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File #: 140056

March 8, 2024

***VIA ELECTRONIC FILING***

Rosemary Chiavetta, Secretary  
Pennsylvania Public Utility Commission  
Commonwealth Keystone Building  
400 North Street, 2nd Floor North  
P.O. Box 3265  
Harrisburg, PA 17105-3265

**Re: Petition of PPL Electric Utilities Corporation for Approval of Major Modifications to its Existing Long-Term Infrastructure Improvement Plan  
Docket No. P-2022-3034972**

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Dear Secretary Chiavetta:

On January 17, 2024, PPL Electric Utilities Corporation (“PPL Electric” or the “Company”) filed the above-captioned Petition for Approval of Major Modifications to its Existing Long-Term Infrastructure Improvement Plan (“Petition”) with the Pennsylvania Public Utility Commission (“Commission”). In the Petition, PPL Electric requested Commission approval of certain “major” modifications its Long-Term Infrastructure Improvement Plan (“LTiIP”), namely: (1) adding a new program, *i.e.*, Predictive Failure Technology (“PFT”); and (2) updating its total capital expenditure projection for the LTiIP, which exceeded by more than 20% the total capital expenditure projection set forth in the current LTiIP. The Office of Consumer Advocate (“OCA”) filed an Answer to the Petition on February 6, 2024.

On February 16, 2024, the OCA filed Comments requesting “supplemental information” from the Company about the proposed modifications. The OCA also recommends that the Commission “reaffirm that the inclusion of property in the LTiIP is not dispositive of whether the cost of that project will be afforded [Distribution System Improvement Charge (“DSIC”)] recovery.” (OCA Comments, p. 7.) On February 22, 2024, the Company filed answers to the Commission’s Bureau of Technical Utility Services’ (“TUS”) data requests, which provided additional information about the Company’s proposed PFT program.

PPL Electric respectfully submits this letter in reply to the OCA's Comments and addresses certain of the questions and concerns set forth in the OCA's Comments as follows.<sup>1</sup>

## **I. PROJECTED LTIP EXPENDITURES**

In its Comments, the OCA presents a chart comparing the differences between the existing LTIP budgets and proposed LTIP budgets. Based on that chart, the OCA concludes that the "primary drivers for the increased projections are Predictive Failure Technology, Substation, and Reliability." (OCA Comments, p. 5.) OCA then states that "[i]mplementation of Predictive Failure Technology is only a portion of the proposed increases" and that "the Company has not adequately addressed the remaining increases." (OCA Comments, p. 5.) "Prior to Commission approval of this modification," the OCA asserts that "the Company should provide additional specifics as to the location of these changed investments, and the expected benefit for each selected location." (OCA Comments, p. 5.)

Several factors are driving PPL Electric's increased investments in DSIC-eligible property over the current LTIP's term. First, PPL Electric's proposed budget increase for Reliability projects incorporates wildfire mitigation and storm hardening measures, which are critical in light of the wildfire risks and severe weather events affecting electric distribution companies ("EDCs"). In fact, PPL Corporation is standardizing and enhancing its approach to strengthen its utility subsidiaries' electric distribution systems to be better prepared for the risks of wildfires and severe weather events. Moreover, in 2023, PPL Electric experienced 45 severe weather events, surpassing the Company's previous record of 42 severe weather events in 2021. Also, in the Commission's 2021 Reliability Report, the Commission encouraged EDCs to continue investing in reliability improvement and resilience to weather events. As such, PPL Electric proposed modifications to its LTIP that are focused on addressing these risks from wildfires and severe weather events, including approximately 6 miles of reconductoring underground and spacer cable deployment in 2024 alone. The Company also plans to continue deploying smart grid investments through the term of the LTIP.

Second, the Company proposes a budget increase for Substation projects because PPL Electric needs to accelerate investments in critical substation assets, so that the Company can stay ahead of the substation failure trends observed in recent years. For example, based on a data analytics model, if PPL Electric were to continue replacing power transformers at historical rates, a large percentage of the Company's transformer fleet would be at a higher risk of failure over the next 10 years. However, under PPL Electric's proposal for accelerated investments in critical substation assets, PPL Electric's transformer replacement rate would nearly double (*i.e.*, targeting six to eight replacements annually) and would drive down that percentage.

Third, in parallel with the accelerated investments in critical substation assets, the Company has proposed an increase in the Protection and Control budget that is focused on upgrading the suite of legacy substation relays with microprocessor-based relays. These

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<sup>1</sup> To the extent that the Company does not address a recommendation or issue in this letter, PPL Electric's failure to respond should not be construed as the Company's agreement therewith.

investments will improve remote visibility, expedite fault restoration, and facilitate adaptive protection schemes. Also, these investments will continue to drive quicker restorations for customers via PPL Electric's Fault Isolation System Restoration ("FISR"), which helped automatically restore service to nearly 1.9 million customers through 2023.

Fourth, the proposed modifications to the LTIP reflect significant changes in supply chain market conditions and inflation, which are being driven by commodity shortages, transportation costs, and increased industry demand. For example, the procurement costs for transformers between 2016 and 2020 averaged approximately \$590,000. Since 2021, however, those costs have averaged over \$1 million. Industry demand also remains at the highest levels seen in the last five years and continues to drive higher costs and extend lead times for distribution units from vendors.

Lastly, in response to OCA's Comments, PPL Electric has prepared the attached **Appendix A**, which provides the scoped locations for Substation and Reliability projects under the five-year term of the revised LTIP.<sup>2</sup> This list addresses the OCA's request for additional specifics about the location of these investments and further supports the Company's proposed increases for the Substation and Reliability budgets.

## **II. VEGETATION MANAGEMENT**

The OCA questions whether the Company should be directed its spending more to vegetation management, noting how page 36 of the 2021 Pennsylvania Electric Reliability Report says that, for PPL Electric, "Trees were the top cause of outages and customer-minutes interrupted" and that "[o]ver 74% off customer minutes interrupted are caused by trees, and 13% are caused by equipment failure." (OCA Comments, pp. 5-6.) The OCA also claims that it "is currently unable to accurately determine how much of this proposed new level of spending is specifically being earmarked for enhanced, more frequent or targeted vegetation management." (OCA Comments, p. 6.)

PPL Electric's proposed modifications to its LTIP will bolster the Company's vegetation management efforts and help reduce vegetation-caused service interruptions. As observed previously, the Reliability program investments surrounding PPL Electric's grid resilience initiative include reconductoring sections of cable underground, which effectively eliminates the exposure of vegetation encroachment.

Furthermore, the Company's investment in PFT will help the Company deploy vegetation management crews more effectively. As noted in response to TUS Set I, No. 1(b), five of the 42 issues found by PFT on the three test circuits were directly related to vegetation encroachment. Once PFT is deployed across the grid, PPL Electric will have continual, real-time monitoring of issues that are affecting or could affect the safe and reliable operation of the electric distribution

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<sup>2</sup> PPL Electric notes that through its business planning cycles, the projects included on this list could change, such as the addition of other projects. Moreover, the Reliability project locations do not include small or emergent work that is scoped throughout the year.

system, thereby enabling the Company to deploy vegetation crews more efficiently and effectively.

### **III. COST-BENEFIT ANALYSIS**

The OCA avers that PPL Electric “has not supported [the] increases in its LTIP expenditures with a cost-benefit analysis.” (OCA Comments, p. 6.) Further, the OCA alleges that “PPL estimates a \$9 million savings” in operation and maintenance (“O&M”) expense “due to the implementation of Predictive Failure Technology; however, the revised LTIP provides that this technology will cost \$84.44 million.” (OCA Comments, p. 6.) According to the OCA, “[o]verall, the Company has identified increased expenditures of \$287 million (\$238 million when the DOE grant is subtracted) for a \$9 million reduction in O&M expense.” (OCA Comments, p. 6.) Thus, the OCA contends that “this is an upside-down cost-to-benefit ratio” and that “without further detail there is no way to determine the overall reasonableness of these program modifications.” (OCA Comments, p. 6.)

To clarify, PPL Electric estimates that, at scale, PFT will reduce annual O&M expense by \$9 million. As stated in response to TUS Data Requests Set I, No. 3, “the average life expectancy of this technology is 10-15 years.” Therefore, when compared to the budget of \$84.44 million, the \$9 million reduction in O&M expense over a 10 to 15-year period is cost-effective.

In addition, the proposed modifications reflect the Company’s acceleration of replacing aging, high risk infrastructure that will enhance the safety and reliability of PPL Electric’s service. Specifically, the Company is using data analytic models to identify poor performing and vulnerable assets to assess failure risks across its system. Based on these models and known failure rates, PPL Electric is targeting these accelerated investments to replace nearly 70% of all high-risk circuit breakers, 48% of all high-risk substation getaways, 30% of tie cables, and 13% of all high-risk transformers through the end of the current LTIP’s term in 2027.

Moreover, in the Reliability program, PPL Electric’s proposed modifications include investments in undergrounding, spacer cables, and additional smart grid deployment, which could save up to 34,000 customer interruptions just in the first two years. As additional scope is defined in outer years, even more savings could be realized. Further, additional benefits of these investments include wildfire mitigation, like applications of spacer cable, which reduce the potential for electrical-derived ignition.<sup>3</sup>

Also, under the Substation program, benefits of the Company’s increased investments include near real-time substation monitoring with upgraded relays and critical substation infrastructure, which are designed to support proactive asset health monitoring and to facilitate more efficient grid operations and fault restoration. All of these benefits will help maintain or

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<sup>3</sup> <https://www.marmonutility.com/wp-content/uploads/2023/02/Fire-Mitigation-United-Power-Installs-Hendrix-Spacer-Cable.pdf>.

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improve safety and reliability of the Company's distribution system. Thus, PPL Electric is confident its investments will yield long-term benefits for its customers.

#### **IV. SUBSTATION SPENDING**

The OCA avers that “[t]he Petition does not provide any explanation for” the large increase in substation spending “beyond a statement that new PPL personnel determined that the approved LTIIP's level of spending ‘was insufficient to maintain reliability when considering changes in operating conditions.’” (OCA Comments, p. 6.) Moreover, the OCA states that “it may be reasonable to evaluate why PPL’s personnel erred in establishing the approved LTIIP’s substation budget, and how the new projections would rectify the Company’s concerns.” (OCA Comments, p. 6.)

As set forth in Section A, *supra*, and the Company’s Petition, PPL Electric maintains that its proposed increase in the Substation budget is reasonable and justified.

Based on the foregoing, PPL Electric maintains that through its Petition, its answers to TUS’s data requests, and the information provided in this letter, the Company has demonstrated that its proposed “major” modifications are reasonable and in the public interest. Thus, PPL Electric respectfully requests that the Commission approve the Petition.

Respectfully submitted,



Devin Ryan

DR/dmc  
Enclosures

cc: Harry R. Bidelspach Sr. (*via email; w/attachments*)  
Certificate of Service

### Appendix A – Locations of Reliability and Substation Projects

Substation Name	Reliability Project (Y/N)	Substation Project (Y/N)
ALLENTOWN	N	Y
ARROWHEAD	Y	N
ASHFIELD	Y	N
ATGLEN	N	Y
AUBURN	Y	N
AUGSTAVILLE	Y	N
AVOCA	Y	Y
BARTONSVILLE	N	Y
BEAR CREEK	N	Y
BEAVERTOWN	Y	N
BENVENUE	Y	N
BERWICK	N	Y
BINGEN	Y	N
BLOOMING GLEN	Y	N
BLOOMSBURG	Y	N
BLUE MOUNTAIN	Y	N
BLYTHEBURN	Y	Y
BROOKSIDE	Y	N
BUCK	Y	N
CANADENSIS	N	Y
CARBON	Y	N
CARLISLE	Y	N
CATASAUQUA	N	Y
CEDAR AVENUE	N	Y
CENTRAL ALLENTOWN	N	Y
CHAPMAN	N	Y
CHERRY HILL	N	Y
CLEVELAND	Y	N
COCALICO	N	Y
COOPERSBURG	Y	N
CRACKERSPORT	N	Y
DALMATIA	Y	Y
DANVILLE	N	Y
DONERVILLE	Y	N
DONNERVILLE	N	Y
E ELIZABETHTOWN	Y	N
EAST HAZLETON	N	Y
EAST LANCASTER	N	Y

Substation Name	Reliability Project (Y/N)	Substation Project (Y/N)
EDELLA	N	Y
EGYPT	N	Y
ELIZABETHTOWN	N	Y
ELIZABETHVILLE	Y	N
EXCHANGE	N	Y
EXETER	Y	N
EYNON	Y	Y
FARMERSVILLE	N	Y
FLEMINGTON	N	Y
FOGELSVILLE	N	Y
FREELAND	Y	N
GEORGETOWN	N	Y
GILBERT	Y	Y
GOWEN CITY	Y	Y
GREEN PARK	Y	Y
GREENFIELD	Y	N
HALIFAX	Y	Y
HAMILTON	N	Y
HARLEIGH	N	Y
HARTLAND	N	Y
HARWOOD	N	Y
HATFIELD	N	Y
HEIDELBERG	Y	N
HEIDELBURG	N	Y
HEMPFIELD	Y	Y
HERSHEY	N	Y
HICKORY RUN	N	Y
HOCKERSVILLE	N	Y
HONESDALE	Y	N
HUNTER	Y	N
INDIAN ORCHARD	Y	N
JERSEY SHORE	N	Y
KENMAR	N	Y
KEYSER AVENUE	N	Y
KINZER	Y	N
LAKE HARMONY	N	Y
LANARK	N	Y
LANDISVILLE	N	Y
LAWNTON	Y	N

Substation Name	Reliability Project (Y/N)	Substation Project (Y/N)
LEOLA	N	Y
LIMESTONE	Y	N
LINCOLN	Y	N
LINDEN	N	Y
LINGLESTOWN	N	Y
LITITZ	N	Y
LOCK HAVEN	N	Y
LOGANTOWN	Y	N
MACADA	N	Y
MADISONVILLE	N	Y
MC ALISTERVILLE	Y	N
MICKLEYS	N	Y
MIDDLEBURG	Y	N
MILFORD	N	Y
MINSI TRAIL	N	Y
MONTOURSVILLE	Y	Y
MORGANTOWN	N	Y
MOSCOW	N	Y
MOUNT ALLEN	Y	Y
MOUNT CARMEL	N	Y
MOUNT POCONO	N	Y
NEW BLOOMFIELD	Y	N
NEW COLUMBIA	Y	N
NEWPORT	Y	N
NO HARRISBURG	Y	N
NORTH COLUMBIA	N	Y
ORWIGSBURG	N	Y
PALMERTON	Y	Y
PARRISH	N	Y
PENNS	Y	N
PENNSBORO	Y	Y
PINE GROVE	Y	Y
PINE RIDGE	N	Y
POINT	Y	Y
POINTE NORTH	N	Y
PORT CARBON	N	Y
PROVIDENCE	N	Y
QUARRYVILLE	N	Y
REAMSTOWN	N	Y

Substation Name	Reliability Project (Y/N)	Substation Project (Y/N)
REED	Y	Y
ROCKVILLE	Y	N
ROHRSBURG	Y	N
ROSEVILLE	Y	N
RUTHERFORD	N	Y
SALEM	N	Y
SCHNECKSVILLE	Y	N
SEIDERSVILLE	N	Y
SELLERSVILLE	N	Y
SHENANDOAH	Y	N
SHILLINGTON	Y	Y
SOUTH AKRON	N	Y
SOUTH ALLENTOWN	N	Y
SOUTH HERSHEY	Y	Y
SOUTH MANHEIM	N	Y
SOUTH MILTON	N	Y
SOUTH SLATINGTON	Y	Y
SPORTING HILL	N	Y
STROUDSBURG	N	Y
SUBURBAN YARD 2	N	Y
SULLIVAN TRAIL	Y	Y
SUMMERDALE	N	Y
SUMNER	N	Y
SWATARA	N	Y
TANNERSVILLE	N	Y
TERRE HILL	N	Y
THROOP	N	Y
TREICHLERS	N	Y
TREXLERTOWN	N	Y
UNIVERSITY	Y	N
UPPER HANOVER	N	Y
WAGNERS	N	Y
WALKER	N	Y
WATSON	Y	Y
WEISSPORT	Y	Y
WERNERSVILLE	N	Y
WERTZVILLE	Y	Y
WEST ALLENTOWN	N	Y
WEST BERWICK	Y	N

Substation Name	Reliability Project (Y/N)	Substation Project (Y/N)
WEST BLOOMSBURG	Y	Y
WEST CARLISLE	N	Y
WEST LANCASTER	Y	N
WESTGATE	N	Y
WHITE HILL	N	Y
WILKES-BARRE	N	Y
WOOLRICH	Y	Y
WOOLRIDGE	Y	N
YATESVILLE	N	Y
ZIONSVILLE	Y	N

## CERTIFICATE OF SERVICE

I hereby certify that a true and correct copy of the filing has been served upon the following persons, in the manner indicated, in accordance with the requirements of 52 Pa. Code § 1.54 (relating to service by a participant).

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