

**BEFORE THE  
MARYLAND PUBLIC SERVICE COMMISSION**

POTOMAC EDISON COMPANY'S  
PROPOSAL FOR AN ELECTRIC  
SCHOOL BUS PILOT

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Case No. 9741

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DIRECT TESTIMONY

OF

COURTNEY LANE

ON BEHALF OF THE OFFICE OF PEOPLE'S COUNSEL

August 23, 2024

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EXHIBIT A - Resume of Courtney Lane

EXHIBIT B - Data Requests and Responses Referenced in Testimony



1 **Q. Please describe your professional and educational experience.**

2 A. I have 20 years of experience in energy policy and regulation. At Synapse, I  
3 work on issues related to performance-based regulation, grid modernization,  
4 benefit-cost analysis, rate and bill impacts, and review of distributed energy  
5 resource and electric vehicle utility filings. Prior to working at Synapse, I  
6 was employed by National Grid as the Growth Management Lead for New  
7 England where I oversaw the development of customer products, services,  
8 and business models for Massachusetts and Rhode Island. In previous roles  
9 at National Grid, I led the development of the Rhode Island Annual and  
10 Three-Year Energy Efficiency Plans and oversaw the associated benefit-cost  
11 models. Prior to joining National Grid, I worked on regulatory and state  
12 policy issues pertaining to demand-side management, retail competition, net  
13 metering, and the Alternative Energy Portfolio Standard for Citizens for  
14 Pennsylvania's Future. Before that, I worked for Northeast Energy  
15 Efficiency Partnerships, Inc. where I promoted energy efficiency throughout  
16 the Northeast.

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

1 **Q. Have you previously submitted testimony to the Maryland Public**  
2 **Service Commission?**

3 A. Yes. I submitted testimony on behalf of the Office of People's Counsel  
4 (OPC) on matters related to utility electric vehicle (EV) programs in Case  
5 No. 9645, Baltimore Gas and Electric Company's (BGE) application for an  
6 electric and gas multi-year plan; Case No. 9655, Potomac Electric Power  
7 Company's (Pepco) application for an electric multi-year plan; Case No.  
8 9681, Delmarva Power & Light Company's application for an electric  
9 multi-year plan; Case No. 9695, Potomac Edison Company's (PE or the  
10 company) application for adjustments to its retail electric rates; Case No.  
11 9692, BGE's application for a second electric and gas multi-year plan; and  
12 Case No. 9702, Pepco's application for a second multi-year rate plan. I also  
13 submitted testimony on behalf of OPC on BGE's application for an electric  
14 school bus pilot program in Case No. 9696.

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

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

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

2 A. I am presenting testimony on behalf of OPC.

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

4 A. The purpose of my testimony is to review and assess PE's proposal for an  
5 Electric School Bus (ESB) Pilot<sup>1</sup> and to provide recommendations for  
6 improvement.

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

8 A. The sources for my testimony are the company's application and testimony,  
9 responses to discovery requests, public documents, and my personal  
10 knowledge and experience.

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

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

14 **I. Summary and Recommendations**

15 **Q. Please summarize your primary conclusions regarding PE's ESB Pilot**  
16 **proposal.**

17 A. My primary conclusions are that while PE's ESB Pilot meets the *Climate*  
18 *Solutions Now Act's* (CSNA)<sup>2</sup> preconditions for application to the  
19 Commission, it fails to identify and propose a demonstration project to test

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<sup>1</sup> Potomac Edison Company's *Proposal for an Electric School Bus Pilot*, ML No. 307163 (CN 9478, Jan. 17, 2024).

<sup>2</sup> Climate Solutions Now Act of 2022 (CSNA), 2022 Md Laws Ch. 38 (codified in relevant part at Md. Code Ann., Pub. Util. Art. (PUA) § 7-217).

1 vehicle-to-grid (V2G) use cases. I also find that the company's proposal  
2 may not provide sufficient benefits to some counties in PE's service territory  
3 and to underserved communities.

4 I also conclude that the company's proposed cost recovery method is flawed  
5 as it seeks to earn a return on non-capital pilot program expenses related to  
6 assets that it will not own or operate, which will result in a higher cost to  
7 customers.

8 **Q. Please summarize your recommendations.**

9 A. My primary recommendation is that the Commission approve PE's ESB  
10 Pilot proposal contingent on the Company making a compliance filing with  
11 the following modifications and additions:

- 12 • At least one proposal for an initial demonstration project to test a  
13 V2G use case;
- 14 • A plan for participating school systems to deploy a certain percentage  
15 of ESBs awarded through the pilot to routes serving underserved  
16 community census tracts to ensure that low-income and minority  
17 communities receive a portion of the ESB Pilot benefits;
- 18 • A proposal for additional evaluation metrics as described within this  
19 direct testimony; and

- 1           • Modify the treatment of ESB Pilot O&M costs, including financial  
2           incentives (i.e., rebates), such that they are expensed in the year  
3           incurred and not included in a regulatory asset.
- 4           • The company should include a summary of PE's outreach to school  
5           systems and contractors in Carroll and Howard Counties, the number  
6           of school bus parking locations within the PE service territory,  
7           opportunities for V2G at identified locations, and interest in ESB  
8           Pilot participation. The Company should explain whether it is  
9           requesting additional pilot budget for these counties or if existing  
10          approved pilot funds will be utilized.

11          **II. PE's ESB Pilot meets the CSNA's preconditions for application to**  
12          **the Commission.**

13          **Q. What is the regulatory context for PE's ESB Pilot?**

14          A. The CSNA authorizes investor-owned electric utilities to apply for  
15          Commission approval of an ESB pilot program if the proposed program  
16          meets certain preconditions.<sup>3</sup>

17          **Q. What are the CSNA's preconditions regarding ESB pilots and how does**  
18          **PE propose to comply with each?**

19          A. In Table 1 below, I list the preconditions of the CSNA and how PE plans  
20          meet each one.

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<sup>3</sup> PUA § 7-217(b)(1)(2).



1 **Table 1. Summary of PE’s proposed compliance with the CSNA**

<b>CSNA Precondition<sup>4</sup></b>	<b>PE ESB Pilot</b>
1) Commence on or before October 1, 2024	Plans to have the first ESBs resulting from the pilot in place by October 1, 2024. <sup>5</sup>
2) Provide for the deployment of not fewer than 25 electric school buses	Contains incentives for 28 ESBs. <sup>6</sup>
3) Provide for electric school bus rebates to participating school systems	Provides incentives to participating school systems that are intended to cover up to 100 percent of the incremental cost difference between an ESB that complies with all ESB Pilot requirements and a diesel bus that a school system would have purchased (or contracted for) absent the ESB Pilot. <sup>7</sup>
4) Limit total rebates to \$50 million	Incentive budget is \$10.4 million. <sup>8</sup>
5) Allow the utility to use the ESB storage batteries to access the stored electricity through V2G technology without additional compensation to the school system and at times when the school system determines the ESBs are not needed to transport students	Requires recipients to enter into an agreement with PE indicating that PE be allowed to access the energy stored in batteries subject to not interfering with the ESBs’ primary use of transporting students safely and on time. <sup>9</sup>
6) Recharge ESB batteries to the state in which they were prior to the V2G event at no cost to the participating school system	The electricity used by PE will be replaced at no cost to the school system. <sup>10</sup>
7) Select school system participants based on appropriate factors including the locational benefits that the ESB storage batteries may bring to the utility and the health	School systems must be located in PE’s service territory. If a school system proposes multiple ESB locations, PE will consider the locational benefit of each ESB in making a selection. <sup>11</sup>

<sup>4</sup> PUA § 7-217(c)(1-11).

<sup>5</sup> Direct Testimony of Mark Jones, at 12, lines 19-21.

<sup>6</sup> *Id.*, at 13, lines 4-5.

<sup>7</sup> PE Proposal at 11.

<sup>8</sup> Jones Direct Testimony at 13, lines 20-21. PE uses the term incentives for rebates.

<sup>9</sup> *Id.*, at 14, lines 5-9.

<sup>10</sup> *Id.*, at 14, lines 12-13.

<sup>11</sup> PE Response to OPC 1-19(a).

<b>CSNA Precondition<sup>4</sup></b>	<b>PE ESB Pilot</b>
and economic effects on low-income and minority communities	
8) Consider, in determining the appropriate factors under item (7) above, the health and economic effects on low-income and minority communities	PE will coordinate with school systems to consider the health and economic effects on low-income and minority communities, including specifically students who are eligible for free and reduced-price meals, when assigning ESBs to particular routes. PE will also look at the “Equitable Transportation Community Explorer,” provided through the U.S. Department of Transportation’s “Justice40” initiative. <sup>12</sup>
9) Provide and install the interconnection equipment and interconnection facilities for electric vehicle charging stations	Includes funding to cover the installation of interconnection equipment and facilities for EV charging stations. <sup>13</sup>
10) Ensure each electric school bus is equipped with lap and shoulder belts in accordance with recommendations from the National Transportation Safety Board	ESBs qualifying for incentives must comply with these CSNA requirements, such as being equipped with lap and shoulder belts. <sup>14</sup>
11) Ensure the school is provided with adequate training and expertise to operate ably electric school buses, electric vehicle charging stations, and associated infrastructure	PE will advise a school system that requests support on how to obtain training and support from ESB original equipment manufacturers (OEM) and others in the industry that provide training. <sup>15</sup>

<sup>12</sup> Jones Direct Testimony at 15, lines 7-14.

<sup>13</sup> *Id.*, pg. 15, lines 18-20.

<sup>14</sup> PE Proposal at 13.

<sup>15</sup> *Id.*, at 16, lines 11-16.

1 **Q. Has the Commission made a determination related to the CSNA**  
2 **provision that the ESB pilot commence on or before October 1, 2024?**

3 A. Yes. In its July 3, 2024, order on the procedural schedule in this case, the  
4 Commission found that “the plain language of the statute requires only that a  
5 utility’s program must be ‘structured to commence’ not merely that it  
6 ‘commences’ on or before October 1, 2024.”<sup>16</sup> Due to the fact PE’s ESB  
7 Pilot as proposed in its January 17, 2024 application is designed to be in  
8 effect by October 1, 2024, PE meets this requirement of the CSNA. The  
9 Commission also found that “the statute does not impose any deadline for  
10 Commission action.”<sup>17</sup>

11 **Q. How does the CSNA define a “rebate”?**

12 A. The CSNA defines “rebate” as “an incentive provided by an investor-owned  
13 electric company to a participating school system that is equal to:

14 (i) the demonstrable incremental costs of purchasing and deploying  
15 electric school buses to participating school systems; and

16 (ii) the incremental administrative and operating costs incurred by a  
17 participating school system in implementing its electric school bus pilot  
18 program.”<sup>18</sup>

19 **Q. What kinds of proposed program expenditures does PE interpret as**  
20 **falling within the definition of a “rebate”?**

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<sup>16</sup> ML# 310657

<sup>17</sup> Case No. 9741, Order No. 91215 (Maillog No. 310657) July 3, 2024, at 5.

<sup>18</sup> PUA § 7-217(a)(10).

1 A. The company classifies all incentives within the ESB Pilot as CSNA  
2 “rebates.” The company uses the term “incentive” because the CSNA  
3 defines a “rebate” as “an incentive,” and the purpose of a rebate is to  
4 incentivize behavior.<sup>19</sup> Specifically, the company characterizes its entire  
5 \$10.4 million ESB Pilot incentive budget for ESB and related infrastructure  
6 and services as falling within the CSNA definition of a rebate.<sup>20</sup>

7 **Q. Do you find the company’s proposal to classify ESB Pilot incentives as**  
8 **“rebates” under the CSNA to be reasonable?**

9 A. Yes. While I am not an attorney, I agree with the company’s reading of the  
10 CSNA that a “rebate” is defined as “an incentive” and therefore the use of  
11 the term “incentive” to describe the expenditures that are subject to the  
12 CSNA’s \$50 million limit on total rebates is reasonable.

13 **Q. Does the CSNA contain any reporting requirements?**

14 A. Yes. A utility that establishes an ESB pilot program is required to submit, in  
15 consultation with each participating school system, an annual report to the  
16 Governor, the Commission, the House Economic Matters Committee, and  
17 the Senate Finance Committee by February 1, 2025, and each year thereafter  
18 for the duration of the pilot. This report is required to include an evaluation  
19 of the environmental and health benefits of the pilot program and the  
20 financial cost and benefits to the participating school system and the utility

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<sup>19</sup> Jones Direct Testimony at 13, lines 14-17.

<sup>20</sup> PE Proposal at 3 and Jones Direct Testimony at 13, lines 20-21.

1 of implementing the pilot program, including the deployment, operation and  
2 maintenance (O&M) of the EVSB, and the use of V2G technology.<sup>21</sup>

3 **Q. Do you find that PE's ESB Pilot proposal adheres to the CSNA and is in**  
4 **the best interest of ratepayers?**

5 A. As discussed above, I find that PE's ESB Pilot meets all the CSNA's  
6 preconditions for an ESB pilot application. However, I find that for the ESB  
7 Pilot to be equitable and in the best interest of ratepayers, it should be  
8 modified to provide all school systems with access to pilot funds, require  
9 school systems to utilize ESBs in underserved communities, include a V2G  
10 demonstration project, improve reporting metrics, and change to the cost-  
11 recovery structure. I will expand upon these subjects within the rest of my  
12 testimony.

### 13 **III. Summary of PE's EVSB Pilot Application**

#### 14 **A. Overview of PE's ESB Pilot**

15 **Q. Please summarize PE's ESB Pilot.**

16 A. The company proposes a five-year, \$10.4 million ESB pilot program  
17 consisting of \$5.7 million for the purchase of ESBs, \$1.5 million for electric  
18 vehicle supply equipment (EVSE), \$0.9 million for load- and line-side  
19 make-ready infrastructure, \$0.7 million for O&M and implementation costs,

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<sup>21</sup> PUA § 7-217(i).

1 and \$1.5 million in pilot expenses. Table 2 below provides a summary of the  
2 proposed budget for each year of the pilot.

3 **Table 2. PE ESB Pilot budget (\$000s)**

<b>Pilot Component</b>	<b>2024</b>	<b>2025</b>	<b>2026</b>	<b>2027</b>	<b>2028</b>	<b>Total</b>
ESB Incentives	\$306.0	\$988.0	\$1,880.0	\$2,492.0	-	\$5,666.0
EVSE	\$560.0	\$714.4	\$235.3	\$26.9	-	\$1,536.7
Load-Side Make Ready	\$360.0	\$507.4	-	\$16.2	-	\$883.5
Line-Side Make Ready	-	\$52.8	\$15.8	\$16.2	-	\$84.7
EVSE Networking and Maintenance	\$25.3	\$62.3	\$74.5	\$81.8	\$83.8	\$327.7
School System Implementation Costs	\$404.3	-	-	-	-	\$404.3
Company Pilot Expenses	\$300.0	\$303.8	\$307.6	\$311.5	\$315.6	\$1,538.4
<b>Total</b>	<b>\$1,955.6</b>	<b>\$2,628.6</b>	<b>\$2,513.2</b>	<b>\$2,944.6</b>	<b>\$399.4</b>	<b>\$10,441.4</b>

4 *Source: Direct Testimony of Stephanie L. Fall, pg. 4, Table 1.*

5 **Q. Please describe PE’s proposed ESB incentives.**

6 A. The company proposes to provide financial incentives for 28 ESBs across  
7 the PE service territory that will cover up to 100 percent of the incremental  
8 cost of an ESB compared to a diesel bus that a school system would have  
9 otherwise purchased (or contracted for) absent the ESB Pilot, net of any  
10 other state or federal incentives. While the incentive is designed to also be  
11 net of any operating cost savings, PE assumes parity between ESB and  
12 diesel bus fuel and maintenance expenses for the purpose of the pilot.<sup>22</sup> The  
13 company plans to provide the incentive payment to the school system at the  
14 time of ESB contracting to avoid any interim budget shortfalls.<sup>23</sup>

<sup>22</sup> PE Proposal at 6, footnote 6 and at 11.

<sup>23</sup> Jones Direct Testimony at 5, lines 21-22.

1 **Q. How will PE ensure that the ESB incentives are limited to the**  
2 **incremental cost?**

3 A. The company will require school systems to submit the invoice for the ESB  
4 and a price quote for a comparable diesel bus as part of their incentive  
5 application.<sup>24</sup>

6 **Q. Please provide a summary of PE’s proposed incentives for ESB**  
7 **charging equipment.**

8 A. The company proposes to provide financial incentives to school systems and  
9 contractors for up to 100 percent of the cost of EVSE needed to charge  
10 ESBs. The company intends to deploy Direct Current Fast Chargers (DCFC)  
11 as part of the pilot<sup>25</sup> and indicates that a higher kW rating, such as 60 kW, is  
12 needed to “maximize the economic viability of V2G” and enable ESBs to  
13 quickly recharge between routes.<sup>26</sup> The company also proposes to provide  
14 funds for networking services to enable PE and the school systems to  
15 communicate with ESBs and EVSE and for ESBs and EVSE to  
16 communicate with each other and IT systems.<sup>27</sup>

17 **Q. Please summarize the company’s proposed make-ready incentives.**

18 A. The company proposes to provide financial incentives to school systems and  
19 school system contractors for up to 100 percent of the utility-side (line-side)  
20 and customer-side (load-side) make-ready infrastructure and charging

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<sup>24</sup> PE Response to Staff 2-2(c)(iii).

<sup>25</sup> PE Response to OPC 2-1.

<sup>26</sup> PE Proposal at 15.

<sup>27</sup> *Id.*, at 15-16.

1 hardware for ESBs parked at a municipal location such as a depot, school, or  
2 other publicly owned property. For ESBs parked on private property, the  
3 ESB operator must provide evidence of an executed contract with the school  
4 system that authorizes that operator “to provide school bus services and the  
5 legal right to install infrastructure on the property for at least the duration of  
6 the ESB Pilot.”<sup>28</sup>

7 **Q. Does PE plan to support school systems with the maintenance of the**  
8 **EVSE incentivized through the pilot?**

9 A. Yes. The company plans to reimburse school systems for service contracts  
10 related to EVSE and, upon request, will provide support in the negotiation of  
11 EVSE maintenance contracts. The company’s budget also includes \$280,000  
12 for the purchase of five “spare” smart chargers to mitigate the risk of an  
13 ESB not being “route ready” due to a faulty EVSE.<sup>29</sup> The company’s  
14 proposal assumes one spare charger per 10 vehicles at depot sites.<sup>30</sup>

15 **Q. Please summarize PE’s proposed incentives for school system**  
16 **implementation costs.**

17 A. In accordance with the CSNA, PE proposes to pay up to 5 percent of the  
18 total incentives paid to the participating school system to support the  
19 reimbursement of the cost of third-party services for operational and safety

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<sup>28</sup> *Id.*, at 14.

<sup>29</sup> *Id.*, at 16 and PE Response to OPC 2-2(a).

<sup>30</sup> PE Response to OPC 2-2(b).



1 training, the evaluation of ESB and EVSE in advance of procurement, and  
2 the evaluation of retail energy options.<sup>31</sup>

3 **Q. Will PE account for federal and state funding when issuing incentives to**  
4 **pilot participants?**

5 A. Yes. The company indicates that the application process “will ask the school  
6 districts about any additional funding that is being received for equipment or  
7 services that overlap with the scope of the ESB Pilot to prevent the projects  
8 from being overfunded.”<sup>32</sup>

9 **Q. Does PE propose a pilot or demonstration to test ESB V2G technology?**

10 A. No. The company does not propose a specific pilot or demonstration.  
11 Instead, PE lists factors that it plans to study including “load management,  
12 ESB duty cycles, battery performance, state of charge, ambient temperature  
13 and cabin heating, elevation, preheating, speed of travel, and rate-related  
14 considerations such as capacity and energy prices.”<sup>33</sup>

15 **Q. What customer protections does PE plan to include as part of its ESB**  
16 **Pilot?**

17 A. For contractor-operated buses parked at private facilities, which may include  
18 residential locations, the company plans to engage with school systems to  
19 enter into long-term contracts with contractors who become ESB incentive  
20 recipients. PE will also include a provision in the ESB Pilot incentive

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<sup>31</sup> PE Proposal at 6-7 and PE Response to OPC1-7(a).

<sup>32</sup> PE Response to Staff 1-7.

<sup>33</sup> Jones Direct Testimony at 11, lines 19-22.

1 agreements with contractors which will permit PE to claw back a prorated  
2 portion of the incentive paid.<sup>34</sup>

3 **B. PE's pilot budget is reasonable and complies with the CSNA.**

4 **Q. Did PE consult with school systems and school bus contractors to**  
5 **inform the development of the ESB Pilot?**

6 A. Yes. The company indicates that it conducted outreach to school systems,  
7 school bus OEMs and distributors, infrastructure and technology providers,  
8 the Maryland Association of Boards and Education, and school bus  
9 contractors to inform the development of the ESB Pilot.<sup>35</sup>

10 **Q. Did PE conduct research on the existing number of ESBs in each**  
11 **county?**

12 A. Yes. The company indicates that as of the end of Fiscal Year 2023,  
13 Frederick County reported having two ESBs in its fleet and Montgomery  
14 County reported 86 ESBs in its fleet, while the other counties reported no  
15 ESBs.<sup>36</sup>

16 **Q. How did the company develop the proposed incentive levels and ESB**  
17 **Pilot budget?**

18 A. As part of the company's outreach efforts, it obtained high-level ESB  
19 adoption plans and goals from school systems in PE's service territory and  
20 gathered vehicle cost, availability, and operating information from ESB

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<sup>34</sup> PE Response to OPC 1-20(a).

<sup>35</sup> Jones Direct Testimony at 10, lines 4-7.

<sup>36</sup> PE Response to OPC 1-17(b).

1 OEMs.<sup>37</sup> The company then developed a school bus inventory with the  
2 number of owned and contracted buses in each county, estimated new buses  
3 needed per year based on a 15-year life.<sup>38</sup> The resulting allocation of pilot  
4 incentives, shown in Table 3 below, was based on the size and ownership  
5 structure of school bus fleets in each school system in PE’s service territory  
6 and the indications of interest from each school system over a 5-year ESB  
7 Pilot term beginning in calendar 2024.<sup>39</sup>

8 **Table 3. PE proposed allocation of ESB Pilot incentives (2024-2028)**

County	ESB Incentives	EVSE and Make-Ready Incentives	Reimbursable Implementation Costs	Total
Allegany	\$892,000	\$283,826	\$56,367	\$1,232,193
Carroll	N/A	N/A	N/A	N/A
Frederick	\$2,453,000	\$1,347,537	\$181,690	\$3,982,227
Garrett	\$944,000	\$148,201	\$51,404	\$1,143,605
Howard	N/A	N/A	N/A	N/A
Montgomery	\$1,377,000	\$1,053,090	\$114,850	\$2,544,940
Washington	\$0	\$0	\$0	\$0

9 *Source: PE Response to OPC 1-17 Attachment A, ‘Incentive Budget’ tab.*

10 **Q. Please explain why Washington County does not have a budget**  
11 **allocation.**

12 A. The company indicates that Washington County is excluded from the ESB  
13 Pilot budget because it indicated to PE that it is not ready to commit to  
14 ESBs.<sup>40</sup>

<sup>37</sup> Jones Direct Testimony at 10 lines 18-23.

<sup>38</sup> OPC 1-17 Attachment A, Tab “Bus Inventory.”

<sup>39</sup> Jones Direct Testimony at 13, lines 5-9.

<sup>40</sup> *Id.*, at 9, lines 9-11.

1 **Q. Why has the company excluded Carroll and Howard Counties from the**  
2 **proposed budget?**

3 A. The company explains that Carroll and Howard Counties do not operate any  
4 school bus depots and instead contract out for 100 percent of their buses.<sup>41</sup>

5 However, PE plans to engage with these counties to identify contractors that  
6 may park in areas served by PE's distribution system.<sup>42</sup>

7 **Q. Does the company plan to increase its budget should these counties**  
8 **become interested in the pilot and be eligible for incentives?**

9 A. Yes. The company indicates that if it receives an incentive request from  
10 Carroll and Howard school systems, which meets the ESB Pilot criteria, PE  
11 may request an additional program budget from the Commission. The  
12 company explains that while the exact budget increase is not known at this  
13 time, the incentives would be comparable on a per-ESB basis with other  
14 counties.<sup>43</sup>

15 **Q. Does the company cite other instances that would result in a request for**  
16 **additional budget over the course of the ESB Pilot?**

17 A. Yes. The company indicates that it may request "additional budget for the  
18 ESB Pilot if it finds that additional benefits are reasonably obtainable or if  
19 program costs significantly vary from proposed costs."<sup>44</sup>

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<sup>41</sup> *Id.*, at 9, lines 5-6.

<sup>42</sup> *Id.*, at pg. 9, lines 3-9.

<sup>43</sup> PE Response to OPC 1-14.

<sup>44</sup> PE Response to OPC 1-21(c).

1 **Q. What is your assessment of PE's proposed pilot budget?**

2 A. First, it is evident that the company scaled the proposed number of ESB  
3 rebates and associated EVSE and make-ready incentives based on outreach  
4 and communication with school systems in its service territory. The work  
5 conducted by the company in advance of filing creates a budget proposal  
6 that is right-sized to the existing number of ESBs, school system interest  
7 over the pilot period, and the unique characteristics of school bus operations  
8 in each county.

9 While the current budget appears reasonable and is within the budget  
10 limitations for rebates under the CSNA (PUA § 7-217(C)(4)), there is  
11 uncertainty as to whether additional funding will be needed to serve Carroll,  
12 Howard, and Washington Counties. Any request for additional ESB Pilot  
13 budget should be supported with a summary of the discussions with school  
14 systems and/or school bus contractors, updates on any changes to the  
15 assumed cost of ESB, EVSE, and make-ready incentives, an updated  
16 benefit-cost analysis, and an updated version of the information as contained  
17 in PE Response to OPC 1-17 Attachment A related to the number and type  
18 of incentives by county.

1 **IV. The ESB Pilot should be modified to maximize benefits and**  
2 **learnings.**

3 **A. PE should propose ESB incentives to counties that contract for 100**  
4 **percent of school buses.**

5 **Q. You indicate earlier in your testimony that PE's ESB Pilot does not**  
6 **include a budget for Carroll and Howard Counties, do you have any**  
7 **concerns with that proposal?**

8 A. Yes. I am concerned that Carroll and Howard Counties will not have an  
9 equitable opportunity to participate in the ESB Pilot. While I understand  
10 there are complexities associated with the fact that Carroll and Howard  
11 Counties contract out for 100 percent of their buses and do not operate any  
12 school bus depots, PE acknowledges that "some of the school bus  
13 contractors for these two counties may park in areas which are served by  
14 PE's distribution system."<sup>45</sup> In addition, the company indicates that Garrett  
15 County's school system contracts for all of its buses, which are parked in  
16 small numbers and widely distributed across the county, including at  
17 drivers' homes.<sup>46</sup> Yet, the company includes a budget for Garrett County in  
18 its ESB Pilot proposal.

19 While PE indicates that it will actively engage with those school systems to  
20 identify potential contractors should the ESB Pilot be approved,<sup>47</sup> the

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<sup>45</sup> Jones Direct Testimony at 9, lines 6-8.

<sup>46</sup> *Id.*, at 17, lines 8-10.

<sup>47</sup> *Id.*, at 9, lines 8-9.

1 company does not explain why it did not conduct this research prior to filing  
2 the ESB Pilot proposal to inform the pilot budget.

3 **Q. Why is it important that PE include Carroll and Howard Counties in its**  
4 **ESB Pilot?**

5 A. All of the company's customers will pay for the ESB Pilot, including those  
6 residing in Carroll and Howard Counties, and should be given the  
7 opportunity to benefit from the pilot. In addition, as a pilot, one of the key  
8 outcomes should be to better understand and learn from the challenges and  
9 opportunities facing school systems as well as independent contractors in  
10 transitioning from diesel buses to ESBs. Developing an understanding of  
11 how utilities can support the electrification of ESBs operated by private  
12 contractors and how those ESBs can be utilities for V2G should be an  
13 outcome of the ESB Pilot.

14 **Q. What is your recommendation related to funding ESBs in Howard and**  
15 **Carroll Counties?**

16 A. I recommend that the Commission require PE to make a compliance filing  
17 that provides a summary of PE's outreach to school systems and contractors  
18 in Carroll and Howard Counties, the number of school bus parking locations  
19 within the PE service territory, opportunities for V2G at identified locations,  
20 and interest in ESB Pilot participation. Within this filing, the company  
21 should explain whether it is requesting additional pilot budget for these  
22 counties or indicate if existing approved pilot funds will be utilized.

1           **B. School systems should be required to support underserved**  
2           **communities.**

3           **Q. Does the CSNA include any requirements related to low-income and**  
4           **minority communities?**

5           A. Yes. The CSNA states that a proposed utility ESB pilot must be structured  
6           to “provide for the selection of school systems that apply to participate in the  
7           pilot program on the basis of appropriate factors determined by the investor-  
8           owned electric company with the approval of the Commission” and  
9           consider, in determining those appropriate factors, “the health and economic  
10          effects on low-income and minority communities.”<sup>48</sup> In addition,  
11          participating school systems are required to “consider criteria that benefit  
12          students who are eligible for free and reduced price meals” when deploying  
13          ESBs.<sup>49</sup>

14          **Q. What steps does PE plan to take to consider the health and economic**  
15          **effects on low-income and minority communities?**

16          A. The company will obtain a commitment from pilot participants to undertake  
17          best efforts to serve underserved census tracts with ESBs.<sup>50</sup> However, the  
18          company notes that the school system will ultimately have the responsibility  
19          to determine which routes are served by the resulting pilot ESBs and that

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<sup>48</sup> PUA § 7-217(c)(7)(8).

<sup>49</sup> PUA § 7-217(d)(1).

<sup>50</sup> PE Response to OPC2-7(b).



1           there may be operational or other justifications for ESBs being deployed  
2           more broadly.<sup>51</sup>

3   **Q.   How will the company assist school systems with utilizing ESBs in**  
4   **underserved communities?**

5           The company originally intended to utilize the Equitable Transportation  
6           Community Explorer, a tool created by the U.S. Department of  
7           Transportation's Justice40 initiative to engage with participating school  
8           systems on the deployment of ESBs to low-income and minority  
9           communities.<sup>52</sup> However, since the filing of the ESB Pilot proposal, PE  
10          indicates that the Maryland Department of the Environment's  
11          Environmental Justice Screening Tool (MDE EJ Screening Tool) may be a  
12          more effective resource to identify low-income and minority communities.<sup>53</sup>  
13          The company plans to utilize the MDE EJ Screening Tool to provide maps  
14          illustrating underserved communities as defined by MDE to school system  
15          transportation directors to assist them in identifying school bus routes which  
16          traverse applicable census tracts.<sup>54</sup>

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<sup>51</sup> PE Response to OPC 2-7(b).

<sup>52</sup> PE Proposal at 11.

<sup>53</sup> PE Response to OPC 1-18(a).

<sup>54</sup> PE Response to OPC 1-18(a).

1 **Q. Has the company identified the census tracts in the PE service territory**  
2 **that meet MDE’s definition of an underserved community?**

3 A. Yes. PE indicates there are 76 census tracts within its service territory that  
4 meet MDE’s definition of an underserved community.<sup>55</sup> Table 4 below  
5 provides the distribution of the 76 census tracks across the school systems in  
6 PE’s service territory. For comparison, the table also provides the proposed  
7 allocation of the ESB Pilot incentives to school systems.

8 **Table 4. Number of census tracts classified as underserved communities and**  
9 **total pilot incentives by county**

<b>County/School System</b>	<b>Total School System Incentives</b>	<b>% of Total School System Incentives</b>	<b>Number of Underserved Communities Census Tracts</b>	<b>% of Total Underserved Communities Census Tracts</b>
Frederick	\$3,982,227	45%	16	21%
Montgomery	\$2,544,940	29%	14	18%
Allegany	\$1,232,193	14%	19	25%
Garrett	\$1,143,605	13%	7	9%
Washington	\$0	0%	19	25%
Carroll	N/A	N/A	1	1%
Howard	N/A	N/A	N/A <sup>56</sup>	N/A

10 *Sources: PE Response to OPC 1-17 Attachment A, ‘Incentive Budget’ tab and PE*  
11 *Response to OPC 2-6.*

12 **Q. Does PE propose to set aside a specific percentage of pilot funds for**  
13 **underserved communities based on the number of underserved**  
14 **communities census tracks?**

15 A. No. The company indicates that it has not “explicitly earmarked” funds for  
16 underserved communities. The company explains that “forecasted ESB  
17 adoption for those communities were included in the development of the

<sup>55</sup> PE Response to OPC 2-6.

<sup>56</sup> No information for Howard County was included in PE’s Response to OPC 2-6.

1       ESB Pilot budget” and the school systems will utilize those ESBs in  
2       underserved communities.<sup>57</sup>

3       **Q.    Please summarize your assessment of the company’s ESB Pilot related**  
4       **to underserved communities.**

5       A.    I find that the company’s proposal does not ensure that ESBs will be utilized  
6       to benefit underserved communities. While the company indicates that it  
7       will obtain a commitment from pilot participants to undertake best efforts to  
8       serve underserved census tracts with ESBs, this is not a requirement. It is  
9       plausible that a school system could choose to not utilize any of the pilot  
10       ESBs for routes serving underserved communities. The company itself  
11       seems to note this possibility by indicating that once an application is  
12       approved by PE, the school systems will have the ultimate responsibility for  
13       determining which routes are to be served by ESBs and school systems may  
14       end up deploying ESBs more broadly due to “operational or other  
15       justifications (such as experimenting with routes of varying distance or  
16       terrain).”<sup>58</sup>

17       This is problematic when the CSNA clearly indicates the importance of the  
18       pilot for underserved communities through the requirements that the utility  
19       and the participating school systems consider these populations through

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<sup>57</sup> PE Response to OPC 2-7(a).

<sup>58</sup> PE Response to OPC 2-7(b).

1 selection of pilot participants and deployment of ESBs.<sup>59</sup> Furthermore,  
2 customers in underserved communities may be less likely to participate in  
3 PE's other EV programs due to the fact many low-income customers do not  
4 have the means to purchase an EV. The use of ESBs in underserved  
5 communities will ensure that the health and environmental benefits of  
6 electrification of the transportation sector are experienced by those  
7 customers who are otherwise unable to directly participate.

8 **Q. Do you have any recommended improvements to the ESB Pilot to**  
9 **support underserved communities?**

10 A. Yes. I recommend that PE, through its formal agreements with school  
11 systems, require systems to deploy a certain percentage of ESBs awarded  
12 through the pilot to routes serving underserved community census tracts.  
13 This requirement would ensure that low-income and minority communities  
14 receive a portion of the ESB Pilot benefits. The requirement could be based  
15 on the percentage of total census tracts within a school system that are  
16 classified as underserved communities or percentage of students who are  
17 eligible for free and reduced-price meals.

18 **C. PE should propose a V2G demonstration project.**

19 **Q. What is your concern with PE's ESB Pilot as it relates to V2G?**

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<sup>59</sup> PUA § 7-217(c)(7)(8) and (d)(1).

1 A. PE has not proposed a V2G demonstration project. While the company  
2 claims that the ESB Pilot is a V2G pilot because it plans to deploy V2G  
3 capabilities at locations where ESBs participated in the pilot are parked and  
4 charging,<sup>60</sup> there is insufficient information related to how the company will  
5 select which locations to test V2G, the number of buses that will be utilized,  
6 which V2G applications it seeks to prioritize, and how it will track and  
7 measure progress.

8 The company indicates that if the ESB Pilot is approved, PE will enter  
9 formal agreements with school systems that “will include PE leveraging  
10 internal and potentially external expertise to perform a V2G demonstration  
11 project.”<sup>61</sup> However, it is not clear which aspects of V2G the company seeks  
12 to pilot. For example, while the company states in its application that the  
13 purpose of the ESB Pilot is to test whether ESBs could potentially become  
14 non-traditional grid resources and PE will study factors including ESB duty  
15 cycles, state of charge, and rate-related considerations,<sup>62</sup> when asked for  
16 specifics, the company cannot actually identify how it will utilize V2G for  
17 grid services<sup>63</sup> or identify the criteria it plans to use to determine which V2G

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<sup>60</sup> PE Response to OPC 1-10(a).

<sup>61</sup> Jones Direct Testimony at 11, lines 12-14.

<sup>62</sup> PE Proposal at 19.

<sup>63</sup> PE Response to OPC 1-10(e).

1 deployment options to evaluate when more than one V2G value stream is  
2 available.<sup>64</sup>

3 **Q. Does PE explain why it does not provide more detail in its application**  
4 **related to the utilization of V2G?**

5 A. The company states that it has yet to determine the scope for studying V2G  
6 capabilities “as several factors, such as location, uptake, etc. could impact  
7 the study.”<sup>65</sup>

8 **Q. Do you agree that these factors limit PE’s ability to propose a scope for**  
9 **a V2G demonstration project within the ESB Pilot proposal?**

10 A. No, I do not. There are several examples of utilities’ proposing V2G  
11 demonstration projects without this information. For example, National Grid  
12 in Massachusetts worked alongside a school district to propose and  
13 implement a pilot to test the use of an ESB to deliver stored electricity grid  
14 to help meet peak energy demand.<sup>66</sup>

15 In addition, San Diego Gas & Electric (SDG&E) provides an example of a  
16 utility V2G pilot where the school system was not known at the time of the  
17 proposal to the commission. SDG&E developed a V2G proposal to provide  
18 financial incentives for ESBs at one school location to test participation in

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<sup>64</sup> PE Response to Staff 1-10(c).

<sup>65</sup> PE Response to OPC 1-10(e).

<sup>66</sup> Proterra Press Release (Oct. 13, 2021; last accessed on July 18, 2023),  
<https://www.proterra.com/press-release/massachusetts-electric-school-bus/>.

1 the California Independent System Operator (CAISO) markets.<sup>67</sup> The  
2 proposal did not identify a school district; instead, it sought to obtain a  
3 participant through outreach and education. Even without knowing which  
4 school district would participate, SDG&E was able to determine the scope  
5 of the pilot, its objectives, evaluation metrics, and cost. I do not find  
6 anything in the CSNA that would prevent PE from following a similar path  
7 to these utilities and providing a specific proposal for at least one V2G  
8 demonstration project within its EVB Pilot application.

9 In addition, PE demonstrates that it has already conducted outreach with  
10 school systems and bus contractors. Through these conversations, the  
11 company could have proactively identified bus depots or other charging  
12 locations that may be suitable for V2G to inform the development of a V2G  
13 demonstration project proposal.

14 **Q. Can you provide an example of what you would like to see included in**  
15 **the ESB Pilot application related to a V2G demonstration project?**

16 A. Yes, an example of a sound approach to pilot design can be found in  
17 Consolidated Edison Company of New York's (Con Edison) Electric School  
18 Bus Vehicle-to-Grid (V2G) Demonstration Project, which appears to be one  
19 of the pilots PE reviewed in the preparation of its proposal.<sup>68</sup> Con Edison's

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<sup>67</sup> Pub. Util. Comm'n of the State of Cal., Decision 19-08-026 in Application 18-01-012 (Aug. 15, 2019).

<sup>68</sup> PE Response to OPC 1-15(a).

1 demonstration project sought to test a “shared asset” business model  
2 between the utility and a V2G provider (First Priority Green-Fleet) to test  
3 the technical and operational viability of using a school bus as a distribution  
4 grid asset.<sup>69</sup>

5 Con Edison’s June 8, 2018, V2G project outline identifies the proposed  
6 project partners, the school district, the number and location of buses,  
7 timeline, and budget. The outline also provides detailed information related  
8 to the hypothesis, the revenue cost-sharing business model the project seeks  
9 to test, potential ability to scale, risk and mitigation strategies, data  
10 collection, and metrics.<sup>70</sup>

11 **Q. What type of reporting structure does Con Edison employ?**

12 A. Con Edison provides quarterly reports on implementation progress and  
13 budget, summary of deviations, and key performance metrics.<sup>71</sup>

14 **Q. What type of performance metrics does Con Edison track?**

15 A. Con Edison tracked the following:

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<sup>69</sup> Consolidated Edison Company of New York, Inc. (Con Edison), *Rev Demonstration Project Implementation Plan Electric School Bus V2G* (Nov. 12, 2018), N. Y. Pub. Serv. Comm’ Case 14-M-0101, at 3.

<sup>70</sup> Consolidated Edison Company of New York, Inc. (Con Edison), *Proceeding on Motion of the Commission in Regard to Reforming the Energy Vision* (Jun. 8, 2018), N.Y. Pub. Serv. Comm’ Case 14-M-0101.

<sup>71</sup> Consolidated Edison Company of New York, Inc. (Con Edison), *Rev Demonstration Project Implementation Plan Electric School Bus V2G* (Nov. 12, 2018), N. Y. Pub. Serv. Comm’ Case 14-M-0101, at 20.



- 1           • For summer months when the ESB battery is used, performance is  
2           tracked for the following:
- 3                 ○ ESB charging events including time, load, and transfer rate;
  - 4                 and
  - 5                 ○ Discharge-to-grid events including time, load, and transfer  
6                 rate.<sup>72</sup>
- 7           • For non-summer months ESB performance is tracked for the  
8           following: miles driven, average kWh/mile, kWh consumption,  
9           vehicle maintenance and uptime.<sup>73</sup>

10           Con Edison then used this information to help inform the development of a  
11           total cost of ownership (TCO) to provide an understanding of the difference  
12           in the purchase and O&M costs associated with diesel school buses, ESBs  
13           with unmanaged charging, ESBs with managed charging, and ESBs with  
14           managed charging and V2G.<sup>74</sup>

15   **Q.    What is your recommendation regarding the development of a V2G**  
16   **demonstration project?**

17   A.    I recommend that the Commission require PE to modify its ESB Pilot to  
18           include at least one proposal for a V2G demonstration project to test a  
19           specific use case. The company should provide detailed information on the

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<sup>72</sup> *Id.*

<sup>73</sup> *Id.*

<sup>74</sup> *Id.*, at 12.

1 objective of the V2G demonstration, data collection, evaluation metrics, the  
2 required number of EVBs needed to conduct the demonstration, whether the  
3 location of the school buses impacts the ability to conduct the pilot, an  
4 education and outreach plan for how it will recruit participants, and  
5 indication of whether additional funding is required.

6 **Q. Why is it important that PE be required to propose a V2G**  
7 **demonstration project as part of its ESB Pilot?**

8 A. As stated by the company, the “primary purpose of the ESB Pilot, in  
9 accordance with the CSNA, is for PE to test the use of the ESB battery for  
10 V2G services.”<sup>75</sup> The Commission should not approve an ESB Pilot that  
11 does not contain a proposal for a V2G demonstration project. Without this  
12 requirement, PE’s customers could end up paying for V2G technology that  
13 is not being utilized.

14 **D. Additional reporting metrics will improve the ESB Pilot**  
15 **evaluation.**

16 **Q. What metrics does the company propose to track over the course of the**  
17 **ESB Pilot?**

18 A. The company proposes to track the following eight metrics, which it will  
19 include in its annual status reports:

- 20 1. Number of ESBs deployed through the pilot;
- 21 2. Percentage deployed to underserved areas;

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<sup>75</sup> PE Response to OPC 1-20(b).

- 1           3. ESB performance including kWh/mile efficiency, kWh/hour charging
- 2           performance, and demonstrated reduced emissions when compared to
- 3           fossil-powered bus;
- 4           4. Number of miles on the road during the reporting period;
- 5           5. Number of hours on the road during the reporting period;
- 6           6. Amount of kWh consumed in charging during the reporting period;
- 7           7. Greenhouse gas (GHG) emissions reduced; and
- 8           8. V2G-related learnings during the reporting period.<sup>76</sup>

9           Specific to GHG emission reductions, the company will utilize the Argonne  
10          National Laboratory AFLEET Online tool based on the miles driven by each  
11          ESB, which will be obtained through either vehicle telematics or by  
12          multiplying charging event data by the ESM's fuel economy. Total GHG  
13          contributions will be calculated as the net hourly energy consumption of the  
14          ESBs and the hourly marginal emission rates provided by PJM on an annual  
15          basis. The difference between the GHG reductions and contributions will  
16          inform the ESB Pilots' net GHG benefit.<sup>77</sup>

17          Specific to potential applications of V2G, the company will monitor  
18          cycles/partial cycles added to the batteries and additional battery energy

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<sup>76</sup> Jones Direct Testimony at 19:16-18 and 17:1-9.

<sup>77</sup> PE Response to Staff 2-14.

1 (kWh) throughput through either the EVSE or through on-board  
2 telematics.<sup>78</sup>

3 The company also explains that it will provide a qualitative summary of  
4 learning from program participants and which school systems, if any, do not  
5 participate and will report on the barriers indicated from those non-  
6 participants to the degree practicable.<sup>79</sup> Specifically, the company states that  
7 its implementation plan will include an annual survey to collect information  
8 on which school systems, if any, do not participate and why.”<sup>80</sup>

9 **Q. How will the company collect data to support the proposed reporting**  
10 **metrics?**

11 A. The company will require the ESB owner to provide data from the ESB and  
12 EVSE to support information related to the number of days the ESB is  
13 dispatched for routes, miles driven per day, energy consumption per mile,  
14 state of charge, energy consumed from or exported to the grid (kW level and  
15 kWh consumption), and weather data such as ambient temperature.<sup>81</sup>

16 **Q. What ESB Pilot reports will the company file?**

17 A. The company plans to submit its first ESB Pilot status report to the  
18 Governor, the Commission, the House Economic Matters Committee, and  
19 the Senate Finance Committee by February 1, 2025, and each year thereafter

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<sup>78</sup> PE Response to Staff 2-9(b)(c).

<sup>79</sup> PE Response to OPC 1-9(a)(b).

<sup>80</sup> PE Response to Staff 1-6(a).

<sup>81</sup> PE Response to Staff 1-17.

1 for the duration of the pilot and is willing to share the results of its status  
2 with the public.<sup>82</sup>

3 The company will also provide an annual report on the ESB Pilot status that  
4 will be informed with consultation with applicable school systems. The  
5 reports will include the status of the environmental and health benefits of the  
6 ESB Pilot and the financial costs and benefits of implementing the pilot to  
7 the participating school system, contractors, and the company. The company  
8 indicates that the costs and benefits included in these reports will include the  
9 deployment, operation, and maintenance of the ESBs; and the learnings  
10 related to V2G technology.”<sup>83</sup>

11 **Q. Do you recommend any improvements to the metrics?**

12 A. Yes. First, I recommend that the company track its proposed metrics by  
13 county. Second, the company does not specify what it plans to include in the  
14 “demonstrated reduced emissions” metric. I recommend PE calculate and  
15 report on the net-reduction in nitrogen oxides (NO<sub>x</sub>), sulfur oxides (SO<sub>x</sub>),  
16 and particulate matter (PM<sub>2.5</sub>).

17 I also recommend that the company report separately on the following  
18 metrics specific to ESBs deployed in underserved communities:

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<sup>82</sup> Jones Direct Testimony at 20, lines 10-13.

<sup>83</sup> *Id.*, at. 20, lines 15-20.

- 1 • demonstrated reduced emissions (NO<sub>x</sub>, SO<sub>x</sub>, PM<sub>2.5</sub>) when compared
- 2 to fossil-powered buses;
- 3 • Number of miles on the road during the reporting period;
- 4 • Number of hours on the road during the reporting period; and
- 5 • GHG emissions reduced.

6 In addition, I recommend several additional evaluation metrics to support  
7 the evaluation of ESB performance and the cost of ESB adoption:

- 8 • Number of ESBs as a percentage of total school buses by school
- 9 system;
- 10 • Required distribution system upgrade costs by school system;
- 11 • Total cost of ESB ownership by participating school systems;
- 12 • School system and bus contractor staff enrollment in EVSB training
- 13 programs;
- 14 • Participant ESB O&M costs; and
- 15 • Time of day and duration of ESB charging.

16 **Q. Do you have any other recommendations related to the company's**  
17 **proposed reporting metrics?**

18 A. Yes. It is not clear whether the company is proposing to conduct a formal  
19 evaluation at the end of the pilot. I recommend, at a minimum, the company  
20 prepare a final report for the ESB Pilot that summarizes whether PE  
21 achieved its pilot goals, a summary of the outcomes, learnings for each ESB

1 operating model, benefits, costs, and summation of the reporting metrics  
2 over the pilot period.

3 **V. PE's cost-recovery proposal increased costs to customers and should**  
4 **be rejected**

5 **Q. Please summarize PE's proposed cost-recovery approach for the ESB**  
6 **Pilot.**

7 A. The company proposes to establish a regulatory asset for the entire ESB  
8 Pilot budget, except for the \$84,700 in line-side make-ready capital costs.<sup>84</sup>  
9 The company explains that the regulatory asset will be incorporated into rate  
10 base and earn a return at the company's then-authorized rate of return,  
11 utilizing a five-year amortization recovery period beginning on the effective  
12 date of new distribution rates resulting from the company's next base rate  
13 proceeding.<sup>85</sup>

14 **Q. Is the company proposing to earn a return on the non-capital costs**  
15 **associated with the ESB Pilot?**

16 A. It is not clear. When asked whether the company is proposing to earn a  
17 return on the costs associated with ESB incentives, EVSE, Load-Side Make  
18 Ready, EVSE Networking and Maintenance, and School System  
19 Implementation costs that will be included in the regulatory asset, PE

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<sup>84</sup> Direct Testimony of Stephanie L. Fall at 4:18-19 and 5:1-2.

<sup>85</sup> *Id.*, pg. 5, lines 12-15.

1 indicated it would not “since such costs are operation and maintenance  
2 (“O&M”).<sup>86</sup>

3 However, the company indicates that the proposal to defer O&M costs into a  
4 regulatory asset for future recovery is identical to the recovery of EV  
5 program costs from Case No. 9478.<sup>87</sup> The company’s compliance filing in  
6 Case No. 9478 indicates that PE will earn a return at the company’s  
7 authorized rate of return once the asset is incorporated into rate base.<sup>88</sup>

8 For the purposes of my testimony, I therefore conclude that if the O&M  
9 costs are included in the regulatory asset, and the company will earn a return  
10 on that regulatory asset, it follows that the company is earning a return on  
11 those O&M costs. Effectively, this means 100 percent of the ESB pilot  
12 program costs will be treated as capital investment.

13 **Q. What is PE’s rationale for this approach?**

14 A. The company states this approach is consistent with the Commission’s  
15 orders approving the company’s EV pilot program in Case Nos. 9478 and  
16 9695, and the company’s Energy Storage Pilot in Case No. 9619.

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<sup>86</sup> PE Response to OPC 2-8(a).

<sup>87</sup> PE Response to OPC 2-8(b).

<sup>88</sup> The Potomac Edison Company, Revised Electric Vehicle Charging Infrastructure Pilot Plan. Case No. 9478. (ML 225516), Pg. 8.



1 **Q. Did the cost-recovery framework approved by the Commission in Case**  
2 **No. 9478 apply to all future EV filings?**

3 A. No, it did not. Commission Order No. 88997 in Case No. 9478 pertained to  
4 the Phase I EV programs. The Commission has not yet made a  
5 determination on the cost-recovery mechanism for additional EV programs.

6 **Q. Does the CSNA prescribe a cost-recovery mechanism?**

7 A. No, it does not. The CSNA only indicates that the utility “may recover all  
8 reasonable and prudent program costs incurred under an [EVSB] pilot  
9 program through a mechanism that is reviewed and approved by the  
10 Commission.”<sup>89</sup>

11 **Q. Will PE own any of the ESBs, EVSE, or load-side infrastructure**  
12 **incentivized through the ESB Pilot?**

13 A. No. The company will only own the line-side make-ready infrastructure.

14 **Q. Do you support the company's cost-recovery proposal?**

15 A. No. I do not support the company's proposal because customers will pay  
16 more under regulatory asset treatment than if the O&M costs were expensed  
17 in the year they occur. This is because, in addition to the company being  
18 eligible to earn a return on the amortized costs, those costs are subject to the  
19 cost of debt, taxes, and other charges necessary for including costs in rate  
20 base.

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<sup>89</sup> PUA § 7-217(e).

1 **Q. Did you calculate the increased costs to customers from regulatory asset**  
2 **treatment the ESB Pilot O&M costs?**

3 A. I was unable to perform this calculation because the company indicated it  
4 was not able to provide the necessary data in response to OPC 1-25(a-c).

5 **Q. What is your recommendation for the cost-recovery of ESB Pilot costs?**

6 A. I recommend that the Commission reject PE's proposal to defer costs for its  
7 ESB Pilot, except for costs related to utility-side make-ready investments.

8 As explained above, capitalizing ESB Pilot O&M costs through regulatory  
9 asset treatment will cost customers more in the long term. The company will  
10 earn a return for financing equipment it does not own and for which it takes  
11 on no investment risk.

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

13 A. Yes, it does.

# **Exhibit A**

## Courtney Lane, Senior Principal

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Synapse Energy Economics | 485 Massachusetts Avenue, Suite 3 | Cambridge, MA 02139 | 617-453-7028  
clane@synapse-energy.com

### PROFESSIONAL EXPERIENCE

**Synapse Energy Economics, Inc.**, Cambridge, MA. *Senior Principal*, August 2024 – Present, *Principal Associate*, September 2022 – August 2024, *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 consensus 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.

National Energy Screening Project. 2022. *Methods, Tools and Resources: A Handbook for Quantifying Distributed Energy Resource Impacts for Benefit-Cost Analysis*. E4TheFuture, Synapse Energy Economics, Parmenter Consulting, Apex Analytics, Energy Futures Group.

Woolf, T., D Bhandari, C. Lane, J. Frost, B. Havumaki, S. Letendre, C. Odom. 2021. *Benefit-Cost Analysis of the Rhode Island Community Remote Net Metering Program*. Synapse Energy Economics for the Rhode Island Division of Public Utilities and Carriers.

Lane, C., S. Kwok, J. Hall, I. Addleton. 2021. *Macroeconomic Analysis of Clean Vehicle Policy Scenarios for Illinois*. Synapse Energy for the Natural Resources Defense Council.

National Energy Screening Project. 2020. *National Standard Practice Manual for Benefit-Cost Analysis of Distributed Energy Resources*. E4TheFuture, Synapse Energy Economics, Energy Futures Group, ICF, Pace Energy and Climate Center, Schiller Consulting, Smart Electric Power Alliance.

Lane, C., K. Takahashi. 2020. *Rate and Bill Impact Analysis of Rhode Island Natural Gas Energy Efficiency Programs*. Synapse Energy Economics for National Grid.

Chang, M., J. Frost, C. Lane, S. Letendre, PhD. 2020. *The Fixed Resource Requirement Alternative to PJM's Capacity Market: A Guide for State Decision-Making*. Synapse Energy Economics for the State Energy & Environmental Impact Center at the NYU School of Law.

## TESTIMONY

**New Mexico Public Regulation Commission (Case No. 22-00058-UT):** Supplemental Testimony of Courtney Lane regarding the Benefit Cost Analysis of Public Service Company of New Mexico's grid modernization application. On behalf of the New Mexico Office of Attorney General. March 1, 2024.

**Public Service Commission of the District of Columbia (Formal Case No. 1176):** Direct and Surrebuttal Testimony of Courtney Lane regarding the Application of Potomac Electric Power Company for Authority to Implement a Multiyear Rate Plan for Electric Distribution Service in the District of Columbia. On behalf of the District of Columbia Government. January 12, 2024 and April 22, 2024.

**Maryland Public Service Commission (Case No. 9702):** Direct and Surrebuttal Testimony of Courtney Lane regarding electric vehicle programs and cost recovery issues in the application of Potomac Electric Power Company for an Electric Multi-Year Plan. On behalf of the Maryland Office of People's Counsel. December 15, 2023 and February 23, 2024.

**Public Utilities Commission of New Hampshire (Docket No. DE 23-039):** Direct Testimony of Courtney Lane regarding Liberty Utilities Request for Change in Distribution Rates. On behalf of the Office of Consumer Advocate. December 13, 2023.

**Maryland Public Service Commission (Case No. 9696):** Direct Testimony of Courtney Lane regarding the application of Baltimore Gas and Electric Company for an Electric School Bus Pilot Program. On behalf of the Maryland Office of People's Counsel. July 25, 2023.

**Maryland Public Service Commission (Case No. 9695):** Direct and Surrebuttal Testimony of Courtney Lane regarding electric vehicle program benefit-cost analysis issues in the application of the Potomac Edison Company for Adjustments to its Electric Retail Rates. On behalf of the Maryland Office of People's Counsel. June 9, 2023 and July 14, 2023.

**Maryland Public Service Commission (Case No. 9692):** Direct and Surrebuttal Testimony of Courtney Lane regarding electric vehicle program benefit-cost analysis issues in the application of Baltimore Gas and Electric Company for an Electric and Gas Multi-Year Plan. On behalf of the Maryland Office of People's Counsel. June 20, 2023 and August 25, 2023.

**California Public Utilities Commission (Application Nos. 22-05-015/22-05-01):** Prepared Testimony of Eric Borden and Courtney Lane regarding Quantitative Risk Analysis Issues in Sempra's 2024 Test Year General Rate Case. On behalf of The Utility Reform Network. March 27, 2023.

**New Mexico Public Regulation Commission (Case No. 22-00058-UT):** Direct Testimony of Courtney Lane regarding the application of Public Service Company of New Mexico's for authorization to implement grid modernization. On behalf of the New Mexico Office of Attorney General. January 27, 2023.

**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.

**Illinois Commerce Commission (Docket No. 22-0431/22-0443):** Direct and Rebuttal Testimony of Courtney Lane and Eric Borden regarding the petition of Ameren Illinois Company for Approval of Beneficial Electrification Pursuant to Section 45 of the Electric Vehicle Act. On behalf of the People of the State of Illinois. September 15, 2022 and November 7, 2022.

**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 (Case 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 (Case 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.

**Pennsylvania Public Utility Commission (Docket No. M-2020-3020830):** Direct testimony of Alice Napoleon and Courtney Lane regarding PECO Energy Company's proposed Act 129 Phase IV Energy Efficiency and Conservation Plan. On behalf of the Natural Resources Defense Council. January 14, 2021.

**Maryland Public Service Commission (Case No. 9645):** Direct and Surrebuttal Testimony of Courtney Lane regarding the Application of Baltimore Gas and Electric Company for an Electric and Gas Multi-Year Plan. On behalf of the Maryland Office of People's Counsel. August 14, 2020 and October 7, 2020.

**Maryland Public Service Commission (Case No. 9619):** Comments of Maryland Office of People's Counsel Regarding Energy Storage Pilot Program Applications, attached Synapse Energy Economics Report. June 23, 2020.

**Public Service Commission of the District of Columbia (Formal Case No. 1156):** Direct, Rebuttal, Surrebuttal, and Supplemental Testimony of Courtney Lane regarding the Application of Potomac Electric Power Company for Authority to Implement a Multiyear Rate Plan for Electric Distribution Service in the District of Columbia. On behalf of the District of Columbia Government. March 6, 2020, April 8, 2020, June 1, 2020, and July 27, 2020.

**Rhode Island Public Utilities Commission (Docket No. 4888):** Oral testimony of Courtney Lane regarding the Narragansett Electric Co. d/b/a National Grid - 2019 Energy Efficiency Program (EEP). On behalf of National Grid. December 11, 2018.

**Rhode Island Public Utilities Commission (Docket No. 4889):** Oral testimony of Courtney Lane regarding the Narragansett Electric Co. d/b/a National Grid - 2019 System Reliability Procurement Report (SRP). On behalf of National Grid. December 10, 2018.

**Rhode Island Public Utilities Commission (Docket No. 4755):** Oral testimony of Courtney Lane regarding the Narragansett Electric Co. d/b/a National Grid - 2018 Energy Efficiency Program (EEP). On behalf of National Grid. December 13, 2017.

**Rhode Island Public Utilities Commission (Docket No. 4684):** Oral testimony of Courtney Lane regarding the RI Energy Efficiency and Resource Management Council (EERMC) Proposed Energy Efficiency Savings Targets for National Grid's Energy Efficiency and System Reliability Procurement for the Period 2018-2020 Pursuant to §39-1-27.7. On behalf of National Grid. March 7, 2017.

**Rhode Island Public Utilities Commission (Docket No. 4684):** Oral testimony of Courtney Lane regarding National Grid's 2018-2020 Energy Efficiency and System Reliability Procurement Plan. On behalf of National Grid. October 25, 2017.

**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 (EPPP) for Electric & Gas. On behalf of National Grid. December 8, 2016.



**Rhode Island Public Utilities Commission (Docket No. 4580):** Oral testimony of Courtney Lane regarding the Narragansett Electric Co. d/b/a National Grid - 2016 Energy Efficiency Program Plan (EEPP) for Electric & Gas. On behalf of National Grid. December 2, 2015.

**Pennsylvania Public Utility Commission (Docket No. P-2012-2320369):** Direct testimony of Courtney Lane regarding the Petition of PPL Electric Utilities Corporation for an Evidentiary Hearing on the Energy Efficiency Benchmarks Established for the Period June 1, 2013 through May 31, 2016. On behalf of PennFuture. October 19, 2012.

**Pennsylvania Public Utility Commission (Docket No. P-2012-2320334):** Direct testimony of Courtney Lane regarding the Petition of PECO Energy for an Evidentiary Hearing on the Energy Efficiency Benchmarks Established for the Period June 1, 2013 through May 31, 2016. On behalf of PennFuture. September 20, 2012.

**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.

**Pennsylvania Public Utility Commission (Docket No. M-00061984):** Oral testimony of Courtney Lane regarding the En Banc Hearing on Alternative Energy, Energy Conservation, and Demand Side Response. On behalf of PennFuture. November 19, 2008.

## PRESENTATIONS

Lane, C. 2021. "Accounting for Interactive Effects: Assessing the Cost-Effectiveness of Integrated Distributed Energy Resources." Presentation at the 2021 American Council for an Energy-Efficient Economy (ACEEE) National Conference on Energy Efficiency as a Resource, October 27, 2021.

Lane, C. 2019. "The RI Test." Presentation for AESP Webinar: Emerging Valuation Approaches in Cost-Effectiveness and IRPs, October 31, 2019.

Lane, C., A. Flanders. 2017. "National Grid Rhode Island: Piloting Wireless Alternatives: Forging a Successful Program in Difficult Circumstances." Presentation at the 35th Annual Peak Load Management Association (PLMA) Conference, Nashville, TN, April 4, 2017.

Lane, C. 2013. "Regional Renewable Energy Policy Update." Presentation at the Globalcon Conference, Philadelphia, PA, March 6, 2013.

Lane, C. 2012. "Act 129 and Beyond." Presentation at the ACI Mid-Atlantic Home Performance Conference, October 1, 2012.

Lane, C. 2012. "Act 129: Taking Energy Efficiency to the Next Level." Presentation at the Energypath Conference, June 28, 2012.

Lane, C. 2011. "Pennsylvania's Model Wind Ordinance." Presentation at Harvesting Wind Energy on the Delmarva Peninsula, September 14, 2011.

Lane, C. 2011. "Electric Retail Competition and the AEPS." Presentation at the Villanova Law Forum, November 4, 2011.

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

*Resume updated July 2024.*

## **Exhibit B**

**MARYLAND PUBLIC SERVICE COMMISSION**  
**Maryland Office of People’s Counsel**  
**Data Request Set No. 1**  
**To Potomac Edison Company**  
**(“PE” or “Company”)**  
**Case No. 9741—EV School Bus Pilot Proposal**  
**June 14, 2024**

Prepared by: Becca Harder

Response Date: July 1, 2024

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**OPC-1-9**

Refer generally to PE’s plan to report annually on the ESB Pilot status and explain if PE plans to provide the following information and explain why or why not:

- a. Summary of learnings from program participants based on a survey or other form of outreach.
- b. An assessment of non-participants including what barriers prevented school systems from applying to the ESB Pilot.

**RESPONSE:**

- a. PE does plan to provide a qualitative summary of learnings from program participants.
- b. PE will include in its annual report which school systems, if any, do not participate and will, to the degree practicable, report on the barriers as explained by the non-participants.

**MARYLAND PUBLIC SERVICE COMMISSION**  
**Maryland Office of People’s Counsel**  
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**June 14, 2024**

Prepared by: Becca Harder

Response Date: July 1, 2024

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**OPC-1-10**

Refer to page 4 of PE’s ESB Pilot proposal, which states that “PE will perform a V2G Pilot to study V2G technology, which includes load management, to identify the opportunities to optimize charging or discharging of ESB batteries when doing so is economical and does not interfere with transporting students.”

- a. Does PE plan to file a proposal for a specific V2G Pilot during the course of the ESB Pilot? If yes, why when does PE expect to file such a proposal? If not, please explain why not.
- b. Are the costs of the V2G Pilot included in the ESB Pilot budget included in the current proposal? If yes, please provide those costs broken out by year. If not, what are the estimated costs of the V2G Pilot?
- c. Are there additional costs to the school system to participate in a V2G Pilot? If yes, please provide these costs and explain whether PE’s ESB Pilot covers these costs?
- d. Please explain whether and/or how the V2G demonstration portion of the Company’s proposed ESB Pilot will evolve over the program’s five-year duration.
- e. Please identify the grid services the Company intends to utilize V2G for (e.g., demand response, peak shaving, energy arbitrage, etc.). For each type of grid service, please provide the metrics the Company will track to assess performance.

**RESPONSE:**

- a. The ESB Pilot is a V2G Pilot in which PE plans to deploy V2G capabilities at locations where ESBs participating in the Pilot are parked and charging. PE will deploy V2G technology at sites suitable for V2G following an evaluation of the distribution circuit used to serve the ESB and other factors.

- b. The V2G costs are included in the overall ESB Pilot budget referenced in OPC-1-17 Attachment A.
- c. The school systems will not be expected to incur any additional costs.
- d. As V2G technology evolves and as PE gains more experience on how the bi-directional EVSE interacts with the electric distribution system, PE will identify and adapt to any need for changes regarding V2G demonstration.
- e. PE has not yet determined the scope for studying V2G capabilities as several factors, such as location, uptake, etc. could impact the study.

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**June 14, 2024**

Prepared by: Mark Jones

Response Date: July 1, 2024

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**OPC-1-15**

Refer to the Direct Testimony of Mark Jones on page 11, lines 19-22, which states “Specific factors, which will be studied, include load management, ESB duty cycles, battery performance, state of charge, ambient temperature and cabin heating, elevation, preheating, speed of travel, and rate-related considerations such as capacity and energy prices.”

- a. Is the Company aware of any other pilots or programs in other states that have utilized ESBs to provide V2G services? If yes, please list all pilots/programs the Company reviewed and provide the source.
- b. Please explain how each pilot/program listed in response to (a) informed the development of the Company’s ESB Pilot.
- c. Please explain how the Company’s proposed ESB pilot will build upon the findings of each identified pilot/program included in response to (a).

**RESPONSE:**

- a. PE is aware of other pilots or programs in other states that have utilized ESBs to provide V2G services. The Dominion Energy program in Virginia is particularly notable and described at the following URLs:
  - <https://investors.dominionenergy.com/news/press-release-details/2020/Dominion-Energy-Moves-Forward-with-Electric-School-Bus-Program/default.aspx>
  - <https://vacleancities.org/wp-content/uploads/2022/07/Dominion-Electric-School-Bus-Infrastructure-Program-One-Pager.pdf>

PE also reviewed findings from Consolidated Edison Company of New York’s ESB V2G pilot. Information regarding the pilot is available at <https://www.coned.com/en/about-us/media-center/news/2022/04-12/con-edison-and-partners-go-to-school-with-findings-from-e-school-bus-project>.

- b. PE learned that Dominion does not have a V2G-specific rate, and that Dominion can use V2G capabilities to offset demand on individual circuits. With regard to EVSE power levels, PE learned that Dominion can meet 85% of its charging needs with 25 kW power levels into the ESBs and that Dominion exports power from the ESBs at a rate of 60 kW. Dominion also evolved its program over time to manage V2G capabilities of ESBs not receiving vehicle purchase incentives.

Another V2G ESB Pilot is run by Consolidated Edison Company of New York. In that pilot, Consolidated Edison learned that the ESBs were not available to discharge energy on certain high-demand days, some of which occurred during the school system's summer break and some of which occurred after the start of the fall semester. Similar to Dominion, the ESBs in the New York pilot were not enrolled in the utility's Distributed Energy Resources tariff. Consolidated Edison also studied battery degradation in the ESBs, and found that cycling the batteries for V2G services has the same effect as cycling for driving; the conclusion is that extensive V2G usage could require a larger battery or earlier replacement.

- c. PE notes that Dominion does not have a V2G-specific rate and that Consolidated Edison also did not utilize its DER tariff during the pilot; PE is cognizant of the learning from Consolidated Edison about the challenges ESBs have in serving as capacity resources, as well as the finding that discharging kWh for V2G is comparable to driving, and that the ESB warranty should be selected accordingly based on the combined kWh consumed by driving and V2G operations.



**MARYLAND PUBLIC SERVICE COMMISSION**  
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**Case No. 9741—EV School Bus Pilot Proposal**  
**June 14, 2024**

Prepared by: Mark Jones

Response Date: July 1, 2024

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**OPC-1-17**

Refer to the Direct Testimony of Mark Jones on page 13, lines 5-6, which states that “PE has developed initial ESB allocations based on the size and ownership structure of school bus fleets in each school system served by PE.”

- a. Please provide the ESB and EVSI allocations by school system and the associated budget.
- b. Please provide the existing number of ESBs in each school system.
- c. Does PE plan to prioritize school systems that do not yet have ESBs? Please explain why or why not.

**RESPONSE:**

- a. PE’s goal is to deploy ESB incentives to school systems and school bus contractors across PE’s service territory. While there is no firm allocation by school system, PE anticipates that Frederick and Montgomery Counties will each receive approximately 10 ESBs, and PE is planning for Allegany and Garrett Counties to each receive up to four ESBs.

See OPC-1-17 Attachment A for the complete program budget in Microsoft Excel format.

- b. As of the end of Fiscal Year 2023, Frederick County reports having two ESBs in its fleet and Montgomery County reports having 86 ESBs in its fleet. The other counties report no ESBs.
- c. PE will support all school systems within its service territory and use several metrics in the application review process, which may include a school’s current ESB adoption.

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**Case No. 9741—EV School Bus Pilot Proposal**  
**June 14, 2024**

Prepared by: Mark Jones

Response Date: July 1, 2024

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**OPC-1-20**

Refer to the Direct Testimony of Mark Jones on page 17, lines 1-2, related to the scenario where contractor-operated buses are parked at private facilities, which may include residential locations.

- a. Please explain what will happen to ESBs and associated EVSE rebated through the pilot should a school bus contractor no longer serve the school system?
- b. How will PE ensure that the school bus contractor uses the ESB within the PE service territory?
- c. Will residents of the home where the ESB is parked be permitted to use the EVSE for personal vehicle charging?

**RESPONSE:**

- a. PE will strive to mitigate this risk by engaging with school systems to enter into long-term contracts with contractors who become ESB incentive recipients. PE will also include a provision in the ESB Pilot incentive agreements with contractors which will permit PE to claw back a prorated portion of the incentive paid.
- b. The primary purpose of the ESB Pilot, in accordance with the CSNA, is for PE to test the use of the ESB battery for V2G services. Because school system boundaries do not in many cases align with utility service territories, PE cannot guarantee that a school bus contractor (or a school system) would use the ESB entirely within PE’s service territory. Because the primary purpose of the ESB Pilot is for PE to utilize the energy stored in the ESB battery, any ESB which parks at an EVSE at a location served by PE’s distribution network will be eligible to receive incentives.
- c. PE will not explicitly restrict the use of EVSE for personal vehicle charging. However, since the chargers are owned by the school district, PE cannot opine on what will be permitted by the school system.

**MARYLAND PUBLIC SERVICE COMMISSION**  
**Maryland Office of People’s Counsel**  
**Data Request Set No. 2**  
**To Potomac Edison Company**  
**(“PE” or “Company”)**  
**Case No. 9741—EV School Bus Pilot Proposal**  
**July 19, 2024**

Prepared by: Mark Jones

Response Date: August 2, 2024

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**OPC-2-6**

Refer to PE’s response to OPC 1-18(a).

- a. Please provide the number of census tracts that meet the Maryland Department of the Environment’s (MDE) definition of an Underserved Community by county and by school district.

**RESPONSE:**

The following table contains the number of census tracts served by PE which meet MDE’s definition of Underserved Community. Counties and school districts are equivalent.

<b>County / School System</b>	<b>No. of Census Tracts Classified as Underserved Communities</b>
Allegany	19
Washington	19
Frederick	16
Montgomery	14
Garrett	7
Carroll	1
<b>Total</b>	<b>76</b>

**MARYLAND PUBLIC SERVICE COMMISSION**  
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**Data Request Set No. 2**  
**To Potomac Edison Company**  
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**Case No. 9741—EV School Bus Pilot Proposal**  
**July 19, 2024**

Prepared by: Mark Jones

Response Date: August 2, 2024

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**OPC-2-7**

Refer to PE’s response to OPC 1-18(b).

- a. Please confirm that PE does not plan to reserve or earmark a percent of the ESB Pilot budget for Underserved Communities. If confirmed, please explain why PE chose to not reserve budget for these communities.
- b. Please explain what PE considers its role in meeting the requirements PUA § 7-217(C)(8).

**RESPONSE:**

- a. While PE has not explicitly earmarked funds for Underserved Communities, forecasted ESB adoption for those communities were included in the development of the ESB Pilot budget and are expected to be utilized by those communities. PE did not specifically earmark these dollars because it is viewed as important to maintain flexibility in the program as the effectiveness of the ESB Pilot may vary based on the operational needs of transporting students.
- b. PUA §§ 7-217(c)(7) and (8) require PE to structure the ESB Pilot in such a way that school systems are selected to participate “on the basis of appropriate factors determined by [the utility] with the approval of the Commission, including . . . the health and economic effects on low-income and minority communities.” PE embraces this mandate and considers its role to include making strong efforts to have ESBs operate in underserved communities. PE will obtain a commitment from pilot participants to undertake best efforts to serve underserved census tracts with ESBs, with the acknowledgement that there may be operational or other justifications (such as experimenting with routes of varying distance or terrain) such that the ESBs should be deployed more broadly. Once an application is approved by PE, the school systems will

have the ultimate responsibility for determining which routes are to be served by ESBs within the Pilot.

**MARYLAND PUBLIC SERVICE COMMISSION**  
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**To Potomac Edison Company**  
**(“PE” or “Company”)**  
**Case No. 9741—EV School Bus Pilot Proposal**  
**July 19, 2024**

Prepared by: Stephanie Fall

Response Date: August 2, 2024

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**OPC-2-8**

Refer to PE’s response to OPC 1-24.

- a. Please confirm the Company is not proposing to earn a return on the costs associated with ESB incentives, EVSE, Load-Side Make Ready, EVSE Networking and Maintenance, and School System Implementation costs that will be included in the regulatory asset. If not confirmed, please explain.
- b. Please explain how the Company’s proposal for cost recovery of the ESB Pilot differs from the cost recovery structure approved by the Commission for PE’s electric vehicle program in Case No. 9478.

**RESPONSE:**

- a. Confirmed since such costs are operation and maintenance (“O&M”).
- b. The proposal to defer O&M costs into a regulatory asset for future recovery is identical to the recovery of electric vehicle program costs from Case No. 9478. The only difference for the ESB Pilot is the Company is also requesting a deferral of the return on and of capital into the regulatory asset until such capital costs can be reflected for recovery in rate base upon conclusion of a future distribution rate case.

**Potomac Edison Company (“PE” or “Company”) EV School Bus Pilot Proposal**  
**Case No. 9741**  
**Staff Data Request No. 1**  
**July 31, 2024**

Prepared by: Angelina Rinaldo

Response Date: August 12, 2024

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**STAFF-1-6**

Please refer to PE’s response to Office of People’s Counsel (“OPC”) Data Request 1-9: “PE will include in its annual report which school systems, if any, do not participate and will, to the degree practicable, report on the barriers as explained by the non-participants.”

- a. How does PE propose to collect this information?
- b. In what format will reporting on barriers encountered during the implementation of the ESB Pilot be provided?

**RESPONSE:**

- a. PE’s implementation plan will include an annual survey to collect information on which school systems, if any, do not participate and why.
- b. Text format will be provided on barriers encountered during the implementation of the ESB Pilot.

**Potomac Edison Company (“PE” or “Company”) EV School Bus Pilot Proposal**  
**Case No. 9741**  
**Staff Data Request No. 1**  
**July 31, 2024**

Prepared by: Ryan Martinez

Response Date: August 12, 2024

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**STAFF-1-10**

How might the requirements identified in Maryland Senate Bill 959/ House Bill 1256 (approved subsequent to PE’s Application) impact the proposed ESB Pilot?

**RESPONSE:**

The Distributed Renewable Integration and Vehicle Electrification (“DRIVE”) Act (2024 SB 959) introduced several requirements on the Public Service Commission and utilities related to time-of-use rates, interconnection of bi-directional electric vehicle systems, distribution support services pilots, and customer renewable on-site generation installation incentives.

PE is currently developing strategies to inform program development in these areas as well as continuing to work collaboratively with stakeholders in all applicable Commission work groups.

Specifically, the DRIVE Act requires the Commission to “establish expedited processes for interconnecting...bidirectional electric vehicle systems capable of providing electricity to the electric distribution system”, a concept similar to that proposed by PE as part of the ESB Pilot Program. PE will both work with other stakeholders in the PC44 Electric Vehicle Work Group to develop these processes and ensure that any bidirectional EVSE incentivized by this program follow this protocol.

Otherwise, PE will continue to follow activities related to DRIVE implementation to determine if any other adjustments will need to be made to the Pilot in the future.



**Potomac Edison Company (“PE” or “Company”) EV School Bus Pilot Proposal**  
**Case No. 9741**  
**Staff Data Request No. 1**  
**July 31, 2024**

Prepared by: Kevin Kavali

Response Date: August 12, 2024

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**STAFF-1-17**

Please answer the following questions related to the proposed interconnectivity between PE and the various school systems/contractors that PE may fund as part of the ESB Pilot.

- a. What differences in provided support, telematics, tracking, and other operational aspects of the ESB Pilot does PE anticipate for school systems/contractors with different ESB operational models?
- b. How will the interconnectivity of provided support, telematics, tracking, and other operational aspects of the ESB Pilot be established?

**RESPONSE:**

- a. PE anticipates that support for various school systems will not vary based on the ESB operational model. PE will require the ESB owner to provide necessary data from the ESB and EVSE to evaluate information such as the number of days the ESB is dispatched for routes, miles driven per day, energy consumption per mile, state of charge, energy consumed from or exported to the grid (kW level and kWh consumption), and weather data such as ambient temperature. This data will be required regardless of operating model (i.e., whether a school system or a contractor is operating the ESB).
- b. PE will establish relationships with the charging network providers directly or indirectly through a third-party vendor to collect the required data.

**Potomac Edison Company (“PE” or “Company”) EV School Bus Pilot Proposal**  
**Case No. 9741**  
**Staff Data Request No. 2**  
**August 2, 2024**

Prepared by: Ryan Martinez

Response Date: August 15, 2024

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**STAFF-2-9**

Regarding ESB batteries:

- a. How will PE manage V2G or V2X activities in relation to considerations regarding battery life and quality?
- b. Will PE monitor cycles/partial cycles added to the batteries through V2G or V2X?
- c. Will PE measure additional battery energy (kWh) throughput to the batteries as a result of V2G or V2X programs? If so, how and where will this be measured (at the meter, in the EVSE, through on board telematics at the battery level, or all three)?
- d. Who will be own or be responsible for ESB batteries after the anticipated useful life of the ESB?
- e. Has PE considered retaining or purchasing the batteries for additional grid use? If not, why?

**RESPONSE:**

- a. The Participation Agreement will establish the parameters under which ESBs can be called on for V2G applications when not providing transportation services.
- b. Yes, PE will monitor cycles/partial cycles added to the batteries through V2G.
- c. Yes, PE will monitor additional battery energy (kWh) throughput to the batteries as a result of V2G programs. This monitoring will occur at either the EVSE or through on-board telematics.
- d. The school district and/or the ESB provider will be responsible for ESB batteries after the anticipated useful life of the ESB.
- e. PE will not have ownership of ESB batteries at any point in the Pilot and thus is not in a position to retain ESB batteries. PE views the purchasing of these batteries outside of the scope of the ESB Pilot.