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February 18, 2021

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

**VIA ELECTRONIC FILING**

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

Dear Secretary Chiavetta:

Attached for filing with the Pennsylvania Public Utility Commission are the Comments of the Pennsylvania Energy Consumer Alliance ("PECA"), Met-Ed Industrial Users Group ("MEIUG"), Penelec Industrial Customer Alliance ("PICA"), Philadelphia Area Industrial Energy Users Group ("PAIEUG"), PP&L Industrial Customer Alliance ("PPLICA"), and West Penn Power Industrial Intervenors ("WPPII") (collectively, "Large Customer Groups"), in the above-referenced proceeding.

Thank you.

Sincerely,

McNEES WALLACE & NURICK LLC

By   
Charis Mincavage

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**BEFORE THE  
PENNSYLVANIA PUBLIC UTILITY COMMISSION**

<b>Policy Proceeding – Utilization</b>	<b>:</b>	
<b>of Storage Resources as</b>	<b>:</b>	<b>Docket No. M-2020-3022877</b>
<b>Electric Distribution Assets</b>	<b>:</b>	

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**COMMENTS OF THE  
PENNSYLVANIA ENERGY CONSUMER ALLIANCE,  
MET-ED INDUSTRIAL USERS GROUP,  
PENELEC INDUSTRIAL CUSTOMER ALLIANCE,  
PHILADELPHIA AREA INDUSTRIAL ENERGY USERS GROUP,  
PP&L INDUSTRIAL CUSTOMER ALLIANCE, AND  
WEST PENN POWER INDUSTRIAL INTERVENORS**

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**I. INTRODUCTION**

On December 3, 2020, the Pennsylvania Public Utility Commission ("Commission" or "PUC") issued a Secretarial Letter initiating a proceeding to explore whether electric utilities should be permitted to substitute conventional distribution system upgrades with alternative technologies, specifically electric storage, where such alternative technologies would foster reliability and have a lower rate impact to customers as compared to conventional distribution system upgrades. Initially, the Commission is requesting that stakeholders answer a series of questions related to the deployment of electric storage as distribution system assets.

The Pennsylvania Energy Consumer Alliance ("PECA"), Met-Ed Industrial Users Group ("MEIUG"), Penelec Industrial Customer Alliance ("PICA"), Philadelphia Area Industrial Energy Users Group ("PAIEUG"), PP&L Industrial Customer Alliance ("PPLICA"), and West Penn Power Industrial Intervenors ("WPPII") (collectively, "Large Customer Groups") submit the following Comments responding to each of the Commission's questions.

## II. COMMENTS

In general, the Large Customer Groups would not object to the adoption of electric storage as a distribution asset if electric storage offers a statutorily authorized and cost-effective solution to resolve a particular distribution system constraint. However, as discussed further below, several legal, policy, and implementation issues must be considered prior to such adoption in order to fully understand the issues and consider any potential problems prior to implementing any policy or regulation on this issue. For example, although the price of electric storage continues to decrease as the technology's capabilities improve, electric storage remains a more expensive technology and should only be adopted where its benefits to the distribution system and customers outweigh its potential costs. Before submitting an electric storage proposal, an electric utility should be expected to explore a range of alternatives to resolve the distribution system constraint and demonstrate to the Commission in its proposal that grid-connected electric storage is the more reasonable and cost-effective solution.

Similarly, the Commission also needs to evaluate whether utility-owned electric storage is permissible under the Electricity Generation Customer Choice and Competition Act ("Competition Act"), and if not, develop a methodology for third party-owned storage to be incorporated as a distribution system asset. The location and ownership of electric storage will have cost recovery implications that require additional consideration as well.

As part of the outcome of this proceeding, and prior to any finalization by the PUC of its position therein, the Large Customer Groups recommend that the Commission host a series of stakeholder working group meetings and technical conferences to further evaluate these policy and implementation issues and to establish a list of requirements an electric utility must satisfy to support a future electric storage proposal. The meetings should be conducted before the

Commission proceeds with a Tentative Implementation Order to establish a regulatory framework for adopting electric storage facilities as distribution assets.

**A. What applications can electric storage provide as a distribution asset for utilities that would facilitate improved reliability and resiliency?**

Electric storage is defined by the Environmental Protection Agency as the process of storing electricity during periods of relatively high production and low demand of electricity followed by the release of that electricity back to the power grid during periods of lower production or higher demand.<sup>1</sup> Although there are a number of different electric storage technologies, including pumped hydroelectric, compressed air, and flywheels,<sup>2</sup> the battery energy storage system ("BESS") has gained attention in recent years as an electric storage technology that may be incorporated as part of an electric distribution grid. A BESS may improve the reliability and resiliency of the portion of an electric utility's distribution system in the vicinity of the BESS. One example of how a BESS provides these benefits would be to install a BESS along a distribution circuit that experiences many service outages. Once the BESS is installed, the customers along that circuit could be served temporarily from the stored energy of the BESS during a system outage. Alternatively, a BESS may provide useful grid flexibility along feeders with concentrated distributed energy resource ("DER") penetration, *i.e.*, solar, wind, and other renewable energy projects, or may replace the need for a more costly traditional distribution system upgrade project such as substation upgrade.

By contrast, there are some locations across an electric utility's distribution grid where a BESS would present little to no additional reliability or resiliency benefits, such as in areas where there are low rates of historic outages or limited DER development. Although BESS prices have

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<sup>1</sup> *Electricity Storage*, Environmental Protection Agency, <https://www.epa.gov/energy/electricity-storage> (last visited Feb. 12, 2021).

<sup>2</sup> *See id.*

been decreasing, a BESS solution generally remains a more expensive distribution system upgrade as compared to traditional distribution system repairs or upgrades, such as replacing transformers or distribution lines. A utility's primary responsibility should be maintaining and replacing, as needed, its existing distribution facilities to maintain reliability of the distribution system. As the Commission is well aware, customers are not responsible to pay for gold-plating of a utility's system. In many cases, repairing or replacing traditional distribution system infrastructure will be the least cost and most effective solution to promote system reliability. Therefore, the Commission should carefully examine any proposed BESS solution to ensure it is cost-effective.<sup>3</sup> In other words, the benefits of the proposed BESS solution must outweigh the potential costs to customers. Further, the utility must demonstrate that there is no alternative project that would lower costs to customers while providing similar benefits.

As part of an electric utility's evaluation of whether a BESS solution is cost-effective, an analysis should be completed regarding whether there are any customer-owned BESS applications that could instead be adopted to provide the same reliability and resiliency benefits without imposing the costs of the BESS on the utility's wider customer base. A utility could contract with the owner of a behind-the-meter BESS to provide grid support services. A series of behind-the-meter BESSs may resolve reliability and resiliency issues along a distribution system circuit if they are coordinated through a network and installed by a group of customers served by the same circuit. This type of BESS application is referred to as a virtual power plant ("VPP").<sup>4</sup> VPPs offer the same benefits to the distribution system as grid-connected storage without necessarily

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<sup>3</sup> Conducting a cost-effectiveness or cost-benefit review to evaluate electric storage projects is common practice. *See, e.g.,* NY CLS Pub. Ser. § 74(2)(d); Cal. Pub. Util. Code § 2836(a)(1); *In the Matter of the Maryland Energy Storage Pilot Program*, Md. Pub. Serv. Comm'n Case No. 9619 (Nov. 6, 2020).

<sup>4</sup> *See, e.g., Hawaii Will Power Its Clean Grid With 6,000 Home Batteries Installed By Swell Energy*, Green Tech Media, <https://www.greentechmedia.com/articles/read/hawaii-will-power-its-clean-grid-with-6000-home-batteries-installed-by-swell-energy> (last visited Feb. 12, 2021); *The New Green Grid: Utilities Deploy 'Virtual Power Plants'*, *Yale Environment* 360, [https://e360.yale.edu/features/virtual\\_power\\_plants\\_aliso\\_canyon](https://e360.yale.edu/features/virtual_power_plants_aliso_canyon) (last visited Feb. 12, 2021).

spreading the cost of the BESS to other customers. If the BESSs incorporated in the VPP are paid for directly by participating customers, an advantage of the VPP model is that it can create distribution system benefits without increasing all utility customers' rates by the full cost of the BESS. Instead, the customers receiving the benefits of the VPP are paying for the VPP. The utility could contract with the VPP owners to operate the VPP at specific periods, such as in response to outage events or during periods of peak load, to resolve the particular distribution system constraint.

Some utilities across the country have begun to incorporate BESSs as distribution system assets, and as such, it is reasonable for the Commission to evaluate how BESSs should be deployed in the Commonwealth. BESSs may improve grid reliability and resiliency in the surrounding area of the BESS, but there are certain locations where a BESS would be significantly more cost-effective than others. Utilities should be directed to evaluate whether there are other solutions, such as a behind-the-meter BESS or traditional distribution system project, that could be installed instead at a lower cost to customers. In any electric storage proposal, utilities should be required to demonstrate that they have evaluated alternative options and the proposed BESS is the most cost-effective for customers.

**B. What are the defining characteristics of electric storage used for distribution asset planning as distinguished from generation resources? What thresholds, if any, would classify electric storage as a generation resource and therefore outside permitted distribution ratemaking and recovery?**

As discussed in the prior section, the Large Customer Groups agree that a BESS may be incorporated as a distribution asset if a utility demonstrates that the BESS is the most cost-effective solution to resolve a distribution system constraint. However, it remains unclear whether utility ownership of the BESS is consistent with current Pennsylvania law. Pursuant to the Competition

Act, generation of electricity is not a public utility function.<sup>5</sup> After electric restructuring in the Commonwealth, electricity generation became a competitive function and third-party non-utilities act as generation providers.

BESS technologies act in many ways like other generation resources. There are no particular thresholds that would cause a BESS to act more or less like other generation resources. By its very nature, a BESS acts like a generation resource by either directly serving behind-the-meter load or discharging directly to the grid as necessary based on wholesale market conditions or other operating requirements. In a recent filing that seeks to expand BESS access within PJM's capacity market, PJM identifies electric storage resources as a sub-category of generation capacity resources.<sup>6</sup> If the Commission were to agree that electric storage is a generation resource, then utility ownership of BESSs is likely prohibited under the Competition Act.

Although utility-owned storage projects have been permitted by certain state commissions, this authorization often occurs in the context of underlying legislation that explicitly provides for utility ownership of electric storage or adopts statewide targets for storage deployment.<sup>7</sup> The Maryland legislature adopted an energy storage pilot program, which established a framework for utilities to submit electric storage pilot projects.<sup>8</sup> The program permitted utilities to propose one utility-owned project, but they were required to submit at least one third party-owned project as well.<sup>9</sup> Similarly, the California Public Utilities Commission permitted limited utility ownership of electric storage after legislation imposed statewide energy storage targets and explicitly

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<sup>5</sup> See 66 Pa.C.S. § 2802(14).

<sup>6</sup> *PJM Interconnection LLC, Effective Load Carrying Capability Construct*, FERC Docket No. ER21-278-000 (Oct. 30, 2020) (defining a capacity storage resource as a limited duration resource, which is a type of generation capacity resource).

<sup>7</sup> See, e.g., Md. PUBLIC UTILITIES Code Ann. § 7-216; Cal. Pub. Util. Code §§ 2835, *et seq.*; see also NY CLS Pub. Ser. § 74.

<sup>8</sup> Md. PUBLIC UTILITIES Code Ann. § 7-216.

<sup>9</sup> *Id.* § 7-216(d)(1).

authorized utility-owned storage projects.<sup>10</sup> Although the New York Public Service Commission ("PSC") developed a framework to allow for limited utility ownership of electric storage before there was any specific underlying legislation on the topic, one of the PSC's requirements imposed on utilities was to demonstrate that "competitive alternatives proposed by non-utility parties are clearly inadequate or more costly than a traditional utility infrastructure alternative."<sup>11</sup> Subsequently, the New York legislature also adopted legislation that established aggressive statewide storage goals and specifically referenced storage that is directly connected to distribution facilities.<sup>12</sup>

Without similar underlying legislation in Pennsylvania, it is legally questionable whether utility ownership of storage is consistent with the Competition Act. Like traditional generation providers, there are numerous third-party storage providers who have significant experience owning and operating electric storage and bidding these resources into the wholesale markets. Unless there is express legislative authority permitting utility-owned storage, the Competition Act could reasonably be interpreted as requiring those third-party storage providers to own all grid-connected storage.

If utilities are precluded from owning storage, utilities may still incorporate third party-owned BESSs as distribution assets to improve reliability and resiliency. Utilities should be subject to the same prudence review for a third party-owned BESS, namely demonstrating that it is the most cost-effective solution to resolve a particular system constraint. Because the BESS would not be owned by the utility, it should not be included in rate base. Instead, the costs associated with paying the third party to install, operate, and maintain the asset would be included

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<sup>10</sup> Cal. Pub. Util. Code §§ 2835, *et seq.*

<sup>11</sup> *Proceeding on Motion of the Commission in Regard to Reforming the Energy Vision*, N.Y. Pub. Serv. Comm'n Case 14-M-0101 (Opinion entered Feb. 26, 2015).

<sup>12</sup> NY CLS Pub. Ser. § 74.



as part of the utility's operation and maintenance ("O&M") expense. As such, the utility should not be permitted to collect a return on the costs associated with a third party-owned BESS.

Whether or not the Commission permits utility ownership of storage, a cost-effective BESS deployment should remain the top priority. Similar to New York's requirement highlighted above, utilities should be required to submit requests for proposal ("RFP") to obtain bids from third-party storage providers to minimize the potential cost of any storage project. If a third party can deploy a BESS at lower cost than the utility itself while still providing the same grid benefits, then the third party-owned project should be deployed. Such an approach would promote the most cost-effective deployment of BESSs as distribution assets while also ensuring that the Commission provides an opportunity for the vast competitive market of energy storage providers.

**C. Is it prudent for utilities to include electric storage in their distribution resource planning and, if so, where and under what circumstances? Further, is it appropriate for utilities to include such investments in rate base?**

As already discussed, there are situations where the installation of grid-connected electric storage as a distribution asset may be the most prudent solution to resolve a particular distribution system constraint and improve reliability or resiliency. However, before a utility may include electric storage in its distribution resource planning, the utility should be required to demonstrate that its electric storage proposal offers the most cost-effective solution. The Large Customer Groups recommend that the Commission hold a series of stakeholder working group meetings and technical conferences to further evaluate the policy and implementation issues discussed herein, as well as to collectively determine the requirements that a utility must include in any electric storage proposal to provide the Commission with enough information to evaluate whether the proposal is the most cost-effective solution.

The primary objectives of the working group should be 1) developing a process that the utility must follow to demonstrate that it has evaluated alternatives to the electric storage project

and those alternatives are not as cost-effective as the storage proposal; 2) evaluating the availability and benefits of competitive involvement in the adoption of electric storage as distribution system assets, as well as the development of an RFP process for utilities to obtain bids for electric storage projects; 3) determining what, if any, circumstances exist where utility-owned electric storage is reasonable; 4) evaluating the appropriate cost recovery methodologies for electric storage proposals; 5) determining a list of filing requirements for any utility seeking to include electric storage in its distribution resource planning; and 6) evaluating any other policy issues of interest to the Commission or stakeholders.

The Large Customer Groups already addressed the need for electric utilities to consider all alternatives before submitting an electric storage proposal to ensure that there is no lower cost solution available, such as a traditional distribution system upgrade or customer-sided project, that would present the same distribution system benefits. The working group could discuss the benefits of behind-the-meter BESSs and VPPs, as well as the potential contracting terms between behind-the-meter BESS owners and utilities. A technical conference would provide an opportunity for input from experienced industry experts in a non-adversarial forum. Along these same lines, utilities should be required to issue RFPs for storage projects to minimize project costs and encourage competitive participation. The working group could discuss the potential components of an RFP, as well the policy questions related to utility-owned versus third party-owned storage. All stakeholders should be permitted to weigh in on whether utility-owned storage is consistent with the Competition Act. Competitive providers of electric storage also should have an opportunity to participate in this working group and identify the benefits of the different BESS models.

Regarding cost recovery, the working group will need to evaluate what cost recovery methodologies are reasonable for electric storage deployment, which may differ depending on the type and location of BESS projects. As discussed above, costs associated with third party-owned storage would be included as part of the utility's O&M expense and not eligible for a return. For any utility-owned storage, assuming the Commission finds that such a model is consistent with current law, including the cost of the BESS in rate base may be reasonable if there are system-wide benefits presented by the project. If the BESS project only provides local reliability benefits to a small subset of customers, the Commission should consider whether an alternative, more targeted cost recovery approach is feasible. Wherever possible, a cross-subsidy among customers should be avoided. The customers benefiting from the BESS should be responsible to remit the costs associated with the project rather than spreading out the costs to all customers.

In addition, the Commission working group should develop a list of filing requirements that electric storage projects must meet for them to be included in a utility's distribution system resource planning and eligible for cost recovery. While BESS projects remain more expensive than traditional distribution system upgrades, the Commission should carefully review any utility storage proposals, which should be submitted by utilities either in their base rate proceedings or separate petitions that request deferral authority for cost recovery in a future base rate proceeding. Electric storage technologies are not deemed eligible property under 66 Pa.C.S. § 1351, and therefore, cost recovery via utilities' distribution system improvement charges is prohibited.<sup>13</sup> Electric storage filings should identify all the expected costs and benefits of the BESS project and demonstrate that the BESS is the most cost-effective solution to resolve a specific distribution system constraint. To aid in the Commission's review of such proposals, the working group could

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<sup>13</sup> See 66 Pa.C.S. § 1350, *et seq.*

be tasked with developing a filing framework including a comprehensive list of potential costs and benefits of electric storage projects in general.

The Large Customer Groups have a few other suggestions for what issues should be addressed in these filings. In addition to establishing cost-effectiveness, utilities should demonstrate that their BESS proposal complements their overarching strategies for repairing and replacing aging infrastructure. A utility should not present a BESS solution if the infrastructure surrounding the BESS is at risk of failure. If other portions of the distribution system fail due to aging infrastructure, the BESS will be useless to the utility and its customers. System reliability should not be sacrificed for a utility to have the opportunity to operate a BESS. In their filings, utilities must establish that the BESS proposal will not adversely impact their ability to maintain and upgrade their existing distribution infrastructure both in the area of the proposed BESS and elsewhere along the utility's system.

To evaluate electric storage proposals, it also would be helpful for the Commission and other stakeholders to specifically understand how the BESS will be used operationally to improve distribution system performance. Other potential uses of a BESS include voltage support, energy arbitrage, demand charge management, peak shifting, and power quality improvement. Comprehensive information regarding the intended uses of the BESS should be included in the filing to assist stakeholders in evaluating how to maximize the value of the BESS to customers.

Finally, the Commission working group should be available for all stakeholders to raise additional policy issues that require further discussion. The Large Customer Groups recommend that the working group discuss wholesale market participation in more detail. Specifically, the working group should evaluate the options for wholesale market participation and whether utilities or third parties are better positioned to participate in the PJM wholesale markets and maximize

benefits for customers. Depending on how they are configured and operated, BESSs can participate in the generation, capacity, or ancillary services markets. The working group should evaluate the different BESS use cases in order to understand the full potential range of wholesale market opportunities available to BESSs that are installed to resolve distribution system constraints.

In addition, the working group should consider the potential risks and rewards of wholesale market participation. Third-party storage providers have experience maximizing the revenues from wholesale market participation. However, wholesale market participation can result in penalties to participants. The working group should be tasked with evaluating how to ensure that customers receive the maximum benefits associated with a grid-connected BESS without being subject to PJM penalties. These working group efforts could help inform any future Tentative Implementation Order and utility filings.

### **III. CONCLUSION**

The Large Customer Groups hope the Commission will initiate a working group process for stakeholders to discuss the foregoing issues in more detail. Although there are scenarios where grid-connected electric storage could be a prudent solution to resolve reliability or resiliency concerns, other projects, such as traditional distribution system upgrades or behind-the-meter projects, may more cost effectively address certain distribution system constraints. Before submitting an electric storage proposal, utilities should be directed to evaluate all potential alternatives and conduct a cost-benefit analysis to help ensure that any BESS proposal presents the most cost-effective option. A Commission working group process would provide a useful forum for all stakeholders to weigh in on potential filing requirements, as well as the other policy and

implementation issues addressed herein. The Large Customer Groups look forward to further participation at the Commission regarding this matter.

**WHEREFORE**, Pennsylvania Energy Consumer Alliance, Met-Ed Industrial Users Group, Penelec Industrial Customer Alliance, Philadelphia Area Industrial Energy Users Group, PP&L Industrial Customer Alliance, and West Penn Power Industrial Intervenors respectfully request that the Pennsylvania Public Utility Commission consider and adopt, as appropriate, the foregoing Comments.

Respectfully submitted,

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Dated: February 18, 2021