Cost to Load ($ billion)
2015/16[2]	$136.00	164,561.2	19.7%	19.3%	$9.7
2016/17[3]	$59.37	169,159.7	20.7%	20.3%	$5.5
2017/18	$120.00	167,003.7	20.1%	19.7%	$7.5
2018/19	$164.77	166,836.9	20.2%	19.8%	$10.9
2019/20	$100.00	167,305.9	22.9%	22.4%	$7.0
2020/21[4]	$76.53	165,109.2	23.9%	23.3%	$7.0
2021/22	$140.00	163,627.3	22.0%	21.5%	$9.3
2022/23	$50.00	144,477.3	21.1%	19.9%	$3.9
2023/24	$34.13	144,870.6	21.6%	20.3%	$2.2
2024/25	$28.92	147,478.9	21.7%	20.4%	$2.2
2025/26[5]	$269.92	135,684.0	18.6%	18.5%	$14.7

Table 1 shows capacity clearing prices for Delivery Years 2015-2026. The 2017-2018 and 2018-2019 capacity auctions were run in the Summers of 2014 and 2015, respectively. As a result of the clearing prices in those auctions, new generation came online approximately three to four years later, reflective of the then-typical timeline to construct

[4] Tim Horger & Adam Keech, *2025/2026 Base Residual Auction Results,* at 8 (PJM Markets & Reliability Committee, Aug. 21, 2024), https://www.pjm.com/-/media/DotCom/committees-groups/committees/mrc/2024/20240821/20240821-item-08---2025-2026-base-residual-auction---presentation.pdf.

new assets. Indeed, in response to the capacity auction signaling the need for new investment, LS Power decided to invest in upgrades at some of its assets in Pennsylvania, leading to commercialization of an additional 300 MWs at our existing Pennsylvania power plants from 2017 to 2019.

Subsequently, following the implementation of new capacity market rules, including reducing the ability to reflect risks in Market Seller Offer Caps and substantially limiting the effectiveness of the Minimum Offer Price Rule,[5] capacity auction prices dropped from 2022-2023 through 2024-2025, sending a strong signal that PJM had no need for further investment. Capacity prices during that period were sending retirement signals, not investment signals, causing less efficient units to retire. Accordingly, while not perfect, the capacity market to date has worked as intended such that investment was made when capacity clearing prices were robust and dried up during the years of lower capacity prices.

The capacity auction for the 2025-2026 delivery year that was held last year was the first auction that reflected the implementation of PJM's Electric Load Carrying Capability ("ELCC") construct, which is used to reflect a resource's contribution to reliability when it is expected to be needed. While the ELCC construct needs improvement, it is a necessary tool that corrects past over-estimations of the reliability benefits provided by various resources and if implemented correctly determines a resource's actual reliability contributions.[6] In addition to the regulatory changes instituted by PJM, there are other

[5] *See Independent Market Monitor for PJM v. PJM Interconnection, L.L.C.*, 176 FERC ¶ 61,137 (2021) (order on PJM's Market Seller Offer Cap); *PJM Interconnection, L.L.C.*, FERC Docket No. ER21-2582-000, Notice of Filing Taking Effect by Operation of Law (Sept. 29, 2021) (unreported) (notice with accompanying statements by FERC Commissioners regarding Minimum Offer Price Rule).

[6] *See, e.g.,* RA Conference Video at 30:31 (Tom Rutigliano, NRDC).

challenges – some anticipated, some not – that have affected the supply-demand balance and, correspondingly, PJM's 2025-2026 auction:

1. As identified by the regional reliability coordinator, ReliabilityFirst, the misalignment caused by the rapidity at which units are retiring but not being replaced is a reliability concern.[7] Some of these retirements are being driven by federal and state environmental laws, which have made operating some units uneconomic because the costs to comply are too high. Some retirements can be anticipated because of legislative deadlines, but some cannot. For example, in Illinois, the Climate and Equitable Jobs Act ("CEJA") requires certain units, encompassing thousands of megawatts, to retire by 2030. Those retirements could be accelerated as there is little incentive to repair equipment today if retirement is mandated in a few years.
2. The PJM interconnection queue is clogged, creating a time lag to bring new projects onto the grid. PJM continues to work with stakeholders, the states and the Federal Energy Regulatory Commission (the "FERC") to speed up the interconnection process. Additionally, on December 13, 2024, PJM filed its Reliability Resource Initiative. If approved by the FERC, this will allow PJM to accelerate the interconnection process for up to fifty new projects that are intended to significantly enhance resource adequacy.[8]

[7] *See id.* at 33:52 (Diane Holder, ReliabilityFirst).

[8] *See PJM Interconnection, L.L.C.*, Tariff Revisions for Reliability Resource Initiative, FERC Docket No. ER25-712-000 (filed Dec. 13, 2024).

3. The unexpected growth in energy demand by data centers and other large industrial users as a function of the onshoring of manufacturing has accelerated the need for more generation. While not an entirely new phenomenon, the sudden explosive growth in data center demand and the speed of that demand materializing was unexpected. Furthermore, state electrification policy goals will create additional demand. Unfortunately, these projected increases in load growth occurred at the same time as economic retirements triggered by very low capacity market prices, thus creating a looming reliability and resource adequacy problem.

It should be no surprise, therefore, that the 2025-2026 capacity auction prices reflected the dynamics of shrinking supply and increasing demand. PJM's capacity market was designed based on a price reflecting the cost of building a new capacity resource, less expected energy and ancillary service market revenues (the so-called "net CONE" value). Indeed, an underlying assumption of the PJM capacity market design is that prices will average around net CONE over the long term, with some years experiencing prices below that value and other years higher.[9] Because of the supply and demand fundamentals discussed previously, the 2025-2026 auction did exactly what it was supposed to do: signal the need for more capacity.

[9]*See PJM Interconnection, L.L.C.,* 137 FERC ¶ 61,145, at P 25 (2011) (stating that "a competitive capacity market would provide annual revenues over time that, on average, would approximate Net CONE"); The Brattle Group, *PJM CONE 2026/2027 Report* (Apr. 21, 2022), https://www.pjm.com/-/media/library/reports-notices/special-reports/2022/20220422-brattle-final-cone-report.ashx.

Unfortunately, PJM's auction for the 2025-2026 delivery year was delayed due to the implementation of the ELCC construct. Subsequent auctions have also been deferred due to PJM's desire to be responsive to third party complaints at FERC. This has pushed out auction timelines and compressed auction schedules, such that the 2026-2027 auction will occur in June 2025, and the 2027-2028 auction will take place in December 2025. In response, the Commission and others have expressed concerns that auctions will continue to clear at high prices, with nothing to show for it – *i.e.*, without new supply in the relevant delivery year.[10] It is true that *new* units cannot be built within a year or two in response to a price signal, but expansions of existing resources and growing supply from demand response can be commercialized in this time frame. Getting back on a 3 year forward auction timeline, allowing resources reasonable time to commercialize their facilities, will be of growing importance as PJM and Penssylvania see large demand growth. But it is shortsighted to believe that the absence of an immediate announcement of new projects based on one auction means the market will not respond.

As discussed above, LS Power responded to higher capacity prices in 2014 and 2015 with investments in PJM and will respond again if capacity clearing prices continue to send an investment signal. In fact, in a recent FERC filing, LS Power said it has identified 40 potential investments comprising approximately 2,400 MW of expanded capacity with a value of more than $3 billion across its PJM fleet. These investments encompass a variety

[10] *See* RA Conference Video at 42:47 (Stephen DeFrank, Commission Chairman); *Joint Consumer Advocates v. PJM Interconnection, L.L.C.*, Complaint of Joint Consumer Advocates, FERC Docket No. EL25-18-000 (filed Nov. 18, 2024); *Governor Josh Shapiro & The Commonwealth of Pennsylvania v. PJM Interconnection, L.L.C.*, Complaint of Governor Josh Shapiro and the Commonwealth of Pennsylvania, FERC Docket No. EL25-46-000 (filed Dec. 30, 2024) ("Commonwealth Complaint").

of projects, with in-service dates ranging from 2025-2026 to 2031-2032.[11] In addition, LS Power is considering the development of more than 2,000 MW of new battery storage capacity across 11 sites in the PJM footprint with an aggregate potential investment of more than $5 billion. A small number of these battery projects could be on-line for the 2027-2028 delivery year while the majority could be in operation for the 2030-2031 delivery year.[12] While not all of these investments will be made in the Commonwealth alone, Pennsylvania ratepayers would benefit from the overall increase in PJM generation supply, which would improve the supply and demand balance and competitively mitigate capacity prices.

Investors clearly are looking for the opportunity to continue to invest in power generation where it makes sense to do so. In other words, if the 2025-2026 auction clearing price is indicative of a trend and independent power producers have confidence that the market structure will produce consistent outcomes based on the market fundamentals, they will invest. If the current capacity price trend continues, it is likely that retirement decisions based on economics could be reversed or delayed, further ensuring resource adequacy.[13] Moreover, as noted above, there are significant opportunities for enhancement and upgrades that can be put in place quickly. Based solely on our company's experience, the diversity of investment opportunities LS Power has identified at

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[11] *See Sierra Club, Natural Resources Defense Council, Public Citizen, Sustainable FERC Project, and Union of Concerned Scientists v. PJM Interconnection, L.L.C.*, Protest of Calpine Corporation and LS Power Development, LLC, Exhibit 1, Testimony of Nathan Hanson, President, Generation, LS Power Development, LLC at 6-7, FERC Docket No. EL24-148-000 (filed Nov. 13, 2024).

[12] *See id*. at 7.

[13] *See, e.g.,* Ethan Rowland, *Middle River Power reverses plan to shut 540-MW plant amid record PJM capacity prices* (Utility Dive, Sept. 12, 2024), https://www.utilitydive.com/news/middle-river-power-retire-elgin-power-plant-pjm-interconnection/726824/.

our own fleet indicate there is a large potential pool of near-term upgrades available across the PJM generating portfolio that could be quickly brought online if PJM's capacity market continues to signal the need for such investments.

Permitting and supply chain issues will make it difficult to build a new power plant in less than five to seven years.[14] Nonetheless, expansions to existing supply resources can respond more quickly and will do so. Moreover, if capacity prices remain robust, it is also likely that additional new, stand-alone generation will be submitted into the queue. In this respect, it is important to note that all developers, regardless of their capital structure, face challenges in trying to bring new plants online quickly. Utilities and independent power producers face the same permitting, environmental, interconnection queue, and supply chain constraints. There is no need to reverse years of successful generation competition, where ratepayers did not bear the costs of new generation or their performance risks, by sanctioning utilities' use of ratepayer money to fund new generation.

As in the past, capital will be available and investments in new power plants will be made without the need for ratepayer guarantees if the price signals are clear and there is confidence in a stable market structure.[15] Regulatory stability is therefore a critical component of the investment decision. LS Power applauds the Commonwealth's continued commitment to the PJM markets to ensure reliability, and appreciates the Commonwealth's statement that its recent actions before the FERC are "rooted in a strong desire to improve PJM's capacity market and to ensure it provides all market participants

[14] *See* Pennsylvania Public Utility Commission, *Technical Conference on Resource Adequacy in Pennsylvania: Session 2*, YouTube (Nov. 25, 2024) at 28:40 (Darren Olagues, Talen Energy).

[15] *See* RA Conference Video at 47:30 (Marjorie Philips, LS Power).

needed stability in the long term."[16] We caution, however, that certain proposals that have been put before FERC will dampen market signals precisely at the time they are needed and could chill the incentive to invest in the PJM capacity market, which would be the exact opposite result than sought by the Commonwealth. More than ever, PJM's capacity market needs efficient and consistent price rules to ensure we adequately and efficiently address resource adequacy.

In conclusion, we encourage the Commission to consider the following actions:

1. Stay invested in the PJM market. Encourage PJM to stay the course on market enhancements that promote a balanced approach to resource adequacy and discourage PJM from trying to skew efficient market rules to favor particular state policies through rule changes. If PJM properly executes its role as the reliability coordinator and the independent administrator of competitive markets, then state policies can be accommodated. Despite growing pains, PJM's recent ELCC accreditation of capacity market resources provides a more accurate assessment of a resource's contribution to reliability on the system than previous methodologies. LS Power has initiated a stakeholder process at PJM that will improve the ELCC construct further through enhanced transparency and improvement of investment signals. We urge the Commission to support these reforms as they will help improve investor confidence in the PJM capacity market and provide a path toward faster improvements to the PJM supply portfolio.

[16] Commonwealth Complaint at 38.

2. Recognize and fully utilize the Commission's jurisdictional control outside of the PJM markets. States continue to have resource adequacy jurisdiction: most significantly, they can control permitting over data centers, generation siting, pipeline infrastructure, etc. We recommend the Commission ensure coordination across the Commonwealth's regulatory agencies that impact the development of new generation and pipeline infrastructure. The Commonwealth's agencies should share a clear and consistent understanding of the state's goals in facilitating new generation development and take the necessary supporting actions to accommodate them. Additionally, if the Commission is concerned about the commitment of data centers in the Commonwealth, it should work with other states that are currently grappling with the same issues to produce cost-effective solutions that encourage the development of critical new technology while also protecting ratepayers.
3. Work with transmission owners and PJM to enhance load forecasting. The Commission could benefit from an understanding and evaluation of the various approaches to load forecasting. While it is difficult to predict load growth perfectly, greater accuracy is critical. Underestimate load and PJM is short supply. Overestimate load and PJM procures too much supply. Load forecasts are also a critical piece of information for investors as they try to assess the amount of demand that will inform their investment decisions.
4. Ensure ratepayers are protected as much as possible. The unfortunate reality of this current energy transition is that it comes at a price. This is something that is rarely

discussed and thus even more rarely dealt with. PJM's competitive markets have helped ensure that reliability in the Commonwealth has been maintained at the most efficient cost to customers. The Commission should continue to support PJM's markets.

CONCLUSION:

LS Power commends the Commission's leadership that has consistently supported the PJM markets over the years and facilitated billions of dollars of investments in generating assets, without imposing the risks on ratepayers as when utilities used to rate base power plants. LS Power urges the Commission to continue supporting competitive markets, and work with PJM to continue to make the Commonwealth attractive to new investment that will ensure reliability at the least cost to customers.