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File #: 193598

October 31, 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 its Act 129 Phase IV
Energy Efficiency and Conservation Plan
Docket No. M-2020-3020824**

Dear Secretary Chiavetta:

Enclosed for filing is the supplemental answer to the data request propounded by the Bureau of Technical Utility Services on October 16, 2024, in the above-captioned proceeding, concerning the Petition of PPL Electric Utilities Corporation for Approval of a Minor Change to Its Act 129 Energy Efficiency and Conservation Plan. The supplemental answer provides additional information for the responses to subparts (a) and (b) of the data request.

Copies of the answer to the data request are being served as indicated below and on the enclosed Certificate of Service.

Respectfully submitted,



Devin Ryan

DTR/dmc
Enclosures

CERTIFICATE OF SERVICE
(Docket No. M-2020-3020824)

I hereby certify that a true and correct copy of this 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).

VIA E-MAIL

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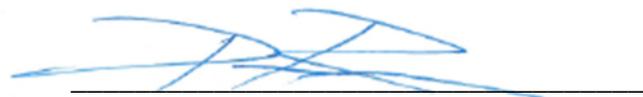
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Dated: October 31, 2024



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Rosemary Chiavetta, Secretary
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cc: Joseph Sherrick (*via Email josherrick@pa.gov*)
Darren Gill (*via Email dgill@pa.gov*)
Certificate of Service

**PPL Electric Utilities Corporation
Response to the Set II Data Requests of
The Bureau of Technical Utility Services
Dated October 16, 2024
Docket No. M-2020-3020824**

TUS A-1 In reference to the Petition of PPL Electric Utilities Corporation (PPL) filed with the Commission on September 19, 2024, for approval of a Minor Plan Change to add a residential electric vehicle (EV) charging pilot program, please respond to the following questions.

- a. What energy efficiency opportunities do you envision from implementing this pilot?
- b. Please explain how any potential energy savings (kWh) from this proposed pilot program are expected to result from EV charging. What baseline information would data collected from the participants of this pilot be compared against to arrive at energy savings (kWh)?
- c. Please explain the process and data used by PPL to determine that 1,000 customers would be an achievable target for this pilot.
- d. Please clarify that the terms and conditions for data authorization clearly convey to the consumer/applicant that all data will be treated confidentially and only provided or used in anonymized aggregate fashion.
- e. Please provide the cost breakdown for customer incentives, marketing, platform build, and administration.
- f. Please provide the estimated TRC for the proposed pilot.
- g. The post-purchase rebate is for specific Level 2 “connected” Energy Star certified smart EV chargers. Please detail which EV charger models and vendors were selected for this pilot and how PPL made this determination.
- h. How did PPL arrive at the price point for the prescribed chargers?
- i. Are these eligible chargers truly networked chargers or simply Wi-fi enabled? Please confirm or clarify this aspect.
- j. Will PPL be claiming savings from this pilot for Phase IV? If not, why not?

PPL
Response

- a. PPL EU would leverage the well-established energy efficiency opportunity of incentivizing ENERGY STAR (“ES”) Level 2 chargers. The U.S. EPA notes that ENERGY STAR Level 2 EV chargers use

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40% less energy than a standard EV charger in the most common operational mode, standby.

- b. The ENERGY STAR (“ES”) testing yields power consumption for the EVSE in various modes (no vehicle, idle, max output, partial on). Threshold, qualifying values for the Level 2 ES specification were developed through testing that also included models ultimately deemed non-compliant. As such, there is an existing comparison of power to draw upon. The pilot will provide the number of hours in each mode, which combined with the power comparison will be used to determine annual energy savings. The pilot will determine the load profile of charging, which will show the proportion of savings that are coincident with peak demand.
- c. The 1,000-customer pilot participation represents approximately 5% of the estimated annual EV growth rate in the PPL EU territory. 5% is the expected adoption rate for the proposed incentive. In addition, the proposed participation provides the best opportunity to achieve a sample set with high confidence and low precision error.
- d. All customer information and data will be held securely and treated confidentially and, if presented or reported upon, will be anonymized and aggregated to protect all participating customers. These points will be clearly conveyed to customers in documentation, including in the terms and conditions of their data authorization.
- e. Cost breakdown of the \$875,000 total cost, for customer incentives, marketing, platform build, and administration:

Task / Item	Rate	Unit	Quantity	Total
Customer Incentives	\$300	Qualified Charger	1,000	\$300,000
Configuration and Launch	\$50,000	Launch	1	\$50,000
Pilot Partner Onboarding and Support	\$5,325	Month	15	\$79,875
Marketing and Outreach	\$8,350	Month	12	\$100,200
Customer Support and Rebate Processing	\$3,320	Month	16	\$53,120
Data Aggregation Platform	\$3,350	Month	12	\$40,200
Management and Reporting	\$11,875	Month	16	\$190,000
ChooseEV Subscription	\$30,750	Year	2	\$61,500
Total				\$874,895

- f. The initial TRC benefit-cost ratio estimate from the Company’s third-party evaluator for the pilot is 0.04. This is expectedly low due to the additional costs associated with a pilot. A scaled program would have an estimated TRC of 0.25. The overall Phase IV EE&C Plan

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would remain cost-effective with a TRC benefit-cost ratio exceeding 1.0.

- g. The pilot has finalized the manufacturer types and has selected Chargepoint and Emporia charging equipment due to high data transfer rates and compatibility. The particular models will be determined prior to pilot implementation to ensure the most accessible and compatible equipment is eligible for incentives. These chargers accommodate both charging standards in use for light duty vehicles – SAE J1772 and NACS (SAE J3400).
- h. The customer incentive is based largely on the request for data authorization, as well as the incremental cost of the charging equipment and installation costs. The equipment's retail cost is expected to be \$600 - \$700 without installation. Installation costs for a level two charger, due to the required 240V circuit, can range between \$750 and \$1500.
- i. A common definition of networked chargers are units that are connected remotely to a larger network and have remote access to online management tools through an online portal. The eligible chargers will be Wi-Fi enabled and will need to be connected to the manufacturer's online portal at the time of installation. This connection will allow for authorized data transfer back to PPL EU. As such, PPL EU views pilot chargers as networked.
- j. Yes, the Company intends to claim savings from this pilot.

SUPPLEMENTAL RESPONSE (10-31-2024)

- a. Electric vehicle chargers are not binary like a light bulb that only consumes energy when switched on; when electric vehicle charging equipment is not charging a vehicle, they still consume energy. Energy savings from incentivizing ENERGY STAR level two chargers are realized by reducing consumption of energy while charging equipment is in standby mode (not actively charging). A comparison would be unplugging a cell phone charger while not charging to reduce 'phantom load'. This is possible because ENERGY STAR certified level 2 equipment consumes 40% less energy than standard EV chargers in standby mode. Researchers at the Idaho National Lab supported these results through separate testing and reporting on level 2 charger

efficiency as part of the DOE’s EV Project - one of the largest on EV charging infrastructure.

The calculation methodology can be found in the PPL Electric Vehicle Chargers Draft IMP which mirrors similar approaches in other EDC territories and/or TRMs, including Texas, Arizona Public Service, Arkansas, CPS Energy, Illinois, Iowa, Michigan, New Jersey, New Mexico and RTF. Full algorithms can be found below.

Energy Savings

$$\Delta kWh = \frac{(((SBP_Hr+SBU_Hr) \times SBb) - ((SBP_Hr \times SBeP) + (SBU_Hr \times SBeUP)))}{1000}$$

Coincident Peak Demand Savings

$$\Delta kW_{peak} = \frac{((SBb - SBeP) \times (\frac{SBP_Hr}{(SBP_Hr+SBU_Hr)}) + (SBb - SBeUP) \times (\frac{SBU_Hr}{(SBP_Hr+SBU_Hr)}))}{1000} * CF$$

- b. PPL EU expects to claim approximately 60,500 kWh and 7.13 kW through the EV Charging Pilot. This is based on 60.50 kWh and 0.00713 kW per networked charger installed. These values are defaults that rely on ENERGY STAR efficient and baseline average standby mode power consumption, as well as annual plugged and unplugged standby hours utilized in testing scenarios. PPL EU will use actual EDC gathering values to update reported savings, where possible. As such, the savings may be less or greater depending on availability of data. The deemed values above are based on the following standby values and hours:

Term	Description	Values
<i>C_Hr</i>	Annual Active Charging Hours	278
<i>P_Hr</i>	Annual Plugged In Hours	3,511
<i>SBP_Hr</i>	Annual Plugged Standby Hours	3,233
<i>SBU_Hr</i>	Annual Unplugged Standby Hours	5,249
<i>SBb</i>	Baseline Average Standby Power (W)	9.9
<i>SBeP</i>	Efficient Average Standby Power (W) plugged in	3.2
<i>SBeUP</i>	Efficient Average Standby Power (W) unplugged	2.5

VERIFICATION

I, THOMAS J. McATEER, being the Manager – Energy Efficiency at PPL Electric Utilities Corporation, hereby state that the facts above set forth are true and correct to the best of my knowledge, information and belief and that I expect PPL Electric Utilities Corporation to be able to prove the same at a hearing held in this matter. I understand that the statements herein are made subject to the penalties of 18 Pa.C.S. § 4904 relating to unsworn falsification to authorities.

Date: 10/31/2024



Thomas J. McAteer