PUBLIC VERSION

BEFORE THE
MARYLAND PUBLIC SERVICE COMMISSION

IN THE MATTER OF THE APPLICATION OF THE POTOMAC EDISON COMPANY FOR ADJUSTMENTS TO ITS RETAIL RATES FOR THE DISTRIBUTION OF ELECTRIC ENERGY	* * * *	Case No. 9695

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DIRECT TESTIMONY

OF

COURTNEY LANE

ON BEHALF OF THE OFFICE OF PEOPLE'S COUNSEL

June 9, 2023

PUBLIC VERSION

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DIRECT TESTIMONY OF COURTNEY LANE

INTRODUCTION

Q. Please state your name and business address.

A. My name is Courtney Lane. I am a principal associate at Synapse Energy Economics, Inc. (Synapse) located at 485 Massachusetts Avenue, Suite 3, Cambridge, MA 02139.

Q. Please describe Synapse Energy Economics, Inc.

A. Synapse is a research and consulting firm specializing in electricity and gas industry regulation, planning, and analysis. Our work covers a range of issues, including economic and technical assessments of demand-side and supply-side energy resources; energy efficiency policies and programs; integrated resource planning; electricity market modeling and assessment; renewable resource technologies and policies; and climate change strategies. Synapse works for a wide range of clients, including attorneys general, offices of consumer advocates, public utility commissions, environmental advocates, the U.S. Environmental Protection Agency, the U.S. Department of Energy, the U.S. Department of Justice, the Federal Trade Commission, and the National Association of Regulatory Utility Commissioners. Synapse has over 40 professional staff with extensive experience in the energy industry.

Q. Please describe your professional and educational experience.

A. I have 19 years of experience in energy policy and regulation. At Synapse, I work on issues related to utility regulatory models, grid modernization, benefit-cost assessment frameworks, and performance incentive mechanisms. I also contributed to the development of the *National Standard Practice Manual for Benefit-Cost Analysis of Distributed Energy Resources* (NSPM for DERs).[1] Prior to working at Synapse, I was employed by National Grid. At National Grid, I oversaw the benefit-cost models for the company's Rhode Island energy efficiency and demand response programs and was a core contributor to the development of the Rhode Island Benefit Cost Test. During my employment at National Grid, I also served as the growth management lead for New England, where I oversaw the development of customer products, services, and business models for Massachusetts and Rhode Island, which included electric vehicle programs. Prior to joining National Grid, I worked on regulatory and state policy issues pertaining to energy conservation, retail competition, net metering, and the Alternative Energy Portfolio Standard for Citizens for Pennsylvania's

[1] National Energy Screening Project, *National Standard Practice Manual for Benefit-Cost Analysis of Distributed Energy Resources* (NSPM for DERs) (Aug. 2020), https://www.nationalenergyscreeningproject.org/wp-content/uploads/2020/08/NSPM-DERs_08-04-2020_Final.pdf.

Future. Before that, I worked for Northeast Energy Efficiency Partnerships, Inc. where I promoted energy efficiency throughout the Northeast.

I hold a Master of Arts in Environmental Policy and Planning from Tufts University and a Bachelor of Arts in Environmental Geography from Colgate University. My resume is attached as Appendix A.

Q. Have you previously appeared before the Maryland Public Service Commission?

A. Yes. I previously testified on behalf of the Office of People's Counsel on matters related to the benefit-cost analysis (BCA) of utility electric vehicle (EV) programs in Case No. 9645, Baltimore Gas and Electric Company's application for an electric and gas multi-year plan; Case No. 9655, Potomac Electric Power Company's application for an electric multi-year plan; and Case No. 9681, Delmarva Power & Light Company's application for an electric multi-year plan.

Q. Have you previously submitted testimony in proceedings before other state commissions or agencies?

A. Yes. I have testified and participated in regulatory proceedings before the Rhode Island Public Utilities Commission, the Pennsylvania Public Utility Commission, the Public Service Commission of the District of Columbia, the New Hampshire Public Utilities Commission, and the New Mexico Public Regulation Commission.

Q. On whose behalf are you appearing in this proceeding?

A. I am presenting testimony on behalf of the Office of People's Counsel.

Q. What is the purpose of your testimony in this proceeding?

A. The purpose of my testimony is to respond to the BCA conducted by witness Mark Warner on behalf of The Potomac Edison Company (PE or the Company) regarding its suite of EV programs and whether it adheres to the EV-BCA Framework developed by the PC44 Electric Vehicle Work Group (EV Work Group), as included in the Electric Vehicle Benefit/Cost Analysis Methodology by the Maryland Joint-Utilities (EV-BCA Whitepaper) and approved by the Commission.[2]

It is important to ensure the accuracy of BCA results. A BCA improves transparency of the expected benefits and costs of utility investments. It also provides stakeholders and regulators with the information necessary to determine if a utility investment will provide net benefits to customers. It also helps to provide valuable insight into program design and whether changes to a program would yield a higher level of benefits.

[2] In the Matter of the Petition of the Electric Vehicle Work Group for Implementation of a Statewide Electric Vehicle Portfolio, *Electric Vehicle Benefit/Cost Analysis Methodology by the Maryland Joint-Utilities, prepared by Mark Warner, Gabel Associates Inc., in support of the EV-BCA Work Group* (*EV-BCA Whitepaper*), ML No. 238013 (CN 9478, Dec. 1, 2021) (approved by the Commission via letter order, ML No. 238539 (Jan. 13, 2022)).

Q. What materials did you rely on to develop your testimony?

A. The sources for my testimony are PE's Application[3] and responses to discovery requests, public documents, and my personal knowledge and experience.

Q. Was this testimony prepared by you or under your direction?

A. Yes. My testimony was prepared by me or under my direct supervision and control.

I. Summary and Recommendations

Q. Please summarize your primary conclusions regarding PE witness Mark Warner's BCA.

A. My primary conclusion is that Mr. Warner does not accurately apply the EV-BCA Framework to the Residential Charger Rebate program and Off-Peak/Off-Bill (OPOB) program, which he combines into a single customer offering. This is because he excludes the costs associated with the Level 2 smart chargers that are rebated through the Residential Charger Rebate program, thereby inflating the cost-effectiveness of this program.

While it is appropriate to conduct a BCA for customers that participated in both the Residential Charger Rebate program and the OPOB program to understand how these offerings work together, it is not correct to ignore the

[3] *Application of the Potomac Edison Company for Adjustments to its Retail Rates for the Distribution of Electric Energy*, ML No. 301935 (CN 9695, Mar. 22, 2023).

costs associated with the rebated chargers as part of this analysis. PE designed its Residential Charger Rebate program as a $300 incentive to offset a portion of the cost to purchase and install a Level 2 smart charger. The $300 rebate only covers a portion of the costs to the participant to purchase and install the charger. The EV-BCA Framework clearly includes "EV Charger Costs" as a Participant Cost under the Maryland EV Jurisdiction-Specific Test (MD EV-JST).[4] These costs should be included for any program where the utility is incentivizing the customer to purchase a charger. When these costs are excluded, it leads to inflated cost-effectiveness results, making the program seem more beneficial to ratepayers than it is in actuality.

I also find that Mr. Warner fails to conduct a BCA for the Residential Charger Rebate program on its own. The Residential Charger Rebate Program is designed as a stand-alone offering which customers can select to participate in even if they choose not to enroll in the OPOB program. It is therefore clear from the Residential Rebate Program's design that it should be assessed as a standalone program. PE did not require charger rebate recipients to enroll in the OPOB program. In fact, just 60 percent of the customers receiving a charger rebate participated in the OPOB program.[5]

[4] *EV-BCA Whitepaper* at 17.
[5] PE Response to OPC 7-02(a).

When a customer receives a rebate for a charger but does not participate in the OPOB design, a cost is created that has no associated benefits. . It is important to conduct a BCA of the Residential Charger Rebate program on its own to bring this issue to light and inform improvements to the design of this program and future proposed programs.

Finally, I find that the resulting benefit-cost ratios (BCRs) of Mr. Warner's BCAs for the Residential Charger Rebate program and OPOB program combined and the BCA for the OPOB program alone are likely inflated due to the unfounded assumption that 100 percent of the customers enrolled in this program will continue off-peak charging behavior after the program ends. There is currently no data and no studies to support this finding.

The MD-JST cost-effectiveness test was intended to provide regulators and stakeholders with more transparency on the costs and benefits resulting from utility EV programs. In accordance with Order No. 88997,[6] the Maryland utilities are currently implementing a portfolio of EV pilot programs set to partially conclude by December 31, 2023. The utilities are currently exploring the potential for additional EV programs as part of the EV Work Group. The BCAs conducted by utilities in accordance with the MD-JST are

[6] Order No. 88997, In the Matter of the Petition of the Electric Vehicle Work Group for Implementation of a Statewide Electric Vehicle Portfolio (CN 9478, Jan. 14, 2019).

a critical part of evaluating the success of the current suite of EV pilot programs and will help to inform the Commission's decisions concerning future programs. It is therefore important that these tests include all relevant costs and benefits, are based on reasonable assumptions, and account for the unique design of program implementation to ensure the results are accurate. The inflated cost-effectiveness results of the Residential Charger Rebate program and OPOB program do not provide the accurate information needed to evaluate these programs.

Q. Please summarize your recommendations.

A. My primary recommendations include the following:

- The Commission should require PE to modify its existing Residential Charger Rebate program to ensure that off-peak charging benefits associated with rebates for Level 2 smart chargers are realized. This modification should include a requirement that customers are only eligible to receive a Level 2 smart charger rebate if they enroll in PE's EV-Only Time-of-Use (TOU) rates, which replaced the OPOB program that expired in May of 2023. It is not a beneficial use of ratepayer dollars for PE to incentivize chargers that are not creating any distribution system benefit. In fact, providing rebates for the installation of Level 2 chargers without requiring off-peak charging may increase distribution costs that would be borne by all ratepayers.

- The Commission should require PE to revise and resubmit its BCAs as follows:
  - The OPOB program BCA and the combined Residential Charger Rebate and OPOB BCA should include a sensitivity (i.e., a range) of assumptions regarding the persistence of off-peak charging behavior after the program's expiration. Benefits that are dependent on the existence of a program should not be counted in a BCA after the program ends unless there is sufficient evidence to support their inclusion.
  - The combined Residential Charger Rebate and OPOB BCA should include the participant share of the Level 2 charger costs, net of the utility rebate.
  - PE should conduct a BCA for the Residential Charger Rebate program on its own that includes the participant share of the Level 2 charger costs, net of the utility rebate.

II. Overview of MD EV-BCA Framework

Q. Why did PE file an EV-BCA in this case?

A. In Order No. 88997, The Commission required utilities to include a detailed cost-benefit assessment "to substantiate, empirically, all cost expenditures related to EV charging for purposes of cost recovery in any future rate

case."[7] The Commission noted the need to balance the goals of the utility EV programs against other considerations, such as "the appropriate size of an EV charging program, the level of utility involvement, the ratepayer impacts, the cost-effectiveness of the program, the overall benefits to all Maryland ratepayers, and the potential impediments to competition by market participants."[8]

Q. Does PE's EV BCA affect decisions beyond those related to cost recovery?

Yes. The Company, along with the other Maryland utilities, are currently exploring the potential for additional EV programs that would go into effect after their current offerings expire at the end of 2023. The BCAs filed in accordance with Order No. 88997 will provide valuable information on whether programs should be continued or redesigned to increase benefits to customers and the electric system.

Q. Please summarize the EV Work Group process in the development of the MD EV-BCA.

A. The Commission tasked the EV Work Group with developing a consensus BCA proposal for Commission consideration by December 1, 2021, taking

[7] Order No. 88997 at 44, n.170.
[8] *Id*. at 37.

into account the NSPM for DERs and the existing BCA framework used to review the EmPOWER Maryland programs.[9]

The EV Work Group met 11 times during 2021 to review the NSPM for DERs, Maryland's policy goals, EV-BCAs used in other jurisdictions, and current BCA practices in Maryland.[10] Based on these discussions, Mr. Warner, consultant for the Maryland Joint Utilities,[11] developed a whitepaper detailing a jurisdiction-specific EV-BCA. The EV Work Group members reviewed and provided comments on several iterations of the whitepaper, resulting in a final consensus version.

Q. Did you participate in the EV Work Group?

A. Yes. I participated in the EV Work Group on behalf of OPC. This included attending meetings, reviewing whitepaper drafts, and participating in the drafting of written feedback and comments that were submitted on behalf of OPC.

[9] Order No. 89678, Application of Baltimore Gas and Electric Company for an Electric and Gas Multi-Year Plan (CN 9645, Dec. 16, 2020), at 113-14.

[10] In the Matter of the Petition of the Electric Vehicle Work Group for Implementation of a Statewide Electric Vehicle Portfolio, *Summary Report on a Statewide Electric Vehicle Benefit Cost Analysis Methodology*, *Prepared for the Commission by PC44 Electric Vehicle Work Group*, ML No. 238013 (CN 9478, Dec. 1, 2021), at 2-3.

[11] The "Maryland Joint Utilities" includes Baltimore Gas and Electric Company (BGE), Potomac Electric Power Company (PEPCO), Delmarva Power & Light Company (DPL), The Potomac Edison Company (PE), and Southern Maryland Electric Cooperative (SMECO).

Q. Do you support the resulting Maryland EV-BCA Framework?

A. Yes. I support the Maryland EV-BCA Framework as a consensus work product of the EV Work Group.

Q. Please summarize the resulting Maryland EV-BCA Framework.

A. The Maryland EV-BCA Framework includes a primary cost-effectiveness test, the MD EV-JST, and several secondary tests and assessments, all of which I summarize below.

1. **MD EV-JST—the Primary Test**: Assesses the cost-effectiveness of utility EV programs and accounts for all applicable utility system impacts and non-utility system impacts related to Maryland's policy goals, including host customer (i.e., program participant) impacts and societal impacts.
2. **Market-Wide Test (MWT)**: Assesses the impact of all EVs on society as a whole. This test uses the same methodology as the MD EV-JST but seeks to measure whether society is better off due to widespread transportation electrification, not just electrification directly induced by utility EV programs.
3. **Aggregate Non-Participating-Ratepayer Impact (ANRI)-All**: Quantifies the positive and negative impacts of utility EV programs to determine the net increase or decrease in costs to non-participating ratepayers. The ANRI-All case includes impacts that can be

monetized on a utility bill (utility system impacts) and externalities that are currently not embedded in rates such as avoided environmental harm and improved public health.

4. **ANRI-Bills-Only:** Uses the same methodology as ANRI-All but only includes impacts that can be monetized on a utility bill.

The Maryland EV-BCA Framework also includes a list of impact factors within the categories of Utility (and Power Sector), Participant (Host Customer), and Societal.

Q. Did the whitepaper include examples of how the MD EV-JST should be applied to different types of utility EV programs?

A. Yes. The whitepaper included a summary table for how the MD EV-JST could be applied to different utility EV programs, as shown in Figure 1 below. These examples are referred to as "Impact-Factor" mapping.

Figure 1. MD EV-JST Impact Factor Mapping

Impact-Factor	MD EV-JST (UO-1): Residential Managed Charging	MD EV-JST (UO-2): Multi-Family Charging	MD EV-JST (UO-3): Utility Owned Public Chargers
Computation Scope:	Induced Charging Behavior	Induced Adoption	Induced Adoption
Baseline:	EV Owner, Nat-Chrging	No EV Adoption	Pull-Through Adoption
Utility (and Power Sector) Impacts			
Utility Program Administration Costs	Cost	Cost	Cost
Utility Program Implementation Costs	Cost	Cost	Cost
Impacts On Capacity Costs	Benefit	Cost	Cost
Impacts On Transmission Costs	Benefit	Cost	Cost
Wholesale Energy Cost Impacts	Benefit	Cost or Benefit	Cost or Benefit
Increased Electricity (KWHr) Costs (for EV charging)	N/A	Cost	Cost
Impacts on Grid Reinforcement	Benefit	Cost	Cost
Utility-Owned EV Chargers - Costs	N/A	N/A	Cost
Utility-Owned EV Chargers - Usage $ From EV Drivers	N/A	N/A	Transfer
Increased RPS Compliance Costs	N/A	Cost	Cost
T&D Losses	Benefit	Cost	Cost
Utility Equipment Incentives	Transfer	Transfer	Transfer
Utility Rate Incentives	Transfer	Transfer	Transfer
Increased Utility Revenues	Transfer	Transfer	Transfer
Participant Impacts(from EV Driver Perspective)			
Incremental EV Purchase Costs	N/A	Cost	Cost
EV Charger Costs (equipment and installation)	N/A	Cost	Cost
Avoided Vehicle Fuel Costs	N/A	Benefit	Benefit
Savings From Decreased Vehicle Maintenance	N/A	Benefit	Benefit
Federal Tax Incentive (EV purchase)	N/A	Benefit	Benefit
Societal Costs or Benefits (from Society's Perspective)			
Value Of Reduced GHG Emissions	N/A	Benefit	Benefit
Public Health Value Of Reduced/Shifted Emissions	N/A	Benefit	Benefit

Source: EV-BCA Whitepaper at 19, Figure 5.3-1.

Q. What was the purpose of the Impact-Factor mapping?

The Impact-Factor mapping was intended to illustrate how the MD EV-JST methodology can be applied across different types of EV programs offered by a Maryland utility. The EV-BCA Whitepaper illustrates Impact-Factor mapping for three sample programs, referred to as "offer-classes." As shown in Figure 1, this includes (1) Residential Managed Charging, (2) Multi-Family Charging, and (3) Utility-Owned Public Chargers. The purpose of including these sample offer-classes was to highlight that the

same cost-effectiveness test can be applied to—or "mapped to"—different types of programs, while demonstrating that an impact may be a cost, benefit, or not applicable depending on the program structure.

Q. Will all utility EV programs map to one of these three offer-classes?

A. Not necessarily. The offer-classes were based on common Maryland Joint Utility offerings but, as indicated in the EV-BCA Whitepaper, "if new utility EV programs are introduced that don't map cleanly into one of these three offer-classes, a customized mapping would need to be created for that new class. In this way, this proposed methodology can be adapted to an evolving portfolio of programs over time."[12]

III. Flaws in PE's EV Program BCA.

A. Summary of Analysis

Q. What programs did Mr. Warner assess?

A. Mr. Warner applied the MD EV-BCA Framework to four of PE's "EV Driven" programs: (1) Off-Peak/Off-Bill Incentive (OPOB-Only), (2) Residential Charger Rebate and Off-Peak/Off Bill (Charger & OPOB), (3) Public L2 Chargers, and (4) Public Direct-Current Fast Chargers (DCFC). He also applies the framework to these programs taken together as a portfolio.

[12] *EV-BCA Whitepaper* at 18.

Mr. Warner did not conduct a BCA for the Company's Multi-Unit Dwelling Rebate program. He indicates that sufficient real-world charging data was not available.[13]

Q. What were the results of the assessment?

A. I summarize the results of Mr. Warner's assessments in Table 1 below.

Table 1. Summary of Potomac Edison EV-Program Assessments

	MD EV-JST	Market-Wide	ANRI (All)	ANRI (Bill Only)
OPOB-Only	0.77		$27,864	$27,864
Charger & OPOB	0.12		$356,990	$356,990
Public L2 Chargers	1.07		-$2,432,673	$1,960,003
Public DCFC	1.01		-$4,541,443	$932,202
Portfolio	1.03		-$6,589,261	$3,277,059
Market-Wide JST (100% Natural)		2.33		
Market-Wide JST (100% Managed)		2.40		
Market-Wide JST (Current Programs)		2.33		

Source: Direct Testimony of Mark Warner at 22, lines 8-9 (Figure 4).

For the MD EV-JST and the Market-Wide cost-effectiveness tests, a result over 1.0 demonstrates the program or portfolio is cost-effective. Table 1 shows that according to the MD EV-JST, the OPOB-Only and combined Charger & OPOB programs were not cost-effective and that public charger programs were marginally cost-effective. The Market-Wide assessment, which accounts for the impacts of all EVs to society, beyond those directly resulting from PE's programs, is cost-effective. The results of the MD EV-JST should be given the most weight as it is the primary

[13] Warner Direct Testimony at 10, lines 19-20.

cost-effectiveness test and only accounts for the costs and benefits directly resulting from PE's program.

The ANRI assessments show the aggregate net impact on rates from PE's programs. A positive result from an ANRI-Bill-Only assessment indicates ratepayer costs will increase from PE's programs, while a negative result indicates a cost reduction. The ANRI-All assessment adds external impacts (i.e., emissions) that are not currently monetized in rates. The ANRI-Bill-Only results in Table 1 indicate that each of PE's EV programs, and the portfolio, result in increased costs to ratepayers.

Q. Does Mr. Warner's cost-effectiveness assessment adhere to the MD EV-BCA Framework?

A. In part, yes. Based on my review of Mr. Warner's cost-effectiveness and ANRI assessments, I find that he adheres to the MD EV-BCA Framework except for his application of the MD EV-JST to the Residential Charger Rebate program and the OPOB program, which he combines into a single customer offering.

Q. Please describe the Residential Charger Rebate program.

A. The Residential Charger Rebate program provides customers with a $300 incentive to help offset the costs associated with the purchase and

installation of an eligible Level 2 smart charger. To participate, the customer must agree to share charging data with the Company.[14]

Q. Please describe the OPOB program.

A. The OPOB program ended on May 15, 2023, when PE began implementing an EV-Only TOU rate.[15] While the OPOB program was in place, it encouraged customers to charge EVs off peak by providing a $0.02 payment for each kilowatt-hour (kWh) of off-peak charging, net of any on-peak charging.[16] Customers were eligible to participate in the OPOB program if they had purchased and installed an eligible Level 2 smart charger that was connected to wi-fi and agreed to share charging data with the Company.[17]

Q. Was eligibility for the Residential Charger Rebate contingent on the customer participating in the OPOB program?

A. No. A customer did not have to participate or commit to participating in the OPOB program to be eligible for the $300 rebate.[18] According to the Company, as of December 31, 2022, just 60 percent of the customers that received a charger rebate participated in the OPOB program.[19] For this reason, I consider the Residential Charger Rebate to be a standalone

[14] In the Matter of the Petition of the Electric Vehicle Work Group for Implementation of a Statewide Electric Vehicle Portfolio, *PE Revised Electric Vehicle Charging Infrastructure Pilot Plan*, ML No. 225516 (CN 9478, May 29, 2019), at 3.

[15] PE Response to OPC 7-01(a).

[16] Warner Direct Testimony at 9, lines 14-17.

[17] PE Response to OPC 7-01(a).

[18] *Id.*

[19] PE Response to OPC 7-02(a).

program. This practice continues today, where a customer can receive a charger rebate without enrolling in the EV-Only TOU Rate.[20]

Q. Please summarize how Mr. Warner assessed the cost-effectiveness of these two programs.

A. Mr. Warner conducted a BCA of the OPOB program on its own and for the OPOB program combined with the Residential Charger Rebate program (Charger & OPOB). He did not conduct a BCA of the Residential Charger Rebate program on its own. The BCAs for the OPOB program and combined Charger & OPOB programs were conducted using the impact factors (i.e., benefits and costs) as defined in the EV-BCA Whitepaper under the "UO -1: Residential Managed Charging" (UO-1 Offer Class), as shown in Figure 1 earlier in my testimony.[21]

While the OPOB program ended on May 15, 2023, **BEGIN CONFIDENTIAL** [redacted] **END CONFIDENTIAL**

[20] PE EV Driven, https://www.evdrivenpe.com/evdriven/ (last accessed May 25, 2023).
[21] Warner Direct Testimony at 14, Figure 2.
[22] **BEGIN CONFIDENTIAL** [redacted] **END CONFIDENTIAL**

Q. What are you concerns with this approach?

A. I have identified two key issues with Mr. Warner's analysis. The first relates to the application of the EV-BCA Whitepaper Impact-Factor mapping in a manner that does not reflect the actual design of PE's program, which leads to the exclusion of Level 2 smart charger costs in the BCA and inflates the cost-effectiveness results. The second issue pertains to the inclusion of off-peak charging benefits after the expiration of the program. I will address these issues in more detail in the next sections of my testimony.

B. Charger Rebate Costs Should Not Be Ignored

Q. What is Mr. Warner's justification for combining the OPOB program with the Residential Charger Rebate program?

A. In identifying which program offerings to analyze, Mr. Warner indicates that he considered the fact that some programs are used together by customers.[23]

Q. Do you agree with this approach?

A. No, I do not. According to the Company, as of December 31, 2022, just 60 percent of the customers that received a charger rebate participated in the OPOB program.[24] Mr. Warner's decision to only assess the cost-effectiveness of customers participating in both programs fails to capture the way in which 40 percent of customers participate. While it is appropriate to conduct a BCA for customers that participated in both the

[23] Warner Direct Testimony at 9, lines 10-12.
[24] PE Response to OPC 7-02(a).

Residential Charger Rebate program and the OPOB program to understand how these offerings work together, it is just as critical to assess the cost-effectiveness of these programs separately.

Q. ****BEGIN CONFIDENTIAL**** [redacted] ****END CONFIDENTIAL****

Q. How does the EV-BCA Whitepaper define the UO-1 Offer Class?

A. The EV-BCA Whitepaper defines the UO-1 Offer Class as "programs which combine the charging infrastructure with economic incentives to encourage residential customers to charge their vehicles at preferred off-peak times."[26]

[25] ****BEGIN CONFIDENTIAL**** [redacted] ****END CONFIDENTIAL****; *see also* Warner Direct Testimony at 33, lines 5-12.
[26] EV-*BCA Whitepaper* at 18.

Q. Do you agree that the combined Charger & OPOB programs should map to the UO-1 Offer Class?

A. No, I do not. It is only accurate to map the OPOB program, on its own, to the UO-1 Offer Class. The OPOB program is intended for customers that already have a qualifying Level 2 charger and seek to modify their charging behavior by offering an incentive for off-peak charging. For this program, it is accurate to exclude the costs of the Level 2 charger since the program utilizes existing equipment. However, when the OPOB program is combined with the Residential Charger Rebate program, the baseline changes. Mr. Warner's baseline for the combined Charger & OPOB programs is, therefore, incorrect.

The purpose of PE's Residential Charger Rebate program is to incentivize the purchase of a qualifying Level 2 smart charger, which is a standalone offering given the customer does not have to enroll in the OPOB program. This assumes a baseline where the customer does not already have the qualifying charging equipment and therefore necessitates a rebate. This fact should not change when the Residential Charger Rebate program is combined with the OPOB offering. The rebate is still intended to incentivize the purchase of a qualifying Level 2 smart charger. The resulting baseline should therefore be no charger, a Level 1 charger, or a Level 2 charger that is not on the Company's list of qualifying chargers. This baseline does not

align with that found in the UO-1 Offer Class and does not map to any of the offer class examples in the EV-BCA Whitepaper.

Q. Are there costs associated with PE's Residential Charger Rebate program?

Yes. There are costs associated with PE's administration of the program and costs related to the $300 rebate paid to program participants. Both costs are considered utility system costs and are recovered from ratepayers. There are also costs to participants in the program. The $300 rebate from PE only covers a portion of the purchase and installation costs of a qualifying Level 2 charger. According to Mr. Warner, the average cost to purchase an eligible Level 2 charger was $589.99 as of the Company's February 1, 2023 filing.[27] In addition, PE indicates that installation costs can vary from $200 to $1,000, depending on the electrician and the extent of work required.[28] This indicates that there will be a program participant cost ranging from $489.99 to $1,289.99 after accounting for the charger rebate.

Q. Does Mr. Warner include any costs associated with the purchase and installation of Level 2 chargers in the combined Charger & OPOB BCA?

A. No, he does not. Due to the fact Mr. Warner uses the costs and benefits defined by the UO-1 Offer Class , neither the utility costs associated with

[27] PE Response to OPC 7-02(d).

[28] PE EV Driven FAQs, https://www.evdrivenpe.com/faqs/evdriven-faq/ (last accessed May 26, 2023).

the charger rebates nor the participant share of the costs associated with the purchase and installation of the charger are included.[29] **BEGIN CONFIDENTIAL** [redacted] **END CONFIDENTIAL**

Q. Does the EV-BCA Framework allow for the inclusion of EV charger costs?

A. Yes, it does. The MD EV-JST includes participant costs associated with equipment and installation of EV chargers. Figure 2 below, details the impact factors (i.e., costs and benefits) as defined for the primary cost-effectiveness test, the MD EV-JST.

[29] *EV-BCA Whitepaper* at 19, Figure 5.3-1: Mapping of "Impact Factors" To Societal-Scale Tests.

[30] **BEGIN CONFIDENTIAL** [redacted]. **END CONFIDENTIAL**

Figure 2. MD EV-JST Impact Factors

Impact-Factor	MD EV-JST
Utility (and Power Sector) Impacts	
Utility Program Administration Costs	Cost
Utility Program Implementation Costs	Cost
Impacts On Capacity Costs	Cost or Benefit
Impacts On Transmission Costs	Cost or Benefit
Wholesale Energy Cost Impacts	Cost or Benefit
Increased Electricity (KWHr) Costs (for EV charging)	Cost
Impacts on Grid Reinforcement	Cost or Benefit
Utility-Owned EV Chargers - Costs	Cost
Utility-Owned EV Chargers - Usage $ From EV Drivers	Transfer
Increased RPS Compliance Costs	Cost
T&D Losses	Cost or Benefit
Utility Equipment Incentives	Transfer
Utility Rate Incentives	Transfer
Increased Utility Revenues	Transfer
Participant Impacts(from EV Driver Perspective)	
Incremental EV Purchase Costs	Cost
EV Charger Costs (equipment and installation)	Cost
Avoided Vehicle Fuel Costs	Benefit
Savings From Decreased Vehicle Maintenance	Benefit
Federal Tax Incentive (EV purchase)	Benefit
Societal Costs or Benefits (from Society's Perspective)	
Value Of Reduced GHG Emissions	Benefit
Public Health Value Of Reduced/Shifted Emissions	Benefit

Source: EV-BCA Whitepaper at 17, Figure 5.1-1.

Q. How does the EV-BCA Framework define EV Charger Costs?

A. The EV-BCA Framework defines EV Charger Costs as "the full costs of buying, installing, and operating (i.e., data and network charges, maintenance) EV charging infrastructure. Any applicable utility charger incentives are not reflected in this factor (since that is a transfer). This factor

is a cost under the MD EV-JST and MW tests."[31] In other words, the EV Charger Costs are the costs to the participant net of the utility rebate.

Q. Did you calculate the participant costs associated with the Level 2 chargers included in the Charger & OPOB BCA based on this definition?

A. Yes. I calculated the average total cost for Level 2 charger equipment and installation costs for customers across the years 2020–2023 to be **BEGIN CONFIDENTIAL** [redacted] **END CONFIDENTIAL** I then multiplied that value by the planned **BEGIN CONFIDENTIAL** [redacted] **END CONFIDENTIAL** This results in a total cost of **BEGIN CONFIDENTIAL** [redacted]. **END CONFIDENTIAL**Lastly, I calculated the total rebate value by multiplying the $300 rebate by the planned **BEGIN CONFIDENTIAL** [redacted] **END CONFIDENTIAL**charger rebates. The total rebate value of **BEGIN CONFIDENTIAL** $[redacted] **END CONFIDENTIAL**is then subtracted from the total costs, resulting in a participant cost of **BEGIN

[31] *EV-BCA Whitepaper* at 15.
[32] **BEGIN CONFIDENTIAL** [redacted] **END CONFIDENTIAL**

CONFIDENTIAL** $[redacted] **END CONFIDENTIAL** Those resulting participant costs should have been included in the Charger & OPOB BCA.

Q. Does the inclusion of participant costs impact the cost-effectiveness of the combined Charger & OPOB BCA?

A. Yes, it does. As included in Table 1 earlier in my testimony, Mr. Warner's Charger & OPOB BCA resulted in a BCR of 0.12. When the participant costs are added to this BCA, it becomes even less cost-effective with a BCR of 0.06.

Q. You mentioned that a BCA was not conducted for the Residential Charger Rebate program on its own. Would this program be cost-effective?

A. If considered on its own, the Residential Charger Rebate program would not be cost-effective. Considering that PE's OPOB program and combined Charger & OPOB programs are not cost-effective, it is reasonable to assume the Residential Rebate Charger program would not be cost-effective. Without requiring the recipient of the rebate to charge off peak or enroll in a TOU rate, there would not be any associated utility system benefits.

Q. What is your recommendation for conducting a BCA for the combined Charger & OPOB programs?

A. The combined Charger & OPOB BCA should include the participant impacts for EV charger costs as defined in the MD EV-JST for all participants that received a charger rebate.

Q. What is your recommendation for PE's Residential Charger Rebate program?

A. The Commission should require PE to modify its existing Residential Charger Rebate program so that receipt of the charger rebate is contingent on a customer enrolling in the EV-Only TOU rate. It is not a beneficial use of ratepayer dollars for PE to incentivize chargers that are not creating any distribution system benefit. In fact, providing rebates for the installation of Level 2 chargers without requiring off-peak charging may increase distribution costs that would be borne by all ratepayers. As stated by the Commission in its Order on the Joint Utilities initial *Petition for Implementation of a Statewide Electric Vehicle Portfolio*,

> As the number of EVs in Maryland is projected to grow rapidly in the near term, the deployment of charging infrastructure to support that growth will only increase the level of stress on the distribution grid, especially during peak system hours, which further implicates issues concerning grid reliability and resiliency. Therefore, EV load must be managed effectively, otherwise all ratepayers will share in the expensive costs of upgrading and maintaining the distribution system to accommodate increased load on the system.[33]

Requiring the charger rebate to be contingent on a customer enrolling in the EV-Only TOU rate will help to ensure this investment creates benefits and avoid undue stress on the distribution system.

[33] Order No. 88997 at 49.

C. Benefits Should Not Be Overstated

Q. Please summarize your second concern with the Charger & OPOB BCA.

A. The second issue I identified in this BCA pertains to the inclusion of benefits associated with customers charging off peak instead of on peak after the expiration of the program in 2023, which inflates the cost-effectiveness of this program, making it appear to provide more benefits to ratepayers than it does in actuality. **BEGIN CONFIDENTIAL** [redacted]

[redacted]

Q. [redacted]

[redacted]

[34] **BEGIN CONFIDENTIAL** [redacted]. **END CONFIDENTIAL**

[redacted] **END CONFIDENTIAL**

Q. Do you agree with Mr. Warner's rationale?

A. I do not. There is no evidence to support the claim that customer charging behavior will continue after the conclusion of the program. In fact, Mr. Warner acknowledges that less than 100 percent of program participants remain enrolled in the program. He states that of the 250 customers who received a charger rebate and opted in to the OPOB program, only 180 customers, or 72 percent, have remained in the program for over a year.[36] It is also reasonable to assume that a certain percentage of customers may move during an eight-year period. Mr. Warner does not provide data to support whether or not the customers that dropped out of the OPOB program continued to charge off peak.

In addition, the OPOB program ended in May 2023, and it is unclear what percentage of customers previously enrolled in OPOB will switch to the EV-Only TOU rate. It is not appropriate to continue counting 100 percent of the benefits for customers under the OPOB program when a certain percentage may switch to the EV-Only TOU rate, which will have its own costs and benefits. This has the potential to result in double counting of

[35] **BEGIN CONFIDENTIAL** [redacted] **END CONFIDENTIAL**

[36] PE Response to OPC 7-02(b).

benefits across the OPOB program and the EV-Only TOU rate. If this approach is not modified, when PE conducts a BCA for its EV-Only TOU rate, it should not be permitted to count any of the customers included in this OPOB program to avoid double counting of off-peak charging benefits over this same period.

Furthermore, if Mr. Warner's assumption is correct that 100 percent of customers enrolled in the OPOB program continue their charging behavior, there would be no need to provide additional incentives to these customers to charge off-peak by enrolling them in the EV-Only TOU rate. However, PE, plans to encourage OPOB participants to enroll in the EV-only TOU rate.[37]

Q. Are you aware of any research that supports this conclusion?

A. I am not. The closest area of research I am aware of pertains to examining the persistence of behavioral energy efficiency program savings from Home Energy Reports (HERs). These programs typically involve providing customers with HERs that contain personalized energy usage data, how it compares to similar dwellings, and tips for how to save energy. Regulators have historically not allowed utilities and program administrators to claim

[37] In the Matter of the Petition of the Electric Vehicle Work Group for Implementation of a Statewide Electric Vehicle Portfolio, *Petition to Revise the Electric Vehicle Charging Infrastructure Pilot Plan of the Potomac Edison Company* (CN 9478, Feb. 22, 2023), at 5.

energy savings in years when the program is not offered due to uncertainty over whether savings from behavioral changes persist after the program ends.[38] Recent evaluations seeking to answer the question of HER savings persistence found there is a decrease in behavioral energy savings after the program ends. These studies show energy savings decay rates ranging from a low of 11 percent to a high of 83 percent each year depending how long the program was in place.[39]

Q. What is the resulting BCR if the savings are only counted in the years that the program is offered?

A. When the benefits of off-peak charging are zeroed out after the conclusion of the program in 2023, the BCR is reduced from 0.77 to 0.19 for the OPOB program and from 0.12 to 0.03 for the combined Charger & OPOB BCA.

Q. What is your recommendation?

A. Given the uncertainty around the persistence of savings after the end of this program, I recommend the BCAs for the OPOB and Charger & OPOB be updated to include a sensitivity analysis to show how BCA results are

[38] For example, Massachusetts and Rhode Island HER programs are only permitted a one-year measure life. For Massachusetts *see* 2022–2024 Three-Year Energy Efficiency Plan, Statewide Data Tables – Electric, at "Savings" Tab, https://ma-eeac.org/wp-content/uploads/Addendum-Att.-4-Exh-1-App-C.1-Rev-4-1-22-Data-Tables-Electric.xlsx. For Rhode Island *see* National Grid's 2022 Annual Energy Efficiency Plan, Technical Reference Manual, at M1-M8, https://ripuc.ri.gov/eventsactions/docket/1%20PY2022%20RI%20TRM.pdf.

[39] M. Sami Khawaja, Ph.D. and James Stewart, Ph.D., *Long-Run Savings and Cost-Effectiveness of Home Energy Report Programs,* The Cadmus Group LLC (2017), https://cadmusgroup.com/papers-reports/long-run-savings-cost-effectiveness-home-energy-report-programs.

affected by changes to how many customers continue off-peak charging behavior. This is appropriate because it is unlikely 100 percent of customers will continue existing charging behavior. At a minimum, the revised analysis should show BCA results for two scenarios, one where customers only continue charging off peak while the program is in place and one in which a portion of customers (but less than 100 percent) continue off-peak charging. In the absence of EV-charging-specific evaluations, the percentage of customers that continue to charge off peak could be modeled after the decay rates of energy savings from energy efficiency behavioral evaluations cited above. This revised analysis would show a range of potential BCRs based on each sensitivity and will provide the Commission and stakeholders with valuable information to help determine whether this program should be extended into the future.

IV. Conclusion

Q. Please summarize your conclusions.

A. To ensure the EV-BCA fulfills its purpose of improving transparency of the expected benefits and costs of utility investments, it is important that the MD EV-BCA Framework be applied in a manner that accounts for differences in program design and does not overstate benefits. While the offer-class examples and baselines included in the EV-BCA Whitepaper should be used as guidance and serve as examples, the framework should be

applied in a manner that accounts for nuances in program design. It is the design of the program and the way the utility incentives are deployed that should help inform the baseline and the application of the MD EV-JST. If the MD EV-BCA Framework is not applied in this manner, the results of the analysis will not provide sufficient detail into whether programs are designed in a manner to create the most cost-effective outcome.

The initial EV programs approved by the Commission are scheduled for evaluation and full program review in 2024, and the Maryland utilities are actively discussing future program proposals. The information gleaned from the utility BCAs will be critically important to inform the direction of future EV programs. It is therefore important that PE's BCAs be corrected so that regulators and stakeholders can have an accurate picture of the costs and benefits of different program designs.

Q. Does this conclude your direct testimony at this time?

A. Yes, it does.

Appendix A

Courtney Lane, Principal Associate

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PROFESSIONAL EXPERIENCE

Synapse Energy Economics, Inc., Cambridge, MA. *Principal Associate*, September 2022 – Present, *Senior Associate,* November 2019 – September 2022.

Provides consulting and researching services on a wide range of issues related to the electric industry including performance-based regulation, benefit-cost assessment, rate and bill impacts, and assessment of distributed energy resource policies and programs. Develops expert witness testimony in public utility commission proceedings.

National Grid, Waltham, MA. *Growth Management Lead*, *New England,* May 2019 – November 2019, *Lead Analyst for Rhode Island Policy and Evaluation,* June 2013 – April 2019.

- Portfolio management of product verticals including energy efficiency, demand response, solar, storage, distributed gas resources, and electric transportation, to optimize growth and customer offerings.
- Strategy lead for the Performance Incentive Mechanisms (PIMs) working group.
- Worked with internal and external stakeholders and led the development of National Grid's Annual and Three-Year Energy Efficiency Plans and System Reliability Procurement Plans for the state of Rhode Island.
- Represented energy efficiency and demand response within the company at various Rhode Island grid modernization proceedings.
- Led the Rhode Island Energy Efficiency Collaborative; a group focused on reaching consensuses regarding energy efficiency plans and policy issues for demand-side resources in Rhode Island.
- Managed evaluations of National Grid's residential energy efficiency programs in Rhode Island, and benefit-cost models to screen energy efficiency measures.

Citizens for Pennsylvania's Future, Philadelphia, PA. *Senior Energy Policy Analyst*, 2005–2013.

- Played a vital role in several legislative victories in Pennsylvania, including passage of energy conservation legislation that requires utilities to reduce overall and peak demand for electricity (2009); passage of the $650 million Alternative Energy Investment Act (2008); and important amendments to the Alternative Energy Portfolio Standards law vital to the development of solar energy in Pennsylvania (2007).
- Performed market research and industry investigation on emerging energy resources including wind, solar, energy efficiency and demand response.
- Planned, facilitated and participated in wind energy advocates training meetings, annual partners retreat with members of wind and solar companies, and the PennFuture annual clean energy conference.

Northeast Energy Efficiency Partnerships, Inc., Lexington, MA. *Research and Policy Analyst,* 2004–2005.

- Drafted comments and testimony on various state regulatory and legislative actions pertaining to energy efficiency.
- Tracked energy efficiency initiatives set forth in various state climate change action plans, and federal and state energy regulatory developments and requirements.
- Participated in Regional Greenhouse Gas Initiative (RGGI) stakeholder meetings.
- Analyzed cost-effectiveness of various initiatives within the organization.

EnviroBusiness, Inc., Cambridge, MA. *Environmental Scientist,* July 2000 – May 2001

- Conducted pre-acquisition assessments/due diligence assignments for properties throughout New England. Environmental assessments included an analysis of historic properties, wetlands, endangered species habitat, floodplains, and other areas of environmental concern and the possible impacts of cellular installations on these sensitive areas.

EDUCATION

Tufts University, Medford, MA
Master of Arts; Environmental Policy and Planning, 2004.

Colgate University, Hamilton, NY
Bachelor of Arts; Environmental Geography, 2000, *cum laude.*

PUBLICATIONS

Fortman, N., J. Michals, T. Woolf, C. Lane. 2022. *Benefit-Cost Analysis: What it Can and Cannot Tell us About Distributional Equity of DERs*. E4TheFuture, Synapse Energy Economics. Presented at the 2022 ACEEE Summer Study of Energy Efficiency in Buildings.

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TESTIMONY

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Illinois Commerce Commission (Dockets 22-0432/22-0442 (Consol.): Direct and Rebuttal Testimony of Courtney Lane and Eric Borden regarding the petition of Commonwealth Edison Company for Approval of Beneficial Electrification Plan Under the Electric Vehicle Act. On behalf of the People of the State of Illinois. September 22, 2022 and November 16, 2022.

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New Mexico Public Regulation Commission (Case No. 21-00178-UT): Direct Testimony of Courtney Lane regarding the application of Southwestern Public Service Company's for authorization to implement grid modernization. On behalf of the New Mexico Office of Attorney General. October 11, 2022.

Public Service Commission of Wisconsin (Docket 5-UR-110): Direct and Surrebuttal Testimony of Courtney Lane regarding the Joint Application of Wisconsin Electric Power Company and Wisconsin Gas, LLC for Authority to Adjust Electric, Natural Gas, and Steam Rates. On behalf of Clean Wisconsin. September 9, 2022 and October 3, 2022.

Maryland Public Service Commission (Docket No. 9681): Direct Testimony of Courtney Lane regarding the application of Delmarva Power & Light Company for an Electric Multi-Year Plan. On behalf of the Maryland Office of People's Counsel. August 19, 2022.

New Mexico Public Regulation Commission (Case No. 21-00269-UT): Testimony of Courtney Lane in Support of Unopposed Comprehensive Stipulation regarding the Application of El Paso Electric Company for Approval of a Grid Modernization Project to Implement an Advanced Metering System. On behalf of the New Mexico Office of Attorney General. May 11, 2022.

Public Utilities Commission of New Hampshire (Docket No. DG 21-104): Direct Testimony of Courtney Lane and Ben Havumaki regarding Northern Utilities, Inc.'s request for change in rates. On behalf of the Office of Consumer Advocate. April 1, 2022.

Public Utilities Commission of New Hampshire (Docket No. DE 20-092): Direct Testimony of Courtney Lane and Danielle Goldberg regarding the 2021-2023 Triennial Energy Efficiency Plan. On behalf of the Office of Consumer Advocate. April 19, 2022.

Maryland Public Service Commission (Docket No. 9655): Direct and Surrebuttal Testimony of Courtney Lane regarding the application of Potomac Electric Company for a Multi-Year Plan and Performance Incentive Mechanisms. On behalf of the Maryland Office of People's Counsel. March 3, 2021 and April 20, 2021.

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Rhode Island Public Utilities Commission (Docket No. 4654): Oral testimony of Courtney Lane regarding the Narragansett Electric Co. d/b/a National Grid - 2017 Energy Efficiency Program Plan (EEPP) for Electric & Gas. On behalf of National Grid. December 8, 2016.

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Pennsylvania Public Utility Commission (Docket No. I-2011-2237952): Oral testimony of Courtney Lane regarding the Commission's Investigation of Pennsylvania's Retail Electricity Markets. On behalf of PennFuture. March 21, 2012.

Committee on the Environment Council of the City of Philadelphia (Bill No. 110829): Oral testimony of Courtney Lane regarding building permitting fees for solar energy projects. On behalf of PennFuture. December 5, 2011.

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Lane, C. 2009. “Act 129: Growing the Energy Conservation Market.” Presentation at the Western Chester County Chamber of Commerce, March 25, 2009.

Resume updated June 2023

EXHIBIT CL-1

APPLICATION OF THE POTOMAC EDISON COMPANY FOR ADJUSTMENTS TO ITS RETAIL RATES FOR THE DISTRIBUTION OF ELECTRIC ENERGY

Case No. 9695

Data Responses Referenced in the Direct Testimony of

Courtney Lane

PE Response to OPC 7-01

PE Response to OPC 7-02

PE Response to OPC 8-01 (Confidential – Omitted from Public Version)

PE Response to OPC 8-02 (Confidential – Omitted from Public Version)

IN THE MATTER OF THE APPLICATION OF THE POTOMAC EDISON COMPANY FOR ADJUSTMENTS TO ITS RETAIL RATES FOR THE DISTRIBUTION OF ELECTRIC ENERGY
Case 9695

THE POTOMAC EDISON COMPANY RESPONSE TO DATA REQUEST OF OFFICE OF PEOPLE'S COUNSEL

Discovery request submitted by: Office of People's Counsel

Discovery request set number: Seventh

Prepared By: Kevin Mizer

Response date: May 24, 2023

OPC-07.01

Refer to the description of the Off-Peak/Off Bill (OPOB) Incentive offering on page 9 of the Direct Testimony of Mark Warner.

a. Can a customer enroll in the OPOB offering without receiving a Charger Rebate from PE? Please explain why or why not.
b. Are there any prerequisites for a customer seeking to enroll in the OPOB program? Please explain.

Response:

a. As of 5/15/23, the OPOB offering has been converted into an EV Charger TOU Rate program and customers can no longer enroll in the OPOB offering. However, yes, a customer could enroll in the OPOB offering without receiving a charger rebate prior to 5/15/23. Any PE residential customer was eligible for the OPOB offering if they had a qualified "smart" Level 2 charger installed that was connected to wi-fi and they agreed to share charging data with PE.

b. A customer seeking to enroll in the OPOB program must have been:
   1. A PE residential customer
   2. Had a qualified "smart" Level 2 charger installed and connected to wi-fi
   3. Agreed to share the charging data from their Level 2 charger via remote access

IN THE MATTER OF THE APPLICATION OF THE POTOMAC EDISON COMPANY FOR ADJUSTMENTS TO ITS RETAIL RATES FOR THE DISTRIBUTION OF ELECTRIC ENERGY
Case 9695

THE POTOMAC EDISON COMPANY RESPONSE TO DATA REQUEST OF OFFICE OF PEOPLE'S COUNSEL

Discovery request submitted by: Office of People's Counsel

Discovery request set number: Seventh

Prepared By: Kevin Mizer

Response date: May 24, 2023

OPC-07.02

Refer to the description of the Charger Rebate and OPOB offering on pages 9 and 10 of the Direct Testimony of Mark Warner.

a. What percentage of the customers that receive a Charger Rebate opt-in to the OPOB offering?
b. What percentage of the customers that receive a Charger Rebate remain enrolled in the OPOB offering after the first year?
c. What percentage of the customers that receive a Charger Rebate charge their vehicles off-peak?
d. Does the charger rebate cover the full cost of a utility-approved smart charger? If no, what is the estimated cost to the participant after the rebate?

Response:

a. Customers could have opted-in and out of the OPOB program at any time but based on the customers enrolled as of 12/31/22, 60% of the rebate recipients participated in the OPOB offering.
b. Of the 250 customers who received a charger rebate and opted-in to the OPOB offering, 180 customers, or 72%, have remained in the program for over a year.
c. Please see Appendix F from maillog 301116 filed on 2/1/23 for current data collected for residential kWh charged during off-peak hours.
d. No, the rebate of $300 does not cover the full cost of a utility approved smart charger. As of the 2/1/23 filing, the average cost to purchase an EV charger was $589.99.