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January 9, 2025

Via Electronic Filing

Rosemary Chiavetta, Secretary
Pennsylvania Public Utility Commission
Commonwealth Keystone Building
400 North Street, 2nd Floor
Harrisburg, PA 17120

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

Dear Secretary Chiavetta:

Enclosed for filing are PECO Energy Company's Comments in the above referenced proceeding. Please feel free to contact me should you require anything further.

Respectfully submitted,

A handwritten signature in blue ink, appearing to read "DK", written over a horizontal line.

Dawn Kurtz Crompton (#311701)
Assistant General Counsel

Enclosures

First Refusal (“ROFR”); (3) requiring new large loads to ‘bring your own generation’ (“BYOG”); (4) Pennsylvania government agencies procurement; (5) Pennsylvania strategic generation reserve; (6) purchase power agreements with new generation resources and cost recovery assurances; (7) continued creation and expansion of demand-side and distribution-level solutions such as energy efficiency (“EE) and demand response (“DR”); and (8) utility-owned regulated generation and utility-owned energy storage assets.

I. EXECUTIVE SUMMARY

Due to the recent proliferation of data centers and overall expectations of increased load, resource adequacy – the ability of the grid and the resources that support it to supply enough electricity where needed to serve customers during all hours of the year and under most possible conditions – has gained attention as a pressing issue nationwide.² Unlike most other states in the PJM region,³ Pennsylvania continues to be a net exporter of electricity and gas. However, conditions in the broader PJM footprint remain concerning from a resource adequacy standpoint. Resource adequacy reserve margins remain tight in Pennsylvania and are forecasted to become even tighter due to anticipated demand growth and expected generation retirements.⁴

Accordingly, the current focus on resource adequacy is timely and demonstrates the Commission’s willingness to proactively address the steps necessary to maintain Pennsylvania’s electric supply. PECO supports the Commission’s focus on resource adequacy and urges swift

² According to NREL, resource adequacy is measured by the probability of an electric service outage due to insufficient capacity. A common adequacy metric for service outages is one day with an outage every 10 years. Adequacy is measured at the system level to capture the overall impact of outages of individual components including generators and transmission. See <https://www.nrel.gov/research/resource-adequacy.html#:~:text=One%20of%20the%20most%20important,of%20the%20U.S.%20power%20grid>.

³ PJM is the Regional Transmission System Operator that serves Pennsylvania and other mid-Atlantic states including Delaware, Illinois, Indiana, Kentucky, Maryland, Michigan, New Jersey, North Carolina, Ohio, Pennsylvania, Tennessee, Virginia, and West Virginia, as well as the District of Columbia.

⁴ Source: PJM Pennsylvania Resource Adequacy Analysis published in November 2024 [PowerPoint Presentation](#) available at <https://www.pjm.com/-/media/DotCom/library/reports-notices/special-reports/2024/20241121-pa-resource-adequacy-analysis.pdf>.

action to address this pressing issue along with issues of grid reliability and customer affordability in Pennsylvania.

With respect to the Session One issues, and as stated by several panelists during the Technical Conference, identifying the right mix of resources to achieve resource adequacy requires an “all of the above” holistic view of solutions, including from the Commission, PJM, and Pennsylvania electric distribution companies (“EDCs”). Taking a holistic view also will require solutions that Pennsylvania EDCs and the Commission can influence both indirectly and directly. PECO also believes there are several specific solutions, including how ELCC is designed, that the Commission and Pennsylvania EDCs could advance indirectly through advocacy and participation at the PJM level.

1. The Commission and Pennsylvania EDCs could continue to participate in discussions about, and advocate for, near-term modifications to the PJM Capacity Market rules such as refining PJM’s ELCC methodology, supporting PJM efforts to enhance procedures associated with transparently designating and compensating Reliability Must Run (“RMR”) resources, and properly valuing and incorporating in relationship to the supply-side of PJM’s capacity auctions. Further considerations include supporting PJM’s load forecast data gathering and methodology, including feedback and input to PJM’s forecast development through engagement with the PJM’s Load Analysis Subcommittee.
2. The Commission and Pennsylvania EDCs could advocate for long-term modification of the PJM Capacity Market rules.

With respect to the Sessions Two and Three issues, there are several solutions that the Commission and Pennsylvania EDCs could advance both directly through legislative and regulatory amendments, as well as indirectly through advocacy and participation:

1. The Commission has control over siting and permitting improvements and could issue model rules, ordinances, and other templates to enable the siting of infrastructure and economic growth in the Commonwealth’s municipalities.
2. Pennsylvania could enact a carefully structured state transmission ROFR which would provide early development opportunities for public utilities to collaborate transparently, leveraging existing and building out new infrastructure to serve load in a more timely and cost effective manner.

3. Pennsylvania could encourage large new loads, such as data centers, to BYOG so that new hyper-loads will not exacerbate tightness within the existing supply portfolio.
4. Pennsylvania government agencies could be responsible for procurement of new generation.
5. Pennsylvania could create a Pennsylvania-administered strategic generation reserve to mitigate the impact of potential retirements of existing, at-risk resources.
6. EDCs could enter into Commission-approved power purchase agreements with new generation resources, along with corresponding cost recovery assurances.
7. The Commission and Pennsylvania EDCs could continue to expand and create demand-side and distribution-level solutions, such as EE and DR, as complementary solutions to other programs to aid in achieving resource adequacy.
8. Legislators and regulators could consider permitting EDCs to own regulated generation, provided protections and clarity around prudency determinations, cost recovery, and output are put in place. EDCs should be permitted to own energy storage solutions that address resource adequacy concerns.

These various federal and state solutions – which are addressed in greater length below in no particular order – will have different impacts on reliability and affordability, and those impacts must be considered when identifying the optimal mix of solutions for Pennsylvania. Together, the Commission, the Pennsylvania General Assembly, and Pennsylvania stakeholders (particularly Pennsylvania EDCs) can take meaningful steps toward ensuring the reliability of Pennsylvania’s electric supply, while also balancing affordability, equity, and climate objectives.

II. Resource Adequacy Has Regional and State Implications

A. Resource Adequacy in the PJM Region

Across the nation and within the PJM region, stakeholders are critically examining resource adequacy in order to ensure service to customers during all hours of the year and under most possible conditions. Resource adequacy concerns continue to grow throughout North

America as supply is projected to decline to the point of being insufficient to meet the corresponding rapid increase in demand, within the next ten years, including in the PJM region.⁵

Overall Supply and Demand: The North American Electric Reliability Corporation (“NERC”) reports that the “trends point to critical reliability challenges facing the industry: satisfying escalating energy growth, managing generator retirements, and accelerating resource and transmission developments.”⁶ PJM anticipates a shortfall in power supply by 2030 based on a projected 40 GW of generator retirements, limited additions of new generation, and expected load growth.⁷ This shortfall could occur sooner if electricity demand grows faster than anticipated⁸ and the PJM system could see a capacity shortage as soon as the 2026/27 Delivery Year.⁹

Data Centers: Electricity peak demand and energy growth forecasts between 2024 and 2033 are higher than at any point in the past decade,¹⁰ and much of that demand is driven by the growth in data centers – especially so within PJM.¹¹ Certain estimates show that demand from

⁵ See NERC 2024 Long Term Reliability Assessment (“[Report](#)”) at p. 6,7, 91-93, available at https://www.nerc.com/pa/RAPA/ra/Reliability%20Assessments%20DL/NERC_Long%20Term%20Reliability%20Assessment_2024.pdf.

⁶ See NERC [Report](#) at p. 6 Executive Summary.

⁷ PJM Interconnection LLC, *Energy Transition in PJM: Resource Retirements, Replacements & Risks* (Feb. 24, 2023) at 3.

⁸ In total in October 2024, PJM received requests for 52 GW of summer peak demand to be added to their econometric peak demand forecast for 2030, which was 32 GW more than requested in 2023. See <https://www.pjm.com/committees-and-groups/subcommittees/las>. See also October 25, 2024 meeting materials. “Post meeting – Zonal Large Load Adjustment Requests” and “Post Meeting – Zonal Large Load Requests Summary.”

⁹ See December 9, 2024 Letter to Stakeholders from the PJM Board available at [20241209-board-letter-outlining-action-on-capacity-market-adjustments-rri-and-sis.ashx](https://www.pjm.com/committees-and-groups/subcommittees/las) at p. 1.

¹⁰ NERC 2023 Long Term Reliability Assessment (“[2023 Report](#)”) at p. 10, available at https://www.nerc.com/pa/RAPA/ra/Reliability%20Assessments%20DL/NERC_LTRA_2023.pdf.

¹¹ PJM is experiencing this trend, observing considerable demand growth driven by the rise of electrification and energy-intensive data centers. See <https://insidelines.pjm.com/pjm-publishes-2024-long-term-load-forecast/>.

newly announced data centers has risen 51 GW since the beginning of 2023 alone, with the average size of proposed data center demand doubling in that time from 150 MW to 300 MW.¹²

Retirements: Further resource adequacy challenges are forecasted over the next 10 years for the entire North American bulk power system due to significant increase in demand coupled with the impending retirement of thermal generators.¹³ Baseload generating plants are retiring faster than replacement generation can come online. In the most recent PJM capacity auction in July 2024, 6.6 GW (UCAP)¹⁴ of dispatchable generation did not participate because the generators plan to retire, while only 110 MW (UCAP) of new generation entered the auction.¹⁵ This deficit leaves PJM with less dispatchable generation to meet rising peak loads and the overall market conditions resulted in capacity prices increasing to record highs.

Mix of Resources: Resource adequacy is further impacted by the availability of a mix of resources that can be relied upon to meet customer demand during all hours of the year. Historically, this mix was predominantly dispatchable generation (*i.e.*, generation that can be dispatched on demand and controlled to match supply); however, wind, solar, and hybrid configurations – renewable generators built with storage capabilities – will be the primary additions to the resource mix between 2024 and 2033.¹⁶

While renewable energy is critical to reducing carbon emissions and is aligned with Pennsylvania’s Climate Action Plan,¹⁷ the increased share of intermittent renewable generation

¹² Chris Seiple, Wood Mackenzie, Gridlock: the demand dilemma facing the US power industry, October 2024 at 4. Together Oncor, Xcel Energy, AEP, PG&E, PP&L and Dominion Energy have 93 GW of data center demand seeking to interconnect with their systems. *Id.* at 5.

¹³ See NERC [Report](#) at 6, 7, 91-93.

¹⁴ UCAP, or Unforced Capacity, refers to the amount of reliable capacity that can be attributed to each resource that clears the Capacity Market.

¹⁵ See <https://www.pjm.com/-/media/DotCom/markets-ops/rpm/rpm-auction-info/2025-2026/2025-2026-base-residual-auction-report.ashx> at 7.

¹⁶ NERC [2023 Report](#) at p. 10.

¹⁷ The 2021 Pennsylvania Climate Action Plan outlines a pathway to reducing GHG emissions by 26% in 2025 and 80% in 2050. See [greenport.pa.gov/elibrary//GetDocument?docId=3925177&DocName=2021 PENNSYLVANIA](https://greenport.pa.gov/elibrary//GetDocument?docId=3925177&DocName=2021%20PENNSYLVANIA)

in the mix of resources complicates how the overall pool of generation is used now and can be used in the future to meet load. Identifying the proper resource mix will require updated methods and processes to ensure adequate supply to meet ever-increasing demand.¹⁸ These forecasts highlight the need for new dispatchable generation, the need to pair that generation with responsive technology in order to better enable EE and DR measures, as well as the targeted use of other hybrid solutions to reduce peak demand impacts.

For the reasons stated above, the PJM region faces imminent and multifaceted challenges that require particularized and innovative solutions at federal, state, and local levels. While similar concerns with resource adequacy are being debated across the nation, the impacts within the PJM region are expected to be particularly acute, and Pennsylvania is poised to play a significant role in addressing these challenges.

B. Resource Adequacy and Pennsylvania’s Energy Future

As a critical contributor to PJM’s overall installed electric generation capacity, Pennsylvania is uniquely situated to impact reliability and affordability for customers in the Commonwealth and in the PJM region. Pennsylvania’s installed electric generation capacity represents approximately 25% of PJM installed capacity,¹⁹ demonstrating that what happens in Pennsylvania in the next few years will be a critical factor to maintain grid reliability in the PJM region.²⁰

[CLIMATE ACTION PLAN.PDF](#) %28NEW%29 9/21/2023.

¹⁸ *Id.*

¹⁹ In 2024, Pennsylvania hosted 32 GW of accredited capacity (UCAP) and had a reliability requirement of 27 GW (UCAP), which yielded 5 GW (UCAP) of accredited capacity that could be exported to the rest of PJM. *See* “Pennsylvania Resource Adequacy Analysis” [PowerPoint Presentation](#), dated November 21, 2024, at Slides 11 and 13, available at <https://www.pjm.com/-/media/DotCom/library/reports-notices/special-reports/2024/20241121-pa-resource-adequacy-analysis.pdf>. *See also* PJM “Planning Period Parameters for Base Residual Auction 2025/26” available at <https://www.pjm.com/markets-and-operations/rpm.aspx> for the forecast pool requirement.

Prior PJM projections forecasted that Pennsylvania’s ELCC adjusted resource mix would remain resource adequate through 2032;²¹ however a more recent forecast showed significant peak growth across PJM by 2030 based on load forecast adjustments submitted by several EDCs, including load adjustments submitted by Pennsylvania Utilities.²² This adjusted peak growth could accelerate resource adequacy concerns for the state.

The Commission’s policies should continue to lay a foundation for an energy secure future for Pennsylvanians and for the PJM Region. The Commission should consider policies that will secure Pennsylvania’s ability to maintain both its position as an energy exporter state and its resource surpluses: these policies will enable local economic development and strengthen the overall economy as well as enable affordability within Pennsylvania’s communities.

In addition, policies that force generation retirements should be avoided in conjunction with implementation of state incentives to retain existing generation units to prioritize both reliability and affordability for customers in Pennsylvania and in the PJM region. Resource stability is particularly critical until there is greater confidence that new entry can fully replace the loss of retiring resources as well as account for further incremental requirements from load growth.

There is a ripe opportunity for economic development to meet current and future in-state demand, as well as to meet projected out-of-state demand. The Commission should

²⁰ On December 30, 2024, Governor Josh Shapiro and The Commonwealth of Pennsylvania filed a Complaint against PJM Interconnection, LLC (EL25-46) regarding certain PJM capacity market rules. In short, the Complaint requests that PJM be required to (1) make auction parameter changes that will temporarily lower the price cap and (2) further delay the next capacity auction to December 2025.

²¹ See PJM’s “Pennsylvania Resource Adequacy Analysis” [PowerPoint Presentation](#), slides 4-6. A Final 2025 Load Report is expected to be released in January 2025.

²² See Preliminary Jan 2025 load forecast at Slide 40, Slide 35 (PECO), and Slide 36 (PPL), available at <https://www.pjm.com/-/media/DotCom/committees-groups/subcommittees/las/2024/20241209/20241209-item-03---2025-preliminary-pjm-load-forecast.pdf>.

support policies to advance Pennsylvania’s role as a leading energy exporter and supplier, which significantly contribute to local economies and workforce development.

Energy production significantly impacts the Commonwealth economy by creating jobs and adding significantly to the state’s Gross Domestic Product and tax revenues. Further, any significant capital and infrastructure investments in the energy sector – whether generation, transmission, or distribution – allows EDCs like PECO to create and maintain thousands of jobs in the region every year.

PECO appreciates the collective sense of urgency to identify solutions that will support efficient service to Pennsylvanians at affordable rates while promoting a stronger economy and bolstering energy security for the Commonwealth and the PJM region.

III. Achieving Resource Adequacy for the PJM Region and for Pennsylvania

In no particular order of prioritization, the following discussion lays out possible high-level solutions that PECO has identified, including benefits and challenges, to begin the conversation regarding the optimal mix of solutions both in the PJM region and in the state of Pennsylvania. Other potential solutions may arise as stakeholders continue to work through these important and imminent challenges, and some of these options may become impractical or infeasible with further study.

A. Session One: Improving Resource Adequacy Requires a Holistic Approach with Innovative Solutions including PJM Level Solutions

PECO’s Comments from Session One concern identifying the right mix of resources with an “all of the above” view of solutions, as well as specific PJM level reforms. As discussed during Session One and throughout these Comments, solving resource adequacy challenges will require a holistic view of solutions and the balancing of affordability, reliability, equity, and climate objectives. The Commission and jurisdictional utilities cannot solve the

challenges alone. Instead, as discussed in greater depth below, success will involve a combination of both existing and new resources as well as a mix of solutions from all key stakeholders, including the Federal Energy Regulatory Commission (“FERC”), PJM, EDCs, generation owners, load interests, and the Commission.

1. Amend Current PJM Capacity Market Rules (Near-Term Focus)

Amending the PJM Capacity Market rules through existing PJM regulatory and stakeholder processes could lead to improved calculation of generator contributions to resource adequacy and support more accurate price signals of the resource adequacy shortfall, while alleviating near-term affordability issues to some degree. Some examples of possible market rule modifications include reviewing the ELCC accreditation and bringing RMR resources into the supply side of PJM’s capacity auctions, and other overall process improvements could include supporting PJM’s load forecast methodology including feedback and input to PJM’s forecast development through engagement with the PJM’s Load Analysis Subcommittee. The Exelon family of utilities have contributed to and seen recent advancements with respect to all three examples.

First, with support from certain Exelon utilities, PJM is forming an ELCC senior task force to begin reviewing the ELCC accreditation principles. The Commission could seek to participate more meaningfully in the ELCC senior task force, and Exelon intends to continue to support the productive resolution of the associated issues.

Second, in October of 2024, PJM transmission owners, including Exelon utilities, presented large load adjustment requests at PJM’s Load Analysis Subcommittee (consistent with PJM procedures) to help inform PJM’s annual load forecast while also providing all stakeholders transparency into load growth in the region. PJM also works with the states through the

Independent State Agencies Committee (“ISAC”) to incorporate state public policies enshrined in state law into PJM’s load forecast. The Exelon utilities expect these requests to be factored into PJM’s broader annual load forecast update around year-end and therefore encourage the Commission to engage with the ISAC to represent the interests of the Commonwealth.

Lastly, in December 2024, PJM made a filing at FERC that, among other things, addressed the existing filed RMR agreements in the BGE Zone (*i.e.*, Brandon Shores and H.A. Wagner). As filed, PJM’s proposal would incorporate the resource adequacy contribution of certain RMR units that meet certain reasonable criteria into the supply stack in upcoming capacity auctions. PECO urges the Commission to carefully consider whether to support PJM’s filing, which would, among other things, potentially relieve capacity cost pressure on PJM customers including those in PECO’s service territory.

These market reforms highlight stakeholders’ ability to use existing PJM processes to make relatively quick changes and their ability to complement other possible solutions. However, amending the current PJM capacity market will not deliver resource adequacy on its own. This solution set largely addresses the affordability side of current resource adequacy conditions although driving towards market reforms that reduce prices could potentially dampen signals that lead to the development of new supply. Furthermore, even if price signals remain strong (*i.e.*, high), there are other non-market challenges that exist outside the PJM rules that generation developers may overcome to ensure they can bring physical capacity to the region and support long-term resource adequacy. Taken together, amending the existing Capacity Market rules may not be fully supportive of the objective of attracting new resources that are needed for long-term reliability. Moreover, PJM may find it difficult to achieve stakeholder consensus that is preferred, but not required, for reforms to be made.

2. Alter PJM Capacity Market Rules (Long-Term Focus)

As discussed above, the current Capacity Market structure is producing record high prices while current indications are that only limited quantities of new, dispatchable generation capacity are poised to enter the market. This raises the question of whether changes to Capacity Market rules may be needed to better align the market rules with the needs of generation developers.²³ Some reforms that have been discussed include longer capacity contract term lengths, alternative award lead times prior to the delivery year, and seasonal capacity products.

Altering the Capacity Market involves working mostly within the current processes and constructs at PJM and FERC. However, these alterations may prove insufficient to solve the gap since they merely change the nature of the price signal instead of compelling generation construction, and relying on the Capacity Market involves a relinquishment of control (and certainty) to market forces. Even when altering the Capacity Market, new generation development still depends on developers responding to price signals and their ability to complete financing, interconnection, and other development activities in the context of broader financial and regulatory constraints, many of which exist outside PJM rules and FERC jurisdiction. There is considerable risk that exogenous regulatory hurdles and uncertainties can still be a barrier to new entry.

B. Sessions Two and Three: Possible State Level Solutions to Improve Resource Adequacy in Pennsylvania

As set forth in greater detail below, there are multiple state-directed solutions to facilitate completion of the construction of generation resources and to enable resource adequacy for electric distribution customers. Some approaches for consideration in

²³ It is also possible that no such changes are needed and that patience with the current market design is necessary, allowing market participants to develop experience with, and confidence in, the rules of the market and the resulting price signals.

Pennsylvania include: (1) siting and permitting improvements; (2) transmission rights of first refusal; (3) ‘BYOG’ or requiring new large loads to bring their own new generation; (4) Pennsylvania procurement; (5) strategic generation reserve; (6) power purchase agreements that allow for certainty in cost recovery; (7) continued creation and expansion of demand-side and distribution-level solutions such as EE and DR; and (8) utility-owned regulated generation and energy storage assets.

1. Siting and Permitting Improvements

With respect to permitting, developers are experiencing significant delays in the permitting process within the PJM region.²⁴ Enabling the timely interconnection of resources to the electric system is critical to achieving resource adequacy in the PJM footprint and in Pennsylvania.²⁵ Pennsylvania siting and permitting processes may also benefit from examination and potential reforms to improve the speed of development of new infrastructure and to contribute to a resource-adequate PJM system.

Within Pennsylvania, there are several options for streamlining local siting and permitting. Additionally, the Commission could assist with educational resources to help increase local lawmakers’ and residents’ familiarity with the criticality of constructing these assets around residential areas, and could issue model rules, ordinances, and other templates to facilitate growth in the Commonwealth’s municipalities.

²⁴ See ‘As Interconnection Reform Sees Success, PJM Focuses on Post-Study Obstacles | PJM Inside Lines’ available at <https://www.rstreet.org/commentary/state-energy-infrastructure-permitting-and-siting-series-conclusion/22>.

²⁵ Due to increasing delays with the PJM interconnection queue in recent years, certain reforms have shifted from a first-in/first-out serial interconnection process to a first-ready/first-served cluster study approach that better fits the needs and purpose of the PJM interconnection queue and help bring resources online more promptly. See FERC Docket No. ER22-211 and *PJM Interconnection, L.L.C.*, 181 FERC ¶ 61,162 (November 29, 2022). PJM’s reformed process includes a transition period that should be complete in mid-2025.

2. Transmission Rights of First Refusal

Transmission remains a critical component of any resource adequacy solution, as it allows for the pooling of resources across geographic regions and facilitates the delivery of generated power to customers. Planning proactively and holistically will help create a transmission system that can serve ‘8760’ customer demands (*i.e.*, 365 days a year, 24 hours a day) – not just during peak – and will provide flexibility for demands that may not have been expected but must be served nonetheless.²⁶

There are land use reforms available at the state level that could help expedite near-term transmission development, including establishment of Pennsylvania ROFRs. ROFRs give utilities the first option to build, own, and maintain transmission lines in their service territories. These ROFRs facilitate cost-effective and timely construction of transmission that reflects and prioritizes knowledge of state and local system topology, and also factors in community and local concerns.

Significantly, a ROFR is not a utility reward given at the expense of others. Rather, it recognizes the need for new infrastructure to be built to address reliability and resource adequacy. Moreover, achieving that goal can be furthered by giving a first opportunity to public utilities already operating existing infrastructure – utilities that are known to the customers, experienced with the terrain, knowledgeable of the regional transmission system, and that are regulated by the state. It further supports greater transparency and collaboration to develop the most effective solutions to meet all system needs.

²⁶ Recognizing that legacy transmission planning processes were too reactive and short-sighted, in May 2024, the Federal Energy Regulatory Commission (“FERC”) issued Order No. 1920, requiring planning regions like PJM to implement forward-looking, scenario-based planning processes with a 20-year planning horizon. Compliance is currently due in June 2025, although PJM, States and Transmission Owners are generally aligned that more time is likely needed to work out both the planning and cost allocation procedures and that resulting infrastructure will not be in service until the mid-2030s in the most optimistic scenarios.

Certain states already have legislated ROFRs for their jurisdictional utilities,²⁷ and experience at the federal level is further instructive. In 2011, FERC required removal of ROFR provisions from FERC-regulated transmission planning processes, acknowledging that they could persist under state law and regulation.²⁸ Fifteen years later, with resource adequacy and reliability increasingly challenged, analyses continue to demonstrate that non-utility transmission developments – including the competitive solicitation processes and any resulting litigation of those processes – are generally less efficient, costlier, and more time intensive than expected.²⁹ Regulated transmission projects developed by entities other than state-regulated utilities have experienced cost and schedule challenges, while projects developed by state-regulated utilities have shown more consistent cost and schedule performance as well as greater levels of comfort by local communities familiar with their local utilities.³⁰

As resource adequacy concerns continue to grow, establishing Pennsylvania ROFRs through carefully designed legislation in a manner rationally related to the legitimate government interest in supporting reliable electric service could meaningfully streamline the transmission process, facilitate the timely delivery of transmission benefits to Pennsylvania customers, and ultimately reduce costs to customers. ROFRs would also facilitate resource adequacy in the generation space, as it is expected that transmission development will be needed

²⁷ Examples of states with existing ROFRs include Alabama, Iowa, Indiana, Michigan, Minnesota, Mississippi, Montana, Nebraska, North Dakota, and South Dakota, Oklahoma and Texas.

²⁸ 136 FERC ¶61,051 (Jul. 21, 2011) at 270-341.

²⁹ See, e.g., Building New Critical Infrastructure: No Time to Waste Evaluating Cost Transparency Between a Federal Right of First Refusal and Competitive Bidding in Electrical Transmission Infrastructure Expansion, Alliance for Innovation and Infrastructure, July 2024 <https://www.aii.org/wp-content/uploads/2024/07/Building-New-Critical-Infrastructure.-No-Time-to-Waste.pdf>; An Updated Examination of FERC Order No. 1000 – Expanded Review Shows the Benefits of Competition Remain Elusive, Concentric Energy Advisors, April 16, 2024, <https://ceadvisors.com/wp-content/uploads/2024/04/An-Updated-Examination-of-FERC-Order-1000-Projects.pdf>; Revisiting the Evidence on Cost Savings from Transmission Competition, Developers Advocating Transmission Advancements, December 2023, available at <https://elibrary.ferc.gov/eLibrary/filedownload?fileid=01996A2C-D96B-C588-A78C-8C6E1E900000>.

³⁰ *Id.*

to facilitate reliable interconnection of new generation and loads, and ROFRs increase the likelihood of timely and cost-effective development of transmission.

3. BYOG: New Large Loads Could Bring Their Own New Generation

Pennsylvania could encourage – or require, if necessary, through carefully drafted and structured legislation – new large loads such as data centers to BYOG rather than draw from existing generation supply.³¹ Simply stated, when new large loads materialize, they could be required to bring their own generation so that they are able to directly meet and fulfill their load needs with commensurately sized generation.³² This approach would help to maintain the supply and demand balance, which is especially critical for areas that are already projecting resource constraints. In addition, Pennsylvania could drive economic development with BYOG – for example, by offering tax incentives, land grants, or direct subsidies to large loads that bring their own generation – as well as consider incentivizing clean BYOG in order to contribute to the Commonwealth’s overall decarbonization goals and resource independence.

It is important to acknowledge BYOG’s place in the energy ecosystem: large loads will always be reliant on the bulk power market for some portion of their energy needs (*i.e.*, for certain transmission and ancillary services and for backup generation capacity). Accordingly, if generation and large load are interconnected with and reliant upon the grid for any services, they must remain responsible for paying their fair share of the costs associated therewith so those costs are not imposed on other customers.

Ultimately, the BYOG concept merits thoughtful consideration of the specific requirements for new large loads since the resource adequacy impact of a new load is more

³¹ The large load could either construct the generation or enter into a power purchase agreement requiring its construction.

³² For example, in Pennsylvania, Microsoft has signed a 20-year power purchase agreement with Three Mile Island, which will be reopened in 2028 after being shuttered since 2019.

complex than simply its incremental contribution to peak demand. Improvements in siting, permitting, and transmission as described above will be critical to enable any BYOG solution given that such generation, and any associated transmission, will need to be sited efficiently.

4. Pennsylvania Procurement

Pennsylvania government agencies could be responsible for procurement of new generation. Through centralized procurement of new capacity resources, Pennsylvania could optimize a resource portfolio to achieve resource adequacy and could conduct a process – similar to Integrated Resource Planning conducted by vertically integrated utilities – that determines the timing, location, and potentially the technology of new generation builds. The centralized resource procurement could be designed to meet Pennsylvania’s policy goals.

This procurement structure has been implemented in other states, for example in New York with the New York Power Authority (“NYPA”)³³ and New York State Energy Research & Development Authority (“NYSERDA”).³⁴ NYPA is the nation’s largest state public power organization, producing clean and low-cost electricity, and operating 16 generating facilities. NYPA acts as a centralized procurement organization, providing bidding opportunities to developers. It manages designing, bidding, and constructing generation projects across New York. NYPA provides economic, environmental and community support through power allocation, proceeds from excess power sales, and contractual agreements in long-term licenses that FERC oversees.

Having a centralized Pennsylvania agency organizing procurement could expedite permitting, siting, and advancing new resources, boost development of state-preferred resources, and guarantee resource builds. Additionally, costs could be shared across the tax base or all

³³ <https://www.nypa.gov>

³⁴ <https://www.nyserda.ny.gov/>

distribution utility customers rather than a more limited group. However, a centralized Pennsylvania procurement model would be a significant change and likely would be slow to develop, as it may require the development of a new state agency.

5. Strategic Generation Reserves

Pennsylvania could create a Commonwealth-administered strategic generation reserve to optimize the operations and eventual retirements of existing at-risk resources. Strategic reserves could create a smoother transition to the future clean energy resource mix and can include traditional generation capacity as well as demand-side and distribution-level solutions, as discussed below. Further, such reserves can quickly help to address resource adequacy in the near term by delaying any pending retirements, and in some designs by also facilitating new generation development. California has implemented strategic reserves, recognizing that there are socioeconomic benefits to sustaining existing infrastructure.

There are different structures for strategic generation reserves. For example, a state could manage the timing of retirements so that they do not occur while the capacity is needed for resource adequacy, while moderating customer cost impact and dispatching any high-emissions resources only when necessary. A state-administered strategic generation reserve would likely involve the state directly negotiating and contracting with resource owners, and the net cost of creating a strategic reserve would be allocated to all utility customers and/or to taxpayers. The costs would be above market on a per MW basis, and state-supported resources would be credited to the resource adequacy obligations of the broader PJM pool thereby allowing exporting states to provide benefits to other states in the region. A strategic reserve could fill the critical demand gap in the PJM construct, which currently depends on an RMR

program that addresses only the deactivation of transmission reliability and does not properly account for overall resource adequacy.

6. State-mandated power purchase agreements between electric distribution utilities and new resources

Pennsylvania EDCs could be directed to enter purchase power agreements with new generation resources, along with corresponding cost recovery assurances that would not lead to adverse credit ratings, stranded costs, or otherwise negatively impact an EDCs balance sheet. Such agreements could convey just capacity, or all products produced by the facility (energy, capacity, and any environmental attributes), for use by the utility in serving load. Regardless of the nuances of various agreement structures, one such approach is that the utility would take ownership of contracted products and netting of wholesale market revenues before charging customers for the remaining balance or passing on savings.

Costs could be recovered through a non-bypassable charge applied to all distribution customers, regardless of their energy supplier. Further, EDCs could be offered performance incentive mechanisms to encourage generation contracts that add affordable capacity to the grid and with the least incremental greenhouse gas emissions.

7. Distribution System-Level Energy Solutions including Energy Efficiency and Demand Response

Distribution-level solutions – such as EE and DR – are a key complement to the overall resource adequacy solution. These solutions can be deployed to reduce peak demands thereby easing the supply need during times of system stress and can help solve resource adequacy broadly as well as locally.

EE and DR projects can be deployed relatively quickly compared with other resource adequacy solutions, and there is still room to expand utilities' EE and DR programs to aid the

effort to achieve resource adequacy. In particular, EE is a ‘no regrets’ strategy, which lowers customer costs, makes homes and businesses more comfortable, and reduces demand spikes on the grid during periods of heavy energy use – even in fully electrified buildings – as well as contributes to Pennsylvania’s climate goals. Pennsylvania should continue to leverage Act 129 to utilize EE to help fill the emerging resource adequacy gap.

Likewise, effective DR programs provide various economic and environmental benefits such as lowering energy prices, reducing greenhouse gas emissions, enhancing grid reliability and preventing blackouts. In order to leverage DR to reduce demand during peak times, utilities could develop programs to offer financial incentives to customers who reduce their consumption during peak hours. These programs could include provisions for advanced metering infrastructure (“AMI”) and other technologies to improve DR capabilities and allow EDCs to have direct control to manage peak load. By leveraging existing AMI technology and adding incremental distribution-side controls, DR programs can readily mitigate the need for new power plants and lead to overall lower electricity bills for customers.

Though trends like electrification and data center growth are expected to increase overall load, investing in greater EE and DR will continue to help EDCs manage this growth in a way that is controlled and more cost-effective for customers, reducing the potential gap in supply resources. Regulatory or legislative changes could provide a pathway for Pennsylvania to tap into the full potential benefits of utility EE and DR programs.³⁵ As such, PECO encourages the Commission to continue to explore options to incentivize Pennsylvania EDCs to implement more durable, longer-lived investments in EE and DR, particularly for the benefit

³⁵ In certain states, such as New Jersey, utilities and regulators are using performance incentive mechanisms that allow utilities to earn returns for their investments in energy efficiency when they meet certain performance criteria. *See, e.g.*, N.J.S.A. 48:3-87.9(a).

of lower-income customers who will face significant challenges in this resource-constrained market.

8. Utility-Owned Regulated Generation and Distributed Energy Resources

If enacted by the General Assembly, new legislation could permit Pennsylvania EDCs to own regulated generation. When placed strategically and sized appropriately, regulated generation can serve as a complement or an alternative to transmission investment to address reliability concerns. Regulated generation could take such forms as solar, community solar, and dispatchable generation.³⁶ Similar to other generation, regulated generation will require the study of economic impacts as well as operational implications.

PECO is willing to support and consider owning regulated generation, provided certain key regulatory attributes are developed to ensure cost recovery for EDCs, including their cost of capital. Regulated generation must be implemented in a manner that safeguards the financial stability of utilities. It is crucial that utilities be able to recover prudently incurred costs related to acquiring, constructing, owning, and operating regulated generation through rates in a manner that does not negatively impact their credit standing. Implementing utility-owned, regulated generation may also require lead time to establish new utility capabilities (for those utilities that do not currently own generation) and require an increased demand for utility capital.

Utility-owned, regulated generation would allow Pennsylvania and the Commission to actively influence resource adequacy with more certainty surrounding new resource builds. The utility-owned regulated generation could provide cost-based generation capability and PJM market-based wholesale revenue. Just as the cost recovery described above could mitigate price

³⁶ Dispatchable generation, like the combined cycle gas turbine plants Entergy is proposing to construct, could provide the opportunity for the use of future carbon capture and storage technology. See <https://www.energynewsroom.com/news/lake-charles-power-station-achieves-commercial-operation/>; <https://crescentmidstream.com/news/crescent-midstream-selected-develop-integrated-carbon-capture-solution-entergy-louisiana>.

volatility exposure for utility-owned regulated generation, the PJM market revenue could be credited back to customers and would offset, to some degree, the cost-based revenue requirements associated with the generation facility and could provide to customers some mitigation of future market price volatility.³⁷

Pennsylvania EDCs should be permitted to own energy storage not only to defer transmission and distribution investments, but to address generation resource needs as well. Energy storage also has a unique complementary role to play in enhancing efficiency to potentially reduce costs at the distribution level. Distributed energy resources (“DERs”), such as battery energy storage, may be deployed as a cost-effective solution for deferring or avoiding costlier distribution system upgrades, increasing power quality on distribution circuits, and may serve as a critical resource for increasing circuit and substation hosting capacity to meet the system demands posed by increasing proliferation of DERs, particularly non-dispatchable generation. Deployment of DERs, particularly battery energy storage, at scale may help address resource adequacy by reducing congestion on the grid and shaving peak demand.

Similar to the prevailing paradigm in other states, Pennsylvania EDCs should be permitted to own energy storage. Allowing EDC ownership with cost recovery through base rates would benefit customers and help Pennsylvania meet its clean energy goals while also contributing to resource adequacy, since additional power generated from community solar projects means less energy that will need to be procured from other generation sources.

Battery storage and other DERs will be an important component in the overall mix of solutions to smooth dispatchability of intermittent resources. In recognition of the fundamental value of these assets, Commissions in both restructured and vertically integrated states have

³⁷ This is not novel and such structures are already in place not only in MISO and SPP, but also in PJM.

allowed EDCs to deploy energy storage as a transmission or distribution system resource as a natural utility asset. This treatment does not eliminate the continued expansion of energy storage as a market asset, but EDC ownership can increase the exposure and use profile of energy storage as well as benefit the energy grid as a whole. By empowering EDCs to deploy energy storage at optimal scale and location, the Commission would enable the most efficient use of resources so that public utilities – as the party most informed of grid needs and best positioned to deploy resources throughout their territory – can integrate storage into long-term, system-wide resource planning.

IV. Conclusion

Resource adequacy is a pressing national and state issue that requires innovative solutions. PECO's possible solutions presented in these Comments serve as the starting point for determining the optimal mix of resource adequacy solutions in which the Commission, the Commonwealth, as well as Pennsylvania EDCs and other key stakeholders can invest effort to secure electric supply in the state. PECO encourages the Commission to leverage its authority to perform a deep dive assessment of the resource adequacy challenges in the state, as well as in the PJM territory, and drive collaboration at the national and regional level to identify and facilitate implementation of solutions that will ensure strength in Pennsylvania's energy future.

PECO looks forward to continuing productive engagement with the Commission and interested stakeholders on this important issue and appreciates the opportunity to provide comment on this matter.

Respectfully submitted,



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Dated: January 9, 2025