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November 29, 2021

**VIA eFILING**

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

**Re: Policy Proceeding – Utilization of Storage Resources as Electric  
Distribution Assets  
Docket No. M-2020-3022877**

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Dear Secretary Chiavetta:

Enclosed for filing in the above-captioned proceedings are the **Comments of PECO Energy Company in Response to the Commission's August 12, 2021 Secretarial Letter**.

If you have any questions, please contact me directly at 215.841.4635.

Very truly yours,

A handwritten signature in black ink that reads "Anthony E. Gay". The signature is written in a cursive style.

Anthony E. Gay

Enclosures

c: via email w/enclosure:

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**BEFORE THE  
PENNSYLVANIA PUBLIC UTILITY COMMISSION**

**POLICY PROCEEDING –** :  
**UTILIZATION OF STORAGE** :  
**RESOURCES AS ELECTRIC** : **DOCKET NO. M-2020-3022877**  
**DISTRIBUTION ASSETS** :

**COMMENTS OF PECO ENERGY COMPANY ON  
THE COMMISSION’S AUGUST 12, 2021 SECRETARIAL LETTER**

**I. INTRODUCTION**

On February 18, 2021, in accordance with the procedural schedule established by the Pennsylvania Public Utility Commission (“Commission”) in the above-captioned docket, PECO Energy Company (“PECO” or the “Company”) filed its Comments in response to the Commission’s Secretarial Letter issued on December 3, 2020 (“Initial Comments”).

In its Initial Comments, PECO proposed several guiding principles for the Commission’s investigation on potential opportunities for deployment of energy storage technologies in the Commonwealth to enhance the reliability and resiliency of utility distribution systems as follows:

- **Pilot projects should be used to evaluate the benefits and capabilities of energy storage technologies as a tool to support distribution system operations.**
- **Electric distribution companies (“EDCs”) should have flexibility in developing energy storage applications.**
- **The Commission should ensure fair and timely cost recovery of utility investments in energy storage.**

Consistent with these principles, PECO’s Initial Comments addressed the specific questions presented in the December 3, 2020 Secretarial Letter (“December 2020 Secretarial Letter”) regarding potential energy storage applications to meet distribution system operating needs, how the Commission should classify energy storage facilities, and the prudence of utility investment in energy storage technologies.

Twenty other stakeholders filed comments in response to the December 2020 Secretarial Letter, including the Office of Consumer Advocate (“OCA”), other Pennsylvania EDCs, electric generation suppliers (“EGSs”), environmental advocates, industry groups, large industrial customers, private developers and wholesale power producers. The comments filed by these stakeholders provide a wide variety of perspectives, but also demonstrate fundamental agreement among many of them with PECO’s proposed guiding principles.

First, nearly all commenters emphasized the potential distribution system benefits that energy storage can provide, including enhanced reliability and resiliency, grid services and renewable energy integration, and recognized that energy storage is uniquely capable of serving multiple purposes with a single installation. These perspectives demonstrate the importance of EDC involvement in the ownership, procurement and operation of energy storage through pilot projects to help identify valuable applications and beneficial locations for future deployments in Pennsylvania.

There is also significant support for a flexible approach to the development of energy storage solutions to enhance distribution system reliability and resiliency in the Commonwealth. EDCs and other commenters underscored that a blanket approach to the utilization of energy storage with a predetermined, positive benefit-cost requirement may hinder innovation and an EDC’s ability to test, evaluate and deploy energy storage applications that best meet the needs of its customers and that can be configured with utility distribution systems.<sup>1</sup>

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<sup>1</sup> See Duquesne Light Company (“DLC”) Comments, pp. 8-9; Energy Association of Pennsylvania (“EAP”) Comments, pp. 6-7; Energy Storage Association (“ESA”) Comments, pp. 5-7; Metropolitan Edison Company, Pennsylvania Electric Company, Pennsylvania Power Company and West Penn Power Company (collectively, FirstEnergy EDCs”) Comments, pp. 6-7; Natural Resources Defense Council (“NRDC”) Comments, pp. 14-16; PPL Electric Utilities Corp. (“PPL”) Comments, pp. 7-8; UGI Utilities, Inc. – Electric Division (“UGI Electric”) Comments, pp. 5-6.

After reviewing the initial comments submitted by various stakeholders in this proceeding, the Commission determined that additional information is needed to formulate policies regarding distribution system-related utility investment in energy storage. To that end, by Secretarial Letter issued on August 12, 2021 (“August 2021 Secretarial Letter”), the Commission solicited comments on seven additional questions about key issues presented in the initial round of comments, including parameters for Commission approval of energy storage deployment at the distribution level, the ownership model for distribution-sited energy storage systems, and cost recovery mechanisms. In these Comments, PECO will address each of the Commission’s questions presented in the August 2021 Secretarial Letter.

## **II. COMMENTS IN RESPONSE TO THE QUESTIONS PRESENTED IN THE AUGUST 2021 SECRETARIAL LETTER**

1. *What are the parameters that would allow for the use of energy storage on the distribution grid?*
  - a. *For example, what factors should be used in the consideration of the energy-storage project?*
  - b. *Should the energy-storage project meet certain thresholds and demonstrate certain requirements, e.g., demonstration of cost-effectiveness as compared to alternate measures, demonstration of need, required RFPs to solicit potential third-party providers, limitations on project size and scope, etc.?*

When considering parameters that would enable utility use of energy storage on the distribution grid, the Commission should prioritize energy storage applications that have the potential to further enhance system reliability and provide other benefits, including the following examples described in PECO’s Initial Comments (pp. 5-6):

1. Use of energy storage in a substation or on a distribution feeder to enhance reliability and defer the need to increase capacity;
2. Deployment of energy storage to improve grid stability and support larger-scale integration of DERs;
3. Utilization of energy storage to maintain power quality; and

4. Deployment of energy storage to enhance system reliability and resiliency for critical facilities on a stand-alone basis or as part of a microgrid.

To encourage innovative energy storage solutions that are in the public interest, PECO encourages the Commission to evaluate the reliability and resiliency benefits of proposed investments, recognizing that some customers provide essential services to the public and that outages experienced by these customers result in broader community disruptions. Existing tools that attempt to value reliability from a customer perspective are extremely limited and do not recognize the essential services provided to the community by customers such as emergency operations centers, municipal first responders, and even traffic control devices along critical transportation corridors. This same flexible approach to the valuation of storage investments could be applied to investments that offer enhanced reliability and resiliency to commercial centers that provide a range of essential services to the public in the event of major outage events.

As noted in the August 2021 Secretarial Letter, several commenters, including the OCA and industrial customer groups, contend that the use of energy storage technologies as electric distribution assets should only be allowed if cost-effective compared to traditional infrastructure investments. However, the Commission should not adopt those recommendations to evaluate energy storage projects to support distribution operations based strictly on a cost-benefit analysis.

Given the limited scope of energy storage technologies integrated with utility distribution systems in Pennsylvania to date, it is essential for the Commission, EDCs and other stakeholders to analyze how a variety of technologies, ownership structures and use cases would allow larger scale energy storage deployment to meet distribution system reliability needs while optimizing value to EDC customers. The use of utility pilot projects as recommended by PECO in its Initial

Comments (pp. 8-9) would provide valuable insight on how to access multiple energy storage value streams and help to quantify what the likely benefits will be. Application of a rigid cost-effectiveness requirement could limit the opportunity for demonstration projects and pilots that involve uncertain revenues or costs. The lessons learned from these projects are important given that storage technology is just beginning to be deployed in Pennsylvania and should be considered, even if they are not quantified in an economic analysis because they could contribute to the development of long-term cost-effective energy storage solutions.<sup>2</sup>

2. *What EDCs have undertaken energy storage initiatives as a pilot program and what were the results?*

As previously noted, Pennsylvania EDCs are in the early stages of exploring energy storage technology as a tool to support distribution system operations. For example, PECO is aware of the battery storage pilot recently approved by the Commission in UGI Electric's 2021 base rate case proceeding.<sup>3</sup>

While PECO has not yet undertaken energy storage pilot initiatives, in 2019, the Maryland Public Service Commission ("Maryland PSC") established a pilot program for investor-owned utilities, including PECO's affiliates, to start developing energy storage under four ownership frameworks. In November 2020, the Maryland PSC approved six battery energy storage pilots with an aggregate capacity of 7 MW over a ten-year period for the Exelon utilities under a mix of ownership models, including a third-party owned and operated virtual power plant with a plan to recruit 110 residential customers in Delmarva Power & Light Company's

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<sup>2</sup> Other state regulatory commissions have approved energy storage pilot proposals despite concerns raised by some stakeholders that the projects may not be immediately cost-effective. *See, e.g., In the Matter of the Maryland Energy Storage Pilot Program*, Case No. 9619, Order No. 89805 (Md. P.S.C. Nov. 6, 2020), pp. 15-16.

<sup>3</sup> *See Pa. P.U.C. v. UGI Utils., Inc. – Elec. Div.*, Docket No. R-2021-3023618 (Opinion and Order entered Oct. 28, 2021), pp. 13, 31, 49-52.

Elk Neck service area who would each receive free installation of a lithium-ion battery system.<sup>4</sup> Engineering, design and permitting of the approved pilots is underway, and the projects are expected to come online in 2022.<sup>5</sup>

Energy storage investment is underway in many other jurisdictions, often through utility pilot programs. PECO notes that the Edison Electric Institute recently issued a report providing case studies of electric utility investment in energy storage across the country that may provide helpful context as the Commission develops energy storage policies in Pennsylvania.<sup>6</sup>

3. *Under what circumstance is it appropriate to deploy energy storage as compared to traditional infrastructure upgrades?*

PECO agrees with several commenters that energy storage is a valuable option in an EDC's toolkit to support distribution system operations, and the Commission should not limit EDC investments in energy storage only as a substitute for traditional infrastructure upgrades.<sup>7</sup> In determining whether it makes sense to deploy energy storage compared to traditional distribution infrastructure, EDCs must consider existing distribution planning criteria, the objectives of the proposed project, performance expectations and requirements, and the complexity and scope of each proposed solution.

Infrastructure upgrades are typically designed to address an identified grid constraint within the utility's operational guidelines or parameters (e.g., forecasted peak demand or energy consumption above planning limits). Additional considerations for traditional infrastructure

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<sup>4</sup> See *In the Matter of the Maryland Energy Storage Pilot Program*, Case No. 9619, Order No. 89644 (Md. P.S.C. Nov. 6, 2020), pp. 11-24 (approving utility owned and funded battery storage pilot projects designed to provide peak shaving capabilities, improve reliability and aid during outages).

<sup>5</sup> See *In the Matter of the Maryland Energy Storage Pilot Program*, Case No. 9619 (Maryland Exelon Utilities Updated Storage Project Costs and Operational Dates filed Oct. 1, 2021).

<sup>6</sup> See Edison Electric Institute, *Leading the Way: U.S. Electric Company Investment and Innovation in Energy Storage* (June 2021).

<sup>7</sup> See ESA Comments, pp. 6-7; EEI Comments, pp. 3-5; NRDC Comments, pp. 6-8; PPL Comments, pp. 5-6, 8.

investments also include improvements to the reliability or resiliency of the grid through the replacement of legacy equipment in accordance with best practices. Energy storage offers many potential benefits to the grid's operational performance, allowing for highly responsive reaction to system disturbances or adverse conditions incurred, such as power quality issues, temporary excessive feeder loading, outage support, and contingency management. While the use of energy storage in distribution systems can be an attractive option for EDCs, there can be challenges related to the finite energy capacity of energy storage and reduction of technology capacity over time. In short, EDC assessments of whether it is appropriate to deploy energy storage as an alternative or alongside traditional infrastructure in accordance with existing planning criteria will vary on a case-by-case basis depending on many factors, including site conditions and location on the distribution system.

In their initial comments, several parties recommended that EDCs develop an integrated distribution planning ("IDP") framework that includes a benefit-cost analysis to evaluate non-wires solutions, including energy storage.<sup>8</sup> Under the settlement of PECO's 2021 electric base rate proceeding recently approved by the Commission, PECO agreed to convene a collaborative working group meeting in early 2022 to discuss opportunities to advance non-wires solutions to reduce distribution infrastructure costs within PECO's service territory.<sup>9</sup> This working group will provide an appropriate forum for stakeholders to discuss potential use cases for deployment of energy storage as compared to traditional infrastructure upgrades.

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<sup>8</sup> See CEA Comments, pp. 6-8; ESA Comments, pp. 7-8; NRDC Comments, pp. 17-18; OCA Comments, pp. 3-4 and App. A, pp. 7-21.

<sup>9</sup> See *Pa. P.U.C. v. PECO Energy Co.*, Docket No. R-2021-3024601 (Recommended Decision dated Oct. 6, 2021), p. 67. The Recommended Decision was adopted by the Commission without modification by Final Order entered November 18, 2021.



4. *Who should own an energy-storage asset? EDCs, third-party vendors, or some combination of both?*

In their initial comments in response to the December 2020 Secretarial Letter, most commenters offered their views on whether EDCs should be permitted to own energy storage assets integrated with utility distribution systems. Several commenters, including EGSs, private developers and industrial customer groups, opposed utility-owned storage on the grounds that the Public Utility Code prohibits EDC ownership of generation assets and innovative energy storage solutions are already available in the competitive market.<sup>10</sup>

At the same time, a wide range of stakeholders urged the Commission to allow EDCs to own and operate energy storage systems to gain experience with the logistical, regulatory and operational challenges associated with energy storage solutions in order to enhance distribution system reliability and resiliency.<sup>11</sup> Because energy storage systems do not fit neatly within traditional generation, distribution, and transmission classifications for regulatory purposes and can provide different services depending on the use or operational mode (see PECO's Initial Comments (pp. 7-8), many commenters agreed with PECO that the Commission should classify energy storage applications based on the asset's primary function rather than solely as a generation asset.<sup>12</sup>

In light of these comments, PECO continues to support a mix of ownership models between EDCs, third parties and customers for energy storage assets that support distribution

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<sup>10</sup> See Advanced Energy Management Alliance Comments, pp. 7-8; Calpine Retail Holdings, LLC Comments, pp. 2-5; Large Customer Groups Comments, pp. 6-8; PJM Independent Market Monitor Comments, p. 2; PJM Power Producers Comments, pp. 5-6; RESA Comments, pp. 2-5, 9-11; Solar Energy Industries Association Comments, pp. 2-3.

<sup>11</sup> See Clean Energy Advocates Comments, pp. 4-6; DLC Comments, pp. 8-9; EAP Comments, pp. 5-7; EEI Comments, pp. 4-5; ESA Comments, pp. 6-7; NRDC Comments, pp. 12, 16; PPL Comments, pp. 7-8.

<sup>12</sup> See Clean Energy Advocates Comments, p. 4; DLC Comments, pp. 6-8; EEI Comments, pp. 2-3; ESA Comments pp. 4-5; FirstEnergy EDC Comments, p. 5; NRDC Comments, pp. 11-12; OCA Comments, pp. 7-8; PPL Comments, pp. 6-7.

grid operations. Diversity of ownership models will help identify the greatest number of cost-effective resource alternatives and support the use of emerging technologies. PECO also strongly recommends against a blanket prohibition against EDC-owned storage devices participating in energy markets, as such a policy would result in sub-optimal utilization of storage devices and higher costs for utility customers. EDC-owned storage devices should be permitted to make energy sales, provided that the net proceeds from these sales are passed through to EDC customers to reduce project costs.

5. *What processes should the Commission use to review requests to utilize energy storage as a distribution asset?*

In its Initial Comments (pp. 8-9), PECO explained that the Commission should allow EDCs to invest in energy storage technologies as a routine component of reliability and resiliency upgrades without prior Commission approval, and the ratemaking treatment of those projects should be determined as part of a base rate proceeding. For more complex and innovative pilot projects such as those that may involve third-party or customer partnerships, multiple value streams or novel applications, EDCs should be permitted to seek Commission approval to use pilot projects as distribution system assets consistent with criteria PECO has proposed, including opportunities for learnings applicable to future projects (see PECO Initial Comments, p. 9). As Commission-approved pilot projects are executed, the Commission may determine that certain technology applications and project structures can be routinely included as utility infrastructure investments.

6. *What cost recovery mechanisms should be implemented for the ownership and operation of energy-storage assets?*

In their initial comments, PECO and other EDCs explained that utility investments in energy storage assets designed, deployed and operated for the primary purpose of providing distribution services, including systems owned or operated by third parties, should be eligible for

inclusion in rate base, subject to the Commission’s detailed ratemaking review in a base rate proceeding. EDCs should also have the opportunity to seek recovery of any operating and maintenance costs associated with those energy storage systems through either base rates established under Section 1308 of the Public Utility Code or a Section 1307 adjustment clause. In addition, PECO agrees with other commenters that EDCs should be permitted to offer their energy storage resources in available wholesale markets operated by PJM Interconnection, L.L.C. (“PJM”) to reduce costs recovered from customers through distribution rates.

*7. What are the appropriate models and limitations necessary to allow energy storage to participate in wholesale power markets?*

The Federal Energy Regulatory Commission (“FERC”) has exclusive jurisdiction over wholesale markets and the criteria for participation in them. Accordingly, energy storage systems deployed on utility distribution systems in Pennsylvania that are participating in the wholesale markets will be subject to the applicable market participation rules outlined in FERC Order Nos. 841 and 2222.

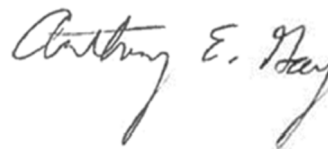
PJM’s plan to comply with FERC Order No. 2222 is not due until February 2022. That plan is being developed by a working group to address various complex issues, including the interconnection of distributed energy resources (“DERs”) located on the distribution system to ensure reliability, distribution factors and bidding parameters for DER aggregations, and coordination between PJM, DER aggregators and distribution utilities. As the entity with regulatory authority on matters of distribution system reliability and retail program participation, the PUC and other state regulatory commissions have a role to play in considering the potential impact of DER participation in wholesale markets on distribution system reliability, the conditions for an EDC override of DER dispatch, and the avoidance of DER double compensation for retail and wholesale services. PECO believes that the Commission can explore

appropriate models to allow energy storage to participate in the wholesale power markets and the roles of EDCs, but any finalization of any guidance should await FERC's review and approval of PJM's implementation of Order No. 2222.

### III. CONCLUSION

PECO appreciates this opportunity the Commission has provided to offer these additional comments and looks forward to continuing to work with the Commission and interested stakeholders to develop policies to increase energy storage development and deployment in Pennsylvania.

Respectfully submitted,



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