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November 29, 2021

**VIA E-FILE**

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

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

Dear Ms. Chiavetta:

Enclosed you will find the Comments of UGI Utilities, Inc. – Electric Division in the above-referenced docket.

Sincerely,

/s/ Michael S. Swerling  
Michael S. Swerling

Cc: Assistant Counsel Aspassia V. Staevska  
Assistant Counsel Joe Cardinale  
Fixed Utility Financial Analyst David Edinger

**BEFORE THE  
PENNSYLVANIA PUBLIC UTILITY COMMISSION**

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

**UGI UTILITIES, INC. – ELECTRIC DIVISION’S  
COMMENTS TO THE COMMISSION’S SECRETARIAL LETTER**

**I.       INTRODUCTION**

On December 3, 2020, the Pennsylvania Public Utility Commission (“Commission” or “PUC”) issued a Secretarial Letter (“December 3 Secretarial Letter”) to explore the viability of enhancing reliability and resiliency through utility-owned electric storage assets. According to the Commission, grid connected batteries, in appropriate circumstances, may enhance distribution system reliability more economically than traditional investments. In its December 3 Secretarial Letter, the Commission sought answers to three questions to help guide and develop policymaking in this area. Interested parties, including UGI Utilities, Inc. – Electric Division (“UGI Electric”), submitted comments on February 18, 2021.<sup>1</sup>

On August 12, 2021, the Commission issued a second Secretarial Letter in this docket (“Secretarial Letter”), requesting comments from interested parties on seven additional questions relating to the implementation and use of battery storage to improve distribution efficiency and resiliency. Comments to these additional questions were to be filed by September 27, 2021. On September 14, 2021, the Commission granted a motion request filed by the Clean Air Council *et*.

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<sup>1</sup> Per the December 3 Secretarial Letter, comments were due by January 18, 2021. However, on December 28, 2020, the Office of Consumer Advocate (“OCA”) requested a 30-day extension of the filing deadline, which was granted on December 30, 2020, thereby extending the comment deadline to February 18, 2021.

*al.* for a 60-day extension to the due date for comments, which revised the due date to November 29, 2021. UGI Electric supports the Commission's efforts to determine how storage assets can perform distribution system functions and hereby submits its response to the August 12 Secretarial Letter.

## **II. RESPONSE**

- A. What are the parameters that would allow for the use of energy storage on the distribution grid? For example, what factors should be used in the consideration of the energy-storage project? 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.?**

Any parameters adopted should be flexible allowing utilities to include battery technology in their overall distribution system designs and plans. This flexibility will strengthen grid resiliency and enhance reliability in ways that can complement traditional investments. Batteries can be used to serve different and multiple reliability functions (e.g., outage mitigation, peak load shaving, frequency balancing, renewable integration, etc.) as the situation may require. However, each utility's distribution system is different as are the particular reliability and operational issues a utility is working to address on their system. Therefore, Electric Distribution Companies ("EDCs") are best suited to determine the appropriate methods and manners for integrating batteries into their systems to address reliability hazards, reduce distribution system costs and enhance the customer experience. Moreover, each battery installation will depend on the specific reliability service goals the utility is seeking to address. For instance, in determining the appropriate location and need for a battery to reduce outage durations on a bad performing circuit, an EDC may consider factors such as:

- Reliability metrics (SAIFI, SAIDI and CAIDI)
- Benefits and cost of the battery versus traditional solutions
- Number and duration of past outages during major storms, storms, and non-storm conditions
- Number of customers served and impacted by outages
- Hazardous conditions (e.g., trees/branches on and off the public right of way)
- Extent to which outage durations could be reduced by a battery
- How batteries can make triage response more efficient during storm response

In considering the use of battery storage technology by EDCs, the Commission should support their use to foster safe and reliable distribution service to customers, including consideration for the changing demands and threats to the electric grid. As stated by the bureau of Technical Utility Services (“TUS”) in the Executive Summary of its 2019 Electric Service Reliability Report:

In general, overall reliability performance of most EDCs in meeting benchmark performance metrics continued to be poor in 2019. The reliability performance and resilience of the overall Pennsylvania electrical distribution system is trending negative. Electric reliability and resilience appears [sic] to be most challenged during storm activity which bring down off-right-of-way trees and limbs onto the distribution lines. If the weather pattern experienced in the past three years becomes the new norm, it appears many EDCs will continue to struggle to achieve sustained benchmark performance. It may be that changes are needed by EDCs to excel, continually improve, and develop new ideas that will achieve and sustain existing benchmark reliability performance metrics and strengthen grid resilience during extreme weather events. Vegetation management of off right-of-way trees continues to cause major disruptions for customers during severe weather events.

The Commission’s policies should support utility investment in new ideas that achieve and sustain existing benchmark reliability performance and strengthen grid resilience during extreme weather events. More specific to the Commission’s inquiry here, the Commission should

recognize that to the extent a battery is being used purely as a distribution or reliability solution then that use should not be evaluated any differently than other distribution infrastructure that is deployed by the EDC. The Commission's existing process for evaluating distribution infrastructure is adequate for addressing the use of battery storage technology being used purely for distribution purposes.

Accordingly, UGI Electric encourages the Commission to adopt a standard that presumes that battery storage technology is an acceptable solution where its primary purpose is to address reliability issues, where it is used in lieu of other traditional infrastructure work, and where it is a cost effective alternative. Under those conditions, there is no basis for assessing battery storage technology using a different standard than other traditional infrastructure projects undertaken by a utility. Similarly, there is no basis for requiring specific review and approval of individual battery storage projects that are used exclusively for distribution purposes.

Adopting this approach will allow EDCs to include battery storage technology as an additional option available to solve reliability issues, serve critical customers (e.g., police, hospital, supermarkets, etc.), and address developing system needs. To the extent the Commission believes that battery storage projects require specific review and approval, the Commission should do so on an individual project basis considering the specific system needs that will be addressed by the battery. This need demonstration should match the demonstration that the Commission currently requires an EDC to provide in order to justify an infrastructure project. With current regulatory review processes such as Long Term Infrastructure Improvement Plans, Annual Asset Optimization Plans and general base rate case proceedings, there appears to be no need for

additional or more onerous standard of review, and no basis as a matter of fact or law for applying one.

Battery storage technology is just one of a number of emerging technologies that have the potential to revolutionize the grid as well as the reliability performance of EDCs. The Commission should seek to encourage the efficient and expedient adoption of new technology and be a pioneer of innovation for the Commonwealth. The Commission should adopt policies that are flexible and capable of growing and evolving with new technologies into the future. Battery storage technology is still considered an emerging technology, but it is growing rapidly and utilities expect this to be a much more common tool to be deployed on a forward basis. Therefore, the Commission should adopt policies that allow new and emerging technologies to be quickly adopted and deployed by EDCs through a transparent process. Doing so will improve reliability, solve reliability problems, modernize the grid and provide reliable and affordable service to customers without delay.

It is for these reasons that UGI Electric recommends that the Commission refrain from cataloging criteria or specifying limitations on the use of battery storage at this time. A permissive standard with a case by case approach will allow for the successful use and integration of modern technology in a manner that best serves customers.

In its inquiry, the Commission asks if RFPs should be used to solicit potential third-party providers of storage assets. UGI Electric believes that storage assets should be owned and operated by the EDC. Storage assets, such as the lithium-ion battery that UGI Electric is installing in its distribution system, serve a distribution function just like all utility assets. As explained in the Company's 2021 Electric Rate case (at Docket No. R-2021-3023618), the purpose of its battery project is to improve reliability and resiliency for one of UGI Electric's worst performing circuits.

To that end and as agreed in settlement of the 2021 Electric Rate Case, the Company is installing a 1.25 MWh battery on the identified circuit as part of a pilot in which UGI Electric will provide data about the battery's performance. Settlement of the battery proposal was based on its small size and the unique circumstances of the distribution circuit, including its voltage, its status as a worst performing circuit, the surrounding terrain, the nearby vegetation, and the load served by the circuit. The settlement allows the Company to recover the costs of the battery project through base rates.

This is in keeping with the rights and responsibilities that apply to EDCs when they undertake to provide safe and reliable service to customers. Specifically, because the EDC is responsible to provide safe and reliable service, it must make proper investments to support the performance of the distribution system. Therefore, the EDC should be permitted to recover costs for installing equipment that provides this public service. Moreover, one of the fundamental components of ratemaking and public utility service is that distribution service infrastructure provides public benefits to a broad group of customers who share in the costs of the system as a whole. As such, these investments are capitalized and recovered from all customers through rates, including projects that only impact small subsets of an EDC's total customers.

While UGI Electric believes that EDCs should be allowed to own batteries, EDCs also should exercise prudent procurement methodologies related to deployment such as conducting competitive RFPs to procure the battery and key components, any specialized information technology needed to control it, and a developer/installer of the battery system if not performed by internal resources. Such a process would enact prudent costs control measures and permit qualified entities and suppliers to participate in the bidding process.

In its inquiry, the Commission also asked whether it should adopt limitations on project size and scope, etc. UGI Electric believes that the existing rules in Chapter 57 adequately address the installation of a battery into the distribution system in terms of voltage and frequency. Aside from that, the size and location of each battery will depend on the specific circumstances of the installation. As long as the battery complies with Chapter 57 and EDC tariffs, no size and scope prohibitions need to be adopted.

**B. What EDCs have undertaken energy-storage initiatives as a pilot program and what were the results and lessons-learned?**

UGI Electric is one of the EDCs in Pennsylvania that is in the process of exploring battery storage technology. As previously stated, UGI Electric is installing a battery to improve the reliability and resiliency for one of its worst performing circuits. Like many other rural circuits, the distribution circuit is a single phase tap that is near the end of a feeder, six miles from the substation that powers it, which increases the exposure of the line to outage risks. Moreover, the area surrounding the circuit and the main line feeding it is primarily mountainous in nature and features heavy vegetation, which also increases the chance of a vegetation-related outage, as well as making vegetation work to reach and remove trees more difficult. Finally, the source line feeding the circuit, and the primary location for faults, is bounded by a mountain on one side and a railroad and river for a significant portion on the other side, which precludes the possibility of line relocation away from vegetation. UGI Electric already completed work to add line sectionalizing to minimize customer exposure to outages along the circuit and performed non-



capital reliability improvements, including vegetation management with targeted danger tree removals.

In determining that the battery solution was the preferable approach to address the ongoing outage concerns, UGI Electric compared the use of a battery solution to other traditional infrastructure solutions. The Company considered the following projects:

- Constructing a new substation at the remote end of the primary feeder at an estimated cost of \$5.1 million (excluding costs related to property acquisition and distribution tie-in).
- Relocating the source lines underground where feasible, at a cost of approximately \$4.8 million.
- Creation of a tie-line to an existing source approximately 1.5 miles away, through mountainous, challenging terrain at a preliminary cost estimate of \$3.0 million (excluding any capacity upgrades that may be required to source facilities used to create the tie-line, environmental and permitting costs, or land acquisition).
- Relocation of overhead supply facilities were considered, but ultimately rejected as infeasible.

Compared with these solutions, which range from \$3.0 to \$5.1 million, the \$1.5 million cost of the battery presented the lowest cost solution to address the performance issues on the identified worst performing distribution circuit.

While the Company has not yet implemented the battery storage project, a review of the historic outage conditions on the distribution circuit provides an idea of the impact the battery may have on reliability. Looking at recent outage data, if the battery had been installed it would have covered the entire outage for 22 of the 26 outages experienced on the distribution circuit between 2016 and 2020. Further, of the remaining four outages, there was only one outage where the battery would not have covered the vast majority of the outage minutes. For that one outage, the battery still would have covered 54.46% of the outage duration for all impacted customers. If the

battery performs as expected, it will have a significant impact on the reliability of service for the customers served off this distribution circuit.

UGI Electric's rate case shows that battery solutions can and should be considered and assessed in the same way other infrastructure and reliability solutions are considered. As part of the battery storage pilot, UGI Electric will maintain and provide information concerning the duration, extent, cause, and times for each outage, the duration and times the battery storage system was used to maintain service during the outage, and loads on the facilities served by the battery storage system just prior to and during the outage. Such information will be provided in annual reports filed with the Commission by January 1st of each year that the battery storage system remains in service, with the first annual report to be filed by January 1, 2023.

**C. Under what circumstances is it appropriate to deploy energy storage as compared to traditional infrastructure upgrades**

Currently battery technology has the ability to be deployed in many different configurations, including generation, transmission, distribution, and some combination of these options. Further, this technology presents a dependable solution that will continue to evolve and improve with further deployment and more widespread use. UGI Electric encourages the Commission in this proceeding to maintain the flexibility of battery technology so that EDCs will have as many options available in the toolbox as possible to address the changing demands of customers, new challenges in the electricity market, or the improvement of the battery storage technology itself.

Additionally, existing battery storage technology can serve a number of ongoing distribution system needs. These include localized outage concerns where other traditional solutions have already been explored and dismissed, such as those present in UGI Electric's battery

storage project. Unlike most traditional solutions, battery technology offers the advantage of being able to place a reliable storage source close to customers which reduces the risk from typical outage causes. Particularly, current battery technology is a cost-effective option to address reliability challenges for pockets of load or where a specific point of load experiences issues, because battery storage can provide a targeted and tailored solution. This is particularly true for locations with critical customers. Finally, battery storage technology offers a solution to voltage challenged areas of the distribution system, where it can be used to provide voltage solutions close to the location of load in order to mitigate line losses and drops.

UGI Electric's comments focus exclusively on the use of battery storage technology for distribution system purposes, although the Company does not believe its comments have exhausted many currently available uses of battery storage technology, and these comments do not attempt to forecast future uses of this technology based on the likelihood that this technology will continue to grow in the ways in which it can be deployed. For this reason, UGI Electric believes that the Commission should not be prescriptive in its policymaking. This technology is evolving, and utilities need to be able to adjust their use as the technology changes and becomes less expensive.

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

As stated in the response to Question 1 above, EDCs should be allowed to own batteries installed on their distribution systems because they provide distribution functions. The Commission should avoid a prescriptive approach to battery ownership that would limit its ownership and application by EDCs. Specifically, the Commission should encourage EDC ownership where it makes sense (e.g., for reliability and resiliency) and provides lower or cost competitive alternatives to traditional infrastructure projects.

Similarly, the Commission should not mandate third party ownership in developing its policies here as it must recognize, in particular, that the EDC must have the full capability to control the use of the technology and have full visibility into the battery's deployment and dispatch. This is not to say that EDCs may not develop public-private partnerships around the use of battery storage technology. Rather it is to say that the EDCs themselves should be given the authority to explore these options and to present them to the Commission where such an option would provide a solution that would be in the public interest.

**E. What processes should the Commission use to review requests to utilize energy storage as a distribution asset and recover associated costs?**

As indicated previously in these comments, UGI Electric does not believe that the Commission needs to alter its existing processes for incorporating battery storage technology into the distribution system. EDCs should be allowed to choose the avenues for seeking approval to recover the costs for battery installations – whether in the context of a base rate case, an LTIP filing or a stand-alone petition request. For basic reliability projects, in order for battery storage technology to be an equally accessible option for EDCs, the Commission should not require any review beyond what is currently used for other reliability projects. In the context of an LTIP proceeding, battery technology should be considered LTIP-eligible infrastructure.<sup>2</sup> However, it should not otherwise require a separate Commission review and approval process in order for that

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<sup>2</sup> Battery technology could be considered eligible property (i.e., other related capital costs) pursuant to 66 Pa. C.S. 1352(1)(vi).

technology to be deployed by an EDC. There is simply no basis in either law or prudent regulation that calls for battery technology to be scrutinized more closely than other distribution technology.

To the extent the use of storage may deviate from a reliability project, or where an EDC may seek for more novel and non-distribution specific uses, EDCs can propose such projects in base rate proceedings or through a separate petition to the Commission for its consideration and approval. Further, if the Commission seeks additional transparency in this market in its nascent days so that it may better understand the deployment and use of battery storage technology, then UGI Electric encourages the Commission to implement reporting requirements associated with the deployment of batteries until such technological understanding is achieved. An example of these reporting requirements can be found in the UGI Electric rate case settlement at Docket No. R-2021-3023618. The focus of any additional reporting requirements should be on transparency, accountability and providing the Commission with visibility on how this new technology may be used to serve the public.

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

Given that this technology is still developing, UGI Electric encourages the Commission not to limit the avenues of cost recovery associated with battery storage technology, since it will have many potential uses. As shown in UGI Electric's rate case, traditional cost recovery is certainly an appropriate avenue for these projects when they focus on reliability and are a substitute for other infrastructure projects. However, where battery storage technology may offer a solution to aging infrastructure replacement, the Commission should allow this technology to be included by EDCs in their LTIPs and recovered through the Distribution System Improvement Charge ("DSIC"). Allowing cost recovery through the DSIC would encourage more rapid deployment of

customer-benefitting technology. As UGI Electric has stated previously, the goal of the Commission's policy inquiry should be to provide EDCs with as many useful and effective tools as possible to ensure reliable service to customers and the modernization of the electric grid.

Ultimately, location and use should drive the Commission's analysis on cost recovery, but lowering the barriers around both deployment and cost recovery will be critical to the efficient implementation of battery storage technology.

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

UGI Electric encourages the Commission to consider the significant public benefits that may be achieved by allowing battery technology to participate in the wholesale power market where material benefits may be realized for its customers. While the Commission must carefully balance the needs of the competitive market, battery technology is uniquely situated amongst infrastructure replacement options to allow customers to see the overall cost of reliability projects involving batteries to be lowered through offsetting revenue associated with using the battery in the wholesale power market.

The Commission should consider identifying certain conditions under which EDC owned or operated batteries may be used in the wholesale market, and to indicate openness to considering any specific proposal advanced by an EDC. UGI Electric suggests that appropriate limitations may require that any battery project used in this fashion have a primary purpose of improving reliability, and that any revenues generated from participation in the wholesale market be utilized in some form of a cost offset mechanism. These criteria would ensure that projects would produce the maximum benefit to the public by achieving improvements to reliability and reducing the cost of such improvements to customers. Any final policy adopted by the Commission should

encourage EDCs to explore this innovative approach that offers potentially significant benefits to customers.

### **III. CONCLUSION**

UGI Electric appreciates the opportunity to provide comments on the August 14 Secretarial Letter and asks that the Commission favorably consider its comments in this inquiry.

Respectfully submitted,

/s/ Michael S. Swerling

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