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January 9, 2025

VIA ELECTRONIC FILING

Rosemary Chiavetta, Secretary
Pennsylvania Public Utility Commission
Commonwealth Keystone Building
400 North Street
Harrisburg, PA 17120

RE: Technical Conference on Resource Adequacy in Pennsylvania; Docket No. M-2024-3051988; **COMMENTS OF INVENERGY LLC**

Dear Secretary Chiavetta:

Enclosed for filing with the Commission is the Comments of Invenergy LLC in the above-referenced proceeding.

Thank you for your attention to this matter. If you have any questions related to this filing, please do not hesitate to contact my office.

Very truly yours,

Todd S. Stewart
Counsel for Invenergy LLC

TSS/jld
Enclosure

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

Technical Conference on Resource Adequacy in Pennsylvania	: : :	Docket No. M-2024-3051988

COMMENTS OF INVENERGY LLC

I. EXECUTIVE SUMMARY

Invenergy LLC ("Invenergy") has made substantial investment in capacity resources in Pennsylvania in the form of a nominal 1500 MW combined cycle natural gas fired generator in Lackawanna County. Invenergy agrees that the results of the Delivery Year 2025/2026 (DY25/26) Base Residual Auction ("BRA") are indicative of the clearing prices that will be needed to entice investors and developers to build the capacity resources that are needed to meet PJM's projected capacity shortfall in the coming years. It should be obvious, but it is worth stating; those who invest the capital to build generation assets and those who build and operate those assets value regulatory certainty over time. Rather than considering yet another major overhaul of the capacity market, Invenergy suggests that it would be more productive to (1) examine the historical changes to the capacity market in recent years and their impact on the clearing prices needed to support market investment; and (2) focus on addressing the barriers to market entry that can be controlled solely by state policy makers, such as permitting and siting issues.

II. INTRODUCTION AND BACKGROUND

Invenergy is the world's leading privately held clean energy company. It was founded by Michael Polsky and his leadership team, who were pioneers in the natural gas cogeneration business in the 1980s and 90s. Worldwide, Invenergy has invested in projects in nearly every category of clean energy including wind, natural gas, solar, storage and hydrogen. Invenergy began with a single 10 MW natural gas project in 2003, and its portfolio has now grown to more than 33,00 MW of projects that are in operation, construction or contracted. Invenergy has developed approximately 4,500 MW of generation now in operation in PJM. Specific to Pennsylvania, Invenergy is the owner/operator of a 1,485 MW combined-cycle natural gas fired electric generation facility in Lackawanna County. The Lackawanna Energy Center came online in 2018 and has been reliably producing power since that time. Invenergy has also developed clean hydrogen projects coupled with battery storage and solar generation. The Lackawanna Energy Center is one of the largest and most efficient natural gas generating plants in North America.

As an independent power producer, Invenergy's entire business is to leverage and invest substantial private capital into the development and operation of generation and storage facilities based on the revenue the projects expect to collect from offtakers and the markets over the useful life of the projects. It is with this background that Invenergy offers its comments in this proceeding which seeks to gather information and recommendations for addressing PJM's resource adequacy issues. Invenergy is grateful for this opportunity to share its experience and expertise in developing new projects to assist the Pennsylvania Public Utility Commission ("Commission") in charting a path forward.

III. INVENERGY PERSPECTIVES

As discussed above, Invenergy owns the largest gas fired electric generation facility in Pennsylvania. As the Commission is aware, development and construction of modern highly efficient gas fired power plants – particularly those of impactful size increments that efficiently use available sites, be they greenfield sites or brownfields -- requires substantial investment, often in the billions of dollars. It is the kind of private investment made by companies like Invenergy, relying upon the latest technology to produce clean energy, that will be the backbone of resolving PJM's resource adequacy concerns in the foreseeable future. Because of the substantial investment of capital, developers and investors are understandably concerned when regulatory and market landscapes dramatically change. Volatility in market rules can transform a once-promising investment into an uncertain proposition. Stated differently, developers will not invest in new projects if the rules change significantly from year to year. PJM, however, has done just that by implementing several significant changes to capacity market rules in rapid succession. These changes went into effect starting with PJM's Delivery Year (DY) 2022/2023; including: two significant changes to the Minimum Offer Price Rule (MOPR),[1] and a major change to the Market Seller Offer Cap (MSOC).[2] PJM also implemented three major changes to its capacity accreditation methodology, known as Effective Load Carrying Capability (ELCC),[3] and announced a major shift in how it views seasonal risk (summer days to winter nights), all of which impact the capacity value of existing resources on the system.[4] Continuing this trend, PJM recently

[1] Expanded MOPR (EL16-49, EL18-178) approved by FERC in 2019, in effect for DY22/23; Targeted MOPR (ER21-2582) approved by FERC in 2021, in effect for DY23/24.
[2] EL19-47, EL19-63 approved by FERC in 2021, in effect for DY23/24.
[3] These changes include: 1) Initial ELCC Proposal (ER21-2043, EL19-100, ER20-584), approved by FERC in 2021, in effect for DY23/24; 2)CIRs for ELCC Resource (ER23-1067), approved by FERC in 2023, in effect for DY25/26; and, 3) Marginal ELCC Proposal (ER24-99), approved by FERC in 2024, in effect for DY25/26.
[4] This change was also part of ER24-99, and was approved in 2024, effective for DY25/26.

filed two proposals to change the capacity market rules again.[5] Both proposals are pending before the FERC. Taken together these actions have substantially changed the rules for how and how much generators get paid, and the net effect is to increase uncertainty, which increases risk. This recitation is not intended to suggest that project developers seek a risk-free environment or one that is free from any change, but they also cannot finance and build generation projects in a region where the rules change frequently or unpredictably in ways that are contrary to their ability to build and operate generation. Allowing the markets to create the incentives, and not overreacting to minor fluctuations is important – stability matters.

Invenergy also suggests that it is important to maintain perspective when viewing the results of any single auction. The current clearing price should not be viewed as an anomaly, but rather as a regression to the norm. That is, $269.92/MW-day is where the clearing price should be despite the intervening rule changes that tended to suppress it. The average RTO-wide clearing price for the Base Residual Auction ("BRA") since DY 2015[6] has been $107.24/MW-day. The rule changes have created counter-productive volatility in the clearing price. For example, the BRA cleared at $34.13/MW-day in DY23/24, while not long before that, in DY21/22 it cleared at $140.00/MW-day. In this context, the $269.92/MW-day clearing price for DY25/26, while substantial at 10 times the result of the previous auction, when viewed through the lens of recent results, is not as dramatic as it might initially appear.

Apart from the multiple and consequential changes to market rules, in recent years PJM has also delayed or disrupted the BRA schedule. The typical BRA auction was a 3 year forward schedule. Since DY22/23, however, the schedule has been consistently less than 3 years and will

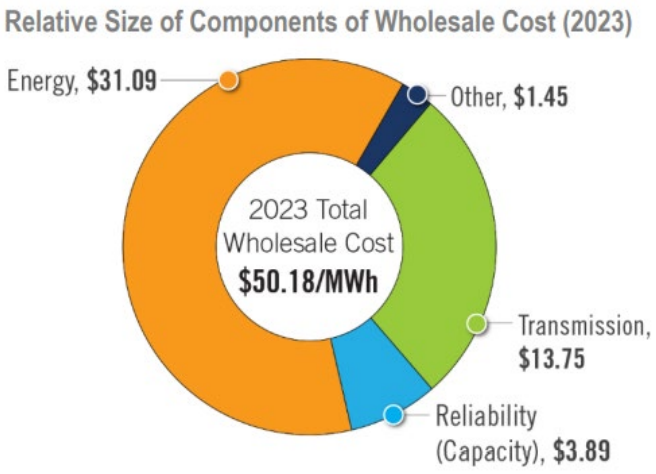
[5] ER25-682, ER25-785.
[6] DY 2015/26 coincides with the implementation of PJM's Capacity Performance paradigm that assesses penalties for non-performance in emergency situations.

not likely get back to a 3 year forward schedule until at least DY30/31. Disruptions are also detrimental to investor confidence. In the BRA for DY24/25, PJM attempted to adjust the auction rules mid-auction because of a concern that the outcome of the auction would be higher prices for consumers. The validity of that change was rightfully challenged on appeal and overturned.[7] With several simultaneous rule changes, and the threat of PJM's intervention in auctions, it is difficult for thermal resources to predict revenue expectations for resource adequacy compensation in the short-term, let alone for the 20 plus year life of an asset. This point is illustrated by the fact that the average clearing price for DY22/23, DY23/24, DY24/25 and DY25/26 – years that saw dramatic rule changes and severe disruption -- is $95.74/MW-day, which is close to the historical average. This includes the $296.92/MW-day result from the most recent auction and suggests that this result brings the market back to where it has been historically, absent the disruptions and rule changes. If you exclude the $296.92/MW-day result, the average for the prior three auctions is a mere $37.69/MW-day which is well below the historical average and Net Cost of New Entry (Net CONE) for recent Delivery Years, and clearly below a price that will incent new generation to enter the market.

With this perspective it is possible to view an increase in clearing price as the market functioning as intended and not assume that it is broken and needs repair. In this case, it is clear that additional generating capacity is needed, and a high clearing price sends that message. That is not to say that additional reform may not be warranted, but at the same time, we should not let panic drive the process. The "problem" is the lack of capacity, not the price signal, and tweaking or even overhauling the market construct will not necessarily address the issue.

[7] DPL-South Auction Re-Run Docket ER23-729.

Context is also critical when viewing the results of any single auction and the quantification of the resulting clearing price. It has been estimated by the Commonwealth of Pennsylvania in its Complaint filed at FERC, that the increased clearing price in the DY25/26 BRA will impose $20 billion in cost on PJM consumers over the next two years.[8] While $20 billion seems like a very large number, it is important to recall that the price retail customers are eventually charged includes many components and that the energy (commodity) cost remains the largest of those. The chart below, which was created by PJM, demonstrates this point well.[9]



Also, the $20 billion number is for *all 65 million PJM customers across 13 dates and the District of Columbia*, not just Pennsylvania, and is the total projected increase over two years. Accordingly, increases in capacity costs will not necessarily be reflected in increases of a similar magnitude in the overall price of electricity. PJM agrees with this point as well – capacity prices are only one of many components of a retail price and increases in capacity prices will "not result in a corresponding percentage increase to a consumer's total bill."[10] Invenergy understands that the Commission's goal is to keep electricity rates for customers as low as possible. However, it is also critical to understand that the concept of "low as possible" retail electricity rates can sometimes run headlong into the need to ensure that there is adequate

[8] *Governor Josh Shapiro and the Commonwealth of Pennsylvania v. PJM Interconnection, L.L.C.*; Docket No. EL25-46-000; (Complaint, fn. 4).
[9] *Understanding the Difference Among PJM's Markets*, PJM 2024, pg.1.
[10] *Maryland's Higher Capacity Pricing for 2025–2026 Indicates Demand Outpacing Supply and Transmission Constraints;* PJM, 2024.

generation capacity on the grid to keep the lights on, and that fixing the shortfall of capacity resources will necessarily entail allowing real market price signals to create the incentives to invest in those new resources. Most of the time, markets work best when they are allowed to function as designed and to react to developments without the regulatory second-guessing that often occurred when markets were historically regulated. Competitive markets have saved customers of the PJM states billions of dollars in the past 20 plus years, by allowing the risk of building new generation to be taken on by the market instead of the ratepayers. However, the continuation of that paradigm requires that the market be allowed to function and sometimes that means prices fluctuate. In this case, the market price increase for capacity should not be derided as a market failure, but rather as a sign that the market is able to react to a need for more generation.

Invenergy is not alone in its belief that changing the rules for the capacity market is not the solution to the current lack of capacity. Rather, such changes are part of the problem - fueling the skepticism of investors and developers. Other established entities, including Calpine and Talen Energy, testified at the Technical Conference that stable and consistent market rules are needed to ensure investor confidence that projects can be built and operate profitably. They also noted that Pennsylvania is well positioned, geographically and from a regulatory perspective, to remain a leader in meeting the increases in energy demand that the future will bring. It also is worth noting that the developers that testified were consistent in supporting the result of the most recent BRA as within the "sweet spot" that will encourage existing resources that may have considered retirement and development of new resources.

The PJM capacity market is complex, and it may not always be obvious what factors drive the decision-making process or rise to the level of investment signals for parties such as Invenergy. To assist the Commission in understanding its approach, Invenergy would welcome the

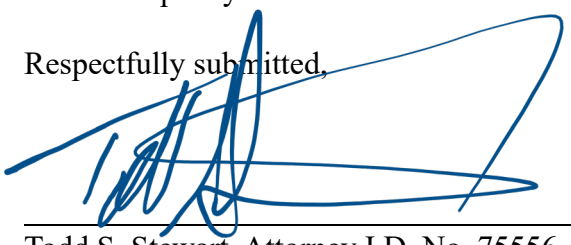
opportunity to meet with the Commission and explain the process that generation builders engage when deciding to enter a market.

IV. CONCLUSION

There is little room to argue that PJM will need a substantial increase in generation capacity in the near future. Demand for electricity is increasing from new sectors like data centers, AI and EV charging stations, and from the "usual" increases caused by the move to electrification. The PJM capacity market is a complex and multi-faceted mechanism that is intended to ensure that there are sufficient generation resources delivering power into the PJM system to maintain reliability. On its very basis – it is the market that drives the price, demand and supply. When demand is high and the supply is skeptical about its ability to profitably build and operate generation, the price increases. That is what has happened here. The long-term answer is to allow the market to function as intended to create the incentive for supply to be constructed. In the short term, assets that may have been planning retirement may reconsider the retirement because the incentive in the form of higher capacity prices may change the economic equation. In the long run however (noting that lead-times for new generation have elongated in recent years), higher capacity prices produced by a stable market will convince generation to enter the market – if the market is allowed to function.

Invenergy appreciates this opportunity to offer its comments to the Commission and looks forward to working with all stakeholders to address the PJM capacity market's issues.

Respectfully submitted,



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