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November 29, 2021

VIA E-MAIL

Rosemary Chiavetta, Secretary
Pennsylvania Public Utility Commission
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,

The Edison Electric Institute (EEI) respectfully submits this letter to the Pennsylvania Public Utility Commission (Commission or PUC) in response to the additional questions issued on August 12, 2021, in the above-referenced proceeding.¹ EEI has been monitoring energy storage proceedings across the country and appreciates the opportunity to expand upon the comments submitted on February 18, 2021 at this docket by offering additional considerations regarding electric distribution companies' fundamental need to incorporate storage into the distribution grid and allow storage to maximize its potential by enabling it to engage in as many revenue streams as possible, which minimizes costs and maximizes reliability and resilience benefits for customers.

EEI is the association that represents all U.S. investor-owned electric companies. Our members provide electricity for 220 million Americans and operate in all 50 states and the District of Columbia. EEI's members include Duquesne Light, First Energy, PECO Electric, PPL Electric Utilities Corporation, and UGI Utilities. Collectively, the electric power industry supports more than 7 million jobs in communities across the United States. EEI's member companies deliver safe, reliable, affordable, and increasingly clean electricity that powers the economy and enhances the lives of all Americans.

EEI members annually invest more than \$130 billion to make the energy grid stronger, smarter, cleaner, more dynamic, and more secure; to diversify the nation's energy generation mix; and to integrate new technologies that benefit customers. EEI members are united in their commitment to get as clean as they can, as fast as they can, while keeping reliability and affordability front and center for the customers and communities they serve.

¹Pursuant to the Secretarial Letter issued on September 14, 2021, the due date for comments in this proceeding was extended until November 29.

Electric Companies are Leading the Way on Energy Storage

Electric companies are the largest users and operators of all forms of energy storage in the U.S. Accordingly, electric companies, in both vertically integrated and restructured states alike, are critical partners in implementing energy storage technologies.

Battery storage is expected to continue to be the fastest-growing energy storage technology, increasing by approximately 14 times from about 3.4 gigawatts (GW) in 2020 to about 48 GW by 2026, and electric companies will account for approximately 80 percent of this growth between 2021 and 2026.² Pennsylvania's PJM membership gives the Commonwealth a unique ability to be ready to accommodate and maximize the benefits of battery energy storage as a distribution asset as more storage comes online.

Between 2015 and 2019, the EIA references a 72 percent drop in battery storage costs, which is a 27 percent rate of decline.³ Beyond this, battery storage costs are expected to continue to decline, underlying an overall increase in installations. For context of just how dramatic the cost decrease is expected to be, the National Renewable Energy Laboratory (NREL) estimates a reduction of 28-58 percent, depending on assumptions, by 2030.⁴ These historical and forecasted cost declines demonstrate battery energy storage is on a trajectory to become a cost-effective mainstay of utility infrastructure upgrade options and a staple of the distribution system, supporting grid reliability and resilience. Accordingly, the question for the Commission in this proceeding should not be whether battery storage can be a distribution asset – instead, the focus should be on how best to allow electric distribution companies to incorporate these assets in a way that both improves resilience and maintains reliability for customers.

To Maximize Revenue Streams and Minimize Costs for Customers, Energy Storage Should be Used in Various Ways

The Commission recognizes, in its August 12, 2021, Secretarial Letter, that “energy storage has several versatile functions.” This recognition echoes EEI's comments from February 2021, which explained that when deployed at the appropriate location and scale, energy storage can be used in various ways to enhance electric company operations, as well as optimize and support the energy grid.

Some components of revenue derived from energy storage applications will depend on market factors, as well as locational and utilization factors. To maximize revenue streams from its various uses, electric companies should be permitted to deploy all functions enabled by the physical characteristics of energy storage. For the Commonwealth to realize the full benefits of energy storage when electric companies can incorporate storage into their distribution system, a battery storage asset should be allowed to provide all the services of its physical characteristics,

² *ibid*

³ See U.S. Energy Information Administration. Battery Storage in the United States: An Update on Market Trends. Aug. 16, 2021 <https://www.eia.gov/analysis/studies/electricity/batterystorage/>

⁴ See National Renewable Energy Laboratory. Cost Projections for Utility-Scale Battery Storage: 2021 Update <https://www.nrel.gov/docs/fy21osti/79236.pdf>

including participation in the wholesale markets when appropriate.⁵ The ability to tap into multiple revenue streams and to stack the earnings to maximize an asset's potential will be increased if electric companies are able to own, procure, operate, and manage energy storage.⁶ Electric companies are best positioned to determine how to maximize the value and cost-effectiveness of energy storage in conjunction with existing regulated assets (such as regulated energy efficiency and demand response assets) as they currently do under Commission approved programs and tariffs.

Several examples exist in Maryland's restructured market where electric company-owned battery energy storage is allowed to participate in wholesale markets and the revenue earned is obtained by the EDC and provided to customers over the 10-year project term.⁷ As part of Maryland's Energy Storage Pilot Program (Maryland Pilot), Exelon's BGE will own a battery energy storage system at the Fairhaven substation, providing distribution upgrade deferral and peak shaving, and is expected to participate in PJM's frequency regulation market.⁸ In another project under the Maryland Pilot, Delmarva Power will own and operate a battery storage project for peak shaving, grid reliability and resiliency that will participate in PJM's ancillary service market.

In Michigan, the Public Service Commission recently issued an Order encouraging the state's electric companies to propose energy storage pilot programs that include tariffs to compensate energy storage for participation in wholesale markets, allowing electric companies to act as aggregators and market participants on behalf of customers' energy storage resources, and compensate the electric companies for the services they provide in these roles.⁹

As the Commission continues to gather information and shape a broad policy position regarding battery storage, the PUC should review the work in these other states and consider the cost savings and benefits that customers can receive when use of storage assets is maximized.

Battery Energy Storage Systems are Part of an Electric Company's Distribution Asset Upgrade Portfolio

Electric companies are driving energy storage installations and are increasingly using energy storage to add flexibility, reliability, and resiliency in supporting generation, transmission, and

⁵ While EEI recognizes that UGI was recently granted approval to put battery storage into its system but not allowed to participate in the PJM Frequency Regulation Market, that settlement was not precedential and does not prevent the Commission from allowing broader participation by UGI or any other EDC in a later proceeding. *See* Docket No. R-2021-3023618.

⁶ *See* Edison Electric Institute, "Harnessing the Potential of Energy Storage" 2021.

https://www.eei.org/issuesandpolicy/Energy%20Storage/Harnessing_Energy_Storage_Factsheet.pdf

⁷ *See* Exelon Utilities. Application of Joint Exelon Utilities for Approval of Energy Storage Pilot Projects. Case No. 9619. April 15, 2020.

[http://webapp.psc.state.md.us/newIntranet/Casenum/NewIndex3_VOpenFile.cfm?filepath=//Coldfusion/Casenum/9600-9699/9619/Item_4\JointExelonUtilitiesStorageFiling\(04152020\)_F.pdf](http://webapp.psc.state.md.us/newIntranet/Casenum/NewIndex3_VOpenFile.cfm?filepath=//Coldfusion/Casenum/9600-9699/9619/Item_4\JointExelonUtilitiesStorageFiling(04152020)_F.pdf)

⁸ *See* Order No. 89664. In the Matter of The Maryland Energy Storage Pilot Program. Case 9619. Nov 6, 2020.

http://webapp.psc.state.md.us/newIntranet/Casenum/NewIndex3_VOpenFile.cfm?FilePath=//Coldfusion/Casenum/9600-9699/9619/40.pdf

⁹ *See* p. 24 Michigan Public Services Commission Order. Case No. U-21032. August 11, 2021 <https://mi-psc.force.com/sfc/servlet.shepherd/version/download/068t000000RIWgpAAF>

distribution operations. In fact, EEI recently documented a sampling of 44 battery storage projects already implemented by 23 electric companies and noted that there are dozens more that are operational or are currently under development.¹⁰ In addition, EEI has an active group of more than 200 participants, representing virtually all investor-owned electric utilities, who are engaged on energy storage technologies and policies, and are either implementing or considering energy storage projects.

Some suggest that utilities considering different distribution system investment solutions will, more times than not, choose traditional wires solutions over energy storage, based on cost. First, when electric distribution companies approach planning decisions, there is no longer a real distinction between traditional wires investments and non-wires alternatives. Energy storage, due to cost declines and numerous benefits referenced above, is regularly being considered as an option for electric distribution companies when examining potential solutions to upgrade distribution systems, though regulatory and operational considerations have resulted in differing rates of adoption across the country. When electric distribution companies propose storage projects, they are reviewed and scrutinized in an open process. When energy storage is shown to be an appropriate solution, the PUC should allow EDCs to recover the costs of storage system investments on a full and current basis. This concept has been exemplified in Pennsylvania, where two electric distribution companies have already received approval for battery storage under the existing regulatory construct.

Electric company ownership and operation of energy storage can provide necessary information to best maintain the reliability, resilience, and safety of the distribution system. Accordingly, electric distribution companies need visibility and operational control of energy storage systems that are integrated into the distribution system for planning and daily operational purposes. An electric company's provision of reliable service is better facilitated and achievable through system control and its important obligation to serve all customers.

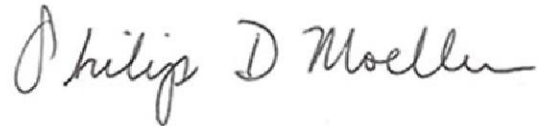
Given the benefits of electric company ownership of storage described above, the Commission should clearly articulate electric distribution companies' right to own, procure, and operate energy storage with the ability to seek rate recovery of associated costs through an appropriate recovery mechanism, as they do any other technology that assists in the ability to optimize and support the energy grid, that ensures the grid's reliability and resiliency, and that maximizes customer benefits. As highlighted in EEI's earlier comments in this proceeding, several states, including California, Connecticut, Illinois, New York, Massachusetts, and Maine, have established laws and/or regulations that explicitly permit investor-owned electric companies to own energy storage as distribution or transmission assets. The Commission should look to these states for guidance on the benefits that can inure to all customers as a result of electric distribution company ownership and operation of these resources.

¹⁰ See Edison Electric Institute. Leading the Way. U.S. Electric Company Investment and Innovation in Energy Storage. June 2021. https://www.eei.org/issuesandpolicy/Energy%20Storage/Energy_Storage_Case_Studies.pdf

Conclusion

Thank you for the time and opportunity to provide additional thoughts on these important issues. EEI commends the Pennsylvania PUC for its time and attention on this important issue and is available if the Commission has any questions or requires more information about anything included in these comments.

Respectfully submitted,

A handwritten signature in black ink that reads "Philip D Moeller". The signature is written in a cursive style with a large initial 'P'.

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