

**ORDER NO. 90212**

UNITED BENEFIT COST ANALYSIS  
(BCA) FRAMEWORK FOR DISTRIBUTED  
ENERGY RESOURCES

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BEFORE THE  
PUBLIC SERVICE COMMISSION  
OF MARYLAND

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CASE NO. 9674  
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**Issued: May 13, 2022**

**ORDER ESTABLISHING WORK GROUP TO DEVELOP A  
UNIFIED BCA FRAMEWORK**

1. On February 23, 2022, the Commission held a legislative-style hearing to explore the process for developing a unified Benefit Cost Analysis (“UBCA”) framework for all Distributed Energy Resources (“DERs”) in Maryland. For the reasons discussed below, the Commission directs the establishment of a work group to address the development of a Maryland-specific, UBCA framework.

**I. BACKGROUND**

2. On December 1, 2021, in Case No. 9478, the Leader of the Electric Vehicle Benefit Cost Work Group (PC44) filed a report recommending that the Commission open a new proceeding to examine a UBCA framework for all Distributed Energy Resources (“DERs”) in Maryland.<sup>1</sup> The report asserted that as the grid continues to modernize, it is important that the Commission have a framework in place to measure the cost-effectiveness and potential rate impacts across all

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<sup>1</sup> Recommendation for New Unified Benefit Cost Analysis (BCA) Proceeding December 1, 2021 (“EV Leader Report”), Maillog No. 238014, Case No. 9478, *In the Matter of the Petition of the Electric Vehicle Work Group for Implementation of a Statewide Electric Vehicle Portfolio*.

DERs to ensure that future projects can be reviewed adequately, in support of meeting Maryland's climate and energy policies.<sup>2</sup>

3. In response to the report, the Commission issued a Notice Initiating a New Docket, Notice of Virtual Hearing, and Request for Comments on December 16, 2021. The Notice docketed Case No. 9674, established a proceeding to examine a UBCA framework for DERs in Maryland, and scheduled a virtual, legislative-style hearing for February 23, 2022. The Commission's Notice also requested that interested parties file comments by February 16, 2022 addressing: (1) the practical use of a UBCA for stakeholders, (2) the role of a UBCA in Commission proceedings; and (3) suggested methodologies, procedures, or vehicles for developing the UBCA.

4. Comments were filed by the Northeast Energy Efficiency Partnerships ("NEEP"); the Building Performance Association ("BPA"); Ceres and the Ceres Energy Optimization Workgroup ("Ceres"); Baltimore Gas and Electric Company, Delmarva Power & Light Company, and Potomac Electric Power Company (collectively, the "Joint Exelon Utilities"); The Potomac Edison Company ("Potomac Edison"); Washington Gas Light Company ("WGL"); the Maryland Energy Administration ("MEA"); the Maryland Office of People's Counsel ("OPC"); and Technical Staff ("Staff"). Additionally, during the Commission's February 23, 2022 hearing, John Shenot provided comments on behalf of the Regulatory Assistance Project.

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<sup>2</sup> *Id.* at 2.

## II. PARTY POSITIONS

### A. Northeast Energy Efficiency Partnerships<sup>3</sup>

5. NEEP supports the development of a universal framework to measure cost-effectiveness and potential rate impacts across all DERs, in order to comprehensively and consistently evaluate proposals to evaluate state decarbonization goals and programs.<sup>4</sup> NEEP asserts that a UBCA will align energy efficiency, demand response programs, and long-term infrastructure planning with State climate and equity efforts and encourage programs that fulfill the needs of the grid and the goals of the State. Additionally, NEEP argues that a UBCA will provide guidance to utilities on how to design programs to achieve State energy priorities. In order to successfully develop the UBCA, NEEP asserts that the Commission should use the process outlined in the National Standards Practice Manual (“NSPM”) for DERs and ensure opportunities for robust and meaningful stakeholder involvement.

### B. The Building Performance Association<sup>5</sup>

6. BPA asserts that a UBCA will provide increased transparency and efficiency in the assessment of energy resources, and will “ensure DERs are evaluated on an equal playing field and can be compared consistently and comprehensively with each other and with alternative resources.”<sup>6</sup> BPA argues that a UBCA framework with consistent principles, methodologies, and assumptions applied across all DER types will promote DERs and facilitate the State reaching its ambitious greenhouse gas abatement and renewable energy targets. Additionally, BPA states that a UBCA will improve the efficiency and transparency of Commission

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<sup>3</sup> Founded in 1996, NEEP is one of six Regional Energy Efficiency Organizations funded, in part, by the U.S. Department of Energy, to support state efficiency policies and programs. <https://neep.org/about-neep>.

<sup>4</sup> NEEP Comments at 1-2.

<sup>5</sup> BPA is a 501(c)(6) industry association committed to redefining the industry by supporting policies that will improve and increase the expansion of home and building performance, energy efficiency businesses, and industries. BPA Comments at 1, n. 1.

<sup>6</sup> BPA Comments at 1.

proceedings by providing a consistent framework for considering the value of DERs.<sup>7</sup> Finally, BPA contends that the NSPM for DERs would be a helpful guidance document for developing a UBCA framework in Maryland to apply to all DERs.

**C. Ceres and the Ceres Energy Optimization Workgroup**<sup>8</sup>

7. Ceres contends that Maryland’s benefit cost analyses should be modernized to align with the State’s greenhouse gas reduction goals and other policy priorities. Ceres advocates in favor of a UBCA, arguing that valuations should not fluctuate significantly across working groups and programs that operate within the Commission’s purview. Ceres notes that EmPOWER’s Future Programming Work Group has relied on parts of the NSPM in formulating potential updates to cost effectiveness tests for energy efficiency and asserts that the NSPM would provide useful guidance to Maryland in developing a UBCA framework for all DERs.<sup>9</sup>

**D. The Joint Exelon Utilities**

8. The Joint Exelon Utilities recommend that the Commission decline the proposal to adopt a UBCA. They contend that a UBCA framework is impractical, given the complexity involved with each DER program. The Joint Exelon Utilities argue that benefit cost analyses are necessarily idiosyncratic and that BCA methodologies must adapt to and be flexible for different DERs, depending on the multi-layered policy and program goals for each DER program.<sup>10</sup>

9. In lieu of a UBCA, the Joint Exelon Utilities recommend that the Commission convene a work group of interested stakeholders “to develop a handbook of value streams and cost calculation methodologies that can be applied when analyzing a wide variety of DER initiatives

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<sup>7</sup> *Id.* at 3.

<sup>8</sup> Ceres is a nonprofit sustainability advocacy organization whose goal is to build a more just and sustainable global economy. Its related work group includes over two dozen companies focused on enhancing opportunities for energy efficiency investment at the state and local levels. Ceres Comments at 1.

<sup>9</sup> *Id.* at 2.

<sup>10</sup> Joint Exelon Utilities Comments at 3.

and program proposals.”<sup>11</sup> The Joint Exelon Utilities assert that the handbook would provide a significant measure of consistency while also enabling the Commission, in individual DER proceedings, to consider and determine the appropriate benefit and cost streams to include.<sup>12</sup> The Joint Exelon Utilities recommend that existing DER programs—including the EmPOWER Energy Efficiency program and the Electric Vehicle and Energy Storage pilot programs—should have the option, but not the obligation, to utilize the handbook. Finally, the Joint Exelon Utilities recommend that a Public Utility Law Judge preside over the proposed work group to facilitate development of the handbook.

#### **E. The Potomac Edison Company**

10. Potomac Edison asserts that the NSPM would provide a sound framework for the development of individual BCAs for use in Maryland; however, Potomac Edison argues that “there is no detailed ‘one-size fits-all’ BCA-computation that can, or should, be applied to all DERs in Maryland.”<sup>13</sup> Potomac Edison contends that the NSPM should be used to define high-level principles and guidelines and to reflect Maryland-specific policies and conditions, which will enable reasonable high-level comparisons and policy decisions across DER types. However, Potomac Edison states that although a BCA framework can inform utility judgments about specific projects or investments, no BCA can substitute for the utilities’ independent, experienced judgment as to how to maintain safe and reliable service on utility systems. Potomac Edison maintains that the responsibility for the specifics of system planning and operations lies with each individual utility.<sup>14</sup>

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<sup>11</sup> *Id.* at 2.

<sup>12</sup> *Id.* at 4.

<sup>13</sup> Potomac Edison Comments at 1.

<sup>14</sup> *Id.* at 6.

## **F. Washington Gas Light Company**

11. WGL does not comment in favor or against a UBCA; however, it asserts that it is important for the Commission to develop clear definitions of the types of DERs that would be covered by a UBCA. For example, WGL observes that DERs may include thermal storage, fuel cells, combined heat and power, energy storage, demand response, electric vehicles, microgrids, and energy efficiency.

## **G. Maryland Energy Administration**

12. MEA supports exploring the use of a UBCA across multiple DERs, provided that such efforts do not violate the ability of the utilities to maintain the safety and reliability of their systems.<sup>15</sup> MEA asserts that the Whitepaper on Electric Vehicle BCA Methodology submitted in PC44 would provide a suitable straw proposal to begin discussion on this topic.<sup>16</sup>

13. MEA supports establishing a system value of resiliency as it pertains to ensuring reliable sources of power to customers. For example, MEA states that a survey-based methodology could be used to measure a Maryland customer's "willingness to pay."<sup>17</sup> MEA states that less time-consuming and expensive methods of measuring the value customers place on resiliency include market-based approaches, regional economic modeling, blackout studies, and literature reviews. MEA contends that resiliency valuation could be used to appropriately price potential projects based on their ability to add resiliency or reliability at critical locations throughout the grid. Additionally, MEA supports exploration of a locational value study for the Maryland grid, in order to provide location-based improvements to grid resilience.<sup>18</sup> MEA recommends that if

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<sup>15</sup> MEA Comments at 1, 6.

<sup>16</sup> Whitepaper: Electric Vehicle Benefit/Cost Analysis Methodology by the Maryland Joint-Utilities, prepared by Mark Warner, Gabel Associates Inc.

<sup>17</sup> MEA Comments at 2.

<sup>18</sup> *Id.* at 3. *See also* Hr'g. Tr. at 56 (Opsal).

the Commission elects to approve the use of a social cost of carbon in UBCA calculations, it should use the three percent discount rate established at the federal level, rather than the two-and-a-half percent rate employed in the Whitepaper. Finally, MEA recommends that socioeconomic equity considerations be included in the UBCA framework, such as through the U.S. Environmental Protection Agency’s Environmental Justice Screening and Mapping Tool (“EJSCREEN”).

#### **H. Office of People’s Counsel**

14. OPC supports the development of a UBCA that can be applied consistently across all DERs. OPC argues that cost-benefit analyses in Commission proceedings to date have been relatively “siloeed,” such that the application of different tests across DERs could lead to inconsistent results and uneconomic outcomes to ratepayers.<sup>19</sup> Moreover, OPC asserts that a UBCA will improve transparency, allow for the comparison and prioritization of DER investment options, enhance regulatory certainty, and create efficiencies within work groups and dockets before the Commission.<sup>20</sup> OPC further argues that a UBCA framework can help the Commission optimize all types of DERs to identify the least-cost means to meet the Greenhouse Gas Reduction Act, Renewable Portfolio Standard, and the goals for transforming Maryland’s electric grid articulated in PC44.<sup>21</sup>

15. In order to develop the UBCA, OPC recommends that the Commission initiate a work group of all interested stakeholders to develop a jurisdiction-specific cost effectiveness test—the Maryland Test, which will include the identification of Maryland’s policy goals and utility and

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<sup>19</sup> OPC Comments at 2-3.

<sup>20</sup> OPC further argued that a UBCA could create significant economies of scale. Hr'g. Tr. at 63 (Lane).

<sup>21</sup> OPC Comments at 6.

non-utility system impacts.<sup>22</sup> OPC recommends that the work group be facilitated by a Public Utility Law Judge. Next, OPC states that a common set of definitions and parameters should be developed through public comments and technical sessions (rather than through the work group) in order to create a value for each impact.<sup>23</sup> Finally, OPC recommends that the Commission develop a more uniform approach to evaluate the equitable distribution of the benefits and costs from DERs, in order to achieve a more equitable distribution of costs and benefits.

### **I. Technical Staff**

16. Staff supports the development of a UBCA framework for DERs in Maryland. Staff argues that a UBCA will assist the Commission by accurately valuing the quantifiable and qualitative benefits associated with different types of DERs and ensuring that all DERs are treated consistently.<sup>24</sup> Additionally, Staff asserts that a UBCA framework for DERs will benefit electric utilities and stakeholders by shaping future DER distribution system planning practices with greater transparency as to how the Commission may evaluate the prudence of utility investments in DERs as an alternative to traditional solutions.<sup>25</sup>

17. In developing the UBCA framework, Staff recommends that the Commission include existing work by the EV and EmPOWER Maryland work groups, the PC44 Energy Storage Work Group in Case No. 9619, and the NSPM. Staff also argues that the UBCA framework should provide a structure for conducting benefit cost analyses across a wide range of DERs and be flexible to account for the differences in DERs. Staff states that a UBCA framework should consider the following factors: a primary test for each DER; secondary tests to consider the impact on participants, ratepayers and utility operations; appropriate discount rates; utility

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<sup>22</sup> Hr'g. Tr. at 60-61. (Zeichner); Hr'g. Tr. at 67 (Lane).

<sup>23</sup> OPC Comments at 8.

<sup>24</sup> Staff Comments at 1-2.

<sup>25</sup> See Hr'g. Tr. at 58-59 (Opsal).



impacts; participant impacts; and environmental impacts.<sup>26</sup> Finally, Staff contends that the development of the UBCA framework should be informed by several DER benefits, including: the deferral or avoidance of transmission and distribution system upgrades; optionality; reliability and the value of avoided outages; power quality; distributed generation hosting capacity; and resilience.

### **III. COMMISSION DECISION**

18. The Commission accepts the recommendation of the Leader of the Electric Vehicle Work Group to develop a UBCA framework for DERs in Maryland—a Maryland-specific UBCA—and finds that numerous potential benefits may accrue from this investment.

19. Currently, cost-benefit analyses before the Commission have been idiosyncratic, involving the application of different tests across multiple DERs, which could lead to inconsistent results. As discussed during the hearing by Regulatory Assistance Project witness Shenot, a common weakness among states in BCA practices is inconsistent treatment of DERs, including through the use of different tests and assumptions to evaluate different DERs.<sup>27</sup> For example, Mr. Shenot observed that a state commission or utility may use a utility cost test to evaluate an energy storage program, a societal cost test to evaluate an energy efficiency program, and a total resource cost test to evaluate a third DER.

20. The consequences of this inconsistent approach can be significant. “If you don’t use the same or similar tests and methods for different types of DERs, the chances are you’re going to overinvest or underinvest in some of them and you might put too much money into a DER

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<sup>26</sup> Staff Comments at 3.

<sup>27</sup> See Hr'g. Tr. at 23-24 (Shenot), noting “[i]t is actually really common for us to see states and utilities across the country use different tests for each type of distributed resource.”

program when there was a utility investment that could have solved the problem at less cost – or greater benefit or vice versa.”<sup>28</sup>

21. In contrast, a UBCA framework would more accurately value the quantifiable and qualitative benefits associated with different types of DERs and ensure that all DERs are treated consistently. As discussed by Amanda Best, Senior Commission Advisor and Leader of the Electric Vehicle Benefit Cost Work Group: “The primary purpose of a unified BCA framework is to ensure all DERs are assessed consistently against supply alternatives and each other to optimize the total investment in DERs relative to the level of investment in different DERs.”<sup>29</sup> A UBCA will better align energy efficiency, demand response programs, and long-term infrastructure planning with State climate and equity efforts and encourage programs that fulfill the needs of the grid and the goals of the State.

22. A UBCA framework may also assist the Commission and stakeholders to identify the least-cost means to achieve Maryland policy goals, including those articulated by the Greenhouse Gas Reduction Act, the Renewable Portfolio Standard, and the goals for Transforming Maryland’s Electric Grid contained in PC44. As discussed by Mr. Shenot, “the more you can drive towards a ... more uniform approach, the better off you’re going to be in terms of protecting ratepayer interests and ensuring that you’re getting the most benefit at the least cost.”<sup>30</sup>

23. A UBCA should also increase transparency and efficiency in the assessment of energy resources. In contrast to a siloed approach to valuing the impacts of different DERs, where utilities are obligated to commission studies and hire consultants to develop values for assessing

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<sup>28</sup> Hr'g. Tr. at 23-24 (Shenot).

<sup>29</sup> Hr'g. Tr. at 8 (Best).

<sup>30</sup> Hr'g. Tr. at 28 (Shenot).

each DER technology, a UBCA will create efficiencies within work groups and dockets before the Commission by allowing DERs to be evaluated holistically under common assumptions and evaluation criteria. The adoption of a unified Maryland test for all DERs should also provide utilities greater regulatory certainty in preparing filings, by making clear those benefits and costs that should be included and the approved methods for valuing the impacts.

24. For the reasons discussed above, the Commission establishes a work group to develop a Maryland-specific UBCA. In the past, the Commission has relied on the electric vehicles work group as a *de facto* forum for the discussion of a cost benefit test for DERs. However, the Commission finds, and the parties at the hearing agreed, that it is appropriate to create a work group at this time to focus on the Maryland UBCA.<sup>31</sup> The work group shall be assisted by a consultant who will be funded by utility contributions that were made in the Exelon-PHI merger related to the grid-of-the-future proceeding (PC44).<sup>32</sup>

25. In endeavoring to develop a UBCA framework, the work group should consider the principles and steps included in the NSPM.<sup>33</sup> For example, the NSPM outlines how stakeholders can identify state policy goals, develop a list of impacts that apply to all DERs, and align the

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<sup>31</sup> See Hr'g. Tr. at 73. (Stanek).

<sup>32</sup> See Case No. 9361, *In the Matter of the Merger of Exelon Corporation and Pepco Holdings, Inc.*, Order No. 86990, which provides at Condition 14 the following:

No later than July 1, 2016, Delmarva and Pepco shall make a filing with the Commission requesting that the Commission initiate a proceeding to examine opportunities to transform the electric distribution grid, including the incorporation of smart-grid technology, microgrids, renewable resources, and distributed generation. As part of this filing, the companies shall request formation of a collaborative stakeholder process to study relevant issues. Exelon shall fund up to \$500,000 for the Maryland Public Service Commission to retain a consultant to study relevant issues and/or facilitate the proceeding, and Delmarva and Pepco shall not seek recovery in utility rates of this funding.

<sup>33</sup> The goal of the NSPM is to provide “objective, policy- and technology-neutral, and economically sound guidance” for developing a primary DER cost-effectiveness test, or modifying an existing primary test. See National Energy Screening Project at <https://www.nationalenergyscreeningproject.org/national-standard-practice-manual/state-references/>. To date, 11 states have either applied or are in the process of applying NSPM principles to develop their own cost effectiveness tests.

state's primary tests used for cost benefit analysis with those policy goals.<sup>34</sup> In addition to the NSPM, the work group should consider the existing work of the Electric Vehicle Benefit Cost Work Group, the EmPOWER Maryland work groups, and the Energy Storage Work Group in Case No. 9619, *In The Matter of the Maryland Energy Storage Pilot Program*.

26. The Commission provides certain caveats to the work group as it endeavors to develop a Maryland-specific UBCA framework. First, the Commission agrees with Staff that the UBCA should be flexible to account for differences in DERs, including differences in costs and benefits.<sup>35</sup> The goal of developing a consistent framework does not mean that the test must be identical across different DERs and utilities. There may be impacts (benefits or costs) that are unique to a given DER. Likewise, there may be impacts (benefits or costs) that are unique to a given utility. Additionally, the Commission does not intend to surrender its discretion by adopting an inflexible mathematical formula that would mandate the approval or rejection of a given project. The purpose of the UBCA is to better inform stakeholders and the Commission about available choices that will promote the realization of State goals and policies. Similarly, the Commission agrees with Potomac Edison that the UBCA should not be designed to substitute for the utilities' independent, experienced judgment as to how to maintain safe and reliable service on utility systems. Responsibility for system planning and operations lies with each individual utility.

27. Finally, MEA raised issues related to determining the value of resiliency to Maryland ratepayers, conducting a locational value study, and quantifying the appropriate discount rate. The Commission finds that it would be premature to resolve those issues at this time, but it may address them at a later date as the work group proceeds to develop the Maryland-specific UBCA.

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<sup>34</sup> Hr'g. Tr. at 22 (Shenot).

<sup>35</sup> Hr'g. Tr. at 71 (Hurley).

With regard to the socioeconomic equity considerations raised by MEA, the Commission agrees that the work group should consider those issues.

**IT IS THEREFORE**, this 13th day of May, in the year Two Thousand Twenty-Two, by the Public Service Commission of Maryland,

**ORDERED:** That a work group is established to address the development of a Maryland-specific, UBCA framework.

*/s/ Jason M. Stanek* \_\_\_\_\_

*/s/ Michael T. Richard* \_\_\_\_\_

*/s/ Anthony J. O'Donnell* \_\_\_\_\_

*/s/ Odogwu Obi Linton* \_\_\_\_\_

Commissioners