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ORDER NO. 88997

IN THE MATTER OF THE PETITION OF THE ELECTRIC VEHICLE WORK GROUP FOR IMPLEMENTATION OF A STATEWIDE ELECTRIC VEHICLE PORTFOLIO	* * * * * * * *	BEFORE THE PUBLIC SERVICE COMMISSION OF MARYLAND CASE NO. 9478

Before: Jason M. Stanek, Chairman
Michael T. Richard, Commissioner
Anthony J. O'Donnell, Commissioner
Odogwu Obi Linton, Commissioner
Mindy L. Herman, Commissioner

Issued: January 14, 2019

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I. INTRODUCTION

This matter comes before the Maryland Public Service Commission ("Commission") upon a request to approve a Petition for Implementation of a Statewide Electric Vehicle Portfolio ("Petition"), as submitted by the leader of the Public Conference 44 ("PC44") Electric Vehicle Work Group along with the following joint signatories: Baltimore Gas and Electric Company ("BGE"), Delmarva Power & Light Company ("Delmarva"), Potomac Electric Power Company ("Pepco"), The Potomac Edison Company ("PE"), ChargePoint, Greenlots, Natural Resources Defense Council, Sierra Club, Chesapeake Climate Action Network ("CCAN"), Institute for Energy and Environmental Research, Marylanders for Energy Democracy and Affordability, Pace Energy and Climate Center, Solar United Neighbors of Maryland, and Nuclear Information and Resource Service (collectively, the "Signatory Parties").[1] The Signatory Parties specifically request that the Commission (1) approve the implementation of the Maryland Electric Vehicle Portfolio ("Portfolio" or "EV Portfolio") presented in the Petition, which further consists of sub-portfolios and programs offered by BGE, PE, Delmarva, and Pepco (the "Utilities"); (2) authorize the associated cost mechanisms associated with the EV Portfolio, as discussed in the Petition; (3) grant the limited, temporary waivers of certain Code of Maryland Regulations ("COMAR") regulations pertaining to electric submetering; and (4) authorize the use of up to $370,000 of grid modernization funding, pursuant to Commission Order No. 88128, to further advance access to electric vehicle ("EV") infrastructure. The Commission held two legislative-

[1] Maillog #218613, Leader of PC44 Electric Vehicle Work Group, Petition for Implementation of a Statewide Electric Vehicle Portfolio (Jan. 22, 2018).

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style hearings to gather more information on the various Utility proposals and further inform and assist the Commission with determining what action to take on the Petition. For the reasons stated herein, the Commission approves the Petition, in part, and denies it, in part.

II. BACKGROUND

Maryland has adopted several policies related to the advancement of electric vehicles and electric vehicle service equipment ("EVSE") in the State.[2] In 2015, Governor Larry Hogan signed into law an extension of the Maryland Electric Vehicle Infrastructure Council ("EVIC").[3] EVIC is tasked with evaluating incentives for EV and EVSE adoption, developing recommendations for a statewide EV infrastructure plan, and proposing policies to promote successful EV integration in Maryland.[4] EVIC's legislative directives require that EVIC shall, among other things (1) develop a recommendation for a Maryland charging infrastructure plan, including placement opportunities for public charging stations; (2) develop targeted policies to support fleet purchases of electric vehicles; (3) develop charging solutions for existing and future multi-dwelling units; and (4) pursue other goals and objectives that promote the

[2] Maryland's EV policies are reflected by: the Greenhouse Gas Emissions Reduction Act of 2009 ("GGRA"), 2009 Md. Laws, Ch. 172 (requiring the State to reduce statewide greenhouse gas emissions 25 percent from 2006 levels by 2020), and the Greenhouse Gas Emissions Reduction Act of 2016, 2016 Md. Laws, Ch. 011 (reauthorizing the GGRA); the eight-state Zero-Emission Vehicle Memorandum of Understanding, *available at* https://mde.maryland.gov/programs/Air/MobileSources/Documents/2018%20Multi-State%20ZEV%20Action%20Plan.pdf (last visited Jan. 9, 2019); the twelve-jurisdiction Transportation and Climate Initiative, *available at* https://www.transportationandclimate.org/northeast-and-mid-atlantic-states-seek-public-input-they-move-toward-cleaner-transportation-future (last visited Jan. 9, 2019); and the legislatively-created Electric Vehicle Infrastructure Council, 2011 Md. Laws, Ch. 400 and 401.
[3] 2015 Md. Laws, Ch. 378.
[4] Maillog #221618, Comments by EVIC at 1 (Aug. 9, 2018) ("EVIC Initial Comments").

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utilization of electric vehicles in Maryland.[5] A number of the objectives in the Petition overlap with the role of EVIC.

In 2016, Governor Hogan signed into law the reauthorization of Maryland's Greenhouse Gas Emissions Reduction Act, which targets a 40 percent reduction in statewide greenhouse gas ("GHG") emissions from 2006 levels by 2030.[6] The legislation tasked the Maryland Department of the Environment ("MDE") with developing and implementing a GGRA Plan to mitigate carbon emissions while considering, among other things, the impact on electricity costs to Maryland customers.[7] MDE has since identified the electrification of Maryland's transportation sector as a key GHG mitigation strategy for meeting the State's reduction targets.[8] In recognition of the fact that the transportation sector currently accounts for approximately one-third of Maryland's GHG emissions, the State has adopted a goal of having 300,000 zero-emission electric vehicles ("ZEVs") on Maryland roadways by 2025.[9] Further, the Maryland Commission on Climate Change has requested that EVIC "assess policies that employ Maryland's public utilities to aid in efforts to rapidly and equitably expand EV infrastructure in Maryland, with specific targets in rural areas; and policies that make it easier to install EV charging

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[5] *Id.* at 2.
[6] 2016 Md. Laws, Ch. 011.
[7] Md. Code Ann., Envir. §§ 2-1205, 2-1206(6) (LexisNexis). The GGRA requires MDE to ensure that planned mitigation measures are implemented in an efficient and cost-effective manner, do not directly cause a loss of existing jobs, and produce a net economic benefit to Maryland's economy and net increase in Maryland jobs. *Id.* § 2-1206(8).
[8] *See* Maillog #194882, PC43, Md. Dep't of the Env't, Summary of Opening Remarks by Secretary Grumbles, at 1-2 (July 18, 2016) ("MDE PC43 Remarks"); *see generally* Md. Dep't of Transp., 2015 Maryland Greenhouse Gas Reduction Act Plan (Oct. 2015), *available at* http://www.mdot.maryland.gov/newMDOT/Planning/Environmental/Documents/Greenhouse_Gas_Reduction_Plan_rev.pdf.
[9] *See* MDE PC43 Remarks at 2.

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infrastructure at multi-family housing locations with attention to high density, urban populations."[10]

Additionally, State programs and initiatives through the Maryland Energy Administration ("MEA"), MDE and other agencies offer funding to deploy EV charging in Maryland. Recently, MDE, in conjunction with MEA and the Maryland Department of Transportation ("MDOT"), announced a draft spending plan to invest approximately $11.3 million from Maryland's portion of the Volkswagen settlement toward the deployment of EV charging infrastructure, among other strategies to help improve air quality.[11] MEA "runs multiple grant, rebate, and funding programs in order to accelerate the adoption of [plug-in electric vehicles] throughout the State."[12]

In July 2016, the Commission held a public conference to explore the regulatory, technical, and financial barriers to the deployment of EVs in Maryland. Shortly thereafter, the Commission initiated a public conference (PC44) on September 26, 2016, to commence "a targeted review to ensure that electric distribution systems in Maryland are customer-centered, affordable, reliable and environmentally sustainable."[13] The Commission's PC44 initiation notice identified several topics believed to be ripe for

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[10] Maillog #222327, Additional Comments by EVIC at 3 (Sept. 28, 2018) ("EVIC Final Comments").

[11] Jay Apperson, Maryland Dept. of the Environment announces draft spending plan for Volkswagen settlement funds, Md. Dep't of the Env't (Aug. 2, 2018), https://news.maryland.gov/mde/2018/08/02/maryland-dept-of-the-environment-announces-draft-spending-plan-for-volkswagen-settlement-funds/; *see also* Md. Dep't of the Env't, Maryland Volkswagen Draft Mitigation Plan, at 2 (Aug. 1, 2018), *available at* https://mde.maryland.gov/programs/Air/MobileSources/Documents/Maryland-Volkswagen-Mitigation-Plan.pdf.

[12] Maillog #221948, Comments by MEA, at 6 (Aug. 31, 2018) ("MEA Second Comments").

[13] Maillog # 199669, Notice of Public Conference, at 1 (Sept. 26, 2016) ("PC44 Initiation Notice"). On June 30, 2016, Pepco Holdings, Inc. ("PHI") filed a request that the Commission initiate a proceeding—pursuant to Merger Condition 14 of Commission Order No. 86990, which approved the merger of Exelon Corporation and PHI—to examine opportunities to transform the electric distribution grid, including the incorporation of smart-grid technology, microgrids, renewable resources, and distributed generation. *Id*. at 1-2 (quotation marks omitted).

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further exploration as part of the proceeding,[14] including time-varying rates for EVs and other rate designs, and requested comments on a range of topics, timeline, and format. Forty-six individuals and organizations provided comments. In January 2017, the Commission revised the scope of the PC44 proceeding to expand the discussion on electric vehicle charging, recognizing that while the widespread adoption of EVs in the State would reduce harmful health and environmental effects of automotive emissions, it could also strain Maryland's electric grid.[15]

The Commission has acknowledged that the EV market share is expected to grow significantly over the course of the next decade.[16] The Commission therefore encouraged the development of a coordinated strategy through an EV Work Group, working across various state entities, such as EVIC and MDE, and in conjunction with utilities to address various EV adoption-related issues.[17] Building on discussions from the previous public conference regarding potential EVSE options moving forward, the Commission outlined the following actions to be addressed by the EV Work Group:[18]

1. Making the currently available EV tariffs apply in other utility territories (not just in BGE & Pepco territories);

2. Allowing retail choice for EV tariffs in all utility territories;

3. Considering additional rate structures for customers with EVs, including EV-only time-varying rates;

[14] Initial PC44 topics included Rate Design, Benefits and Costs of DERs, Advanced Metering Infrastructure ("AMI"), Energy Storage, Interconnection Process, Distribution System Planning, and Limited-Income Marylanders. *Id*. at 3.
[15] Maillog #212176, PC44 Notice at 7 (Jan. 31, 2017) ("2017 PC44 Notice").
[16] *Id*.
[17] *Id.* at 9. Although the Commission's 2017 PC44 Notice does not specifically reference EVIC, the Commission recognizes that coordinating strategies with EVIC can further mitigate distribution system-related costs associated with widespread vehicle fleet electrification.
[18] *Id.*

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4. Planning a limited utility infrastructure investment in EVSE, working with private industry and identifying locations [where] it is difficult to attract private capital for EVSE investment;

5. Developing a strategy in partnership with other state agencies and in consultation with [Maryland] utilities to address grid-related costs associated with vehicle fleet electrification;

6. Considering unique tariffs for corporate fleets and workplace & commercial [charging]; and

7. Partnering with Maryland Department of Transportation and the auto industry to promote the cost savings and other benefits of EV rate structures.

In support of State environmental objectives through electrification, the Commission has recognized a coordinating role with EVIC and other agencies to incentivize the adoption of EV fleets in an economical and financially equitable manner, promote workplace charging, partner with state agencies and stakeholders to speed adoption of tariffs and other measures, as well as ensure equitable access to EV infrastructure and charging incentives for traditionally underserved communities.[19]

A. Procedural Background

On January 22, 2018, the Leader of the EV Work Group filed this Petition and recommended that the Commission open a docketed proceeding to consider the implementation of the coordinated, statewide[20] EV Portfolio.[21] While the Petition was not a consensus filing, several electric companies and others joined the filing as

[19] *Id.*
[20] While the Petition describes the Portfolio as a "statewide" program, it does not include deployment of charging equipment in the several counties and areas of the State covered by the Southern Maryland Electric Cooperative ("SMECO"), Choptank Electric Cooperative ("Choptank"), and other service territories not participating in these proceedings.
[21] Petition at 1.

signatories, and a broad cross-section of stakeholders made filings in support of the Petition. As explained in the Petition, the EV Portfolio is intended to address barriers to the deployment of EVs, increase the efficiency and reliability of the electric distribution system, and lower electricity use at times of high demand.

On January 29, 2018, the Maryland Office of People's Counsel ("OPC") filed a letter supporting the request that the Commission docket a proceeding, but offering an alternative path forward by which the Commission could consider potential utility-run EV programs in Maryland.[22] Specifically, OPC recommended that the Commission institute a formal procedural schedule to allow for a full evidentiary process with associated discovery privileges, and that the Commission set a date by which the Utilities must file complete EV program proposals, including a supporting cost-benefit analysis and full revenue requirement breakdown and recovery mechanism for each rate class.[23]

On February 6, 2018, in response to requests for a docketed proceeding by the Leader of the PC44 EV Work Group and OPC, the Commission issued a Notice of Initiating a Proceeding and Request for Comments.[24] The Commission docketed Case No. 9478, and directed interested parties to file any written comments by March 16, 2018, after which the Commission would determine a further procedural schedule as necessary.[25]

On March 8, 2018, OPC informed the Commission that the National Renewable Energy Laboratory ("NREL") gap analysis undertaken to estimate the unmet EV charger

[22] Maillog #218730, OPC Comments at 1 (Jan. 29, 2018).
[23] *Id.* at 3.
[24] Maillog #218878.
[25] *Id.* at 2.

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need necessary to support Maryland's EV goals[26] was not expected to be available until March 16, 2018.[27] Given that the Commission's deadline for written comments in this matter coincided with that date, OPC noted its concerns that some of its positions and analysis, as well as those of other parties, may be preliminary and subject to significant change after review of the NREL report.[28] On March 9, 2018, the Commission extended the written comment due date for all interested persons in the proceeding to March 27, 2018.[29] From March 6 through April 11, 2018, the Commission received written comments from 42 interested parties and stakeholders, including a public petition with 317 signatories and 80 accompanying customer comments.[30]

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[26] In pursuit of the directives assigned to it, the PC44 EV Work Group identified the need to complete an EV charging infrastructure "gap analysis" in order to properly project the charging infrastructure type and quantity needed to support Maryland's stated EV adoption goal of having at least 300,000 zero emission vehicles on the State's roads by 2025. By letter dated October 6, 2017, Pepco Holdings, Inc. ("PHI") was advised by the Commission that it had set-aside $2,195,586 of funding derived from the Most Favored Nation's ("MFN") compliance filing as part of Case No. 9361. Pursuant to Order No. 88128, that funding was to be used in support of the Commission's grid-of-the-future proceeding, i.e., PC 44. The Commission advised PHI that it found it appropriate to use a portion—not to exceed $150,000—of these MFN funds to support the EV charging infrastructure gap analysis requested by the PC 44 EV Work Group. Exelon was therefore directed to expend MFN monies reserved to support the Commission's PC 44 proceeding on an EV infrastructure gap analysis, and Exelon (and/or its wholly-owned subsidiary) was directed to engage an appropriate entity of its choosing to conduct the EV charging infrastructure gap analysis.

[27] Maillog #219343, OPC Comments regarding availability of NREL gap analysis to consider EV programs in the Petition at 1 (Mar. 8, 2018).

[28] *Id.*

[29] Maillog #219358, Notice of Extension of Comment Filing Date (Mar. 9, 2018).

[30] Maillog #219338, Comments by Frederick County Sustainability Commission (Mar. 7, 2018); Maillog #219340, Comments by Frederick County Government – Office of the County Executive (Mar. 7, 2018); Maillog #219345, Comments by Montgomery County – Office of Energy and Sustainability ("Montgomery Cnty") (Mar. 8, 2018); Maillog #219426, Comments by Paul Verchinski (Mar. 15, 2018) ("Verchinski Initial Comments"); Maillog #219441, Comments by ABB, Inc. (Mar. 15, 2018); Maillog #219504, Comments by Advanced Energy Economy (Mar. 20, 2018); Maillog #219563, Comments by Electric Vehicle Association of Greater Washington DC ("EVADC") (Mar. 26, 2018); Maillog #219565, Comments by Annapolis Green (Mar. 26, 2018); Maillog #219582, Comments by Ford Motor Company (Mar. 27, 2018); Maillog #219590, Comments by Securing America's Future Energy (Mar. 27, 2018); Maillog #219593, Comments by Dai Technologies, Inc. (Mar. 27, 2018) ("Dai Comments"); Maillog #219594, Public Comment Submission by 317 citizen signatories and 80 individual citizen comments (Mar. 27, 2018) ("Public Comment Petition"); Maillog #219595, Comments by Siemens (Mar. 27, 2018); Maillog #219596, Comments of Environment Maryland and Maryland League of Conservation Voters (collectively, "MLCV") (Mar. 27, 2018) ("MLCV Comments"); Maillog #219602, Comments by Greater Prince George's Business Roundtable (Mar. 27, 2018); Maillog #219603, Comments by Montgomery County Councilmember Roger Berliner (Mar. 27, 2018); Maillog #219604, Comments by American Honda Motor

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On March 16, 2018, PHI filed the Preliminary Report from NREL.[31] Then, on April 17, 2018, the Commission issued a Notice scheduling an initial legislative-style hearing on May 17 and 18, 2018,[32] to help the Commission determine what action to take on the Petition.[33] The Notice stated that the hearing would include the following EV-related topics: the current state of EVs and charging infrastructure in Maryland, the potential growth of the EV market over the next several years and funding sources available to foster the growth, the potential benefits and costs of increasing Maryland's capacity to integrate the increase in EVs, how the Portfolio fits with the current and

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Co., Inc. (Mar. 27, 2018); Maillog #219605, Comments by Rockville Chamber of Commerce (Mar. 27, 2018); Maillog #219608, Comments by General Motors, LLC (Mar. 27, 2018) ("GM Initial Comments"); Maillog #219611, Comments by Alliance for Transportation Electrification ("ATE") (Mar. 27, 2018) ("ATE Initial Comments"); Maillog #219612, Supplemental Comments by Montgomery Cnty (Mar. 27, 2018) ("Montgomery Cnty Suppl. Comments"); Maillog #219616, Comments by Maryland Business for Responsive Government (Mar. 27, 2018); Maillog #219620, Comments by the Signatory Parties (Mar. 27, 2018); Maillog #219623, Comments by Plug In America (Mar. 27, 2018) ("Plug In America Initial Comments"); Maillog #219625, Comments by the Union of Concerned Scientists ("UCS") (Mar. 27, 2018) ("UCS Initial Comments"); Maillog #219626, Comments by the Marylanders for Energy Democracy and Affordability ("MEDA") Network (Mar. 27, 2018); Maillog #219628, Comments by Retail Energy Supply Association ("RESA") (Mar. 27, 2018) ("RESA Comments"); Maillog #219629, Comments by Office of Staff Counsel (Mar. 27, 2018) ("Staff Initial Comments"); Maillog #219631, Comments by Apartment and Office Building Association of Metropolitan Washington ("AOBA") (Mar. 27, 2018) ("AOBA Initial Comments"); Maillog #219632, Comments by Ceres BICEP Network (Mar. 27, 2018); Maillog #219633, Comments by the Association of Global Automakers, Inc. and the Alliance of Automobile Manufacturers (collectively, "Global Automakers") (Mar. 27, 2018) ("Global Automakers Comments"); Maillog #219636, Comments by Office of People's Counsel ("OPC") (Mar. 27, 2018) ("OPC Initial Comments"); Maillog #219639, Comments by Mark Hampton (Mar. 27, 2018) ("Hampton Comments"); Maillog #219640, Comments by Prince George's County Chamber of Commerce (Mar. 27, 2018); Maillog #219641, Comments by Montgomery County Chamber of Commerce (Mar. 27, 2018); Maillog #219644, Comments by the Greater Bethesda Chamber of Commerce (Mar. 27, 2018); Maillog #219638, Comments by William Fowler (Mar. 28, 2018) ("Fowler Comments"); Maillog #219664, Comments by Todd Jaffe (Mar. 28, 2018); Maillog #219694, Comments by Maryland Energy Administration ("MEA") (Mar. 29, 2018) ("MEA Initial Comments"); Maillog #219695, Comments by ClimateXChange Maryland and the Climate Law & Policy Project (Mar. 29, 2018); Maillog #219917, Comments by the National Association of Convenience Stores, the National Association of Truckstop Operators, and the Society of Independent Gasoline Marketers of America (collectively, "Associations") (Apr. 11, 2018) ("Associations Comments").

[31] PHI stated, "Although the analysis is labeled as a 'preliminary report' the analysis is final and the report is awaiting final approval from NREL upper management for publication." Maillog #219466.

[32] Maillog #220033.

[33] Maillog #220385.

future state of EVs in Maryland, and the proper role of utility investment and private-sector participation in EV infrastructure.[34]

The initial hearing in this matter was held on May 17 and 18, 2018. Interested parties and stakeholders who appeared before the Commission included MDE Secretary Ben Grumbles; MDOT Deputy Secretary and EVIC Chairman, R. Earl Lewis, Jr., appearing on behalf of EVIC; MEA Director Mary Beth Tung; NREL; ChargePoint; Greenlots; the Association of Global Automakers; the Utilities; the National Resources Defense Council, M.J. Bradley & Associates; Alliance for Transportation Electrification; Edison Electric Institute; Nuclear Information Research Service on behalf of Marylanders for Energy Democracy & Affordability; Pace Energy & Climate Center on behalf of Fuel Fund of Maryland and the CCAN ("Pace Energy"); Rocky Mountain Institute; Sierra Club; the Northeast States for Coordinated Air Use Management ("NESCAUM"); and OPC.

On July 2, 2018, the Commission issued a Notice of Further Procedural Schedule.[35] The Commission found that more detailed, granular data was needed to adequately consider the various proposals and any potential impacts to ratepayers associated with approving a Portfolio. The Commission established a discovery period and designated a deadline of August 30, 2018 for comments and recommendations to be filed.

[34] Maillog #220033 at 1-2.
[35] Maillog #221122.

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On or before September 4, 2018, the Commission received written comments from more than twenty-five interested parties and stakeholders.[36] The Commission held a second round of hearings on September 6 and 7, 2018. The interested parties and stakeholders who appeared before the Commission included the Utilities; M.J. Bradley & Associates; Sierra Club; Plug-In America; Edison Electric Institute; Alliance for Transportation Electrification; CALSTART; NESCAUM; Pace Energy; The GridWise Alliance; Mr. Paul Verchinski (consumer); Mr. Lanny Hartman (consumer); General Motors; Siemens; Tesla; EVgo Services; SemaConnect; City of Annapolis; Montgomery County; OPC; Maryland Energy Administration; and the Commission's Technical Staff ("Staff").

On September 10, 2018, the Commission issued a Notice of Opportunity to File Final Comments, which established a deadline of September 28, 2018, for participants or

[36] *See generally* EVIC Initial Comments; Maillog #221739, Supplemental Comments by the Northeast States for Coordinated Air Use Management ("NESCAUM") (Aug. 20, 2018) ("NESCAUM Comments"); Maillog #221825, Comments by EVgo (Aug. 27, 2018) ("EVgo Comments"); Maillog #221831, Comments by Gavin Buckley, Mayor of the City of Annapolis (Aug. 27, 2018) ("Buckley Comments"); Maillog #221870, Comments by M.J. Bradley & Associates, LLC (Aug. 28, 2018); Maillog #221875, Comments by Paul Verchinski (Aug. 29, 2018) ("Verchinski Second Comments"); Maillog #221880, Comments by the GridWise Alliance (Aug. 29, 2018); Maillog #221885, Comments by SemaConnect (Aug. 29, 2018) ("SemaConnect Comments"); Maillog #221892, Comments by William T. Martin, Mayor for the City of Havre de Grace (Aug. 29, 2018); Maillog #221893, Comments by General Motors, LLC (Aug. 29, 2018) ("GM Second Comments"); Maillog #221894, Comments by Monica Worrell, Councilwoman for the City of Havre de Grace (Aug. 29, 2018) ("Worrell Comments"); Maillog #221895, Comments by Siemens (Aug. 29, 2018); Maillog #221899, Comments by Plug In America (Aug. 30, 2018) ("Plug In America Second Comments"); Maillog #221900, Comments by Baltimore Office of Sustainability ("BOS") (Aug. 30, 2018) ("BOS Comments"); Maillog #221903, Additional Comments by Montgomery Cnty (Aug. 30, 2018) ("Montgomery Cnty Add'l Comments"); Maillog #221907, Comments by Tesla, Inc. (Aug. 30, 2018); Maillog #221910, Comments by Edison Electric Institute ("EEI") (Aug. 30, 2018) ("EEI Initial Comments"); Maillog #221913, Comments by Denise Breder, Town Administrator of Perryville (Aug. 30, 2018); Maillog #221914, Comments by ATE (Aug. 30, 2018) ("ATE Second Comments"); Maillog #221915, Comments by Pace Energy and Climate Center, Chesapeake Climate Action Network, Fuel Fund of Maryland, Institute for Energy and Environmental Research, MEDA, Nuclear Information and Resource Service, and Solar United Neighbors of Maryland (Aug. 30, 2018); Maillog #221919, Comments by CALSTART (Aug. 30, 2018); Maillog #221921, Additional Comments by the Signatory Parties (Aug. 30, 2018) ("Signatory Parties Add'l Comments"); Maillog #221922, Comments by OPC (Aug. 30, 2018); Maillog #221923, Comments by Staff (Aug. 31, 2018) ("Staff Second Comments"); MEA Second Comments; Maillog #221961, Comments by City of Hyattsville (Sept. 4, 2018).

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interested persons to file comments on the issues addressed at the hearing.[37] Fourteen interested parties and stakeholders filed final comments from September 12, 2018, through October 4, 2018.[38]

B. Proposed EV Portfolio Programs

The Petition seeks Commission approval to implement a statewide EV Portfolio that would facilitate EV ownership and use through increasing available EV tariff offerings, providing for utility infrastructure investment in EV charging, and offering customer assistance regarding EV usage as noted in the proposals made by Maryland's four electric investor-owned utilities ("IOUs")—BGE, Delmarva, PE, and Pepco. The Petition includes additional requests in connection with the Portfolio, such as cost recovery, customer outreach, and evaluation, measurement and verification ("EM&V"), which are addressed later in this Order. The Petition proposes a statewide EV Portfolio that consists of Utility offerings in five component areas targeted for EV charging deployment. These five sub-portfolio areas include: Residential; Non-Residential; Public; Innovation; and Technology. Each Utility has an offering for each component except for PE, which does not include an Innovation or Technology sub-portfolio. As proposed, the various components of the Portfolio will be rolled out gradually over a

[37] Maillog #222024.

[38] Maillog #222062, Comments by City of College Park, Maryland (Sept. 12, 2018); Maillog #222268, Comments by Paul Verchinski (Sept. 26, 2018) ("Verchinski Final Comments"); Maillog #222289, Comments by the EVADC (Sept. 27, 2018); Maillog #222291, Final Comments by AOBA (Sept. 27, 2018) ("AOBA Final Comments"); Maillog #222294, Final Comments of UCS (Sept. 27, 2018); Maillog #222303, Comments by the American Petroleum Institute ("API") (Sept. 27, 2018) ("API Comments"); Maillog #222326, Letter of Opposition to Petition by the Mid-Atlantic Petroleum Distributors Association ("MAPDA") and the Mid-Atlantic Propane Gas Association ("MAPGA") (Sept. 28, 2018) ("MAPDA/MAPGA Comments"); EVIC Final Comments; Maillog #222332, Final Comments by EEI (Sept. 28, 2018) ("EEI Final Comments"); Maillog #222333, Additional Comments by OPC (Sept. 28, 2018) ("OPC Final Comments"); Maillog #222335, Final Comments of Exelon Utility Companies (Sept. 28, 2018); Maillog #222341, Comments by Staff (Sept. 28, 2018) ("Staff Final Comments"); Maillog #222386, Comments by Interstate Gas Supply, Inc. dba IGS Energy (Oct. 4, 2018).

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five-year pilot period. At the end of this period, a third party will evaluate the Portfolio and examine whether the various Utility programs have incentivized the deployment of EV charging equipment in a manner that will help the State meet its EV adoption and GHG reduction goals.

1. BGE

BGE proposes seven programs across five sub-portfolios. In total, BGE's portfolio is designed to install 18,455 EV chargers for a total program cost of $48.1 million.[39]

a. Residential Sub-Portfolio

BGE is proposing one new residential program and the continuation of an existing program. The new "Residential EV Charging Incentives" program would offer rebates for the installation of smart Level 2 ("L2") EV chargers in residences. The rebate would cover 50 percent of the purchase and installation costs, net other available grants, incentives, and discounts offered through state, federal and local government programs.[40] The "Whole-House Time-of-Use ("TOU") Rate" program is an existing offering from BGE to its residential Standard Offer Service ("SOS") customers. Also known as Schedule EV, this rate is available to EV owners who charge at home. BGE is not proposing any changes to this rate at the time of the filing of the Petition.[41]

BGE proposes rebates to defray the costs of purchasing and installing 15,000 EV chargers at private residences at a cost of $9.7 million. The Residential sub-

[39] *See* Petition at 80-81, Attachment C – Residential Sub-Portfolio; *id.* at 102-04, Attachment D – Non-Residential Sub-Portfolio; *id.* at 128, Attachment E – Public Sub-Portfolio; *id.* at 145, Attachment F – Innovation Sub-Portfolio; *id.* at 152, Attachment G – Technology Sub-Portfolio.
[40] *Id.* at 78, Attachment C – Residential Sub-Portfolio
[41] *Id.* at 81.

portfolio represents approximately 20 percent of the budgeted expenses for BGE's Portfolio.

b. Non-Residential Sub-Portfolio

BGE is proposing two Non-Residential programs. The "Non-Residential EV Charging Incentives" program offers rebates of up to 50 percent of the purchase and installation costs, net other available grants, incentives, and discounts, for the installation of advanced and controllable L2 EV chargers or DC fast chargers ("DCFCs") in a workplace, multi-unit or multi-tenant dwellings ("MUDs"), or for a vehicle fleet. Rebates for other non-residential locations are proposed at up to 25 percent of the purchase and installation costs, net other available grants, incentives, and discounts.[42] The "Demand Charge Credit" program would be available to "demand-billed" non-residential customers—namely, those customers subject to a separate charge for demand—who install EV chargers at their workplace or for fleet use. A bill credit would be provided for a portion of the maximum distribution demand that results from the addition of EV chargers to the customer's load. The credit is for a fixed amount at 50 percent of the maximum nameplate capacity of the L2 or DCFC equipment installed for up to 30 months or the end of the five-year program.[43]

BGE's Non-Residential programs would provide rebates for 1,965 EV chargers at a cost of $14.1 million. The Non-Residential sub-portfolio represents approximately 29 percent of the budgeted expenses for BGE's Portfolio.

[42] *Id.* at 99, Attachment D - Non-Residential Sub-Portfolio.
[43] *Id.* at 104.

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c. Public Sub-Portfolio

BGE is proposing one program for a network of publicly accessible L2 and DCFC EV charging stations across its service territory. BGE plans to work with government entities, government-associated organizations, and properties controlled by those entities and organizations. BGE would independently charge the users of the chargers with a wake-up fee and a flat per kilowatt-hour ("kWh") charge for the electricity.[44] BGE's Public sub-portfolio proposal includes 1,000 EV chargers costing $17.0 million, or approximately 35 percent of the budgeted expenses for BGE's portfolio.

d. Innovation Sub-Portfolio

BGE, Delmarva, and Pepco each propose a program under which interested persons or groups can apply for funding for EV charging projects designed to advance equitable access to EV charging in the State and support transportation electrification in urban and underserved communities. The rebates would cover up to 50 percent of the equipment and installation costs, net other available grants, incentives, and discounts.[45] BGE's Innovation sub-portfolio would provide for the installation of 490 EV chargers at the cost of approximately $7.2 million.

e. Technology Sub-Portfolio

BGE is proposing a load management charging program at select EV chargers at its facilities. The charging stations participating in this program would inform users of the load management capabilities of the charger. BGE plans to monitor software capabilities, operations reliability, customer education and notifications, and user

[44] *Id.* at 128, Attachment E – Public Sub-Portfolio.
[45] *Id.* at 143, Attachment F – Innovation Sub-Portfolio.

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satisfaction as part of the program.[46] There are no incremental costs to the EV portfolio from this program.

2. Delmarva and Pepco

Delmarva and Pepco (the "PHI Utilities") are each proposing eleven programs across the five sub-portfolios. Delmarva's portfolio is designed to install 774 EV chargers for a total program cost of over $11.3 million.[47] Pepco's portfolio is designed to install 2,264 EV chargers for a total program cost of $30.6 million.[48]

a. Residential Sub-Portfolio

Delmarva and Pepco are proposing four Residential programs each. For Delmarva, all four programs are new offerings while Pepco currently offers one of the four proposed programs.

The "Discounted Level II Charging Stations and Incentive Rates" ("Discounted L2") program and the "Residential Smart Level II Charging Station Rebate" ("Rebate Only") program offer rebates for the installation of smart L2 EV chargers in residences. The rebate under the Discounted L2 program would cover 50 percent of the equipment and installation costs less any applicable rebates. Participating customers have the opportunity to pay for the remainder of the installation costs through zero percent interest on bill financing. The Discounted L2 program requires a second metering device. Additional offerings under the Discounted L2 program are an EV-only TOU rate,

[46] *Id.* at 152, Attachment G – Technology Sub-Portfolio.
[47] *See* Petition at 87, 90, 93, 96, Attachment C –Residential Sub-Portfolio; *id*. at 116, 120, Attachment D – Non-Residential Sub-Portfolio; *id.* at 136, 140, Attachment E – Public Sub-Portfolio; *id.* at 149, Attachment F – Innovation Sub-Portfolio; *id.* at 155, Attachment G – Technology Sub-Portfolio.
[48] *See id.* at 88, 91, 94, 97, Attachment C – Residential Sub-Portfolio; *id.* at 117, 121, Attachment D – Non-Residential Sub-Portfolio; *id.* at 137, 141, Attachment E – Public Sub-portfolio; *id.* at 147, Attachment F – Innovation Sub-Portfolio; *id.* at 154, Attachment G – Technology Sub-portfolio.

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inclusion in a Demand Response program, and the Green Rider option for zero carbon charging.[49] The rebate under the Rebate Only program would cover 100 percent of the charger and installation costs less any applicable rebates. This program will only be offered after the conclusion of the Discounted L2 program.[50]

The "Residential FleetCarma Smart Device" ("FleetCarma") program offers customers a device that plugs into their EVs. The device collects data that enables the customer to receive credits for participating in the program and for charging off-peak. There are three credits available to customers: a $50 one-time credit for starting the FleetCarma program, a $5 credit for each month the device is plugged into the EV and active, and credits for off-peak charging.[51] The PHI Utilities do not include a capital budget with the FleetCarma program.

The "Whole-House Time-of-Use Rate" is a current offering from Pepco to its residential customers. This rate is available to EV owners and is designed to incentivize customer to charge off-peak. Delmarva is proposing to begin offering this program to its residential customers, similar to Pepco.[52]

Delmarva's Residential sub-portfolio programs are designed to install 287 EV chargers and 37 FleetCarma devices for $1.5 million. The Residential sub-portfolio represents approximately 13 percent of the budgeted expenses for Delmarva's portfolio. Pepco's Residential sub-portfolio programs are designed to install 850 EV chargers and 100 FleetCarma devices for over $3.5 million or nearly 12 percent of the budgeted expenses for Pepco's portfolio.

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[49] *Id.* at 85, Attachment C – Residential Sub-Portfolio.
[50] *Id.* at 89.
[51] *Id.* at 92.
[52] *Id.* at 95.

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b. Non-Residential Sub-Portfolio

Delmarva and Pepco are proposing three Non-Residential programs. The "Level 2 Charging Stations for Workplace Charging" and the "Level 2 Charging Stations for Multi-Unit Dwellings" are rebate programs for the installation of smart L2 chargers. Rebates for workplaces would cover 50 percent of the equipment costs, net of any available State or local incentives, while rebates for MUDs would cover 50 percent of the equipment costs and 100 percent of the installation costs less any applicable rebates.[53] The "Demand Charge Credit" program, similar to BGE's program, would be available to demand-billed non-residential customers who install EV chargers at their workplace or for fleet use.[54]

Delmarva's Non-Residential programs would install 289 EV chargers at a cost of approximately $2.5 million. The Non-Residential sub-portfolio represents approximately 22 percent of the budgeted expenses for Delmarva's portfolio. Pepco's non-residential programs are designed to install 867 EV chargers for $7.5 million or more than 24 percent of the budgeted expenses for Pepco's portfolio.

c. Public Sub-Portfolio

Delmarva and Pepco are proposing two Public sub-portfolio programs, one for L2 chargers and one for DCFCs. Both companies plan to examine the density of EV ownership in their service territories, along with the location of major roadways and other elements, to try to maximize the opportunity for EV users to charge at the public charging stations. The proposed rate to be charged by Delmarva and Pepco at their public chargers

[53] *Id.* at 118, Attachment D - Non-Residential Sub-Portfolio.
[54] *Id.* at 122.

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is $0.1789/kWh and $0.1747/kWh, respectively.[55] Delmarva's Public program is designed to install 161 EV chargers at a cost of approximately $4.5 million. Pepco's Public program is designed to install 447 EV chargers at a cost of approximately $12.4 million.

d. Innovation Sub-Portfolio

Delmarva and Pepco, like BGE, also propose a program under which interested persons or groups can apply for funding for EV charging projects designed to advance equitable access to EV charging in the State. Comparable to BGE's Innovation sub-portfolio, the PHI Utilities' rebates would also cover up to 50 percent of the equipment and installation costs, net other available grants, incentives, and discounts.[56] Delmarva and Pepco did not provide forecasts for the anticipated EV chargers to be installed under their Innovation programs. The total costs for Delmarva's Innovation program are $1.9 million, while Pepco's Innovation program costs over $5.0 million. The Innovation sub-portfolio represents nearly 17 percent of the budgeted expenses for Delmarva's and Pepco's respective portfolio offerings.

e. Technology Sub-Portfolio

Delmarva and Pepco are proposing four "Technology Demonstration" projects, one of which is an update to an existing rider to electric service for public chargers. The first two projects have costs associated with their implementation while the remaining two projects do not have incremental costs for their implementation.

The "DC Fast Charging with Energy Storage" project pairs an energy storage device with a cluster of DCFCs to study the potential benefits of using energy storage to

[55] *Id.* at 134, Attachment E – Public Sub-Portfolio.
[56] *Id.* at 143, Attachment F – Innovation Sub-Portfolio.

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mitigate power quality or capacity impacts from the DCFCs.[57] The "Virtual V2G Demonstration" project will cycle participating chargers at zero percent, 50 percent, and 100 percent in accordance with PJM Frequency Response regulations and aggregate the benefits. For participating, EV owners will receive either discounted or no-cost charging.[58] The total costs for these demonstration projects are $803,000 for Delmarva and over $2.0 million for Pepco, representing approximately 7 percent of the budgeted expenses for both Delmarva's portfolio and Pepco's portfolio.

The "Public Charging Interoperability" project will select a vendor to oversee the driver registration, identification, and payment transactions across Delmarva- and Pepco-owned charging equipment.[59] The "Carbon-Free Charging Network" project is an updated form of the Green Rider currently offered by both Delmarva and Pepco. Both companies will procure and retire renewable energy credits for their public charging equipment. The estimated cost of this service for 2018 is $0.0059/kWh and would be included in the charging rates for customers of the public chargers.[60]

3. Potomac Edison

PE proposes four programs across three sub-portfolios. In total, PE's portfolio is designed to install 2,259 EV chargers for a total cost of over $12.3 million.[61]

a. Residential Sub-Portfolio

PE is proposing one Residential program. The "Level II Charging Station Rebate" program offers rebates for the installation of smart L2 EV chargers at residential service

[57] *Id.* at 153, Attachment G – Technology Sub-Portfolio.
[58] *Id.*
[59] *Id.*
[60] *Id.*
[61] *See* Petition at 84, Attachment C –Residential Sub-Portfolio; *id.* at 109, 113, Attachment D – Non-Residential Sub-Portfolio; *id.* at 133, Attachment E – Public Sub-Portfolio.

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locations. The rebate would cover 50 percent of the purchase and installation costs, net other available grants, incentives, and discounts. [62] PE's Residential program is designed to install 2,000 EV chargers at a cost of approximately $3 million.

b. Non-Residential Sub-Portfolio

PE is proposing two Non-Residential programs. The "Level 2 Charger Installation at Commercial/Industrial Service Locations" program and the "Level II Charger Installation at Multi-family Service Locations" program allow non-residential customers to request PE to install L2 chargers at their service locations. If a charger is installed behind the meter, then PE will own the charger and the customer will own the wiring from the service panel to the charger and can be reimbursed for up to $2,000 for the wiring installation costs. If a charger is installed on a separately-metered location, then PE will own and operate the entire infrastructure.[63] The rate charged by PE at these locations is proposed at $0.15/kWh plus a $2.00 wake-up fee per charge. PE is proposing to reserve 15 of the 50 multi-family L2 chargers for buildings where 50 percent or more of the residents are confirmed low-income customers at or below 200 percent of the federal poverty income guidelines.[64] PE's Non-Residential programs are designed to install 200 total EV chargers at a cost of approximately $6.0 million.

c. Public Sub-Portfolio

PE is proposing one program that allows its customers to request PE to install DCFCs or L2 chargers at their public-facing service locations. If a charger is installed behind the meter, then PE will own the charger and the customer will own the wiring

[62] *Id.* at 82, Attachment C – Residential Sub-Portfolio.
[63] *Id.* at 106, 110, Attachment D – Non-Residential Sub-Portfolio.
[64] *Id.*

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from the service panel to the charger and can be reimbursed for up to $2,000 for the wiring installation costs.[65] If a charger is installed on a separately-metered location, then PE will own and operate the entire infrastructure. The rate charged by PE at these locations is proposed at $0.15/kWh plus a $2.00 wake-up fee per charge for L2 chargers and $0.19/kWh plus a $3.00 wake up fee per charge for DCFCs. All DCFCs must be installed at separately-metered locations. PE is proposing to install one DCFC at a location at which grid capacity is limited and combine it with an energy storage system to monitor changes to the distribution system based on electrical demand.[66] PE's Public program is designed to install 59 EV chargers at a cost of approximately $3.1 million.

4. Cost Recovery

The Utilities propose ratepayer financing to support the EV charging infrastructure outlined in the Portfolio, either through electric distribution rates or, in PE's case, through a customer surcharge. Cost recovery is discussed in further detail later in this Order. Briefly, BGE, Delmarva, and Pepco request Commission approval to establish a regulatory asset in which those companies would defer their EV charging program costs and amortize them over five years. As proposed, the regulatory asset would earn a return after the balance is incorporated into rate base in a future rate case proceeding.[67] PE, however, proposes to amortize its EV charging program costs over five years and recover them through a customer surcharge rider, which would be

[65] *Id.* at 130, Attachment E – Public Sub-Portfolio.
[66] *Id.*
[67] Petition at 54.

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reconciled annually. Charging station revenues for PE in excess of the standard retail tariff charge at those locations would be used to offset the surcharge.[68]

The Utilities clarify that their proposed offerings do not place all costs associated with the Portfolio's proposed charging infrastructure on ratepayers. The Utilities' residential offerings, for example, are designed to complement existing State and local incentives, rebates, grants, and discounts for charging equipment.[69] The Utilities do not propose to cover the full cost of the chargers. Instead, the proposals will "ensure that EV charging customers will also share costs,"[70] such as a portion of charger costs as well as public or non-residential charger wake-up fees and consumption charges. All in all, the EV Portfolio proposes a total investment of approximately $104.7 million, installing over 24,000 EV chargers in participating utility service territories that will "enable smart charging in residential, non-residential, and public settings."[71] The Signatory Parties point out that while ratepayer financing of these costs "may in the short-term result in a small increase in electricity costs to consumers,"[72] the electric distribution revenues generated by increased EV use "are likely to wholly offset the residential bill impacts attributable to this [Portfolio] as the State progresses toward realization of its 2025 EV adoption goal."[73]

C. Interested Party and Stakeholder Positions

The general positions of the interested parties—either supporting or opposing, in whole or in part, the Petition and the EV Portfolio—are summarized as follows:

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[68] *Id.* at 55-56.
[69] Hr'g Tr. at 178.
[70] *Id.*
[71] Petition at 56.
[72] *Id.* at 4-5.
[73] *Id.* at 54.

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1. MEA

MEA supports the expansion of EV ownership and an EV infrastructure throughout the state. MEA fully supports two aspects of the Petition: (1) the expansion of EV time-of-use ("TOU") rates in the Residential offerings; and (2) BGE's proposed managed charging pilot as part of its Technology sub-portfolio offering. MEA states that EV TOU rates are beneficial and essential to support the long-term growth of EVs and their impact on grid reliability. As EV adoption increases, the stress on the various components of the distribution grid will increase significantly. Thus, incentivizing EV charging during off-peak periods will help "reduce system peaks and costly upgrades and improvements to the distribution system."[74] To further mitigate grid impact from EV growth, MEA points to managed charging as a way to address initial ramp-up concerns as well as help the Utilities better perform their roles as grid operators.[75]

MEA opposes the use of ratepayer funds for private residential EV chargers.[76] Rather, MEA recommends that any ratepayer dollars should be used for public infrastructure, which would mitigate EV owner range anxiety. If the Commission approves any of the proposed programs, MEA further recommends that the Commission require (1) inclusion of a ratepayer line item clearly identified as supporting EV programs; (2) prior Commission approval of project plans before project commencement, subject to information and data requirements, and (3) annual performance reviews of each utility's program.[77]

[74] MEA Initial Comments at 5.
[75] *Id.* at 6.
[76] MEA Second Comments at 2.
[77] *Id.* at 9-10.

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2. OPC

OPC generally agrees that EV programs are necessary, but OPC does not support adoption of the EV proposals contained in the Petition at this time because the Utilities have not provided sufficient data, analysis or support for programs. OPC also challenges the Commission's authority to approve all elements of the Petition—specifically, authorizing rate base recovery of utility-owned EV charging infrastructure costs.[78] Questioning the proper role of electric utilities in transportation electrification,[79] OPC states that utilities can accommodate EV adoption and help mitigate the impact of EV charging on ratepayers and the grid by developing tools, such as creative rate designs, to better manage EV charging loads for the benefit of all ratepayers.[80] Here, OPC believes the Utilities' role is not to encourage EV adoption by investing in EV infrastructure.[81]

OPC argues that the Utilities have failed to establish the reasonableness of the Petition and the EV Portfolio. Among OPC's criticisms is the Petition's failure to provide adequate cost-benefit analyses and discussions to support the EV Portfolio.[82] OPC also objects that the proposed rebate amounts are too large and unsubstantiated.[83] As proposed, the programs are purportedly "inherently inequitable" to low- to moderate-income ("LMI") customers, who would be required to subsidize programs that they may never have access to or may only benefit from years later. OPC further highlights alleged failures and omissions in the Petition, including failure to calculate the individual impacts

[78] OPC Second Comments at 2.
[79] *Id.*
[80] *Id.* at 14.
[81] OPC Initial Comments at 12.
[82] OPC Second Comments at 4.
[83] *Id.* at 5.

of each EV proposal,[84] failure to account for distribution system costs (e.g., costs of operation, maintenance and repair to the grid) in the Utilities' cost-benefit assessments,[85] and failure to provide justifications for the Utilities' decisions to target specific percentages of the NREL gap analysis.[86]

Should the Commission approve certain programs contained in the EV Portfolio, OPC recommends that the Commission conditionally approve those programs in accordance with OPC's recommendations.[87] First, OPC recommends that the Commission apply the eight factors previously adopted by the Commission in other pilot settings as necessary for developing and evaluating a proposed pilot.[88] In this regard, the Utilities should be required to work with the EV Work Group to develop these factors. Second, OPC recommends that the Utilities be required to conduct and file a detailed cost-benefit analysis for each approved program, including detailed, itemized cost allocations for each EV proposal.[89] OPC further contends that the Commission should have strict oversight over the costs that are allocated to residential ratepayers. Lastly, OPC explains that the proposals in the Petition can be modified to ensure system benefits as well as benefits to other ratepayers.[90]

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[84] *Id.* at 7-8.
[85] *Id.* at 9.
[86] *Id.* at 10-11.
[87] OPC Final Comments at 2.
[88] *Id.* at 2-3.
[89] OPC Second Comments at 12.
[90] *Id.* at 15.

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3. Commission Technical Staff

Commission Technical Staff agrees that Maryland's transportation sector must electrify in order to meet the State's long-term GHG emissions reduction goal.[91] Staff supports efforts to increase EV adoption in the State to the benefit of all Maryland residents. Staff offers several recommendations regarding the Petition. First, Staff recommends that the Commission adopt the Utilities' respective Residential, Non-Residential, and Innovation sub-portfolios, but at reduced rebate amounts, citing a lack of justification by the Utilities for the stated rebate amounts.[92] As an alternative to customer-funded rebates, Staff proposes that the Utilities offer bill credits—for off-peak use—to offset charger costs, which would reduce the amount of subsidization between LMI customers and higher income EV owners.[93]

Second, Staff is not persuaded that the Utilities should own and operate public EV charging stations.[94] Staff maintains that the ownership and operation of public EV charging stations should remain a competitive function and, furthermore, it is unclear whether the charging stations will, in fact, benefit ratepayers as a whole within a meaningful timeframe.[95] Accordingly, Staff recommends denial of this aspect of the Petition.

Third, Staff recommends that the Commission deny the Technology sub-portfolio, unless program costs are excluded from ratepayers.[96]

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[91] Staff Initial Comments at 4.
[92] Staff Final Comments at 1-2.
[93] *Id.* at 2-3.
[94] Staff Second Comments at 3.
[95] *Id.* at 1.
[96] Staff Final Comments at 5.

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Lastly, Staff recommends that the Commission allow EV chargers to be treated as electric submeters for direct metering of EV charging, which would circumvent the need for installing a second meter and incurring unnecessary costs associated therewith.[97]

Staff has reservations with regard to the cost-benefit assessments and the NREL gap study used to support the Portfolio, noting specifically concerns with their baseline assumptions. Whereas the costs of the Utilities' programs were calculated by assuming full deployment at full costs of all incentives, Staff does not believe the proposed EV charging deployment will actually lead to the adoption of 300,000 EVs.[98] Staff's concerns also include the variability of public charging rates and rate design across the different service territories, cost allocation of public charging stations, and the disparities of socializing infrastructure and rebate costs across all customer classes.[99] If the Commission accepts the Portfolio, Staff recommends that as a condition of acceptance, the Utilities file annual reports on the costs of the Portfolio, the costs associated with each charging station, public charging usage information, and similar usage information for other chargers.[100]

4. Other Positions in Support

In addition to the Signatory Parties, over 50 stakeholders filed comments in support of the Petition,[101] and another 317 individuals signed a public petition, with 80 accompanying comments (collectively, the "Supporters"), calling upon the Commission to approve the EV Portfolio in the Petition and its various program

[97] Staff Second Comments at 1-2.
[98] Hr'g Tr. at 1068.
[99] Staff Second Comments at 4-6.
[100] Staff Final Comments at 4.
[101] Signatory Parties Add'l Comments at 2.

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offerings, as proposed. The Supporters include individual consumers, elected officials, automobile manufacturers, trade associations, environmental advocates, and EV private market participants, representing a broad cross-section of the industry. The Supporters make similar arguments regarding the merits of, need for, and implications of the Portfolio with regard to the State's policy objectives. For reasons of brevity, the Commission does not recite each Supporter's position but, instead, summarizes the principal arguments in favor of implementing the statewide EV charging network. The Supporters generally contend that the EV Portfolio provides a framework that will (1) lay the groundwork for a statewide EV charging network, (2) empower customers to manage their electric load, (3) introduce capabilities to improve the electric grid, (4) increase grid utilization, (5) facilitate distributed resources, and (6) lower costs to all customers over time.[102]

The Supporters maintain that investments in adequate charging infrastructure are needed to achieve and support widespread electrification of the transportation sector and to reach Maryland's ZEV adoption and GHG emissions reduction goals.[103] The Supporters cite the lack of adequate charging infrastructure as the most significant barrier to greater EV adoption in Maryland.[104] EVIC states that the Portfolio would increase the availability of charging infrastructure statewide[105] and unlock grid benefits for all ratepayers.[106] For example, the Supporters point out that increased EV use would lower

[102] *See* ATE Second Comments at 1.
[103] *See, e.g.*, UCS Initial Comments at 4.
[104] Plug-in America Initial Comments at 1-2.
[105] *See* footnote 19. As proposed, the charging infrastructure would only be deployed in the BGE, PE, Delmarva and Pepco service territories. Other areas of the State, including the SMECO and Choptank service territories are not included in the Portfolio.
[106] EVIC Initial Comments at 1. EVIC also notes that the proposed Portfolio supports EVIC's mission and the State's goals for EV adoption in Maryland. *Id.*

the average cost to serve all grid customers.[107] By taking steps toward closing the infrastructure gap, the Supporters contend that the proposed programs in the EV Portfolio will help overcome driver range anxiety and concerns about access to charging and cost barriers,[108] which are common concerns associated with EV ownership.[109] The Supporters believe that a more widespread charging network will convince consumers that EVs can be driven anywhere as well as attract innovative and advanced mobility solutions.[110]

The Supporters assert that the Utilities have a vital role in advancing vehicle electrification and are best equipped to accelerate deployment of the necessary charging infrastructure, particularly in underserved markets.[111] The Supporters state that key market segments currently underserved by competitive markets include MUD and low-income communities.[112] Given the projected increase in EV sales over the next several years, the Supporters note that EV infrastructure and consumer awareness must also increase, exponentially, in order to support these sales.[113] In their view, approving the Proposal will not only help Maryland meet its EV adoption and environmental goals, but also make Maryland a national leader in EV infrastructure. They further point out that the Petition is generally supported by EVIC and consistent with other EV programs and strategic plans, including the 2018 Baltimore Sustainability Plan,[114] the 2012 the

[107] EEI Initial Comments at 2.
[108] Worrell Comments at 1.
[109] MLCV Comments at 2.
[110] GM Initial Comments at 1.
[111] SemaConnect Comments at 2-3; Buckley Comments at 1.
[112] Public Comment Petition at 1.
[113] Global Automakers Comments at 2.
[114] BOS Comments at 1.

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Baltimore Climate Action Plan,[115] the Northeast Corridor Regional Strategy for Electric Vehicle Charging Infrastructure,[116] and the ZEV Task Force Multi-State ZEV Action Plan.[117]

5. Other Positions in Opposition

Nine parties, including three BGE residential customers, oppose the EV Portfolio either in its entirety or with respect to a specific Utility's program offerings. The residential customers—William Fowler, Mark Hampton, and Paul Verchinski—object to BGE's program offerings and requirement for ratepayers to finance the incentives, allegedly cross-subsidizing the costs of BGE's proposed EV charging stations. Messrs. Fowler and Hampton contend that EV owners should cover the "end-to-end" cost of their fuel, not non-EV owners.[118] Mr. Verchinski recommends that the Utilities should first run a smaller pilot study prior to making a substantial rate-based investment.[119] The remaining stakeholder objections are summarized below:

a. AOBA

AOBA recommends that the Commission reject Pepco's various sub-portfolios in their entirety. AOBA opposes ratepayer financing of utility-deployed EV charging infrastructure, which could give rise to sunk costs and stranded investments.[120] As a procedural matter, AOBA argues it is beyond the Commission's legal authority to approve the expansion of an EV charging network because "fueling stations are not a public utility service nor is electric vehicle charging infrastructure necessary for the

[115] *Id.*
[116] NESCAUM Comments at 2.
[117] *Id.*
[118] Fowler Comments at 1; Hampton Comments at 1.
[119] Verchinski Final Comments at 1.
[120] AOBA Initial Comments at 3.

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delivery . . . of safe, reliable, and affordable electricity service consistent with environmental requirements and conservation of natural resources[] mandated in [Public Utility Article] §2-113."[121] To that point, AOBA states the Utilities should not be allowed to recover any investment costs related to non-core competitive services.[122]

AOBA claims that market realities do not support ratepayer financing of utility-deployed charging infrastructure. While automakers continue to invest billions of dollars in bringing EVs to market, AOBA notes that automakers themselves have been reluctant to enter this competitive space and buyers have not been buying many EVs to date.[123] AOBA supports utilities entering the competitive EV charging equipment market "on an unregulated basis with financing from their shareholders and investors" or through partnerships with automakers and third party EV charging companies.[124] Absent any contribution from the utilities or automakers, AOBA cautions that Maryland ratepayers would bear the risks of stranded investments and sunk costs alone.[125] Should the Commission approve any utility-owned and operated EV charging stations, AOBA recommends they be for not-for-profit enterprises, with excess profits from their usage refunded back to ratepayers.[126]

b. American Petroleum Institute

The American Petroleum Institute ("API") objects to ratepayer financing of any expansion of EV charging infrastructure, arguing that EVs largely serve high-income earners, and public policy should not favor this small group of households who use EVs

[121] *Id.* at 5.
[122] *Id.* at 11-13.
[123] *Id.* at 18, 27.
[124] *Id.* at 26; *see also* AOBA Final Comments at 8-15.
[125] AOBA Final Comments at 6.
[126] *Id.* at 15.

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at the cost of lower-income households.[127] By incentivizing the purchase and installation of charging equipment, API reasons that the Petition would force ratepayers—especially LMI customers—to pay more in taxes, fees, and electric utility rates "so that someone else can purchase and operate an expensive electric vehicle."[128] API reasons that doing so would unfairly shift costs to individuals who have chosen not to use this technology. Furthermore, API notes a lack of customer response to existing excise tax credits designed to incent EV purchases.[129]

c. Mid-Atlantic Petroleum Distributors Association, Inc. and Mid-Atlantic Propane Gas Association

The Mid-Atlantic Petroleum Distributors Association ("MAPDA") and Mid-Atlantic Propane Gas Association ("MAPGA") urge the Commission to reject the Petition because it discounts the burdens and inequities of economic subsidies, overlooks the adverse environmental impacts attributable to EVs, and disregards the reality of consumer demand. MAPDA and MAPGA argue that EV subsidies favor the wealthy at the expense of the majority of ratepayers and have not been shown to effectively shift the market toward EVs in the long term.[130] They also point out that EVs themselves carry a high environmental cost over their life cycle, from manufacturing costs and costs to create infrastructure to costs associated with disposal of traditional vehicles before the end of their life cycle as well as EV battery disposal.[131] MAPDA and MAPGA contend that EVs are more expensive to own than traditional combustion vehicles, which along with environmental impacts are the true disincentives to EV ownership. In their view, the

[127] API Comments at 1, 5.
[128] *Id.* at 1.
[129] *Id.* at 3.
[130] MAPDA/MAPGA Comments at 1-2.
[131] *Id.* at 2.

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Commission should not discount the consumers who will continue to prefer combustion vehicles.[132]

d. National Association of Convenience Stores, National Association of Truckstop Operators and Society of Independent Gasoline Marketers of America

That National Association of Convenience Stores ("NACS"), National Association of Truckstop Operators ("NATSO") and Society of Independent Gasoline Marketers of America ("SIGMA") (collectively, the "Associations") argue that the EV Portfolio, if adopted, would create an alternative fueling monopoly and destabilize the competitive nature of the refueling marketplace to the detriment of consumers.[133] The Associations point out that under the current regulatory construct, the Utilities have essentially no market entry costs because they can recover investment costs through rate base. Where the same cannot be said for private market participants, this would result in a "de facto monopoly" as it could limit private sector interest in investing in this marketplace.[134] Therefore, the Associations state that public utilities should be required to enter the market on the same cost basis as private companies, and any tax or other benefit afforded to either should be available to all market entrants.[135] Accordingly, the Associations recommend that the Commission reject the Petition and, instead, work with the fuel retail industry and other stakeholders to deploy an EV charging network through partnership with motor fuel retailers.[136]

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[132] *Id.*
[133] Associations Comments at 1.
[134] *Id.* at 2.
[135] *Id.* at 2-3.
[136] *Id.* at 3.

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e. Dai Technologies

Dai Technologies ("Dai"), a minority and woman-owned installer of public EV charging facilities, does not support the Petition at this time, due to a lack of clarity in the Petition concerning the equitable participation of Maryland-based minority and women-owned businesses ("MWOBs") in the development of an EV charging infrastructure.[137] According to Dai, the lack of information in the Petition about how the Utilities plan to engage and work with MWOBs presents a risk of those companies being locked out of significant economic opportunities.[138] Dai therefore requests that the Commission delay approval of the Portfolio until the Utilities revise their respective programs to address the inclusion of minority- and woman-owned businesses at levels that meet or exceed their supplier diversity program objectives.[139]

f. Retail Energy Supply Association

The Retail Energy Supply Association ("RESA") does not support the Petition, as filed, because it lacks competitive market engagement. RESA, like other opponents of the EV Portfolio, objects to using ratepayer funds to develop EV charging infrastructure and expanding utility EV time-of-use rates, which in its present form is only offered to utility SOS customers. RESA argues that such expansion of TOU offerings contradicts PC44's guiding principles that emphasize the importance of competitive markets.[140] Consequently, "RESA cannot support a rate structure that favors utility electricity supply, while excluding competitive supply options."[141] RESA recommends, instead, that the

[137] Dai Comments at 1.
[138] *Id.*
[139] *Id.* at 2.
[140] RESA Comments at 2-3.
[141] *Id.* at 3.

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proposed rate structures be modified to enable full competition for electric supply services.[142] According to RESA, competitive suppliers engaged in developing EV charging infrastructure can better achieve the stated benefits of increased EV penetration.[143]

III. COMMISSION DECISION

The proposed EV Portfolio and its various Utility program offerings are designed to incentivize the deployment of charging infrastructure in furtherance of state policy goals and commitments for the electrification of Maryland's transportation sector. Specifically, the Signatory Parties maintain that development of a robust charging network is necessary to help Maryland achieve the adoption of 300,000 ZEVs by 2025 and a 40 percent reduction in GHG emissions, from 2006 levels, by 2030.[144] To that end, the Petition aims to (1) alleviate EV range anxiety, (2) help customers understand and manage their charging load, (3) increase interest and investment in smart charging at MUDs, as well as encourage workplace and fleet charging, (4) provide information regarding EV charging behavior to facilitate future TOU rates, managed charging, and other EV programs, and (5) evaluate grid impacts to determine opportunities for integrating additional technology as well as maximize economic and technical benefits of an EV charging infrastructure.[145]

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[142] *Id.* at 4.
[143] *Id.*
[144] The Petition cites a Maryland-specific EV cost-benefit study by M.J. Bradley & Associates that used a scenario based on a stated long-term goal of "80 by 50" for Maryland—*i.e.*, 80 percent economy-wide greenhouse gas reductions from 2006 levels by 2050. Petition at 19.
[145] Petition at 28-29.

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The Commission supports many aspects of the Petition and applauds the Work Group for its development, but the Commission must balance these goals against other considerations, such as coordination with the full suite of State programs and initiatives, the appropriate size of an EV charging program, the level of utility involvement, the ratepayer impacts, the cost-effectiveness of the program, the overall benefits to all Maryland ratepayers, and the potential impediments to competition by market participants. The Commission also considers elements of the Petition that risk overlap and potential duplication with other State programs and initiatives. As discussed below, the Commission finds that the Petition's pilots, as proposed, are overly broad and costly to ratepayers in the service territories of BGE, Pepco, Delmarva and PE. However, as modified, components of the Petition can inform the Commission and the public of potential impacts and implications for the electric distribution grid, including reliability, load management, improved system efficiency, and whether a wider expansion of a ratepayer funded EV charging network would be appropriate in the future.

A. Legal Authority

As an initial matter, OPC and AOBA contend that the Commission lacks jurisdictional authority to approve all elements of the Petition. Notably, these parties question whether the Utilities' may own and operate public charging infrastructure and recover such costs through rate base. OPC argues that Maryland law neither requires nor allows IOUs to develop EV programs and seek recovery of charging equipment or services in regulated rates.[146] While the Public Utilities Article ("PUA") of the Maryland Annotated Code grants the Commission broad legal authority to supervise and regulate

[146] *See* OPC Initial Comments at 13-14.

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the operations of Maryland utilities, OPC points to two areas where the PUA purportedly excludes electric vehicle charging equipment from regulation. First, OPC asserts that under PUA Title 4, "rate regulation" does not apply to electric vehicle charging or services because charging does not constitute a regulated service that a public service company is required to provide under its franchise.[147] Second, OPC claims that the General Assembly expressly excluded electric vehicle charging equipment from the definitions of "electric supplier" and "public service company" under PUA § 1-101, in order to encourage a private market in EV charging.[148] AOBA similarly argues that ratepayer-funded deployment of an EV charging network is neither authorized by statute nor considered to be a core or necessary function of the utilities to ensure the safe and reliable delivery of affordable electric service.[149]

The definitions under PUA § 1-101 should not be read disjunctively. Section 1-101 expressly includes electric companies in the definitions for both electricity supplier[150] and public service company.[151] For each term, the PUA carves out an exception for any person who owns or operates EV charging equipment. However, neither definition precludes electric companies from owning or operating EV charging equipment. Rather, to accommodate entry by competitive market participants, the term "electricity supplier" under § 1-101(j)(3)(iii), for example, simply removes a private market entrant, e.g., a private charging station provider/operator, from the ambit of unnecessary regulatory requirements that could present a cost-prohibitive bar to entry.

[147] *Id.* at 16. OPC reasons that an electric distribution utility's regulated service is "the . . . distribution service it is required to provide under its franchise." *Id.* (citing PUA § 7-506).
[148] *Id.* at 17.
[149] AOBA Initial Comments at 10.
[150] PUA § 1-101(j)(2).
[151] *Id.* § 1-101(x)(1).

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Section 1-101(j)(3)(iii) does not negate the inclusion of electric companies from the general definition of "electric suppliers" under § 1-101(j)(1); likewise, the definition is not qualified or conditioned upon the language of § 1-101(j)(3)(iii).[152]

As for OPC's and AOBA's remaining arguments, the Commission has broad authority under PUA § 2-113 to regulate the activities of utility companies providing services within the State.[153] It is the Commission's duty to ensure that utility companies in Maryland operate in the interest of the public and to promote the adequate, economical, and efficient delivery of utility services without unjust discrimination.[154] As noted during these proceedings, infrastructure investments to develop and maintain the transmission and distribution system fall squarely within a utility company's core competencies.[155]

PUA § 7-506 provides that an "electric company operating in a distribution territory shall provide and be responsible for distribution services in the territory … ." The EV Portfolio aims to facilitate "an efficient and reliable electric distribution grid moving forward."[156] As part of the Portfolio, the Utilities propose to own and operate public chargers within their respective service territories. Clearly, the Utilities would provide the electricity supply to the public charging stations, as electrical energy will travel to the charging station via the utility's distribution system. While EV charging stations, themselves, are facilities that use specialized equipment to provide electricity to charge an EV battery, what takes place at the station is the retail sale of electricity. In

[152] The same reasoning applies to the definition of "public service company" under PUA § 1-101(x)(1) and (2).
[153] *People's Counsel v. Public Service Comm'n*, 52 Md. App. 715, 722 (1982).
[154] PUA § 2-113(a)(2).
[155] Hr'g Tr. at 911.
[156] Petition at 15.

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this sense, there is no difference between a utility's wire running to an electric meter on the side of a customer's house to allow the customer to watch TV, and a utility's wire running to an electric charging station to allow the customer to charge an electric vehicle. Thus, the Commission concludes it is well within its statutory authority to rule upon all aspects of the Petition.

The Commission's authority over EV charging programs is also consistent with the Commission's general duty to consider "the economy of the State, the conservation of natural resources, and the preservation of environmental quality" when supervising and regulating public service companies.[157] It is alleged that the Utility-owned charging stations will have a direct impact on the number of EVs in Maryland and that the level of EV adoption in Maryland will affect the State's ability to curb carbon emissions and meet its GHG emissions reduction targets. It follows that the Commission's jurisdictional authority extends to utility-operated charging services, which impacts the conservation of natural resources and preservation of the environment.

B. Cost-Benefit Assessment

Collectively, the Utilities propose to deploy a total of 23,912 smart L2 chargers and DCFC ports across their service territories. With a combined budget of over $104 million to cover the expenses of the various Utility programs and sub-portfolios, the proposed EV Portfolio carries significant costs. The public interest requires that the Commission consider the proposed offerings through a lens that reaches an appropriate balance between reliability, cost effectiveness, customer impact, and state policy goals.

[157] PUA § 2-113(a)(2).

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The Petition is supported by a 2016 study by M.J. Bradley & Associates ("MJB&A Study" or "Study"), which estimated the costs and benefits of increased EV penetration in Maryland under two penetration scenarios based on (1) an EV adoption rate of 300,000 EVs by 2025, and (2) 80 percent reduction in GHG emissions from 2006 levels by 2050.[158] The Study assumed that a sufficient number of EVs would be adopted in Maryland to reach the 80 percent target in emissions reductions by 2050. The Study estimated the total GHG emissions reductions that could be achieved by transitioning the light duty fleet to EVs, and then quantified the value of these emissions reductions to society. It also estimated the benefits of increased utility revenues that would accrue to all Maryland electric utility customers, such as applying the revenue increase to support O&M costs and offset future electricity rate increases.[159] The Study concluded that increased EV penetration would produce more benefits than cost to the EV owner and utility customer, citing reductions in GHG emissions, annual vehicle operating costs for EV owners, and electric bills for utility customers.[160] MJB&A reported a cumulative total in estimated benefits of approximately $6.2 billion under Scenario 1 and $34 billion under Scenario 2.[161] This, according to the Petition, equates to a net present value of annualized benefits of $230 per plug-in EV by 2030.[162]

Additionally, the Utilities conducted their own cost-benefit assessments. BGE concludes that if Maryland's EV adoption goals are met by 2025, the added distribution revenues alone "will exceed the estimated EV Proposal residential revenue requirements

[158] Petition at 19; *see generally* Maillog #221870, M.J. Bradley & Assoc., Electric Vehicle Cost-Benefit Analysis: Maryland (December 2016) ("MJB&A Study").
[159] MJB&A Study at 7-9; Petition at 19.
[160] MJB&A Study at 15-21.
[161] *Id.* at 4, 6.
[162] Petition at 20.

by approximately 2.0 times … ."[163] Pepco claims the increase in distribution revenues could exceed the incremental revenue requirements to its residential ratepayers by approximately three times. Delmarva states that the benefits would equal the costs.[164] PE predicts that by 2028, or sooner, assuming EV adoption goals are met, the total EV program revenues, collected through the proposed surcharge, would outweigh EV program costs and flow back to customers.[165]

Several participants note the absence of any financial data to substantiate the costs to deploy all the charging stations needed to support Maryland's adoption goal of 300,000 EVs by 2025. Additionally, AOBA posits that the total representative costs of the EV Portfolio fail to, but should, include costs for maintaining and repairing the distribution grid, given the expected increase in system load from EV usage.[166] Regarding the scope of the EV Portfolio, OPC questions the Utilities' reliance on the NREL gap study in developing their program cost estimates, explaining that "the number of EV chargers required to meet . . . state goals is highly variable and depends on several factors," including the electric range distribution of EVs, the ratio of plug-in hybrid vehicles to battery electric vehicles, the share of EVs adopted by customers who lack access to home charging, and the power level of deployed charging technology.[167] With regard to O&M costs, industry participants note there is insufficient data from the various

[163] *Id.* at 29.
[164] *Id.* at 30.
[165] *Id.* at 31.
[166] *See* AOBA Initial Comments at 7.
[167] Hr'g Tr. at 1051.

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EV charging pilot programs to determine how much O&M costs from utility-owned and operated charging stations would increase overall costs for the utility.[168]

Determining the cost-effectiveness of the EV Portfolio has been challenging, as the record lacks detailed cost effectiveness information, and the Utilities' own cost assessments are superficial at best. The Commission recognizes that there are challenges with identifying an appropriate cost-benefit test insofar as the EV industry is still nascent and evolving, and quality data remains sparse. Industry participants further point out that EV charging deployments do not fit well with any current cost-benefit test.[169] Instead, a combination of tests may yield more successful results than any single approach.

Supporters of the Portfolio maintain that expanding EV infrastructure and EV adoption in Maryland will yield short- and long-term benefits, such as enhancing grid resiliency, improving air quality for all Maryland citizens, creating jobs, reducing costs of personal transportation, and strengthening the resilience of the transportation networks. The Commission agrees that pairing EV adoption and EV charging with intelligent rate design can improve electric distribution system utilization and create downward pressure on rates through load management and system peak reduction. However, without more detailed cost effectiveness data, the Utilities have not, at this time, met their burden to justify the recovery of $104 million in cumulative program costs exclusively from ratepayers. The Commission finds, however, that the anticipated benefits associated with an expanded EV infrastructure are potentially far-reaching to EV owners and non-EV owners alike and, thus, warrant approval of a smaller pilot study to test the concepts

[168] *See id.* at 922-23.
[169] *Id.* at 932-33 (referencing the ratepayer impact measure test, the total resource cost test, or the societal cost test).

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outlined in the Petition.[170] Consistent with the Commission's previous Orders concerning pilot studies, the Commission finds the Portfolio and the public would benefit from applying the pilot-specific guidelines outlined in Case No. 9453,[171] which will be discussed later in the Order. The Commission turns now to the merits of the Petition.

C. Residential Sub-Portfolios

The Utilities' Residential sub-portfolios are comprised of three types of offerings: rebate incentives for chargers, time variant rates, and FleetCarma. In sum, the Residential sub-portfolios have a combined cost of approximately $17.8 million across all four Utilities. As proposed, only Delmarva and Pepco expressly offer the Discounted L2 smart charger rebate program, which couples the rebate incentive with an EV-only residential time-of-use tariff. This program aims to "test the effectiveness of a passive rate incentive on incentivizing customers to charge off-peak."[172] Next, all of the Utilities offer a residential smart charger rebate-only program, designed to incent customers to install smart L2 chargers at their residence and enable them to participate in future programs from the Utilities. For Delmarva and Pepco, the Rebate Only program would begin after the close-out of the Discounted L2 program. Also unique to Delmarva and Pepco are proposals to provide Residential FleetCarma Smart Devices to customers with existing, non-smart chargers to incentivize off-peak charging and provide the PHI Utilities with insight into customer usage and grid impacts. Lastly, BGE and Pepco will

[170] The Commission notes that while a single cost-benefit test might not be a perfect fit, the Commission nevertheless expects the Utilities to include a detailed cost-benefit assessment—through a traditional test or a combination of tests—to substantiate, empirically, all cost expenditures related to EV charging for purposes of cost recovery in any future rate case.
[171] *In re Baltimore Gas and Electric Company Request for Approval of a Prepaid Pilot Program and Request for Waivers of COMAR and Commission Orders*, Order No. 88438 (October 25, 2017).
[172] Petition at 85, Attachment C – Residential Sub-Portfolio.

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continue to offer a "whole house" TOU discounted off-peak rate that applies to both vehicle charging and residential usage, while PHI propose to extend this program to Delmarva's service territory. With the exception of PE's Commercial and Industrial ("C&I") customers, all charging equipment in this category and in the Non-Residential category will be customer owned.

1. Rebate Incentives

The EV Portfolio proposes to advance Maryland's goal of increasing EV adoption and usage by offering, among other things, customer rebates toward the purchase and installation of smart L2 chargers. These residential rebates are designed to offset the higher costs associated with purchasing a smart charger, up to 50 percent of the costs to purchase and install the charger, net of other available rebates and discounts, with some variation among the programs.[173] Further, the residential rebates are generally capped at a maximum of $500 per rebate.[174] The combined total costs for the Utilities' smart charger rebate-only programs are estimated at approximately $13.5 million. While the various sub-portfolio cost estimates assume that every customer would receive the maximum rebate amount, actual program costs will depend on the number of customers who choose to apply and receive the rebates. If a Utility does not receive a sufficient number of applications for the rebates, it follows that the Utility's Residential program costs would decrease. Additionally, as a condition of receiving the rebate, PE would

[173] Under the Discount L2 program, Delmarva and Pepco propose rebates that would cover 50 percent of the equipment costs and installation. *Id.* Once the Discount L2 program closes, the PHI Utilities' rebates would cap at $500 but would cover up to 100 percent of the total charger and installation costs, less any applicable rebates. *Id.* at 89.

[174] The Delmarva and Pepco rebates under the Discounted L2 program would not be capped at $500.

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require its customers to also agree to share their charging data with the company;[175] the other Utilities include no such requirement in their rebate-only Residential offerings.

Several participants, including MEA, object to the use of ratepayer funds to finance rebates for residential chargers because it leads to customer cross-subsidization. MEA supports, however, "managed charging" as a way to mitigate grid impacts. Advanced charger deployment is an important component of "managed charging" and the goal of the residential rebates is to provide enough incentive for a residential customer to choose an advanced L2 charger over a cheaper alternative that lacks the "smart" functionality.

The Commission finds there is value in collecting usage data and determining how load management profiles can be shaped by using smart chargers. It also stands to reason that an increase in EV usage would also increase a Utility's distribution revenues, which could lower electric distribution rates for all ratepayers. Indeed, Staff points out that the increase in load from EVs could pay back the costs of the rebates in short time.[176] Thus, in view of maximizing smart charger functionality to assess potential grid impacts and mitigation strategies, the Commission finds that it is in the public interest to approve the Petition's rebate incentive program, with modification, as discussed below.

The State agencies raise concerns regarding the size and cost of the BGE and PE rebate- only programs. MEA believes that "ratepayers should not solely bear the burden of one-third of the State's infrastructure gap, as determined by the NREL gap

[175] *Id.* at 82, Attachment C – Residential Sub-Portfolio.
[176] Staff Second Comments at 2. According to Staff, "each charger in [the rebate-incentivized sub-portfolios] represents a customer who will eventually pay for the charger with increased electric usage." Staff Initial Comments at 4.

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analysis."[177] Staff argues that the proposed $500 rebate caps are too high and unsubstantiated. And OPC states that the residential rebates should be based on "a percentage of the difference in cost between a standard L2 charger and a smart L2 charger."[178]

For pilot study purposes, the Commission finds it appropriate to reduce the size of the proposed rebate-only programs to a smaller number of rebates, which would lower the overall cost to ratepayers and could mitigate cross-subsidization between EV owners and non-EV owners. Scaling down the rebate measures would also provide time and opportunity over the course of the pilot to assess the effectiveness of these programs to incent EV adoption while limiting risk to ratepayers in paying for these programs. Accordingly, the Commission will reduce the total number of rebates to a maximum of 1,000 measures for BGE and PE, each. Further, the PHI Utilities are authorized to proceed with their proposed residential rebate-only programs, which combined, totals 1,000 measures.

To further allay cost and cross-subsidization concerns, Staff and OPC recommend that the Commission reduce the rebate amount. According to Staff, the Utilities' selection of $500 as the maximum rebate amount was not based on any study or analysis that demonstrates this amount is optimal. Rather, the Utilities explain that $500 reflects the difference in price between a smart charger and a non-smart charger.[179] However, according to an analysis by BGE, the average difference in price between a smart and

[177] MEA Initial Comments at 8-9.
[178] OPC Final Comments at 6 (internal quotation marks omitted).
[179] Staff Second Comments at 2.

non-smart charger is $371.70.[180] Staff explains that the Utilities rounded this number to $500 "to cover the costs of the more expensive residential chargers and associated infrastructure."[181] The Commission agrees that reducing the rebate amount will further lower ratepayer impact, ratepayer risk, and customer cross-subsidization. The Commission therefore adopts Staff's recommendation to limit the maximum rebate amount for smart L2 chargers to $300 for residential customers.

Lastly, as an alternative to the residential rebates, Staff suggests that creative rate design can further reduce or remove the residential rebate program altogether. Staff contends that offering a reduced distribution rate for overnight hours to encourage off-peak EV charging, or a reduced rate to encourage charging during times when renewable energy penetration is highest, can lower the costs of the residential programs, reduce cross-subsidization, and produce environmental benefits.[182] Staff also notes that the Utilities can offer distribution bill credits for off-peak use equal to a rebate. Under this approach, the EV customer would receive a rate credit for a certain amount energy for EV charging during off-peak periods.[183] While Staff's alternative proposals could, in theory, serve the same purpose as the proposed residential rebate programs, Staff has not shown that either approach will incentivize customers to purchase a smart charger in the same manner as receiving a rebate in hand. For this reason, the Commission declines to eliminate the rebate incentive entirely. However, as described further below, the Commission finds that lower distribution rates for off-peak charging yields additional benefits that warrant development and evaluation. The Commission does not accept

[180] *Id.* at 2-3.
[181] Staff Second Comments at 3.
[182] Staff Initial Comments at 7.
[183] Staff Final Comments at 2.

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Staff's proposed rate designs at this time. However, Staff is directed to work with the Utilities to develop and evaluate alternative rate designs, including bill credits, to further benefit ratepayers and reduce grid reliability impacts. To the extent any of the Utilities wish to submit a creative rate design or bill credit proposal with the Commission at a later date, the Commission will consider the filing at that time.

2. EV-Only Time-of-Use Rates and Submetering

As the number of EVs in Maryland is projected to grow rapidly in the near term, the deployment of charging infrastructure to support that growth will only increase the level of stress on the distribution grid, especially during peak system hours, which further implicates issues concerning grid reliability and resiliency. Therefore, EV load must be managed effectively, otherwise all ratepayers will share in the expensive costs of upgrading and maintaining the distribution system to accommodate increased load on the system. As Staff and several participants to the proceeding note, time-of-use rate design is one way to shift EV charging to off-peak periods.[184]

In 2013, BGE demonstrated that a modest TOU structure can shift load. Here, its proposed program will test "more aggressive options to be able to manage . . . and shift that load even further into the evening hours or even across the evening hours."[185] Moreover, the Commission also recognizes that data from the smart chargers can provide insight into usage patterns and potential impacts to the distribution grid.

The question arose during the proceedings whether customers should be required to participate in EV-only TOU rate programs and share their EV usage data with the

[184] *Id.*; Hr'g Tr. at 895.
[185] Hr'g Tr. at 585.

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Utilities as conditions of eligibility to receive a rebate for a smart L2 charger. The Commission finds that data from a smart charger can raise customer awareness of one's charging usage to help customers better manage power consumption. There is a public interest in moving EV charging usage from peak to off-peak and providing Utilities with access to EV charging data. Utilities can use this data to evaluate long-term distribution system planning and to develop innovative rate design options, and demand response and load management programs. The Commission therefore approves PE's requirement that rebate recipients share their EV charging data with the company and further directs BGE and the PHI Utilities to similarly require data sharing (with the utility) as a condition of participation in their residential rebate programs.

BGE previously demonstrated load shifting in its 2013 rate design pilot under a "modest" TOU structure, and PHI succeeded in remotely adjusting the power level of EV chargers in its previous demand response pilot.[186] The proposed rate design under the Residential sub-portfolios will test "more aggressive options" to manage and shift load, including programs to control the smart chargers during times of critical peak demand.[187] Where information is currently lacking with regard to the impacts EV growth will have on the grid, it is vital that the Utilities have the opportunity to test and learn from these program offerings. For these reasons, the Commission approves the proposed Discounted L2 program offerings by Delmarva and Pepco.

While Delmarva and Pepco are the only Utilities to expressly offer EV-only TOU rate designs, along with demand response and the optional Green Rider offerings, BGE and PE have indicated that they are willing to pursue EV-only TOU rate offerings with

[186] *Id.* at 585-86.
[187] *See id.* at 585-87.

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residential smart L2 chargers, provided that the Commission accepts the request to treat smart chargers as electric submeters, subject to the appropriate technical and regulatory standards for submeters.[188] Submetering would allow the smart charger's embedded metrology and communication capabilities to track EV charging data for rate design and billing application purposes. More importantly, submetering would avoid the unnecessary costs associated with installing and qualifying a second AMI meter for the purpose of offering EV-specific rate design and load management programs. The Commission finds this latter point significant because the PHI Utilities' Discount L2 offerings currently require the installation of a second meter, at no additional cost to the EV owner, but those costs would be socialized among all ratepayers.

For PE, which does not have advanced metering in its service territory, utilizing smart charger metrology would provide a basis for developing and implementing an EV-only TOU rate for residential customers.[189] To accommodate the treatment of smart chargers as electric submeters for data gathering and billing purposes under our regulatory scheme (i.e., regulatory treatment), the Petition requests a temporary waiver of certain regulations governing the submetering process for the limited duration of the five-year Portfolio program cycle. The specific COMAR sections to which the waiver would apply include COMAR 20.25.01.01(B), COMAR 20.25.01.04(A)(2), and COMAR 20.25.01.05(H).

Based on the foregoing, the Commission grants the requested COMAR waivers for good cause shown. Where smart chargers and other EVSE products are designed to be "smart grid-ready," the Commission directs the Utilities to utilize the "smart" features

[188] Petition at 43.
[189] *See* Hr'g Tr. at 593.

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of such technology to their maximum potential, like advanced metering, to develop and implement time variant rate, load management, and demand response programs within the Utilities' service territories, for the benefit of ratepayers. The data gathered from smart L2 chargers can be used to encourage charging at certain times during the course of the day and facilitate TOU rates. Also, the chargers themselves have the ability to communicate and control for future load management purposes. As the Signatory Parties' assert, the requested waivers "would allow the pursuit of an innovative, experimental approach to this issue while avoiding both unnecessary costs associated with a second meter installation and/or the additional costs and work needed to officially certify a 'smart' EVSE device … ."[190]

The Commission is further persuaded by the fact that treating smart chargers as electric submeters would not require socialization of any data access charges incurred by the Utilities to all ratepayers in connection with administering an EV-specific rate.[191] Additionally, participants in these proceedings noted that the requested waivers would not affect consumer protections under COMAR. The Commission, therefore, expects that all consumer protections applicable to a residential customer's primary account shall also extend to the EV account for that customer and that any "submeter" designation associated with the EV account shall not divest the customer of any consumer protections tied to the primary meter. To this point, the EV customer shall have the right, among

[190] Petition at 51.
[191] *Id*. at 51-52.

other protections, to file a complaint with the Commission under COMAR 20.32 in connection with the submeter.[192]

Granting the requested temporary waivers in this instance would allow PE, which does not have AMI infrastructure deployed in its territory, as well as BGE to participate in EV-TOU rate design offerings without adding any additional capital costs to its Residential offerings. The Commission further notes that requiring all four Utilities to provide EV-only TOU rate offerings would create uniformity among the various Utility offerings and extend benefits to all ratepayers. The Commission therefore directs BGE and PE to develop EV-TOU rate design as part of their residential rebate offerings.

3. Whole-House Time-of-Use Rates

BGE proposes to continue to offer a whole-house TOU rate, which is currently available to its SOS customers who also own EVs. Pepco will also commit to continuing its whole-house TOU rate and Delmarva will introduce a similar TOU rate in its service territory. Under this voluntary program, the enrolled customer's single TOU meter measures consumption at the whole-house level, including any EV charging at the residence. Although Mr. Verchinski contends that EV owners have rejected whole house TOU,[193] Plug-in America, which represents the interests of EV drivers in the United States, suggests that EV owners who wish to take advantage of a time varying rate would benefit from a whole-house TOU rate in an effort "to lower costs for everybody … ."[194]

[192] Without listing every available protection afforded to residential customers under COMAR, it is sufficient to note, for purposes of this Order, that the residential EV owner may benefit from other protections. To the extent that the Utilities believe certain protections would not apply in view of the requested submeter waivers, the Utilities may petition the Commission to identify those regulations and seek an appropriate remedy, e.g., temporary waiver or other alternative treatment.
[193] *See* Verchinski Initial Comments at 1.
[194] Hr'g Tr. at 903.

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As proposed, there is no incremental cost to the customer to participate in a whole-house TOU rate offering. Based on the record, the Commission approves this TOU offering.

4. FleetCarma

In addition to offering EV-only TOU rates, Delmarva and Pepco also propose to provide interested customers, who do not have smart chargers, with a plug-in device (known as FleetCarma) at no additional cost.[195] According to the Petition, the PHI Utilities estimate that FleetCarma's total program cost for both service territories is approximately $2 million, which would be socialized across Delmarva's and Pepco's ratepayers.

The device plugs into the vehicle and provides location and consumption information on the EV. Delmarva and Pepco would reward customers who use the device with credits for charging off-peak. As with submetering, FleetCarma can facilitate EV-only TOU rates without requiring the need for a second AMI meter. Once issued to a customer, there is no penalty for nonuse. But unlike a smart charger, the customer can cease to use the device or receive it but never use it. Thus, the Commission recognizes there is a risk of stranded assets and sunk costs with FleetCarma. Further, there is no data in the record that supports a finding that FleetCarma, as a second meter work-around, is superior to submetering. In fact, CALSTART observed during these proceedings that uptake of plug-in devices like FleetCarma has been slow.[196] Additionally, OPC has concerns related to customer data privacy and data security safeguards and recommends

[195] Petition at 94, Attachment C – Residential Sub-Portfolio.
[196] Hr'g Tr. at 882.

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the Commission reject the FleetCarma proposal.[197] Weighing program costs against the program's value to EV owners, along with OPC's privacy and security concerns, the Commission finds it would not be in the public interest to approve the FleetCarma offerings at this time.

5. Residential Sub-Portfolio Conditions

The Commission's approval of the Utilities' Residential sub-portfolios, as modified, is conditioned on the following requirements:

- The Utilities shall require any residential customer who elects to participate in the rebate program to share EV charging timing, frequency, and other usage data with their Utility, as a condition of receiving the rebate;
- The PHI Utilities shall, in accordance with their proposed Discounted L2 Residential programs, enroll any residential customer who elects to participate in the rebate program to participate in the utility's Demand Response programs for EV charging and allow the utility to reduce charger output in concert with the utility's Peak Energy Savings Events, subject to a customer's choice to opt out;[198]
- Each Utility shall develop and file tariffs on residential EV-only TOU rates to encourage off-peak EV charging; and
- Each Utility shall file with the Commission semi-annual reports on their residential EVSE programs, for the duration of this five-year pilot study, as further described in the reporting requirements section of this Order.

D. Non-Residential Sub-Portfolios

Except for PE, the Utilities' Non-Residential sub-portfolios consist of two types of offerings: incentives for EV chargers and demand charge credits. Whereas BGE, Delmarva, and Pepco each offer rebates to incent customers to purchase and install

[197] OPC Final Comments at 8.

[198] Although BGE and PE do not include demand response for EV charging in their residential rebate programs, the Commission strongly encourages both companies to take full advantage of the "smart" charger functionalities to further limit grid impacts, particularly by exploring the integration of demand response into their EV programs.

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chargers at non-residential locations, PE proposes to own the chargers and offers a reimbursement program to customers. PE does not include a demand charge credit in its sub-portfolio. To implement the demand charge credit, BGE and the PHI Utilities propose to pilot a demand charge rider, or tariff that will consist of a temporary rate credit in connection with EV charging for a workplace or fleet use.[199] The purpose of the demand charge rider is to offset a portion of the demand charge that could be incurred as a result of installing fast chargers or large quantities of charging stations at non-residential locations.

1. Rebate and Reimbursement Incentives

The Utilities' Non-Residential incentive programs extend to smart L2 chargers, and in BGE's case, to DC fast chargers as well. All four of the Utilities target either workplace or commercial or industrial locations. The Utilities also propose incentives for multi-family and MUD market segments (e.g., apartments and condominiums). BGE is the only utility to propose vehicle fleet applications as part of this sub-proposal.

BGE, Delmarva and Pepco offer rebates that generally cover up to 50 percent of the cost of the charger, net of other applicable incentives, discounts, grants or awards, with a few distinctions. BGE would also cover up to 50 percent of the charger installation costs,[200] while Delmarva and Pepco do not include installation costs in their Non-Residential rebate programs.[201] PE's incentive offerings are distinguishable from the other Utilities in that PE proposes to own the installed chargers. Thus, the customer would only be responsible for the wiring installation costs. PE proposes to reimburse

[199] *See, e.g.*, Petition at 105, Attachment D – Non-Residential Sub-Portfolio, Electric Vehicle Charging Demand Credit (Sample Tariff).
[200] Petition at 99, Attachment D – Non-Residential Sub-Portfolio.
[201] *Id.* at 114.

customers for these costs, up to $2,000, depending on the charger's location—either behind the customer's meter or at a separately metered service location.[202] The cumulative program costs for the Utilities' Non-Residential rebate offerings are over $30.2 million.

As the Commission weighs the utility-sponsored incentive proposals, which are intended to establish a charging infrastructure that would attract EV adoption in the State, it is important to also consider the issue of equitable access to EVs for the underserved and low-income communities. The Petition notes that the multi-family and MUD market segments are presently underserved "due to the general lack of permanent, resident-owned off-street parking opportunities."[203] Participants in this proceeding also confirm that competitive market participants have been unsuccessful in meeting demand in the low-income and MUD segment for a variety of reasons, resulting in a market gap.[204] Staff supports incentives for the Non-Residential program offerings but cautions that the costs of these rebates "can escalate quickly if there is high interest in this program."[205] Staff further recommends that the Commission reduce the rebate amounts insofar as they have not been justified by the Utilities.

The Utilities' incentive offerings under this sub-portfolio category attempt to facilitate equitable access to charging infrastructure for the multi-family and MUD market segments. Of the 1,965 measures budgeted under BGE's non-residential sub-portfolio, BGE forecasts 700 of these will be reserved for MUD applications, although

[202] *Id.* at 106.
[203] Petition at 45.
[204] Hr'g Tr. at 921-22, 940.
[205] Staff Initial Comments at 7.

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the company does not specify the proportion of smart L2 chargers to DC fast chargers.[206] Delmarva and Pepco propose to designate 50 and 200 measures, respectively, for MUD incentives, and PE will "reserve a portion of its [50] MUD incentives for buildings in which 50 percent or more of the residents are confirmed as low-income customers."[207]

The Commission finds that the inclusion of a MUD-focused offering serves a public interest by providing equitable access to EV charging for underserved areas. Furthermore, limiting the Utility programs to MUD incentives only would reduce the total number of chargers in the sub-portfolio and lower the total costs of the Non-Residential programs, thereby lessening the overall impact on utility ratepayers. It would also afford the Utilities the opportunity to test whether these incentives can encourage a broader range of communities to purchase electric vehicles. Accordingly, the Commission approves the MUD- and multi-family-specific rebate incentive offerings under the Utilities' Non-Residential sub-portfolios. Whereas multi-unit and multi-family tenants could have different customer rights depending on their metering status, the Commission finds it appropriate to create a separate rate class for EV charging and tariff purposes. As discussed further in the Cost Recovery section of this Order, the Utilities shall develop a new rate class for EV charging stations and propose tariffs for EV charging.

In support of the need for utility-ownership of non-residential charging stations, PE notes that its service territory is largely considered rural, comprising 25 percent of the Maryland's land area.[208] With five percent of public chargers in Maryland currently in

[206] Petition at 102, Attachment D – Non-Residential Sub-Portfolio.
[207] Petition at 45.
[208] Hr'g Tr. at 604-05.

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PE's service territory, the company believes a utility-owned network of non-residential chargers represents the best approach to deploying chargers in its service territory.[209] Despite this explanation, the Commission remains unconvinced that PE ratepayers should bear the entire equipment costs of these non-residential chargers, when ratepayers in the other jurisdictions would not have the same burden. Further, PE's Public sub-portfolio already proposes to expand utility-owned charging stations in PE's service territory. For consistency across the territories, PE is directed to use a rebate incentive program, similar to BGE and the PHI Utilities whereby PE customers, not the utility, would own the non-residential chargers. PE and the other Utilities shall each file a revised Non-Residential plan consistent with this Order with a revised budget reflecting these changes.

2. Demand Charge Credits

The Utilities and other participants maintain that demand charges—i.e., charges based on the peak or highest energy usage averaged over a short time interval in a billing period—can present a significant operating cost barrier to adopting commercial charging.[210] Certain customers, particularly large commercial and industrial customers, exceed a specific level of electricity consumption per month consistently and are billed a separate demand charge for their peak usage ("demand-billed customers"). Supporters of the Portfolio explain that concentrations of charging stations for fleet applications and workplace charging can significantly impact electricity bills and increase the demand charges billed to these customers as a result of greater peak usage from vehicle

[209] *Id.* at 605.
[210] *See* Hr'g Tr. at 751; EVgo Comments at 2.

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charging.[211] BGE, Delmarva, and Pepco therefore propose to offer to those demand-billed customers a bill credit to offset a portion of that demand charge, and the credit would remain available through the test period of the pilot. Whereas the Commission is careful to insure against rate designs that present additional barriers to non-residential ratepayers, the parallel inclusions of demand charge credits by BGE and the PHI Utilities in their sub-portfolios would address a market need and facilitate adoption of EVs by non-residential customers. Moreover, the Commission notes that the temporary demand charge credit, which will remain available for the duration of the EV pilot programs, per the utilities' offerings would not impose any additional cost to the customer or to ratepayers as a whole. For the above-stated reasons, the Commission accepts the demand charge credit offerings contained in BGE's, Delmarva's, and Pepco's non-residential sub-portfolios and directs the Utilities to file the appropriate tariffs consistent with this Order.

E. Public Sub-Portfolios

The Utilities have proposed a collection of public sub-portfolios to install, own, and operate publicly accessible EV charging stations. BGE's Public sub-portfolio describes a partnership with state and local governments and government-associated organizations to provide public access to a total of 1,000 L2 and DCFCs in select areas. PE proposes to install up to 50 public L2 chargers and nine DCFC chargers in its service territory. Delmarva and Pepco each plan to install a specific number of DCFC chargers in primary transportation corridors, with a portion of the usage revenues applied to offset

[211] *See* Hr'g Tr. at 890.

capital costs.[212] Notwithstanding the program-specific details, the Utilities propose that their ratepayers finance the entire cost of the public charging stations.

Several participants contend that the lack of adequate EV charging infrastructure presents the greatest barrier to EV adoption in Maryland. In 2012, EVIC found that Maryland needs adequate charging infrastructure to alleviate "range anxiety."[213] Consequently, EVIC determined that establishing a visible charging network should be a State priority.[214] The measures of EV chargers proposed in the Petition are based on a Maryland-specific NREL gap analysis study, which examined current charging options in Maryland and identified the projected gap in charging infrastructure needed to support the State's adoption goal of 300,000 EVs by 2025. Currently, there are over 590 public charging stations located across Maryland, with over 1,590 total charging outlets.[215] The NREL study estimates that Maryland needs 17,400 workplace L2 plugs, 9,300 public Level 2 chargers, and 1,000 DC fast charge plugs to meet its EV adoption goal.[216] The Petition targets approximately one-third of that infrastructure gap.

OPC, Staff, and other opponents of ratepayer-funded public charging argue that ownership and operation of public charging stations should remain a function of the competitive markets, which already exists for public EV chargers. In their view, there is

[212] *See* Petition at 138, Attachment E – Public Sub-Portfolios.
[213] Petition at 7.
[214] *Id.* at 7. If the Commission approves the Petition, and specifically the Public sub-portfolios, EVIC would help the Utilities develop a charging infrastructure plan, including public charging station placement opportunities. EVIC Final Comments at 3.
[215] Department of Energy, *Alternative Fueling Station Counts by State*, *available at* https://afdc.energy.gov/stations/states (last visited Jan. 9, 2019).
[216] National Renewable Energy Laboratory, Meeting 2025 ZEV Goals: An Assessment of Electric Vehicle Charging Infrastructure in Maryland, Draft Report, at 32 (Mar. 16, 2018); *see* Staff Initial Comments at 2-3.

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no need or justification for ratepayer-funded utility-deployed charging infrastructure.[217] They warn that allowing utilities to invest in public charging equipment, only to recover those costs through rate base, will create a regulatory barrier to new entry, unfairly punish existing competition, and shift costs as well as impose risks of sunk costs and stranded investments onto ratepayers who do not choose this technology for themselves.[218] In their view, the Utilities should focus instead on developing creative rate design or load management tools, given that the Utilities are "best suited and equipped to ensure proper EV integration that maintains system reliability . . . while minimizing system upgrades and potentially reducing consumer costs."[219]

Supporters of the Petition respond that the Utilities can greatly assist the accelerated development of charging infrastructure, in the near term, particularly in stagnant markets. They have identified areas where there exists a market gap or market failure that has prevented private market investments to date. These areas include MUDs, low income, inner city corridors, and rural areas.[220] They argue that, as proposed, a "targeted ratepayer investment . . . will seed the burgeoning Maryland EV landscape in a manner that will promote a healthy, competitive, and lasting private market moving forward."[221] It is further suggested that widespread public EV charging can help improve equitable access to electric vehicles by facilitating EV adoption by individuals who otherwise cannot charge at home.[222]

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[217] AOBA Initial Comments at 5.
[218] *See* MEA Second Comments at 5-6; API Final Comments at 5.
[219] OPC Initial Comments at 10.
[220] Hr'g Tr. at 921-22.
[221] Petition at 9.
[222] Montgomery Cnty Add'l Comments at 3.

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Although the Commission has adopted a policy in favor of competitive markets as an integral part of the State's electricity landscape, several industry participants observe that while EV markets continue to grow, public charging deployment has yet to attract sufficient levels of private investment to align with the State's EV adoption and GHG reduction goals. Several participants acknowledged during these proceedings that there are not enough EVs in Maryland to provide a return on investment for private market participants.[223] And where private companies have been unable or unwilling to make initial capital investments in difficult and underserved areas, utility ownership can help reach these market segments faster.

The Commission finds that the Utilities have resources, electrical connectivity, and the technical bandwidth within their service territories to address emerging challenges impacting the grid as a result of EV charging on a mass scale. The Utilities can also leverage their customer relationships to educate and advertise EV ownership to potential buyers. Furthermore, the Utilities will also be responsible for ensuring that public charging stations are working and maintained in good working order.[224] Whether the deployment of public charging stations, as a complement to the other EV charging offerings, will lead to EV adoption remains to be seen. However, the Commission finds that a limited deployment of public charging equipment is appropriate at this time.

Notwithstanding the benefits of utility-deployed public charging infrastructure, MEA raises a general concern that the proposed program offerings could stifle the existing competitive market for EV services. In this regard, the Commission considers MEA's recommendation regarding a pilot study:

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[223] SemaConnect Comments at 2.
[224] *See* Hr'g Tr. at 915-16; Plug In America Second Comments at 9.

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> If utility-owned charging stations are allowed, this impact [on competitive growth in this sector] should be given serious consideration . . . Additionally, any investments by the utilities using ratepayer funds should be kept to a minimum, and these investments should be made in underserved locations or areas unable to attract private capital."[225]

The Commission also acknowledges Staff's and the Associations' concern that a utility-owned EV charging network could limit private sector interest in investing in this marketplace. Based on the record, the Commission concludes that allowing the Utilities to deploy and operate public charging equipment on a limited scale would balance the advantages of utility investment with important State policy considerations, such as competitive access to charging infrastructure, cost impact, and ratepayer exposure to risks associated with sunk costs and stranded assets.

The Commission further notes Staff's and OPC's reservations concerning the NREL study and its underlying assumptions which ground the Petition's program offerings. The Commission gives little weight to the study since it does not include any analysis of the anticipated change in actual EV adoption levels that would be stimulated by the proposed programs. Neither the Signatory Parties nor any proponent of the EV Portfolio has offered evidence to substantiate the proposed EV measures in the Petition as optimal values. Likewise, participants have pointed to uncertainty in the data with regard to public demand for EVs and whether the proposed EV charging expansion will actually lead to the adoption of all 300,000 EVs in Maryland. There is, however, an opportunity to learn from the data gathered from these public-facing chargers to ascertain charging patterns, assess impacts on grid reliability, track EV adoption progress, identify

[225] MEA Second Comments at 6.

additional targets for EV charging expansion and competitive entry, and develop EV-suited rate design and load management programs to support EV growth in Maryland.

In due consideration of the State's policies toward EV adoption and clean air, as well as the Commission's own priorities for grid reliability, efficiency and optimization, the Commission finds that it is in the public interest to allow the Utilities to own and operate a limited number of public charging stations to jumpstart the deployment of a public EV charging network, reduce EV owner range anxiety in the near term, and lay the foundation for a competitive market to develop in this space. Accordingly, the Commission approves the Utilities' respective Public sub-portfolio offerings, subject to the following modifications:

- BGE, Delmarva, and Pepco are authorized to install, own, and operate approximately half of the EV chargers proposed under their respective sub-portfolios in the Petition as follows:

Company	Approved Measures
BGE	500
Delmarva	100
Pepco	250

- PE is authorized to proceed with its full complement of requested chargers under the Public sub-portfolio, in order to establish a statistically significant sample size compared to the other Utilities;
- PE may seek recovery of its program costs through distribution rates following a future base rate case, as with the other Utilities;

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- The Utilities are directed to locate public EV charging equipment only at property leased, owned, or occupied by a unit of State, county, or municipal government for public use and, to that end, the Utilities shall work with state, municipal and local government entities to determine the siting locations for these public EV chargers; and
- The Utilities must ensure that the public charging equipment complies with all applicable COMAR reliability and safety requirements.

On a related note, Staff and other participants raise cost allocation concerns in connection with public EV charging stations. Staff cautions that allocation of public charger costs across all rate classes, based on revenue levels, will result in cross-subsidization and unfairly ascribe costs to, and raising rates for, customer classes that do not use the chargers (e.g., lighting class or larger commercial class).[226] Instead, Staff recommends that the Commission require the Utilities to create a separate public charging station rate class for the purpose of cost allocation.[227] This would allow all costs associated with public chargers "to be directly allocated to that class and would allow each electric company to use a Cost of Service Study to determine the proper rates needed to cover the costs of the charging station."[228] The Commission agrees with Staff that a separate rate class for public charging stations should avoid the difficulties associated with socializing these costs to all rate classes and then determining the rate needed to cover the costs of the public stations.[229] Therefore, the Commission finds that the creation of a separate rate class for EV charging stations is warranted. The Commission need not address the question of cost allocation at this time but, instead, directs the Utilities to develop a new rate class for EV charging stations and submit tariff

[226] Staff Initial Comments at 10.
[227] Staff Second Comments at 6.
[228] *Id.*
[229] *See id.*

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proposals for EV charging. The Utilities shall track the usage of the public stations and use this data to further adjust the tariffs. The Commission will address cost allocation at the appropriate time in a future rate case proceeding.

As a condition of this authorization, the Utilities are directed to file with the Commission semi-annual reports for the duration of this five-year pilot study on their public EV charging services, as further described in the reporting requirements section of this Order. The reports shall be based on a Commission-approved template and shall include, without limitation, the number of public charging stations installed under each Utility program, the location of the charging stations, program costs, and comprehensive usage data.

F. Innovation Sub-Portfolios

BGE, Delmarva, and Pepco also include in their respective proposals Innovation sub-portfolios that provide grant funding for innovative ideas "designed to serve multiple users and/or multiple tenant applications" as well as projects designed to serve underserved and low-income areas and facilitate access to vehicle electrification benefits.[230] Staff and other participants in this proceeding support the Innovation sub-portfolios' focus on underserved areas and mass transit electrification.

Under these programs, the Utilities' proposed incentives would cover up to 50 percent of the costs for accepted projects, net of all other available grants, incentives, and discounts. The various Innovation proposals do not, however, commit to any specific programs that would be pursued if the Commission decided to approve this grant funding option. Notwithstanding the capped amounts on the rebate incentives, only BGE's

[230] Petition at 47.

proposal is tailored to a definitive number of EV chargers—490 chargers in total. Neither Delmarva nor Pepco provide such parameters, only their requested budget amounts.

The Petition seeks a combined budget amount of $14,237,788, which is apportioned among the Utilities as follows: $7,261,788 for BGE; $1,913,000 for Delmarva; and $5,063,000 for Pepco. However, nothing in the record, outside of the comments in support of the Petition, appears to justify such a large expenditure. Given other, outside efforts to advance EV charging within the state and elsewhere, the Signatory Parties have not demonstrated a need in this area that cannot be met through partnerships with other agencies and organizations.

As noted earlier, the Commission observes that the objectives of BGE's and the PHI Utilities' proposed Innovation offerings partially overlap with the role of EVIC and its legislative mandate to, among other things, develop recommendations for implementing a statewide EV infrastructure, propose policies to promote EV integration within the State, and pursue goals that advance EV utilization in Maryland. EVIC also acknowledges this overlap, noting specifically that EVIC has been asked to assess policies "that make it easier to install EV charging infrastructure at multi-family housing locations with attention to high density, urban populations."[231] EVIC states in its comments that it expects to play an instrumental role in implementing the Petition, if it is approved by the Commission. In addition to EVIC, the Commission observes that MEA, MDE, and other agencies have been and continue to remain engaged in the statewide effort to deploy EV charging, offering for example additional funding opportunities for

[231] EVIC Final Comments at 3.

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charging infrastructure, including plans to invest $11.3 million from the Volkswagen settlement toward EV charging. The Commission finds that continued coordination among EVIC, these state agencies, and the Utilities presents the best pathway to rapidly and equitably expanding EV infrastructure in Maryland. Notably, Delmarva and Pepco propose to partner with MEA and MDE to review project proposals as part of their Innovation programs.

Based on the record before the Commission, the Utilities have not demonstrated sufficient need to justify the $14 million in total costs for the Innovation sub-portfolios. Notwithstanding the Non-Residential and Public sub-portfolio offerings by the Utilities, the Commission finds there are other agencies that may be better suited and situated to supplement the charging needs of the underserved and LMI communities in the near term. Rather than duplicate the efforts of EVIC and other state agencies, the Commission directs the Utilities to work with these resources to develop programs aimed at advancing equitable access to transportation electrification. Accordingly, the Petition's proposed Innovation sub-portfolios are denied at this time.

G. Technology Sub-Portfolios

As a final component of their proposed programs, BGE, Delmarva, and Pepco include separate Technology Demonstration sub-portfolios aimed at further increasing public benefits. BGE proposes to implement a "managed charging" evaluation program at designated EV chargers installed at BGE facilities. The program would leverage the network capabilities of EV smart chargers to facilitate load management by controlling the level of EV charging during peak demand periods. To alert and engage customers in this EV load management functionality, BGE would develop communication, user

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education and support tools. BGE would assess the deployment of software capabilities, operations reliability and impact, customer education and notification requirements, and user reaction and satisfaction.[232] BGE's offering carries no incremental cost impact to the company's EV portfolio.

By comparison, Delmarva and Pepco each propose three ratepayer-funded Technology Demonstration Projects: (1) DC Fast Charging with Energy Storage, (2) Virtual V2G Demonstration, and (3) Public Charging Interoperability.[233] Additionally, the PHI Utilities propose to apply "an updated version of [the] Green Rider to the Electric Service for public Level 2 and public DC Fast Chargers," which, through RECs procured from the Maryland Renewable Portfolio Standard Mix, would allow PHI to create a network of "carbon-free" Level 2 and DC Fast Chargers.[234] The total Technology project costs for Delmarva and Pepco are estimated to be $803,000 and $2,063,000, respectively.[235]

As with the other components of the Portfolio, the Commission weighs the perceived benefits of these proposals against their cost impact to ratepayers. Proponents of the Petition argue that these technology offerings collectively address goals and objectives identified by the EV Work Group and, if approved, would allow the utilities to explore novel approaches to further increase public benefits.[236] Staff recommends denial of these Technology proposals because they are experimental and have not been shown to provide a clear benefit to ratepayers. Staff states that if the Utilities wish to pursue and

[232] Petition at 48-49.
[233] Petition at 153, Attachment G – Technology Sub-Portfolio.
[234] *Id.*
[235] *Id.* at 154-55.
[236] Petition at 47-48; Montgomery Cnty Add'l Comments at 4.

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evaluate experimental techniques that would expand their knowledge of EV charging, they should not be allowed to do so using ratepayer funds. OPC similarly opposes the approval of the Technology sub-portfolios insofar as the program costs are shifted to residential ratepayers.[237] Like Staff, OPC questions the proposals' direct benefits to residential ratepayers.[238] However, MEA supports BGE's managed charging pilot offering and recommends that the Commission further adopt managed charging capabilities throughout the state. Where advances in EV charging technology coupled with a growing number of EVs can place significant stress on the distribution grid during peak system hours, managed charging can "assist utilities to better perform their roles as the operators of the distribution grid in a future of expansive EV ownership."[239]

Pursuant to the Commission's charge to set just and reasonable rates, the Commission has historically followed the well-accepted ratemaking principle that investment cost recovery from ratepayers does not begin until the associated assets are placed in service and used and useful in rendering service. While the instant matter is not a rate proceeding, the Utilities intend to recover these and other program costs in a future rate case proceeding. The Commission agrees with Staff that the proposed Technology projects, at least with respect to the PHI Utilities, are too experimental and the benefits unknown so as to justify the costs to ratepayers at this stage. For this reason, the Commission denies Delmarva's and Pepco's Technology Demonstration sub-portfolios.

The Commission is, however, persuaded that BGE's managed charging pilot study provides a potential mechanism for smoothing out EV TOU charging demand

[237] OPC Final Comments at 6.
[238] *Id.*
[239] MEA Initial Comments at 6.

through the off-peak period. This load management program, offered at no additional, incremental cost to the ratepayer, is consistent with a key policy goal with respect to an EV charging pilot, to incentivize deployment of EV charging equipment in a manner that will increase the efficiency and reliability of the electric distribution system. The Commission therefore approves BGE's Technology Demonstration proposal to implement a managed charging program, and we encourage the PHI Utilities as well as PE to propose similar managed charging programs. In view of the Commission's approval of smart charger incentives under the various components of the Portfolio, the Commission directs the Utilities to take advantage of and maximize all the available features of the smart chargers.

H. Other Proposed Items

1. Reporting Requirement and Future Proceedings

In Case No. 9453, the Commission set forth factors, advocated by MEA, for successfully developing and evaluating a pilot billing program by BGE, which include:[240]

- Clear goal(s) established at the beginning of pilot program development;
- Evaluation metrics linked to those goal(s) that will inform whether the goal(s) are achieved;
- An evaluation plan developed before final pilot approval;
- An estimate of pilot program implementation costs;
- Public sharing of key pilot program data after pilot is complete, and at regular intervals during the pilot if appropriate;
- Public review of pilot results by the Commission;

[240] *In re Baltimore Gas and Electric Company Request for Approval of a Prepaid Pilot Program and Request for Waivers of COMAR and Commission Orders*, Order No. 88438, at 19-20 (October 25, 2017).

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- A clear transition plan for current customers (e.g., customers could remain on the pilot tariff until the Commission evaluations the results and reaches a decision, but enrolling new customers is prohibited); and
- A firm sunset date – any extension, amendment or permanent authorization must be affirmatively approved by the Commission.

Where the Commission has previously stated that the appropriate factors for evaluation may vary depending on the design and goals of the proposed pilot, the Commission finds that the above-listed factors provide relevant guidelines for the instant Petition.

To comply with the above-listed parameters, the Signatory Parties describe goals and metrics specific to each Utility sub-portfolio.[241] They also propose a program implementation strategy[242] as well as an EV Evaluation, Measurement, and Verification plan to be conducted by an independent, third-party EM&V contractor.[243] The proposed implementation strategy outlines, over the pilot's five-year period, an active deployment stage with semi-annual reporting as well as a mid-course review followed by a final review to evaluate the progress and performance of the Portfolio in two legislative-style hearings before the Commission.[244] For a transition plan, after the pilot study concludes, customers enrolled in a pilot program or rate offering can elect to continue in that posture pending a final decision by the Commission to extend or expand the applicable program. Otherwise, customers will be transitioned to their prior rate class or competitive service, as appropriate.[245] The Signatory Parties state that during program implementation, any

[241] Petition at 32, Attachment A – PC44 EV Work Group Goals and Objectives Matrix, Attachment C – Residential Sub-Portfolio, Attachment D – Non-Residential Sub-Portfolio, Attachment E – Public Sub-Portfolio, Attachment F – Innovation Sub-Portfolio, Attachment G – Technology Sub-Portfolio.
[242] Petition at 32-35.
[243] *Id.* at 36.
[244] *Id.* at 33.
[245] *Id.* If the Commission declines to extend or expand an EV program, customers enrolled in that program offering will be transitioned to SOS or a competitive service, as appropriate. *Id.*

lessons learned and underlying key data collected will be made "publicly available at defined intervals during and following completion of the programs … ."[246]

The Utilities will subsequently file the resulting EM&V reports in the Commission's public docket. As previously stated in this Order, the Commission's approval of specific incentive proposals in the Portfolio, as discussed and modified herein, is conditioned on the Utilities adhering to a reporting requirement. The EM&V plan outlined in the Petition is therefore approved, subject to the modified reporting metrics described below.

The schedule for Utility reporting will be as follows:

- The Utilities shall file in the Commission's EV Portfolio public docket, semi-annual progress reports, with a Q1/Q2 Report due on August 1st and a Q3/Q4 Report due on February 1st of the following year.
- A mid-course EV program evaluation report shall be due on Sept 15, 2021.
- A final EV program report shall be due on March 1, 2024.

Future proceedings on the semi-annual reports and the mid-course and final program reviews will occur as follows:

- Each semi-annual report will be reviewed at an Administrative Meeting.
- The mid-course program review will take place via legislative-style hearing in October/November 2021.
- The final program review will take place via legislative-style hearing in May 2024.

[246] *Id.* at 32 (noting further that the data collected pursuant to the pilot and subject to public disclosure will be aggregated and anonymized consistent with Utility policies to protect personally-identifiable information).

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The Commission will endeavor to issue a timely order following the conclusion of the final program review. To ensure consistency in reporting metrics among the Utilities for their EV programs, the Utilities shall standardize their semi-annual reporting by following a template developed by the Commission. A draft template is attached to this Order as Attachment A. The Utilities shall work with Commission Staff to finalize the reporting template prior to filing the first semi-annual report.

2. Cost Recovery

BGE, Delmarva, and Pepco propose to recover the revenue requirement associated with their respective sub-portfolios through electric distribution rates in a future rate case proceeding. As such, BGE and the PHI Utilities seek to place their EV program costs, i.e., rebates, program administration, education and outreach, in a regulatory asset amortized over a five-year period.[247] The regulatory asset would then earn a rate of return once the balance is incorporated into rate base in a future rate case proceeding. The capital costs associated with BGE's and PHI's EV charging equipment would be included in rate base and depreciated over the useful lives of the equipment. The Petition assumes a 15-year useful life for EV charging assets.[248] In a future rate case proceeding, the revenue requirements would be calculated consistent with the utility's most recent base rate case and allocated to customer classes using the percentage of base distribution revenue from the most recent rate case.[249] Notably, the residential sub-portfolio revenue requirement would be allocated solely to the residential classes, and the

[247] Petition at 54.
[248] *Id.*
[249] *Id.* For BGE, the Petition references Commission Case No. 9406 as the most recent base rate proceeding. For Delmarva, the Petition references Commission Case No. 9455 as the most recent base rate proceeding. And for Pepco, the Petition references Commission Case No. 9443 as the most recent base rate proceeding. *Id.* at 55.

non-residential sub-portfolio similarly allocated only to the non-residential classes. BGE, Delmarva, and Pepco propose to allocate the mixed-use sub-portfolio revenue requirements to all customer classes.[250]

PE, by contrast, proposes to recover the revenue requirement associated with its sub-portfolios through a surcharge rider assigned to the appropriate customer class, and amortize its EV program costs over five years. Costs would include directly assigned costs respective to each sub-portfolio, as well as allocated program management and consumer awareness costs.[251] PE's Residential sub-portfolio revenue requirement would be allocated solely to the residential classes. Its Non-Residential and Public sub-portfolio revenue requirements would be allocated solely to the non-residential classes.[252] The monthly surcharge rate for each calendar year of the five-year amortization period would consist of the amortized amount for the rate-effective year plus a pre-tax authorized rate of return on the remaining unamortized balance.[253] Additionally, PE proposes to offset the surcharge by all revenues at the EV charging locations that exceed the standard tariff charge for separately-metered service locations.[254]

The Commission has generally recognized that a surcharge is a departure from the industry's long-standing rate-making process, permitting contemporaneous cost recovery without comprehensive Commission review of such costs. Therefore, it has historically been reserved for circumstances in which it is demonstrated that rate base recovery would be inappropriate. The Commission is not convinced that the ratemaking process could

[250] *Id.* at 55.
[251] *Id.*
[252] *Id.*
[253] *Id.* at 56.
[254] *Id.*

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not incorporate an EV charging pilot program; in fact, three of the four Utilities are proposing to recover these costs through the ratemaking process. PE has not demonstrated why its circumstances warrant a different form of recovery; the Commission finds that PE's proposed rider is not appropriate for this study when it is yet to be established that PE's various sub-portfolio offerings will achieve the stated goals or deliver benefits to ratepayers. Given the limited cost-benefit assessments presented in this matter, the Commission cannot find that the overall benefits to ratepayers within PE's service territory are sufficiently clear as to justify the proposed upfront surcharge on PE ratepayers. Therefore, the Commission directs all the Utilities to seek cost recovery through traditional ratemaking in a future rate case proceeding, as proposed by BGE, Delmarva, and Pepco.

Finally, while the Commission does find that recovery through base rates is appropriate for costs related to the EV charging pilot programs, the Commission supports MEA's recommendation for transparency regarding ratepayer financing of these EV pilots, and therefore directs the Utilities to include a disclosure to customers that clearly identifies EV program costs. The EV Work Group is directed to develop uniform guidance to the Utilities on properly estimating and calculating these costs and how the cost information should be presented to ratepayers.

3. Budget Management Flexibility

The Signatory Parties request that the Commission provide the Utilities "a certain degree of flexibility in regard to the management of the proposed budgets so that the approved use of ratepayer dollars may be targeted to the most productive and efficient

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manner possible as market conditions fluctuate."[255] The Signatory Parties seek, among other things, freedom and flexibility to shift incentive dollars between programs within a sub-portfolio. They contend, however, that the overall sub-portfolio budgets would remain binding on the Utilities, subject to modification by the Commission.

In view of the Portfolio's cost burden to ratepayers, even as reduced per this Order, the public interest requires that the Commission hold the Utilities accountable to their cost projections, both globally and within each program. The Commission's decisions vis-à-vis each Utility's offerings are based not only on the program details, as filed, but also upon careful consideration of salient factors, such as the cost impact of a specific program. To the extent the Utilities wish to make a material change to a program offering at a later time, consistent with Commission practice, the Utilities shall follow Commission procedure by seeking approval for the change at that time. It would be premature and contrary to the public interest for the Commission to allow—or essentially pre-approve—any reallocation of ratepayer dollars without knowing any details associated with the program change. The request is therefore denied.

4. Customer Education and Outreach

The Signatory Parties propose an EV Portfolio Customer Education and Outreach Strategy, wherein the Utilities would each commit approximately five percent of their planned total program costs to support a comprehensive customer education and outreach campaign.[256] As described, the campaign would endeavor to "enhanc[e] customers' and the public's awareness of EV technology and the availability of EV charging throughout

[255] *Id.* at 33-34.
[256] *Id.* at 39.

their respective service territories."[257] The campaign would use a variety of resources, such as communication channels, to impact awareness both locally and regionally, as well as leverage regional collaborative efforts and private-public partnerships to maximize non-ratepayer funding streams.[258] Because customer education and outreach is a vital component of a viable strategy to increase EV penetration in Maryland, the Commission approves the Utilities' proposal to commit a maximum of five percent of their planned programmatic costs as part of a Customer Education and Outreach strategy. The Commission notes, however, that a separate EV Portfolio Communications Advisory Board is unnecessary insofar as "education and outreach" is already a duty given to EVIC by the legislature. So, to avoid public confusion, unnecessary costs and the duplication of efforts, the Utilities are directed to work with EVIC and the PC44 EV Work Group to develop and implement their Customer Education and Outreach plans.

5. EV Portfolio Advisory Council

The Signatory Parties propose to form a separate stakeholder-driven EV Portfolio Advisory Council to discuss ideas that may provide insight into potential next steps for an EV infrastructure.[259] While the Petition clearly identifies the proposed Advisory Council as a stakeholder work group, the Commission finds this proposal duplicative of EVIC and the PC44 EV Work Group, which are already established. The Commission does not envision the EV Portfolio to be the end of the PC44 collaborative process. Accordingly, the Signatory Parties' request is denied.

[257] *Id.*
[258] *Id.*
[259] *Id.* at 61.

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6. Grid Modernization Funding

Related to the proposed creation of an EV Portfolio Advisory Council, the Signatory Parties request authorization to use up to $370,000 of grid modernization funding pursuant to Commission Order No. 88128 for "three potential work streams that could be overseen by the EV Portfolio Advisory Council … ."[260] Notwithstanding the potential benefits of studies aimed at enhancing access to EV charging, fast charging, and electrified transportation, the Commission denies the request to establish an EV Advisory Council. To the extent these concepts are discussed within the EV Work Group, the Work Group can decide then whether to bring these proposals before the Commission. To approve the use of grid modernization funds at this time would be premature. The Signatory Parties' request is therefore denied.

IV. CONCLUSION

The Commission's decision today realigns EV charging among the state's public utilities to supplement current and future state environmental and transportation electrification goals. Implementing a coordinated and well-planned charging infrastructure will play an important role in helping Maryland achieve its greenhouse gas reduction goals and support the growth in EVs throughout a major portion of the state. Based on the record and considering the size, scope and potential impact of the various program offerings in the EV Portfolio, the Commission finds it is in the public interest to approve EV charging pilot programs that test a limited EV charging deployment at a reduced cost to limit exposure to Maryland ratepayers. Such a pilot will nonetheless

[260] *Id.* at 62.

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provide valuable insight into Maryland's trajectory toward achieving its ZEV and climate goals as well as "lessons learned" to help EVIC, the Commission and stakeholders evaluate grid impacts, technology capabilities, and load management strategies to determine the appropriate next steps for implementing an efficient and reliable charging network in Maryland.

IT IS THEREFORE this 14th day of January, in the year Two Thousand Nineteen, by the Public Service Commission of Maryland,

ORDERED: (1) That the Proposal to Implement a Statewide Electric Vehicle Portfolio ("Petition") submitted by the Public Conference 44 Electric Vehicle Work Group Leader and other Signatory Parties is hereby approved in part and denied in part, as described herein;

(2) That the Residential sub-portfolios proposed by the Utilities—Baltimore Gas and Electric Company ("BGE"), Delmarva Power & Light Company ("Delmarva"), Potomac Electric Power Company ("Pepco"), and the Potomac Edison Company ("PE")—are approved as modified herein;

(3) That the Utilities' Non-Residential sub-portfolios are approved as modified;

(4) That the Utilities' Public sub-portfolios are approved as modified;

(5) That the Utilities' Innovation sub-portfolios are denied;

(6) That BGE's Technology sub-portfolio is approved, as described herein;

(7) That Delmarva's and Pepco's Technology sub-portfolios are denied;

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(8) That the Petition's request for a temporary waiver of COMAR 20.25.01.01(B), COMAR 20.25.01.04(A)(2), and COMAR 20.25.01.05(H) for the duration of the 2019-2024 EV Portfolio program cycle is approved;

(9) That the classification of smart chargers as electric submeters and the temporary waiver of COMAR 20.25.01.01(B), COMAR 20.25.01.04(A)(2), and COMAR 20.25.01.05(H) for the duration of the 2019-2024 EV Portfolio program cycle shall not divest a customer of the consumer protections applicable to the customer's primary account under COMAR 20.32, which shall extend to EV pilot participants for the duration of the 2019-2024 EV Portfolio program cycle;

(10) That the Petition's proposed Evaluation, Measurement, and Verification plan is approved, subject to the reporting requirement and schedule described herein, and the Utilities shall work with the Commission's Technical Staff to finalize the draft reporting and metrics template attached to this Order as Attachment A and, thereafter, file semi-annual reports to the Commission based on that document, in its public docket, as described herein;

(11) That BGE's, Delmarva's and Pepco's cost recovery proposals are hereby approved;

(12) That PE's proposed cost recovery method through a surcharge rider is denied, and PE is further directed to seek recovery of its EV charging program costs in a future rate case proceeding, similar to BGE, Delmarva, and Pepco;

(13) That the Petition's request for budget management flexibility is denied;

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(14) That the Petition's proposed customer education and outreach plan is hereby approved at a maximum of five percent of each Utility's planned programmatic costs;

(15) That the Petition's request to establish an EV Portfolio Advisory Council is denied;

(16) That the Petition's request for authorization to use up to $370,000 of grid modernization funding, pursuant to Order No. 88128, is denied;

(17) That all other components of the Petition and the EV Portfolio not expressly approved herein are denied.

(18) That the Utilities shall each file revised program offerings consistent with the Commission's decisions and modifications herein, along with revised budgets to reflect those changes; and

(19) That the Utilities shall develop a new rate class for EV charging stations and submit tariff proposals that describe the rights and estimated charges for EV customers, including public station charging and non-residential charging; and

(20) That the Utilities shall file revised tariffs as directed herein.

/s/ Jason M. Stanek

/s/ Michael T. Richard

/s/ Anthony J. O'Donnell

/s/ Odogwu Obi Linton

/s/ Mindy L. Herman
Commissioners

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ATTACHMENT A

EV Portfolio Reporting Guidelines

Semi-Annual Reports (Mid-Year and Year-End)

Semi-Annual Reports are to include data during the following time periods:

First Half of the Year (Q1/Q2) - January 1st - June 30th. To be filed on August 1st.[1]

Second Half of the Year (Q3/Q4) - July 1st - December 31st. To be filed on February 1st.[2]

Semi-Annual Reports will be filed with the Commission. In addition, copies of the report should be submitted to the Commission Technical Staff, the Maryland Office of People's Counsel, and the Maryland Energy Administration. The report should be text searchable and must be accompanied by workable spreadsheets.

Executive Summary

1. Program participation and Impact Highlights
    a. Provide a summary of the portfolio offerings.
    b. Provide a list (or include as an Appendix, labeled as "Appendix A," etc.) of the chargers installed by county.
    c. Provide a highlight of the overall successes of the portfolio, while also including any major changes or issues encountered during the period.
2. Reporting Period Cost Breakdown
    a. Discuss the overall costs, broken down by cost categories (including capital costs and annual operations and maintenance costs).
3. Commission Requests
    a. Incentive, Design, Budget, Implementation changes.

Program Specifics[3]

1. Programs in Ramp-up Phase
    a. While programs are ramping up, discuss the following:
        i. Program implementation progress and roll out activities to-date

[1] When this day falls on a weekend or Holiday, the documents should be filed no later than the next business day.

[2] *Ibid.*

[3] *See* Petition at 78-97, Attachment C – Residential Sub-Portfolio; *id.* at 99-121, Attachment D – Non-Residential Sub-Portfolio; *id.* at 125-41, Attachment E – Public Sub-Portfolio; *id.* at 152-55, Attachment G – Technology Sub-Portfolio.

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ii. Explanations for changes in anticipated program implementation and provide new/updated timelines, if necessary.

2. Implemented Programs
    a. For each program, the following should be included:
        i. Update on the status of the program.
        ii. Relevant metrics that supports the status of the program.
        iii. Explanation for significant changes in participation, delivered measures, or costs from previous periods.
3. Program Specific Metrics
    a. For each program, the following should be included:
        i. Residential Programs:
            1. Participants that switch to EV/TOU rate
            2. Frequency of daily charging
            3. Length of daily charging
            4. Timing of daily charging
            5. For PHI's Smart Level 2 Chargers and EV-Only TOU Only:
                a. Total customers that opted to pay installation costs through the on-bill financing mechanism
                b. Total customers participating in Demand Response
                c. Total customers participating in Green Rider
            6. EVSE Submetering:
                a. For initial report only: Assessment of submeter functionality—*i.e.*, metrology testing procedure, standards and result—supported by technical specification sheets associated with the EV charging station metering
                b. Results of in-service performance testing:
                    i. Supporting documents
                    ii. Frequency of testing
                    iii. Maximum allowable error tolerance
                    iv. Sample size of participating submeters
                c. Customer satisfaction survey, rating the following:
                    i. Reliability of charging station

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ii. Safety of charging station

iii. Accuracy of measurement of electricity used by customer's EV

iv. Accuracy of EV portion of customer bill

v. Ability to control charging station remotely

vi. Availability of EV-only TOU rate

vii. Overall satisfaction with submetering service (including customer billing)

d. Any technical, billing, or customer service-oriented challenges encountered by Utility

e. Annual charger replacements and reasons therefor

7. For final report only: Comparison of energy use profiled between:

a. Homes receiving smart EV charger rebates with homes with EV chargers that did not receive a rebate

b. Homes currently on the offered EV rate with homes currently on the offered EV rate that receive an EV charger rebate

c. Average customer energy costs per month for off peak and on peak charging

d. Summary of charging on demand response events

ii. Non-Residential Programs:

1. The usage rate by charger type

2. The charging load profiles (both aggregate and by site type)

3. The price per kWh and usage in kWh by price charged to EV drivers

iii. Public Programs:

iv. The usage rate by charger type

v. The charging load profiles (both aggregate and by site type)

vi. The site host's pricing plan applicable to EV drivers, updated on a quarterly basis