

**PUBLIC SERVICE COMMISSION OF THE DISTRICT OF COLUMBIA  
1325 G STREET NW, SUITE 800  
WASHINGTON, DC 20005**

**ORDER**

**December 8, 2023**

**GENERAL DOCKET NO. 2019-04-M, IN THE MATTER OF THE IMPLEMENTATION  
OF THE 2019 CLEAN ENERGY DC OMNIBUS ACT COMPLIANCE REQUIREMENTS,  
Order No. 21938**

**I. INTRODUCTION**

1. By this Order, the Public Service Commission of the District of Columbia (“Commission”) reviews the Clean Energy Act Implementation Working Group’s (“CEAIWG”) Report and Recommendations on the development of a standardized benefit-cost analysis (“BCA”) framework for the Commission.<sup>1</sup> The Commission adopts several of the CEAIWG’s Recommendations and opens Phase 2 of this proceeding. Phase 2, to be separated into two parts (Part A and Part B), will establish an interim BCA screening tool to be implemented in Phase 2, Part A, with additional, more difficult-to-quantify portions of the test to be completed in Phase 2, Part B. The societal cost test (“SCT”) will be relied upon as the primary BCA test, and the total resource cost test (“TRC”) will serve as the secondary test to provide affordability guidance. To develop the BCA, the Commission will issue a Request for Proposal (“RFP”) within 30 days of the date of this Order for a consultant to build a BCA framework and a standardized Commission SCT and TRC model according to the guidance contained within this Order. The Commission also grants the Potomac Electric Power Company’s (“Pepco”) Motion for Leave to Submit Comments (“Pepco’s Motion”)<sup>2</sup> and accepts into the record both Pepco’s Comments and the Joint Reply to Pepco’s Motion and Comments.<sup>3</sup>

**II. BACKGROUND**

2. The Council of the District of Columbia (“D.C. Council”) enacted the Clean Energy Amendment Act of 2018 (“CEDC Act”) on March 22, 2019.<sup>4</sup> Section 103 of the Act amended D.C. Code § 34-808.02 to require that, in supervising and regulating utility or energy companies,

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<sup>1</sup> *GD2019-04-M, In the Matter of the Implementation of the 2019 Clean Energy DC Omnibus Act Compliance Requirements (“GD2019-04-M”), Framework for Compliance with the Clean Energy Omnibus Amendment Act of 2018 (CEDC Act) of the District of Columbia (“CEAIWG Report” or “BCA Report”), filed November 16, 2021.*

<sup>2</sup> *GD2019-04-M, the Potomac Electric Power Company’s Motion for Leave to Submit Comments and Comments on the CEAIWG Report (“Pepco’s Comments”), filed January 31, 2022.*

<sup>3</sup> *GD2019-04-M, Joint Parties’ Reply to the Potomac Electric Power Company’s Motion for Leave to Submit Comments and Comments on the CEAIWG Report (“Joint Response”), filed February 10, 2022.*

<sup>4</sup> D.C. Law 22-257, CleanEnergy DC Omnibus Amendment Act of 2018, effective March 22, 2019.

the Commission shall consider the “effects on global climate change and the District’s public climate commitments.”

3. The Commission released a Notice of Inquiry (“NOI”) initiating this matter on September 26, 2019, to invite public comment on the analytical approach that it should take when considering the effects of utility proposals on global climate change and the District’s public policy commitments, including whether specific greenhouse gas (“GHG”) emissions reporting requirements, metrics for GHG emissions reduction, and carbon footprint metrics should be used.<sup>5</sup> The Commission indicated that it was seeking responses and recommendations that further the Commission’s “MEDSIS Vision Statement”<sup>6</sup> for modernizing the District’s energy delivery system, which includes both electric and gas systems.

4. Comments were filed by the Center for Biological Diversity; Solar United Neighbors of D.C. (“DCSUN”) and Pace Energy and Climate Center; District Department of Energy and Environment (“DOEE”); Environmental Defense Fund; the Office of the People’s Counsel for the District of Columbia (“OPC”); Pepco; Sierra Club; Washington Gas Light Company (“WGL”); and Daniel Marcin.<sup>7</sup>

5. In the November 25, 2019, NOI, the Commission also indicated that it would hold a technical conference to further consider stakeholder input on this matter.<sup>8</sup> The first technical conference was convened on March 30, 2020. At that time, the current and all future technical conferences were redesignated as CEAIWG meetings to discuss and develop a set of recommendations for the Commission on a proposed analytical framework.<sup>9</sup>

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<sup>5</sup> *GD-2019-04-M*, Commission’s Notice of Inquiry, rel. September 26, 2019.

<sup>6</sup> “MEDSIS” means “Modernizing the Energy Delivery System for Increased Sustainability.” Order No. 19984 rebranded the MEDSIS Initiative as PowerPath DC. *See Formal Case No. 1130, In the Matter of the Investigation into Modernizing the Energy Delivery System for Increased Sustainability* (“FC 1130”), Staff Proposed Opinion and Order, Order No. 19984, rel. August 2, 2019. References in this Order to PowerPath DC can be assumed to include MEDSIS and vice versa.

<sup>7</sup> *GD2019-04-M*, Center for Biological Diversity’s Response to Commission’s Notice of Inquiry, filed January 13, 2020; *GD2019-04-M*, Solar United Neighbors of D.C. and Pace Energy and Climate Center’s Response to Commission’s Notice of Inquiry, filed January 13, 2020; *GD2019-04-M*, District Department of Energy and Environment’s Response to Commission’s Notice of Inquiry, filed November 12, 2019; *GD2019-04-M*, Environmental Defense Fund’s Response to Commission’s Notice of Inquiry, filed January 13, 2020; *GD2019-04-M*, The Office of the People’s Counsel for the District of Columbia’s Response to Commission’s Notice of Inquiry, filed January 13, 2020; *GD2019-04-M*, Potomac Electric Power Company’s Amended Response to Commission’s Notice of Inquiry, filed January 15, 2020; *GD2019-04-M*, Sierra Club’s Response to Commission’s Notice of Inquiry, filed January 13, 2020; *GD2019-04-M*, Washington Gas Light Company’s Response to Commission’s Notice of Inquiry, filed January 13, 2020; and *GD2019-04-M*, Daniel Marcin’s Response to Commission’s Notice of Inquiry, filed November 5, 2019.

<sup>8</sup> *GD2019-04-M*, Commission’s Notice of Inquiry, ¶10, rel. November 25, 2019.

<sup>9</sup> *GD2019-04-M*, First Working Group Meeting Minutes, filed April 7, 2020.

6. The D.C. Council enacted the Racial Equity Achieves Result Amendment Act (“REACH Act”) on March 16, 2021.<sup>10</sup> Among other things, the REACH Act created the Office of Racial Equity and added racial equity-related performance measures to agencies’ annual performance plans.

7. Based on the CEAIWG’s work and discussions, the CEAIWG Report was filed on November 16, 2021.<sup>11</sup> The work of the CEAIWG focused on recommending “an overall cohesive and systematic analytical approach to enable the [Commission] to address and assess, in an economically sound and consistent manner, the universe of regulated activities that it oversees which can result in climate impacts, whether associated with mitigation or adaptation.”<sup>12</sup> The Report contained several Recommendations for the adoption of a BCA framework for the Commission.

8. On January 31, 2022, Pepco filed a Motion and accompanying Comments, requesting the Commission grant the Motion and accept its comments regarding the CEAIWG Report.<sup>13</sup> Pepco raises concerns that are also reflected in the CEAIWG Report. OPC, DCCA, DOEE, GRID2.0, DCSUN, and Sierra Club filed a joint response requesting that the Commission reject Pepco’s Comments because they attempt to circumvent the CEAIWG process in favor of Pepco’s unilaterally preferred approach.<sup>14</sup>

9. On September 21, 2022, the D.C. Council enacted the Climate Commitment Act of 2022 (“Climate Commitment Act”). The Climate Commitment Act, among other things, accelerates the District’s carbon neutrality commitment to 2045, as well as adds District-wide interim targets for GHG reductions between 2025 and 2050 to the following levels:

- (1) Not less than 45% below 2006 greenhouse gas emission levels by 2025;
- (2) Not less than 60% below 2006 greenhouse gas emission levels by 2030;
- (3) Not less than 70% below 2006 greenhouse gas emission levels by 2035;
- (4) Not less than 85% below 2006 greenhouse gas emission levels by 2040; and
- (5) A level consistent with carbon neutrality by 2045 and in each year thereafter.<sup>15</sup>

10. On February 28, 2023, Center for Biological Diversity, Chesapeake Climate Action Network, Chesapeake Solar and Storage Association, DCCA, DC Environmental Network, and

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<sup>10</sup> D.C. Law 23-181, Racial Equity Achieves Results (REACH) Amendment Act of 2020, effective March 16, 2021.

<sup>11</sup> *GD2019-04-M*, Framework for Compliance with the Clean Energy Omnibus Amendment Act of 2018 (CEDC Act) of the District of Columbia (“CEAIWG Report” or “BCA Report”), filed November 16, 2021.

<sup>12</sup> BCA Report at 14.

<sup>13</sup> *GD2019-04-M*, Pepco’s Motion and Comments.

<sup>14</sup> *GD2019-04-M*, Joint Response.

<sup>15</sup> D.C. Code § 8–151.09d.

Grid 2.0 filed a letter with the Commission requesting urgent action on several climate items, including the development of the BCA framework.<sup>16</sup>

11. On March 20, 2023, the Intergovernmental Panel on Climate Change (“IPCC”) released the synthesis report for its sixth Assessment Report (“AR6”).<sup>17</sup>

### **III. DISCUSSION**

#### **A. Pepco’s s Motion for Leave to Submit Comments and Comments**

12. Prior to discussion of the Working Group Recommendations, the Commission addresses Pepco’s Motion and the Joint Response thereto. The Commission has broad authority in managing its docket. Generally, the Commission will grant a request of this nature if good cause is shown.<sup>18</sup> Here, Pepco argues good cause exists to grant the Motion because its Comments will provide the Commission a complete and fulsome record when making decisions in this proceeding. The Joint Parties counter that Pepco’s proposal in the Comments would amount to erasing the work of the CEAIWG in favor of a proposal supported by a single stakeholder. As such, the Commission should reject Pepco’s proposal.<sup>19</sup> Joint Parties state many of Pepco’s proposed comments are already docketed in the CEAIWG Report and, therefore, are unnecessary to provide the Commission with a complete record.<sup>20</sup>

13. Though stakeholders, with guidance from Commission Staff, provided extensive comments both in the body of the Report and in the attached Appendices A and B to the Report, the Commission has routinely approved stakeholders’ motions to submit additional comments.<sup>21</sup> The Commission accepts into the record both Pepco’s Comments and the Joint Response. However, we reject Pepco’s proposal in its Comments to use its BCA framework as a strawman, and instead we adopt our own framework in this Order.

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<sup>16</sup> *Formal Case No. 1050, In the Matter of the Investigation of the Implementation of Interconnection Standards in the District of Columbia; Formal Case No. 1156, In the Matter of the Application of the Potomac Electric Power Company for Authority to Implement a Multiyear Rate Plan for Electric Distribution Service in the District of Columbia; GD-2019-04-M, and Formal Case No. 1167, In the Matter of the Implementation of the Climate Business Plan, Letter from Center of Biological Diversity, Chesapeake Climate Action Network, Chesapeake Solar and Storage Association, DC Climate Action, DC Environmental Network, and Grid 2.0 Working Group, filed February 28, 2023.*

<sup>17</sup> See <https://www.ipcc.ch/assessment-report/ar6/>.

<sup>18</sup> See, e.g., *Formal Case No. 1175, In the Matter of Washington Gas Light Company’s Application for Approval of PROJECTpipes 3 Plan*, Order No. 21573, ¶ 10, rel. February 17, 2023.

<sup>19</sup> Joint Response at 2.

<sup>20</sup> Joint Response at 3.

<sup>21</sup> See, 15 DCMR § 105.8 (1981). (“Written motions may be filed at any time in accordance with this chapter. Responses to a written motion shall be filed no later than ten (10) calendar days after a motion has been served.”).

## B. The Working Group Recommendations

14. The Recommendations included in the CEIAWG Report are addressed in this section.<sup>22</sup> The Commission adopts certain Recommendations now and initiates Phase 2 of this proceeding. In Phase 2, we will retain a consultant to develop our BCA model. In Phase 2, Part A, the consultant shall develop an interim BCA model and will quantify all costs and benefits approved in this Order. This work is expected to be completed and submitted to the Commission for final approval and adoption within six months from the date a contract is executed between the Commission and its consultant. In Phase 2, Part B, the consultant will quantify additional costs and benefits for addition to the model developed in Part A. The part A model will contain placeholders for the unquantified benefits to be included. This work is expected to be completed and submitted to the Commission for final approval within 12 months from the date a contract is executed between the Commission and its consultant. Stakeholders will have an opportunity for further comment at the conclusion of Phase 2, Part A, and at the conclusion of Phase 2, Part B. Over time, further refinement and improvement of the developed BCA model is anticipated.

15. **Recommendation 1 (Majority)**: “The following three GHGs should be quantified and monetized in the BCA framework: Carbon Dioxide (CO<sub>2</sub>), Methane (CH<sub>4</sub>), and Nitrous Oxide (N<sub>2</sub>O). Two other GHGs — Hydrofluorocarbons (HFCs) and Sulfur hexafluoride (SF<sub>6</sub>) — should be tracked when applicable, but not quantified or monetized in the BCA at this time.”<sup>23</sup>

16. **Non-Consensus Positions**: Pepco agreed that HFCs and SF<sub>6</sub> should be tracked but expressed the desire to weigh which cases may warrant their inclusion, and that only well-defined values be used. WGL raised concerns about the inclusion of N<sub>2</sub>O, stating that the relative quantity emitted is miniscule. DCCA stated that HFCs and SF<sub>6</sub> should be quantified and included in the framework, rather than tracked. GRID2.0 asked that an explanation for why HFCs and SF<sub>6</sub> are not currently included be provided, as well as a date by when they will be included.<sup>24</sup>

17. **Decision**: The Commission adopts the CEIAWG Recommendation on monetizing CO<sub>2</sub>, CH<sub>4</sub>, and N<sub>2</sub>O. The consultant shall quantify the cost/benefit of reduction/addition of these three gases in Phase 2, Part A, based on our decisions regarding the Social Cost of Carbon (“SCC”) and the global warming potential (“GWP”) of these gases. The Commission’s consultant shall quantify and value HFCs and SF<sub>6</sub> in Phase 2, Part B. It should be noted that, while the quantity of HFCs and SF<sub>6</sub> may or may not be “miniscule,” such climate pollutants have a high GWP, and therefore should not be excluded on that basis.

18. **Recommendations 2 & 3 (Majority)**: “Apart from GHG, the following air pollutants should be tracked now for inclusion after 2 years or sooner in the Public Health portion of the BCA: NO<sub>x</sub>, SO<sub>2</sub>, and Particulate Matter (PM), with PM<sub>2.5</sub> noted separately. [Note: NO<sub>x</sub> in

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<sup>22</sup> All the Recommendations will be designated as “Recommendation No. (Majority or Non-Majority).” There were no unanimous recommendations among the CEIAWG members on any of its Recommendations.

<sup>23</sup> BCA Report at 17.

<sup>24</sup> BCA Report at 19.

this majority recommendation refers to Nitrogen Oxides other than N<sub>2</sub>O which is a GHG.]”<sup>25</sup> “The geographic boundary for criteria air pollutants should be based on the same boundaries that are used to determine the emissions factors. For direct particulate matter (PM), the boundary should be DC, MD, VA.”<sup>26</sup>

19. **Non-Consensus Positions:** GRID2.0, DCCA, Sierra Club, and OPC requested that PM<sub>2.5</sub> be recorded separately from total PM, partially because the pollutant is a result of diesel combustion.<sup>27</sup> WGL raised concerns that including local criteria pollutants would divert focus from GHG reductions and emphasized the need for equitable treatment of pollutant accounting across utilities. WGL stated that all geographic boundaries should be tied to the emission source and area of impact in a logical way. Pepco recommended using PJM as an electrical boundary, due to Pepco’s concern that different geographic regions for emissions would result in a benefit-cost model that is not internally consistent. DCCA deferred to DOEE, pointing out that there is no nexus between gas supply and PJM. DOEE’s Air Quality Division suggested the following boundaries: for NO<sub>x</sub> and SO<sub>x</sub>, the boundary should include neighboring states based on their relative contribution determined by the government entities for the Clean Air Act, and for direct PM the boundary should be the DC-MD-VA region. OPC suggested that the reporting of local air pollutants should be disaggregated at the ward level to identify localized impacts of avoided pollution.<sup>28</sup>

20. **Decision:** The Commission agrees with the Recommendation that air pollutants should be tracked and monetized in the BCA framework and agrees with certain stakeholders that PM<sub>2.5</sub> should be tracked and monetized separately from total PM. The Commission agrees with DOEE’s Air Quality Division, the District’s authority on air pollution, that the boundaries for NO<sub>x</sub> and SO<sub>x</sub> should include neighboring states based on relative contribution determined by the government entities for the Clean Air Act, and for direct PM it should be the DC-MD-VA region. The Commission will arrange for a presentation by DOEE’s Air Quality Division to the Commission Staff and the Commission’s consultant 45 days after execution of the contract between the Commission and the consultant, where the Air Quality Division shall present its recommendations for monetizing these pollutants and finalizing their boundaries. The consultant shall, based on DOEE’s recommendations and other relevant research, quantify air pollutants in Phase 2, Part A.

21. **Recommendations 4 & 28** (Majority): “The BCA should include metrics for social equity, racial equity, and environmental justice. These metrics should include both energy and non-energy benefits, including access to clean energy, across income, race, and geography.”<sup>29</sup>

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<sup>25</sup> BCA Report at 19.

<sup>26</sup> BCA Report at 20.

<sup>27</sup> BCA Report at 20, Appendix B at 201-202.

<sup>28</sup> BCA Report at 21.

<sup>29</sup> BCA Report at 21.

“Equity should be addressed at the feeder level in an effort to account for distributional/geographical factors.”<sup>30</sup>

22. **DOEE Recommended Definitions:** The following are definitions of the metrics proffered for inclusion by DOEE.<sup>31</sup>

1. Equity (or Social Equity) - “Equity is the guarantee of fair treatment, advancement, opportunity and access for all individuals while striving to identify and eliminate barriers that have prevented the full participation of some groups and ensuring that all community members have access to community conditions and opportunities to reach their full potential and to experience optimal well-being and quality of life.”<sup>32</sup>

2. Racial Equity - “Racial Equity means the elimination of racial disparities such that race no longer predicts opportunities, outcomes, or the distribution of resources for residents of the District, particularly for persons of color and Black residents.”<sup>33</sup>

3. Environmental Justice - “Environmental justice is the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income, with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. This goal will be achieved when everyone enjoys: the same degree of protection from environmental and health hazards, and equal access to the decision-making process to have a healthy environment in which to live, learn, and work.”<sup>34</sup>

4. Energy Justice - “Energy justice requires not only ending disproportionate harm, it also entails involvement in the design of solutions and fair distribution of benefits, such as green jobs and clean air...Energy justice requires: Distributive justice with equitable allocation of risks and opportunities; procedural justice with access to decision-making power; and recognition justice involving respect for all peoples and worldviews.”<sup>35</sup>

5. Energy Burden - “Energy burden is defined as the percentage of gross household income spent on energy costs.”<sup>36</sup>

23. **Non-Consensus Positions:** WGL advocated for relying on the ratepayer impact measure (“RIM”) test and proposed a long-term, multi-sector integrated resource plan. WGL supported a quantitative approach to equity, reliability, and resilience, augmented by the inclusion

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<sup>30</sup> BCA Report at 86.

<sup>31</sup> BCA Report at 24-25.

<sup>32</sup> Definition from International City/County Management Association.

<sup>33</sup> Definition from District of Columbia Council Office of Racial Equity.

<sup>34</sup> Definition from US Environmental Protection Agency.

<sup>35</sup> Definition from National Institutes of Health.

<sup>36</sup> Definition from US Department of Energy.

of qualitative factors. Pepco noted, and WGL agreed, that associating energy usage information to neighborhood and sub-zip-code geography can be extremely difficult with existing utility databases and the limitations of customer privacy and grid security laws and regulations. DCSUN suggested that a process should be instituted to develop costs and benefits for societal impacts. DCSUN also recommended that the definition of equity should include both low- *and* moderate-income customers and their access, proportionally, to DERs and energy efficiency program benefits. GRID2.0 stressed that there is a distinction between low-income societal benefits and low-income host customer impacts. OPC agreed with other stakeholders that low-income benefits should also include moderate-income customers, and that difficult-to-monetize costs and benefits should be prioritized for the assignment of value, rather than using zero-dollar placeholders. DCCA stated that localized benefits from GHG reduction measures should prioritize low-income groups whenever possible. DOEE suggested building a secondary test that focuses solely on distributional equity to address utility investments that are only marginally cost-effective. Pepco stated that the most effective way to advance equity goals is to deploy explicit equity-focused programs and initiatives, and that such programs and initiatives should not be subject to a BCA.<sup>37</sup>

24. **Decision** The Commission accepts DOEE's definition for racial equity,<sup>38</sup> energy justice, and energy burden. Additionally, the Commission adopts these definitions for equity and environmental justice as amended:

Equity: "Equity means the consistent and systematic fair, just, and impartial treatment of all individuals, including individuals who belong to underserved communities that have been denied such treatment, such as Black, Latino, and Indigenous and Native American persons, Asian Americans and Pacific Islanders and other persons of color; members of religious minorities; lesbian, gay, bisexual, transgender, and queer (LGBTQ+) persons; persons with disabilities; persons who live in rural areas; and persons otherwise adversely affected by persistent poverty or inequality."<sup>39</sup>

Environmental justice: "The legacy of environmental racism runs decades long, and has often left America's lower-income, Black, Brown, and Indigenous communities disproportionately impacted by polluted air and water, and vulnerable to extreme weather events. And we know that throughout the nation, these communities are shouldering a heavier energy burden, with the poorest families in our country paying upwards of 30% of their income for energy

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<sup>37</sup> BCA Report at 26-27.

<sup>38</sup> The Commission notes that the definition of racial equity is consistent with D.C. Code § 2-1471.01.

<sup>39</sup> Executive Order on Advancing Racial Equity and Support for Underserved Communities Through the Federal Government, rel. January 20, 2021, <https://www.whitehouse.gov/briefing-room/presidential-actions/2021/01/20/executive-order-advancing-racial-equity-and-support-for-underserved-communities-through-the-federal-government/>.



costs.”<sup>40</sup> This “will be achieved when everyone enjoys the same degree of protection from environmental and health hazards and equal access to the decision-making process to have a healthy environment in which to live, learn and work.”<sup>41</sup>

Additionally, the Commission believes that both racial equity and energy burden metrics should be quantified where possible, recorded at the neighborhood level, and the consultant is directed to quantify these costs/benefits in Phase 2, Part B. The Commission will establish a working group and hire an equity expert facilitator to assist with the working group discussions. The working group should include the Office of Racial Equity to ensure that the development of these metrics comports with the Commission’s requirements under the REACH Act. The working group and facilitator will provide their recommendation for inclusion in Phase 2, Part B.

25. **Recommendation 5 (Non-Majority)**: “If applying carbon offsets, they must be purchased from a source that abides by one of the following standards: Climate SEED, Community Climate Biodiversity Standard (CCBA), Gold Standard, ISO14064-1, UNFCCC Clean Development Mechanism, or the Verified Carbon Standard (VCS). Note: A recommendation on carbon offsets is omitted in this WG Report because it is an issue currently being addressed in Formal Case No. 1167 and other pending cases. A determination in this proceeding will be made at a later date.”<sup>42</sup>

26. **Non-Consensus Positions**: DOEE, DCCA, and Sierra Club did not agree with the inclusion of offsets. Pepco stated that there was no explanation for why these particular organizations or certification standards were selected. WGL agreed with Pepco and did not endorse any particular agency or platform.<sup>43</sup>

27. **Decision**: The Commission finds that it is premature at this time to include offsets in a BCA framework, given that offsets are currently not part of the District’s climate plans.<sup>44</sup> Both Pepco and WGL have existing options available to them to reduce GHG emissions.

28. **Recommendation 6 (Majority)**: “To ensure that the District is moving toward its energy and climate goals, interim GHG targets should be set for the utilities every 3 years,

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<sup>40</sup> Statement adopted from the U.S. Department of Energy (<https://www.energy.gov/justice/energy-justice-dashboard-beta>).

<sup>41</sup> BCA Report at 326, citing United States Environmental Protection Agency.

<sup>42</sup> Originally, the Report included a majority Recommendation by the stakeholders to exclude offsets that were removed from the Appendix. It was the Staff’s position that offsets were inappropriate to discuss in this case. *See GD-2019-04-M, Joint Metrics, BCA Framework, and Reporting Requirements Committee Meeting Minutes* (October 29, 2021).

<sup>43</sup> BCA Report at 28-29.

<sup>44</sup> The District’s “Clean Energy DC” climate roadmap by DOEE does not include offsets in its pathway to meeting the District’s climate mandates.

beginning in 2022. The interim targets should be revised to account for shortfalls or exceedances in GHG reductions during previous performance periods.”<sup>45</sup>

29. **Non-Consensus Positions:** Pepco stated that no party addressed how interim GHG targets could be developed specific to each utility, the types of programs that the utilities could enact, the time required to design programs, what programs would be eligible to meet such targets, and the potential impact of such programs. Pepco argued that further research is required before considering interim GHG targets for the District. Both Pepco and WGL raised concerns that it was not yet clear what the methods for setting interim targets for the various utilities might be, and the possible penalties related to failure to meet interim targets, cost recovery mechanisms, and regulatory hurdles.<sup>46</sup>

30. **Decision:** Since the filing of the BCA Report, the D.C. Council has established interim targets for the District of Columbia. The Climate Commitment Act of 2021 adopted several interim targets on the path to carbon neutrality by 2045 based on reductions from 2006 as the baseline year: 45% reduction by 2025, 60% reduction by 2030, 70% reduction by 2035, and 85% reduction by 2040.<sup>47</sup> The Commission adopts those targets for Pepco and WGL and will issue an order prescribing next steps on reporting requirements for both Pepco and WGL related to these targets.

31. **Recommendations 7 & 8 (Majority):** “‘Long-Run Marginal Emissions Factors’ rather than ‘Average Emissions Factors’ should be used to estimate the emissions impact. Further, ‘Long-Run Marginal Emissions Factors’ rather than ‘Short-Run Marginal Emissions Factors’ should be used to best capture long-term impacts and structural changes to the utility system. Definitions:

Average Emissions Factor (AEF): The average CO<sub>2</sub> emissions per average unit of electricity delivered for an entire electricity system.

Short-Run Marginal Emissions Factor (SR-MEF): The change in CO<sub>2</sub> emissions relating to a unit change in electricity demand, where there is usually little structural change in the electricity system being analyzed. SR-MEF allows for short-run structural changes in the electricity system.

Long-Run Marginal Emissions Factor (LR-MEF): The change in CO<sub>2</sub> emissions relating to a unit change in electricity demand, where structural change in the electricity system is explicitly accounted for (i.e., demand-side interventions dynamically interact with power stations commissioning and decommissioning, and with system operation).”<sup>48</sup>

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<sup>45</sup> BCA Report at 29.

<sup>46</sup> BCA Report at 30.

<sup>47</sup> D.C. Code § 8–151.09d(a).

<sup>48</sup> BCA Report at 31.

“The most local values available for the emissions factors should be used, starting with the best values available and continue refining the values for DC as they become available. PJM’s latest marginal emissions data for the Pepco Zone as defined by PJM should be used.”<sup>49</sup>

32. **Non-Consensus Positions:** Pepco stated that LR-MEF relies on the use of NREL’s Cambium model to project emissions and argued that the assumptions behind any such model would need to be discussed and vetted by CEAIWG members. WGL disagreed with using the NREL values, stating that the process for setting long-term emission factors must be clarified. DCCA, GRID 2.0, and Sierra Club argued that a tailored protocol would need to be developed that is specific to DC and accounts for the District’s advanced renewable portfolio standard (“RPS”). DCSUN suggested that the emission factors be based on the highest resolution available.”<sup>50</sup>

33. **Decision:** The Commission agrees with using the most accurate and highest resolution available in calculating GHG emissions for both the electric and gas systems. The Commission adopts the use of the LR-MEF for forecasted GHG emissions system from the electric system using NREL’s Cambium model and confirming past GHG emissions by using actual dispatch data from PJM, combined with the calculated impact of the District’s RPS. For the gas system, the most accurate data available from gas purchasing, including the gas chemical content, should be relied on for GHG accounting, both in forecasting and in verification. The Commission’s consultant shall also develop a verification protocol for GHG emissions based on this decision. The Commission’s consultant is directed to complete the inclusion of this framework in Phase 2, Part A.

34. **Recommendations 9 & 10 (Majority):** “Upstream emissions of GHGs...should be included in the calculation of emissions factors for all utility generation and supply. For example, fugitive methane emissions should be included for natural gas supply and electricity generation using natural gas.”<sup>51</sup> “The upstream methane emissions attributable to each unit of natural gas delivered to the District of Columbia should be determined proportionate to the total emissions from the natural gas supply chain to the District of Columbia. The same method should be applied to the share of electricity delivered to DC that is derived from gas-fired generation.”<sup>52</sup>

35. **Non-Consensus Positions:** OPC agreed with the recommendation but stated that additional research should be undertaken. Pepco supported including distribution losses for all utilities but not embodied emissions (emissions arising from the production and processing of the natural gas supplied to the natural gas-fired power plants providing power to the PJM Interconnection). WGL opposed reporting upstream emissions and argued that including upstream emissions without allowing the use of offsets is illogical and unnecessarily results in higher costs for those least able to shoulder the cost burden. WGL also argued that excluding transportation and electric fuels from consideration would be discriminatory against gas customers. Similarly, WGL argued that the exclusion of emissions embodied in the production of renewable generation

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<sup>49</sup> BCA Report at 36.

<sup>50</sup> BCA Report at 35-38.

<sup>51</sup> BCA Report at 38.

<sup>52</sup> BCA Report at 40.

would also be inconsistent and discriminatory.<sup>53</sup> GRID2.0 suggested using a proportion of the total upstream emissions for North America.<sup>54</sup>

36. **Decision:** The Commission agrees with the Recommendation that upstream methane emissions should be included in both the electric and gas systems in recording GHG emissions. This includes emissions generated from exploration, production, gathering and boosting, processing, and transmission and compression.<sup>55</sup> Additional work is needed regarding the inclusion of upstream methane emissions. The Commission will account for upstream methane emissions based on the District's GHG Inventory practices as maintained by DOEE in Phase 2, Part B.

37. **Recommendation 11 (Non-Majority):** "The social cost of carbon (SCC) should be backed by federally recognized science and should be calculated to meet the goals of the District (carbon neutrality by 2050 and the goals of the Paris Climate Accords). Numbers that could be tailored for the District include the recent SCC from the New York Department of Environmental Conservation and the federal SCC from the Interagency Working Group on the Social Cost of Greenhouse Gases (2021 numbers). A review of the SCC is needed after changes in Federal guidelines around science and price anticipated in one year. The cost of carbon should adjust to the reality of inflation. In the BCA, the Commission should use an informational secondary test in which the marginal cost of carbon abatement is used in lieu of an SCC. If this approach is proven to be useful and science-driven, it may be added to the BCA approach going forward. The social cost of other GHGs such as Methane and N<sub>2</sub>O should be multiplied by the IPCC factors discussed in the next recommendation."<sup>56</sup>

38. **Non-Consensus Positions:** OPC, GRID2.0, DCSUN, and DOEE agreed to the idea of using the DCSEU figure of \$110.23/metric ton of CO<sub>2</sub> for consistency. DCCA, Sierra Club, Pepco, and WGL disagreed. Sierra Club argued that the cost of carbon needs to be sufficiently high to incentivize utility actions that support the achievement of the District's climate commitments, which require considering the marginal abatement costs and the specific GHG reduction goals of the District over time. Sierra Club therefore suggested using the 95th percentile scenario in the Federal guidelines coupled with a 2% discount rate.<sup>57</sup> WGL opposed the Recommendation, stating that the SCC is the single most important parameter in the BCA and considers that it is not feasible for the District to conduct this analysis independently and expect it to withstand scrutiny. WGL recommended using the Federal values published in February 2021 and objected to the use of a marginal abatement cost. WGL argued that the utility's cost of capital should be used as the discount rate. Pepco indicated that it is open to the use of the social cost of

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<sup>53</sup> BCA Report at 39-40.

<sup>54</sup> BCA Report at 40.

<sup>55</sup> See NYSEDA, New York State Oil and Gas Sector: Methane Emissions Inventory at 12-14. November 2022. <https://www.nyseda.ny.gov/-/media/project/nyseda/files/publications/energy-analysis/22-38-new-york-state-oil-and-gas-sector-methane-report-acc.pdf>.

<sup>56</sup> BCA Report at 41.

<sup>57</sup> BCA Report at 43 ("At 3% discount rate, these values are \$138 in 2025, \$152 in 2020, \$183 in 2040 and \$212 in 2050. Values at 2% discount rate are not available in the Federal guidelines, but they will be higher.").

carbon, cost of methane, and cost of nitrous oxide values that are calculated using a discount rate lower than the utility's weighted average cost of capital ("WACC") due to the intergenerational effects of GHG pollutants, if the values are based on the Interagency Working Group's ("IWG") federal cost of GHG scientific record. DOEE stated that it is important to distinguish a planning SCC, which is the proposal here, versus an actual SCC levied to ratepayers. DOEE supported the use of the DCSEU figure in the interim but suggested that the CEAIWG plan to consider using a marginal abatement cost curve in the next cycle (for reasons explained in the 2018 IPCC report). According to DOEE, the goal of this exercise is to identify a SCC that is high enough to achieve the carbon neutrality goal, and that the Environmental Protection Agency's ("EPA") current SCC (\$51) is designed to be consistent with 3 degrees of global warming, which is far removed from the District's commitment to keep the global warming to 1.5 degrees from preindustrial levels.<sup>58</sup>

39. **Decision:** The Commission agrees with many of the stakeholders that the cost applied to GHG pollution for planning purposes should be consistent with both the District's legislated climate mandates and recognized science. The District has selected a pathway to carbon neutrality by 2045,<sup>59</sup> which is in line with the international commitment to keep global heating to under 1.5 degrees Celsius.<sup>60</sup> The DCSEU currently uses a value of \$128 per short ton of CO<sub>2</sub> equivalent ("CO<sub>2e</sub>") in 2021 dollars. We adopt this value, which is \$160 per metric ton of CO<sub>2e</sub> in 2023 dollars, which we will continue to update over time. In Phase 2, Part B, the consultant will develop an implementation plan for a standardized marginal abatement cost framework for valuing GHG emissions. The Commission finds that a marginal abatement cost curve is useful in that it allows the comparison of both the financial cost and abatement benefit of different GHG abatement actions.

40. **Recommendation 12 (Non-Majority):** "GWP time scale reference should follow the latest IPCC guidance, at present AR5 (IPCC's technical guide), and updated as the IPCC releases new guidance. Specifically, GWP values should follow IPCC guidelines for 100-year potentials (as opposed to 20- or 500-year). Methane GWP should also be based on a 100-year value following the EPA protocol and GHG Protocol."<sup>61</sup>

41. **Non-Consensus Positions:** GRID2.0 recommended a shorter time frame, given rapidly changing climate conditions. DCCA recommended using a 30-year time frame to align with the District's carbon neutrality goal by 2050. DCSUN and Sierra Club recommended using a 20-year time frame given the short 10- to 12-year life span of CH<sub>4</sub>. DCSUN stated that the EPA uses the 100-year value to comply with the United Nations Framework Convention on Climate Change, while the District of Columbia has no such obligation. Pepco supported using federal regulatory values for societal costs of GHG emissions and, to the extent relevant, EPA's GWP

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<sup>58</sup> BCA Report at 43-44.

<sup>59</sup> D.C. Code § 8-151.09d(a).

<sup>60</sup> See The Paris Agreement at <https://www.un.org/en/climatechange/paris-agreement>.

<sup>61</sup> BCA Report at 44.

values to maintain consistency with other US GHG regulations and markets. WGL supported using EPA’s GWP for similar reasons.<sup>62</sup>

42. **Decision:** Since this Report was filed, the IPCC’s AR6 was released, which includes, among other things, values for GHG pollutants. Since AR6 is the most updated international science on the topic, the Commission adopts the values for each of the adopted GHG pollutants. We adopt the Recommendation to use the 100-year time horizon. We adopt the following GWPs for each of the GHG pollutants that will be evaluated in this framework: the GWP-100 of CO<sub>2</sub> is 1; the GWP-100 of fossil CH<sub>4</sub> is 29.8; the GWP-100 for non-fossil CH<sub>4</sub> is 27; the GWP-100 for N<sub>2</sub>O is 273; the GWP-100 for HFC-32 is 771; the GWP-100 for HFC-134a is 1,526; and the GWP-100 of SF<sub>6</sub> is 25,200. Information from Working Group 1’s Report to the AR6 is included below.<sup>63</sup> Other HFC values can be found in the AR6 reporting documents.<sup>64</sup> The Commission may periodically update these figures as new Assessment Reports are released.

Species	Lifetime (Years)	Radiative Efficiency (W m <sup>-2</sup> ppb <sup>-1</sup> )	GWP-20	GWP-100	GWP-500	GTP-50	GTP-100	CGTP-50 (years)	CGTP-100 (years)
CO <sub>2</sub>	Multiple	1.33 ± 0.16 × 10 <sup>-5</sup>	1.	1.000	1.000	1.000	1.000		
CH <sub>4</sub> -fossil	11.8 ± 1.8	5.7 ± 1.4 × 10 <sup>-4</sup>	82.5 ± 25.8	29.8 ± 11	10.0 ± 3.8	13.2 ± 6.1	7.5 ± 2.9	2823 ± 1060	3531 ± 1385
CH <sub>4</sub> -non fossil	11.8 ± 1.8	5.7 ± 1.4 × 10 <sup>-4</sup>	79.7 ± 25.8	27.0 ± 11	7.2 ± 3.8	10.4 ± 6.1	4.7 ± 2.9	2675 ± 1057	3228 ± 1364
N <sub>2</sub> O	109 ± 10	2.8 ± 1.1 × 10 <sup>-3</sup>	273 ± 118	273 ± 130	130 ± 64	290 ± 140	233 ± 110		
HFC-32	5.4 ± 1.1	1.1 ± 0.2 × 10 <sup>-1</sup>	2693 ± 842	771 ± 292	220 ± 87	181 ± 83	142 ± 51	78,175 ± 29,402	92,888 ± 36,534
HFC-134a	14.0 ± 2.8	1.67 ± 0.32 × 10 <sup>-1</sup>	4144 ± 1160	1526 ± 577	436 ± 173	733 ± 410	306 ± 119	146,670 ± 53,318	181,408 ± 71,365
CFC-11	52.0 ± 10.4	2.91 ± 0.65 × 10 <sup>-1</sup>	8321 ± 2419	6226 ± 2297	2093 ± 865	6351 ± 2342	3536 ± 1511		
PFC-14	50,000	9.89 ± 0.19 × 10 <sup>-2</sup>	5301 ± 1395	7380 ± 2430	10,587 ± 3692	7660 ± 2464	9055 ± 3128		

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43. **Recommendations 13 & 14 (Majority):** “The Commission should adopt a consistent Benefit-Cost Analytical Framework, based on the guidance of the ‘National Standard Practice Manual for Benefit-Cost Analysis of DER,’ that can ‘organically’ evolve in a systematic and economically sound manner to assimilate technology, policy, and market/customer changes, as well as to address multi-sited DERs and their interactive effects; multi-sectoral applications; dynamic utility system optimization planning; and coordinated end-to-end utility planning.”<sup>66</sup> “The BCA should adopt the NSPM ‘Principles’ to govern the development and application of a BCA Framework. The 8 Principles are: (1) Treat DERs as a Utility System Resource; (2) Align with Policy Goals, (3) Ensure Symmetry; (4) Account for Relevant, Material Impacts; (5) Conduct

<sup>62</sup> BCA Report at 47.

<sup>63</sup> Masson-Delmonte and Zhai, Et. Al., Climate Change 2021 The Physical Science Basis – Working Group I Sixth Assessment Report (“AR6”), IPCC (Aug. 2021), at 1017.

<sup>64</sup> AR6 at 944.

<sup>65</sup> AR6, Chapter 7: The Earth’s Energy Budget, Climate Feedbacks and Climate Sensitivity, Table 7.15.

<sup>66</sup> BCA Report at 48.

Forward-Looking, Long-term, Incremental Analyses; (6) Avoid Double-Counting Impacts; (7) Ensure Transparency; and (8) Conduct BCAs Separately from Rate Impact Analyses.”<sup>67</sup>

44. **Non-Consensus Positions**: WGL commented that the NSPM contributes to the goal of setting objective analytical standards but does not focus enough on the effect of electrification on infrastructure and reliability/resilience due to the unprecedented and non-incremental changes in electricity demand under some proposals. WGL appreciates the inclusion of the recognition of multi-sector integrated planning requirements, but its application to the gas sector is novel and its application to a specific BCA evaluation may not be able to fully capture long-term integrated planning matters. Pepco opposed this recommendation, instead arguing that a BCA methodology with sufficient detail and clarity for application should be used as a “strawman.” Pepco recommended that one of its BCA handbooks serve as the initial proposal for comment.<sup>68</sup> OPC noted that social equity is a key policy goal for the District. DOEE stated that integrated distribution planning is key to unlocking DER potential in the NSPM framework.<sup>69</sup>

45. **Decision**: The Commission will develop a standard BCA model in Phase 2, Part A, of this proceeding, which shall be updated in Part B. The Commission will direct the consultant to build the BCA model according to best practices, including strong consideration of the NSPM. The Commission’s consultant will also develop a standard BCA model based in Excel in accordance with decisions made in this Order.

46. **Recommendation 15 (Majority)**: “The basis of the development of this BCA framework is the CleanEnergy Act, also known as the DC Omnibus Act, and all other major District policies that direct and guide energy decision... thus, the selected framework should be aligned with the goals of the Act and those other District policies including MEDSIS/PowerPath DC Vision Statement and Guiding Principles.”<sup>70</sup>

47. **Non-Consensus Positions**: OPC supports the Act and setting a framework toward compliance, but stressed that the implementation must be equitable, safe, and affordable. Pepco agreed with the statement, but noted, however, that a framework alone cannot ensure that goals are met. WGL commented that the Commission’s mandate under DC Code § 1-204.93 to ensure adequate service and just and reasonable charges have not been adequately considered during this process. GRID2.0 commented that no framework can ensure the goals will be met and the Commission needs to make its policy goals explicit, based on the DC Omnibus Act. DCSUN commented that the Act is the legal basis for this framework and should be followed, but other policies, such as MEDSIS and CleanEnergy DC, should be considered.<sup>71</sup>

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<sup>67</sup> BCA Report at 51-52.

<sup>68</sup> BCA Report at 50-51.

<sup>69</sup> BCA Report at 53.

<sup>70</sup> BCA Report at 54.

<sup>71</sup> BCA Report at 55.

48. **Decision:** Since this Report was submitted, the D.C. Council adopted the Climate Commitment Act of 2022. The Commission intends to adopt a BCA framework that complies with the CleanEnergy Act and Climate Commitment Act. The Commission, in Order No. 20662, previously clarified it has “an obligation to develop a plan that furthers the purposes of the CleanEnergy Act and aligns with the targets established by Clean Energy DC and Sustainable DC.”<sup>72</sup> In Order No. 20754, the Commission also established that “to the extent that the Clean Energy DC does not conflict with the Commission’s statutory mandates, the Commission can be guided by Clean Energy DC in its review of utility proposals.”<sup>73</sup>

49. **Recommendations 16 & 18 (Majority):** “The BCA should utilize a primary societal cost test framework based on the NSPM principle to ensure alignment of relevant impacts with a jurisdiction’s applicable policy goals. When considering a straw proposal BCA, the Working Group should consider, at a minimum: Other Fuel Impacts, Resilience, GHG Emissions, Other Environmental Impacts, Public Health, Low-Income Impacts, Moderate-Income Impacts, and Geographically Distributed Impacts. Electric Utility System Impacts to be included are: Energy Generation, Capacity, Environmental Compliance, RPS/CES Compliance, Market Price Effects, Ancillary Services, Transmission Capacity, Transmission System Losses, Distribution Capacity, Distribution System Losses, Distribution O&M, Distribution Voltage, Financial Incentives, Program Administration Costs, Utility Performance Incentives, Credit and Collection Costs, Risk, Reliability, and Resilience. Gas Utility System Impacts to be included: Fuel and Variable O&M, Capacity, Environmental Compliance, Market Price Effects, Financial Incentives, Program Administration Costs, Utility Performance Incentives, Credit and Collection Costs, Risk, Reliability, and Resilience. Host Customer Impacts to be included are: Host Portion of DER Costs, Host Transaction Costs, Interconnection Fees, Risk, Reliability, Resilience, Tax Incentives, Host Customer Non-Energy Impacts, Low-Income Non-Energy Impacts.”<sup>74</sup> “Host-customer/participant impacts should be addressed in the BCA using the NSPM listed impacts: Host Customer portion of DER Costs, Transaction Costs, Interconnection Fees, Risk, Reliability, Resilience, Tax Incentives, Low-Income Host Customer Non-Energy Impacts, and Host Customer Bill Savings.”<sup>75</sup>

50. **Non-Consensus Positions:** OPC commented that low-income benefits should be expanded to a larger group (including moderate-income benefits and geographic distribution-related benefits) and that equity benefits should be monetized in the BCA. OPC added that more discussion is needed regarding how reliability and resilience would be weighted to ensure an appropriate balance between cost and risk. WGL reiterated its suggestion for an integrated planning process, suggesting a primary SCT with the RIM test as the secondary test. Pepco opposed the Recommendation due to both the ambiguity of the components and the potential for double counting. Pepco instead prefers to use its own BCA as a strawman for the next phase of this proceeding. DCSUN suggested establishing a process to determine difficult-to-quantify

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<sup>72</sup> *Formal Case No. 1142, In the Matter of the Merger of AltaGas Ltd. and WGL Holdings, Inc.* (“*Formal Case No. 1142*”) and *Formal Case No. 1167, In the Matter of the Implementation of Electric and Natural Gas Climate Change Proposals* (“*Formal Case No. 1167*”), Order No. 20662, n. 19, rel. November 18, 2020.

<sup>73</sup> *Formal Case Nos. 1142 and 1167*, Order No. 20754, ¶ 44.

<sup>74</sup> BCA Report at 55.

<sup>75</sup> BCA Report at 60.



societal impact costs and benefits. GRID2.0 supported applying the SCT within long-term integrated resource planning. DCCA and Sierra Club commented that the BCA needs to also address “delineated” host customer and participant impacts, including as they evolve over time. DOEE stated that the SCT under the NSPM should be adopted in a manner that addresses the broad range of societal, host customer, and participant impacts and goes on to say that the utility system impacts for both gas and electric should be included as well. DCCA commented that these impacts should be weighted according to the DC CleanEnergy Act goals and mandates.<sup>76</sup>

51. **Decision**: The Commission will, in Phase 2, Part A, develop a standard BCA framework using SCT and TRC tests. The SCT shall serve as the primary BCA test, and the TRC test (previously referred to by the Commission as the “All-Ratepayer Test”)<sup>77</sup> shall serve as the secondary BCA test for affordability.

52. **Recommendation 17 (Majority)**: “Inclusion of temporal and locational impacts should be quantified and monetized to the extent possible. The Commission’s upcoming Value of DER study should offer additional data when it is completed and can be considered alongside other existing and emerging methods for system planning and evaluating the net benefits of DER.”<sup>78</sup>

53. **Non-Consensus Positions**: GRID2.0 stated that a utility should undertake cost-effective methods to develop granular, accurate, verifiable data on DER temporal and locational impacts. Pepco argued that locational values could be considered pending rigorous review and that assuming useful results from the Value of DER study is premature. Pepco also noted its current non-wires alternatives (“NWA”) process already provides an indication of the value of DER. WGL commented that there needs to be a baseline of utility costs found through an integrated resource planning process to address these complex issues in a cumulative fashion. WGL noted that existing structures for program evaluation address only small incremental changes, not major changes that would be required by the bold decarbonization targets of the District.<sup>79</sup>

54. **Decision**: The Commission adopts this Recommendation. Since the CEAIWG Report was finalized, a Commission consultant has completed the Value of DER Study, which has recently been issued for public comment. In Phase 2, Part A, the consultant for the BCA will develop a framework for the inclusion of locational and temporal valuation of DER in its BCA framework based on the results of the initial Study, stakeholder comments, and best regulatory practice. In Phase 2, Part B, the Value of DER will be incorporated into the BCA test.

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<sup>76</sup> BCA Report at 57-61.

<sup>77</sup> The All-Ratepayer Test, now referred to as the Total Resource Cost Test, is designed to reflect the net cost or benefit to both program participants and non-participants as a whole. *See also, Formal Case No. 945, In the Matter of the Investigation into Electric Services Market Competition and Regulatory Practices*, Order No. 13475, rel. March 7, 2005.

<sup>78</sup> BCA Report at 58.

<sup>79</sup> BCA Report at 59-60.

55. **Recommendation 19 (Majority)**: “The BCA results will be calculated and presented in both benefit-cost ratio and net benefit form.”<sup>80</sup>

56. **Non-Consensus Positions**: Pepco recommended presenting the BCA results as net benefits rather than as a ratio, because not all value streams are clearly defined as costs or benefits. Sierra Club commented that maximizing the ratio of benefits to costs favors projects for which small benefits can be achieved at minuscule costs, and it can be more appropriate to choose projects based on maximizing total excess benefit over total cost. DOEE stated that the line items of the full calculation should be presented, and an observer should be able to reproduce the calculation with the same inputs. WGL remains concerned that while discrete BCA analysis may be fine for smaller, “no regrets” projects, it currently disregards cumulative effects of programs that may have significant impacts on supply and demand and there is no defined protocol for qualitative factors such as resilience, equity, etc.<sup>81</sup>

57. **Decision**: The Commission adopts the Recommendation, noting that for the reasons outlined by stakeholders, it will be useful to review both the ratio of benefits to costs as well as the overall net benefit of any utility proposal using both the SCT and TRC tests. The Commission also agrees with DOEE that all calculations should be made available and reproducible. Utilities are required to enter the data required for the Excel model and share the prepared model with parties.

58. **Recommendation 20 & 27 (Majority)**: “All benefits and costs should be quantified and/or monetized to the extent possible, even when difficult; a utility will use cost-effective efforts to develop/acquire and apply the best available tools, analytic methods and techno-economic practices to quantify and/or monetize benefits and costs included in the DCPSC’s primary cost-effectiveness test in connection with the planning, design and implementation of its programs that relate to the achievement of the District’s climate change, clean energy and energy efficiency mandates and associated policy commitments, taking into account recognized industry practices and techniques. The BCA should avoid double-counting impacts.”<sup>82</sup> “Impacts that cannot be monetized should be accounted for quantitatively or qualitatively. Examples of nonmonetary quantitative metrics are job-years (to value job creation impacts), and the time it takes for a utility to respond/recover to power disruptions due to hurricanes. Examples of relevant qualitative impacts are geographic diversity of investment, improved distribution planning, resilience, and environmental impacts.”<sup>83</sup>

59. **Non-Consensus Positions**: GRID2.0 suggested that the Commission be proactive in encouraging utilities to identify and apply analytical methods used to account for hard-to-quantify but material impacts. GRID2.0 also noted that BCA results for hard-to-quantify impacts that have material effects should be reported in qualitative terms. WGL stated that some quantitative results other than SCT estimates need to impact the scoring, requiring a more flexible

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<sup>80</sup> BCA Report at 61.

<sup>81</sup> BCA Report at 61-62.

<sup>82</sup> BCA Report at 62.

<sup>83</sup> BCA Report at 84.

scoring system. WGL proposed a question-and-answer rubric designed to determine cost-effectiveness with a scoring evaluation analysis where weights are assigned to quantitative SCT results, qualitatively assessed SCT impacts (e.g. resilience), and impacts that are not in the SCT (e.g., rate impacts).<sup>84</sup> Pepco stated that attempts to quantify proposed benefit categories that are theoretical, overly speculative, poorly defined, and/or subject to bias, could cause the BCA to be distorted, leading to inefficient and costly decisions, and the advancement of policy goals could be replaced by contentious proceedings. OPC asserts that important customer benefits should be monetized for inclusion in the BCA—and not valued as \$0—and flags impacts on low and moderate-income communities in particular as critical to include in BCAs.<sup>85</sup>

60. **Decision:** The Commission agrees with the stakeholders that the purpose of adopting a SCT is to ensure that difficult-to-monetize values are monetized, and that every effort should be taken to avoid double-counting. We are not adopting a SCT that uses qualitative scoring at this time and, instead, will focus on a framework for valuation of all inputs to the BCA. Benefits that will be more difficult to quantify will be valued in Phase 2, Part B.

61. **Recommendation 21 (Majority):** “BCA submissions should include a technical appendix with modeling inputs and outputs for all scenarios examined.”<sup>86</sup>

62. **Non-Consensus Positions:** Pepco commented that it is premature to consider formats for presenting BCA analyses; however, consistent with other proceedings before the Commission, any BCA and its underlying inputs should be discussed in the context of the case at hand. DOEE stated that line items should be presented with sufficient granularity to be reproducible.<sup>87</sup>

63. **Decision:** We adopt this Recommendation and agree with DOEE that calculations should be granular enough to be reproducible. The Commission will adopt a BCA framework and Excel model to be used by all stakeholders in Phase 2, Part A, of this proceeding and refined further in Phase 2, Part B.

64. **Recommendation 22 (Non-Majority):** “A consistent BCA framework should be used to assess new regulated utilities’ proposals that would assist the District in meeting and advancing its climate goals. The NSPM guidance recommends a phased approach and applies to both electric and gas utility investments. The general proposed strategy for developing an interim primary test is to use the DCSEU cost-effectiveness test (as is currently applied) as a starting point and modify that if there is a Working Group consensus. In Phase II, there will be additional

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<sup>84</sup> BCA Report at 63.

<sup>85</sup> BCA Report at 85-86.

<sup>86</sup> BCA Report at 63.

<sup>87</sup> BCA Report at 64.

working group discussion and/or a rulemaking process, based on the Commission determination.”<sup>88</sup>

65. **Non-Consensus Positions**: DOEE had concerns about relying too heavily on DCSEU’s methodology. DOEE argues that the BCA adopted in Phase 2 should be based on the work of the CEAIWG, and that the framework adopted in this docket should be informing the evaluation of utility proposals in *Formal Case No. 1167*, not the other way around. GRID2.0 proposed undertaking a rulemaking process, based on the NSPM. GRID2.0 does not believe that the DCSEU model should become the central focus, and that instead a rulemaking should be based upon the recommendations of the CEAIWG, which are approved by the Commission. Pepco recommended that a BCA methodology with sufficient detail and clarity for application be offered as a proposal or “strawman,” allowing stakeholders to provide their positions and recommended changes to this detailed BCA methodology, if any, with the Commission deciding on the BCA methodology after stakeholders are provided the opportunity to comment. Pepco recommended one of its BCA methodologies should serve as the strawman for comment. Pepco also opposed GRID2.0’s proposal for a rulemaking. DCSUN agrees with GRID2.0 that Phase 2 should involve a formal and transparent stakeholder process as Phase I has, but not necessarily a rulemaking.<sup>89</sup>

66. **Decision**: The CEAIWG Report did not provide a copy of the DCSEU’s BCA framework for the Commission to review. However, the Commission prefers to develop its own standardized BCA model that is tailored to the Commission’s needs. The Commission will adopt a standardized test to be used for evaluating utility applications in Phase 2 of this proceeding. The BCA framework will be developed by the Commission’s consultant and further refined as appropriate. An interim model will be implemented in Phase 2, Part A, with updates to the model implemented in Phase 2, Part B. The model developed in Phase 2, Part A, will go into effect, and will not be delayed by additional work in Phase 2, Part B. The Commission will provide an opportunity for further stakeholder comments in both Part A and Part B of Phase 2.

67. **Recommendation 23 (Majority)**: “The BCA guidance should include direction as to what scale a utility should conduct a BCA (*i.e.*, application scale, project specific, phases of a project, bundled projects) and when it would or would not be appropriate to conduct the BCA at that scale. As a general principle, the level of analysis required for a BCA should correspond to the size and scope of the utility proposal.

- Where relevant potential applications should be examined on a programmatic basis to address the question of scale and determine which applications require BCAs for decision making (recognizing not every application needs a BCA, if they are not likely to affect DC’s climate commitments)
- BCAs should be applied to all applications that could affect the District’s public climate change commitments, including relevant non-climate programs, large-scale

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<sup>88</sup> BCA Report at 64.

<sup>89</sup> BCA Report at 68-70.

capital projects, major infrastructure investments, and projects and spending under consideration in rate cases.

- Decisions regarding whether or not to support and advance policies that could impact climate commitments should be informed by a quantified analysis based on a BCA provided by the applicant for the decision.”<sup>90</sup>

68. **Non-Consensus Positions:** DOEE stated that in addition to the *scope* of the BCA guidance, the CEAIWG also needs to address the *scale* of the BCA implementation. WGL commented that its proposal for a long-term, multi-sector integrated resource planning process is meant to address the issue of large-scale programmatic evaluation, rather than incremental changes. WGL stated that the BCA should not be applied to utility activities not directly related to climate change, such as rate cases, reliability, and safety measures. GRID2.0 stated that the BCA guidance should discuss techniques that utilities can use to meet “materiality criteria,” such as bundling projects or clustering comparable projects within programs. GRID2.0 added that the application of BCA should be applied, under section 103 of the DC CleanEnergy Omnibus Act, to all categories of utility proposals raised for Commission review and approval that could affect global climate change and the District’s climate change commitments. Pepco argued that the BCA under development in the CEAIWG should be applied only to utility programs proposed to meet the District’s decarbonization goals. Pepco maintained that it is inappropriate to require a BCA for its traditional investments in reliability and customer-driven construction. OPC believed that BCAs should be applied to all applications that could affect the District’s climate change commitments for which the utility is seeking to rate base the costs of the programs included in the application, including relevant non-climate programs, large-scale capital projects, major infrastructure investments, and rate cases, as a broad application is consistent both with the DC Code and the Commission’s statements for commencing this investigation. Further, OPC argued that because consumers will pay the costs of any approved programs, they have a right to understand the associated climate costs and benefits of the proposed programs. To the extent the utilities are interested in proposing respective de minimis investment thresholds or categories of investments under which an objective analysis would show they have no impact on the global climate or the District’s climate commitments (*e.g.*, employee retirement benefits), OPC is open to considering and establishing such boundaries. However, OPC does not support Pepco’s suggestion to categorically exclude reliability and customer-driven construction as those investments could have climate impacts that may have the potential to be mitigated if an alternative solution (with a lower BCA score) was employed.<sup>91</sup>

69. **Decision:** We note that the use of a standardized BCA framework and SCT test will capture more societal costs and benefits than just climate impacts. As such, the development of this standardized BCA framework is intended to apply to utility proposals. The Commission notes that utilities are also welcome to propose programs and activities to the Commission that do not pass the BCA test, as the BCA tests will be one metric in our determination and is not pre-determinative at this time while we develop additional familiarity with the use of the test.

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<sup>90</sup> BCA Report at 70-71.

<sup>91</sup> BCA Report at 74-75.

Similarly, an application will not be deemed approved simply because it passes the SCT and/or TRC BCA tests.

70. **Recommendations 24 & 25 (Majority):** “The BCA Framework will use a SCT for screening all the programs or portfolio categories ... Thus, an across-the-board approach should be adopted, i.e., a single SCT applied to technology, policy, and market/customer changes, as well as multi-sited DERs and other non-DER programs/projects and their interactive effects; multi-sectoral applications; dynamic utility system optimization planning, and comprehensive end-to-end electricity and gas system planning. Different input values or emphasis may be applied when considering an empirical benefit/cost ratio calculation. For example, a shorter timeframe may be used to analyze the cost-effectiveness of storage resources.”<sup>92</sup> “The BCA may use UCT and TRC as secondary tests in the program evaluation, and a rate impact analysis, which is separate from BCA (in accordance with NSPM principles) can be used to inform rate and bill impacts.”<sup>93</sup>

71. **Non-Consensus Positions:** DOEE commented that the SCT should be applied to all utility business-as-usual programs and investments. DOEE also stated that the components included in the test should be standard, and they should be filled in with zero if they do not apply. DOEE noted that the NSPM guidance itself cautions the use of secondary tests and that it may be prudent to make the secondary test optional and ensure the use is in accordance with the NSPM guidance. DOEE is open to considering the use of the utility WACC as the discount rate for UCT as a secondary test in appropriate situations. GRID2.0 emphasized that the BCA addresses different questions than a RIM test so that a BCA cannot be used interchangeably with a RIM test. Pepco stated that a secondary test may not be necessary depending on the design of the primary test. Pepco referenced its own BCA Handbook and the New York Public Service Commission’s BCA framework as other sources to rely upon other than the NSPM. Pepco did not see a compelling need for a secondary test and stated that requiring such a test could increase administrative costs. WGL stated that large changes in demand necessitate the use of RIM in addition to the SCT. However, WGL believed that the scoring of major programs requires a question-and-answer rubric for qualitative analysis that can be used transparently. OPC supported the use of RIM but needed more information on how UCT and TRC would be used for this purpose and what value these additional tests could bring to the decision-making process.<sup>94</sup>

72. **Decision:** The Commission adopts the use of the SCT as the primary test and the TRC as the secondary test. While the CEAIWG did not recommend the use of a secondary test, we believe that it is important to include the TRC to evaluate the affordability of utility applications. Pepco and WGL must submit the results of both tests for consideration by the Commission and other stakeholders and provide all calculations in the Excel model that are visible and reproducible.

73. **Recommendation 26 (Majority):** “For the Discount Rate for the BCA analysis for DER programs, projects, plans, procurements and pricing structures, the BCA should use a societal

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<sup>92</sup> BCA Report at 76.

<sup>93</sup> BCA Report at 78.

<sup>94</sup> BCA Report at 77-79.

discount rate of 1-2.5% in applying the societal cost test as the primary test, consistent with DC's long-term policy mandates and climate commitments; in addition, the BCA could use the WACC discount rate in applying the Utility Cost Test as a secondary test. This approach would generate information regarding resources that can best serve customers over the long term, while achieving DC policy goals and mandates."<sup>95</sup>

74. **Non-Consensus Positions:** DCCA stated that a discount rate of 1% would be appropriate for environmental investments whose benefits are expected to occur over a long period. WGL believed that if the District wants utilities to use their balance sheets to support utility-operated decarbonization activities, then the utility's WACC must be utilized as it reflects the actual financing costs incurred by the utilities. WGL further stated the utility's WACC should be used for utility programs, and District financing costs for District-funded programs. If a single rate is required, it should be a combined weighted average. Pepco stated that the discount rate to be applied in the BCA generally should be the utility's WACC, noting that the WACC reflects the cost to finance utility-funded projects and programs such as those subject to the BCA, and these costs are in turn passed on to customers. Pepco also stated that, while the WACC generally should be applied, a lower discount rate may be appropriate for the discounting of the future damages due to incremental GHG emissions, given their intergenerational context, consistent with the EPA Interagency Working Group's Social Cost of Carbon estimates, and for these reasons, this recommendation should be rejected.<sup>96</sup>

75. **Decision:** The purpose of adopting an SCT for the Commission is to review the societal impacts of the Commission's decisions. To review societal impacts, we believe it makes the most sense to use a societal discount rate. Societal discount rates tend to be lower, reflecting a priority for long-term benefits and costs weighed in our decision-making. We believe that it is important to choose an exact value rather than a range, for standardization in our review of utility applications. We adopt a societal discount rate of 2% for use in the SCT. This rate may be revised over time. Note that the TRC discount rate is generally set at the utility's weighted average cost of capital ("WACC"), but the Commission shall require the consultant to determine the appropriate rate. The societal discount rate of 2% and the Pepco and WGL WACCs will be adopted in Phase 2, Part A.

76. **Recommendation 29 (Majority):** "The BCA guidance should include reliability and resilience as components to calculate benefit/cost ratio. The District currently does not have a fully supported industry methodology to measure the economic value of improved reliability or resilience for the District of Columbia. While reliability/resilience impacts (in dollars) have not been quantified for certain projects for D.C., one possible approach raised, which would require further exploration and evaluation, is for the Commission to use the DCSEU adder approach for such benefit/impact at this point until additional research or a method developed specifically for the District is approved by the Commission. Another approach is to identify key metrics that can be tracked for reliability and resilience, and to consider these quantitatively (but not monetized)

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<sup>95</sup> BCA Report at 79.

<sup>96</sup> BCA Report at 83.

when considering the resource investment. Regardless, it is recommended that reliability and resilience benefits must be demonstrated, not merely asserted.”<sup>97</sup>

77. **Non-Consensus Positions:** WGL opposed a process that does not provide for the scoring of qualitative factors. OPC noted it will need to see further information and discussion about how reliability and resilience would be included before supporting their inclusion as benefits because OPC was concerned that every infrastructure investment built in the name of reliability could be included as a benefit to the District, over and beyond levels of reliability needed to limit blackouts to acceptable standards. DOEE stated that the Value of DER study will examine the locational value of reliability and resilience. DOEE commented that there are currently calculations available to determine resilience impacts, such as the Value of Lost Load (VoLL) for commercial customers, or the Interruption Cost Estimate (ICE) Calculator developed by USDOE and Lawrence Berkeley National Lab, or the Resilient Node Cluster Analysis Tool (ReNCAT) developed by Sandia National Lab, which can be adopted and implemented right away. DOEE stated that if the CEAIWG finds resilience to be difficult to quantify due to a lack of consensus over the appropriate valuation methodology, it should be assessed and tracked even if a monetary value has not yet been assigned for resilience in all cases. GRID2.0 supported considering delineating appropriate “evaluation frameworks” for reliability and the resiliency of the District’s power system and critical energy infrastructure. GRID2.0 also supported the development of new metrics to track progress toward improving grid reliability and critical infrastructure resilience. For example, GRID2.0 agreed with DOEE’s proposal for resilience metrics to measure the ability to provide services to critical populations and critical functions, including vulnerable populations. Sierra Club argued that resilience benefits must be demonstrated, not merely asserted. Pepco stated that projects designed to satisfy expectations or standards pertaining to adequate reliability or resilience levels, or that ensure public safety, should not be subject to a BCA for approval. Consequently, Pepco concluded that only the incremental value of reliability and resilience in the BCA, between alternatives, or between implementing a project or program without a primary reliability or resilience purpose and not implementing that project or program, is relevant to the BCA. Pepco stated that, while reliability and resilience may be quantified in the BCA when a reasonable, established, and adequately supported quantification methodology to do so is available, at this time no such quantification methodology exists. Similarly, attempting to incorporate an adder in the BCA calculations to account for reliability and resilience would be arbitrary and could distort the BCA results.<sup>98</sup>

78. **Decision:** We agree with the Recommendation that both reliability and resilience should be adopted in the BCA framework and monetized. While the Recommendation offered the DCSEU’s “adder” as an interim valuation, the Report did not provide any additional information about this adder, and we decline to adopt it at this time. In Phase 2, Part B, the consultant will monetize the value of reliability and resilience, if feasible, based on the best regulatory practices, including those raised by the CEAIWG members.

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<sup>97</sup> BCA Report at 86-87.

<sup>98</sup> BCA Report at 90-91.



79. **Recommendations 30-35 (Majority)**: These recommendations deal with climate-related data reporting requirements to the Commission that would occur on an annual basis. This topic will be addressed in forthcoming Orders on data access and reporting.

#### IV. **DECISION**

80. The intended purpose of the Commission's adoption of a standardized BCA framework is to enable the Commission to help guide its decision-making in a manner that allows for the quantitative comparison of alternatives. Based on the decisions rendered above:

- The Commission will adopt a standardized BCA framework to review future programs and actions by the utilities regulated by the Commission based on best regulatory practices using the SCT as the primary test and the TRC as a secondary test. The societal discount rate will be 2% for use in the SCT, while the TRC will use Pepco's and WGL's WACCs. The discount rate may be revised in the future.
- A consultant will be selected by the Commission to develop both tests, and the consultant will develop a standardized Excel model. The BCA results will be calculated and presented in both benefit-cost ratio and net benefit form, with sufficient granularity to be reproducible and with all formulas visible. The Commission shall rely on the BCA for guidance; however, the Commission is not required to approve all initiatives that are determined to be cost-effective or to reject all initiatives that are determined not to be cost-effective.
- The Commission adopts the inclusion of CO<sub>2</sub> (GWP of 1); CH<sub>4</sub> (GWP of 29.8, and 27 for non-fossil CH<sub>4</sub>); N<sub>2</sub>O (GWP of 273); HFCs (GWP varies but based on IPCC AR6); and SF<sub>6</sub> (GWP of 25,200) as GHG pollutants. CO<sub>2</sub>, CH<sub>4</sub>, and N<sub>2</sub>O shall be quantified in Phase 2, Part A, while HFCs and SF<sub>6</sub> shall be quantified in Phase 2, Part B. The adopted SCC is \$160 per metric ton of CO<sub>2</sub>e in 2023 dollars. Upstream GHG emissions shall be included in both the electric and gas systems in recording GHG emissions. The Commission directs the use of LR-MEF for forecasted GHG emissions from the electric system using NREL's Cambium model, combined with the impact of the District's RPS. For the gas system, the most accurate data available from gas purchasing, including the gas chemical content, should be relied on for GHG accounting.
- The Commission adopts NO<sub>x</sub>, SO<sub>2</sub>, and PM (with PM<sub>2.5</sub> as a subset) as air quality pollutants.
- The following items should be monetized in Part A: GHG Emissions (CO<sub>2</sub>, CH<sub>4</sub>, and N<sub>2</sub>O), Other Environmental Impacts, Geographically Distributed Impacts. Electric Utility System Impacts, including: Energy Generation, Capacity, Environmental Compliance, RPS/CES Compliance, Market Price Effects, Ancillary Services, Transmission Capacity, Transmission System Losses, Distribution Capacity, Distribution System Losses, Distribution O&M, Distribution Voltage, Financial Incentives, Program Administration Costs, Utility Performance Incentives, Credit and Collection Costs. Gas Utility System Impacts, including: Fuel and Variable O&M, Capacity, Environmental Compliance, Market Price Effects, Financial Incentives, Program Administration Costs, Utility Performance Incentives, Credit and Collection Costs. Host Customer Impacts, including:

Host Portion of DER Costs, Host Transaction Costs, Interconnection Fees, Tax Incentives, Host Customer Non-Energy Impacts.

- The following items shall be monetized in Part B: GHG emissions (adding in HFCs, SF6, and upstream emissions); Reliability; Resilience; Public Health; Low-Income Impacts; Moderate-Income Impacts; Racial Equity; Energy Burden; and Locational and Temporal Value of DER.

81. While the adopted SCT framework will be used for screening, we will also adopt an evaluation, monitoring and verification (“EMV”) process for applications that are approved according to the framework, to ensure that approved programs are functioning as intended. There will be a biennial review of approved programs for each utility.

82. In Phase 2, Part A, we will develop the Commission’s standardized SCT and TRC framework within six months from the date a contract is executed between the Commission and its consultant. The developed model will be further refined in Phase 2, Part B, within 12 months from the date a contract is executed between the Commission and its consultant. The Commission will issue an RFP within 30 days of the date of this Order and retain a consultant to undertake the Scope of Work attached to this Order, which must be approved by the Commission prior to its release. After a draft of the BCA has been developed in Phase 2, Part A, the Commission will release a draft for public comments. After the completion of Phase 2, Part B, the Commission will release a copy of the recommended model refinements for public comment. Upon Commission adoption, the BCA model will supersede all prior BCAs, including those relied on in *Formal Case No. 1160* and *Formal Case No. 1167*.<sup>99</sup>

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<sup>99</sup> See Commission Order No. 20654, which states the “...GD Working Group’s detailed BCA framework will apply to all programs and proposals, including DERs, for the future.”

**THEREFORE, IT IS ORDERED THAT:**

83. The Commission **GRANTS** the Potomac Electric Power Company's Motion for Leave to Submit Comments and accepts into the record the Potomac Electric Power Company's Comments and the Joint Parties' Reply to the Potomac Electric Power Company's Motion for Leave to Submit Comments and Comments on the CEAIWG Report;

84. The Commission **ADOPTS** a framework for the development of a standardized societal cost test (SCT) and a framework for the development of a secondary standardized total resource cost (TRC) test as set forth herein; and

85. The Commission will issue a Request for Proposal within 30 days of the date of this Order and retain a consultant to undertake the Scope of Work described in Attachment A.

**A TRUE COPY:**

**BY DIRECTION OF THE COMMISSION:**

A handwritten signature in black ink, reading "Brinda Westbrook-Sedgwick". The signature is written in a cursive, flowing style.

**CHIEF CLERK:**

**BRINDA WESTBROOK-SEDGWICK  
COMMISSION SECRETARY**

## ATTACHMENT A

### Consultant Scope of Work

The Commission's consultant shall complete the following during Phase 2.

1. The consultant shall prepare a standard Excel model for the Commission's societal cost test ("SCT") and total resource cost ("TRC") tests, including the elements and values adopted in this Order. This includes the following: Greenhouse Gas ("GHG") Emissions, Air Pollutants, Other Environmental Impacts, and Geographically Distributed Impacts.
  - a. The Electric Utility System Impacts are: Energy Generation, Capacity, Environmental Compliance, RPS/CES Compliance, Market Price Effects, Ancillary Services, Transmission Capacity, Transmission System Losses, Distribution Capacity, Distribution System Losses, Distribution O&M, Distribution Voltage, Financial Incentives, Program Administration Costs, Utility Performance Incentives, and Credit and Collection Costs.
  - b. The Gas Utility System Impacts are: Fuel and Variable O&M, Capacity, Environmental Compliance, Market Price Effects, Financial Incentives, Program Administration Costs, Utility Performance Incentives, and Credit and Collection Costs.
  - c. The Host Customer Impacts are: Host Portion of DER Costs, Host Transaction Costs, Interconnection Fees, Tax Incentives, Host Customer Non-Energy Impacts, and Low-Income Impacts.
2. The SCT will use a societal discount rate of 2%, while the TRC will use the utility's weighted average cost of capital ("WACCs"). The discount rate may be revised in the future. The components of the TRC will be the SCT, minus the inclusion of externalities.
3. In Part A, GHG emissions will initially include CO<sub>2</sub>, CH<sub>4</sub>, and N<sub>2</sub>O, using a social cost of carbon of \$160 per metric ton of CO<sub>2e</sub> in 2023 dollars, and the 100-year global warming potentials adopted in this Order, based on the Intergovernmental Panel on Climate Change's Sixth Assessment Report. GHG emissions will be estimated for the electric system using the long-run marginal emissions factor based on the National Renewable Energy Laboratory's Cambium model, combined with the impact of the District's RPS. For the gas system, the most accurate data available from gas purchasing, including the gas chemical content, should be relied on for GHG accounting.
4. In Part B, the consultant shall amend the test to add in the following costs and benefits: GHG emissions (modified to include HFCs, SF<sub>6</sub>, and upstream methane emissions); Reliability; Resilience; Public Health; Low-Income Impacts; Moderate-Income Impacts; Racial Equity; Energy Burden; and Locational and Temporal Value of distributed energy resources.

5. The Part A test will include placeholders for the quantification of the additional elements in Part B.
6. The consultant shall incorporate stakeholder comments as directed by the Commission and Commission Staff to amend the test developed in both Part A and Part B.
7. The consultant shall submit a finalized version of the SCT and TRC tests in both benefit-cost ratio and net benefit form to the Commission to be published for public use after approval.
8. The consultant shall develop a draft of the Commission's standard SCT and TRC Excel model and accompanying guidebook. The guidebook will be initially written for Part A, then amended for Part B.
9. The consultant shall develop a monitoring, evaluation, and verification ("EMV") protocol for applications that are approved according to the BCA framework, to allow the Commission to assess the effectiveness of approved programs and initiatives on a biennial basis.
10. The consultant shall be available for up to three (3) technical conferences, as needed.