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Re: Docket No. P-2022-3030743 - Petition to Initiate a Proceeding to Consider Issuance of a Policy Statement on Electric Utility Rate Design for Electric Vehicles; WeaveGrid's Working Group Comments

Dear Public Utility Commission Staff:

I am writing today to provide Weave Grid, Inc.'s ("WeaveGrid") comments in response to the procedural schedule outlined by Pennsylvania Public Utility Commission ("Commission") staff in their January 25, 2023 presentation to the Electric Vehicle ("EV") Charging Rate Design Working Group ("Working Group") Meeting.

I. Introduction and Procedural History

1. Introduction

WeaveGrid is a software company that helps utilities support increased EV adoption through greater understanding of customer charging behaviors, managed charging programs, and distribution-level optimization. WeaveGrid's technology leverages utility and charging data, including the embedded vehicle telematics—

data, controls, and communication systems—and the charging equipment to transform unpredictable and disaggregated EV charging loads into a cohesive network of controllable grid resources. We also support utilities in engaging their EV customers with personalized messages, insights, and notifications via the web, email, and text messages. WeaveGrid is a market leader in providing these solutions, which we are deploying in utility programs across the United States.

WeaveGrid appreciates Commission staff's efforts in organizing and facilitating the Working Group meetings thus far. WeaveGrid likewise appreciates the presentations from Synapse Energy Economics, Inc. ("Synapse"), Duquesne Light Company, and PECO, as the information presented has provided Working Group participants with essential foundational knowledge that will assist in the development of the Commission's policy statement.

II. WeaveGrid's Recommendations to the Working Group

WeaveGrid did not submit comments in this proceeding, but it has been an active participant in the Working Group and has also participated in the Pennsylvania Department of Environmental Protection's Drive Electric PA Coalition Meetings. WeaveGrid is encouraged to see the further development of EV policy in Pennsylvania and agrees with the Commission that "it is imperative that it research and consider rate designs that advance effective management of energy and infrastructure costs" related to EVs.[1]

Based on the discussion during the February 16, 2023 Working Group meeting, the Working Group will be presenting three consensus issues in its recommendations to the Commission:

- The Commission should prepare or proceed toward the preparation of a policy statement on electric vehicle rate design ("Policy Statement");
- The Commission should continue to use the Working Group as a source of information or expertise to provide additional clarity or refinement on the topics identified in the Commission's Policy Statement; and
- The Commission should address the issues identified in the Working Group's report in its Policy Statement.

[1] Docket No. P-2022-3030743; Petition to Initiate a Proceeding to Consider Issuance of a Policy Statement on Electric Utility Rate Design for Electric Vehicle Charging, Secretarial Letter Announcing Electric Vehicle Charging Rate Design Working Group at 1 (December 21, 2022) ("Secretarial Letter").

Working Group participants were then encouraged by Commission staff to propose issues to be considered for inclusion in its Commission recommendations. Based on this guidance, WeaveGrid respectfully provides its recommendations to be included in the Working Group's March 31, 2023 filing.

1. The Policy Statement Should Provide Broad Latitude to Pennsylvania's Electric Distribution Companies to Design EV Rates and Other Tariffed or Non-Tariffed Programs Within a General Framework

Each of the electric distribution companies ("EDCs") have unique systems, as well as varying degrees of current and anticipated EV adoption within their service territories. As such, the Policy Statement should be general enough that the EDCs have minimum requirements for their proposed EV rates while still having latitude to design the most effective EV rates or EV programs for their customers. The goal of each EDCs' approach should be to provide the best customer experience for their EV driving customers while creating the most value for the EV grid. Such flexibility should be emphasized in the Policy Statement, as should the ability to develop tariffed or non-tariffed load management programs in addition to EV rates.

ChargEVC-PA[2] includes in its February 2023 Working Group Comments an example of a minimum requirements framework for proposed EV rates.[3] The February 15, 2023 comments of the Coalition for Affordable Utility Services and Energy Efficiency in Pennsylvania ("CAUSE-PA") propose similar, basic elements for EV rate proposals.[4] PECO, Duquesne Light, and PPL Electric Utilities all support the implementation of a flexible framework within which each can propose its own unique EV rate design.[5] WeaveGrid is supportive of this approach and suggests that the Working Group's recommendations incorporate the proposed minimum filing construct supported by many Working Group participants.

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[2] ChargEVC-PA is a coalition formed to serve as a resource for research and information on, and as an advocate for, advanced EV adoption and market development in Pennsylvania. ChargEVC-PA consists of the following members: Electrification Coalition, Greenlots, Keystone Energy Alliance, Natural Resources Defense Council (NRDC), Plug In America, Sierra Club and Adams Electric Cooperative.

[3] ChargEVC-PA's Proposed EV Rate Design Policy Statement at ¶ 7 (February 2023) (available at: https://www.puc.pa.gov/media/2266/chargevc-pa-updated-policy-statement-feb2023.pdf) ("ChargEVC-PA Revised Policy Statement").

[4] CAUSE-PA Working Group Comments at 3-5 (February 15, 2023).

[5] PECO Working Group Comments at 2 (March 1, 2023); Duquesne Working Group Comments at 1 (March 1, 2023); PPL Electric Utilities Working Group Comments at 2 (March 3, 2023).

WeaveGrid provides the following additional minimum filing requirements for the EDCs' proposed EV rates:

a. The EDCs should explore tariffed or non-tariffed EV load management strategies along with EV rates.

Both ChargEVC-PA and Commissioner Yanora encouraged the exploration of potential opportunities for managed charging in the Policy Statement.[6] Well-designed managed charging programs can provide the same price signals to EV drivers to encourage grid-beneficial charging behavior as EV rates, albeit through program incentives rather than traditional rate structures. Moreover, such programs have the potential to provide greater grid benefits in a more cost-effective manner, by allowing EV drivers to utilize EVSE or telematics to enroll in the program, which can avoid the significant customer or utility costs associated with installing a second meter.

Managed charging programs can likewise provide a significant reduction in distribution upgrade costs as EV adoption accelerates.[7] A variety of program types are successful in meeting the overall goal of cost-effective, grid-beneficial charging, and ultimately each EDC should have the flexibility to adapt its managed charging approach to the level of EV adoption in its service territory. Managed charging programs have the added benefit of providing the EDCs with the tools to manage and optimize EV charging against distribution system conditions. As PECO points out, managed charging "can be a valuable tool in distribution system planning and operations."[8] The Policy Statement should encourage the EDCs to explore both EV rates and non-rate programs that "advance effective management of energy and infrastructure costs" for EVs.[9]

b. The EDCs should ensure that their proposed EV rates for all customer classes are simply described and easy for customers to understand.

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[6] Docket No. P-2022-3030743; Petition to Initiate a Proceeding to Issue a Policy Statement at 6 (February 4, 2022); Secretarial Letter, Attachment A, at 4.
[7] NYSERDA Report Number 22-13. Prepared by Resource Innovations, San Francisco, CA. Available at: https://www.nyserda.ny.gov/About/Publications/Research-and-Development-Technical-Reports/Transportation-Reports.
[8] PECO Working Group Comments at 5.
[9] Secretarial Letter at 2.

WeaveGrid suggests that the EDCs ensure that their EV rate offerings are described in a manner that allows for all potential enrollees to understand the rate's benefits and costs. As the Commission has indicated, "rate design has the capacity to shift this new EV load into off-peak hours when system load is lower," but only if people participate in the rate.[10] As other stakeholders point out, education and outreach materials are crucial to this effort, and WeaveGrid echoes the recommendation that the Policy Statement should include a minimum filing requirement that the EDCs focus on providing plain and clear descriptions of their offerings to customers.[11]

The education materials included in Duquesne Light Company and PECO's February 2023 Working Group Presentations could serve as a model when such rates are implemented.[12] Duquesne Light's online rate advisor tool is particularly useful, as it allows a potential EV driver to get a comprehensive comparison between their current costs and the cost savings associated with purchasing an EV and utilizing Duquesne Light's EV rate.[13]

c. The EDCs should be encouraged to offer Residential EV options that provide sufficient bill savings to attract meaningful enrollment.

As referenced in Synapse's Working Group presentation, enrollment in EV rates can depend largely on the ability to save enough that the effort necessary to switch one's rate is financially justified.[14] Whether the EDCs ultimately adopt a whole home EV TOU rate similar to Duquesne Light's pilot offering[15], or a subscription rate or off-peak charging credit as identified by Synapse[16], the cost difference between the standard residential rate offering and the EV rate needs to be a key consideration. This price differential can be further enhanced by establishing on-peak, off-peak, and super off-peak periods. The EDCs should be

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[10] Docket No. P-2022-3030743, Secretarial Letter at 1.
[11] *See* CAUSE-PA Working Group Comments at 3; ChargEVC-PA Revised Policy Statement at ¶ 7(e); Pennsylvania Office of Consumer Advocate ("OCA") Working Group Comments at 3.
[12] Duquesne Light Company Working Group Presentation at 6 (February 16, 2023); PECO Working Group Presentation at 4 (February 16, 2023).
[13] Duquesne Light Company Working Group Presentation at 6.
[14] Synapse Working Group Presentation, Rate Design to Maximize the Benefits of Transportation Electrification at 10 (January 25, 2023) (available at: https://www.puc.pa.gov/media/2241/synapse-energy-economics-study-presentation-rate-design-to-maximize-the-benefits-of-transportation-electrification-1_25_23.pdf).
[15] Duquesne Light Company Working Group Presentation at 3.
[16] Synapse Working Group Presentation at 13-14.

encouraged to explore various residential EV rate offerings with these considerations in mind.

d. The EDCs should be provided with the optionality to pilot EV rates or deploy them to all eligible customers.

Depending on EV penetration in an EDCs' service territory, proposed EV rates may be better suited as pilots, rather than fully-deployed rates.[17] Piloting EV rates can allow the EDCs to understand how their EV driving customers respond to the relevant price signals, and gives the EDCs the flexibility to revise or update their approach based on enrollment and feedback from their customers and other stakeholders. As such, the EDCs should be given the opportunity to propose pilots or permanent rates, depending on which approach will create more savings and grid benefits for their EV-driving and non-EV driving customers.

e. The EDCs should incorporate distribution system capacity into their analysis as they propose EV rates and other tariffed or non-tariffed programs.

In Docket No. M-2015-2518883, the Commission considered alternative rate methodologies to address a number of issues related to utility ratemaking, including the evaluation of just and reasonable distribution rates to promote the efficient use of distributed energy resources.[18] In its May 23, 2018 order in that proceeding, the Commission highlighted that new technologies presented an opportunity to consider and implement rates that can "increase distribution system capacity utilization to foster system efficiency and insulate customers from rate increases."[19] In the Commission's order in this underlying proceeding, it charged the Working Group with determining which rate design options are best suited for EV charging and "management of the increased load that the EV rollout may place on the electric distribution grid."[20] The EDCs should be encouraged to explore and implement EV rates and other tariffed or non-tariffed programs that consider available distribution system capacity and how their proposed rates and programs can provide benefits for all of their customers.[21]

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[17] *See* Duquesne Light Company Working Group Comments at 2.
[18] Docket No. M-2015-2518883, Fixed Utility Distribution Rates Policy Statement, Final Policy Statement Order at 22
[19] *Id*. at 14.
[20] Docket No. P-2022-3030743, Order at 17 (December 1, 2022).
[21] *See* Synapse Energy Economics, Inc., Driving Transportation Electrification Forward in Pennsylvania: Considerations for Effective Transportation Electrification Ratemaking at 4, FN 18

2. The Policy Statement Should Consider Alternative Submetering Approaches for Residential EV-Only Rates

In Synapse's presentation to the Working Group, it identified separate metering as a common challenge associated with the implementation of various residential EV rate strategies.[22] During the February 16, 2023 Working Group meeting, both PECO and Duquesne Light were asked if they received inquiries from EV drivers on each utility's whole home EV rate regarding separately metering their EV load. Both PECO and Duquesne Light reported minimal interest from their customers. While customer inquiries were low for PECO and Duquesne Light's whole home EV time of use rates, the implementation of EV-specific rates will likely create implementation challenges if EV drivers are responsible for the additional costs of separately metering their EV charging consumption.

The topic of separate metering is not a new consideration in Commission proceedings regarding the implementation of EV rates. In Docket No. M-2015-2518883, a collaboration of stakeholders[23] submitted a report titled "Driving Transportation Electrification Forward in Pennsylvania: Considerations for Effective Transportation Electrification Ratemaking" ("TE Report") in which submetering considerations for EV rates were discussed.[24] As discussed in the TE Report, "EV-only rates require a second revenue-grade meter or the use of submetering technology to record electricity use that is specifically attributable to EV charging."[25] As has been experienced in other utility programs, the installation

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citing M.J. Bradley & Associates, *Plug-in Electric Vehicle Cost-Benefit Analysis: Pennsylvania* (February 14, 2017) at 5 ("M.J. Bradley & Associates estimates that if light-duty EV adoption increases to 97 percent in Pennsylvania by 2050 and the majority of EV charging occurs off-peak, the state could realize $9.6 billion in cumulative electric utility customer benefit from reduced electricity rates").

[22] *Id*. at 11, 13-14.

[23] Natural Resources Defense Council (NRDC), BYD Heavy Industries, CALSTART, Clean Air Council, EVBox, EVgo, Pennsylvania Solar Energy Industries Association, Philadelphia Solar Energy Association, Plug-In America, Siemens, and Sierra Club.

[24] Docket No. M-2015-2518883, Joint Comments of Natural Resources Defense Council (NRDC), BYD Heavy Industries, CALSTART, Clean Air Council, EVBox, EVgo, Pennsylvania Solar Energy Industries Association, Philadelphia Solar Energy Association, Plug-In America, Siemens, and Sierra Club *citing* Driving Transportation Electrification Forward in Pennsylvania: Considerations for Effective Transportation Electrification Ratemaking (October 15, 2018) (report available at: http://www.synapse-energy.com/sites/default/files/PA-EV-Rates-Report-18-021.pdf).

[25] Synapse Energy Economics, Inc., Driving Transportation Electrification Forward in Pennsylvania: Considerations for Effective Transportation Electrification Ratemaking at 17 (September 26, 2018).

costs of a second meter can be prohibitive and require thousands of dollars in upfront customer investments to enroll in the rate.[26]

Submetering and load monitoring represent alternative approaches to separately metering customers taking service under an EV rate. Other states, including Maryland[27] and Minnesota[28] have implemented utility programs incorporating alternatives to second meters for EV load. New York is currently developing a testing process to gather data and implement standards related the utilization of electric vehicle supply equipment ("EVSE") and vehicle telematics as submeters to measure EV consumption and demand during charging sessions.[29] The National Institute of Standards and Technology Handbook 44 standard has likewise been adopted by California for EVSEs participating in its Vehicle Grid Integration Program.[30]

The California, Maryland, and Minnesota commissions cited similar reasons for their approval of alternative technologies for EV charging load. The first was cost, as each of the commissions identified the savings that could be realized by EV customers by not having to install a second meter to measure EV-specific charging load.[31] The second was the challenge associated with the installation of a second

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[26] Docket No. E002/M-15-111 and E002/M-17-817, Residential Electric Vehicle Charging Tariff Northern States Power Company d/b/a Xcel Energy Minnesota (May 31, 2019). Compliance Filing at 11-
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[27] Case No. 9478, In the Matter of the Petition of the Electric Vehicle Working Group for Implementation of a Statewide Electric Vehicle Portfolio, Electric Vehicle Work Group Statewide Electric Vehicle Portfolio Proposal (January 19, 2018). BGE's proposal included a request to waive to certain Maryland regulations and American National Standards Institute requirements for submetering accuracy, specifically, American National Standard for Electric Meters —Code for Electricity Metering, ANSI C12.1—2001,101, to allow for EVSEs and telematics to measure and bill for EV charging.

[28] *See* Docket M-19-559, Petition of Northern States Power Company d/b/a Xcel Energy for Approval of an Electric Vehicle Home Service Program, Initial Petition (August 30, 2019). Xcel Energy sought to expand its Residential EV Service Pilot implemented in 2018 that allowed residential EV customers to use alternative technologies to traditional meters to measure EV-specific consumption. Xcel Energy found that pilot participants saved an average of $2,000 in upfront metering and charger installation costs, charged 96% off-peak, and thereby limited the overall impact that EV charging had on system peaks.

[29] Case 18-E-0138; Proceeding on Motion of the Commission Regarding Electric Vehicle Supply Equipment and Infrastructure, Joint Utilities' Proposal for a Method to Test the Accuracy of Managed Charging-Enabling Technologies (January 10, 2023).

[30] R.18-12-006, Order Instituting Rulemaking to Continue the Development of Rates and Infrastructure for Vehicle Electrification, Decision Adopting Plug-In Electric Vehicle Submetering Protocol and Electric Vehicle Supply Equipment Communication Protocols at 13-15 (August 4, 2022).

[31] *See* Case No. 9478, Order at 51 (January 14, 2019) (The Public Service Commission of Maryland approved BGE's EV program, including the waiver to utilize EVSE as a submeter, finding that

meter at each location that EV charging would take place.[32] The third was finding a balance between the implementation of policy that will spur EV adoption with the work and testing required to certify alternative submetering technologies under existing ANSI standards.[33]

While the jurisdictions referenced have different levels of EV adoption than Pennsylvania, it is worthwhile to begin exploring alternatives to installing a second meter to measure EV charging load. Such alternatives should investigate the use of both EVSE and vehicle telematics to measure EV consumption during charging sessions. The Working Group's recommendations should encourage the Commission to address submetering alternatives in the Policy Statement, as doing so will meaningfully drive participation in the EV rates established in this proceeding.

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submetering would avoid unnecessary costs associated with an additional AMI meter and would cost-effectively enable EV-specific rate design and load management programs.

[32] R.18-12-006 at 2 ("The [submetering] protocol is a fundamentally important means of accelerating the growth of electric vehicles. The protocol reduces the cost of electric vehicle charging; consumers can avoid having to install a separate utility meter and can instead use the technology to have their electric vehicle charging measured and billed separately from their primary utility meter."

[33] *See* R.18-12-006 at 13-15.

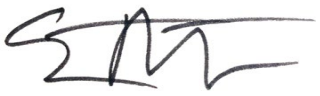
III. Conclusion

WeaveGrid appreciates the opportunity to provide comments on these important issues. Please contact the undersigned should have any questions or require any additional information. Thank you.

Respectfully submitted,

WEAVE GRID, INC.

Sincerely,



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