

COMMONWEALTH OF PENNSYLVANIA



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February 8, 2021

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

Re: Petition of PPL Electric Utilities Corporation for  
Approval of Tariff Modifications and Waivers  
of Regulations Necessary to Implement its  
Distributed Energy Resources Management Plan  
Docket No. P-2019-3010128

Dear Secretary Chiavetta:

Attached for electronic filing please find the Office of Consumer Advocate's Comments in the above-referenced proceeding.

Copies have been served as indicated on the enclosed Certificate of Service.

Respectfully submitted,

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Bureau of Technical Utility Services (**email only**)  
Certificate of Service

\*303698

CERTIFICATE OF SERVICE

Re: Petition of PPL Electric Utilities Corporation for :  
Approval of Tariff Modifications and Waivers : Docket No. P-2019-3010128  
of Regulations Necessary to Implement its :  
Distributed Energy Resources Management Plan :

I hereby certify that I have this day served a true copy of the following document, the Office of Consumer Advocate's Comments, upon parties of record in this proceeding in accordance with the requirements of 52 Pa. Code §1.54 (relating to service by a participant), in the manner and upon the persons listed below:

Dated this 8<sup>th</sup> day of February 2021.

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BEFORE THE  
PENNSYLVANIA PUBLIC UTILITY COMMISSION

Petition of PPL Electric Utilities Corporation :  
for Approval of Tariff Modifications and Waivers : Docket No. P-2019-3010128  
of Regulations Necessary to Implement its :  
Distributed Energy Resources Management Plan :

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COMMENTS OF  
THE OFFICE OF CONSUMER ADVOCATE

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Pursuant to the Joint Petition for Settlement of All Issues (Settlement) approved by the Pennsylvania Public Utility Commission (Commission) on December 17, 2020, at Docket No. P-2019-3010128, the Office of Consumer Advocate (OCA) submits these Comments in response to the DER Management Pilot Implementation Plan (Pilot Implementation Plan) filed by PPL Electric Utilities Corporation (PPL or the Company). The OCA generally finds the Pilot Implementation Plan to contain sufficient information providing a basis to study and identify the benefits associated with smart inverters and its autonomous functions as compared to the benefits associated with the DER management device and remote monitoring and control of the DER. The OCA's limited comments attempt to ensure that the Pilot Implementation Plan provides additional information regarding other distribution infrastructure mitigation solutions that may be recognized by these devices and exploring the possibility of informing other solutions.

**I. BACKGROUND**

On May 24, 2019, PPL Electric Utilities Corporation filed its Petition for Approval of Tariff Modifications and Waivers of Regulations Necessary to Implement its Distributed Energy Resources Management Plan (Petition). Through its Petition, the Company requested Commission approval to waive several Commission regulations and modify its tariff to add Rule

12, entitled Distributed Energy Resource Interconnection Service (DERIS or Rule 12). Petition, App. A. As drafted, Rule 12 would require that new Distributed Energy Resource (DER) applicants install a ‘smart inverter,’ consistent with recently updated industry standards, and a DER management device as a condition for interconnection. Petition ¶ 36. The latter device would allow the Company to remotely monitor and manage a customer’s DER. Petition ¶ 37.

After investigation and review of the Company’s filing, several of the parties to the proceeding reached a Settlement, which was subsequently approved by this Commission on December 17, 2020. The Settlement allows the Company to, *inter alia*, establish a pilot program that is limited in scope and cost, and attempts to measure the incremental benefits of the DER management device and its related functions of remote monitoring and control as compared to the benefits provided by the smart inverter and its autonomous functions (Pilot Program). See Settlement ¶ 54.

Pursuant to the Settlement, the Company filed its Pilot Implementation Plan on January 19, 2021, setting forth the goals of the Pilot Program, the use cases that will be tested, and the specific methods and approaches for testing each use case. See also Settlement ¶ 61. This ensures that the Pilot Program has prioritized objectives to assess the accuracy of the Company’s claims and whether these devices provide sufficient benefits in light of their cost.

The Settlement also provides the other signatories to the Settlement the opportunity to file Comments providing feedback and recommendations on the Pilot Implementation Plan. Accordingly, the OCA submits these Comments.

## **II. COMMENTS**

The objective of the OCA’s review of PPL’s Pilot Implementation Plan is to ensure that PPL’s ratepayers will receive the maximum benefit from the Pilot Program, while placing a

reasonable implementation burden on PPL. Specifically, the OCA focused on the potential for smart inverters and the DER management device to mitigate or defer DER-related distribution system upgrades, thereby avoiding additional infrastructure upgrades where possible and as appropriate. Mitigation or deferral of DER-related system upgrades can be achieved through numerous smart inverter related use cases that require various technological capabilities. Therefore, it is critical that the Company collect sufficient information to further inform these possibilities and potential solutions.

As demonstrated by PPL's Pilot Program design, however, smart inverter use cases can be implemented in different ways and with different technologies, *i.e.* autonomous vs. controlled settings, creating different costs and benefits for ratepayers. The OCA's comments focus on ensuring that PPL's Pilot Program creates and collects sufficient data to evaluate as many use cases and implementation pathways as is reasonable.

A. Data Collection of Energy Storage Systems.

Comprehensive data collection and availability will be critical to properly evaluate the Pilot Program. Based upon the Pilot Implementation Plan, however, it is unclear as to whether, or what, energy storage related data the Company will collect through the Pilot Program. For example, the Pilot Implementation Plan states, without much specificity, "voltage and load data will be captured at all DER inverters." Pilot Implementation Plan at 13. Based on this language, it is unclear whether the Company will be able to capture the existence of energy storage systems on PPL's system and separately evaluate the characteristics of these devices.

As this Pilot Program proceeds, however, it is clear that the use of solar and energy storage on electric distribution systems will become a larger issue across the nation and within Pennsylvania. Indeed, energy storage charging tariffs have been proposed in different districts

throughout the country.<sup>1</sup> The tariffs have been created to recover costs caused by energy storage system charging on utility distribution systems. While it is unclear whether PPL has grid connected storage or whether the Commission would consider a charging tariff reasonable at this time, collecting data on energy storage systems for the purpose of understanding cost causation is reasonable.

Accordingly, PPL should collect energy storage related data and specify how it will collect and share this information within the Pilot Program. At a minimum, PPL should track and provide energy storage data as a separate load profile. This could also potentially help inform the Commission on other aspects regarding the use of energy storage, particularly when the Commission is currently trying to evaluate the benefits of energy storage and its role in the distribution system. See Policy Proceeding—Utilization of Storage Resources as Electric Distribution Assets, Docket No. M-2020-3022877, Secretarial Letter (Pa. PUC Dec. 3, 2020).

B. Cost-Causative Characteristics of DERs.

PPL has proposed that the volt/watt function can be enabled and actively managed with the consent of the interconnecting customer. Pilot Implementation Plan at 5, 11. The Volt/Watt function can curtail generation in order to bring or keep voltage on the distribution system in balance.<sup>2</sup> OCA St. 1 at 14. By PPL's description, the Company's active management of volt/watt appears to be similar to what is known as active network management, flexible interconnection capacity, or dynamic curtailment depending on the jurisdiction (hereafter

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<sup>1</sup> See e.g. Southern California Edison Co., Docket No. ER19-2505, Storage Amendments to the Wholesale Distribution Access Tariff (FERC Jul. 31, 2019).

<sup>2</sup> This differs from the smart inverter's volt/VAR mode, where the DER can inject or absorb reactive power to stabilize voltage, rather than curtail generation. OCA St. 1 at 14.

referred to as Active Network Management [ANM]).<sup>3</sup> ANM has been found to be an exceptionally cost-effective approach to increasing hosting capacity and deferring system upgrades related to DERs.<sup>4</sup> For this reason, the OCA strongly supports the evaluation of this use case and appreciates PPL clearly articulating the use in the Pilot.<sup>5</sup>

The use of the volt/watt function speaks to the potential flexibility of PPL's system to utilize different smart inverter parameters to further increase DER hosting capacity and/or delay DER-related upgrades to the DER distribution system. This type of flexibility used in ANM, and potentially on PPL's system, could lead to the development of interconnection fees based on the additional costs a DER can bring to the system if it opts-out of the use of the volt-watt function or other designated parameters. Accordingly, the OCA requests that PPL consider tracking cost causative characteristics of DER export, which will provide interested stakeholders information concerning the qualities of DERs that can cause costs to be incurred by the Company, that may otherwise be avoided through the use of PPL's Distributed Energy Resource Management System (DERMS).<sup>6</sup>

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<sup>3</sup> See John Parnell, Green Tech Media, "New UK DERMS Project Targets Flexibility Across Distribution and Transmission Grids" (Jan. 7, 2021) (available at <https://www.greentechmedia.com/articles/read/new-uk-derms-project-eyes-whole-system-flexibility>); see also Investigation by the Department of Public Utilities On Its Own Motion Into Electric Distribution Companies' (1) Distributed Energy Resource Planning and (2) Assignment and Recovery of Costs for the Interconnection of Distributed Generation, Docket No. 20-75, Vote and Order Opening Investigation (Ma. Dep't of Pub. Util. Oct. 22, 2020).

<sup>4</sup> See the article referenced in footnote 3.

<sup>5</sup> Pilot Implementation Plan at 5; see also Pilot Implementation Plan, Att. C at 5-6.

<sup>6</sup> PPL's initial filing suggests that costs caused by interconnection are primarily related to DER export, which is evidenced by the Company's claims that DERs are causing two-way power flows on the system. See PPL St. 1 at 44-45. Accordingly, PPL should ensure its data is sufficient enough to capture the type of DERs that are most likely to necessitate distribution system upgrades, cause costs to be incurred, and the extent of such costs.

C. Size of the DER.

The cost-effectiveness of PPL's DER Management Device could be highly dependent on the size of DER that the Company monitors and controls. For example, it is possible that requiring monitoring and control on facilities that are larger than residential installations, i.e., 30 kW, could achieve the vast majority of benefits at a much lower total cost compared to a situation where PPL is allowed to remotely monitor and manage all DER systems (including the smallest).

PPL's Pilot Program, however, does not evaluate how costs and benefits could vary by size of the DER. Accordingly, analyzing capacity thresholds for where monitoring and control provide an optimal cost-benefit ratio will remain of interest to the OCA. The OCA suggests that PPL, to the extent possible, attempt to collect data and conduct analysis to investigate this issue.



### III. CONCLUSION

WHEREFORE, the OCA submits these Comments regarding PPL's DER Management Pilot Implementation Plan. The OCA appreciates the Company's efforts and looks forward to the data and information the Pilot Program will provide the OCA and other interested stakeholders.

Respectfully Submitted,

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