



February 18, 2021

VIA ELECTRONIC FILING

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

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

Dear Secretary Chiavetta,

Clean Air Council, Sierra Club, Philadelphia Solar Energy Association, POWER Interfaith, and the Union of Concerned Scientists (the “Clean Energy Advocates”) appreciate the opportunity to respond to the questions posed in the above-captioned proceeding, and submit the enclosed comments for the Commission’s review. Should you have any questions, please do not hesitate to contact me. Thank you.

Sincerely,

/s/ Devin McDougall

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**BEFORE THE  
PENNSYLVANIA PUBLIC UTILITY COMMISSION**

**Policy Proceeding—Utilization of Storage  
Resources as Electric Distribution Assets**

**Docket No. M-2020-3022877**

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**COMMENTS OF THE CLEAN ENERGY ADVOCATES**

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Dated: February 18, 2021.

## **I. INTRODUCTION**

Clean Air Council, Sierra Club, Philadelphia Solar Energy Association (“PSEA”), POWER Interfaith (“POWER”), and the Union of Concerned Scientists (“UCS”) (hereinafter the “Clean Energy Advocates”) respectfully submit these comments to the Pennsylvania Public Utility Commission (the “Commission”) in response to the questions raised in the Secretarial Letter initiating the above-captioned proceeding on December 3, 2020.<sup>1</sup>

The Clean Energy Advocates thank the Commission for opening this proceeding and appreciate the opportunity to comment. The integration of electric storage into distribution infrastructure is a key means of modernizing the grid and facilitating the sustainable delivery of electricity to Pennsylvanians. However, storage must be deployed in a just and equitable fashion that ensures that the resiliency and reliability benefits of storage are fairly shared.

Clean Air Council is a member-supported environmental organization serving the Mid-Atlantic Region. Clean Air Council is dedicated to protecting and defending everyone’s right to a clean environment. Clean Air Council works through a broad array of related sustainability and public health initiatives, using public education, community action, government oversight, and enforcement of environmental laws.

Sierra Club is a non-profit environmental organization whose mission is to explore, enjoy, and protect the wild places of the Earth and to practice and promote the responsible use of the Earth’s resources and ecosystems. The Sierra Club currently has over 31,000 members in Pennsylvania. These members have a strong interest in both the success of sustainable and equitable energy programs and in protecting themselves, their communities, and their ambient environment from the effects of fossil fuel generation.

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<sup>1</sup> Secretarial Letter (Dec. 3, 2020), <https://www.puc.pa.gov/pdocs/1686327.doc>.

PSEA was established in 1980 as a nonprofit corporation dedicated to public education and training to support the growth of solar energy in the Philadelphia area and across the region. Recognized as a tax deductible, 501(c)(3) corporation in 1998, PSEA has been a volunteer-based, member-supported organization for almost 40 years. Its principal focus is public education, training and advocacy to advance the understanding and use of solar energy in Philadelphia and the surrounding counties, and Delaware and New Jersey.

POWER is a racial and economic justice organizing force in the state of Pennsylvania, helping people put faith and values into strategic action to win concrete change in the public sphere. POWER organizes in southeastern Pennsylvania and in coalitions across the state for racial and economic justice on a livable planet by shifting the moral and policy universe towards possibilities that support the common good. POWER's Climate Justice and Jobs team draws people from both marginalized and privileged neighborhoods into the public struggle over land and energy, considering key land and energy issues as contested space in this world. We fight against dirty fossil fuel expansion and for green economy solutions. In our integrated strategy we center racial and economic equity issues as an essential part of every single building block of policy.

UCS is a national organization with 50 years of experience putting science into action to build a healthier planet, a more equitable society, and a safer world. Our half-million members and supporters include everyday people as well as some of the nation's top scientists, and our distinctive UCS Science Network draws upon more than 25,000 scientists and technical experts across the country to assist our local, state, and national efforts. Working together, we advance science-based solutions to some of the world's most pressing problems, conducting rigorous

technical analyses and mobilizing our supporters to educate decisionmakers and advocate for change.

## II. COMMENTS

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

Electric storage resources (“ESRs”) that are integrated into distribution infrastructure can contribute to the reliable and resilient delivery of electric service in several key ways. First, ESRs can improve reliability by facilitating the integration of distributed renewable generation resources, electrified buildings, and transportation into the distribution system.<sup>2</sup> These technologies have distinct needs. For example, the load shapes of building and vehicle electrification technologies can be addressed, to start, with rate design and smart charging designs. However, the use of ESRs as distribution assets may be able to help reliably integrate all these technologies by helping manage power flow and voltage.<sup>3</sup>

Second, ESRs can improve the resiliency of electric service by providing a back-up source of electricity in the event of a disruption or outage.<sup>4</sup> For shorter-term disruptions, an ESR may itself have sufficient capacity to prevent an outage. For longer-term disruptions, an ESR could prevent an outage for long enough to bring back-up generation or a microgrid online.<sup>5</sup> As

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<sup>2</sup> Derek Stenclik et al., *Maintaining Balance: The Role of Energy Storage for Renewable Integration*, 15 IEEE Power & Energy Magazine 31, 35–36 (2017).

<sup>3</sup> *Id.*

<sup>4</sup> Garrett Fitzgerald et al., *The Economics of Battery Energy Storage: How multi-use, customer-sited batteries deliver the most services and value to customers and the grid*, at 20, Rocky Mountain Institute (Sept. 2015) (“Garrett Fitzgerald et al.”), <https://rmi.org/wp-content/uploads/2017/03/RMI-TheEconomicsOfBatteryEnergyStorage-FullReport-FINAL.pdf>

<sup>5</sup> Qiang Fu et al., *The Role of Energy Storage in a Microgrid Concept*, 1 IEEE Electrification Magazine 21, at 21–22 (Feb. 26, 2014).

the effects of climate change place increasing levels of stress on the grid, the improved resiliency available from the integration of ESRs into distribution infrastructure is increasingly important.<sup>6</sup>

Third, ESRs can enhance the reliability of existing distribution infrastructure by reducing stresses on it and extending its operational life.<sup>7</sup> ESRs can help reduce peak demand, manage congestion, and maintain power quality when integrated with distribution substations. This can help enhance reliability of electricity service in meeting existing demands under ordinary operating conditions.

**2. 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 this question recognizes, electric storage is a versatile technology that is capable of providing both distribution and generation services to the grid (as well as transmission services). Given this versatility, the placement of a particular ESR into the category of a distribution asset should be based on whether the primary use of the ESR is for providing distribution services. As such, the differentiation between distribution and generation categories should be based on the function of the ESR, rather than on particular thresholds relating to the technical specifications of the ESR.

**3. 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?**

It is prudent for utilities to include electric storage in their distribution resource planning for several reasons. As noted above in response to the Commission's first question, storage offers a number of key functions that help support the resilient and reliable functioning of the grid.

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<sup>6</sup> Romany M. Webb et al., *Climate Risk in the Electricity Sector: Legal Obligations to Advance Climate Resilience Planning by Electric Utilities*, at 3, Sabin Center for Climate Change and Environmental Defense Fund (2020).

<sup>7</sup> Garrett Fitzgerald et al. at 27.

Notably, electric storage can help integrate and interconnect increasing levels of distributed renewable energy, building electrification, and vehicle electrification. This is important because these trends are only likely to accelerate in coming years. As determined in a recent study by the Goldman School of Public Policy, the cost of renewable energy and storage technologies has fallen and will likely continue to fall:

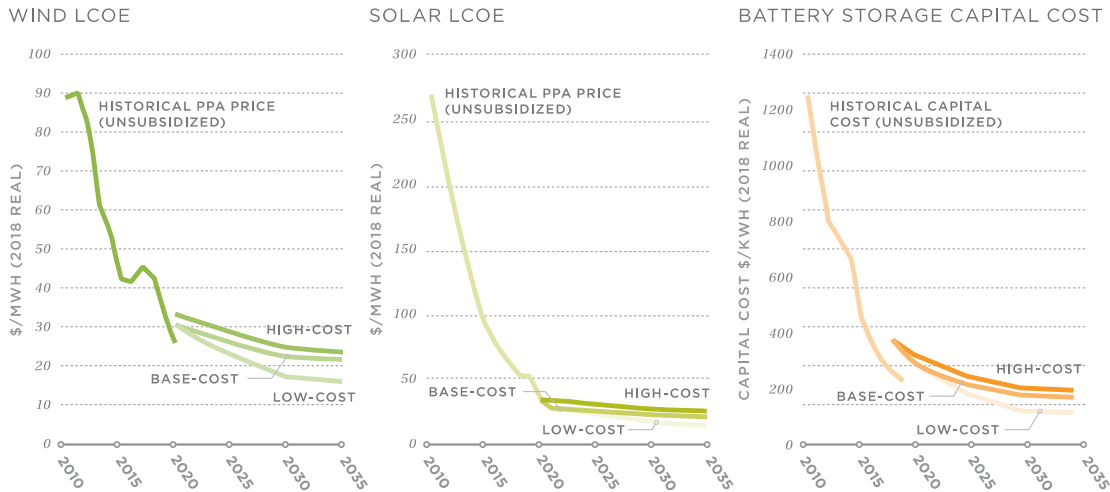


Figure 1: Historical and Projected Technology Cost Declines for Wind, Solar, Battery Storage.<sup>8</sup>

The costs of distributed energy resources are similarly falling, signaling rapid future growth in their deployment.<sup>9</sup>

The Commonwealth of Pennsylvania has also set decarbonization goals that will require substantially increased deployment of renewable energy and electrification technologies to achieve. On January 8, 2019, Governor Wolf issued Executive Order No. 2019-01, which addresses “Commonwealth Leadership in Addressing Climate Change and Promoting Energy Conservation and Sustainable Governance.”<sup>10</sup> EO 2019-01 provides that “the Commonwealth is

<sup>8</sup> Goldman School of Public Policy, *2035 Report: Plummeting Solar, Wind, and Battery Costs Can Accelerate Our Clean Energy Future*, at 14, Univ. Of Calif. Berkeley (June 2020), [http://www.2035report.com/wp-content/uploads/2020/06/2035-Report.pdf?utm\\_referrer=https%3A%2F%2Fwww.2035report.com%2F](http://www.2035report.com/wp-content/uploads/2020/06/2035-Report.pdf?utm_referrer=https%3A%2F%2Fwww.2035report.com%2F).

<sup>9</sup> Jeff St. John, *Distributed Energy Poised for ‘Explosive Growth’ on the US Grid*, GTM (June 21, 2018), <https://www.greentechmedia.com/articles/read/distributed-energy-poised-for-explosive-growth-on-the-us-grid>.

<sup>10</sup> Exec. Order 2019-01 (Jan. 8, 2019) (“EO 2019-01”).

committed to further reducing its net greenhouse gas emissions which, left unchecked, would create a high risk of irreversible, widespread, severe climate impacts in the Commonwealth and beyond...”<sup>11</sup> In furtherance of this goal, EO 2019-01 sets a target of a 26% reduction in net greenhouse gas emissions statewide by 2025 from 2005 levels, and an 80% reduction by 2050.<sup>12</sup> On April 29, 2019, Pennsylvania Department of Environmental Protection (“PA DEP”) published an updated Pennsylvania Climate Action Plan.<sup>13</sup> In it, PA DEP stated that climate change is “the most critical environmental threat facing the world” and reaffirmed the Commonwealth’s target of reducing its greenhouse gas emissions by 80% from 2005 levels by 2050.<sup>14</sup>

Pennsylvania municipalities have also articulated decarbonization goals aligned with increased deployment of distributed renewable energy and electrification technologies. On September 26, 2019, the City of Philadelphia passed Resolution No. 190728, which committed that “the City of Philadelphia shall take measures to achieve a fair and equitable transition to the use of 100% clean renewable energy for electricity in municipal operations by 2030, for electricity city-wide by 2035, and for all energy (including heat and transportation) city-wide by 2050 or sooner.”<sup>15</sup> Resolution No. 190728 also noted that over 130 municipalities around the country have adopted goals to transition to 100% renewable energy, including over 20 Philadelphia suburban towns.<sup>16</sup> Notably, the transition to 100% clean renewable energy for all

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<sup>11</sup> *Id.*

<sup>12</sup> *Id.*

<sup>13</sup> PA DEP, *Pennsylvania Climate Action Plan: Strategies and actions to reduce and adapt to climate change* (Apr. 29, 2019), <http://www.depgreenport.state.pa.us/elibrary/GetDocument?docId=1454161&DocName=2018%20PA%20CLIMATE%20ACTION%20PLAN.PDF%20%20%20%3cspan%20style%3D%22color:blue%3b%22%3e%28NEW%29%3c%2Fspan%3e>.

<sup>14</sup> *Id.* at 12.

<sup>15</sup> City of Philadelphia, *Res. No. 190728*, at 3 (Sept. 26, 2019) (“Resolution No. 190728”).

<sup>16</sup> *Id.* at 2. Sierra Club maintains a website which hosts many of the resolutions adopted by municipalities in PECO’s service territory. Sierra Club Pennsylvania, *RF100 Support: Resolutions*, <https://www.sierraclub.org/pennsylvania/southeastern/rf100-support-resolutions#examples>.



applications, including heat and transportation, as planned by the City of Philadelphia and other municipalities would require the integration and interconnection of significant levels of building and vehicle electrification technologies.

The deployment of energy storage to facilitate increased integration of renewables and electrification technologies is also prudent for reasons of equity. The Clean Energy Advocates strongly support the comments filed by POWER addressing environmental justice and equity issues at stake in this proceeding. These issues manifest in several ways. To start, storage-enabled grid infrastructure can help manage load shapes and peak demand to reduce the need to rely on highly-polluting fossil fuel peaker plants, which are disproportionately sited in overburdened communities.<sup>17</sup> Additionally, facilitating the integration of distributed renewables, such as local solar, and electrification technologies can help support green jobs and provide economic opportunities associated with the deployment of those resources.

With regard to the locations in which storage is deployed as a distribution asset, it is critical that its reliability and resiliency benefits are equitably shared. As such, storage deployment in underserved neighborhoods should be prioritized and accompanied by a robust stakeholder process to engage with those communities. This will help improve the resilience of critical community facilities such as hospitals, fire stations, and shelters, as well as reduce the impacts of outages on ordinary residents, which is particularly important in areas that may have fewer resources than other areas.<sup>18</sup> This will also help facilitate the development of distributed renewables and electrification projects in underserved neighborhoods, which can help support the development of local job opportunities in those neighborhoods.<sup>19</sup> Finally, the financial

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<sup>17</sup> Jeremy Richardson, How to Ensure Energy Storage Policies Are Equitable, at 2, UCS (Nov. 19, 2019).

<sup>18</sup> *Id.* at 3.

<sup>19</sup> *Id.*

benefits of savings on distribution infrastructure from the use of storage should also be equitably shared through reduced utility bills for customers, which is important for low-income ratepayers that spend a disproportionately high proportion of their household budget on energy.

Given these important benefits and equity considerations, the Commission should initiate a fuller proceeding to develop specific guidance for utilities' integration of storage into distribution planning. Such a proceeding must be designed to maximize the ability of ratepayers from underserved communities to participate in the development and planning of such rules, including public hearings accessible to a broad range of stakeholders.<sup>20</sup>

A larger proceeding is also needed ensure that questions regarding the appropriate role for utility ownership versus competitive procurement, rate-basing, and cost-allocation are fully considered. The Clean Energy Advocates do not take a position on these issues at this time but would look forward to reviewing specific proposals.

### **III. CONCLUSION**

The Clean Energy Advocates appreciate the opportunity to offer these comments on storage as a distribution asset and look forward to working with the Commission on this important area.

Dated: February 18, 2021.

Respectfully submitted,

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<sup>20</sup> For example, see the recommendations contained in Jeremy Richardson, *How to Ensure Energy Storage Policies Are Equitable*, UCS (2019). *Id.* at 8.

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