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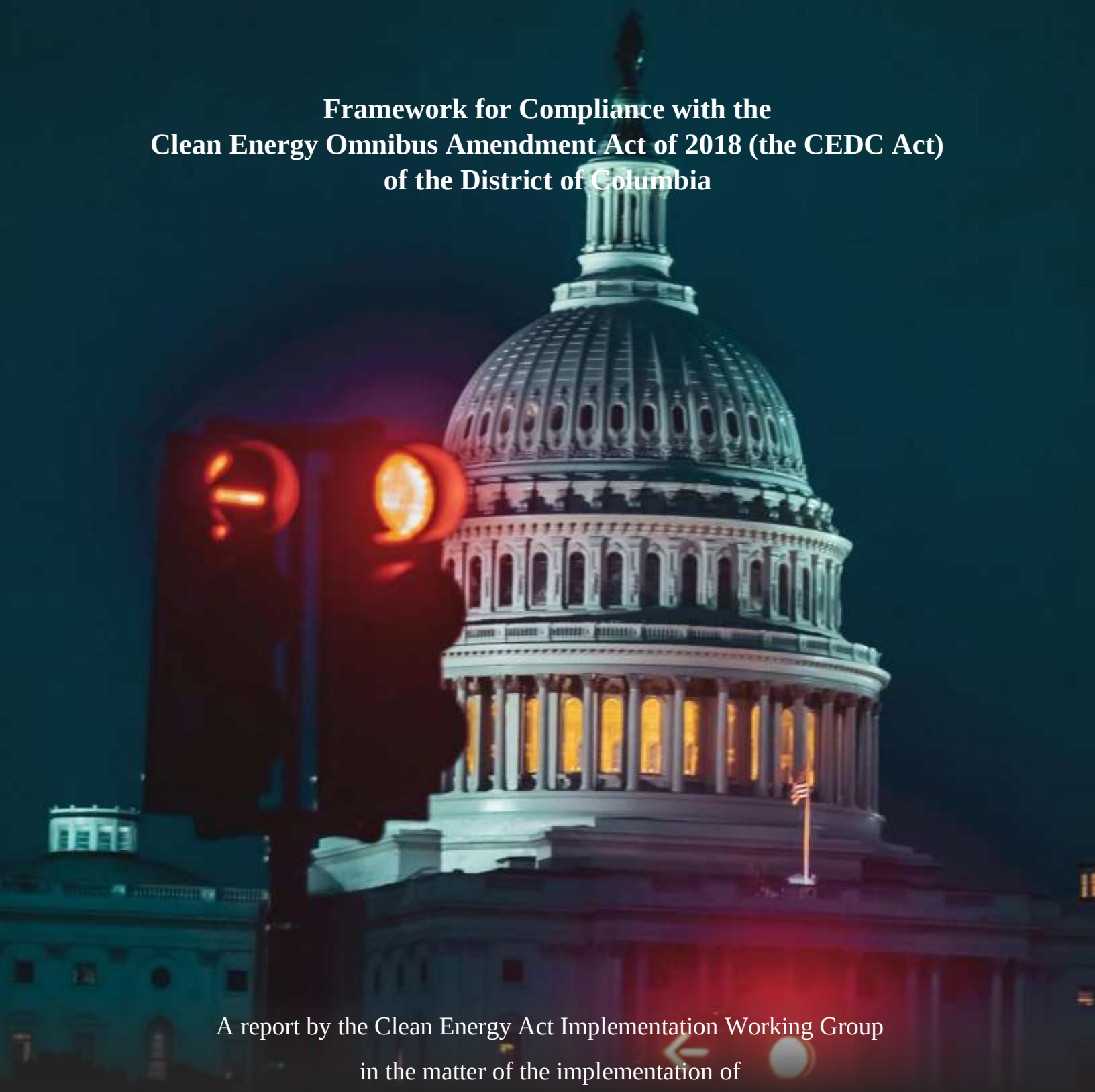
Framework for Compliance with the Clean Energy Omnibus Amendment Act of 2018 (the CEDC Act) of the District of Columbia



A report by the Clean Energy Act Implementation Working Group

in the matter of the implementation of

the 2019 Clean Energy DC Omnibus Act compliance requirements

Case No. GD-2019-04-M

Submitted November 16, 2021

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List of Acronyms

AEF	Average Emissions Factor
BCA	Benefit-Cost Analysis
CCBA	Community Climate Biodiversity Standard
CH_4	Methane
CHP	Combined Heat and Power
CO_2	Carbon Dioxide
CO_2e	Carbon Dioxide Equivalent
DERs	Distributed Energy Resources
DSP/NWAP	Distribution System Planning for Non-Wires Alternatives Program
EEDR	Energy Efficiency and Demand Response
EQSS	Electric Quality of Service Standards
GHG	Greenhouse Gas
GPC	Global Protocol for Community-Scale Greenhouse Gas Emission Inventories
GWP	Global Warming Potential
HFCs	Hydrofluorocarbons
ICE	Interruption Cost Estimate
IRP	Integrated Planning Process
LCS-BCA	Benefit-to-Cost Analysis Handbook for Locational Constraint Solutions
LR-MEF	Long-Run Marginal Emissions Factor
MEDSIS	Modernizing the Energy Delivery System for Increased Sustainability
MEF	'Marginal' Emissions Factors
MNPUC	Minnesota Public Utilities Commission
NESP	National Energy Screening Project
NF_3	Nitrogen Trifluoride
N_2O	Nitrous Oxide (a GHG)
NOx	Nitrogen Oxides (6 other variants besides N_2O,[1] pollutants)

[1] Nitrogen Oxides (NOx) can be of seven different types. See: https://www3.epa.gov/ttncatc1/dir1/fnoxdoc.pdf.

NSPM	National Standard Practice Manual for Benefit-Cost Analysis of Distributed Energy Resources
PBR	Performance Based Rates
PCT	Participant Cost Test
PFCs	Perfluorocarbons
PJM	Peak Demand Emission Measurements
ReNCAT	Resilient Node Cluster Analysis Tool
RIM	Ratepayer Impact Test
SCC	Social Cost of Carbon
SCT	Societal Cost Test
SR-MEF	Short-Run Marginal Emissions Factor
TRC	Total Resource Cost
UCT	Utility Cost Test
VCS	Verified Carbon Standard
VOLL	Value of Lost Load
WACC	Weighted Average Cost of Capital

I. INTRODUCTION

This report summarizes recommendations to the Public Service Commission of the District of Columbia ("DCPSC" or "the Commission") on the analytical approach that the Commission should take when considering the effects of a utility proposal on global climate change and the District of Columbia's ("District") public policy commitments. The recommendations are based on the majority opinion of the Clean Energy Act Implementation Working Group ("CEAIWG," "Working Group," or "WG"), which includes Commission Staff ("Staff") and the working group stakeholders.

The CleanEnergy DC Omnibus Amendment of 2018 ("CleanEnergy DC Act" or "CEDC Act" or "Act"), which amends D.C. Code § 34 – 808.02, imposes a specific charge on the Commission. Section 103 of the Act expands the role and responsibilities of the Commission in addressing climate change and the District's policies relating to GHG emissions reduction, clean energy technology deployment, increasing renewable energy in the generation mix, significantly improving building energy efficiency, and requiring transportation electrification, stating:

> In supervising and regulating utility or energy companies, the Commission shall consider the public safety, the economy of the District, the conservation of natural resources, and the preservation of environmental quality, *including effects on global climate change and the District's public climate commitments.*[2]

The CleanEnergy DC Act builds upon existing commitments by the District to meet the climate goals of the Paris Climate Accord, by reducing the District's GHG emissions by 50% by 2032, and by achieving carbon neutrality by 2050. The Act also strengthens the District's efforts to achieve the goal of reducing its energy use by 50% by 2032 from a 2012 baseline under the Sustainable DC Plan.

Based on the Act's Section 103 charge, the Commission invited, through a Notice of Inquiry ("NOI") in this GD-2019-04-M proceeding, public comment and inputs on the "analytical approach" that the DCPSC should take to evaluate the effects of a utility proposal on global climate change and the District's public policy climate commitments. To undertake this charge to advance the District's bold targets and policy commitments for addressing climate change, the Commission also directed that a "Clean Energy Act Implementation Working Group" be convened. In taking these steps, the Commission has indicated that it is seeking guidance on appropriate "Greenhouse Gas" and "Carbon Footprint" measurement and verification metrics; GHG emissions reporting requirements; standards for quantifying and monetizing impacts; and a "Benefit-Cost Analytical Framework" ("BCA framework"), taking into account best practices from other jurisdictions with similar climate goals, all designed to enable the Commission to "assess compliance with the CleanEnergy DC Act."[3]

In its NOI, the Commission emphasized that, in seeking inputs for the development of the analytical approach — with appropriate evaluation frameworks that it can use to assess compliance — the Commission aims "to provide a higher level of regulatory certainty and transparency into the decision-making process."[4] Moreover, the Commission indicated that it is seeking responses and recommendations that further the District's "Vision Statement" for modernizing the District's energy delivery system, which

[2] D.C. Code § 34 – 808.02.

[3] The Commission's Notice of Inquiry discussed the use of New York, PJM and the Environmental Protection Agency ("EPA") as resources.

[4] *GD2019-04-M, In the Matter of the Implementation of the 2019 Clean Energy DC Omnibus Act Compliance Requirements*, ("*GD-2019-04-M*"), Revised Notice of Inquiry, ¶ 2, rel. October 10, 2019 ("NOI").

includes both electric and gas systems; noting the seven key factors for grid modernization (sustainable, well-planned, safe and reliable, secure, affordable, interactive, and non-discriminatory)." In this regard, the Commission referenced the District's "Guiding Principles" for each of these factors, but especially focused upon the principles for sustainability: "(1) Environmental Protection, including protecting the District's natural resources and assisting the District Government in reaching its Clean Energy DC goals by fostering the use of more efficient energy and renewable energy sources, [Distributed Energy Resources ("DER")] technologies, and controllable demand alternatives to reduce greenhouse gas emissions and overall energy consumption; (2) Economic Growth; and (3) Social Equity, including positively impacting the daily lives of District residents and strengthening community involvement in reaching environmental protection and growth goals related to modernizing the District's energy delivery system."

Through a series of recent Orders, the Commission has reaffirmed the need for a cohesive analytical approach, with holistic, systematic, and consistent evaluation frameworks in emphasizing that deliverables, methodologies and recommendations arising from an array of related and relevant proceedings and workshops need to be aligned. In particular, in both its Pepco Rate Case, Formal Case ("FC") 1156 and FC1167, its case on Utility Climate Change Plan, the Commission specifically instructed that relevant outcomes/work products of such related proceedings — whether deliverables, proposals, methodologies and/or recommendations that the DCPSC has solicited for its consideration and review — need to be aligned with the framework(s), standards, metrics and reporting requirements developed by the CEAIWG in GD-2019-04-M. In Order No. 20754, the Commission clarified its earlier Order No. 20662, stating that, in GD-2019-04-M, the Commission is "(1) establishing the framework for measurement and metrics for GHG and CO_2 equivalents; (2) setting the framework for the benefit-cost analysis regarding utility climate change projects; and (3) establishing reporting requirements regarding GHG reductions and performance."[5] Likewise, in Formal Case ("FC") 1160 regarding EEDR metrics in Order No. 20654 the Commission stated, "the GD Working Group's detailed BCA framework will apply to all programs and proposals, including DERs, for the future."[6]

The CEAIWG recognizes the Commission's overall mission of serving the public interest and helping to ensure that future utility service is provided in a safe and reliable manner at reasonable rates, while fostering energy infrastructure modernization, conservation of natural resources, preservation of environmental quality, and advancement of the District's legislative climate mandates and policy commitments. The CEAIWG recommendations must align with the Commission's mission and also embody a number of other District policies, laws, and statutory mandates that include the Guiding Principles of the PowerPath DC Vision Statement which states:

> "The District of Columbia's modern energy delivery system must be sustainable, well-planned, encourage distributed energy resources, and preserve the financial health of the energy distribution utilities in a manner that results in an energy delivery system that is safe and reliable, secure, affordable, interactive and non-discriminatory."[7]

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[5] *Formal Case No. 1142, In the Matter of the Merger of AltaGas Ltd. and WGL Holdings, Inc.* and *Formal Case No. 1167, In the Matter of the Implementation of Electric and Natural Gas Climate Change Proposals*, Order No. 20754, ¶ 52, rel. June 4, 2021.

[6] *Formal Case No. 1160, In the Matter of the Development of Metrics for Electric Company and Gas Company Energy Efficiency and Demand Response Programs Pursuant to Section 201(b) of the Clean Energy DC Omnibus Amendment Act of 2018*, Order No. 20654, ¶ 1, rel. October 30, 2020.

[7] *Formal Case No. 1130, In the Matter of the Investigation into Modernizing the Energy Delivery System for Increased Sustainability*, Order No. 19984, Appendix B, rel. August 2, 2019.

Finally, the report notes that its recommendations must support the Commission's statutory mandate under DC Code § 1-204.93 to ensure that utilities furnish safe and adequate service and ensure that charges made by utilities are reasonable, just, and non-discriminatory.

The report's recommendations discussed below have been prepared by the CEAIWG, which includes Commission Staff and stakeholders, including: the District's energy utilities – Potomac Electric Power Company ("Pepco") and Washington Gas Light Company ("Washington Gas" or "WGL"), and the Office of the People's Counsel for the District of Columbia ("OPC") (collectively "stakeholders" or "Working Group members"). It is important to note that the recommendations reflect the positions of the majority of the stakeholders participating in the Working Group, and they do not indicate a full consensus of the Working Group members. The Working Group members' positions are outlined in each of the following sections, and detailed comments are included in Appendix B. The stakeholders' consensus/non-consensus positions on the final language of each of the recommendations and the overall report are set forth in their entirety in Appendix A.

The following table includes the recommendations agreed to by a majority of Working Group members (hereafter, referred to as "Majority Recommendations"). The table also includes four "Non-majority Recommendations." These were originally presumed to be favored by a majority of the stakeholders. However, as a result of the final consensus/non-consensus positions submitted to Commission Staff, it was clear that these four recommendations were not supported by a majority of the stakeholders. The recommendations will remain in the report for reference but will be designated as "Non-majority Recommendations." These Recommendations reflect the Working Group's best efforts to provide direction and ideas to develop practical and meaningful evaluation frameworks for assessing the climate change impacts of the activities regulated by the Commission. While they may not answer every question raised by the Working Group members, these Recommendations contain a sufficient basis to further refine and develop such frameworks.

Majority and Non-Majority Recommendations
A. METRICS
A.1.1. *i. The following three GHGs should be quantified and monetized in the BCA framework: Carbon Dioxide (CO_2), Methane (CH_4), and Nitrous Oxide (N_2O).* *ii. Two other GHGs — Hydrofluorocarbons (HFCs) and Sulfur hexafluoride (SF_6) — should be tracked when applicable, but not quantified or monetized in the BCA at this time.*
A.1.2. *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: NOx, SO_2, and Particulate Matter (PM), with PM 2.5 noted separately.* [Note: NOx in this majority recommendation refers to Nitrogen Oxides other than N_2O which is a GHG.]
A.1.3. *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.*
A.1.4. *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.*

Majority and Non-Majority Recommendations
A.1.5. *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, ISO 14064-1, UNFCCC Clean Development Mechanism, or the Verified Carbon Standard (VCS).*[8] [Note: A recommendation on carbon offsets is omitted in this WG Report because it is an issue currently being addressed in FC 1167 and other pending cases. A determination in this proceeding will be made at a later date.]
A.1.6. *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, beginning in 2022. The interim targets should be revised to account for shortfalls or exceedances in GHG reductions during previous performance periods.*
A.1.7. *'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 CO2 emissions per average unit of electricity delivered for an entire electricity system.* • *Short-Run Marginal Emissions Factor (SR-MEF): The change in CO2 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 CO2 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).*
A.1.8. *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*.
A.1.9. *Upstream emissions of GHGs covered by A.1.1 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.*
A.1.10. *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.*
A.2.1. *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*

[8] This is one of four (4) recommendations originally presumed to be favored by a majority of the stakeholders. However, as a result of the final consensus/non-consensus positions submitted to Commission Staff, it was clear that these 4 recommendations were not supported by a majority of the stakeholders. The recommendations will remain in the report for reference but will be designated as "Non-majority Recommendations."

Majority and Non-Majority Recommendations
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 N20 should be multiplied by the IPCC factors discussed in the next recommendation.*[9]
A.3.1. *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.*[10] *The current 100-year IPCC values as per AR5 are:* *Methane 28* *N2O 265*
B. BENEFIT-COST ANALYSIS (BCA) FRAMEWORK
B.1.1. *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.*
B.1.2. *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 Forward-Looking, Long-term, Incremental Analyses; (6) Avoid Double-Counting Impacts; (7) Ensure Transparency; and (8) Conduct BCAs Separately from Rate Impact Analyses.*
B.1.3. *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-making (see appendix D for an inventory of applicable policies); 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.*
B.1.4. *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*

[9] This is another of the four (4) recommendations originally presumed to be favored by a majority of the stakeholders. However, as a result of the final consensus/non-consensus positions submitted to Commission Staff, it was clear that these 4 recommendations were not supported by a majority of the stakeholders. The recommendations will remain in the report for reference but will be designated as "Non-majority recommendation."

[10] See footnotes 8 and 9.

Majority and Non-Majority Recommendations
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.
B.1.5. *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.*
B.1.6. *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.*
B.1.7. *The BCA results will be calculated and presented in both benefit-cost ratio and net benefit form.*
B.1.8. *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.*
B.1.9. *BCA submissions should include a technical appendix with modeling inputs and outputs for all scenarios examined.*
B.1.10. *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 working group discussion and/or a rulemaking process, based on the Commission determination.*[11]

[11] See footnotes 8 and 9.

Majority and Non-Majority Recommendations
B.2.1. *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 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.*
B.2.2. *The BCA Framework will use a SCT for screening all the programs or portfolio categories listed in Recommendation B.1.1. 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.*
B.2.3. *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.*
B.3.1. *For the Discount Rate for the BCA analysis for DER programs, projects, plans, procurements and pricing structures, the BCA should use a societal 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.*
B.4.1. *Impacts that cannot be monetized should be accounted for quantitatively or qualitatively. Examples of non-monetary 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 hurricane. Examples of relevant qualitative impacts are geographic diversity of investment, improved distribution planning, resilience, and environmental impacts.*
B.5.1. *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.*
B.5.2. *Equity should be addressed at the feeder level in an effort to account for distributional/geographical factors.*

Majority and Non-Majority Recommendations

B.6.1. *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) when considering the resource investment. Regardless, it is recommended that reliability and resilience benefits must be demonstrated, not merely asserted.*

C. REPORTING REQUIREMENTS

C.2.1. *The Working Group recommends the following practices for reporting and data production:*

- *Annual reporting to the PSC should include all relevant data that are reported to other agencies including EPA, EIA, DOEE, and the Metropolitan Washington Council of Governments (MWCG), as well as data used in climate change BCAs submitted to the PSC.*
- *Annual reporting to the PSC should also include new data requirements generated by the recommendations of the CEAIWG that are approved by the Commission.*
- *All data reported should be DC-specific (not utility-wide).*
- *To the extent feasible, data reported should be provided for geographies smaller than the District as a whole, for example, ward, quadrant, substation zone, feeder, or zip code while maintaining compliance with Critical Infrastructure Information security requirements, and customer data privacy requirements.*
- *Annual data should be submitted to the PSC by September 30 each year; proposal specific data should be submitted together with utility proposals.*
- *Written reports should include a spreadsheet appendix of all data and assumptions as well as GIS shapefiles (where applicable) relevant to the proceeding.*
- *All third-party electricity and gas utility suppliers should be required to submit sales and greenhouse gas emissions data for their customers in the District consistent with the approach used to provide utility data.*
- *The Commission should review all data submitted to ensure that comparable data are being presented by all parties.*

C.3.1. *That WGL be required to report the following data on gas usage and emissions:*

- *customer gas use by customer type,*
- *customer point of use emissions,*
- *the number and location of gas leaks within the District (by grade and line type), and*
- *the amount of measured and/or calculated fugitive emissions within the District (by pipe size).*

C.4.1. *That Pepco (and, as appropriate, third-party electric suppliers) be required to report the following data on electric usage, generation and emissions citywide and by substation:*

- *customer electric use by customer type,*
- *in front-of-meter generation located within the District,*
- *excess generation (net metering) back to the grid with temporal data at a minimum hourly interval, and*
- *generation emissions from customer electric use with temporal data at a minimum hourly interval.*

Data should be sought from other sources regarding:

Majority and Non-Majority Recommendations
• *in front-of-meter generation located within the District, and* • *behind-the-meter generation located within the District.*
C.5.1. *The Working Group also recommends the following reporting criteria after considering appropriate reporting requirements relevant to evaluating the effect of utility proposals on the District's contribution to global climate change and the District's public commitments under the CleanEnergy DC Omnibus Amendment Act of 2018:* • *Utilities should report on customer progress toward achieving the District's mandates, including with respect to Utility programs, projects, procurements, pricing structures and measures that impact the utility's customers and/or in which the customers participate.* • *Customers and stakeholders should be kept informed of progress in meeting performance metrics, relevant energy and non-energy impacts (such as the non-energy benefits included in DSM assessment), customer impacts and bill savings, and impacts on special classes. Progress reporting should be accomplished via a web-based dashboard to provide regular progress updates with key metrics including number of participants, relevant programs, program expenditures, and projects completed.* • *Reporting should include all information relevant to evaluating the utility proposal's impact on PowerPath DC Vision & Guiding Principles.*
C.6.1. *DOEE provided the Reporting Requirements Committee with a detailed presentation clarifying the District's emissions reporting requirements, practices, and categorizations. Similarly, WGL provided detailed information on its inventory data and processes and also met with Committee members. The District's emissions reporting follows the well-established three-scope emissions system used in jurisdictions around the United States and the world:* • ***Scope 1*** *emissions come from onsite activities (manufacturing, electric generation) occurring directly within the District.* • ***Scope 2*** *emissions include indirect emissions that are created as a result of fuel or electric usage by residents, businesses, and governments within the District, and include "fugitive" emissions occurring upstream in the production of fuels and electricity used in the District.* • ***Scope 3*** *emissions include embodied emissions associated with product and services used in the District.*

II. BACKGROUND AND PROCESS

In November 2019 under Case Number GD-2019-04-M, the Commission invited public comment on the analytical approach that it should take when considering the effects of a utility proposal on global climate change, whether different analytical frameworks and standards should be used for different types of utility proposals, 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. The Commission solicited descriptions and inputs on what measurements, verification metrics and standards for quantifying and monetizing impacts could be designed, as well as on appropriate analytical approaches and reporting requirements, to help it assess and track compliance with the Clean Energy DC Act, which codifies several key initiatives identified in the Clean Energy DC plan — the District's energy and climate action plan to halve GHG emissions by 2032. The Commission also sought examples and best practices from states with similar climate change goals, such as the most effective reporting requirements or rules to track utilities clean energy goal compliance so that the Commission does not need to specify the requirements for every proceeding.

In March 2020, the CEAIWG convened to develop a set of recommendations for the Commission on a proposed analytical framework, consisting of underlying measurements, metrics, standards, and reporting requirements, to evaluate utility proposals for compliance with the Act. The Working Group formed three committees: the Metrics Committee, the BCA Framework Committee, and the Reporting Requirements Committee. A series of WG meetings were held — between March 30, 2020 and October 21, 2021 with presentations by stakeholders followed by open discussions — interspersed with two surveys to arrive at the Majority Recommendations. Stakeholders were asked to respond to position statements within the surveys by answering whether they agreed with each position, and if not, to provide amendments or other comments. *See* the DCPSC E-Docket System for the consolidated survey response with comments filed by each individual stakeholder.

The work of the CEAIWG has been focused on recommending an overall cohesive and systematic analytical approach to enable the DCPSC 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. It is the objective of this CEAIWG to delineate an analytical approach, comprised of a coherent set of measurements, metrics, standards, and reporting requirements, that in totality, can support and enhance the Commission's ability under Section 103 of the Act to evaluate the impacts of utility proposals on climate change and DC climate policy commitments. Our objective also includes determining utility and stakeholder compliance under the Act in a manner that is fair, equitable, and cost-effective and that advances the District's legislative mandates, climate and sustainability plans, as well as the Commission's MEDSIS/PowerPath DC Vision Statement and Guidelines, relevant directives, and policy commitments.

WORKING GROUP MEETINGS HELD

The WG met collectively for the first three Technical Committee meetings. The WG then broke into three Committees which met separately or jointly as noted.

1. Metrics Committee,
2. BCA Framework, and
3. Reporting Requirements.

The following meetings were held in chronological order:

Meeting	Date	Notes
Technical Committee (TC)/WG Meeting 1	03/30/2020	Members from all Committees were present. New people added to successive meetings.
TC/WG Meeting 2	04/30/2020	--
TC/WG Meeting 3	08/26/2020	--
Metrics Committee Meeting 1	10/8/2020	--
Metrics Committee Meeting 2	10/14/2020	At the second Metrics meeting, OPC commented that if the Metrics committee was considering metrics that would influence the cost of CO_2e and methods, the work may overlap with that of the Benefit-Cost

Meeting	Date	Notes
		Analysis Working Group. Staff agreed. This led to the decision to hold joint meetings for the Metrics and BCA committees moving forward.
BCA Framework Committee Meeting 1	11/12/2020	--
Joint Metrics and BCA Committee Meeting 1	12/1/2020	--
Joint Metrics and BCA Committee Meeting 2	02/02/2021	--
Joint Metrics and BCA Committee Meeting 3	02/24/2021	--
Joint Metrics and BCA Committee Meeting 4	03/11/2021	--
Reporting Committee Meeting 1	03/26/2021	--
Joint Metrics and BCA Committee Meeting 5	04/13/2021	--
Reporting Committee Meeting 2	05/06/2021	--
Reporting Committee Meeting 3	05/20/2021	--
TC/WG Meeting 4	08/24/2021	Majority Recommendation Discussion
TC/WG Meeting 5	08/25/2021	Majority Recommendation Discussion
TC/WG Meeting 6	08/30/2021	Majority Recommendation Discussion
TC/WG Meeting 7	08/31/2021	Majority Recommendation Discussion
TC/WG Meeting 8	10/18/2021	WG consensus meeting
TC/WG Meeting 9	10/21/2021	WG consensus meeting

LIST OF PARTICIPATING STAKEHOLDERS

The participating WG members included:

1. AOBA — Apartment and Office Building Association of Metropolitan Washington
2. DCCA — DC Climate Action
3. DCPSC — Staff of District of Columbia Public Service Commission
4. DCSEU — District of Columbia Sustainable Energy Utility
5. DC SUN — Solar United Neighbors of DC
6. DOEE — District of Columbia Department of Energy & Environment
7. EDF — Environmental Defense Fund
8. GRID2.0 — GRID2.0
9. OPC — District of Columbia Office of the People's Counsel
10. PACE — The Pace Energy and Climate Center
11. Pepco — Potomac Electric Power Company
12. Sierra Club — Sierra Club DC Chapter
13. WGL — Washington Gas Light Company

Additional stakeholders who supported this effort included World Resources Institute, E4TheFuture, and Rábago Energy LLC.

III. WORKING GROUP MAJORITY AND NON-MAJORITY RECOMMENDATIONS

A. METRICS

A.1. Scope of GHGs and Other Metrics to be Covered (joint item with BCA Committee)

A.1.1. Working Group Majority Recommendation

i. The following three GHGs should be quantified and monetized in the BCA framework: Carbon Dioxide (CO_2), Methane (CH_4), and Nitrous Oxide (N_2O).

ii. Two other GHGs — Hydrofluorocarbons (HFCs) and Sulfur hexafluoride (SF_6) — should be tracked when applicable, but not quantified or monetized in the BCA at this time.

A.1.1.1. Background

The Metrics Committee was tasked with recommending the GHGs and any other pollutants for inclusion into the BCA Framework.

Overall Approach

At the first WG meeting, WGL stated in their presentation that all metrics and factors that are developed to evaluate the impact of future utility regulatory filings must be fair, reasonable, balanced, consistently applied, and must balance both costs and benefits based on transparent sources and a process that facilitates updates as new information becomes available.[12] OPC recommended that the Commission's chosen metrics be actionable.

Selection of GHGs and Values

At the third WG meeting, Staff's consultant asked the Metrics Committee what metrics should be included, and that includes those already measured and reported. Staff noted that Pepco reports SF_6 emissions and WGL reports methane emissions to the EPA. Staff posed whether additional requirements are needed, and whether additional metrics need to be developed such as – peak demand emission measurements (PJM had one, but it is outdated), and their sources and availability.[13]

At the second Metrics meeting, Staff's consultant noted that the WG is looking to identify what gases should be measured. Staff suggested that the WG also look at the range of reasonable values that should be used to run the analyses. Staff asked if the WG should use CO_2, CH_4, and NOx or whether other pollutants should be added. Staff's consultant also noted that utilities rarely deal with hydrofluorocarbons ("HFC"), but if the utilities are contemplating District heating and cooling systems, using technologies such as chillers or heat pumps, then the WG should also look at HFCs.[14]

Staff asked what global warming potential (GWP) value WGL used. WGL responded that it used the same protocols as the EPA standards. WGL also questioned why NOx emissions were being considered during this proceeding as they have no known relationship to climate change. OPC noted that NOx is an indirect

[12] *GD-2019-04-M*, Technical Committee/Working Group First Meeting Minutes Report, filed April 7, 2020.
[13] *GD-2019-04-M*, Technical Committee/Working Group Third Meeting Minutes Report, filed September 3, 2020.
[14] *GD-2019-04-M*, Metrics Committee Second Meeting Minutes Report, filed October 22, 2020.

GHG because it produces a GHG — tropospheric ozone — after chemical reactions take place in the atmosphere.[15]

GRID2.0 recommended that CO_2e be defined as the impact of carbon dioxide, methane, nitrous oxide, and fluorinated gases over 100 years, where fluorinated gases account for losses from heat-pump or liquified natural gas compressors. These metrics must include emissions from all non-distribution utility operations in the District and all emissions external to the District attributable to District consumption. Environmental impact is calculated as the integrated radiative forcing of these gases, as defined by standard climate change models. GRID2.0 then shared examples of GHGs measured as per the global protocol and around the US, which included perfluorocarbons (PFCs) and nitrogen trifluoride (NF_3) besides the ones mentioned previously in this paragraph.[16]

In the first meeting, Pepco presented that for the Benefit-to-Cost Analysis Handbook for Locational Constraint Solutions ("LCS BCA Handbook") process it has proposed for the DSP/NWAP, the BCA accounts for NOx and SOx emissions through explicit accounting when required – for facilities <25 MW, costs are assigned on market prices. For facilities >25 MW, the costs are captured in the energy prices due to federal clean air programs that require purchase of allowances.

Methane

At the first WG meeting, Sierra Club brought up the impact of methane, an impact that Staff's consultant recognized in the fourth meeting as having a 12-20 year lifetime, and the impact on the atmosphere is about 80 times more impactful than carbon during that lifetime. WGL stated that it uses the EPA emissions factor for methane, which is the 100-year GWP,[17] which is the same factor used in EPA's annual Inventory of U.S. GHG Emissions and Sinks and the District's statewide GHG inventory.[18] WGL stated that a rebuttable presumption should exist with regard to reasonable EPA parameters, and the District should avoid developing a separate methodology. WGL pointed out that the federal government devotes huge resources to the development of methane emissions factors; in order for the District to develop its own methodology, it would be required to devote extensive resources to obtain the same reliability, transparency, and documentation and stay up to date. WGL stated that in the absence of sufficiently reliable estimates, there is insufficient evidentiary basis to conclude that utility actions to reduce emissions are net beneficial, and hence, this could affect the recovery of utility expenditures to reduce emissions.[19]

OPC asked whether the District's inventory included the upstream emissions and other methane leaks. DOEE stated that the DC GHG inventory includes downstream methane leaks reported by WGL.[20] WGL provided that it reports Scope 1 and 2 emissions associated with its operations in its public emissions inventory and in filings to the EPA; this includes fugitive emissions from its pipelines and operations, which reflects estimates regarding leaks based on equipment and material type and hourly operations. It reports this information, as well as gas throughput related to customer usage (Scope 3 emissions) to the Metropolitan Washington Council of Governments ("MWCOG") that, in turn, shares this information with local jurisdictions, including the District, to support the preparation of local emissions inventories, which

[15] *GD-2019-04-M*, Metrics Committee Second Meeting Minutes Report, filed October 22, 2020.
[16] *GD-2019-04-M*, Metrics Committee Second Meeting Minutes Report, filed October 22, 2020.
[17] *See* https://www.epa.gov/sites/production/files/2021-04/documents/emission-factors_apr2021.pdf.
[18] *GD-2019-04-M*, Technical Committee/Working Group First Meeting Minutes Report, filed April 7, 2020.
[19] *GD-2019-04-M*, Technical Committee/Working Group First Meeting Minutes Report, filed April 7, 2020.
[20] *GD-2019-04-M*, Technical Committee/Working Group First Meeting Minutes Report, filed April 7, 2020.

is the same factor used in the EPA's Annual Inventory of U.S. Greenhouse Gas Emissions and Sinks ("EPA Inventory").

At the second Metrics meeting, Staff requested that WGL and Pepco update the Working Group at the next meeting regarding their EPA reporting – Pepco's SF_6 and WGL's methane plus any other pollutants if they report them.[21] Both Pepco and WGL provided their reporting in preparation for the first Reporting Committee meeting.

Other Jurisdictions

At the second Metrics meeting, Staff presented a review of other jurisdictions (*i.e.*, CA, NJ, NY, OR). Staff noted that the widely used Global Protocol for Community-Scale GHG Emission Inventories ("GPC") is the protocol used by DOEE in the District's GHG inventory and previously espoused by GRID2.0 as a good metric basis. California uses the standard list of GHG gases, Oregon uses CO_2e, and New York uses CO_2, CH_4, and CO_2e. Staff asked what pollutants DOEE monitors and tracks in its inventory study. DOEE responded that it has data and can record CO_2, CH_4, and N_2O for GHG and NOx, and PM for air pollutants. Staff noted that PJM also uses these but not CH_4, although the natural gas companies appear to track CH_4. DCSEU noted that New York also uses CH_4.[22]

A.1.1.2. Stakeholder Comment Summary

All stakeholders (WGL, OPC, GRID2.0, DCCA, DCSUN, DOEE, Sierra Club, and Pepco) agreed that the three GHGs — CO_2, CH_4, and N_2O — should be quantified and a monetary value assigned to each in the BCA Framework. Pepco agreed CO_2, CH_4, and N_2O should be quantified and monetized, and generally agreed with the WG Majority Recommendation that HFCs and SF_6 should be tracked; Pepco expressed the need to weigh which cases may warrant their inclusion, and that only well-defined values be used. WGL was concerned about the inclusion of N_2O, stating that the relative quantity emitted is miniscule but agreed that a uniform standard should be applied. All stakeholders agreed that HFCs and SF_6 should be tracked. DCCA stated that it should go one step further and be included in the framework. GRID2.0 asked that an explanation for why they are not currently included be provided, as well as a date by when they will be included.

See additional stakeholder comments in **Appendix B at A.1.1.3.**

A.1.2. Working Group Majority Recommendation

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: NOx, SO_2, and Particulate Matter (PM), with PM 2.5 noted separately. [Note: NOx in this majority recommendation refers to Nitrogen Oxides other than N_2O which is a GHG.][23]

A.1.2.1. Background

In addition to climate change, the Commission is tasked with considering the preservation of environmental quality and the safety of service in the District. For example, particulate matter (PM) can affect both lungs and the heart. PM 2.5 refers to fine particulate matter (under 2.5 microns) that can become a serious public health concern if present in the air in high quantities. It is tied to a number of short-term and long-term health problems, including breathing irritation, chronic bronchitis, and decreased lung function. At the

[21] *GD-2019-04-M*, Metrics Committee Second Meeting Minutes Report, filed October 22, 2020.
[22] *GD-2019-04-M*, Metrics Committee Second Meeting Minutes Report, filed October 22, 2020.
[23] Nitrogen Oxides (NOx) can be of seven different types. https://www3.epa.gov/ttncatc1/dir1/fnoxdoc.pdf.

second Metrics Committee meeting, Staff's consultant noted that the WG is looking at GHG, but it also needed to decide if it wants to incorporate other public health factors such as toxicity. WGL commented that the WG needs to list what GHG gases should be identified and what metric it is using for comparison purposes and not look at other factors outside the scope of GHG. At the third WG meeting, Staff's consultant posed the question whether there should be additional metrics linked to factors such as toxicity or acidification potential. WGL asked if the WG included NOx, which is not a GHG, whether the WG will need to get an estimated cost of NOx, and whether DCSEU is doing this type of work today. Pepco added that the BCA for NWAs does have NOx and SOx and treatment of costs; and that for the market value for generators under 25 MWs, which are not covered by EPA guidelines, market values for allowances are used as the cost. WGL noted that Pepco's point illustrates the need to start with a comprehensive understanding of current reporting, measurements, and metrics, to mitigate inconsistencies in different types of reports and requirements.[24]

The topic of other pollutants that should be tracked, particulates, and their toxicity was not discussed in depth by the Working Group but was included in the Survey to which all stakeholders responded.

A.1.2.2. Stakeholder Comment Summary

In the survey, all except WGL agreed with the proposed suggestion to track NOx, SO_2, and PM. In addition, GRID2.0, DCCA, and the Sierra Club requested, and OPC agreed, that PM 2.5 should be specified separately from total PM. Pepco and WGL were concerned about redundancy and double-counting that would occur due to the overlap with other existing reporting requirements that are based on more than 50 years of law, science, and policy. WGL was concerned that focus on these local criteria pollutants would confuse the process and divert focus from GHG reductions which is a largely unaddressed global matter. Pepco stated that air pollutants should be included in the BCA when federal or market values exist with vetted and generally accepted means of quantifying emissions that meet the general criteria laid out for inclusion in BCA. Pepco agreed with tracking PM emissions and stated that it would support incorporating a monetary value for PM when officially issued by the U.S. EPA.

See additional stakeholder comments in **Appendix B at A.1.2.3.**

A.1.3. Working Group Majority Recommendation

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.

A.1.3.1. Background

Finite boundaries must be drawn to meaningfully analyze the quantities of pollutants attributable to a certain project. At the third meeting of the Working Group, Sierra Club asked about the territorial scope of the BCA analysis, whether it is only the District or a wider geographical region. The geographic boundary for air pollutants was also discussed within the DOEE presentation at the Third Joint Metrics and BCA Framework Committee Meeting. DOEE noted that the physical grid boundary default for GHG Inventory could include PJM, Reliability First Corporation East (RFC-E), or even more local grids such as MD and VA as per GHG protocols based on the states identified as contributors by the Ozone Transport Commission.[25] The Ozone Transport Commission is a multi-state organization created under the Clean Air

[24] *GD-2019-04-M*, Technical Committee/Working Group Third Meeting Minutes Report, filed September 3, 2020.
[25] *GD-2019-04-M*, Joint Metrics and BCA Committee Third Meeting Minutes Report, filed March 3, 2021.

Act,[26] while the Mid-Atlantic/Northeast Visibility Union was formed by a range of government entities to foster a coordinated approach in improving visibility at national parks and wilderness areas in the Northeast and Mid-Atlantic region.[27] Together, these organizations have defined airshed boundaries that can be used for determining air pollutant boundaries for the District. However, the boundaries selected for air pollutants also need to align with the boundaries selected to determine the emissions factors. The selected boundaries could be the overlap of these two boundaries.

A.1.3.2. Stakeholder Comment Summary

DCSUN suggested that the boundary be consistent with that used for emissions factors, whatever framework is picked (*e.g.*, NREL Cambium or eGRID or PJM-wide). Pepco noted its belief that the electrical boundary should be based on the source, which is PJM, if the incremental emissions can be adequately quantified. Pepco stated that there are different geographic regions being proposed across multiple recommendations for emissions, which would result in a benefit cost model that was not internally consistent; the current proposed Majority Recommendations A.1.5 and A.1.8 include different regions for emissions factors for GHG and various air pollutants. Because the group has focused on marginal emission rates, this could imply that a single kW could affect one generator for the purposes of GHG reductions, a second generator for the purposes of NOx and SOx emissions, and a third for particulate matter. This creates inconsistency in the model and confusion and could lead to continued litigation of the BCA modeling framework due to the confusion and inconsistency. WGL emphasized the need for equitable treatment across utilities and that geography in all aspects including measurement, and offsets. WGL also emphasized that all geographic boundaries should be tied to emissions source and area of impact in a logical way to ensure efficiency, affordability, and feasibility.

DCCA deferred to DOEE, pointing out that there is no nexus between gas supply and the PJM. Similarly, there is no correspondence between geographic scope and offsets. WGL added that the principle of fairness dictates that both emissions be counted, and offsets be credited within the same geographic boundaries. DOEE's Air Quality Division suggested that the boundaries for NOx and SOx 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. GRID2.0 also suggested similar options. Meanwhile, OPC suggested reporting of local air pollutants be disaggregated at the District Ward level to identify localized impacts of avoided pollution.

See additional stakeholder comments in **Appendix B at A.1.3.3.**

A.1.4. Working Group Majority Recommendation

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.

A.1.4.1. Background

Utility GHG reduction proposals can be evaluated on both their technical objectives and on the extent to which they include low and moderate income and communities of color in the process and the resulting benefits of that transition. The District's process for grid modernization— PowerPath DC — emphasizes the promotion of social equity by recognizing the impact of energy usage, strengthening community

[26] *See* https://otcair.org/about.asp.
[27] *See* https://otcair.org/manevu/aboutus.asp.

involvement, and providing equal access in its general principles.[28]

The District's vulnerable communities have historically suffered a disproportionate share of harm from air pollution, lack of access to reliable public infrastructure, and the unwanted siting of generation and distribution infrastructure.[29] Metrics can help evaluate whether project proposals successfully consider equity factors. Collecting these metrics takes time and resources since some necessary data may not currently exist or may be difficult to access.[30] Potential actions towards better measurement include setting pollution reduction targets in specific local hotspots, prioritizing marginalized and vulnerable populations during the hiring process for green projects, setting specific targets to ensure the participation of marginalized communities in decision-making processes, and making other process changes—an independent advisory body, a funding mandate—to ensure that investment dollars benefit populations that have experienced environmental injustice.[31]

Good equity metrics can help ensure against (1) programs that primarily benefit wealthier communities with larger incomes and larger energy bills and (2) performative equity-promoting actions that claim to help poorer communities but ultimately do little to address vulnerable communities' marginalization (sometimes called "woke washing"). In climate and energy planning, program outcomes may be designed with insufficient consideration of which communities are in a position to make use of or benefit from them. Examples can include energy efficiency or grid enhancement programs that only benefit home owners or can only be used by those with access to sufficient financing; electric vehicle programs that only benefit car owners or families that can afford to purchase a new car; or benefits given as tax rebates that cannot be accessed by families that receive the Earned Income Tax Credit without parallel programs to benefit those without access to those resources.[32] Without careful and inclusive planning, green infrastructure projects sited in low- and moderate-income neighborhoods may even increase property values and rents, ultimately displacing vulnerable populations such as low-income residents, commuters, and people of color.[33] An analysis that fails to adequately assess equity cannot advance an equitable and sustainable plan for a clean energy transition.

The relevant question for the Commission is whether and to what extent equity metrics will be included in the BCAs of utility climate proposals. If included, these factors could be monetized in order to have an impact on decision making.

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[28] Smart Electric Power Alliance. May 31, 2019. Modernizing the Energy Delivery System for Increased Sustainability: Final Report v1.0 of the DCPSC MEDSIS Stakeholder Working Groups. Available at: dcpsc.org/PSCDC/media/PDFFiles/Final-Report.pdf.

[29] Calma, Emilia. 2020. "The geography of environmental toxins in the District of Columbia*." D.C. Policy Center*. https://www.dcpolicycenter.org/publications/environmental-toxins/.

[30] Woods, Bryndis, and Elizabeth Stanton. 2020. "Initial Assessment of the Climate Justice Working Group's Recommended Policy Priorities – Tracking Equity and Justice." ("Initial Assessment – Equity and Justice"), https://aeclinic.org/publicationpages/2021/3/23/initial-assessment-of-the-climate-justice-working-groups-recommended-policy-priorities-tracking-equity-and-justice.

[31] Initial Assessment – Equity and Justice.

[32] Carbon Free Boston Social Equity Project Team. 2019. "Carbon Free Boston: Social Equity Report 2019." https://static1.squarespace.com/static/5936d98f6a4963bcd1ed94d3/t/5ce44170e719fe0001eefeeb/1558462843173/CFB_Social_Equity_Report_WEB.pdf.

[33] Carbon Free Boston Social Equity Project Team. 2019. "Carbon Free Boston: Social Equity Report 2019." https://static1.squarespace.com/static/5936d98f6a4963bcd1ed94d3/t/5ce44170e719fe0001eefeeb/1558462843173/CFB_Social_Equity_Report_WEB.pdf.

a) Inclusion of equity metrics

At the third WG meeting, Staff stated that the CEAIWG will consider whether metrics should take into account qualitative factors such as equity, locations, and how critical a process is. For instance, if a process has other important implications, *e.g.*, a critical health facility that has a machine that runs on natural gas and there is no substitute available for it, or, a part of the electricity distribution process that has high emissions, but there is no alternative available in the market, those should get due consideration in the framework.[34] The factors defined above were referred to during the discussion variously as "qualitative factors" evaluated relative to how "critical" a process is. Pepco first asked what the definition of a critical metric is and who is defining the term. Pepco stated that the term was not developed by the Working Group and that it continues to be unclear what the term means. The WG eventually arrived at a common definition that it referred to metrics on equity and justice.

OPC also raised issues related to equity and the importance of measuring equity in the District's utility proposal assessments throughout the stakeholder process. GRID2.0 and DCCA conveyed a need to include equity, or some type of variable that can correlate to an equitable solution. This point is notable for the District, as certain geographic areas in the District have significantly lower average household incomes. DCCA would like to see these areas get additional focus in a proposed plan. WGL asked if metrics should include locality and control. DOEE indicated that it has already received feedback that local resources should be prioritized.

In their presentation to the Working Group during the third joint BCA and Metrics committee meeting, WGL included social equity in their "Critical Framework Principles to Achieve Climate Goals."[35]

At the fourth joint committee meeting (joint Metrics and BCA Framework committee meeting), Staff again introduced the topic of social equity. DCSUN noted that the Working Group has an opportunity to broaden what social equity means, and not just look at rates, but nonenergy benefits, EVs and others as well. DCSUN stated it requires more creativity than just using the rate impact measure ("RIM") test but taking the time to do that is important. Staff's consultant wondered if there were any factors in a BCA framework that would help account for the relatively high impact of utility bill changes on low-income communities. OPC stated that additional metrics would be addressed in the Reporting Committee.

GRID2.0 stated that equity impacts can be addressed and are accounted for under the "societal cost test" ("SCT"), which GRID2.0 further stated includes both impacts on low-income customers, as well as low-income "societal" impacts, including impacts on low-income communities (poverty alleviation, environmental justice, etc.). GRID2.0 also stated that the SCT goes beyond utility system impacts and includes host customer/participant impacts and societal impacts. Thus, according to GRID2.0, low-income customer impacts and other vulnerable customer population impacts (both energy and non-energy impacts) are taken into account, as well as "societal" effects on low-income communities.[36]

Pepco agreed with DOEE that qualitative factors could be reported but noted that it does not believe an equity-focused program should be subject to a BCA. Pepco stated that in its experience, when proposing programs that provide issues to low- and moderate-income communities, those programs frequently do not always pass BCA due to the higher costs of providing services to LMI communities, and therefore, Pepco proposed that the Working Group not make these types of programs subject to BCA. Pepco noted that in

[34] *GD-2019-04-M,* Technical Committee/Working Group Third Meeting Minutes Report, filed September 3, 2020.
[35] *GD-2019-04,* Joint Metrics and BCA Framework Committee Third Meeting Minutes Report Attachment No. 3 at 5, filed March 3, 2021.
[36] *GD-2019-04-M,* Joint Metrics and BCA Committee Fourth Meeting Minutes Report, filed March 29, 2021.

some jurisdictions the threshold for passing BCA tests for equity programs is lowered. OPC reemphasized that it did not see anything in the Commission's NOI that would indicate that a BCA would necessitate a particular outcome. Pepco disagreed and believed it is difficult to see how a negative BCA would not inform an outcome.

b) Quantitative versus Qualitative

The discussion included the identification of the metrics, and whether to include them in the BCA 'formula' or separately in the reporting requirements.

GRID2.0 noted in meetings that evaluating these factors is turning from an art to a science.[37] There could be a numerical rating scale for how critical a process is, for example, that becomes a factor in the BCA formula, or it could be a separate qualitative factor.[38]

c) Identification of metrics to include

Following are definitions of the metrics proffered for inclusion by DOEE.

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."[39]

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."[40]

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."[41]

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*

[37] *GD-2019-04-M*, Technical Committee/Working Group Seventh Meeting Minutes Report, filed September 10, 2021.
[38] *GD-2019-04-M*, Technical Committee/Working Group Third Meeting Minutes Report, filed September 3, 2020.
[39] International City/County Management Association.
[40] District of Columbia Council Office of Racial Equity.
[41] US Environmental Protection Agency.

with access to decision-making power; and *recognition justice* involving respect for all peoples and worldviews."[42]

5. Energy Burden

"Energy burden is defined as the percentage of gross household income spent on energy costs."[43]

d) Granularity of Equity Metrics by Geography and Customer Class

At the second Metrics meeting, GRID2.0 also recommended in its presentation that CO_2e be measured per customer class because customer class will enable commensurate resources as deployed to mitigate largest emission sources. GRID2.0 stated that whether this metric should be further broken down by block, neighborhood, or zip-code was an open question to be determined, but that such granular data could be highly useful for focusing District programs.[44]

However, in the third Reporting Committee meeting, Pepco noted and WGL agreed that associating energy usage information to neighborhood, and sub-zip-code geography, and other political boundaries is extremely difficult with existing utility databases and the limitations of customer privacy and grid security laws and regulations. Pepco committed to working with OPC and other stakeholders to develop social equity data products based on available, verifiable utility information within the constraints of customer privacy and grid security laws and regulations.[45] The parties developed a consensus position which is discussed in section C.2.1.

At the fourth joint committee meeting (joint Metrics and BCA Framework committee meeting), GRID2.0 responded by suggesting further granularity on reliability equity by looking at the feeder level.

e) Possible methods for including metrics on equity and justice into BCA framework

- *A Question-based Rubric Option:* At the first meeting, OPC noted that a BCA framework must be accompanied by additional tools such as a question-based rubric to properly account for ratepayer equity implications of a utility's proposal.[46]

- *Qualitative Metrics:* WGL recommended that qualitative issues such as equity be assessed and included in the scoring.[47] For example, a percentage weighting should be given to quantitatively estimated costs and a percentage weighting should be given to qualitative factors such as equity, reliability, resilience, etc. Furthermore, a protocol needs to be developed to give scores to the qualitative factors. In the case of equity, significant weight should be given to the rate impacts on economically disadvantaged customers. WGL noted its belief that large rate increases are likely, and if they occur, they are likely to cause a disproportionate burden on the District's low-income residents. This is especially important because the current legal structure establishes a cost causation non-discrimination requirement in rate setting as opposed to equity alone, while the District's income distribution is the second most inequitable in the country. In light of this situation, WGL believed the position of parties to deny the use of possible cost savings measures such as the use of offsets seems especially misplaced. WGL also asserted that gas customers must be treated equitably vis-à-vis electric

[42] National Institutes of Health.
[43] US Department of Energy.
[44] *GD-2019-04-M*, Metrics Committee Second Meeting Minutes Report, filed October 22, 2020.
[45] *GD-2019-04-M*, Reporting Committee Third Meeting Minutes Report, filed May 26, 2021.
[46] *GD-2019-04-M*, BCA Framework Committee First Meeting Minutes Report, filed November 23, 2020.
[47] WGL Comments, January 13, 2020, GD2019-04-M. pages 16, 17 and 26.

customers. For example, WGL believed DOEE's proposal to only use offsets in the case of electric sector emissions unfairly penalizes gas customers.[48]

- *Alternative Analytical Path*: OPC suggested that these should be addressed by the Reporting Committee. Pepco agreed with DOEE that qualitative factors could be reported but noted that it does not believe an equity-focused program should be subject to a BCA. Pepco stated that in its experience, when proposing programs that provide issues to low- and moderate-income communities, those programs frequently do not always pass BCA due to the higher costs of providing services to LMI communities, and therefore, Pepco proposed that the Group not subject these types of programs to BCA. OPC reemphasized that it did not see anything in the Commission's NOI that would indicate that a BCA would necessitate a particular outcome. Pepco disagreed and believed it is difficult to see how a negative BCA would not inform an outcome. Pepco agreed that a more robust social equity definition is helpful but indicated its concern that the Working Group will define these different types of equity without further discussion. Pepco also agreed with Rábago Energy that the metrics could be both qualitative or quantitative. Finally, Pepco agreed that not all quantitative metrics would necessarily be monetized and included directly into the BCA.[49]

A.1.4.2. Stakeholder Comment Summary

Majority of the stakeholders agree that equity factors should be included in utility BCAs. OPC, GRID2.0, DCCA, DCSUN, and DOEE agreed with this suggestion that was offered in the survey: "Equity benefits will be addressed in the societal portion of the BCA, specifically in the Low Income: Society section which can potentially consider the benefits of poverty alleviation and local environmental justice." WGL and Pepco offered comments only. WGL stated its belief that additional study is required because large rate increases are likely the most antithetical aspect of the decarbonization process to equity concerns, especially if the District, and the District's poorest residences carry a disproportionate burden and advocated for the RIM test.[50] WGL has voiced concerns that pathways for GHG emissions reduction are being pursued without assessment of costs or feasibility. WGL proposed a long-term multi-sector IRP. WGL proposed RIM as a secondary test to help address equity and economic growth concerns. This would be input into the process of having quantitative and qualitative measures and would be a secondary test to the primary Societal Cost Test.[51] Pepco stated that BCAs should reflect the specific program being evaluated and that equity programs should not be subject to a BCA. OPC recommended that equity metrics be included in utility climate plan assessment but suggested that this topic would be addressed in more detail in the Reporting Committee. The definitions or evaluation of social equity metrics was not discussed in depth by the WG.

The SCT monetizes both benefits and costs of a proposed policy or program to society as a whole.[52] The District's SCT benefits include avoided energy costs, avoided generation capacity, and benefits from environmental externalities; costs include incentive payments and a variety of administrative and program costs. Additional societal impacts could include, among others, public health and low- and moderate-income outcomes.

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[48] *GD-2019-04-M*, Metrics Committee First Meeting Minutes Report, filed October 22, 2020.
[49] *GD-2019-04-M*, Technical Committee/Working Group Fourth Meeting Minutes Report, filed September 3, 2021.
[50] WGL Comments, January 13, 2020, GD2019-04-M. page 12, 25.
[51] *GD-2019-04-M*, Technical Committee/Working Group Fourth Meeting Minutes Report, filed September 3, 2021.
[52] Horii, Brian., Jim Williams. 2013. "CPUC Workshop on Societal Cost Test." E3: Energy and Environmental Economics. https://www.cpuc.ca.gov/WorkArea/DownloadAsset.aspx?id=11819.

DCSUN noted that, to the extent there is insufficient existing information about the costs and benefits of these additional societal impacts, a process must be created to develop this information. DCSUN also recommended that the definition of equity should be low- and moderate-income customers receiving proportional distributed energy resources, solar penetration, and energy efficiency program benefits to that of recipients who are not low- or moderate-income customers. GRID2.0 stated that there is a distinction between low-income societal benefits and low-income host customer impacts. GRID2.0 stated that the former includes housing crises or poverty caused by utility disconnection, whereas the latter includes energy-related impacts from the installation and operation of distributed energy resources, energy access, or non-energy impacts on health or economic wellbeing. OPC stated that low-income benefits should be expanded to include a wider set of equity benefits, including moderate income benefits. OPC noted that the stakeholders should avoid using zero-dollar-value placeholders for equity and should prioritize monetization of difficult to monetize outcomes.

There was also general agreement among stakeholders on the importance of assessing utility program costs and benefits for smaller (than the District as a whole) geographic regions, such as feeder, neighborhood, Wards or zip codes. GRID2.0 and Sierra Club called for equity metrics by geographic regions within the District. DCCA noted that localized benefits from greenhouse gas reduction measures should prioritize low-income groups whenever possible. DCSUN commented that the framework must consider cumulative impacts by Ward. Geographic benefits are part of OPC's call for a wider set of equity benefits as well. DOEE suggested that it would be possible to build a secondary test that focuses solely on distributional equity to address utility investments that are only marginally cost-effective. WGL noted that since the biggest equity issue is rate impacts, a long-term RIM test is critical with respect to the potential differential impacts on social equity.[53]

WGL supports a quantitative approach augmented by the inclusion of qualitative factors via a defined protocol and suggested a framework that can evaluate and weight critical qualitative factors that are difficult to quantitatively evaluate, such as reliability, resilience and equity.[54] WGL opposes a process that ignores costs, feasibility and rate impacts and notes that inattention to these issues is not only contrary to legal obligations related to affordability but also inimical to the goals of decarbonization because pursuit of ill-considered approaches decreases the chances of actually achieving the goals.

Pepco believed that the most effective means by which to advance equity goals are to further deploy explicit equity-focused programs and initiatives, including making various system investments that are explicitly designed with an equity focus, and that such programs and initiatives should not be subject to a BCA.

See additional stakeholder comments in **Appendix B at A.1.4.3.**

[53] WGL Comments, January 13, 2020, GD2019-04-M. pages 16,17 and 26.
[54] WGL Comments, January 13, 2020, GD2019-04-M. pages 16-18.

A.1.5. Non-majority Recommendation[55]

If applying carbon offsets, they must be purchased from a source that abides by one of the following standards: Climate SEED,[56] *Community Climate Biodiversity Standard (CCBA),*[57] *Gold Standard,*[58] *ISO 14064-1,*[59] *UNFCCC Clean Development Mechanism,*[60] *or the Verified Carbon Standard (VCS).*[61]

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.*

A.1.5.1. Background

Carbon offsets are emissions reductions from climate action projects that reduce, remove, or avoid GHG emissions. The resulting carbon reductions are sold as carbon offset certificates, with each certificate indicating the tons of carbon offsets purchased. Several entities offer carbon offsets for sale both within the US and internationally.

A key concern about carbon offsets offered for sale is whether the entities offering them are performing the carbon accounting from offset projects to a high standard — for example, whether carbon reduction impacts are being measured accurately, and whether offsets once sold are being "retired" so that each annual ton of carbon offset sold as a certificate is represented only once. Third-party verification of the carbon offsets being sold is therefore essential. To offer certified or verified carbon credits that are measurable and verifiable, projects must adhere to a rigorous set of criteria to pass verification by third-party agencies and a review by a panel of experts at a leading carbon offset standard.[62] After an organization or an individual buys a carbon credit, the credit is permanently retired so it cannot be reused.

A.1.5.2. Stakeholder Comment Summary

DOEE, DCCA, and Sierra Club reiterated that offsets should not be allowed. OPC, DCSUN, and GRID2.0 agreed that if carbon offsets were to be allowed, they should meet the proposed standards. At the time of the survey, Pepco stated that offsets had not been sufficiently discussed by the Working Group and if allowed should meet regulatory requirements. In a later stakeholder meeting, Pepco stated that there was no background on why these particular organizations or certification standards were selected. Pepco stated that it understood that the Working Group did not provide these suggested standards, it understood that Staff's consultant drafted and included the list of standards in proposed recommendations, and these were not discussed in the Working Group.[63] Pepco added that it does not believe that they should be called out in a recommendation when they have not been properly discussed in, suggested by, or vetted by the Working Group. Staff confirmed it did rely on the Staff consultant to produce a list of standards because it

[55] See footnotes 8 and 9.
[56] *See* https://climateseed.com/.
[57] *See* https://www.climate-standards.org/.
[58] *See* https://www.goldstandard.org/.
[59] *See* https://www.iso.org/standard/66453.html.
[60] *See* https://unfccc.int/process-and-meetings/the-kyoto-protocol/mechanisms-under-the-kyoto-protocol/the-clean-development-mechanism.
[61] *See* https://verra.org/project/vcs-program/.
[62] Adapted from https://www.southpole.com/carbon-offsets-explained#question3.
[63] In the survey, this proposal was added by the Staff's consultant, to ensure the integrity of any offsets used, with the list of sources based on the most recent list of standards vetted by the World Bank. *See* https://edgebuildings.com/wp-content/uploads/2020/03/200316-How-to-Apply-for-EDGE-Zero-Carbon-Certification.pdf.

was an area about which the consultant had a significant understanding. (Offsets and standards were discussed in subsequent meetings.)

WGL supports the use of offsets and participation in market platforms like RGGI. However, WGL agreed with Pepco that neither the topic of offsets nor accrediting organizations have been discussed within the CEAI WG and as such does not endorse any particular agency or platform at this time. WGL further stated that the District's 2050 goal of carbon neutrality, by definition balances carbon emissions with "taking action to remove as much carbon dioxide from the atmosphere as each put into it."[64] WGL believes that elimination of offsets, credits, and non-participation in RGGI or similar market trading mechanisms for emissions allowance is contrary to the District's commitment to net neutrality. WGL stated that in the absence of carbon capture and sequestration at scale in the District, which exists nowhere on earth at scale for environmental control purposes, the use of carbon offsets is certainly predicated and was acknowledged by DOEE consultants.[65] Also, WGL believes that including claims that offsets provided by these organizations are unreliable requires that these organizations be able to respond.

See additional stakeholder comments in **Appendix B at A.1.5.3** and **Appendix B at A.1.5.4**.

A.1.6. Working Group Majority Recommendation

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, beginning in 2022. The interim targets should be revised to account for shortfalls or exceedances in GHG reductions during previous performance periods.

A.1.6.1. Background

To ensure that the District is on track to meet its mandate, stakeholders discussed setting interim targets at the third Working Group meeting. Sierra Club noted that interim targets are important because many greenhouse gases remain in the atmosphere for a long time, hence the cumulative emissions affect climate damages. Interim targets are helpful because they help achieve emissions reductions prior to 2050.[66]

Staff asked if there were suggestions for interim 5-year goals or more granular annual goals for GHG reduction to reach the 50% GHG reduction by 2032 and carbon neutrality by 2050.[67] Staff asked DOEE if it recommends interim targets similar to those implemented by California, which may not be mandated by law.

DOEE updated the Working Group on the model being completed and stated that DOEE has enough of an idea to select appropriate interim targets to follow the roadmap.[68] DOEE noted that 50% by 2032 is the initial interim target, but DOEE will revisit whether that is enough, and whether a commitment to start offsets prior to 2050 is necessary.[69] DOEE also suggested that the Carbon Neutrality Strategy ("Carbon Free DC"), CEDC, and various electrification studies underway could inform certain aspects of GHG emission interim targets.

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[64] Carbon Neutral – also called carbon neutrality – is a term used to describe the action of organizations, businesses and individuals taking action to remove as much carbon dioxide from the atmosphere as each put into it.
[65] Public Service Commission of the District of Columbia, First Metrics Committee Meeting Minutes, October 22, 2020 p. 3 and Attachment 3.
[66] *GD-2019-04-M,* Technical Committee/Working Group Third Meeting Minutes Report, filed September 3, 2020.
[67] *GD-2019-04-M,* Technical Committee/Working Group Third Meeting Minutes Report, filed September 3, 2020.
[68] *GD-2019-04-M,* Technical Committee/Working Group Third Meeting Minutes Report, filed September 3, 2020.
[69] *GD-2019-04-M,* Technical Committee/Working Group Third Meeting Minutes Report, filed September 3, 2020.

OPC recommended annual targets that follow a linear interpolation between the latest inventory data on reductions below 2006 and the District's 2032 target. (OPC's survey response provides specific emissions reduction targets for each year from 2021 to 2032 and notes that annual targets are necessary for tracking and evaluating progress.). OPC has provided that, in the interest of developing a consensus, it would support the recommended three-year targets as an alternative, which is a reasonable option that furthers the goal of meeting the targets in a timely fashion.

GRID2.0 agreed with OPC that interim targets make sense, but having arbitrary milestones, even if well-modeled, is not the only approach to meet the broad goals. GRID2.0 highlighted that the models have more sharply decreasing emissions in the later years of the roadmap. It would be helpful to have meetings of the different emitting sectors every couple of years to discuss progress and shifting of resources depending on opportunity to meet the targets. Staff agreed that there will be continuing tasks of the Working Group, including monitoring progress and continuing momentum in GHG reductions.

DCCA supported GRID2.0's stance of public meetings of the different sectors to evaluate progress and make mid-course corrections as technology improves, probably every three years.

DCSUN provided a similar recommendation of 3-year goal cycles and an intermediate target of 20% GHG reduction by 2027 so as to not risk undershooting or backsliding on the 2032 target.

WGL disagreed with this recommendation and stated that the District set an interim goal for 2032 in support of its goal of carbon neutrality by 2050. WGL further noted that data is needed to determine additional goals, and that the question is substantially about customer costs and impacts on the grid. The utilities did not provide any other position during the meetings. Comments made in the stakeholder survey are included below.

A.1.6.2. Stakeholder Comment Summary

OPC, GRID2.0, DCCA, DCSUN, DOEE, and Sierra Club stated that interim targets should be set to ensure that the District is on track to meet its goals.

Pepco stated that no party addressed how interim greenhouse gas 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 noted that further research is required before considering interim greenhouse gas targets for the District, and only goals used for guidance should be considered at this time. Pepco raised the issue of possible penalties related to interim targets, cost recovery mechanisms, and regulatory hurdles.

WGL was concerned 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. WGL noted the costs, rate impacts, feasibility and other consequences of the current 2032 target which itself is an interim target vis-à-vis the 2050 goal was not investigated much less established and that this is important in light of the long lead times in the regulatory process, customer adoption rates, and the realities of permitting and building infrastructure.[70]

[70] Final Survey, page 16, "An interim target of 2032 already exists. Many programs for reductions will take some time for regulatory approval and then a number of years to deploy. Given the permitting and infrastructure development lead times in the energy sector, utilities are challenged to meet some of the CES decarbonization goals established for 2032. For example, many of the renewable power sources in the PJM are being taken out of the interconnection queue due to a lack of available transmission and the already long lead times for interconnection."

See additional stakeholder comments in **Appendix B at A.1.6.3.**

A.1.7. Working Group Majority Recommendation

'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:[71]

Average Emissions Factor (AEF): The average CO_2 *emissions per average unit of electricity delivered for an entire electricity system.*

Short-Run Marginal Emissions Factor (SR-MEF): The change in CO_2 *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_2 *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).*

A.1.7.1. Background

This topic addresses the methods for estimating the reduction in emissions of tracked GHGs and pollutants as a result of specific measures proposed by electric utilities — average versus marginal, and short-run versus long-run as defined above. Average emission factors are the total annual emissions of the grid (or relevant portion thereof) divided by the total annual electric demand—as if every additional megawatt-hour of demand caused exactly the same tons of emissions. Marginal emissions factors take a different approach by calculating the emissions per megawatt-hour of the marginal generating unit (the unit most likely to not run if electric demand is reduced—typically the most expensive unit in operation). Relatively small changes to electric demand will affect only that marginal unit and not the entire grid; the emissions impacts of small changes, therefore, are most accurately estimated using the marginal emissions factor and not the average. Very large or systemic changes to the grid that impact multiple types of generation may be more accurately estimated with an average or other purpose-specific emissions factor.

Emissions Factors

DOEE notes that typically, when energy efficiency and renewable energy projects in the electricity sector are evaluated in terms of avoided emissions, marginal emissions factors are used (or, in the case of eGRID, an approximation of marginal emissions called the "non-baseload emissions rate"), rather than average emissions factors (called the "total output emissions rate" in eGRID). The same approach should be used for Combined Heat and Power (CHP) units.

[71] *See* https://reader.elsevier.com/reader/sd/pii/S0306261914003006?token=D1FE51F39FADB0F274B61768BAE6A71AA1E1DA10A5A9E4583300177E4123B7B965905EB7910BDFF1C6CE788EDD476E94&originRegion=us-east-1&originCreation=20210906180600 and Environmental Science And Technology publication https://www.watttime.org/app/uploads/2019/03/Marginal-Emissions-Factors-for-the-US-Electricity-System_April-2012.pdf.

Pieter Gagnon from NREL noted during his presentation that marginal emissions factors, rather than average emissions factors, should be used to calculate avoided emissions, because that will provide a more accurate picture of the actual impact of the projects on emissions. However, he noted a need to distinguish short-run marginal emissions factors, which may be appropriate for demand response programs that respond incidentally to weather variability on a daily or seasonal basis, and a new measure of marginal emissions that is currently under development by NREL: the "long-run marginal emissions factor", which, when its development is completed, is designed for use in evaluating the emissions of projects that will have long-term structural impacts to the grid such as transit electrification.

The selection of the emission factors will substantially impact the BCA framework, and was discussed extensively at the meetings as well.

- At the second Metrics Committee meeting, Pepco noted that PJM reports marginal emission rates each year and also cited the GHG protocol final guidance. DCSEU noted that PJM does publish historic marginal and average on/off peak data. DOEE noted that the average is just one number without a time frame associated with it, usually presented as one number for average and marginal. DCSEU stated that it used average for city-wide, but if evaluating purchase EV impacts, it favors marginal. DOEE noted it calculates GHG reductions using average and marginal rates — city-wide emissions are reported on an average basis while it recognizes that TOU impacts and other factors are better using marginal rates.[72]

- In the first BCA Framework Committee meeting, NSPM gave a presentation discussing marginal emissions rates within PJM. Pepco noted using typical marginal avoided costs versus average costs for most projects because Pepco is currently only seeing smaller projects that avoid at most the construction of a substation or avoided generation. Pepco noted that PJM market benefits reflect marginal market values and that many of the benefits of LCS focus on PJM market values.[73]

- In the first Joint Metrics and BCA Committee meeting, PJM answered questions about the PJM Emissions Report: 1) Average and Marginal Emissions Rates calculations are explained; 2) Emissions factors are majority unit-specific or are non-emitting resources. The DCSEU presented on electricity and gas energy efficiency and some renewable energy programs. Electricity capacity benefits are calculated on summer demand savings while there is no time or seasonal differences for natural gas. DCSEU noted that it is assuming most marginal generation will be natural gas.[74]

- In the second Joint Metrics and BCA Committee meeting, NREL presented on their "Standard Scenarios Report." NREL included discussion of average and marginal emission rates. NREL noted that their model does not model system components below the substation. NREL noted that, under a 100% RPS requirement, the emission induced by new load would indeed be close to zero, although they can be non-zero depending on how the specifics of the regulation are implemented (*e.g.*, whether REC requirements are defined in terms of consumption or generation). Additionally, in regions that ramp up to 100% RPS requirements over the coming decades, additional electricity consumption during the ramp up would induce non-zero emissions, and local planners may wish to take the ramp-up into consideration. NREL also explained its short-run and long-run marginal

[72] *GD-2019-04-M,* Metrics Committee Second Meeting Minutes Report, filed October 22, 2020.
[73] *GD-2019-04-M,* BCA Framework Committee First Meeting Minutes Report, filed November 23, 2020.
[74] *GD-2019-04-M,* Joint Metrics and BCA Committee First Meeting Minutes Report, filed December 9, 2020.

emission projections and noted that its long-run marginal emission projects are still under development.[75]

- In the third Joint Metrics and BCA Committee meeting, GRID2.0 noted the utility impact needs to be measured over the lifetime of that program's impact, and that utilities don't have much data on marginal cost of infrastructure spending. NSPM presented regarding BCA for DERs, including discussion of marginal emissions rates. DOEE presented on climate change metrics, and also discussed quantification of impact of measures. The DOEE presentation talked about long-run, short-run, and hourly marginal emissions in context of calculating the emissions avoided from BAU. DOEE emphasized picking a scenario consistent with DC and regional goals when considering grid emissions, in a grid-based method.[76]

- Pepco noted that there are many components embedded into the background and recommendation itself. One component is marginal versus average emission factors. Pepco stated that there is no one-size-fits-all approach to marginal versus emissions factors. Smaller impacts make sense to measure on a marginal basis, but larger impacts may affect which generators are operating and have more dynamic impacts to emissions beyond the marginal generator. Pepco stated that large programs, like energy efficiency programs, may have a larger impact and shift the entire PJM dispatch stack (*i.e.*, change the marginal generator), so an average may be appropriate to more accurately reflect the program's effect on total emissions. Pepco proposed modifying the recommendation to say that the selection of marginal versus average emission factors should be determined according to the scope of the program. Pepco stated that the LCS BCA uses the marginal emissions rate as of today, as published by PJM. Pepco recognized that the emissions rate of the grid is changing, and there needs to be a discussion on how to treat emissions to reflect the changing emissions profile of the grid. Pepco indicated its support for using existing market data in the short-term and recommended that, to reflect the differences in program impacts, the recommendation not be prescriptive on marginal emissions versus average emissions. Pepco did not specifically recommend an approach to determine a long-run emissions factor and stated that this would need to be the subject of future discussions.[77]

- WGL noted that the emissions factor of the grid, whether it is established via average rate, short-run marginal emissions rate, or long-run marginal emissions rate, is relevant to estimating GHG emissions associated with electricity using the grid-based method. The grid-based method estimates electricity's GHG intensity by evaluating the emissions from the power plants in a given balancing authority. However, this method ignores energy contracts and products, such as power purchase agreements or Renewable Energy Certificates. The grid-based method and the market-based method are not easily reconciled. A general description of how grid-supplied electricity is accounted for in DOEE's GHG Inventory, including a short discussion on "location-based" and "market-based" methods of calculation, is available in the standard titled "Global Protocol for Community-Scale Greenhouse Gas Emission Inventories."[78] Key parameters include RPS of PJM states, CO_2 emission regulations, fuel prices, cost of power plants demand, regulation applicable to

[75] *GD-2019-04-M,* Joint Metrics and BCA Committee Second Meeting Minutes Report, filed February 18, 2021.
[76] *GD-2019-04-M,* Joint Metrics and BCA Committee Third Meeting Minutes Report, filed March 3, 2021.
[77] *GD-2019-04-M,* Technical Committee/Working Group Fifth Meeting Minutes Report, filed September 3, 2021.
[78] *See* https://ghgprotocol.org/greenhouse-gas-protocol-accounting-reporting-standard-cities.

renewables and storage including reliability contributions, etc. WGL's Climate Business Plan demonstrates the feasibility of such an approach.[79]

Emissions Tracking Protocol

It is important to note that this effort is different from an emissions tracking method used for a GHG Emissions Inventory. The GHG Protocol, developed by the World Resources Institute and the World Business Council for Sustainable Development, provides several ways of measuring GHG emissions, depending on the purpose of the measurement. For example, the District of Columbia's GHG Emissions Inventory, which is maintained by DOEE, is used to provide a high-level historical trend of estimated GHG emissions reasonably attributable to the actions taken by District residents, businesses, and governmental entities based on availability of data.[80] For the Inventory, DOEE uses the Global Protocol for Community-Scale Greenhouse Gas Emission Inventories.

However, the purpose of measurement contemplated in this Working Group is different: the DCPSC needs to know the amount of GHG emissions that would be reduced or avoided by taking specific actions or implementing projects or programs. Subject to further discussion and deliberation, the use of the GHG Protocol for Project Accounting (for individual projects) or the Policy and Action Standard (for a portfolio of projects or corporate-wide policies) might be considered for this purpose. These documents are both available here: https://ghgprotocol.org/standards.

For the purposes of GHG inventories, emissions are categorized into Scope 1 (direct emissions from sources owned or controlled by an organization); Scope 2 (indirect emissions from sources but are directly related to the organization, such as emissions associated with heat or steam purchased from a provider); and Scope 3 (those that are from sources not owned or directly controlled by utility but that are *related to* organizational activities, such as emissions associated with employee travel and commuting, solid waste, wastewater treatment and transportation and distribution (T&D) losses associated with purchased electricity).[81]

The GHG Protocol provides a perspective for consideration on how these approaches are different and when they should be used. An inventory quantifies emissions in the past, so it can serve as a basis for, but is not a substitute for a business-as-usual (BAU) projection into future years. A BAU projection is used as a baseline in estimating the reductions that are anticipated via policies, actions, projects, etc.

Note that DOEE opposes the use of the Corporate Standard for GHG accounting for Standard Offer Service procurements. A portion of the GHG Scope discussion in the "Background" section is based on the Corporate Standard GHG Protocol (and it is referenced again in C.6.1) instead of the Protocol for Cities. The District uses the Cities Protocol, as DOEE has indicated to this group in previous work sessions. DOEE recognizes the complexity of this issue, and is willing to discuss with Pepco and OPC to arrive at a resolution.

DOEE tracks emissions using the Global Protocol for Community-Scale Greenhouse Gas Emission Inventories (GPC) as well as from the DC government using the Local Government Operations Protocol

[79] Final Survey, page 14, "Our CBP analysis clearly shows that significant EV activity is the most economic decarbonization program available."
[80] DOEE notes that the current inventory may be underestimating the GHG footprint of the District of Columbia to the extent that GHG emissions data for some activities, for example, imported goods and services (Scope 3), are not available, and the emissions numbers may be revised in the future as more data becomes available.
[81] *See* https://www.epa.gov/greeningepa/greenhouse-gases-epa.

(LGO Protocol).[82] The Washington DC GHG inventory captures Scope 1 and Scope 2 emissions. Emissions associated with solid waste disposal are the only Scope 3 emissions currently tracked by the District.

Both Clean Energy DC and Carbon Free DC use a BAU scenario, which includes existing policies, and they project GHG reduction scenarios based on its list of potential new policies and actions. This approach is largely consistent with the GHG Protocol for Policy and Action Standard. According to the GHG Protocol, the Protocol for Project Accounting is similar to the Policy and Action Standard, in that they both "estimate[] changes in GHG emission from the implementation of an action relative to a baseline scenario that represents what would have happened in the absence of that action." However, they apply to different scales: "In general, the Project Protocol should be used for small-scale interventions, such as those occurring at a single site, while this [Policy and Action] standard should be used for interventions at a broader scale. [] Some types of interventions—such as projects of the same type implemented at multiple sites, infrastructure programs, or implementation of new technologies, practices, or processes—may blur the line between projects and policies. In situations where multiple standards are applicable, users should consider their objectives. For example, project-level methodologies are typically designed for crediting or offsetting."[83]

A.1.7.2. Stakeholder Comment Summary

OPC, DOEE, DCCA, DCSUN, GRID2.0 and Sierra Club agreed that 'marginal' emissions factors (MEF) should be used to estimate the emission impacts but were divided on the use of long-run versus short-run factors. DOEE, DCCA, DCSUN, GRID2.0 and Sierra Club agreed that 'long-run' factors (LR-MEF) will best reflect the long-term impacts of the utility proposals. Sierra Club added that marginal emissions factor for gas may need to be computed in future using the same principles as discussed here for electricity if natural gas had more than just fracked methane in the gas supply system. Sierra Club emphasized this during a Working Group meeting. DOEE stated that they would support the proposed grid-based approach to estimate emissions factors versus a market-based approach only if long-run values were used. DOEE was concerned that 'short-run' factors (SR-MEF) may result in highly inaccurate results because LR-MEF considers a more comprehensive set of factors but was open to considering an approach where both SR-MEF and LR-MEF are used depending on the types of projects and load that are targeted. Until those factors are better developed and thoroughly vetted, the more established SR-MEF should be used in utility proposal assessment.

Pepco stated that a "long-run hourly marginal emissions factor," as presented by Pieter Gagnon from the National Renewable Energy Laboratory, was presented briefly at a high-level but was not discussed in depth by the Working Group. Pepco stated that the inclusion of a "long-run" emissions factor relies on the use of a model to project emissions. The assumptions behind any such model would need to be discussed and vetted by Working Group members.

WGL's identified numerous matters relating to the development and application of emission factors, summarized as follows (See full explanation in Appendix):

a. Direct emission factors are only a significant issue in the case of using electric power.

[82] The Global Protocol for Community-Scale Greenhouse Gas Emission Inventories (GPC) is the result of a collaborative effort between the GHG Protocol at WRI, C40, and ICLEI. https://ghgprotocol.org/GPC_development_process.

[83] *See* p.10, Section 1.9, the GHG Protocol for Policy and Action Standard, https://ghgprotocol.org/sites/default/files/standards/Policy%20and%20Action%20Standard.pdf.

b. Electricity is coming from the PJM grid. Practically no generation occurs in the District. One can model emissions with and without the District's power demand and determine emissions due to the District's power demand. This allows for average and marginal emission rate determination (as was done for the WGL Climate Business Plan).

c. Development of emissions factors requires the use of a recognized model. (WGL used the IPM model in the WGL Climate Business Plan, the same as the US EPA uses.)

d. This work is very sensitive to assumptions (base case and program electricity demand, RPS levels in DC and in all states, RGGI, the costs of new technologies, federal subsidies, fuel costs, entry and exit of powerplants, etc.) This work is hard and costly to perform and needs to be transparent.

e. The most common impact of electricity demand changes such as electrification is high reliance on fossil fuel as the marginal source. This is due in turn to fossil fuel being on the margin in nearly every hour. There is a low average PJM RPS, RPS programs do not match actual power usage which is hourly not yearly. There is also little in terms of PJM CO2 programs with $/ton average CO2 costs close to zero.

f. The District's 100% RPS does not mean that District electricity demand does not result in GHG emissions. DC RPS can have little impact on actual emissions; the exact level in each year requires detailed grid modeling.

g. WGL understands there is little history of detailed analysis of stringent decarbonization programs. That contributes to why WGL recommends a long-term multi-sector IRP study.

h. The District should first commit to assessment of the costs of the RPS, before undertaking a complex exercise on emission and emission factor modeling. Even though the RPS has been in place for years, no analysis has yet been undertaken and made publicly available. This analytic gap highlights the problematic nature of undertaking a complex modeling exercise. [35]

i. No proposal has been made for modeling the transportation or gas sectors. [36]

j. In the event that detailed modeling is delayed, no reason has been given for not using the DCSEU long term marginal emission rate. This emission rate has been in use for years and was discussed during the CEAIWG presentation of NMR (December 1, 2021) and by WGL. WGL opposes leveraging the NREL model for this purpose because the model is unproven in any regulatory context, is not disaggregated, and there is no process for assumption development, and assessment.[37]

See additional stakeholder comments in **Appendix B at A.1.7.3.**

A.1.8. Working Group Majority Recommendation

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.

A.1.8.1. Background

The values recommended for emissions factors vary by stakeholder and application. In the first Working Group meeting, WGL stated that they used the EPA Emission Factors for Greenhouse Gas Inventories, which is the same factor used in the EPA's Annual Inventory of U.S. Greenhouse Gas Emissions and Sinks

(EPA Inventory). In the first Metrics Committee meeting, DOEE noted it used location-based reporting from the EPA eGRID NE data, which is updated every 2 years, noting that it used the latest update, and that DOEE pulls data and factors from eGRID. OPC asked whether DOEE made adjustments to eGRID based on REC emissions. DOEE responded by stating that it tried to reconcile market-based regulation and location-based data, pointing to the CEDC Act appendix describing REC treatment. Staff asked if DOEE took into account other adjustments to eGRID such as the actions stemming from local actions, DCRPS, and energy efficiency. DOEE responded that on the energy efficiency side, DOEE makes assumptions about local actions, such as new building codes, but there are different assumptions for different sectors.[84]

At the second Metrics Committee meeting, Staff gave a presentation comparing different state approaches.[85]

Dr. Giacombi gave a presentation at the first Joint Metrics and BCA Framework Committee meeting discussing PJM emission factors, noting that a small percentage of generation was assigned an emission factor based on EPA eGRID data. The presentation included many examples of emission factors for CO_2, NOx, and SO_2.[86]

DOEE's presentation to the third Joint Metrics and BCA Framework Committee meeting discussed grid emissions, noting Clean Energy DC is based on RFC-E emissions factor (average), adjusted based on DC RPS and PPAs. DOEE further noted Cambium-generated emissions data is used for PJM-East and recommended choosing scenarios consistent with the District and regional climate goals. In context of methane emissions, DOEE recommended natural gas emission factor should be revised as EPA's emission factor for natural gas does not consider fugitive emissions. DOEE noted upstream emissions also impact PJM's grid emissions for natural gas power generators.[87]

Pepco stated there are different geographic regions being proposed across multiple recommendations for emissions, which would result in a benefit-cost model that was not internally consistent. The current proposed Majority Recommendations A.1.5 and A.1.8 include different regions for emissions factors for GHG and various air pollutants. Because the group has focused on marginal emission rates, this could imply that a single kWh could affect one generator for the purposes of GHG reductions, a second generator for the purposes of NOx and SOx emissions, and a third for particulate matter. This creates inconsistency in the model and confusion and could lead to continued litigation of the BCA modeling framework due to the confusion and inconsistency. Pepco disagreed with the implication that "PJM-east" is equivalent to a recommendation to use "most local" values.[88]

In the interest of moving ahead, Staff proposed that the Working Group can start with the best values available and continue refining the values for DC as they become available. Therefore, the majority recommendation focuses on using the most local values available as the policy rather than a particular set of values.

A.1.8.2. Stakeholder Comment Summary

The survey had polled for agreement on using PJM-East values developed by NREL. DOEE and OPC supported the proposal to use NREL values. However, DCCA, GRID 2.0, and Sierra Club did not agree that the NREL PJM-East model is adequate. They stated that because of the District's advanced RPS standards, DC's emission factors might be quite different from its neighbors and a tailored protocol would

[84] *GD-2019-04-M,* Technical Committee/Working Group First Meeting Minutes Report, filed April 7, 2020.
[85] *GD-2019-04-M,* Metrics Committee Second Meeting Minutes Report, filed October 22, 2020.
[86] *GD-2019-04-M,* Joint Metrics and BCA Committee First Meeting Minutes Report, filed December 9, 2020.
[87] *GD-2019-04-M,* Joint Metrics and BCA Committee Third Meeting Minutes Report, filed March 3, 2021.
[88] *GD-2019-04-M,* Technical Committee/Working Group Fifth Meeting Minutes Report, filed September 3, 2021.

need to be developed specific to DC. Pepco stated Cambium model's Standard Scenarios are the outcomes of a research model and relies on assumptions that were neither adequately vetted nor discussed by members of the Working Group. Pepco stated there are different geographic regions being proposed across multiple recommendations for emissions, which would result in a benefit cost model that was not internally consistent. This creates inconsistency in the model, creates confusion, and could lead to continued litigation of the BCA modeling framework due to the confusion and inconsistency. Pepco stated that it is unclear if "PJM-east," as discussed by some parties, is equivalent to a recommendation to use "most local" values. WGL disagreed with using the NREL values stating that the process for setting long-term emission factors must be clarified especially regarding the establishment of the assumptions.[89] DCSUN suggested that the emission factors be based on the highest resolution available.

See additional stakeholder comments in **Appendix B at A.1.8.3.**

A.1.9. Working Group Majority Recommendation

Upstream emissions of GHGs covered by A.1.1 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.

A.1.9.1. Background

The first Working Group meeting initiated discussion about methane emissions and methane leaks.

OPC asked, which emissions are included and which are not and whether leaked methane from the extraction, long-distance transmission, and local distribution were included in WGL's reporting and procedures. WGL stated that they report Scope 1 & 2 emissions in the Company's emissions inventory and that they also report data on customer usage (Scope 3) to MWCOG, which is used by regional jurisdictions, including the District, to calculate their respective emissions inventories. WGL stated that they use the EPA emissions factors for the four types of distribution, mains, pipes and service lines (cast iron, wrapped steel, bare steel and plastic) per EPA methodology. The same data is provided to DOEE for use it its inventory.

OPC also asked, whether upstream and other methane leaks are included in the District's inventory. DOEE responded that they do not currently have upstream methane captured in the inventory, only downstream (local) emissions reported by WGL. DOEE is working to incorporate upstream fugitive methane to both the electric and gas emission factors for its inventory for the next reporting year (2020).

EDF presented a brief overview of perspectives and experience in other jurisdictions. The presentation primarily focused on advanced leak detection technology and data analytics that can be used to establish a current emissions baseline for the gas distribution system, track and credit methane emissions reductions achieved through leak remediation, and help gas utilities reduce methane emissions more quickly and efficiently. EDF noted that leaks happen in small and large increments, but its recommendation is to locate and focus on the larger leaks first as this is the more effective way to lead to a great reduction over time.

[89] Final Survey, page 4, "Validation of the NREL approach undetermined at this point. (Who sets assumptions – EIA, EPA, PJM itself?)", page 18, "if modeling is to be used to determine marginal emission rates, then numerous metrics need to be determined such as RPS CES levels, capacity expansion and retirement withdrawals, powerplant dispatch, etc. Base line costs are required for the existing District RPS which requires modeling, especially if assumptions are made about future RPS, CES levels in each PJM state change from current levels."

The EDF presentation recommended tracking and crediting methane emissions reductions achieved through leak remediation.[90]

In the second Metrics Committee meeting, EDF stated that a lot of new technology is emerging to detect GHG, and as more precise methods come out, the Commission should be open to incorporating any new information. EDF further noted that natural gas distribution systems, local distribution systems, and upstream sources are detecting methane emissions at higher levels than traditional methods. GRID2.0 echoed the EDF comment and noted that, for example, DCSEU is looking at changes with respect to its "GHG Benchmarking Proposal." Specifically, the changes would increase the accuracy/precision of GHG measurement, energy efficiency, including reductions due to energy efficiency, and technology advancements, to further decarbonization.[91]

In the third Joint Metrics and BCA Framework Committee Meeting, during its presentation, DOEE noted that upstream emissions also impact PJM's grid emissions for natural gas power generators. In a presentation delivered at the second Reporting Committee meeting, WGL noted that these upstream emissions associated with fossil fuel extraction that is used to generate PJM electricity are not captured in emissions reporting for electric generating facilities.[92] WGL further noted a number of data quality and collection issues that affect the accuracy of reporting upstream emissions. WGL referenced its Climate Business Plan, where WGL proposed purchasing certified gas from best practice extractors to reduce upstream emissions of natural gas extraction.[93]

Pepco asked about the definition of "upstream" emissions, asking if it was focused on emissions such as fugitive emissions from wells. Pepco stated that it is not ready to support the recommendation, stating these emissions are not part of what is currently measured as District's emissions. Further, AOBA asked, "Where do we stop with this upstream daisy chain of emissions calculations? How far down do we need to go - do we calculate the cost of emissions for excavation for rare metals that are used for solar panels?" Pepco responded to this conversation by noting that upstream emissions from generation it purchases on the PJM market is currently out of scope for the District. Pepco asked about upstream gasoline emissions, as it would apply to the transportation electrification efforts. It would make sense to be placed on the same framework.[94]

A.1.9.2. Stakeholder Comment Summary

OPC, GRID2.0, DCCA, Sierra Club, and DCSUN supported this majority recommendation. OPC agreed that upstream emissions of natural gas in electric generation should also be included, and that additional research should be undertaken in this area. 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), and noted that Pepco does not track, control, or otherwise influence the GHG attributable to the production and extraction of natural gas. WGL also 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 (lower- and fixed-income households. This is problematic because of the large body of regulatory law and practice emphasizing cost and revenue requirement minimization. WGL also argued that upstream emissions are embodied in transportation and electrical generation fuels, and

[90] *GD-2019-04-M,* Technical Committee/Working Group First Meeting Minutes Report, filed April 7, 2020.
[91] *GD-2019-04-M,* Metrics Committee Second Meeting Minutes Report, filed October 22, 2020.
[92] Final Survey, page 10, "If upstream fugitive methane emissions are included for direct use natural gas, they should also be included for electricity."
[93] *GD-2019-04-M,* Joint Metrics and BCA Committee Third Meeting Minutes Report, filed March 3, 2021.
[94] *GD-2019-04-M,* Joint Metrics and BCA Committee Third Meeting Minutes Report, filed March 3, 2021.

excluding them from consideration would be discriminatory against gas customers. Similarly, exclusion of emissions embodied in the production of renewable generation would also be inconsistent and discriminatory. Staff notes that the intent is to include upstream emissions for both gas and electricity.

See additional stakeholder comments in **Appendix B at A.1.9.3.**

A.1.10. Working Group Majority Recommendation

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.

A.1.10.1 Background

DOEE's presentation to the third Joint Metrics and BCA Framework Committee discussed methane emissions from natural gas.[95]

A.1.10.2 Stakeholder Comment Summary

OPC, DCCA, DOEE, Sierra Club, and DCSUN supported a proportionate attribution based on total emissions from the supply chain. GRID2.0 suggested using a proportion of the total emissions for North America. WGL noted that it reports emissions related to the distribution of its natural gas but opposes reporting upstream emissions noting that it was highly discriminatory against gas customers to single out these emissions only from the natural gas sector, without a parallel discussion for electrical generation and transportation.[96] These sectors rely on the same upstream emissions producing equipment especially for marginal electricity generation. Embodied emissions are also incurred via the use of renewable technologies. WGL also argued that counting upstream emissions, which are not under the company's direct control, without supporting the use of offsets is illogical and unnecessarily results in higher costs for those least able to shoulder the cost burden (lower- and fixed-income households). The problematic nature of this recommendation is reflected in the large body of regulatory law and practice emphasizing cost and revenue requirement minimization.

Pepco supported including distribution losses for all utilities but not upstream emissions and noted that Pepco does not track, control or otherwise influence the GHG attributable to the production and extraction of natural gas.

See additional stakeholder comments in **Appendix B at A.1.10.3.**

[95] *GD-2019-04-M,* Joint Metrics and BCA Committee Third Meeting Minutes Report, filed March 3, 2021.
[96] Final Survey, page 10, "if an attempt is made to include these emissions, symmetrical and equitable reporting for ALL energy sources is important. Marginal electricity is produced by fossil thermal plants." "This includes transportation fuels which have not been adequately discussed."

A.2. Cost of Carbon

A.2.1. Non-majority Recommendation[97]

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_2O *should be multiplied by the IPCC factors discussed in the next recommendation.*

A.2.1.1. Background

The social cost of carbon (SCC) is used to estimate in dollars all economic damage that would result from emitting one ton of carbon dioxide into the atmosphere. It indicates how much it is worth to us today to avoid the damage that is projected for the future.[98]

- In the first Working Group meeting, WGL presented on considerations for assigning values to social cost of carbon. WGL noted the NY Rev, RGGI, and CA QCI values. NY Rev uses EPA's social cost of carbon based on a 3% discount rate. WGL stated that as indicated in its filed comments and the slide deck presented on March 30, they are advocating for the use of a societal cost test generally, for EE programs specifically and for most other utility programs. WGL also stated that societal cost tests must be supported with a solid methodology, consistent application, and with an agnostic technological or fuel neutral approach.[99]

- In the second Working Group meeting, DOEE's presentation primarily focused on evaluating the impact of GHG emissions using two different methods: (1) social cost of carbon, and (2) marginal abatement cost. Pepco asked which states are currently using a marginal abatement cost method? DOEE replied that the California utilities are required to use the marginal abatement cost in their integrated resource planning. WGL observed that while the analysis in Pepco's presentation was heavily predicated on valuations of costs and benefits, DOEE's presentation was solely focused on abatement cost, which is not consistent with the principles of cost benefit analysis which are the underpinnings of social carbon cost evaluations.[100]

- In the first BCA Framework meeting, WGL inquired if and how Pepco incorporates estimates of social cost of carbon (SCC). Pepco responded that it uses the most recent EPA SCC numbers, adjusted to account for differences between nominal and real dollars. Pepco does try to tailor the BCA to a specific project. For example, Pepco mainly focuses on reliability needs, but if a project

[97] See footnotes 8 and 9.
[98] See: https://news.climate.columbia.edu/2021/04/01/social-cost-of-carbon/.
[99] *GD-2019-04-M*, Technical Committee/Working Group First Meeting Minutes Report, filed April 7, 2020.
[100] *GD-2019-04-M*, Technical Committee/Working Group Second Meeting Minutes Report, filed May 8, 2020.

is more focused on GHG reduction or other climate protection goals, if DC adopted a specific SCC estimate, Pepco would try to align the BCA with whatever is most applicable.[101]

- At the first Joint Metrics and BCA Framework Committee meeting, DCSEU presented that its policy assumption of $100 per short ton abatement cost is taken from New England Avoided Cost of Energy Supply studies. If carbon price is assumed to be zero then B/C for DCSEU is around one. The $100 carbon price contributes to the B/C ratio of approximately two (2) for the entire DCSEU portfolio. Put another way, nearly all the net benefit is emission related, especially CO_2 related. WGL questioned why a New England study using cost of abatement rather than the EPA Social Cost of Carbon (SCC) was chosen. Specifically, Washington Gas asked whether it was it more detailed, or methodologically superior. The basis appears fundamentally flawed as demonstrated in the 2021 New England Avoided Cost Study SCC discussion page 15: (1) the discount rate used is too low (see discussion on discount rate); (2) consideration of high-risk situations means that the expected value is not used and violates the premise of discounting – the expected value is the only value that can be discounted in a BCA; and (3) use of marginal abatement cost means that the study is no longer a BCA. Further WGL asked about the alternative method (marginal cost of abatement) violating the legal requirement for a BCA and whether any party has a suggested marginal cost of abatement for DC. NMR presented numerous estimates of SCC and showed DCSEU $100/ton was among the highest cost of carbon used. Sierra Club also presented, noting using a social cost of carbon in a BCA is a useful step forward, but needs to be integrated in an appropriate overall framework. Sierra Club stated we need to look at which technologies will reach the District goals at least cost. BCA cannot be done in a vacuum, as results will change as a specific cost of carbon is set. More time and effort are needed to figure out a cost of abatement, including bringing in experts.

- At the second Joint Metrics and BCA Framework meeting, Staff gave a presentation of different state jurisdictional approaches to evaluating carbon and the social cost of carbon. Staff also noted Federal guidelines for calculating the social cost of carbon. Staff posed the question whether to lower SCC to the Obama administration's levels or keep it the same as DCSEU, which used $100/short ton ($110/metric ton) as SCC.[102]

- At the third Joint Metrics and BCA Framework meeting, WGL presented on parameters for establishing the social cost of carbon. WGL noted application of Marginal Cost Abatement is inappropriate and contrary to reasonable, just, and nondiscriminatory ratemaking.[103] Pepco stated that federal science-backed numbers should be relied on for cost of carbon. Pepco stated it is open to discuss some examples that rely on that science, such as New York Department of Environmental Conservation ("NY DEC") that relied on the federal science underlying and selected a lower discount rate, which resulted in a social cost of carbon of approximately $125/ton, which was similar in magnitude to the value used by the DCSEU. Staff asked if Pepco suggests $125 as used by NY DEC. Pepco stated the number was approximately $125/ton, subject to check, but procedurally, Pepco supported numbers that are produced based directly off of the rigorous and well-documented federal science. Pepco provided a link to the NY DEC social cost of carbon discussion and decision: https://www.dec.ny.gov/press/122070.html.[104]

[101] *GD-2019-04-M*, BCA Framework Committee First Meeting Minutes Report, filed November 23, 2020.
[102] *GD-2019-04-M*, Joint Metrics and BCA Committee Second Meeting Minutes Report, filed February 18, 2021.
[103] *GD-2019-04-M*, Joint Metrics and BCA Committee Third Meeting Minutes Report, filed March 3, 2021.
[104] *GD-2019-04-M*, Joint Metrics and BCA Committee Third Meeting Minutes Report, filed March 3, 2021.

- Pepco supported a social cost of carbon promoting the District's climate goals. However, Pepco argued that any social cost of carbon used needs to be rigorously developed well-vetted or otherwise it could result in protracted legal challenges. Pepco recommended the United States Government's Interagency Working Group on Social Cost of Greenhouse Gases in 2021, which is transparent, objective, and unbiased. Further, Pepco supported the use of the federal social cost of carbon, social cost of methane, and social cost of nitrous oxide. Pepco stated that it understood the social cost of carbon would be evolving with the update from the federal government in February 2022, and relying on a social cost of carbon based on the federal science, but using a discount rate more reflective of District stakeholders' view of an appropriate discount rate, could enable adopting the new federal value more easily. Pepco stated that it did not directly recommend the NY DEC social cost of carbon but would be open to that approach.

- Pepco agreed that inflation should be included and that when Pepco has cited a specific value for the social cost of carbon, it understands that that value is being recorded in nominal dollars. Pepco stated that in its analyses, it reflects necessary inflation or deflation and that the adjustment may look different depending on whether a real or nominal analysis is conducted.[105]

- At the fourth Joint Metrics and BCA Framework meeting, Staff discussed looking at the Federal values for Social Cost of Carbon and Social Cost of Methane, which already accounts for the time impact of the GHGs. WGL indicated its belief that it is already built into the pricing, so following the Biden administration's approach makes the most sense; another issue is giving preference and weighting for GHG emissions that can stay in the atmosphere for hundreds to thousands of years if the group focuses too much on the different time horizons.[106]

A.2.1.2. Stakeholder Comment Summary

OPC, GRID2.0, DCSUN, and DOEE agreed to the idea of using the DCSEU figure of $110.23/metric ton CO_2 for consistency. GRID2.0 stated that it was desirable for all District of Columbia programs to use a standardized approach. GRID2.0 recommended using DCSEU's values with DCSEU eventually revising those values as needed. DCCA, Sierra Club, Pepco, and WGL disagreed. DCCA stated it will not take a position without knowing how DCSEU arrived at the figure.

Sierra Club noted that the cost of carbon that would be adopted needs to be sufficiently high to incentivize utility actions that support achievement of the District's Climate Commitments. As such, one cannot adopt a cost of carbon without considering the marginal abatement costs and the specific greenhouse gas reduction goals of the District over time. Sierra Club also disagreed with DCSEU figures and stated a preference for higher numbers to manage risk better. Sierra Club suggested using the 95th percentile scenario in the Federal guidelines coupled with a 2% discount rate. 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 than the values at 3% discount rate.

WGL opposed the recommendation. WGL considers it inconsistent and arbitrary, undocumented, and non-transparent. WGL stated 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 Federal values published in February 2021 and that the use of the readily available Federal values must be properly applied. WGL pointed out that discounted cash flow analysis

[105] *GD-2019-04-M*, Joint Metrics and BCA Committee Third Meeting Minutes Report, filed March 3, 2021.
[106] *GD-2019-04-M*, Joint Metrics and BCA Committee Fourth Meeting Minutes Report, filed March 29, 2021.

must use the expected or 50th percentile estimate and hence the only basis for using the 95th or some other percentile is a clear showing that the expected value is in error.[107]

WGL objected to the use of marginal abatement cost because it is directly contradicted by every US EPA approach. Also, the marginal abatement cost converts a BCA approach to a cost analysis approach – there is no regard to benefits and is, by definition, not a BCA analysis.[108]

Pepco indicated that it is open to the use of social cost of carbon, cost of methane, and cost of nitrous oxide values that are calculated using a discount rate lower than the utility's WACC due to the intergenerational effects of GHG pollutants, if the values are based on the IWG federal cost of GHG scientific record. Pepco further noted the topic of the SCC was not adequately discussed in the Working Group meetings.

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 Working Group plan to consider using a marginal abatement cost curve in the next cycle (for reasons explained in the 2018 IPCC report). The goal of this exercise is to identify a SCC that is high enough to achieve the carbon neutrality goal, and DOEE notes that the EPA's current SCC ($51) is designed to be consistent with 3 degrees of global warming, which is far removed from the District's goal to keep the global warming to 1.5 degrees from preindustrial levels.

WGL also repeated its position that the utility's cost of capital should be used in order to cover incurred costs. The Commission's statutory mandate under D.C. Code § 1-204.93 requires the Commission to ensure that utilities furnish safe and adequate service and ensure that charges made by utilities are reasonable, just and non-discriminatory. Use of a federal government debt discount rate that will reach 3% for utility actions is therefore not just and reasonable.[109]

See additional stakeholder comments in **Appendix B at A.2.1.3**.

A.3. Time Horizon for Methane/GWP values for other GHGs

A.3.1. Non-majority Recommendation[110]

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.

[107] Final Survey, page 13, "There is no rationale for DC SEU number."
[108] Ibid.
[109] Final Survey, page 21 The 3% value is based on the ten-year US treasury rate. *See also*, Technical Support Document: Social Cost of Carbon, Methane, (whitehouse.gov), page 19. Cit
ed in Final Survey on page 13.
[110] See footnotes 8 and 9.

The current 100-year IPCC values as per AR5 are:

Methane *28*

N2O *265*[111]

A.3.1.1. Background

Global Warming Potentials ("GWP") scaling is important in establishing the emissions factors of non-CO_2 GHGs such as methane (CH_4) and N_2O.

Global Warming Potentials are defined by the EPA as:

> "The Global Warming Potential (GWP) was developed to allow comparisons of the global warming impacts of different gases. Specifically, it is a measure of how much energy the emissions of 1 ton of a gas will absorb over a given period of time, relative to the emissions of 1 ton of carbon dioxide (CO_2). The larger the GWP, the more that a given gas warms the Earth compared to CO_2 over that time period. The time period usually used for GWPs is 100 years. GWPs provide a common unit of measure, which allows analysts to add up emissions estimates of different gases (e.g., to compile a national GHG inventory), and allows policymakers to compare emissions reduction opportunities across sectors and gases."[112]

The Working Group discussion was related mostly to methane because of its high impact and high variability in GWP value depending on the choice of time scale. But the principle applies to all GHGs, such as N_2O.

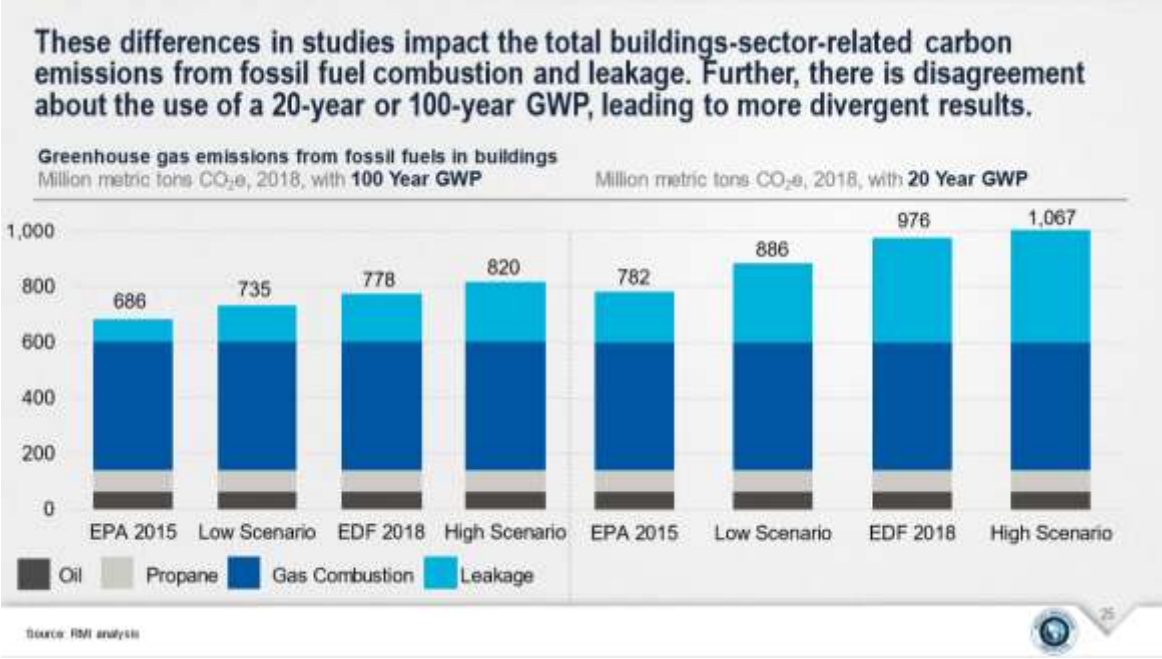
Are there alternatives to the 100-year GWP for comparing GHGs?

The United States primarily uses the 100-year GWP as a measure of the relative impact of different GHGs. However, the scientific community has developed other metrics that could be used for comparing one GHG to another. These metrics may differ based on timeframe, the climate endpoint measured, or the method of calculation.

For example, the 20-year GWP is sometimes used as an alternative to the 100-year GWP. Just like the 100-year GWP is based on the energy absorbed by a gas over 100 years, the 20-year GWP is based on the energy absorbed over 20 years. This 20-year GWP prioritizes gases with shorter lifetimes, because it does not consider impacts that happen more than 20 years after the emissions occur. Because all GWPs are calculated relative to CO_2, GWPs based on a shorter timeframe will be larger for gases with lifetimes shorter than that of CO_2, and smaller for gases with lifetimes longer than CO_2. For example, for methane (CH_4), which has a short lifetime, the 100-year GWP of 28–36 is much less than the 20-year GWP of 84–87. For CF_4, with a lifetime of 50,000 years, the 100-year GWP of 6630–7350 is larger than the 20-year GWP of 4880–4950.

RMI, a non-profit group focused on decarbonization and energy transformation, provides its view of how its four scenarios of future building sector's GHG emissions can change depending on the time horizon chosen for GWP (100-year GWP in the left four columns and 20-year GWP in the right four columns):

[111] https://www.ghgprotocol.org/sites/default/files/ghgp/Global-Warming-Potential-Values%20%28Feb%2016%202016%29_1.pdf
[112] Understanding Global Warming Potentials | Greenhouse Gas (GHG) Emissions | US EPA.



Source: RMI, "The Impact of Fossil Fuels in Buildings", slide 25, December 2019.

What GWP estimates does EPA use for GHG emissions accounting, such as the Inventory of U.S. Greenhouse Gas Emissions and Sinks (k) and the Greenhouse Gas Reporting Program?

The EPA considers the GWP estimates presented in the most recent IPCC scientific assessment to reflect the state of the science. In science communications, the EPA will refer to the most recent GWPs. The GWPs listed above are from the IPCC's Fifth Assessment Report, published in 2014. Partially released, the full Sixth Assessment Report (AR6) is due in 2022.[113]

The EPA's *Inventory of U.S. Greenhouse Gas Emissions and Sinks* (EPA Inventory) complies with international GHG reporting standards under the United Nations Framework Convention on Climate Change (UNFCCC). UNFCCC guidelines require the use of the GWP values from the IPCC's Fourth Assessment Report (AR4), published in 2007. The Inventory also presents emissions by mass, so that CO_2 equivalents can be calculated using any GWPs, and emission totals using more recent IPCC values are presented in the annexes of the Inventory report for informational purposes.[114]

Discussion of Time scale

At the third WG committee meeting, it was stated that the time horizon used for emission measurement will be discussed. At the first Metrics meeting, participants were asked to think about the time horizon for measurement (*i.e.*, 100-year, 20-year, etc.) in preparation for the next meeting.[115] At the second Metrics meeting, Staff noted that the GWP formula (*i.e.*, how many years to use) remains an outstanding question to resolve. In its presentation at the meeting, GRID2.0 noted that 100 years is a compromise between the widely varying radiative forcing of the various gases over different timescales and is a common, human-scale choice in these discussions.[116]

[113] *See* https://www.ipcc.ch/report/sixth-assessment-report-working-group-3/.
[114] *See* https://www.epa.gov/ghgemissions/understanding-global-warming-potentials.
[115] *GD-2019-04-M*, Technical Committee/Working Group Third Meeting Minutes Report, filed September 3, 2020.
[116] *GD-2019-04-M*, Metrics Committee Second Meeting Minutes Report, filed October 22, 2020.

Staff asked what GWP value for methane WGL used. WGL responded that it used the EPA's factor of 25 CO_2e. Staff noted that the most recent Intergovernmental Panel on Climate Change ("IPCC") methane GWP factor is 28. The Staff consultant agreed that the GWP numbers change over time and asked whether the Working Group should discuss how or if to incorporate changes. Staff noted that the EPA has updated its website periodically. DOEE asked if the EPA will update to the new IPCC GWP of 28. DOEE noted that the EPA as of 2020 lists GWP for methane at 28-36. DOEE clarified that the 28 is applied to methane without oxidation and the 36 includes oxidation of CH_4 into CO_2.[117] WGL noted that the EPA reporting requirements use the IPCC's 5th Assessment GWP of 25 and said it supports updating as the EPA updates its reporting requirements.

On N_2O, DOEE recommended using the IPCC AR5 100-year with climate-carbon feedback for consistency, which is 298.[118]

At the fourth Joint committee meeting, Staff's consultant was asked to expand upon the issue of time scale with the global warming potential of GHGs, and stated that methane has a 12-20 year lifetime of impact on the atmosphere, and the impact is about 80 times more impactful than carbon during that time. Staff asked whether the group should look at impacts over a 100-year timespan or consider a different time horizon for each specific GHG. Staff's consultant also mentioned that the Working Group is also looking at the Social Cost of Carbon and Social Cost of Methane provided by the Federal government, which already accounts for the time impact of the GHGs.[119] The Federal Working Group has released a Technical Support Document regarding new SC-GHG values for public comment.[120]

A.3.1.2. Stakeholder Comment Summary

On the question on using 100-year values, OPC, DOEE, and WGL said yes. DCCA, GRID2.0, DCSUN, and Sierra Club said no. GRID2.0 recommended a shorter time frame given rapidly changing climate conditions. DCCA recommended using a 30-year time frame to meet the District's goals by 2050. DCSUN and Sierra Club recommended using a 20-year time frame given the short 10- to 12-year life span of methane. DCSUN stated that the EPA uses the 100-year value to comply with the United Nations Framework Convention on Climate Change; the District of Columbia has no such obligation, and the EPA acknowledges other methodologies including the 20-year GWP "could be used" but maintains that the 100 year GWP reflects "the state of the science."[121] Pepco supported using federal regulatory values for societal costs of greenhouse gas emissions and, to the extent relevant, US EPA's GWP values to maintain consistency with other US GHG regulations and markets. WGL supported using US EPA's GWP for similar reasons and because there was no showing that the US EPA was in error, or biased.

See additional stakeholder comments in **Appendix B at A.3.1.3.**

[117] *GD-2019-04-M*, Metrics Committee Second Meeting Minutes Report, filed October 22, 2020.
[118] *See* https://www.ipcc.ch/site/assets/uploads/2018/02/WG1AR5_Chapter08_FINAL.pdf.
[119] *GD-2019-04-M*, Joint Metrics and BCA Committee Fourth Meeting Minutes Report, filed March 29, 2021.
[120] *See* https://www.federalregister.gov/documents/2021/05/07/2021-09679/notice-of-availability-and-request-for-comment-on-technical-support-document-social-cost-of-carbon.
[121] *See* https://www.epa.gov/ghgemissions/understanding-global-warming-potentials.

B. BENEFIT-COST ANALYSIS (BCA) FRAMEWORK

B.1. BCA Test Selection

B.1.1. Working Group Majority Recommendation

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.

B.1.1.1. Background

The BCA Working Group Committee identified the "National Standard Practice Manual for Benefit-Cost Analysis of Distributed Energy Resources" ("NSPM for DERs," or "NSPM) as a starting point for the District's BCA Framework. The NSPM for DERs is an August 2020 report authored by a group of industry experts led by Synapse Energy Economics including E4the Future and Rabago Energy on behalf of the National Energy Screening Project (NESP). Staff summarized the NSPM into a PowerPoint deck and presented at the November 12, 2020 BCA Framework Committee meeting.[122] The NSPM states that its purpose is "to help guide the development of jurisdictions' cost-effectiveness test(s) for conducting benefit-cost analyses (BCAs) of distributed energy resources (DERs)."[123] The NSPM contains a set of core principles, it is built around a framework that defines steps that a jurisdiction can take to develop its primary cost-effectiveness test, and it provides guidance on how to consider and develop secondary tests where applicable.[124] The NSPM has yet to be accepted by the Commission.

Another BCA framework was presented at the committee meetings: Pepco's "Benefit-to-Cost Analysis Handbook for Locational Constraint Solutions" ("LCS BCA Handbook").[125] The LCS BCA Handbook was completed in October 2020 in accordance with Order No. 20286.[126] It provides the methodology Pepco uses to evaluate third-party and utility solutions (including the use of DERs) for grid constraints. Pepco presented the LCS BCA Handbook at the November 12, 2020, BCA Framework Committee meeting.[127] The methodology outlined in the LCS BCA Handbook addresses the cost-effectiveness test, identification and valuation of benefit and cost streams, implementation of the BCA analysis, and specific calculations for benefit and cost streams.[128] The LCS BCA Handbook is designed to be customized for the District of Columbia's unique service area and context, including the PowerPath DC Vision Statement as well as

[122] *GD-2019-04-M, In the Matter of the Implementation of the 2019 Clean Energy DC Omnibus Act Compliance Requirements ("GD-2019-04")*, BCA Framework Committee First Meeting Minutes Report at 2, filed November 23, 2020.
[123] "National Standard Practice Manual – For Benefit-Cost Analysis of Distributed Energy Resources," NESP, August 2020, p. i.
[124] "National Standard Practice Manual – For Benefit-Cost Analysis of Distributed Energy Resources," NESP, August 2020, p. i.
[125] "Benefit-to-Cost Analysis Handbook for Locational Constraint Solutions," Pepco, October 1, 2020 ("LCS BSA Handbook").
[126] *Formal Case No. 1130, In the Matter of the Investigation into Modernizing the Energy Delivery System for Increased Sustainability*, Order No. 20286, rel. Jan. 24, 2020 ("Order No. 20286").
[127] *GD-2019-04*, BCA Framework Committee First Meeting Minutes Report at 4, filed November 23, 2020.
[128] LCS BCA Handbook, p. 2.

Guiding Principles and the District's clean energy and climate goals.[129] The LCS BCA Handbook has yet to be accepted by the Commission in its respective proceeding.

GRID2.0 responded to this presentation on Pepco's NWA B/C analysis, noting that Pepco stated that it used the NYPSC REV BCA Model for its BCA approach. GRID2.0 noted that the NYPSC REV "BCA Model" is a "BCA Framework" that applies to utility benefit-cost analyses of all DER types and applications and takes a utility "enterprise" approach to shift overall the utility business model in support of a more distributed energy future; whereas, Pepco's presentation described one benefit-cost analysis that it has performed to evaluate its DRP/NWA program. GRID2.0 stated that, while Pepco's B/C analysis is informative for its specified purpose, the benefit-cost analysis is only for a specific DER application and is not intended to be a benefit-cost analysis for all DER types and applications. GRID2.0 stated the LCS BCA needs the benefit of an overall BCA Framework, such as the NYPSC REV BCA Model, to understand component elements common to DER cost-effectiveness, as well as variations in specific applications.[130] However, Pepco did not agree with GRID2.0's characterization, noting that the LCS BCA can be applied to a broad range of DER including proposals combining multiple types of DER could be evaluated using this common framework.[131]

In the third Joint Metrics/BCA meeting, WGL proposed their own framework for a long-term, multisector integrated planning process ("IRP") across gas, electric, and transportation sectors which account for the majority of District GHG emissions. The IRPs would compare and assess individual programs within a long-term framework that recognizes the Commission's principles for modern energy infrastructure. WGL presented that this transparent framework would be regularly revisited and refreshed to incorporate new information, and programs would be proposed and evaluated based on GHG reduction efficacy using benefit-cost analyses.[132] WGL believes this is necessary, unless only incremental changes are being made and there is not a likelihood of large, long-term cumulative impacts.

GRID2.0 expressed the need to establish overarching accounting principles, as set forth in the NSPM, to govern the development and application of a common BCA framework and the cost-effectiveness test, taking into account the full range of DER impacts associated with the District's policy goals. GRID2.0 commented that, thus far, benefit-cost analyses are being undertaken in an ad hoc and siloed manner without any overarching BCA framework, as for example with respect to EE/DR, NWA and now climate and clean energy.[133]

During the third Joint Metrics and BCA meeting, E4theFuture and Rabago Energy, two of the authors of the NSPM, discussed the NSPM. When replying to a GRID2.0 comment about the need for a common BCA framework based on the NSPM, the authors responded that a common BCA framework and the need for consistency of input and calculations can help a jurisdiction meet its policy goals cost-effectively. They added that developing and applying a common framework (consisting of governing principles and a primary test based on the jurisdiction's policy objectives; and taking into account the full range of relevant impacts associated with those policy objectives) will assure that the benefits and costs of DER investments will be

62 "Benefit-to-Cost Analysis Handbook for Locational Constraint Solutions," Pepco, October 1, 2020, p. 2.
LCS BCA Handbook, p. 2.
[130] *GD-2019-04*, BCA Framework Committee First Meeting Minutes Report at 6-7.
[131] *GD-2019-04*, BCA Framework Committee First Meeting Minutes Report at 6-7.
[132] *GD-2019-04*, Joint Metrics and BCA Framework Committee Third Meeting Minutes Report, Attachment No. 3 at 6, filed March 3, 2021.
[133] *GD-2019-04*, Joint Metrics and BCA Framework Committee Third Meeting Minutes Report at 2, filed March 3, 2021.

assessed in an economically sound and systematic manner, based on consistent methods, definitions and assumptions.[134]

In the fourth Joint Metrics and BCA meeting, GRID2.0 commented that they would like to see an "analytical framework" put into place to provide a systematic means for accounting for the costs and benefits of DER, taking into account the full range of DER impacts, based on the Commission's/District's policy goals; rather than addressing DER benefits and costs on a case-specific or program specific basis that cannot assure that consistent methods, assumptions and definitions will be applied. GRID2.0 noted that the purpose of the NSPM's multi-stage process is to guide the development of a BCA framework that can be applied in a consistent and systematic manner across all types of utility actions/proposals (planning, procurement, programs, pricing mechanisms, infrastructure investments, etc.) and to all types of DER and different DER applications.[135] GRID2.0 also focused on the NSPM BCA framework process in their comments on the Draft Working Group Survey where they proposed making another survey section on the BCA "analytical framework." In this proposed section, they mentioned many of the comments already made in the meeting and argued that "[d]eveloping a holistic 'analytical framework' consisting of 'core' overarching elements would maximize cost-effectiveness; enable identifying and capturing value streams; reduce the risk of over- or under-investment of a resource(s); enable accurate valuation of DER and the performance of DER; clarify "trade-offs" between competing policy objectives; [and] enable DER prioritization and comparisons." In addition, GRID2.0 suggested: "[t]he analytical framework developed by the CEAIWG should be extended to cover and align other programmatic areas such as Energy Efficiency, Demand Response, Non-Wires Alternative Solutions, DRP, IRP, etc." This specific survey suggestion was submitted by GRID2.0 in their comments on the Draft Working Group Survey and the text was not changed by Commission staff.[136]

The input from GRID2.0 led to this survey suggestion: "*The NSPM BCA Framework and process should be adopted to put into place an "organic" framework that can evolve in a consistent manner to assimilate technology, policy and market/customer changes, as well as to evolve B/C analyses to address multi-sited DER and their interactive effects; multi-sectoral applications; dynamic utility system optimization planning, and comprehensive end-to-end electricity system planning."*

Upon further Working Group discussion on the recommendation language, GRID2.0 updated its suggestion to the following: "*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," to put into place an "organic" framework that can evolve in a consistent, systematic and economically sound manner to assimilate technology, policy and market/customer changes, as well as to evolve Benefit-Cost Analysis to address multi-sited DER and their interactive effects; multi-sectoral applications; dynamic utility system optimization planning; and comprehensive end-to-end utility planning.*"[137]

With minor edits, GRID2.0's suggested language was adopted as the Majority Recommendation.

B.1.1.2. Stakeholder Comment Summary

Regarding the specific recommendation presented here, GRID2.0 and DOEE agreed, Pepco disagreed, and WGL responded "yes and no." The positions of all stakeholders who submitted comments are summarized

[134] *GD-2019-04*, Joint Metrics and BCA Framework Committee Third Meeting Minutes Report at 4.
[135] GD-2019-04, Joint Metrics and BCA Framework Committee Fourth Meeting Minutes Report at 4, filed March 29, 2021.
[136] GRID2.0's Draft Survey Edits "GD-2019-04-CEAIWG_SURVEY_GRID2.0 EDITS.docx."
[137] *GD-2019-04*, Joint Committee Meeting Minutes Report at 2, filed August 24, 2021.

below.[138] In comments, DOEE agreed with this statement as the NSPM supports the development of an overarching framework and allows for the BCA to be a tool to reduce GHG emissions. GRID2.0 commented that an "analytical" framework such as the NSPM's BCA framework provides a holistic and coherent methodology that can assure the systematic assessment of the cost-effectiveness of the benefits and costs of DER impacts across all utility actions/proposals based on consistent methods, assumptions, and definitions. 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 added that both NSPM and this survey question are too narrowly focused on electricity and recommended that resilience impacts of electrification on winter reliability be addressed, based in part on recent events (in Texas). WGL notes that this recommendation has evolved and has not been fully explored. WGL appreciates the inclusion of the recognition of multi-sectoral applications and what appears to be a recognition of long-term, multi-sector integrated planning requirements. However, 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 MS IRP matters.

Pepco opposed this recommendation, stating that the fact that the CEAIWG was not able to reach agreement on many issues regarding a BCA methodology does not justify imposing the positions espoused in an external report, especially when the report has been positioned as "policy-neutral" yet it actually contains hard policy positions. The policy positions within the report have not been recognized or adequately discussed and, the report lacks sufficient clarity which could lead to follow-on issues regarding interpretation. Pepco recommended instead 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 that either the LCS BCA Handbook or the Climate Solutions BCA (pertaining to FC 1167) serve as the initial proposal for comment. Pepco also noted that the NSPM cannot serve as the initial proposed BCA methodology for comment as it does not offer a BCA methodology with sufficient detail and clarity for application, and instead includes high-level positions on some issues while leaving other issues open. Pepco continued that, under its proposal, stakeholders may refer to the NSPM or any other document to support their positions if they desire. Finally, Pepco rebutted GRID2.0's suggestions that the LCS BCA Handbook does not represent a "systematic" approach and that the LCS BCA Handbook does not constitute an analytical framework. GRID2.0 commented throughout the meetings on the differences between a "BCA Framework," such as the NYPSC BCA Framework, and undertaking a specific benefit-cost analysis, which comments take into account Pepco's statements that its Handbook and BCA are "unique" to addressing DER/NWAs. GRID2.0 stated it has neither said that Pepco's BCA is not "systematic," nor that its Handbook does not reflect any "analytical framework," but that, as Pepco has said itself, its Handbook and BCA are case-specific, in that they address one DER programmatic application, NWA.

See additional stakeholder comments in **Appendix B at B.1.1.3.**

B.1.2. Working Group Majority Recommendation

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 Forward-Looking,

[138] GD2019-04-M, WGL Responses to Final Survey (4-2-21) at 17-18.

Long-term, Incremental Analyses; (6) Avoid Double-Counting Impacts; (7) Ensure Transparency; and (8) Conduct BCAs Separately from Rate Impact Analyses.

B.1.2.1. Background

The NSPM principles were identified by Staff as a starting point for the BCA and were discussed in the first Working Group meeting during a presentation by Staff which summarized the NSPM for DERs.[139] These NSPM Principles, based on best practices for BCA accounting, are distinguishable from the MEDSIS/PowerPath DC Vision and Guiding Principles. The MEDSIS/PowerPath DC Vision and Guiding Principles articulate the DCPSC's policy goal aspirations in 7 areas (sustainable, well-planned, secure, affordable, safe and reliable, interactive, and non-discriminatory). The NSPM Principles are consistent with and supportive of the MEDSIS/PowerPath DC Vision and Guiding Principles, but are focused on supporting the development and application of a coherent, systematic and economically sound BCA accounting methodology, based on consistent definitions, assumptions and methods.

Pepco's LCS BCA Handbook, as described in Section B.1.1.2, was also presented to the Working Group. Pepco noted that the LCS BCA Handbook is designed to (1) create alignment with DC's clean energy & climate policy goals; (2) provide transparency into evaluation; and (3) accommodate multiple resource types and ownership models.[140]

In separate filed comments in the instant docket—the Pepco Notice of Inquiry Comments—Pepco introduced its principles and a framework for the analytical approach to take when considering the effects of a utility proposal on climate change and the District's policy commitments. Specifically, Pepco identified and described in greater detail the following "guiding principles" for the development of the analytical approach: (1) objective analysis is critical; (2) fair recognition of attributes, from local to regional; (3) policies should not unfairly disadvantage and thereby jeopardize any specific type of clean energy resource relative to another; (4) the value of the grid must be preserved; and (5) dynamic efficiency and flexibility are essential.[141]

In these same comments, Pepco also identified its guidance for the general analytical framework: the BCA should be technology agnostic, transparent, internally consistent, reflect net welfare of all stakeholders, avoid double counting, and should not include flawed or speculative benefits. In addition, Pepco suggested it should be allowed flexibility to make investments.[142]

In the third Joint Metrics and BCA meeting, WGL presented BCA framework principles that align with the MEDSIS guiding principles of Sustainable, Well-Planned, Safe & Reliable, Secure, Affordable, Interactive, and Non-Discriminatory. Additional principles proposed were (1) Framework and Metrics consistently applied across utility programs; (2) a fuel neutral approach; (3) generally accepted Regulatory Cost Tests should be used; and (4) long-term cost considerations relating to full electrification is integral. WGL stated that the CleanEnergy DC Omnibus Amendment Act of 2018 does not dictate specific policy considerations but rather mandates the Commission to consider climate goals.[143] At that same meeting, WGL commented the Act's amendments and the Commission's' statutory mandate must be a basis for BCA and have not

[139] *GD-2019-04*, BCA Framework Committee First Meeting Minutes Report at 2, filed November 23, 2020.
[140] *GD-2019-04*, BCA Framework Committee First Meeting Minutes Report at 4.
[141] Pepco Notice of Inquiry Comments at 8-9.
[142] Pepco Notice of Inquiry Comments at 9-12.
[143] *GD-2019-04*, Joint Metrics and BCA Framework Committee Third Meeting Minutes Report Attachment No.3 at 5.

been adequately considered during the CEIAWG process. [144] At the meeting, GRID2.0 expressed the need to establish overarching accounting principles as set forth in the NSPM to govern the development and application of a common BCA framework and the cost-effectiveness test, taking into account the full range of DER impacts associated with DC's policy goals. GRID2.0 commented that, thus far, benefit-cost analyses are being undertaken in an ad hoc and siloed manner without any overarching BCA framework, as for example with respect to EE/DR, NWA and now climate and clean energy.[145] The meeting also included a presentation by E4theFuture and Rabago Energy, who emphasized the first principle of establishing a Jurisdiction Specific Test ("JST") based on applicable policy goals of the District.[146] This specific suggestion for the survey was submitted by GRID2.0 in their comments on the Draft Working Group Survey and adopted by Commission Staff.[147] This suggestion was further adopted in this report to list all of the NSPM for DERs principles. The suggestion was not altered when adopted as the Working Group majority recommendation.

B.1.2.2. Stakeholder Comment Summary

Regarding the specific recommendation presented here, GRID2.0, DOEE, OPC, Sierra Club, DCCA, and DCSUN agreed, and Pepco and WGL disagreed. OPC noted that social equity is a key policy goal for the District. In fact, the District is accelerating implementation of equity measures at all levels of government.[148] DCSUN concurs with OPC on the importance of social equity.

WGL argued that this approach is too narrow and does not account for issues related to the preservation of affordable, reliable, resilient energy systems. WGL noted that the focus of the NSPM on individual programs supports an incremental approach which ignores the cumulative effects of large-scale electrification and noted that there is not a single electrification study on the impacts of infrastructure requirements in any footprint. Therefore, WGL proposed an integrated planning process with a long-term focus and covering all sectors simultaneously.[149]

DOEE supported the suggestion and stated that the principles aim towards lower GHG emissions and that integrated distribution planning is key to unlocking DER potential in the NSPM framework. GRID2.0 commented that the NSPM principles are foundation accounting standards for assessing DER cost-effectiveness that are distinguishable from the MEDSIS principles and support the selection of a primary test and the evaluation of DERs vs conventional utility investments.

Pepco supported the guiding principles and associated BCA framework guidance that it presented at length in its filed comments,[150] and it did not support substituting these principles with those espoused in the NSPM. Pepco also stated that GRID2.0's claim that Pepco's LCS BCA Handbook is not based on an overarching framework is incorrect.

See additional stakeholder comments in **Appendix B at B.1.2.3.**

[144] *GD-2019-04-M*, Joint Metrics and BCA Committee Third Meeting Minutes Report, filed March 3, 2021.
[145] *GD-2019-04*, Joint Metrics and BCA Framework Committee Third Meeting Minutes Report at 2, filed March 3, 2021.
[146] *GD-2019-04*, Joint Metrics and BCA Framework Committee Third Meeting Minutes Report at 3.
[147] GRID 2.0's Draft Survey Edits "GD-2019-04-CEAIWG_SURVEY_GRID2.0 EDITS.docx."
[148] Example: B23-0038 "Racial Equity Achieves Results (Reach) Amendment Act of 2020").
[149] WGL's Draft Survey Edits "GD-2019-04-M Survey March 11 WashGas.docx."
[150] Pepco Notice of Inquiry Comments at 8-12.

B.1.3. Working Group Majority Recommendation

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-making (see appendix D for an inventory of applicable policies); 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.

B.1.3.1. Background

This Working Group was created to focus on implementing the CleanEnergy Act. Among other things, the CleanEnergy Act directs a change in how the Commission supervises and regulates utilities and energy companies as it relates to preserving environmental quality. The statute change relating to the Commission's supervision and regulation of utilities or energy companies requires the Commission to also consider the effects on global climate change and the District's public climate commitments.[151]

In the first BCA meeting, GRID2.0 asked Staff if the Commission will be setting out its priority policy goals to guide BCA development. Staff responded that the CleanEnergy DC Act has GHG reduction goals and the District has mandated policy objectives to this end. Staff further commented that the policy objectives evolve, and there are other cases that also relate to GHG reduction goals.[152] In the third Joint Metrics/BCA meeting, WGL outlined the necessary balance between existing and new PSC responsibilities, presented a framework to achieve climate goals, and stated: "[t]he CleanEnergy DC Omnibus Amendment Act of 2018 does not dictate policy considerations this Commission must adopt for evaluations. Rather, the Act mandates that the PSC consider DC's climate goals in supervising and regulating utilities."[153] In that same meeting, the NSPM authors from E4theFuture and Rabago Energy stated that it is critical to create a jurisdictional test that comes out of a jurisdiction's applicable policy goals.[154] GRID2.0 emphasized the original suggestions are a crucial factor in selecting a BCA primary cost-effectiveness test and in developing and applying a "benefit-cost analytical framework" in their comments on the Draft Working Group Survey.[155] The language for this specific recommendation was submitted by GRID2.0 after further Working Group discussion.[156]

B.1.3.2. Stakeholder Comment Summary

A majority of stakeholders including DOEE, DCCA, and Sierra Club agreed with a similar suggestion that was offered in the survey,[157] WGL disagreed with that survey suggestion, OPC responded "Yes, generally," GRID2.0 responded "Ok, but," and DCSUN responded "No-ish." Regarding the specific Working Group Recommendation presented here, GRID2.0, DCSUN, OPC, and Pepco generally agreed, and WGL generally disagreed. The positions of all stakeholders who submitted comments are summarized below.

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[151] Public Service Commission of the District of Columbia, *Clean Energy Commitments* [website], https://dcpsc.org/CleanEnergy/Clean-Energy-Commitments.aspx.

[152] *GD-2019-04*, BCA Framework Committee First Meeting Minutes Report at 4.

[153] *GD-2019-04*, Joint Metrics and BCA Framework Committee Third Meeting Minutes Report Attachment No.3 at 5.

[154] *Id.*

[155] The language in the original survey suggestion is: "The basis of the development of this BCA framework is the DC Omnibus Act, and the selected framework should assure that those goals will be met."

[156] *GD-2019-04-M*, BCA Framework Committee First Meeting Minutes Report, filed November 23, 2020.

[157] The survey suggestion was as follows: "The basis of the development of this BCA framework is the DC Omnibus Act, and the selected framework should assure that those goals will be met."

In its comments, OPC was strongly supportive of meeting the goals of the Act and setting a framework to make that possible, but only if the path is 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, though they were considered in the Washington Gas Climate Business Plan. WGL stated that this fundamental duty has not been adequately considered during the CEIAWG process and must be a basis of the BCA.[158]

GRID2.0 commented that no framework can ensure the goals will be met and the Commission needs to clarify/make explicit (in a generic, not prescriptive manner) the Policy Goals that the Commission is committed to achieving, based on the DC Omnibus Act. DCSUN comments 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.

See additional stakeholder comments in **Appendix B at B.1.3.3.**

B.1.4. Working Group Majority Recommendation

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.

B.1.4.1. Background

In the first BCA meeting, Staff presented the NSPM for DERs and its focus on creating a jurisdictional-specific test based on a jurisdiction's policy goals. Staff explained that the development of a primary test using the NSPM is centered around the inclusion of "utility system impacts" listed in the NSPM and that other impacts are added in based on applicable policy goals (e.g, environmental impacts, host customer impacts, low-income impacts). Staff further discussed the potential impacts for inclusion listed in the NSPM, of which many are included in the proposed Working Group recommendation. Left out of the recommendation are potential impacts identified in the NSPM relating to gas utilities (although those are similar to the utility system impacts listed in this recommendation), cross-cutting utility system impacts (enabling other DERs, Grid Flexibility, Impacts Associated with TOU rates, and Market or Technology

[158] *GD-2019-04-M*, Joint Metrics and BCA Committee Third Meeting Minutes Report, filed March 3, 2021.

Transformation), and some other potential societal impacts listed in the NSPM (Economic and Jobs impacts, Energy Security impacts).[159]

Another resource that was presented at the BCA Framework Committee meetings was Pepco's LCS BCA Handbook. The LCS BCA Handbook provides the methodology Pepco uses to evaluate third-party and utility solutions (including the use of DERs) for grid constraints, and it applies a Societal Cost Test that includes the following benefits and costs: Avoided Generation Capacity Costs, Avoided Energy Costs, Avoided Ancillary Service Costs, Avoided PJM Transmission Investment and O&M Costs, Deferred Distribution and Sub-transmission Investment and O&M Costs, Greenhouse Gas Emission Reductions, SO_2 and NO_X Emission Reductions, Incremental Reliability and Resiliency Benefits, LCS Costs, Administrative Costs, Incremental Distribution System Costs, and Implementation Risk Premiums (cost).

In the first joint Metrics and BCA meeting, stakeholders heard from the DCSEU contractor, NMR Group, about DCSEU's SCT used to measure the BCA of both Energy Efficiency ("EE") and some renewable energy investments. This test includes the cost elements of incentive payments, participant costs, and administrative costs and the benefits of avoided energy costs, avoided generation capacity costs, avoided T&D capacity costs, avoided water costs, reduced risk/increased reliability, reduced O&M costs, RPS compliance, benefits of reduction in air and water pollution, reduction of GHG emissions, reduction in water use, as well as non-energy benefits (comfort, noise reduction, aesthetics, health and safety, ease of transacting property, improved occupant productivity, reduced work absences due to illness, ability to stay at home, and macroeconomic benefits). NMR's presentation illustrated that most of the benefits came from avoided GHG emissions and avoided electric energy costs.[160]

In the third joint Metrics/BCA meeting, WGL presented a potential framework that suggested that the SCT be used as the primary quantitative test with the Rate Impact Measurement ("RIM") test as a secondary test. This framework would use a long-term IRP process that would include assessments of infrastructure adequacy and associated costs, evaluate customer equipment costs, upstream energy costs/availability/carbon intensity, and assess costs for utility infrastructure upgrades and/or retirements.[161] In addition, in its January 13, 2020, comments on the NOI, WGL stated that in its Recommendation III of IV, a question and answer/factor ranking and scoring system rubric is required to supplement quantitative measures due to the need to address reliability, resilience, safety, and disruptions related to climate change.[162]

In that same meeting, in response to a question from Sierra Club about the different types of cost-effectiveness tests that are being used to evaluate DER benefits and costs, Staff referred to *Formal Case No. 1160*, Order No. 20654, Paragraph 86, which approves the SCT for evaluating EE/DR programs. Staff noted the use of other tests could also be used to track and provide additional insights into programs including RIM. Staff also noted that in the past the All Ratepayer Test was used.[163] Adding into this conversation, GRID2.0 stated a need to base the cost-effectiveness test that is used by the utility to assess the benefits and costs of DER on the District's applicable policy objectives in order to account for all relevant DER impacts. GRID2.0 went on to ask WGL about its selection of the SCT, and WGL noted its concern that the SCT might not capture all costs in full and that there should be a balance between the All

[159] *GD-2019-04*, BCA Framework Committee First Meeting Minutes Report at Attachment No. 3.
[160] *GD-2019-04*, Joint Metrics and BCA Framework Committee First Meeting Minutes Report Attachment No. 4.
[161] *GD-2019-04*, Joint Metrics and BCA Framework Committee Third Meeting Minutes Report Attachment No.3 at 5.
[162] WGL Comments on NOI, page 10 and 16. Recommendation III.
[163] *GD-2019-04*, Joint Metrics and BCA Framework Committee Third Meeting Minutes Report at 1-2.

Ratepayer Test and the SCT.[164] In their comments on the Draft Working Group Survey, WGL noted that: "NSPM items need to be inclusive of the cost of additional…energy infrastructure that is likely to be recovered, for example for winter peak, under scenarios proposed that eliminate natural gas and promote solar which has little value during peak winter times."[165] In their comments on the Draft Working Group Survey, GRID2.0 proposed adding this survey suggestion: "Apply the NSPM multi-step process for determining the primary cost-effectiveness test, consistent with the DCPSC's stated Policy Goals; (The test that is most aligned with the DC policy mandates is the societal test.)"[166] (Staff notes that this is reflected in recommendations B.1.1 and B.1.2).

The original survey suggestion was included by Staff. [167]

B.1.4.2. Stakeholder Comment Summary

A majority of stakeholders including DOEE, OPC, GRID2.0, DCCA and Sierra Club agreed with a suggestion that was offered in the survey that suggested a shorter list of impacts to include.[168] More specifically, GRID2.0 responded "Ok, but," OPC responded "Yes, generally," and DCCA responded "Yes, but." DCSUN disagreed with that survey suggestion. Regarding the specific Working Group Recommendation presented here, Pepco disagreed, and several stakeholders submitted comments that in most cases generally agreed with this Recommendation but that placed qualifiers on various aspects of this suggestion. The positions of all stakeholders who submitted comments are summarized below.

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 not be zero-value placeholders but rather 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 IRP process in comments, suggesting a primary SCT with the RIM test as the secondary test. DCSUN supported the inclusions of all listed impacts in their comments and suggests establishing a process to determine difficult-to-quantify societal impact costs and benefits. GRID2.0 stated that it supports the selection of a societal cost test as the DCPSC's primary cost-effectiveness test because it is aligned with the District's policy mandates and commitments, including Section 103 of the Omnibus Act. In its NOI Order, the Commission indicated that, per this Section 103 charge, the DCPSC is seeking metrics and measurements, a BCA Framework and reporting requirements to enable the Commission to evaluate the effects of utility proposals on global climate change and the DC climate commitments. For these reasons, GRID2.0 also supported including the specified impacts in the societal cost test, as distinctive from addressing certain impacts, such as social equity and resilience impacts, separately and apart from the application of the societal cost test to utility benefit-cost analyses.

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[164] *GD-2019-04*, Joint Metrics and BCA Framework Committee Third Meeting Minutes Report at 2-3.
[165] WGL's Draft Survey Edits "GD-2019-04-M Survey March 11 WashGas.docx."
[166] GRID2.0's Draft Survey Edits "GD-2019-04-CEAIWG_SURVEY_GRID2.0 EDITS.docx."
[167] Original Survey Suggestion: "The BCA should utilize a primary societal cost test based on the NSPM for DERs that includes the utility system impacts and some of the societal impacts listed in the manual. The societal impacts to be included are: Resilience, GHG Emissions, Other Environmental Impacts, Public Health, and Low-Income Impacts. Utility System Impacts to be included: 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. Some of the inputs here may be placeholders only. For example, for reliability and resilience we currently do not have a fully supported industry values for D.C."
[168] *Id.*

GRID2.0 also added support for applying the societal cost test to B/C analyses within long-term Integrated Resource Planning. DCCA commented that the BCA needs to also address "delineated" host customer and participant impacts, including as they evolve over time. Sierra Club commented yes, select the SCT but also address "delineated" host customer and participant impacts. 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.

Pepco supported a BCA methodology that is based on the Societal Cost Test. However, Pepco stated that several of the proposed benefits and/or costs in this recommendation are not adequately defined and other proposed benefits and/or costs in this recommendation may not be appropriate for inclusion in the BCA. Inclusion of these poorly defined or inappropriate benefits and/or costs could easily cause the BCA results to be distorted, leading to inefficient and costly decisions for the District's residents and businesses and therefore this recommendation should be rejected. Pepco supported the LCS BCA Handbook and its benefit and cost categories as a strawman to be used for development of a BCA in the next phase of this proceeding.

See additional stakeholder comments in **Appendix B at B.1.4.3.**

B.1.5. Working Group Majority Recommendation

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.

B.1.5.1. Background

In the first BCA meeting, Staff presented on the NSPM for DERs with a specific focus on the manual's instruction on the inclusion of temporal and locational impacts. Staff noted some of the takeaways from this section of the manual, including the need for a granular (hourly) approach to temporal impacts and the need for a locationally constrained/unconstrained measure. This recommendation is based on that presentation, given the potential importance of this issue and the complexity of quantifying temporal and locational impacts.

In their comments on the Draft Working Group Survey, WGL noted that this cannot be looked at in a short durational view but rather within a long-term context figuring in cumulative effects.[169] The original survey suggestion was revised based on further Working Group discussion.[170]

Pepco commented that the accuracy and value of data should be considered rather than simply availability from a source. Pepco began with stating that it is a bit confused by the second part of the recommendation (re: the Value of DER Study). Pepco noted that locational values could be considered pending rigorous review and that assuming useful results from the Value of DER study is premature. Pepco asked if this is Staff's recommendation to rely on the Value of DER study being sponsored through the MEDSIS Pilot Program Governance Board process. Staff indicated this is more of a clarification. The change was done by Staff because some stakeholders indicated that the WG should use the upcoming Value of DER study to assist in determining temporal and locational impacts. Pepco stated it disagreed that this is the only data that can be used and that the study should not be called out individually, since it has not been completed,

[169] WGL's Draft Survey Edits "GD-2019-04-M Survey March 11 WashGas.docx.".
[170] The revised survey suggestion was adopted as the Working Group Majority Recommendation.

reviewed, or discussed by the Working Group. Pepco stated that specifically including the Value of DER Study in the proposed recommendation elevates its importance relative to other data sources that may be as if not more useful. Staff stated that it was not its intention for the study to be the only database that can be used in this area. Staff agreed with Pepco that there are other sources and welcomed Pepco's suggestions. Pepco appreciated Staff's comment, but Pepco indicated that it would prefer to take out any specific reference to one particular study. Pepco also noted its current NWA process already provides an indication of the value of DERs.[171]

Pepco emphasized that the data inputs should be appropriate to the analysis, meet the level of precision required by the analysis, and meet the level of accuracy required to inform the decision-making process. Pepco stated it has completed numerous benefit cost benefit analyses, both in the District and in other jurisdictions, looking at incorporating more temporal and locational values and is very aware of the limitations of this data. Pepco noted that the WG needs to consider the fidelity of the data that being used and if inclusion of the more granular locational or temporal data tell us anything new. In Pepco's experience, the inclusion of more granular data can, if not carefully considered, appear to add more validity or precision to a calculation but, in reality, just create a more complex calculation without any value added. Pepco added that a key point to consideration of more granular data is whether data can accurately be forecasted going forward or if the granularity is only available historically. Pepco emphasized that the Group needs to keep these considerations in mind when discussing temporal and location information.[172]

Upon further Working Group discussion on the recommendation language, GRID2.0 submitted the following proposed language: "*Because valuation of certain DER depends on temporal and locational factors (when DER is operated and where DER is located), a utility should undertake cost-effective efforts to acquire/develop and apply best available tools, analytic methods and techno-economic practices to generate, with sufficient granularity, relevant, accurate and verifiable information and data on DER temporal and locational impacts appropriate to maximizing the net benefits of using DER in connection with utility planned, designed and implemented programs to meet system needs and requirements, as well as customer and societal needs, taking into account tools, analytic methods and practices being deployed by other jurisdictions and, generally, data and information that becomes available, such as from Pepco's "Benefit-to-Cost Analysis Handbook for Constraint Solutions" relating to its Non-Wires Alternatives program, and the Commission's upcoming Value of DER study*."

B.1.5.2. Stakeholder Comment Summary

All stakeholders who offered opinions (OPC, DCCA, DCSUN, DOEE, and Sierra Club) agreed with this suggestion when it was offered in the survey. In more recent comments, DOEE reaffirmed its agreement with this recommendation, GRID2.0 offered revised language, Pepco expressed agreement in principle but expressed issues with the specific recommendation, and WGL provided comments expressing contextual issues.

GRID2.0 commented that the analytical framework being developed must stress that the value of some DERs depends on when the DER is operated and where it is located. DOEE commented that they agree the Value of DER study can add sufficient granularity to address locationally and temporally affected impacts. WGL commented that there needs to be a baseline of utility costs found through an IRP process to address these complex issues in a cumulative fashion.

[171] *GD-2019-04-M*, Technical Committee/Working Group Sixth Minutes Report, filed September 10, 2021.
[172] *GD-2019-04-M*, Technical Committee/Working Group Sixth Minutes Report, filed September 10, 2021.

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.[173] WGL added it focuses narrowly on location matters but does not address the cumulative effect of changes which will be District-wide, particularly the increase in the annual peak and the shift to winter peaking electrical operations. Therefore it "puts the cart before the horse" to focus on small local DC impacts before considering the infrastructure, cost, rate, reliability and resilience impacts of unexpected major changes in demand. This is especially the case given the consideration of electrification of both vehicles and space heating.

Pepco commented that the accuracy and value of data should be considered rather than simply availability from a source. Pepco noted 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 NWA process already provides an indication of the value.

See additional stakeholder comments in **Appendix B at B.1.5.3**.

B.1.6. Working Group Majority Recommendation

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.

B.1.6.1. Background

In Staff's presentation on the NSPM for DERs in the first BCA meeting, they noted that host-customer impacts relating to behind-the-meter and customer-owned DERs are a new area to consider.[174] Host-customer refers to individuals who host or own DERs and other utility interactive resources. Staff's presentation further mentioned the NSPM manual's focus on host-customer impacts as one section that could be included if local policy indicated it should be considered. This recommendation (which is unchanged from the original survey suggestion) includes all of the host-customer impacts listed in the NSPM, including host customer non-energy impacts (host customer bill savings and low-income non-energy impacts).[175] In the fourth Joint Metrics and BCA meeting, GRID2.0 mentioned that the SCT should include host customer/participant impacts.[176] In its comments on the Draft Working Group Survey, WGL noted: "[Host Customer Impacts] can be excluded from the SCT, but they are included in RIM and other considerations such as PowerPath principles."[177] In comments on the Draft Working Group Survey, GRID2.0 suggested modifying the original survey suggestion to: "*Host-customer/participant impacts typically are addressed under a SCT and, based on the applicable Policy Goals, should be addressed in the BCA.*"[178]

B.1.6.2. Stakeholder Comment Summary

[173] Final Survey, page 25, "In order to assess the impact of DER, there first needs to be a baseline assumption of electrical distribution costs given the potential shift to winter peaking and the large increase in annual peak demand that will result from some of the programs proposed for the District." *See also*, WGL Comments, January 13, 2020, GD2019-04-M. page 8.
[174] *GD-2019-04-M*, BCA Framework Committee First Meeting Minutes Report, filed November 23, 2020.
[175] *GD-2019-04*, BCA Framework Committee First Meeting Minutes Report at Attachment No. 3
[176] *GD-2019-04*, Joint Metrics and BCA Framework Committee Fourth Meeting Minutes Report at 5.
[177] WGL's Draft Survey Edits "GD-2019-04-M Survey March 11 WashGas.docx."
[178] GRID2.0's Draft Survey Edits "GD-2019-04-CEAIWG_SURVEY_GRID2.0 EDITS.docx."

DCSUN, DOEE, and Sierra Club agreed with this suggestion when it was offered in the survey, and GRID2.0 and DCCA responded "Yes, but." Pepco and WGL did not provide a Yes/No answer. In more recent comments, Pepco disagreed, and other stakeholders provided further comments. The positions of all stakeholders who submitted comments are summarized below.

In its comments, WGL supported efforts to consider impacts to customers. Concern about customer impacts contributes to WGL's proposed use of RIM as a secondary test because the RIM test captures some of these items. WGL also noted there has been no discussion of the application of the RIM test within the Working Group, especially as it relates to decarbonization effects on energy demand.

Pepco commented that the BCA should reflect net welfare from a societal perspective and noted that the proposed recommendation here leaves more questions than answers, it is flawed due to issues relating to both the ambiguity of the components listed in the proposed recommendation and the potential for these components to double count other components that may also be in the BCA, and therefore the proposed recommendation should be rejected. DCCA commented that these impacts should be included but also weighted according to the DC CleanEnergy Act goals and mandates. GRID2.0 noted that impacts on host customers can be addressed in the PCT, and impacts should be addressed based on the goals coming from the Omnibus Act mandates. DOEE agreed with the statement and recommends adopting the impacts listed in the NSPM.

See additional stakeholder comments in **Appendix B at B.1.6.3**.

B.1.7. Working Group Majority Recommendation

The BCA results will be calculated and presented in both benefit-cost ratio and net benefit form.

B.1.7.1. Background

The original survey suggestion, *The BCA results will be calculated and presented in benefit-cost ratio form,* was included by Staff. The WG did not discuss this topic.

B.1.7.2. Stakeholder Comment Summary

A majority of stakeholders including WGL, OPC, DOEE, and DCSUN agreed with a suggestion that was offered in the survey to calculate and present BCA results in benefit-cost ratio form,[179] DCCA and Sierra Club disagreed with that suggestion, and GRID2.0 responded, "No, but." Regarding the specific Working Group Recommendation presented here, to present BCA results in both benefit-cost ratio and net benefit forms, stakeholders submitted comments expressing varying views but with no party objecting to the presentation of results in net benefit form. The positions of all stakeholders who submitted comments are summarized below.

Pepco recommended presenting the BCA results as net benefits rather than as a ratio, as not all streams are intuitively defined as clearly costs or benefits, and the results of the ratio approach are affected by the classification of the streams. DCCA noted that results should also be presented in net benefit form. 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 the 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. GRID2.0

[179] The survey suggestion was as follows: "The BCA results will be calculated and presented in benefit-cost ratio form."

supported the use of both methods in evaluating the benefit and cost impacts of alternative investment options, especially with a view to demonstrating that the proposed option is not only cost-effective, but the best option among feasible alternatives. 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.

See additional stakeholder comments in **Appendix B at B.1.7.3.**

B.1.8. Working Group Majority Recommendation

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.

B.1.8.1. Background

The original survey suggestion was included by Staff. As mentioned by Staff in the first BCA meeting, the NSPM for DERs has the principle of quantifying all costs and benefits even when difficult.[180] In the first joint Metrics and BCA meeting, NMR's presentation brought up this topic when mentioning that the benefit adders in its SCT quantify real benefits that are challenging to quantify.[181] At the first BCA committee meeting, Pepco presented their LCS BCA handbook which uses market-based data and extrapolation whenever practical and focuses on avoiding double-counting.[182] In its filed comments in the instant docket[183], Pepco argued that the double counting of benefits distorts the true value of a given initiative, leading to decisions that waste precious resources and increase costs for District of Columbia customers, ultimately threatening the reliability, safety, and affordability of service as well as the achievement of climate goals. In their comments on the Draft Working Group Survey, WGL noted their agreement with avoiding double-counting and the need for a qualitative analysis (Q/A) rubric, though it suggested that most items should be quantified.[184] WGL reiterated that economic analysis is divided into efficiency and equity. BCA is an efficiency test. To include equity into efficiency, some additional techniques are required.

GRID2.0 proposed the following alternative to the language: "*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*."

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[180] *GD-2019-04*, BCA Framework Committee First Meeting Minutes Report at 2 and Attachment No. 3, filed November 23, 2020.
[181] *GD-2019-04-M*, BCA Framework Committee First Meeting Minutes Report, filed November 23, 2020.
[182] *GD-2019-04-M*, BCA Framework Committee First Meeting Minutes Report, filed November 23, 2020.
[183] Pepco Notice of Inquiry Comments at 11-12.
[184] WGL's Draft Survey Edits "GD-2019-04-M Survey March 11 WashGas.docx."

B.1.8.2. Stakeholder Comment Summary

All stakeholders who offered opinions including WGL, OPC, GRID2.0, DOEE, Sierra Club, and DCSUN agreed with this suggestion when it was offered in the survey, with DCCA responding "Yes, but." In more recent comments, some stakeholders reaffirmed their agreement with this suggestion, Pepco agreed with the second part of this suggestion and (subject to greater clarity regarding specifics) disagreed with the first part, and other stakeholders also submitted comments. The positions of all stakeholders who submitted comments in the survey are summarized below.

Pepco stated that benefits and costs should not be included when quantification would be overly speculative, and Pepco agrees that valuations should avoid double counting.

WGL believed that the evaluation of programs causing major changes in the energy delivery system need a flexible scoring system. The system must be able to address issues that can only be addressed via qualitative analysis. One prime example is the effects of electrification on the reliability and especially resilience of the energy infrastructure. Furthermore, WGL also believed that some quantitative results other than SCT estimates need to impact the scoring, and hence, there is the need for a more flexible scoring system. For example, rate impacts assessed via the quantitative RIM test must be included in the evaluation for major, non-incremental programs, but in the absence of a more flexible, and complex scoring system, it is not clear how the RIM and SCT results will impact decision making and scoring. WGL proposed from the beginning of the process a question and answer rubric designed to determine cost effectiveness as it relates to quantitative results impacting SCT as well as the scoring impact of non-SCT or qualitatively determined impacts on the SCT. This requires a weighted 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). Scoring of all factors requires a pre-set protocol that assigns points in each category. This is necessary given the importance of the issues that are not addressed via quantified SCT costs.[185] This is similar to how many utility sector options are evaluated – e.g. proposed generation is assessed in terms of impacts on revenue requirements, rates, as well as qualitative factors. This explicit scoring should be sufficiently transparent to allow the Commission to apply different weights.

GRID2.0 commented that they support using recognized proxies and other techniques for approximating hard to quantify impacts and 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. DCSUN noted their strong agreement with this suggestion. DCCA noted that increasing numbers of factors previously deemed non-quantifiable are now being quantified.

See additional stakeholder comments in **Appendix B at B.1.8.3** and **Appendix B at B.1.8.4**.

B.1.9. Working Group Majority Recommendation

BCA submissions should include a technical appendix with modeling inputs and outputs for all scenarios examined.

[185] In its January 13, 2020, comments on the NOI, WGL stated that in its Recommendation III of IV, a question and answer/factor ranking and scoring system rubric is required to supplement quantitative measures due to the need to address reliability, resilience, safety, and disruptions related to climate change. Page 16-18. Reliability and resilience WGL Comments, January 13, 2020, GD2019-04-M. pages 6 and 7.

B.1.9.1. Background

This suggestion in the survey was introduced by OPC.

According to OPC, third-party review of utility proposals and related assessment is a critical step to assure accuracy and common understanding of assumptions and methodologies among all stakeholders. OPC argued effective review of utility modeling, calculations, and assumptions depends on full access to all underlying materials. OPC stated that time-consuming discovery requests and responses related to modeling details can be avoided by the Commission requiring that a full technical appendix—including all modeling inputs and outputs for all scenarios—accompany the submission of utility climate proposals.

B.1.9.2. Stakeholder Comment Summary

All stakeholders who offered opinions including WGL, OPC, GRID2.0, DCCA, DOEE, and Sierra Club agreed with this suggestion when it was offered in the survey. In more recent comments, GRID2.0 and DOEE reaffirmed their agreement with this suggestion, and Pepco also provided comments. The positions of all stakeholders who submitted comments are summarized below.

GRID2.0 commented that this information and analysis beyond this can provide detailed insights to inform the development of more dynamic utility system planning. 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 commented in support of the statement, saying that line items should be presented with sufficient granularity to be reproducible.

See additional stakeholder comments in **Appendix B at B.1.9.3.**

B.1.10. Non-majority Recommendation[186]

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 working group discussion and/or a rulemaking process, based on the Commission determination.

B.1.10.1. Background

Based on the above BCA Committee comments and Staff considerations, the NSPM Authors proposed that a consistent BCA framework be used to assess new regulated utilities proposals that would assist the District in meeting and advancing its climate goals.

a) *Proposed Approach by E4theFuture and Rabago Energy (collectively, the "NSPM Authors")*

The NSPM for DERs guidance applies to both electric and gas utility investments. While some stakeholders expressed concern about the application of the NSPM to gas utilities, the NSPM concepts and guidance apply to both as provided in Chapter 4.3 of the NSPM for DERs. See Appendix C herein for further information showing a comparison of electric and gas utility system impacts and further discussion on the NSPM application.

[186] See footnotes 8 and 9.

Further, given key timeframe considerations, the NSPM Authors proposed a two-phase process where Phase I would take place during the Working Group report drafting process, and Phase II would be undertaken after the submission of the report and any Commission action on that report.

Phase I of the process involves developing an interim primary cost-effectiveness test for Commission approval that would apply following the conclusion of a working group process 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, and to the extent practicable within the Phase I timeframe, to improve alignment with key DC jurisdictional needs and requirements. This involves:

1. Articulating applicable energy policy goals and objectives to support the District's decarbonization goals and identifying relevant or associated electric and gas utility and non-utility system impacts that ideally should be included in the District's primary cost-effectiveness test;

2. Recommending interim modifications to the current DCSEU cost-effectiveness test based on the above policy review, including addressing symmetrical treatment of costs and benefits of relevant impacts;

3. Identifying interim approaches to accounting for any modifications to the interim tests, including for both utility system and non-utility system impacts that may be difficult to quantify;

4. Consideration of use of any secondary cost-effectiveness tests; and

5. Selecting an appropriate discount rate for the recommended primary test, and potentially any secondary cost-effectiveness tests (see also section on Discount Rates).

Identifying key areas to further address in **Phase II** of the process to fully develop a BCA test to address District decarbonization goals. The above Phase I activities were undertaken as part of this Working Group report development and serve as the basis for a recommended interim cost-effectiveness test to the Commission, as well as recommendations for follow-on **Phase II** efforts to be undertaking during 2022 that would include:

1. Developing a DC-specific cost-effectiveness test that fully aligns with the District's decarbonization goals, as provided below in Section B.1.11.2;

2. Building from interim approaches used to account for modifications to the interim tests in Phase I, identify consensus approach/method for accounting for relevant impacts, and where any new research may be involved, develop a plan for such research and prioritize needs; and

3. Identifying and recommending where and what secondary cost-effectiveness tests may be useful to inform investment decisions, and appropriate use of discount rates.

b) NSPM Authors' Proposal to Adopt the NSPM's BCA Principles

The following is a proposal offered by the NSPM Authors. The statements expressed in this proposal reflect the views of the NSPM Authors.

During Phase I and II of the process, the BCA Committee will aim to ensure alignment with the NSPM BCA Principles described below. To avoid confusion, these principles are broader than the DC PowerPath

(MEDSIS) Principles, which lay out specific goals/policies for the District (and fall within the context of the NSPM Principle #2):

Table S-1. NSPM BCA Principles

Principle 1	**Treat DERs as a Utility System Resource** DERs are one of many energy resources that can be deployed to meet utility/power system needs. DERs should therefore be compared with other energy resources, including other DERs, using consistent methods and assumptions to avoid bias across resource investment decisions.
Principle 2	**Align with Policy Goals** Jurisdictions invest in or support energy resources to meet a variety of goals and objectives. The primary cost-effectiveness test should therefore reflect this intent by accounting for the jurisdiction's applicable policy goals and objectives.
Principle 3	**Ensure Symmetry** Asymmetrical treatment of benefits and costs associated with a resource can lead to a biased assessment of the resource. To avoid such bias, benefits and costs should be treated symmetrically for any given type of impact.
Principle 4	**Account for Relevant, Material Impacts** Cost-effectiveness tests should include all relevant (according to applicable policy goals), material impacts including those that are difficult to quantify or monetize.
Principle 5	**Conduct Forward-Looking, Long-term, Incremental Analyses** Cost-effectiveness analyses should be forward-looking, long-term, and incremental to what would have occurred absent the DER. This helps ensure that the resource in question is properly compared with alternatives.
Principle 6	**Avoid Double-Counting Impacts** Cost-effectiveness analyses present a risk of double-counting benefits and/or costs. All impacts should therefore be clearly defined and valued to avoid double-counting.
Principle 7	**Ensure Transparency** Transparency helps to ensure engagement and trust in the BCA process and decisions. BCA practices should therefore be transparent, where all relevant assumptions, methodologies, and results are clearly documented and available for stakeholder review and input.
Principle 8	**Conduct BCAs Separately from Rate Impact Analyses** Cost-effectiveness analyses answer fundamentally different questions than rate impact analyses, and therefore should be conducted separately from rate impact analyses.

The District has clearly articulated **Principle #1** (***Treat DERs as a Resource (and ensure consistency)***, to ensure that all DERs are treated as a resource and there is non-discrimination across DERs (from PowerPath DC/MEDSIS principles), and that there should be a consistent cost-effectiveness test applied to all DERs.[187]

Principle #2 (***Align with Policy Goals***) is especially important, as it sets forth that the appropriate cost-effectiveness testing perspective should reflect the perspective of regulators or similar entities that oversee utility DER investment decisions, where such perspective (referred to in the NSPM as the 'regulatory' perspective) is guided by the jurisdiction's applicable policy goals and objectives. These goals and objectives are typically articulated in statutes/laws, regulations, plans, and/or other codified forms in which utilities or energy providers operate.

Staff has taken a full inventory of the Commission's statutory mandates and the District's energy policies and plans, as provided in Appendix D. This inventory includes the following:

[187] *Formal Case No. 1130, In the Matter of the Investigation into Modernizing the Energy Delivery System for Increased Sustainability*, ("*Formal Case No. 1130*"), Order No. 19275, Attachment A, rel. Feb. 14, 2018 ("Order No. 19275").

- The foundational legislative mandates that guide competitive and clean energy efforts in the District include DC Code § 1-204.93, the Retail Electric Competition and Consumer Protection Act of 1999, the Renewable Energy Portfolio Standard Act of 2004, the Clean and Affordable Energy Act of 2008, and the CleanEnergy DC Omnibus Amendment Act of 2018.

- DC government policies and plans that plot a course towards a clean and sustainable energy system and set climate goals including but not limited to Sustainable DC 2.0, the Mayor's carbon neutrality commitment, and the DC Council's Resolution to reaffirm the commitment of the District to the Paris Agreement.

- Commission orders, regulations and policy commitments that define a vision for the future of the grid in the PowerPath DC (MEDSIS) and clearly articulate the broad range of utility and non-utility impacts.[188]

The table provided as Appendix E might also be useful as a secondary table to include for discussion with the Working Group on the usefulness of the current DCSEU test and what might be included in the future DC-specific test.

Principles #3 and #4 (***Ensure Symmetry and Account for Relevant & Material Impacts***) will be applied during both Phase I and II of the process to help guide interim and long-term solutions to ensuring the full range of utility system impacts are accounted for, and relevant non-utility system impacts (relevant to applicable policy) goals are accounted for in the BCA, to ensure that a) there is symmetrical treatment of benefits and costs, and b) where an impact is relevant but hard to quantify, some accounting for the impact is necessary (whether quantitative or qualitative) to recognize that the value is not zero.

Application of these principles will include identifying methods/options for how to account for hard to quantify impacts (e.g., areas of study, use of proxy adders, qualitative vs quantitative assessment, etc.) and to prioritize this determination based on specific factors (e.g., size or whether an impact is expected to be material).

Principles #5 and #6 (***Conduct Forward Looking, Long-term and Incremental Analysis, and Avoid Double Counting***) will be applied during the application of the test, both in the interim and long-term applications, to ensure proper accounting of the value of the distributed energy resources, consistent with guidance in the NSPM.

Principle #7 (***Ensure Transparency***) is a key principle, which this process in and of itself is applying, not only in developing a primary test for the District, but in identifying input assumptions and key BCA parameters, and reporting requirements and presentation of BCA results.

Principle #8 (***Conduct BCAs Separately from Rate Impact Analyses***) sets forth that cost-effectiveness analysis and rate impact analysis answer fundamentally different questions and therefore should not be combined into a single analysis. BCAs answer whether a utility program delivers more benefits than costs to the utility and its customers overall and on a cumulative basis. A rate impact analysis tells whether and the extent to which per-unit rates for service will change as a result of the program, which addresses equity across customers.

In particular and in the context of BCA for distributed generation and transportation electrification, often in practice the electric revenues are treated as a 'benefit' to the utility, yet such revenues should not be part of the BCA (in the same way *lost* revenues are not part of a BCA cost). The so-called "Ratepayer Impact

[188] *See* Order Nos. 19275, 20286, 20364 and 20724.

Measure" test, to the extent it may be considered as a secondary test in some jurisdictions, is not actually a cost-effectiveness test, but rather, an assessment of whether a program could result in a redistribution of costs that increases rates for customers not participating in the utility program.

Rate impacts are, of course, an important issue for regulatory concern, especially in a jurisdiction like the District, with a strong emphasis on energy equity in underlying policy.

In order to ensure that the District's primary test be used to inform whether a utility should fund or otherwise support DERs, it should not be utilized in a vacuum. A complementary rate impact analysis merits consideration to identify issues relating to equity in rate impacts.

c) A Note from NSPM Authors on the Use of Secondary Tests

The statements expressed in this section reflect the views of the NSPM Authors.

Secondary tests can help the Commission and stakeholders' overall understanding of DER impacts by answering other questions regarding utility DER investments. Different tests provide different information about the cost-effectiveness and impacts of DERs. However, secondary tests should be used cautiously to ensure that they do not make the BCA decision-making process burdensome or undermine the purpose of the primary test.

A secondary test supports the use of the primary test by answering additional questions regarding utility DER investments. The impacts selected for inclusion in a secondary test depend on the purpose of the evaluation, including prioritization among program options, a closer or complementary look at marginally cost-effective DER options, or other effects on customers (see Section 3.3 and Appendix C of the NSPM-DER which address secondary tests in detail.).

A secondary test may also be used as a form of sensitivity analysis for results from the primary test. For example, a secondary test such as a utility cost test that uses a utility discount factor can improve understanding of how cost-effectiveness changes depending on the evaluation perspective.

Where the primary test encompasses a very broad range of goals, as in the District, a secondary test can be used to evaluate DERs against a narrower range of goals and impacts. In a world of rapidly proliferating cost-effective DER options, the Participant Cost Test, for example, can be used as a secondary test to provide information regarding cost-effectiveness of DER investments for the host customer.

The Staff should recommend that the Commission encourage utilities and stakeholders to propose and develop additional secondary tests as necessary and appropriate to realize District policies.

B.1.10.2. Stakeholder Comment Summary

DOEE supported adoption of this proposal, although DOEE expressed concerns about using the DCSEU methodology in Phase I. DOEE supported a phased implementation, but DOEE had concerns about relying too heavily on DCSEU's methodology in Phase I as, while this methodology is useful, it is mismatched for the BCA under development and is narrowly focused on EE, DR, and DER. DOEE stated that the NSPM is a flexible tool that can be implemented in phases if the Commission is not ready to fully value certain inputs. DOEE supports NSPM BCA Principles; the BCA in Phase 2 should be based on the work of the Working Group, rather than on the utility proposals put forward in FC 1167. The framework adopted in this docket should be informing the evaluation of FC 1167 proposals, not the other way around.

WGL and Pepco opposed this proposal, and Pepco recommended a different proposal. These parties' comments and Pepco's proposal is summarized below. WGL did not understand why this section doesn't

have a comments or position section and doesn't understand how such a detailed proposal can be adopted without any precedential discussion whatsoever.

GRID2.0 strongly supported the proposal for a two-phased process to create a consistent and systematic framework for BCA. They also supported utilizing the DCSEU model to guide Phase II of the BCA creation process.

Pepco opposed this recommendation, stating that the fact that the CEAIWG was not able to reach agreement on many issues regarding a BCA methodology does not justify imposing the positions espoused in an external report, especially when the report has been positioned as "policy-neutral" yet it actually contains hard policy positions. The policy positions within the report have not been recognized or adequately discussed and, the report lacks sufficient clarity which could lead to follow-on issues regarding interpretation. Pepco recommended instead 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 that either the LCS BCA Handbook or the Climate Solutions BCA (pertaining to FC1167) serve as the initial proposal for comment. Pepco also noted that the NSPM cannot serve as the initial proposed BCA methodology for comment as it does not offer a BCA methodology with sufficient detail and clarity for application, and instead includes high-level positions on some issues while leaving other issues open. Pepco continued that, under its proposal, stakeholders may refer to the NSPM or any other document to support their positions if they desire. Pepco also opposed GRID2.0's proposal in response to the NSPM Authors' proposal, noting that GRID2.0's alternative proposal includes adoption of the recommendations included in the CEAIWG Report, while Pepco has communicated its opposition, and supported its reasoning for its opposition, to several of these CEAIWG Report recommendations (including adoption of the NSPM) in Pepco's comments elsewhere in this report.

OPC does not object to the multi-phased process proposed here.

DCSUN agrees generally with the NSPM guidance on BCA development. They also agree with GRID2.0 that Phase II should involve a formal and transparent stakeholder process as Phase I has, but not necessarily a rulemaking.

GRID2.0 proposed the following as an alternative to the NSPM Authors' proposal: "*The Commission should undertake a notice and comment rulemaking proceeding, based on the guidance provided by the "National Standard Practice Manual for Benefit-Cost Analysis of Distributed Energy Resources" ("DER"), to establish a consistent Benefit-Cost Analytical Framework for DER; and this proceeding shall be framed and governed, in its structure, process and agenda, by a "Strawman Framework" that incorporates the Recommendations developed by the Clean Energy Act Implementation Working Group and approved by the Commission and that takes into account the Working Group's work product.*" GRID2.0 gave the following reasons, as discussed in the CEAIWG meeting on August 30, 2021:

- The time constraints governing this Working Group's process do not allow for a fuller process to be undertaken, as described in the NSPM guidance, and which is needed to build upon the core elements that the WG has been addressing and which are reflected in proposed WG Recommendations in its Final Report;
- There is the need for a consistent, Benefit-Cost Analytical Framework to standardize BCA methodology in order to account for relevant Utility system DER impacts and non-Utility system DER impacts; such standardization is necessary to allow for quantifying and monetizing DER net

benefits and to allow for cost-effectiveness comparisons between DER and between DER and conventional investment options;

- NSPM guidance sets out a multi-stage process for addressing elements, principles, cost-effectiveness tests, DER impacts, definitions and calculation methods relevant to developing a coherent Benefit-Cost Analytical Framework by any jurisdiction, based on its policy priorities and particular market conditions; therefore, this guidance delineates a multi-stage process, addressing factors that are material to a jurisdiction's selection of a primary cost-effectiveness test and relevant DER impacts that could be included in that test; the Working Group has already drawn substantially from the NSPM guidance in its discussions and in formulating Recommendations on core elements to be included in a DCPSC BCA Framework;

- In recent Orders, (for example, the recent Pepco Rate Case Order in FC1156 and a recent Order in the "Utility Climate Change Plan Proposals" docket in FC1167) the Commission has expressed the need for harmonization across related proceedings and indicated that the DCPSC is looking to the CEAIWG to contribute to such harmonization by making Recommendations related to developing a B/C Analytical Framework; climate change-related metrics and measurements; and reporting requirements. A B/C Analytical Framework and primary cost-effectiveness test approved by the Commission should apply to all DER types and applications and serve as an organic framework that can evolve in a systematic, consistent and economically sound manner to assimilate technology, policy and market/customer changes, enabling benefit-cost analyses to evolve from a "state of art" to a "state of science," as Rabago Energy, an NSPM author, pointed out.

- While GRID2.0 believes that it has been useful to study the DCSEU cost-effectiveness model, and supports alignment across the DC Government, GRID2.0 does not believe that this model or any other should become the central focus of an extended proceeding; but that, instead, a notice and comment rulemaking should be based upon the recommendations of the CEAIWG which are approved by the Commission, while continuing to take into account the DCSEU model as well as other instructive models and inputs.

- A second stage rulemaking process should be framed and governed by the DCPSC's regulatory authorities, the Commission's charge under Section 103 of the CleanEnergy DC Omnibus Amendment Act (and related District climate change, clean energy and energy efficiency commitments and plans), the Commission's directives in its Notice of Inquiry establishing the GD 2019-04-M docket and the Recommendations and foundational work of the CEAIWG, which, together, would be incorporated into a "Strawman Framework" for the rulemaking proceeding.

See additional stakeholder comments in **Appendix B at B.1.10.4**.

B.2. Attribution Boundaries (Categories of BCA Applications)

B.2.1. Working Group Majority Recommendation

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 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.*

B.2.1.1. Background

This survey suggestion was proposed by OPC as part of one of their comments on the Draft Working Group Survey.

OPC believes it is important to apply BCA to the appropriate scopes in order to support well-reasoned and efficient policy making decisions. Potential applications should be examined on a programmatic basis to address the scale question and determine which applications require BCAs for decision making. OPC agreed with GRID2.0 that not every application needs a BCA, particularly routine decisions that do not affect DC's climate commitments. OPC believes that BCAs should be applied to all significant investments and to applications that could affect the District's climate change commitments including relevant non-climate programs, large-scale capital projects, major infrastructure investments, and rate cases. Both the Commission and OPC have statutory mandates to consider the effects on global climate change and the District's public climate commitments as part of their respective regulatory and advocacy efforts. Decisions regarding whether or not to support and advance policies that impact climate commitments should be informed by a quantified analysis based on a BCA provided by the applicant for the decision.[189]

When presenting the LCS BCA Handbook, Pepco stated that the LCS BCA Handbook "tailors BCA analyses to reflect program-specific considerations."[190] Based on this statement, GRID2.0 stated that the LCS BCA Handbook developed by Pepco is different from the New York State Department of Public Service's Order establishing a "BCA Framework for DER," as GRID2.0 stated that the latter applies to all DER types and applications and takes an "enterprise level" approach to BCA analysis, not the case by case, programmatic approach that GRID2.0 understands that the LCS BCA Handbook is taking.[191] GRID 2.0 then stated that, per the NYPSC's Order, standardized accounting practices are being developed under the NYPSC's BCA Framework in which the PSC determined to apply the Societal Cost Test as its primary test for calculating the costs and benefits associated with a full range of impacts of DER resources. GRID2.0 then stated that the NYPSC, therefore, chose, as a pre-requisite to utilities' developing BCAs tailored to program-specific considerations, to establish an overarching "BCA Framework" to guide and promote systematic, consistent and economically sound benefit-cost analyses by the utilities that the PSC supervises and regulates. The NYPSC indicated that it established such a BCA Framework to guide utilities in connection with their assessing the cost-effectiveness of investments and to enable consistent and systematic comparisons of the benefits and costs of DER with each other and with traditional energy resources.[192] As such, GRID2.0 noted that the NYPSC BCA Framework Order applies to four broad

[189] *GD-2019-04-M*, Technical Committee/Working Group Sixth Minutes Report, filed September 10, 2021.
[190] *GD-2019-04-M*, BCA Framework Committee First Meeting Minutes Report, filed November 23, 2020.
[191] *GD-2019-04-M*, BCA Framework Committee First Meeting Minutes Report, filed November 23, 2020.
[192] *GD-2019-04-M*, BCA Framework Committee First Meeting Minutes Report, filed November 23, 2020.

categories of utility expenditures: (1) Investments in Distributed System Platform capabilities; (2) Investments in procurements of Distributed Energy Resources through competitive selection; (3) Procurement of DER through tariffs; and (4) Energy Efficiency Programs. Pepco disagreed with GRID2.0's characterization of the LCS BCA Handbook, stated that the Working Group is focused on the District's clean energy and climate protection goals, and stated that the key question relates to the identification and application of benefits and costs.[193] In the third Joint Metrics/BCA meeting, WGL presented its suggestion that programs would be proposed and then evaluated under a BCA.[194] WGL responded to questions confirming that it would like to have a long-term multi-sector IRP approach in combination with the program by program evaluation framework.[195]

Pepco asserted that it is not cost effective to do BCA for every application (though the parties may not agree as to the appropriate cut-off for scope or scale of projects requiring a BCA). While OPC agreed that not every portion of utility proposal may not require a BCA, broad application of the BCA is important to meet OPC and PSC's statutory mandates to consider the District's climate change commitments. For rate cases, Pepco stated that it was unclear how a BCA would be applied to a rate case generally, and specifically asked OPC to clarify how to apply BCA to a rate case that uses a historical test year as that is an ex-post review of Company investments.

Fundamentally, Pepco maintained that the BCA under development in this WG should be applied to utility programs proposed to meet the District's decarbonization goals such as those the Company is proposing in its Climate Solutions Plan in FC1167, which will be subject to the Climate Solutions BCA Pepco intends to file with the Commission in January of 2022. As described in the Company's filings in FC 1167, these programs include a broad array of programs developed to activate customers and other partners to decarbonize buildings, electrify transportation, and demonstrate new value DER options, amongst other programs. These programs are tied directly to the achievement of decarbonization goals within the District and reflect the District's approach to decarbonization discussed across numerous policy reports and reflected in legislation.

As Pepco explained, it executes multiple broad categories of investments including Capacity, Reliability, and Customer projects. In Pepco's view the Company's investments in Customer and Reliability-Driven work are largely neutral to the District's climate goals and reflect its obligation to provide safe and reliable service to its customers. Because Reliability-driven projects—projects identified to maintain the distribution system's ability to deliver energy to customers—are required for the Company to provide safe and reliable service to customers and are often needed immediately, a BCA is inappropriate for these projects. Similarly, Customer-Driven investments—which are the result of customer service needs, such as interconnection requests, installation of meters for new customers, and District Department of Transportation requests for utility service to be moved to accommodate road construction—must be fulfilled under its obligations as the jurisdictional utility. Thus, these projects are also inappropriate for BCA treatment.

The long lead times for Capacity-driven projects—projects identified to meet customer load growth—make them more appropriate for BCA treatment. The Company already applies a BCA to appropriate Capacity-driven projects as part of its Distribution System Planning for Non-Wires Alternatives (DSP/NWA) process, including the LCS BCA Handbook methodology for evaluating the cost-effectiveness of proposed solutions that may include a variety of storage, demand response, and other DER. The long lead times for

[193] *GD-2019-04-M*, BCA Framework Committee First Meeting Minutes Report, filed November 23, 2020.
[194] *GD-2019-04-M*, Joint Metrics and BCA Committee Third Meeting Minutes Report, filed March 3, 2021.
[195] *GD-2019-04-M*, Joint Metrics and BCA Committee Third Meeting Minutes Report, filed March 3, 2021.

these projects make them more appropriate for BCA treatment as part of the evaluation of alternatives because the Company has time to consider alternatives.

Pepco appreciated GRID2.0's comment that some applications will be too small for BCA. Pepco asked the Group to state specifically what projects they are suggesting fall under this broad scope, so that Pepco can respond thoughtfully and appropriately. Pepco stated that it does not do benefit/cost analysis for value of life or value of customers as Rabago Energy stated. Pepco further argued that any cost test is specific to jurisdictional goals and stated that the LCS BCA Handbook was specifically developed to take into account the unique jurisdictional goals and context of the District. Pepco stated that it understands that not all stakeholders will agree with it as written but noted that having a straw proposal helps elicit specific feedback from stakeholders.[196]

GRID2.0 added that the BCA guidance should contain materiality criteria for performing BCAs; which materiality criteria would be applied consistently to address the scale question and determine which applications are appropriate for benefit-cost analysis. Also, consideration of "scale" as a factor for B/C analysis should not have the effect of removing from benefit-cost analysis certain material categories of utility proposals (e.g., programs, plans, procurements, projects, pricing structures, etc.). 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. The B/C Analysis should be prepared by the applicant, using the jurisdiction's selected cost-effectiveness test; a B/C analysis that justifies the merits of the investment/procurement and evaluates alternative options.[197]

WGL disagreed with the OPC recommendation. According to WGL: "The BCA should apply to climate change programs of sufficient scale to justify the BCA, while also being mindful of the cumulative impact of such programs. The BCA is particularly useful when comparing alternative climate change programs. These comparisons can reflect scenario or sensitivity analyses where input assumptions may vary. Even under these circumstances, the BCA informs a decision that must also incorporate the judgment of commissioners, particularly when there are important considerations that are hard to reflect in a BCA (e.g., equity or resilience)". WGL has previously proposed that such issues should be accommodated through the addition of qualitative factors, that could be weighted and then scored in a comprehensive rubric, along with quantitative factors; The BCA should not be applied to determine whether to address a significant safety or reliability issue even if that safety or reliability program may also provide environmental benefits; Neither is a BCA appropriate for a rate case which typically relies upon decades of foundational precedent. Finally, WGL does not believe that a BCA is appropriate for application to pilot programs which may be needed to demonstrate and test new and emerging technologies for GHG reduction. The BCA should not be applied to utility activities not directly related to climate change such as rate cases, reliability and safety measures, etc. Although parties may be inclined to broadly interpret any utility action as one that "could affect" DC's climate commitments, OPC's criterion is not helpful. WGL based its view on the following considerations:

[196] *GD-2019-04-M*, Technical Committee/Working Group Sixth Minutes Report, filed September 10, 2021.
[197] *GD-2019-04-M*, Technical Committee/Working Group Sixth Minutes Report, filed September 10, 2021.

- The highly undefined nature of the OPC proposal. For example, how would the BCA apply to rate cases or matters that primarily support safety and reliability? What would be the changes to each process OPC proposes to now incorporate the BCA?
- The lack of discussion during the CEAIWG process or even hypothetical examples related to OPC's proposal.
- The District's lack of experience with the proposed BCA structure which, until now, has been primarily used by the DC SEU for energy efficiency programs,
- The current recommendations which in WGL's view are incorrect, and therefore, an overly broad application would exacerbate the impacts of the errors while also diffusing limited regulatory capabilities (complete elimination of offsets), and
- The costs of BCA evaluation.

DOEE stated that in addition to the *scope* of the BCA guidance, the Working Group also needs to address the *scale* of the BCA implementation. DOEE agreed with OPC that the BCA guidance should also include direction as to the appropriate scale that a utility should conduct the BCA, stressing that the scale guidance should allow for sufficient comparison of alternatives.[198]

DOEE did not agree that "routine decisions" should be excepted from the BCA framework, given that decisions currently accepted as routine may not be so in the future and may already have viable alternatives that may have a different climate impact (e.g. non-wires alternatives). DOEE agreed with GRID2.0 that "programs, plans, procurements, projects, pricing structures, etc." should be part of the BCA. DOEE found that for the optionality embedded within the BCA process, it will be required to assess those options under the BCA at a sufficiently granular level in order to be able to weigh such alternatives effectively. GRID2.0, Sierra Club, and DCCA added their support for DOEE's comments.

B.2.1.2. Stakeholder Comment Summary

A majority of stakeholders who offered opinions including DOEE, DCCA, OPC, Sierra Club, and DCSUN agreed with this suggestion when it was offered in the survey, with GRID2.0 responding "Yes, but." WGL disagreed with this suggestion. Several parties submitted more recent comments on the recommendation. The positions of all stakeholders who submitted comments are summarized below.

DCCA stated that this suggestion is important to capture potential synergies between different projects. DOEE stated that in addition to the *scope* of the BCA guidance, the Working Group 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 disagreed with the OPC recommendation. 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.

WGL also objected to the process that enabled the inclusion of OPC recommendations but excluded WGL's recommendations for similar stakeholder consideration. It cited as examples (i) the recommendation to include a long-term IRP process to handle major (major being defined as likely to have major changes in

[198] Note: The NSPM defines BCA as "a systematic approach for comparing the benefits and costs of alternative options to determine whether the benefits exceed the costs over the lifetime of the program or project under consideration.".

the energy supply and demand situation in the District) long term program evaluation including base lines for costs, rates, key data that is currently missing, modeling assumptions, etc. (ii) a question and answer rubric for scoring qualitatively assessed factors (resiliency), or quantitative factors addressing issues not directly impacting the SCT such as rates, affordability, and equity [Staff notes that the Working Group did consider and agree to this recommendation], (iii) the need to include the transportation sector in any assessment of decarbonization [Staff notes that PSC does not regulate transportation. DOEE does consider transportation in its work], (iv) the need to assess costs, feasibility and other critical impacts before developing pathways, targets, goals, and policies [Staff notes that this was discussed several times, and Staff noted to WGL that the purpose of this Working Group was to establish a BCA Framework. Costs would be considered in the application of the BCA framework, not in the formulation of it], (v) the need to avoid discriminatory treatment of gas customers relative to electric customers [Staff notes that all recommendations included in this report apply equally to both the gas and electric utilities], (vi) the need for a BCA to be a BCA and not a CA – specifically the use of marginal cost of abatement instead of the SCC which eliminates the benefit side of the BCA, (vii) the need not to pass pathways and policies on reservation of offsets for power and not gas customers [Staff notes that all recommendations included in this report apply equally to both the gas and electric utilities], (viii) the need to explain why offsets are reserved for ratepayers of other states, and other matters.

GRID2.0 commented that the NSPM can be applied at different scales and time horizons. 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 stated that the scale of the BCA application should be tailored to the relevant situation. Fundamentally, Pepco maintained that the BCA under development in this WG should be applied 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 required 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 with the Commission's statements for commencing this investigation. Further, 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 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. Nor does OPC support WGL's recommendation for a restrictive application of the BCA. WGL's regulated business is premised on the delivery of natural gas; as such even potentially so-called "routine" proposals such as rate cases, and reliability investments have likely GHG and climate implications.

See additional stakeholder comments in **Appendix B at B.2.1.3**.

B.2.2. Working Group Majority Recommendation

The BCA Framework will use a SCT for screening all the programs or portfolio categories listed in Recommendation B.1.1. 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.

B.2.2.1. Background

In the first BCA meeting, Staff stated that different programs may need different types of BCA tests to evaluate them. Specifically, Staff stated that DER and programs designed to reduce GHG emissions, along with storage and electrification programs, may need different types of BCA tests as opposed to those for energy efficiency ("EE") and demand response ("DR") programs.[199] Staff also noted in the presentation on the NSPM for DERs that one of the principles included in the NSPM is treating all DERs consistently, while noting that the NSPM recognizes that some DERs might be treated differently because of policy, and that can be addressed using secondary tests. Staff noted that the NSPM recommended that input units and methodologies should be the same across DERs.[200] Later in that meeting, GRID2.0 suggested further discussion on the creation of a BCA framework guided by the NSPM for DERs saying: "Such a framework would reflect a consistent and comprehensive accounting methodology for assessing the cost-effectiveness of DER under a predominant test, while also allowing for variations in application of BCA component elements in specific settings."[201]

In the third Joint Metrics/BCA meeting, the NSPM authors presented, and in response to Staff questions stated, that developing and applying a common BCA framework allows for DERs to be compared consistently to one another and to conventional investments. The NSPM Authors stated that the NSPM offers a common DER accounting system, which is applied to take into account the impacts of different types of DERs. According to the NSPM Authors, some utility investments are evaluated against the entire useful life, while non-utility projects may be evaluated only on a short time period. The NSPM Authors stated that these differences in time scales are taken into account based on the particular utility system needs to be addressed and the purpose(s) to be served by particular investments, and that there is a tiered approach to the time periods of analyzing different resources. In response to a Staff question about different resources having different inputs, the NSPM Authors stated that, especially for useful life, those inputs are going to be different, but comparisons can still be made, again based on the particular purposes to be served. The NSPM Authors also stated that the utility impact needs to be measured over the lifetime of that program's impact and claimed that utilities do not have much data on marginal cost of infrastructure spending. In response to a question from Pepco about what gets included and quantified under the NSPM, the NSPM authors answered that what impacts arise are chosen from the 'menu' of utility and non-utility impacts from the NSPM. The NSPM Authors stated that the NSPM entails a multi-step process for developing a primary test. According to the NSPM Authors, under the NSPM, the jurisdiction needs to take inventory of all potential impacts (based on applicable policy goals) before choosing which are appropriate to include in

[199] *GD-2019-04-M*, BCA Framework Committee First Meeting Minutes Report, filed November 23, 2020.
[200] *GD-2019-04*, BCA Framework Committee First Meeting Minutes Report at Attachment No.3.
[201] *GD-2019-04*, BCA Framework Committee First Meeting Minutes Report at 7.

the Jurisdictional Specific Test, and how the impacts will be quantified.[202] In its previously filed comments in the instant docket, Pepco noted, "The BCA should be technology agnostic and capable of evaluating a wide range of initiatives, including investments in carbon reduction technologies and reliability/resilience improvement technologies."[203]

In comments on the Draft Working Group Survey, GRID2.0 suggested modifying the suggestion to: "*Apply the NSPM common BCA Framework and the SCT to different types of DERs, taking into account their distinctive physical and operational characteristics (e.g., EE, DR, DG, ES, etc.), as well as to different applications (e.g., single and multi-sited DER, electrification, dynamic planning, etc.).*"[204] Upon further Working Group discussion, GRID2.0 updated its proposed language to the following: "*While establishing elements, principles, definitions, assumptions and methods common to the analysis of DER impacts, as part of a consistent and coherent Benefit-Cost Analytical Framework, the Framework will apply the Societal Cost Test to benefit-cost analyses, which will consist of such common BCA components and elements, in a manner that fully takes into account the different physical characteristics and operating profiles of respective DER types and the varying circumstances and specific settings relating to DER applications.*"

Staff included a similar survey suggestion to the Recommendation following several conversations on the topic in Working Group meetings. The proposed Working Group Suggestion was later amended by Staff to include the two sentences to capture the partial consensus of the Working Group.

B.2.2.2. Stakeholder Comment Summary

When a similar suggestion was offered in the survey,[205] a majority of stakeholders who offered opinions including DOEE, OPC, and DCSUN agreed with that suggestion, with GRID2.0 responding "Yes, but." Sierra Club and DCCA responded "Maybe." More recently, several stakeholders submitted comments on the specific suggestion presented here. The positions of all stakeholders who submitted comments are summarized below.

Sierra Club commented that how the PSC intends to factor in this variation needs to be explained more fully. DCCA added that this recommendation needs further explanation. DOEE commented that it supports the statement with the modifications of applying the SCT to all utility business as usual programs and investments. DOEE also stated that components should be standardized and, if that component does not apply, then its value should be zero. GRID2.0 asserted that the SCT should apply to programs and not just screen them, though assessments will still need to accurately evaluate the estimated actual impacts of different types of DERs. WGL's concerns included the issues associated with electrification and storage (particularly regarding meeting energy needs during the winter peak) had not been adequately addressed within the CEAIWG.[206] Pepco stated that the primary test should be the Societal Cost Test, as the BCA should reflect net welfare from a societal perspective and stated that a single applicable BCA should be able to assess a wide variety of project or program types if appropriately designed, and that a secondary test may not be necessary depending on the design of the primary test. Pepco referenced the LCS BCA Handbook and NYPSC framework as other sources to rely upon other than the NSPM.

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[202] *GD-2019-04-M*, Joint Metrics and BCA Committee Third Meeting Minutes Report, filed March 3, 2021.
[203] Pepco Notice of Inquiry Comments at 9-10.
[204] GRID2.0's Draft Survey Edits "GD-2019-04-CEAIWG_SURVEY_GRID2.0 EDITS.docx."
[205] The survey suggestion was as follows: "Using SCT for screening for all the program or portfolio categories listed in NSPM, EE, DR, DG, electrification, and storage; however, B/C components and details may vary (for example, storage life may be shorter comparing to EE measures)."
[206] WGL Comments, January 13, 2020, GD2019-04-M. page 7.

See additional stakeholder comments in **Appendix B at B.2.2.3.**

B.2.3. Working Group Majority Recommendation

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.

B.2.3.1. Background

This survey suggestion was included by Staff. In the third Joint Metrics/BCA meeting, WGL presented a potential framework that suggested that the SCT be used as the primary quantitative test with the RIM test as a secondary test.[207] In the fourth Joint Metrics/BCA meeting, Staff noted that some stakeholders believe the Commission should use a RIM test as a secondary test to ensure social equity. DCSUN noted that the Commission has an opportunity to broaden what social equity means, not just looking at rates, but non-energy benefits, EVs and others as well. DCSUN stated that it requires more creativity than just using the RIM test but taking the time to do that is important. The BCA can be adjusted or have adders to help with the mechanics. GRID2.0 stated that equity effects can be addressed and are accounted for under the SCT, which it stated includes both impacts on low-income customers, as well as low-income "societal" impacts, including impacts on low-income communities (e.g., poverty alleviation, environmental justice). GRID2.0 said the SCT goes beyond utility system impacts and includes host customer/participant impacts and societal impacts.[208] In their comments on the Draft Working Group Survey, WGL noted: "RIM is [a] critical supplement to SCT and should have greater weight because we are not making small, but potentially very large impacts in demand that could have large rate impacts reflecting the potential of very high costs. There is the additional need to consider equity and consider PowerPath DC principles."[209]

B.2.3.2. Stakeholder Comment Summary

When this suggestion was offered in the survey, a majority of stakeholders including GRID2.0, DCAA, Sierra Club, and DCSUN agreed with this suggestion, DOEE disagreed, and OPC, WGL, and Pepco offered comments but not yes/no opinions. More recently, several stakeholders submitted comments. The positions of all stakeholders who submitted comments are summarized below.).

In comments, WGL appreciated the recommendation to assess programs with RIM as large changes in demand necessitate RIM's addition to the SCT among the quantitative analysis set. However, WGL believed that the scoring of major programs requires a question and answer rubric whereby qualitatively evaluated and non-SCT quantitative analysis can be transparently used in the scoring. DOEE added its support of the NSPM guidance of treating secondary tests cautiously noting that this information from these tests could go in the annual report but not in the BCA. DOEE notes 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. 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. GRID2.0 supported the use of secondary tests but cautioned the use of the RIM test as it might undermine the purpose of the primary test. GRID2.0 also emphasized that the BCA test addresses different questions than a RIM test, so that a BCA Test cannot be used interchangeably with a RIM test. Pepco stated that the

[207] *GD-2019-04-M*, Joint Metrics and BCA Committee Third Meeting Minutes Report, filed March 3, 2021.
[208] *GD-2019-04-M*, Joint Metrics and BCA Committee Fourth Meeting Minutes Report, filed March 29, 2021.
[209] WGL's Draft Survey Edits "GD-2019-04-M Survey March 11 WashGas.docx."

primary test should be the Societal Cost Test as the BCA should reflect net welfare from a societal perspective, considering benefits and costs from the perspective of the District's policy goals. Pepco also noted that, while other information about a project or program may be useful for informational purposes on a situational basis, Pepco did not see a compelling reason to require that a secondary test be performed, and it stated that requiring such a test could increase administrative costs. OPC continued to ask for more information about how the test would be used.

See additional stakeholder comments in **Appendix B at B.2.3.3.**

B.3. Discount Rate

B.3.1. Working Group Discussion

For the Discount Rate for the BCA analysis for DER programs, projects, plans, procurements and pricing structures, the BCA should use a societal 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.

B.3.1.1. Background

A discount rate is typically used in a BCA to convert future dollars into present value dollars.[210] The choice of discount rate can have a significant impact on present value dollars and on the results of the BCA. A discount rate reflects a particular time preference, which is important in determining short-term versus long-term impacts. A higher discount rate gives more weight to short-term benefits and costs relative to long-term benefits and costs, while a lower discount rate weighs short-term and long-term impacts more equally.[211]

The cost of capital associated with a given investment and the risks associated with the costs and the benefits associated with the investment can affect the appropriateness of the discount rate associated with the investment or any of its benefit or cost streams. However, for simplicity, BCAs generally apply a single discount rate for almost all costs and benefits. The American Council for an Energy-Efficient Economy found that discount rates used in BCAs for energy efficiency vary widely:[212]

[210] National Standard Practice Manual for Benefit-Cost Analysis of Distributed Energy Resources, April 2020, p. 5-16 ("NSPM BCA").
[211] NSPM BCA, p. 5-16.
[212] "A New Tool to Improve Energy Efficiency Practices," The American Council for an Energy-Efficient Economy, July 2019, p. 12.

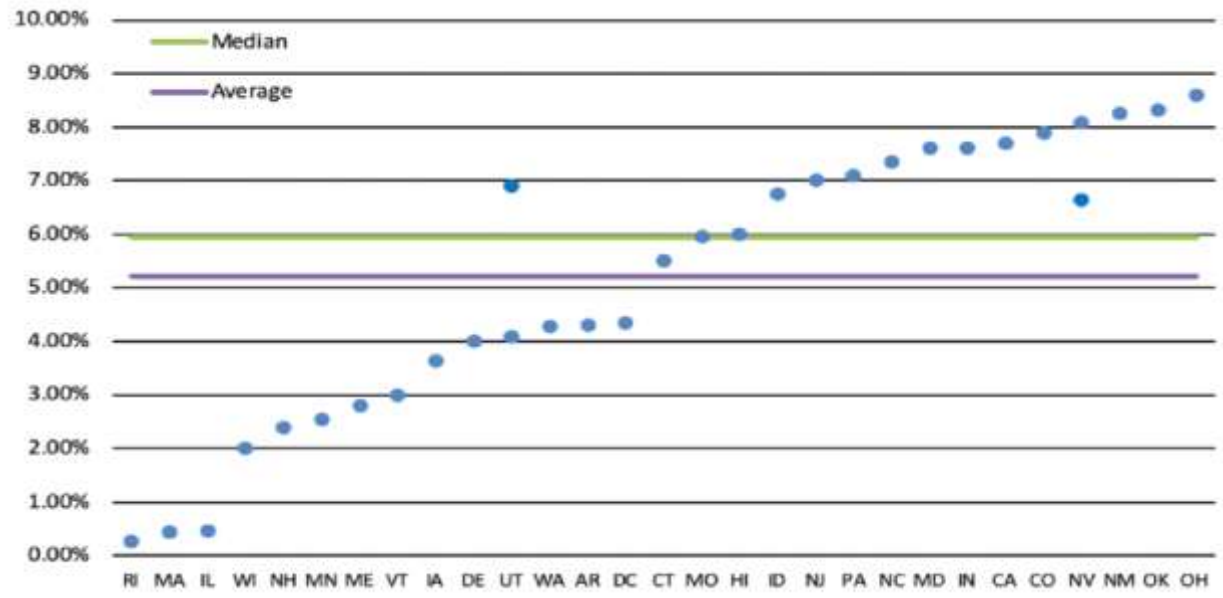

Figure 1: Discount rates used for energy efficiency cost-effectiveness tests for 29 states included in ACEEE's Database of State Efficiency Screening Practices

There are three categories of discount rates typically considered for DER assessments: the utility's WACC, a discount rate reflecting an average customer time preference, and a societal discount rate. A fourth option is some combination of these three categories.[213]

The choice of discount rate is a decision that should be informed by the jurisdiction's applicable policy goals, the period of time over which costs and benefits occur, and the degree of uncertainty in those costs and benefits. Further, the choice of discount rate should reflect the ultimate objective of the cost-effectiveness analysis. Therefore, the regulatory perspective should be used to determine the appropriate discount rate.[214]

The regulatory perspective includes the full scope of issues for which regulators and other relevant decision-makers are responsible. It is typically based upon statutes, regulations, executive orders, commission orders, and ongoing policy discussions. However, the regulatory perspective can take into consideration other relevant perspectives, including:

- Investor-Owned Utility Perspective: The utility's WACC is typically used to indicate the time preference for investor-owned utilities (i.e., reflects the time preference of utility investors based on the utility authorized return on equity, cost of debt, and debt-to-equity ratio). The key goal of utility investors is to maximize the returns on their investments. Therefore, the time preference of utility investors is not necessarily the same as the time preference of utility customers, or the regulatory time preference.[215]

[213] "A New Tool to Improve Energy Efficiency Practices," The American Council for an Energy-Efficient Economy, July 2019, p. 5-17.
[214] "A New Tool to Improve Energy Efficiency Practices," The American Council for an Energy-Efficient Economy, July 2019, p. 5-17.
[215] "A New Tool to Improve Energy Efficiency Practices," The American Council for an Energy-Efficient Economy, July 2019, p. G-3.

- Utility Customer Perspective: An objective of utility cost-effectiveness analysis is to identify those resources that will best serve utility customers over the long term, while also achieving applicable policy goals of the jurisdiction. Thus, the utility customer time preference is an important consideration in determining the appropriate discount rate for analyses. There are at least two challenges to using customer-focused discount rates. First, the customers' cost of capital is only one factor that will influence the customers' time preference, and thus they may place a different time preference on dollars spent on DERs relative to dollars spent on other products or other investments. Second, the customer cost of capital varies considerably across customer classes, and across customers within classes. Any one cost-effectiveness test, however, can use only one discount rate. Therefore, to the extent that the customer cost of capital is used to inform the determination of a discount rate, it should be an average cost of capital that represents the broad range of utility customers.[216]

- Host Customer Perspective: The host customers' perspective is directly relevant when applying the Participant Cost Test ("PCT") because the goal of that test is to indicate the impact on host customers only. For this test, a discount rate reflecting the host customers' time preference would be appropriate.[217] (The PCT is a one-sided perspective and is not being proposed as a primary test for the BCA.)

  Societal Perspective: The societal cost test (SCT) using a social or societal discount rate reflects a policymaker or regulator's perspective. The social discount rate is the discount rate from society as a whole, and figures prominently in decision-making related to climate change because it values the cost and benefits of future events, including those that will impact future generations, such as GHG pollution. Social discounting is distinct from private discounting, which reflects a single perspective such as a utility's WACC or a customer rate-of-return. According to the EPA: "using a given private discount rate instead of a social discount rate can bias results as part of a BCA."[218] The type of social discounting used for climate change analysis is *intergenerational* discounting, which takes into account the long-time horizon of impacts. Intergenerational discounting results in selected discount rates that are lower than observed interest rates due to its time horizon being longer than the investment horizon, and the greater level of uncertainty about the future over a longer time horizon.

The time preference from the regulatory perspective, however, captures two additional considerations. First, regulators have a responsibility to ensure that utility resources will meet applicable policy goals. Second, regulators have a responsibility to consider both current and future customer interests. The regulatory perspective, therefore, should place a higher value on long-term benefits and costs than the utility customer perspective.[219]

One exception to the application of a single discount rate pertains to the benefit or cost associated with avoiding or incurring very long-lived future damages associated with greenhouse gas emissions. For the specific calculation of these benefits or costs, intergenerational considerations are sometimes treated as the

[216] "A New Tool to Improve Energy Efficiency Practices," The American Council for an Energy-Efficient Economy, July 2019, p. G-3.
[217] "A New Tool to Improve Energy Efficiency Practices," The American Council for an Energy-Efficient Economy, July 2019, p. G-3.
[218] EPA, *Guidelines for Preparing Economic Analyses,* 2010. Ch 6. Pg. 1. https://www.epa.gov/sites/production/files/2017-09/documents/ee-0568-06.pdf.
[219] "A New Tool to Improve Energy Efficiency Practices," The American Council for an Energy-Efficient Economy, July 2019, p. G-3.

dominant factor in the choice of discount rate. For example, in its "Order Establishing the Benefit Cost Analysis Framework," the NYPSC established the framework for New York utilities' BCAs for investments in distributed system platform capabilities, the procurement of distributed energy resources through competitive selection, the procurement of DER through tariffs, and energy efficiency programs.[220] The NYPSC prescribed the Societal Cost Test as the primary test for the BCA,[221] and it found that the appropriate discount rate used for comparing utility investment and long term procurement measures to distributed energy resources and other resource alternatives generally is the utility's WACC.[222] However, the NYPSC found one important exception to the use of WACC as the discount rate. Specifically, when calculating the social cost of carbon ("SCC"), the NYPSC prescribed the application of a 3% real discount rate, consistent with the United States Environmental Protection Agency Interagency Working Group's SCC "central value" estimate.[223] The NYPSC noted that the SCC is distinguishable from other benefits and costs because it operates over a very long timeframe, justifying use of a low discount rate specific to its long-term effects.[224]

In its order updating environmental cost values, the Minnesota Public Utilities Commission ("MNPUC") concluded that the two discount rates of 3% and 5% are consistent with past findings and the most supported in the record for valuing environmental costs. The MNPUC also concluded that the suggested rates of 2.5% and 7% were not as well supported, and thus, were not accepted as meaningfully able to quantify the cost of carbon.[225]

During the Working Group process, several stakeholders presented on the topic. In its March 30, 2020 Technical Conference presentation, Pepco recommended using the utility-weighted average cost of capital as the primary basis for the discount rate (except for the cost of carbon calculation, where a lower rate may be appropriate). This reflects the cost of capital for financing utility investments.[226] During DOEE's April 30, 2020 presentation on "Evaluating the Impact of GHG Emissions," it indicated that given the long duration of the impacts of GHG emissions, a low or no discount rate could be considered.[227]

As part of the December 1, 2020 presentation on DCSEU Programs, NMR Group, DCSEU's consultant, explained how the DCSEU sets its discount rate. The ten-year treasury rate is taken, as of October annually, then an adder of 2% is combined to produce the discount rate for the DCSEU. This is typically 3-5%.[228] In its February 24, 2021 presentation on the Clean Energy DC Act discussion, WGL indicated that the discount rate must reflect actual costs. As such it should apply the utility's cost of capital. Failure to do so could result in under-/overstated costs and result in programs where costs exceed benefits and violate Commission requirements for reasonable rates. In addition, application of a discount rate below the utility cost of capital will require the District to provide grants to utilities.[229]

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[220] Proceeding on Motion of the Commission in Regard to Reforming the Energy Vision, Order Establishing the Benefit Cost Analysis Framework, State of New York Public Service Commission Case 14-M-0101 (Jan. 21, 2016), pp. 1-2 ("NYPSC Case 14-M-0101").
[221] NYPSC Case 14-M-0101, p. 12.
[222] NYPSC Case 14-M-0101, p. 26.
[223] NYPSC Case 14-M-0101, p. 27.
[224] NYPSC Case 14-M-0101, p. 27.
[225] MNPUC Case E-999/CI-14-643, issued January 3, 2018, at pp. 24-28.
[226] Presentation by and Pepco, March 30, 2020 at 2.
[227] "Evaluating the Impact of GHG Emissions," Presentation by DOEE, April 30, 2020 at 9.
[228] "Societal Cost Test for DCSEU Programs," Presentation by NMR Group, Inc., December 1, 2020 at 5.
[229] "The Vital Role of Data, Metrics and Flexibility in Achieving Carbon Neutrality," Presentation by AltaGas, February 24, 2021 at 11.

B.3.1.2. Stakeholder Comment Summary

WGL, Pepco, Sierra Club, DOEE, and DCCA disagreed with the suggestion to apply DCSEU's discount rate in the BCA. However, the various stakeholders had differing opinions about the appropriate discount rate and whether a single discount rate should be adopted. The comments of the various parties are summarized below.

GRID2.0, DCCA, DCSUN, and Sierra Club advocated for one low discount rate to be applied, arguing that this is commensurate with the long-term social good associated with achieving the District's climate goals. GRID2.0 and Sierra Club expressed some support for using a 2-3% discount rate, but GRID2.0 noted the Commission should evaluate the merits of alternative options based on the District's policy goals.

DOEE recommended the use of a societal discount rate and the adoption of a rate well below 3%. DOEE stated that it is open to considering two discount rates but noted some reservation because two rates might create misalignment and confusion. DOEE supports the new majority recommendation to use the intergenerational discount rate in the primary SCT between 1% - 2.5%.

DCCA stated that a discount rate of 1% would be appropriate for environmental investments whose benefits are expected to enter over a long period. DCCA stated that because (i) the BCA is meant to evaluate and prioritize projects, (ii) the District has set tough goals for GHG reductions, (iii) the time frame for measuring GHG impacts is very long, and (iv) the costs (damages) posed by GHG emissions change little over time, unlike commercial interest rates, it follows that the discount rate used in any BCA of an investment that affects GHG emissions should be very low, no more than 1%, and constant. This respects the rights of future generations to a livable world. It is this test that should determine the worth of a project. Using the WACC or other market-based and relatively volatile rate is appropriate for determining the utilities' financial costs, and is relevant to rate-setting, but not for determining whether the project is appropriate with respect to our GHG emissions (climate) goals. Pursuit of those goals should be paramount.

OPC initially reserved its right to weigh in on the exact percentage but indicated its general support of setting a discount rate at a percentage that equitably balances current costs and future benefits. OPC then indicated support for a discount rate in the range of 1-2.5% as appropriately balancing current costs and future benefits of measures affecting the District's public climate change commitments.

WGL believed that if the District wants utilities to use their balance sheets to support utility operated decarbonization activities, then the utility 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 greenhouse gas emissions (to the time at which the incremental emissions occur), given their intergenerational context, consistent with the United States Environmental Protection Agency Interagency Working Group's Social Cost of Carbon estimates, and for these reasons this recommendation should be rejected.

See additional stakeholder comments in **Appendix B at B.3.1.3.**

B.4. Qualitative Factors

B.4.1. Working Group Majority Recommendation

Impacts that cannot be monetized should be accounted for quantitatively or qualitatively. Examples of non-monetary 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 hurricane. Examples of relevant qualitative impacts are geographic diversity of investment, improved distribution planning, resilience, and environmental impacts.

B.4.1.1. Background on Qualitative Factors in Utility Decision Making

Benefit-cost analyses ("BCA") assign dollar values to the impacts of a proposed program, measure, or strategy. By assuming that all benefits and costs of proposed policies can be quantified, policy makers can use these summed dollar values to decide whether or not a project will result in more benefit than harm. While the costs to build and operate energy projects typically have well-known (if sometimes underestimated) costs, the social and customer costs and benefits of energy policies can be difficult to monetize. These "qualitative factors" can include both positive outcomes like reduced noise pollution and improved health outcomes from a switch to cleaner sources of power or negative outcomes (externalities).

NMR Group's presentation to the Joint Metrics and BCA Framework Committee noted several potential benefits that are difficult to monetize, including:

- benefits of environmental externalities,
- reduced risk,
- increased reliability, and
- "non-energy benefits,"[230] including "comfort, noise reduction, aesthetics, health and safety, ease of selling/leasing home or building, improved occupant productivity, reduced work absences due to illness, ability to stay in home/avoided moves, and macroeconomic benefits."[231]

Assigning dollar values to these kinds of potential benefits and costs is challenging because many impacts are not bought or sold in markets and therefore lack an explicit price.[232] Nevertheless, these difficult to monetize factors can be evaluated using a variety of available methodologies. The question for the Commission is whether qualitative factors in the District's climate decision-making should be: (1) omitted (i.e. discussed qualitatively but valued at $0); (2) monetized; or (3) included using an alternative methodology (discussed below).

Omit them

Omitting difficult to monetize values from BCA is equivalent to assigning them a dollar value of zero. This approach often includes qualitative discussion of these outcomes in accompanying reports, but no actual value assigned that would impact decision-making. Some jurisdictions elect not to monetize certain potential benefits or costs that are truly difficult to quantify. For example, in its "Order Establishing the Benefit Cost Analysis Framework," the NYPSC established the framework for New York utilities' BCAs

[230] NMR Group Inc. 2021. "Societal Cost Test for DCSEU Programs." Presentation to the District of Columbia Public Service Commission ("SCT for DCSEU Programs").
[231] *See* SCT for DCSEU Programs.
[232] *See* SCT for DCSEU Programs.

for investments in distributed system platform capabilities, the procurement of distributed energy resources through competitive selection, the procurement of DER through tariffs, and energy efficiency programs.[233] In its Order, the NYPSC rejected proposals to quantify and include certain non-energy net benefits in the BCA, due to a lack of accurate valuation and the speculative nature of these net benefits.[234] If a potential benefit or cost that is truly difficult to quantify is not provided a quantitative value, and that potential benefit or cost is not considered qualitatively in the approval process of the project or program, then that potential benefit or cost will effectively be assigned a dollar value of zero.

Monetize them

Difficult to monetize values in a BCA can still be assigned dollar-values employing common practices widely used by federal and state agencies.

- Assign a dollar value: Another approach is to assign dollar values to certain potential benefits and costs, even if they are truly difficult to quantify.

Evaluate them separately

An alternative method is "multi-criteria analysis," which uses up to six to eight criteria (such as qualitative indicators of health, number of lives lost, or environmental benefits) to evaluate project benefits individually rather than combining different types of criteria together by monetizing and summing them.[235] This method can be useful especially in situations where multiple stakeholders are pressing rival claims.

B.4.1.2. Stakeholder Comment Summaries

Most participants in the Working Group agreed that all benefits and costs should be monetized but that truly difficult to quantify factors can be listed qualitatively but omitted from BCA valuation.[236] This section overlaps with section B.1.8 so that section should be reviewed to get a full understanding of the stakeholder comments.

WGL opposed a process that does not provide for a quantification of qualitative factors via a protocol for evaluating factors handled qualitatively and a weighting assigned to them.[237] WGL commented that resiliency and reliability and equity of the electrical system can be quantified via a "weighted-scoring analysis." WGL stated its expectation that the largest equity impacts would be rate and affordability impacts, and that the scoring should and can include quantitative analysis like the RIM analysis via a flexible scoring system. WGL pointed out that it is common for major utility evaluations to include quantitative and qualitative factors – e.g. impacts on costs or revenue requirements, and risks. WGL also highlighted that the determination of a protocol upfront for evaluation and scoring of different issues

[233] Proceeding on Motion of the Commission in Regard to Reforming the Energy Vision, Order Establishing the Benefit Cost Analysis Framework, State of New York Public Service Commission Case 14-M-0101 (Jan. 21, 2016), pp. 1-2.
[234] Proceeding on Motion of the Commission in Regard to Reforming the Energy Vision, Order Establishing the Benefit Cost Analysis Framework, State of New York Public Service Commission Case 14-M-0101 (Jan. 21, 2016), p. 22.
[235] Ackerman, Frank. 2008. "Critique of cost-benefit analysis, and alternative approaches to decision-making." *Friends of the Earth England, Wales and Northern Ireland, London*. https://frankackerman.com/publications/costbenefit/Critique_Cost_Benefit_Analysis.pdf.
[236] These comments come from responses to several survey questions which can be found in Appendix B under sections 2.1 and 2.2, with 2.1.8 being most relevant.
[237] WGL Comments, January 13, 2020, GD2019-04-M. pages 16-18.

provides the Commission valuable information even if the Commission later decides to change the weights.

WGL suggested that the benefits and costs of electric vehicle programs should be included in the BCA.

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. DCCA noted that an increasing number of factors previously deemed non-quantifiable are being quantified in more recent BCAs. OPC disagrees with this recommendation and asserts that important customer benefits should be monetized for inclusion in the BCA—and not valued as $0—and flags difficult to monetize impacts on low- and moderate-income communities in particular as critical to include in BCAs. In a discussion of whether benefits should be presented in benefit-cost ratio form, GRID2.0 noted that BCA results for hard to quantify impacts that have *material effects* should be reported in qualitative terms.

See additional stakeholder comments to the related survey suggestion in **Appendix B at B.4.1.3**.

B.5. Equity Factors

B.5.1. Working Group Majority Recommendation

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.

B.5.1.1. Background (Joint Recommendation from Metrics and BCA Committee)

See Section A.1.4 and additional stakeholder comments in **Appendix B at B.5.1.4**

B.5.2. Working Group Majority Recommendation

Equity should be addressed at the feeder level in an effort to account for distributional/geographical factors.

B.5.2.1. Background (Joint Recommendation from Metrics and BCA Committee)

See Section A.1.4

B.5.2.2. Stakeholder Comment Summary

See Section A.1.4 and additional stakeholder comments in **Appendix B at B.5.1.4**

B.6. Reliability and Resiliency

B.6.1. Working Group Majority Recommendation

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) when considering the resource investment. Regardless, it is recommended that reliability and resilience benefits must be demonstrated, not merely asserted.

B.6.1.1. Background

Improving safety and reliability of the energy delivery system is one of the guiding principles for the Commission's vision in modernizing the distribution system in the District.[238] Therefore the safety, reliability, and resiliency of the distribution system programs are important considerations as projects and programs are pursued to achieve District's climate goals.

Reliability is commonly acknowledged as a system performance measure,[239] and reliability metrics (SAIDI, SAIFI, etc.) can be used to gauge larger scale storm impacts. On the other hand, resilience does not have one standard definition or a method to measure it. Resilience is sometimes defined as: (1) a system characteristic/capability encompassing all hazards and events, including high-impact, low-probability events that are excluded from reliability calculations;[240] (2) "[t]he capacity to recover from difficulties: toughness;"[241] (3) "the ability to withstand and reduce the magnitude and/or duration of disruptive events, which includes the capability to anticipate, absorb, adapt to, and/or rapidly recover from such event;"[242] (4) "the ability of a power system and its components to withstand and adapt to disruptions and rapidly recover from them;"[243] and (5) "the ability of the system and its components (i.e., both the equipment and human components) to minimize damage and improve recovery from non-routine disruptions, including high impact, low frequency events, in a reasonable amount of time."[244]

Currently, there is no generally accepted methodology to put a dollar value on either reliability or resiliency, though SAIDI/SAIFI measures system reliability performance and is a well-established methodology. Additionally, there is no accepted methodology for measuring system resilience performance. To better understand how to measure/consider reliability, and more importantly, resiliency, as part of the BCA Framework developed to meet the District's energy goals, the Working Group reviewed different reports and theses from other organizations.

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[238] *Formal Case No. 1130, In the Matter of the Investigation into Modernizing the Energy Delivery System for Increased Sustainability*, Order No. 20364, Attachment C, "The modern energy delivery system must be secure from both physical attacks to critical infrastructure components as well as from cybersecurity attacks that target energy information systems and private consumer information. Therefore, utilities and energy service providers must: . . . ensure that the energy delivery system is resilient, uses modern grid security protocols, and is designed to resist, discourage, and rapidly recover from physical and cybersecurity attacks and system disruptions."

[239] NARUC PBR Working Group Resilience Metrics presentation by Joe Eto (LBL), Bill Chiu (SCE), and Bobby Jeffers (Sandia National Lab), April 16, 2021 ("Resilience Metrics Presentation").

[240] Resilience Metrics Presentation.

[241] NARUC PBR Working Group Resilience Metrics presentation by Joe Eto (LBL), Bill Chiu (SCE), and Bobby Jeffers (Sandia National Lab), April 16, 2021.

[242] Resilience Metrics Presentation.

[243] Resilience Metrics Presentation.

[244] NARUC PBR Working Group Resilience Metrics presentation by Joe Eto (LBL), Bill Chiu (SCE), and Bobby Jeffers (Sandia National Lab), April 16, 2021.

One of the reports reviewed is the "National Standards Practice Manual for Distributed Energy Resources" ("NSPM").[245] According to the NSPM, resilience is part of the utility system impact, hosting customer impact, and societal impact, while reliability is part of the utility system impact and hosting customer impact. While the report focuses on benefit and cost considerations when reviewing DERs, the NSPM report also indicates that it is important to avoid double counting of risk and to consider reliability and resilience impacts and benefits, because all such components affect the electric utility system as well as hosting customers and are part of societal impact when considering the benefits and costs of DERs.[246]

Valuable work has been done on improving community resilience by organizations like NREL[247] and NIST.[248] The approaches of these organizations stress multi-agency collaboration to address all hazards (floods, storms, earthquakes, etc.) but do not address the challenge of putting a dollar value on avoiding service disruptions or loss of load. In its recent work on resilience, the Department of Energy ("DOE") concluded that "making energy efficiency improvements first can be an effective strategy to reduce the overall costs of meeting resilience goals with onsite generation and storage technologies."[249] Furthermore, the IEEE Task Force on Resilience Framework, Methods, and Metrics for the Electricity Sector recently released a white paper that addressed resilience valuation stating:

There is no widely accepted or standardized method or publicly available solution that can be used to perform benefit-cost analyses involving improvements to system resilience. Current approaches [such as the Interruption Cost Estimate (ICE) calculator] in resilience valuation have limitations as they do not appropriately capture the potentially devastating consequences of not having adequate resilience. For example, prolonged outages lasting weeks is no longer just a mere inconvenience but results in significant pain and suffering or even deaths that are not straight forward to assign a monetary valuation.[250]

Additionally, an analysis released by NARUC's Solar Energy Innovation Network reached a similar conclusion regarding the lack of consensus on resiliency valuation.[251]

In a recent Performance Based Rates ("PBR") Workshop sponsored by NARUC, speakers believed the ICE study included outdated utility surveys and focused on coastal states rather than providing a general framework for the entire U.S.[252] Thus, the ICE study could be further improved by getting more survey

[245] National Energy Screen Project (a project of E4The Future), *National Standard Practice Manuel, For Benefit Cost-Analysis of Distributed Energy Resources*, August 2020 ("NSPM Report"). https://www.nationalenergyscreeningproject.org/wp-content/uploads/2020/08/NSPM-DERs_08-24-2020.pdf.

[246] NSPM Report at xi-xii, table S-6-S-8.

[247] Hotchkiss, Eliza; Dane, Alex. 2019. Resilience Roadmap: A Collaborative Approach to Multi-Jurisdictional Resilience Planning. Golden, CO. National Renewable Energy Laboratory. NREL/TP-6A20-73509. https://www.nrel.gov/docs/fy19osti/73509.pdf.

[248] McAllister, T. (2015), Community Resilience Planning Guide for Buildings and Infrastructure Systems, Volume I, Special Publication (NIST SP), National Institute of Standards and Technology, Gaithersburg, MD, [online], https://doi.org/10.6028/NIST.SP.1190v1.

[249] U.S. Department of Energy; How Distributed Energy Resources Can Improve Resilience in Public Buildings: Three Case Studies and a Step-by-Step Guide; September 2019. https://www.energy.gov/sites/prod/files/2020/06/f75/DERs-Improve-Resilience_0620_0.pdf.

[250] IEEE Power and Energy Society; TECHNICAL REPORT PES-TR83; Resilience Framework, Methods, and Metrics for the Electricity Sector; Prepared by The IEEE Power & Energy Society Industry Technical Support Leadership Committee Task Force; October 2020.

[251] The Value of Resilience for Distributed Energy Resources: An Overview of Current Analytical Practices (2019); Prepared for The National Association of Regulatory Utility Commissioners Prepared by Converge Strategies, LLC. https://pubs.naruc.org/pub/531AD059-9CC0-BAF6-127B-99BCB5F02198.

[252] The Interruption Cost Estimate (ICE) Calculator is an electric reliability planning tool developed by Lawrence Berkeley National Laboratory and Nexant, Inc. https://icecalculator.com/home.

information and including longer outage durations. The speakers in the workshop also indicated the difficulties of assessing value of resilience, including how to measure the value of preparing for rare events. Furthermore, the pain or losses in longer time outages may not be linear with a shorter outage timeframe such as one day.[253] For example, the value of the loss of load or an outage for a week is not the same as the loss of one day multiplied by seven. Overall, regulators have not identified and utilized an economic value of resilience in regulatory decisions related to resilient DERs.

Based on the November 23, 2020, Working Group minutes filed by Staff,[254] regarding the LCS BCA Handbook, Staff asked Pepco if benefits to ratepayers were considered when examining increased reliability and resiliency. Pepco indicated that it is responsible for reliability and resilience, and obviously those are benefits to customers as well. Staff followed up by asking Pepco how it quantifies the benefits of resilience and reliability. Pepco responded that it has no answer as of yet.

In DCSEU's presentation,[255] the Societal Cost Test benefits could include reduced risk and increased reliability. However, it is not clear whether this is quantified as the entire 5% adder of the total benefits or whether part of the adder could be attributable to reliability.

Staff noticed that Rhode Island, in Docket 4600, adopted a stakeholder-made BCA framework. This framework includes utility system impacts, low-income impacts, reliability and resilience impacts, participant impacts, GHG costs, environmental externality costs, public health impacts, economic development impacts, and national security impacts.[256]

WGL noted that there is no discussion of the recent FERC docket which is the most relevant discussion of reliability and resilience and addresses a summer power system unexpectedly peaking during extreme cold and the failure to have back up fuel at power plants. WGL noted that the use of power only metrics and definitions is not appropriate. A gas delivery system is much more reliable and resilient than an electric system. The combination of the two is more reliable that electricity alone. Gas is underground and power is not; diversified approaches are critical during extreme weather, and outages on the gas system cannot be incurred due to the much more difficult recovery process.

Pepco agreed that it is working to advance the District's climate goals but emphasized that including all projects/processes is overly broad and that it would negatively affect customers. Pepco has a statutory responsibility to provide reliable service to customers, is proud of the reliable services that it provides to its customers, and that the Public Service Commission regulates reliability levels in the District through the EQSS, but that there is no shared definition of resiliency across the District. Pepco noted its concern that broad statements have broad implications. In this case, the recommendation indicates that all projects, regardless of size or purpose, would be subject to a BCA. Pepco stated that these broad recommendations would likely lead to unintended consequences and significant expenditures of time and funding without applicability or value. Pepco emphasized the Working Group needs to be very clear what stakeholders are recommending and asked that parties specify the types of investments that would be subject to a BCA. Pepco stated it is not aware of any state that uses BCA for reliability investments. Pepco stated reliability standards are put forward by the District and that the Commission determines reliability standards through

[253] *See* footnote 2.
[254] *See* page 7 of the minutes.
[255] *See* December 9, 2020 meeting minutes, page 41 of 69.
[256] *See* the second BCA meeting minutes filed Feb. 18, 2021. See Docket 4600, Stakeholder Working Group Process Report to the Rhode Island Public Utility Commission, 4/5/2017, Appendix B. *See also*, Order No. 22851 and the associated guidance document in Docket 4600. However, even with the framework, the guidance document states there is "significant work still left to be done so that the Framework can be applied in a fully quantitative manner."

a rulemaking process to change the EQSS. Pepco noted that there is an ongoing proceeding regarding revisions to the reliability measurements in the EQSS, but that there is no shared definition of resiliency across the District. Pepco stated that as technology changes, new technology is incorporated into its system planning and operation. Pepco stated that it has strong reliability metrics and that it will be able to meet increased load under electrification while still meeting reliability standards. Pepco noted that the latter part of the recommendation, which referenced a single approach "raised" but not vetted in the WG. Pepco stated that referencing a single approach elevates that approach, does not reflect the party that proposed the approach, and that, until further discussions have occurred to review how an approach would comport with recognized definitions of reliability/resiliency and Commission standards, Pepco would not support this approach or elevating a single recommendation.

B.6.1.2. Stakeholder Comment Summary

Most Working Group participants agreed that reliability and resiliency need to be considered in the BCA analysis, with some qualifications (see below).

WGL opposed a process that does not provide for scoring of qualitative factors via a protocol for evaluating factors handled qualitatively and a weighting assigned to them.[257] While the final BCA should address the values for unserved energy costs, scarcity values and costs, particularly of lack of resilience during the critical periods of winter energy delivery to the extent possible, the risks that cannot be quantified must still be given weight. WGL suggested that resiliency and reliability of the electrical system can be quantified via a "an issue oriented question and answer rubric with each issue subject to weighted-scoring analysis." WGL emphasized that lack of resilience to sudden weather events—as occurred recently in Texas can result in dramatic economic (as well as human) costs. WGL argued that proposals for extensive electrification could put significant strain on the system and believes this stakeholder process did not adequately consider those costs. WGL suggested that the benefits and costs of electric vehicle programs should be included in the BCA.

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. More discussion is needed regarding how reliability and resilience would be weighted to ensure an appropriate balance between cost and risk. 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 black outs to acceptable standards.

DOEE noted that it has proposed ways to calculate the value of resilience and reliability and that the Value of DER study will examine the locational value of reliability and resilience. DOEE previously 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. If the Working Group 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. DOEE noted that the Commission's VDER study will evaluate both resilience and reliability.

GRID2.0 supported considering delineating appropriate "evaluation frameworks" for reliability (per WGL's proposal relating to potential impacts on grid stability, safety and power quality from increasing

[257] WGL Comments, January 13, 2020, GD2019-04-M. pages 16-18.

the share of renewable energy in the generation mix, increasing penetration of DER in the marketplace, and increasing electrification of transportation and buildings); and the resiliency of the District's power system and critical energy infrastructure (per DOEE's proposal in its NOI comments, WG discussions and Recommendation comments). GRID2.0 also supported the development of new metrics to track progress toward improving grid reliability and critical infrastructure resilience. For example, as DOEE has proposed, resilience metrics should measure the ability to provide services to critical populations and critical functions, including vulnerable populations, critical infrastructure providers and commercial centers.

Sierra Club comments 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.

See additional stakeholder comments in **Appendix B at B.6.1.3.**

C. REPORTING REQUIREMENTS

C.1. Overview

The Reporting Requirements Committee's goal was to examine existing reporting practices for utilities at the state and federal level, recommend best practices for data production and collection, and comment on the appropriate reporting responsibility of utilities to both the PSC and customers. This Committee seeks to ensure that principles for reporting advance the District's assessment of the impact of utility proposals related to global climate change, as well as the District's public commitments under the Clean Energy DC Omnibus Amendment Act of 2018 (CleanEnergy Act) and the District's climate goals.

The Committee began its work by assessing reporting requirements in other states and cities. The Committee Chair, OPC, presented draft reporting requirements to stakeholders and solicited their feedback. Finally, the Committee discussed guidance for categorizing emissions presented by the District's Department of Energy and the Environment (DOEE). This chapter catalogues and summarizes the recommendations of the stakeholders.

C.2. Best Practices for Reporting and Data Production

C.2.1. Working Group Majority Recommendation

The Working Group recommends the following practices for reporting and data production:

- *Annual reporting to the PSC should include all relevant data that are reported to other agencies including EPA, EIA, DOEE, and the Metropolitan Washington Council of Governments (MWCG), as well as data used in climate change BCAs submitted to the PSC.*
- *Annual reporting to the PSC should also include new data requirements generated by the recommendations of the CEAIWG that are approved by the Commission.*

- *All data reported should be DC-specific (not utility-wide).*
- *To the extent feasible, data reported should be provided for geographies smaller than the District as a whole, for example, ward, quadrant, substation zone, feeder, or zip code while maintaining compliance with Critical Infrastructure Information security requirements, and customer data privacy requirements.*
- *Annual data should be submitted to the PSC by September 30 each year; proposal specific data should be submitted together with utility proposals.*
- *Written reports should include a spreadsheet appendix of all data and assumptions as well as GIS shapefiles (where applicable) relevant to the proceeding.*
- *All third-party electricity and gas utility suppliers should be required to submit sales and greenhouse gas emissions data for their customers in the District consistent with the approach used to provide utility data.*
- *The Commission should review all data submitted to ensure that comparable data are being presented by all parties.*

Additionally, the Reporting Requirements Committee reviewed and supports the following statement from Pepco:

Recognizing the importance of addressing equity and environmental justice issues as well as the legal and technical limitations of utility data and data analysis, the Reporting Committee supports Pepco and OPC's proposal to develop data products to better explore low- and middle-income customer energy usage and related issues. These issues include but are not limited to the geographic distribution of RAD customers, customer disconnects, and customers subject to Pepco's previous all-electric tariff. Further, the Reporting Committee supports developing GIS data products that can both aid in analysis of these issues by relating the data to utility infrastructure while maintaining customer privacy and electric grid security laws and regulations. Finally, the Reporting Committee supports further exploration of these as new data analysis tools and capabilities become available.

C.2.1.1. Background

Utility climate planning and proposed actions will require provision of data to the Commission—to be made available to the public and stakeholders—regarding status quo conditions, direct project or program impacts, and longer-term outcomes related to emissions reductions, equity, affordability, health, safety, and accountability.

GRID2.0 requested additional criteria for reporting related to relevance, reliability, accuracy, accountability, and transparency as well as information on projected greenhouse gas emissions associated with utility proposals and a comprehensive baseline of greenhouse gas emissions for current utility service areas. It further recommended that the Commission require utilities to report the estimated greenhouse gas impacts of their activities and emphasizes that data should only be presented for a larger area than the District if that is the relevant scale at which reporting occurs. GRID2.0 argued this Recommendation "bundles" together different types of reporting requirements, both new and existing, some addressing GHG emissions and others going beyond such reporting. GRID2.0 stated these different categories of reporting and the scope of the reporting requirements need to be broken out, clarified and also interrelated to the subsequent Recommendations. GRID2.0 further noted that data collection should assist the Commission with analytical approaches to assess compliance by utilities with the CleanEnergy DC Omnibus Amendment Act of 2018 (Clean Energy DC Act). GRID2.0 also suggested that these last two "third-party"

items should be tied to utility proposals/procurement actions in which the utility is sourcing from third party suppliers, developers, and others.

DOEE recommended that electric data be grouped and recorded by feeder rather than zip codes. DOEE requested that customer hourly consumption and demand data should be aggregated to a feeder group for reporting. DOEE recommended the feeder hourly load profiles be provided in both spreadsheet and map form, similar to the public maps and records provided by Southern California Edison.[258]

OPC emphasized that analysis at the sub-district level is important to identifying and resolving equity imbalances in program benefits, direct program negative effects, and larger impacts from the energy system and climate change. OPC also recommended that data be collected on non-English speakers and that it be broken down at the most granular sub-District level possible in order to assess the impact of utility proposals in high non-English-speaking areas. Utilities should also file their reports and proposals in other languages such that these proposals can be assessed both by the PSC and customers in those areas. Furthermore, granular data should include information on customer arrears by sub-District area. OPC pointed out that outstanding arrears from COVID-19 could be especially relevant to improve equity and assess the potential impact of utility proposals on the distribution of arrears.

WGL called for equitable treatment of all utilities and their suppliers, as appropriate and feasible. If information is already provided by the utility, there should be no additional requirement for the supplier.

GRID2.0, OPC, DCAA, DCSUN, DOEE, Sierra Club, and Pepco supported requiring reporting for every climate-related project proposal or expenditure submitted for PSC decision in conjunction with the BCA requirements for the utility proposal being analyzed. These new reporting requirements would be in addition to annual reporting at an aggregate level. DOEE advocated for reporting for utility proposal BCAs to include all data required to compare multiple options for a utility investment. DOEE noted that this is the purpose of an overarching BCA framework, to review different options for utility investment, including how they impact the District's policy priorities.

Pepco recommended reporting utility data for projects that support the District's Clean Energy goals and customer equity programs and is interested in stakeholder input for proposing these types of data and programs in FC 1167.

Two main issues that stand out as areas of disagreement among the stakeholders—data verifiability and upstream emissions reporting—are discussed in Section 5 below.

In addition, GRID2.0 suggested the following points to set the stage for the reporting requirements discussion:

(1) Reference the legal/regulatory bases for both "existing" and new reporting requirements. For example, the District is operating under the WRI's GHG Protocol/ICLEI's Global Protocol for Community-Scale GHG Emission Inventories. Also, the CleanEnergy DC Omnibus Amendment Act of 2018 ("CleanEnergy DC Act," or "Act") is the basis for new reporting requirements, and Section 103 of the Act expands the role of the Commission and OPC in addressing climate change.

(2) Explain how the legal/regulatory bases for reporting define the nature and scope of what is set out as reporting requirements in this draft, as well as the relevance of these requirements to the goals and agenda of the Reporting Committee/CEAIWG. For example, the Act requires the Commission to generally consider "global" climate effects and impacts on related policy commitments in its regulation. In this regard, in its

[258] *See* https://ltmdrpep.sce.com/drpep/#.

"Notice of Inquiry" for GD 2019-04-M, the Commission indicated it is seeking "analytical approaches," "analytical frameworks" to help in its evaluation of the "effects of a utility proposal," including GHG emissions and related reporting requirements to inform this charge under the Act to assess compliance with its mandates.

(3) Set out proposed "accounting/reporting" Principles that will assure accuracy, reliability, transparency, accountability, no double counting, etc., with respect to information and data that are reported. Such principles should draw on the accounting principles on which the WRI/ICLEI Protocols are based, as well as the Principles laid out in the NSPM for BCA of DER; also, such "Accounting/Reporting" Principles should be differentiated from "MEDSIS/PowerPath Vision Statement's seven key factors and "Guiding Principles" (which set out the Commission's Vision for modernizing the District's energy delivery system and elucidate its priority policy values). The Vision Statement and Guiding Principles are not "accounting/reporting" principles, but GHG reporting and BCA accounting principles will contribute to achieving the policy goals outlined in that Vision and its Guiding Principles.

(4) Interrelate and differentiate "existing" (and modifications to existing reporting requirements) from "new" reporting requirements such as those resulting from BCA proposals (for example, GHG inventorying and reporting is of actual GHG emissions and reductions). BCAs will provide impact estimations/projections related to GHG emissions reductions and also other impacts related to advancing the District's climate commitments. Grid2.0 suggests that the Final Report should address how to organize "BCA proposal" data and information on an annual basis (in addition to making available the information and data as BCA proposals are raised with the Commission) to be able to track progress, evaluate alternative courses of action, and assess actual results against the projections/estimations.

(5) Note that the Commission is seeking alignment of GD 2019-04-M with other related dockets (for example, FC No. 1167 regarding Utility Climate Change Proposals; FC No. 1156 regarding Pepco Rate Case, FC No. 1160, etc.). Also, consideration should be given to aligning reporting requirements with targets, benchmarks, PIMs and other incentives to advance District Plans such as the District's Sustainable DC Plan and Climate Ready DC plan.

See additional stakeholder comments in **Appendix B at C.2.1.2.**

C.3. Gas Utility Data

C.3.1. Working Group Majority Recommendation

That WGL be required to report the following data on gas usage and emissions:

- *customer gas use by customer type,*
- *customer point of use emissions,*
- *the number and location of gas leaks within the District (by grade and line type), and*
- *the amount of measured and/or calculated fugitive emissions within the District (by pipe size).*

C.3.1.1. Background

Gas utility climate and emission-reductions proposed plans, measures and programs will require data reporting for review by the Commission and stakeholders.

GRID 2.0 suggested that the Sustainable DC Plan offers important guidance on the categories of climate change impacts for which information from data reporting would be required: especially mitigation and adaptation.

DOEE recommended that leakage data in particular should be provided by city block or as granularly as possible, and that gas leak reporting by grade and type should also include location by latitude and longitude.

OPC agreed with each of the proposed gas reporting categories above and recommended adding to that list upstream emissions specifically from gas use, leaked gas, and—outside of the District—from transmission, refining, and extraction (see Section 5 for more discussion regarding upstream emissions). OPC noted that leak reporting by location is essential to assessing equity impacts and that the reporting can be on the general location if the exact address needs to be kept confidential.

GRID 2.0, OPC, DOEE, Sierra Club and Pepco agreed that gas utilities should be required to report publicly the location of all leaks in District pipelines. WGL asserted that while it is currently unable to provide this information, it is investigating technology options to accelerate public access to leak data.

See additional stakeholder comments in **Appendix B at C.3.1.2.**

C.4. Electric Utility Data

C.4.1. Working Group Majority Recommendation

That Pepco (and, as appropriate, third-party electric suppliers) be required to report the following data on electric usage, generation and emissions citywide and by substation:

- *customer electric use by customer type,*
- *in front-of-meter generation located within the District,*
- *excess generation (net metering) back to the grid with temporal data at a minimum hourly interval, and*
- *generation emissions from customer electric use with temporal data at a minimum hourly interval.*

Data should be sought from other sources regarding:

- *in front-of-meter generation located within the District, and*
- *behind-the-meter generation located within the District.*

C.4.1.1. Background

Electric utility climate and emission-reductions proposed plans, measures and programs will require data reporting for review by the Commission and stakeholders.

GRID2.0 noted that reporting requirements resulting from Commission proceedings should be aligned, to the extent possible, with the District's Emissions Inventory so that such data can feed into utility BCA analyses of projected emissions reductions. GRID2.0 also suggested that each utility needs to establish a baseline against which the data/information/results reported can be measured, evaluated, and monitored.

DOEE suggested that customer hourly consumption and demand data should be aggregated to a feeder group for reporting.

Pepco noted that system demand data and customer billing data are maintained in separate databases, therefore reporting this data by geographic locations would require extensive technology upgrades to the Company's database infrastructure. If required, Pepco recommended this data only be reported in aggregate. Pepco recommended alternative data reporting capabilities with respect to stakeholder recommendations:

- reporting peak load contribution by customer class instead of annual demand,
- reporting greenhouse gas emissions based on the PJM fuel mix, or
- reporting customer net energy metering at a PJM zonal level only. Pepco DC is already a sub-zone from PJM definition

Pepco also explained that it does not have access to data on either behind-the-meter and in front-of-the-meter generation within the District.

See additional stakeholder comments in **Appendix B at C.4.1.2.**

C.5. The District's Global and Legal Commitments

C.5.1. Working Group Majority Recommendation

The Working Group also recommends the following reporting criteria after considering appropriate reporting requirements relevant to evaluating the effect of utility proposals on the District's contribution to global climate change and the District's public commitments under the CleanEnergy DC Omnibus Amendment Act of 2018:

- *Utilities should report on customer progress toward achieving the District's mandates, including with respect to Utility programs, projects, procurements, pricing structures and measures that impact the utility's customers and/or in which the customers participate.*
- *Customers and stakeholders should be kept informed of progress in meeting performance metrics, relevant energy and non-energy impacts (such as the non-energy benefits included in DSM assessment), customer impacts and bill savings, and impacts on special classes. Progress reporting should be accomplished via a web-based dashboard to provide regular progress updates with key metrics including number of participants, relevant programs, program expenditures, and projects completed.*
- *Reporting should include all information relevant to evaluating the utility proposal's impact on PowerPath DC Vision & Guiding Principles.*

C.5.1.1. Background

GRID2.0, DOEE, Sierra Club, and OPC recommended that reporting be based on the principles set out in the National Standard Practice Manual for Benefit-Cost Analysis of Distributed Energy Resources (NSPM) including assuring relevancy, consistency, reliability, accuracy, accountability, and transparency.

Pepco noted that the PowerPath DC Guiding Principles are not themselves metrics and were not intended to be, so more specificity is needed to assess the proposed Working Group's statement, "Reporting should include all information relevant to evaluating the utility proposal's impact on PowerPath DC Vision & Guiding Principles." Furthermore, Pepco noted that the CEAIWG has not adequately discussed

performance metrics, the definitions of energy and non-energy impacts, customer impacts and bill savings, or impacts on special classes.

GRID2.0 noted that principles governing reporting requirements must permit assessment of the effect of utility proposals on climate change, the District's commitments, and whether such proposals foster the use of renewable power, energy efficiency measures, distributed energy resource technologies, and economic growth and social equity. GRID 2.0 further recommended the following additional criteria for assessing the impact on greenhouse gas emissions of utility proposals:

- Estimates of greenhouse gas impacts should account for temporal and marginal impacts of distributed energy resource/load management practices. (See NSPM, in connection with evaluating the relevant impacts of DER, "when," "where," and the incremental/displacement effects are relevant for reporting purposes.)
- BCA studies should make clear the timeframe over which greenhouse gas impacts are measured.
- Utility BCA proposals should include marginal emissions rates of distributed storage and electric vehicles.
- BCAs should account for key factors affecting greenhouse gas impacts such as technology characteristics of a resource, the technology's operating profile, and impacts on electric supply and consumption, as well as on gas and fuel systems.
- BCAs should account for host-customer nonenergy impacts from actions to reduce greenhouse gas emissions, consistent with both District mandates and MEDSIS/PowerPath DC Principles.
- Guidance should be issued on presenting utility BCA proposal results in meaningful and informative ways. (Not only as the BCA proposal is raised with the Commission, but in an "annual format" that organizes the information/data to help track progress, compare alternative courses of action, and compare estimations eventually with actual results.)
- A requirement should be added that: Within 30 days of Commission approval, a utility should report and file into a Commission-designated database/file the benefit-cost analysis estimating the cost-effectiveness of the utility's proposal that was reviewed and approved by the Commission; and also, should file annually a cumulative report setting forth such BCA estimates for all utility proposals that have been approved in a meaningful format or as prescribed by the Commission;
- Recommend reporting on the accounting for GHG emissions impacts in BCAs (related to GRID2.0's recommendation in C.5.1.1 "Background," based on the NSPM guidance) at marginal emissions rate of generation displaced and relating to when and where RE DER/DER load management takes place/timeframe. GRID2.0 recommends that this be taken up in a next-stage rulemaking proceeding.

GRID2.0 also argued that information from data generated by BCA decision-making processes and from evaluations of BCA results should inform utility proposals on an annual basis. In particular, the utilities should strive to understand interactive effects between resources and distributed energy resource types, as well as the material interactive effects of some distributed energy resource types on others in terms of avoided cost, magnitude of kWh and kW impacts, and enabling of cost-effective adoption and efficient performance of those other distributed energy resource types.

OPC argued that utilities should make all the data used in the required BCA analysis available, ideally publicly or subjected to confidentiality where necessary; OPC supported the use of the NSPM reporting criteria as a foundation for the Commission's requirements for utilities and for refining NSPM guidance to apply to District specific information and priorities through the work of the two other committees.

In addition, WGL, Pepco, DOEE, and AOBA favored limiting required data to that which serves the District's clean energy goals. DOEE understood that utility proposals may include business-as-usual activities that are required to ensure safety and other objectives and may not materially reduce greenhouse gas emissions.

WGL noted that the NSPM framework is not adequately relevant for gas distribution company evaluations because it does not address critical issues such as shifting peak load from summer to winter, and is overly theoretical

OPC was opposed to this limiting required data to those directly related to climate energy goals and noted that data not directly tracked for these goals may still be relevant to evaluating the effects of a utility proposal on "global climate change, and the District's public and private commitments"—a required provision of the CleanEnergy Act. Sierra Club also opposed this limitation and wishes to alter the CleanEnergy Act's requirement to any data, information, or activities that affect compliance with the District's climate and clean energy goals. GRID2.0 noted that the Act has a broad requirement that not only addresses greenhouse gas reduction, but the way in which the District's climate and clean energy commitments are achieved.

See additional stakeholder comments in **Appendix B at C.5.1.2.**

C.6. District Emission Reporting

C.6.1. Working Group Majority Recommendation

DOEE provided the Reporting Requirements Committee with a detailed presentation clarifying the District's emissions reporting requirements, practices, and categorizations. Similarly, WGL provided detailed information on its inventory data and processes and also met with Committee members. The District's emissions reporting follows the well-established three-scope emissions system used in jurisdictions around the United States and the world:

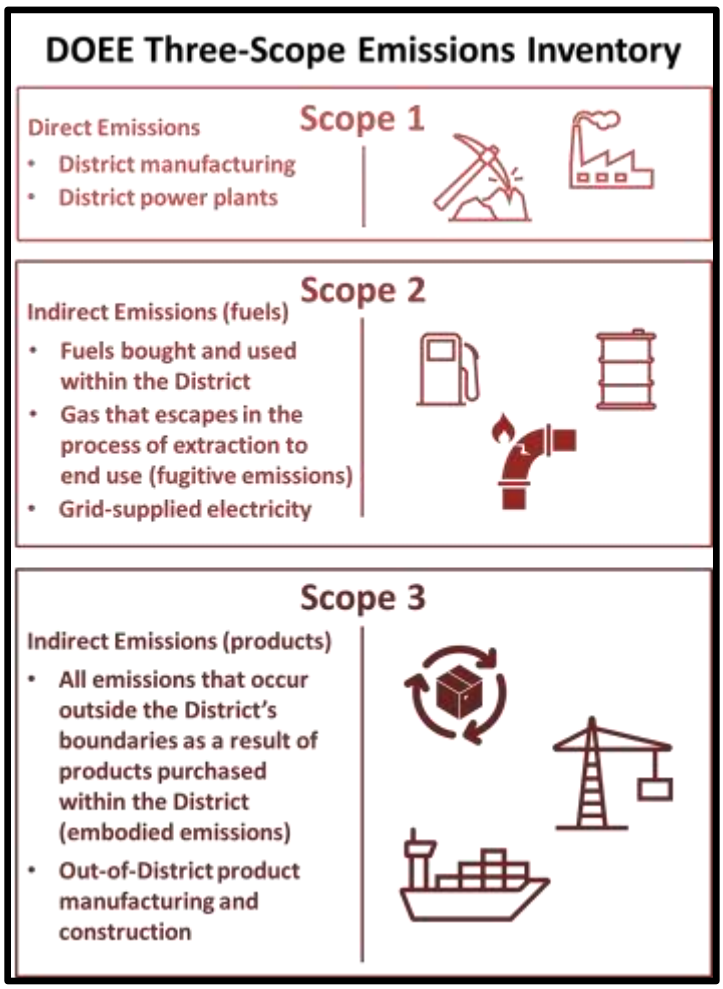
- ***Scope 1** emissions come from onsite activities (manufacturing, electric generation) occurring directly within the District.*
- ***Scope 2** emissions include indirect emissions that are created as a result of fuel or electric usage by residents, businesses, and governments within the District, and include "fugitive" emissions occurring upstream in the production of fuels and electricity used in the District.*
- ***Scope 3** emissions include embodied emissions associated with product and services used in the District.*

C.6.1.1. Background

DOEE used both location and market-based inventory methods to tabulate emissions. The former is associated with a particular balancing authority, while the latter are calculated using financial instruments in energy markets. As a by-product of fuel and electric use in the District, fugitive emissions from fuel extraction, processing and transmission are Scope 2 emissions. DOEE included these Scope 2 fugitive

emissions from heating and electric generation in its emissions accounting (see Figure 2 for a visual representation). DOEE also noted that it has a methane-estimator tool which could be placed in service of calculating fugitive emissions and that it has the capability to do so.

Figure 2. Emission category schematic



These definitions correspond to the World Resources Institute's Corporate Accounting Standard's Greenhouse Gas Protocols[259] and are also based on the Global Protocol for Community-Scale Greenhouse Gas Emission Inventories (GPC)[260]—an accounting and reporting standard for cities—which define the three Scopes as follows:

> *"The GPC distinguishes between emissions that physically occur within the city (scope 1), from those that occur outside the city but are driven by activities taking place within the city's*

[259] World Business Council for Sustainable Development and World Resources Institute. No date. *A Corporate Accounting and Reporting Standard*. Greenhouse Gas Protocol. https://ghgprotocol.org/sites/default/files/standards/ghg-protocol-revised.pdf.
[260] World Resources Institute. No date. Global Protocol for Community-Scale Greenhouse Gas Emission Inventories. Greenhouse Gas Protocol. Pg. 31. https://ghgprotocol.org/sites/default/files/standards/GHGP_GPC_0.pdf.

boundaries (scope 3), from those that occur from the use of electricity, steam, and/or heating/cooling supplied by grids which may or may not cross city boundaries (scope 2)."

WGL presented to the reporting committee at the May meeting and recommended that upstream emissions not be reported until there are better examples of upstream emission reporting. On May 5, 2021, WGL presented on Accuracy and Equity in Reporting Upstream GHG Emissions for the District of Columbia to help the group more clearly define upstream emissions and identify the challenge of both obtaining data and its overall accuracy, as well as boundary and supply chain issues. WGL also restated its intention to begin purchasing its supply from upstream suppliers that can comport to best practices for GHG reduction.

Both Pepco and WGL expressed concern with the accuracy of a proxy value. Pepco argued that it is better to avoid using a proxy value if source-specific data cannot be verified. WGL agreed.[261]

OPC supported DOEE's practice of accounting for upstream emissions impacts that are caused by utility customers' gas and electric usage including emissions from extraction, refining, transmission, and distribution. Sierra Club noted that activities to be reported should be judged on whether they affect compliance with the CleanEnergy Act in addition to activities that are strictly part of a utility's PSC-regulated business. GRID2.0 recommended that reporting requirements for utility BCA proposals be aligned with the District's greenhouse gas inventory, measurement, and reporting practices and called for BCA cost-effectiveness analyses of projected in-District greenhouse gas emissions to be based on consistent "uniform, measurable, and verifiable" reporting. Furthermore, GRID 2.0 recommended a holistic analysis of greenhouse gas emissions within a service territory, taking into consideration more than emissions directly attributable to the utility's own system; this analysis would include economy-wide emissions and upstream emissions, allowing for treatment of indirect market outcomes that arise from utility interactions with customers and other stakeholders.

Other stakeholders disagreed, supporting the use of proxy data when more directly applicable data are not available. In particular, OPC pointed out that the use of proxies where detailed, topic-specific, or geographic-specific data are unavailable is common in utility BCAs, including the District's own energy-efficiency program BCAs. OPC supported the potential use of Commission-approved proxies. DOEE noted that all available information must be reported for tracking purposes, regardless of whether it is of sufficient reliability to calculate monetary values. GRID2.0 suggested that it is important to allow for qualitative analyses for distributed energy resource impacts that are hard to quantify; in such cases, efforts must be made to provide for reasonable approximations of impacts and use appropriate proxies for valuation. Sierra Club opposed utilities' "verifiable" data recommendation on the basis that utilities could use it to object to otherwise legitimate data reporting.

See additional stakeholder comments in **Appendix B at C.6.1.2.**

[261] *GD-2019-04*, Reporting Requirements Committee Meeting Minutes Report at 2, filed May 19, 2021.

IV. CONCLUSION

The CleanEnergy DC Omnibus Amendment of 2018 imposed on the Commission a critical regulatory role that requires the Commission and the utilities it regulates to account, in all cases, meaningful steps to achieve the District's energy and climate change commitments while ensuring affordable, reliable, and secure electric and natural gas distribution service for all customers. Specifically, Section 103 of the Act states:

> In supervising and regulating utility or energy companies, the Commission shall consider the public safety, the economy of the District, the conservation of natural resources, and the preservation of environmental quality, including effects on global climate change and the District's public climate commitments.

As a direct result of its expanded role and responsibilities in addressing climate change, the Commission invited, through a Notice of Inquiry in this GD-2019-04-M proceeding, public comment and inputs on the "analytical approach" that the DCPSC should take to evaluate the effects of a utility proposal on global climate change and the District's public policy climate commitments. To undertake this charge to advance the District's bold targets and policy commitments for addressing climate change, the Commission also directed that this Working Group be convened.

In March 2020, the CEAIWG was convened to develop a set of recommendations to the Commission on a proposed analytical framework, consisting of underlying measurements, metrics, standards, a Benefit-Cost Analytical Framework and reporting requirements, to evaluate utility proposals for compliance with the Act. The Working Group formed three committees: the Metrics Committee, the Benefit-Cost Analysis Framework Committee, and the Reporting Requirements Committee. Together, these Committees developed recommendations after a series of WG meetings, two surveys, and multiple rounds of editing the report.

The work of the CEAIWG was focused on recommending an overall cohesive and systematic analytical approach to enable the DCPSC 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. The Recommendations indicated in this report reflect the Working Group's best efforts to provide direction and ideas to develop practical and meaningful evaluation frameworks for assessing the climate change impacts of the activities regulated by the Commission. While they may not answer every question raised by the Working Group members, these Recommendations contain a sufficient basis to further refine and develop such frameworks.

Though the Working Group made progress in developing an analytical framework, stakeholders agree there is a need for an extended process because the time constraints imposed on the CEAIWG did not allow for the development of further guidance on the elements of the BCA framework. Specifically, the interim BCA framework was identified through the Recommendations, but the Working Group is in agreement that additional time is required to discuss and finalize an executable, District-specific BCA framework. However, the Group could not reach consensus on what this extended process should entail. In other words, the Group could not agree whether the next step should be facilitated through rulemaking, another working group, or a combination of the two.

Therefore, as a final recommendation, the CEAIWG proposes the Commission approve a Phase II process, wherein a methodological approach is developed to quantify the impacts indicated in this report and

approved by the Commission, including those impacts that are difficult to quantify, and the options to account for these difficult to quantify items are identified. This second stage process should be framed and governed by the DCPSC's regulatory authorities, the Commission's charge under Section 103 of the CleanEnergy DC Omnibus Amendment Act (and related District climate change, clean energy and energy efficiency commitments and plans), the Commission's directives in its NOI establishing the GD 2019-04-M docket, and the Recommendations and foundational work of the CEAIWG, which, together, would be incorporated into a "Strawman Framework" for this Phase II proceeding. While the DCSEU model serves as the interim model at this point, as part of the second stage process, Pepco's BCA Framework and other models could be considered in the development of a District-specific analytical framework. However, the Commission will need to determine the process by which Phase II will be executed.

APPENDIX A

FINAL STAKEHOLDER CONSENSUS/NON-CONSENSUS POSITIONS

DC Climate Action has objections and comments on the following six recommendations in the final CEAI Working Group report circulated by Commission staff on November 1. We are taking positions only on these six recommendations.

A.1.4: *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.*

DCCA is not aware of standards for such metrics, but would support an exploration of best practices in identifying them and applying them to BCAs.

A.1.5:

If applying carbon offsets, they must be purchased from a source that abides by one of the following standards: [six standards-vetting organizations listed]

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.*

DCCA continues to oppose the use of carbon offsets to meet GHG reduction goals, all the more so since the weaknesses in carbon offset schemes were highlighted at COP26 in Glasgow. If they are to be used, however, they should abide by one or more of the stated standards, and in addition a detailed examination should identify the kinds of offsets and verification standards that are reliable enough over time to be allowable.

A.2.1:

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_2O *should be multiplied by the IPCC factors discussed in the next recommendation.*

DCCA favors setting the SCC at a level consistent with meeting the Paris Climate Accords goal of no more than 1.5 C degrees of global warming. Estimating the SCC is subject to many assumptions that admit a wide range of possible values. A review of the available estimates should be conducted to permit the Commission to select the methodologically most complete and appropriate SCC. Further periodic reviews will be needed. DCCA opposes the proposed secondary test of using the marginal cost of carbon abatement in lieu of the SCC. It has serious methodological problems (e.g., the varying marginal cost from place to place and over time) and practical ones (e.g., the debate that would ensue over the weight to assign to the secondary test).

A.3.1:

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. [Current GWP values listed for CO2 and N2O]

DCCA disagrees with the 100-year GWP time scale reference. A period of at least 30 years but less than 100 years would be appropriate. The 30-year period is tied roughly to the District's 2050 goal of carbon neutrality. A longer time period would be tied to the time horizon that guides our recommendation for the low discount rate of zero to one percent in BCA calculations - a time horizon that avoids punishing future generations.

B.1.10:

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 working group discussion and/or a rulemaking process, based on the Commission determination.

DCCA accepts the recommendation for a BCA framework based on the NSPM authors' guidance. It does not accept the use of the DCSEU cost-effectiveness test as is currently applied as an interim primary test. Work should begin immediately to devise a permanent test based on the NSPM authors' guidance. This would yield a

superior permanent test without expending time and effort to devise an inferior interim test.

B.3.1:

For the Discount Rate for the BCA analysis for DER programs, projects, plans, procurements and pricing structures, the BCA should use a societal 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.

DCCA accepts the recommendation because it includes the discount rate of one percent, which is the upper limit of what a BCA that assesses investments with extremely long climate impacts should reasonably use.

DOEE Comments on the CEAIWG Final Draft

GD-2019-04-M

November 8, 2021

The Department of Energy and Environment (DOEE) offers the following positions on the Working Group (WG) recommendations. DOEE appreciates and commends the Commission staff for compiling the majority recommendations and guiding the process.

Overall, DOEE believes that the draft recommendations reflect the WG's best efforts to provide direction and ideas for "a cohesive analytical approach, with holistic, systematic, and consistent evaluation frameworks" that will align various "deliverables, methodologies and recommendations arising from an array of related and relevant proceedings and workshops."[262] These majority recommendations also represent, in DOEE's view, the minimum set of recommendations that are needed to develop practical evaluation frameworks for assessing the climate change impacts of the activities regulated by the Commission. While they may not answer every question raised by the WG members, these majority recommendations contain a sufficient basis to establish an interim framework. DOEE looks forward to continuing to collaborate with the Commission and other stakeholders in the development of such a framework based on these recommendations as a starting point.

DOEE offers the following positions:

Recommendation	DOEE's position	Rationale
A.1.1.	Support	
A.1.2.	Support	
A.1.3.	Support	
A.1.4.	Support	
A.1.5.	Oppose	Carbon offsets are not a part of Carbon Free DC, the District's carbon neutrality strategy, and therefore the inclusion of carbon offsets is inconsistent with the District's proposed policy. The IPCC report recommends using carbon offsets only in those instances where decarbonization is not feasible at the time (e.g., jet fuel). Because there is almost no service currently provided by the utilities that cannot be replaced with existing renewable energy technology, the use of carbon offsets must be justified beforehand with the demonstration of technical infeasibility. As written, this Recommendation does not set that threshold for the use of offsets. DOEE also opposes the deletion of the first part of the Recommendation.
A.1.6.	Support	
A.1.7.	Support	Note: DOEE opposes the use of the Corporate Standard for GHG accounting for Standard Offer Service procurements. DOEE uses the City Standard for GHG accounting.
A.1.8.	Support	
A.1.9.	Support	
A.1.10.	Support	

[262] CEAI WG Report, Introduction.

A.2.1.	Oppose in part, Support in part	DOEE opposes the use of the federal cost of carbon or that adopted by the state of NY. The cost of carbon adopted for the District of Columbia should be consistent with limiting the rise of global warming to 1.5 degrees Celsius. Relying on federal SCC or NYS's SCC is misguided because neither the federal government nor the State of NY have committed to achieving carbon neutrality by 2050. The federal government's carbon reduction pledge falls well below the amount that is needed to achieve carbon neutrality. Adopting a carbon price that is already known to be too low to achieve the targeted level of GHG reductions defeats the purpose of the framework, and it amounts to a plan to fail. DOEE supports the use of a secondary Marginal Abatement Cost calculation.
A.3.1.	Support with Modification	DOEE notes that previously the Recommendation included the Methane GWP in the IPCC AR5 that included oxidation of methane into carbon dioxide, therefore accounting for the full GWP of methane. Now the methane GWP has been lowered from 36, which accounts for oxidation, to 28, which does not. DOEE does not support this change and requests that this be amended back to how it was previously stated in the recommendation in earlier drafts. See https://www.ipcc.ch/site/assets/uploads/2018/02/WG1AR5_all_final.pdf, pg. 714.
B.1.1.	Support	
B.1.2.	Support	
B.1.3.	Support	
B.1.4.	Support with Modification	DOEE supports the Recommendation except for the phrase "when considering a straw proposal BCA." It is unclear what straw proposal is referred to here and the Working Group has already put together several recommendations that may serve as an interim BCA framework. DOEE supports the majority's acceptance of the NSPM BCA Principles and finds that the BCA in Phase 2 should be based on the work of the Working Group, rather than on "straw proposals" from the utilities.
B.1.5.	Support	
B.1.6.	Support	
B.1.7.	Support	
B.1.8.	Support	
B.1.9.	Support	
B.1.10.	Support in part, Oppose in part	DOEE supports using phased approach that adopts this working group's recommendations as a starting point as well as the DCSEU methodology. DOEE opposes limiting the use of the SCT only to projects "would assist the District in meeting and advancing its climate goals" and finds that the narrow interpretation in this Recommendation is inconsistent with Recommendations B.1.4 and B.1.1.
B.2.1.	Support	
B.2.2.	Support	
B.2.3.	Support	
B.3.1.	Support	
B.4.1.	Support	
B.5.1.	Support	
B.5.2.	Support	

B.6.1.	Support	DOEE notes that it has proposed ways to calculate the value of resilience and reliability and that the Value of DER study will examine the locational value of reliability and resilience.
C.2.1.	Support	
C.3.1.	Support	
C.4.1.	Support	
C.5.1.	Support	
C.6.1.	Support	

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GRID2.0 Working Group

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November 8, 2021

TO: Clean Energy Act Implementation Working Group (GD-2019-04-M)

FROM: GRID2.0 Working Group

SUBJECT: Framework for Compliance with the Clean Energy Omnibus Amendment Act of 2018

CEAIWG Colleagues, please find below GRID2.0's final positions on the recommendations of our workgroup. This undertaking has been richly instructive, and we thank you for your professionalism and diligence as we collectively sorted through a tremendous amount of information and reasoning. We have followed the PSC staff admonition to not try to further edit the document but to register our concurrence and non-concurrence for the recommendations as currently posed. It is our understanding that the text will not be further revised in response to working group member comments other than to correct any mistakes or further elaborate parties' consensus and non-consensus positions.

We look forward to reading your positions and carrying on the discussion in the next phase of the working group. Finally, we fully agree with the position initially registered by DOEE in their 10/22/21 comments and reiterated in their 11/8/21 submission: *The majority recommendations represent the minimum set of recommendations that are needed to develop a practical evaluation framework for assessing the climate change impacts of the activities regulated by the Commission*. In phase II we look forward to making the case for a comprehensive and uniform cost effectiveness evaluation design for considering and comparing the full range of energy solutions possible now and in the future to meet the District's clean energy goals.

Sincerely,

Larry Martin

GRID2.0 Working Group

Framework for Compliance with the

Clean Energy Omnibus Amendment Act of 2018 (the CEDC Act)

of the District of Columbia

FINAL POSITIONS OF GRID2.0 WORKING GROUP

on the recommendations of the Clean Energy Act Implementation Working Group

A.1.1.

i. The following three GHGs should be quantified and monetized in the BCA framework: Carbon Dioxide (CO_2*), Methane (*CH_4*), and Nitrous Oxide (*N_2O*).*

ii. Two other GHGs — Hydrofluorocarbons (HFCs) and Sulfur hexafluoride (SF_6*) — should be tracked when applicable, but not quantified or monetized in the BCA at this time.*

GRID2.0 CONCURS.

CONSENSUS POSITION STATEMENT: GRID2.0 supports a second stage in this CEAIWG/Metrics, BCA Framework and Reporting Requirements process. That second stage could examine by when information and data might become available to support quantifying and monetizing HFCs and SF_6.

A.1.2. *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: NOx,* SO_2*, and Particulate Matter (PM), with PM 2.5 noted separately.* [Note: NOx in this majority recommendation refers to Nitrogen Oxides other than N_2O which is a GHG.]

GRID2.0 CONCURS.

A.1.3. *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.*

GRID2.0 CONCURS.

GRID2.0 CONSENSUS POSITION STATEMENT: A second stage to this process could address geographic boundaries that make sense for DC with respect to air quality contribution to human health. For example, the second stage could look at the SMA, which is used for compliance with the Clean Air Act. Another that could be discussed is the air-shed from which DC receives prevailing weather during periods of poor air quality.

A.1.4. *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.*

GRID2.0 CONCURS.

A.1.5. *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, ISO 14064-1, UNFCCC Clean Development Mechanism, or the Verified Carbon Standard (VCS).*

GRID2.0 CONCURS.

GRID2.0 CONSENSUS POSITION STATEMENT: A stage two in this process could examine the use of offsets in more detail, taking into account potential impacts within the District of improvements in energy efficiency, peak demand reduction, and local energy solutions.

A.1.6. *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, beginning in 2022. The interim targets should be revised to account for shortfalls or exceedances in GHG reductions during previous performance periods.*

GRID2.0 CONCURS.

A.1.7. *'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 CO2 emissions per average unit of electricity delivered for an entire electricity system.

Short-Run Marginal Emissions Factor (SR-MEF): The change in CO2 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 CO2 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).

GRID2.0 CONCURS.

GRID2.0 CONSENSUS POSITION STATEMENT: GRID2.0 strongly supports this Majority Recommendation. Long-run marginal emissions factors measure the actual impact of District energy decisions, rather than the ephemeral short-run marginal results of those decisions. While the models for calculating long-run marginal emissions are less-well established, multiple sources can be cited and a credible version could be adopted by the Commission, anticipating regular review as the models improve or a standard emerges.

A.1.8. *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.*

GRID2.0 CONCURS.

GRID2.0 CONSENSUS POSITION STATEMENT: A second phase to this process could continue to examine values that are best-tailored to DC's policies and clean energy incentives, in conjunction with developing a long-run marginal emissions model.

A.1.9. *Upstream emissions of GHGs covered by A.1.1 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.*

GRID2.0 CONCURS.

GRID2.0 CONSENSUS POSITION STATEMENT: GRID 2.0 strongly supports this Majority Recommendation.

A.1.10. *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.*

GRID2.0 CONCURS.

A.2.1. *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 N20 should be multiplied by the IPCC factors discussed in the next recommendation.

GRID2.0 DOES NOT CONCUR.

GRID2.0 NON-CONSENSUS POSITION STATEMENT: GRID2.0 strongly believes that the much simpler version presented by DOEE is preferable:

"The cost of carbon adopted by the Commission should be in the range of carbon prices that are consistent with 1.5 degree of global warming, as identified by IPCC's latest report."

This version adopts a social cost of carbon for the District of Columbia that is far more universal and less subject to non-scientific intervention. Moreover, if calculated in this manner, the social cost of carbon calculation would better help to meet the District's goals (carbon neutrality and the Paris Climate Accords). Relying on Federal or NYS values, which are not focused on the District's specific climate commitment goals, is not a wise decision.

A.3.1. *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.*

The current 100-year IPCC values as per AR5 are:

Methane 28

N2O 265

GRID2.0 DOES NOT CONCUR.

GRID2.0 NON-CONSENSUS POSITION STATEMENT: GRID2.0 does not support the Majority Recommendation; the higher 20 year global warming potential for methane is clearly more appropriate for meeting the District's 2032 and 2050 goals.

B.1.1. *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.*

GRID2.0 CONCURS.

GRID2.0 CONSENSUS POSITION STATEMENT: GRID2.0 maintains that it is crucial for the Commission to have a sound, consistent "Benefit-Cost Analytical Framework" upon which to rely for implementing its regulatory charge under Section 103 of the Omnibus Act Amendment. This charge places upon the Commission a responsibility to evaluate in a systematic, consistent, objective and economically sound manner utility proposals that are raised for its review and approval, proposals (whether programs, projects, plans, procurements, investments, pricing structures, etc.) that will affect global climate change and the DC climate policy commitments. The Majority Recommendations that have been agreed upon through the CEAIWG process provide the Commission the key elements of such a holistic, systematic, consistent and economically sound evaluative framework to apply in assessing utility compliance under the Omnibus Act and with respect to related commitments, an evaluative framework that is District-specific, based on the District's policy priorities, and responsive to the Commission's directives in its Notice of Inquiry for Docket No. GD2019-4-M.

Based on best practices within the U.S., a "Benefit-Cost Analytical Framework" is developed to assure Public Utility Commissions that utilities will apply a societal cost test that is consistent with the jurisdiction's policy goals and will address in their benefit-cost analyses all of the benefit/cost impacts relevant to achievement of such policy priorities. A BCA Framework should not be confused with the actual benefit-cost analyses performed by utilities, which will take into account the particular circumstances and market conditions within the utility service territory. In contrast, a Commission's BCA Framework contains all of the elements, definitions, assumptions and methods that can assure that utility benefit-cost analyses will be undertaken in a consistent, systematic and "evolving" accounting manner that will understandable by the Commission and all stakeholders, trackable and auditable. Such standardization of accounting through a BCA Framework is necessary to support DER valuation so that the District can harness the net benefits of DER to achieve cost-effectively DC climate commitments. To take a case by case approach as Pepco espoused in the WG process, would substantially increase the risk of inconsistencies in benefit-cost impact accounting, distortions and bias, which in turn, would increase the prospects for over or under-investment decisions. A BCA Framework that contains the elements reflected in the Majority Recommendations can achieve the "higher level of transparency and regulatory certainty" that the Commission stated in its NOI that it is seeking.

From the first BCA meeting, when the Staff presented on the NSPM, to the last discussions, the CEAIWG has significantly benefited from the Manual's guidance. This document is not a BCA Framework itself, nor a BCA, but instead, a guidance document to aid any Commission in developing its own BCA Framework, based on the particular jurisdiction's policy priorities. While

the members evaluated an array of different BCA Framework models and also assessed utility benefit-cost analyses, the NSPM sets out comprehensive menus, elements, definitions and methods that enabled members to evaluate such inputs (other BCA Framework models and utility benefit-cost analyses, including Pepco's) critically and especially with respect to the appropriateness of the cost-effectiveness test to be applied and all of the impacts relevant to the District's mandates and commitments. In drawing upon the NSPM guidance, therefore, members were able to observe what impacts were address in utility BCAs, such as Pepco's and what impacts were not. Over a majority of members assessed that Pepco's one BCA for NWAs did not incorporate all of the relevant impacts under a societal cost-effectiveness test that are consistent with the District's mandates, policy commitments and the Commission's NOI directives.

The NSPM guidance allows Commissions to include all of the elements in a BCA Framework necessary to assure that utilities will perform DER benefit-cost accounting in a consistent, systematic and economically sound manner, based on common definitions, assumptions, methods and that such an accounting/evaluation framework will apply to all DER applications, types, use cases, not just one DER application, for example, Pepco's NWA BCA.

In the New York PSC BCA Framework Order, the NY PSC did not develop its BCA Framework based on the benefit-cost analysis of any of the utilities that it oversees and regulates. To the contrary, the NYPSC undertook a rulemaking to establish an objective, consistent and systematic Framework to be applied to all of its regulated utilities, taking into account the interests of all stakeholders, to assure that its policy priorities would be addressed by the utilities in their benefit-cost analyses.

B.1.2. *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 Forward-Looking, Long-term, Incremental Analyses, (6) Avoid Double-Counting Impacts, (7) Ensure Transparency, and (8) Conduct BCAs Separately from Rate Impact Analyses*.

GRID2.0 CONCURS.

GRID2.0 CONSENSUS POSITION STATEMENT: Over a majority of the WG members recognize the importance of the "NSPM Principles" as an integral element of a Commission's BCA Framework; again, to assure that the accounting performed in utility benefit-cost analyses is conducted in a consistent, systematic and economically sound manner. These principles set forth "accounting principles" that supplement and complement, but are distinguishable from the MEDSIS/Power Path "Vision Statement and Guiding Principles," which are "aspirational goals,"

not designed to effectuate best accounting practices. Again, without the application of such "accounting principles," the risks are increased for inconsistencies, bias, distortions that can lead to overinvestment or underinvestment decision-making. The principles also enable comparisons between DER and other DER and between DER and conventional investment options, as well as scenario planning comparisons. The "case by case" approach the Pepco seeks would prevent such comparisons to determine the most suitable, cost-effective solutions.

B.1.3. *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-making (see appendix D for an inventory of applicable policies); 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.*

GRID2.0 CONCURS.

B.1.4. *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.

GRID2.0 CONCURS.

GRID2.0 CONSENSUS POSITION STATEMENT: GRID2.0 supports the Societal Cost Test as the most appropriate cost-effectiveness test for the District, as well the Recommendation's list

of relevant impacts to be included in that test. These benefit-cost impacts relate to all three B/C impact categories (Utility, Host Customer/Participant, Society), which GRID2.0 maintains is necessary for the Commission's carrying out of its charge under Section 103 of the Omnibus Act to evaluate the effects of all Utility climate-change related proposals, whether these are energy or non-energy effects, consistent with the District's priorities and the Commission NOI directives. GRID2.0 maintains that the scope of Section 103 necessitates evaluating not only impacts on Utility operations (which is predominantly reflected in Pepco's BCA for NWAs), but also relevant impacts on Participants in Pepco programs ("ClimateChange Solutions")/Host Customer Impacts that could support/facilitate Public, Private Partnerships; as well as Societal Impacts, consistent with the Commission's NOI directives. GRID2.0 supports the addition of "NSPM Principles" to assure that all impacts are evaluated/accounted for consistently, systematically and in an economically sound manner.

B.1.5. *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.*

GRID2.0 CONCURS.

GRID2.0 CONSENSUS POSITION STATEMENT: GRID2.0 support the need for a second phase to this process in order to inventory and assess the tools, analytic methods and techno-economic practices that can support the quantification of new DER values.

B.1.6. *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.*

GRID2.0 CONCURS.

GRID2.0 CONSENSUS POSITION STATEMENT: Again, GRID2.0 believes that the impacts of Utility planned, designed and implemented climate change-related programs need to be subject to B/C analysis under a consistent Commission BCA Framework to evaluate their cost-effectiveness compared to other options, including private sector proposals and Public Private Partnership arrangements.

B.1.7. *The BCA results will be calculated and presented in both benefit-cost ratio and net benefit form.*

GRID2.0 CONCURS.

B.1.8. *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.*

GRID2.0 CONCURS.

GRID2.0 CONSENSUS POSITION STATEMENT: Again, it is GRID2.0's hope that in a Second Phase, there can be an inventory and assessment of cost-effective tools and methods to support the process of quantification.

B.1.9. *BCA submissions should include a technical appendix with modeling inputs and outputs for all scenarios examined.*

GRID2.0 CONCURS.

B.1.10. *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 working group discussion and/or a rulemaking process, based on the Commission determination.*

GRID2.0 CONCURS.

GRID2.0 CONSENSUS POSITION STATEMENT: GRID2.0 supports the need for an extended process, but not one that starts all over again or re-examines the merits of the "core elements" reflected in the Majority Recommendations; which elements have been literally hammered out over quite an extensive process of presentations; Survey Questions; Proposed Recommendations and the Majority Recommendations. GRID2.0 believes that the core elements have been identified that fit the District's particular needs and are well-aligned with the DC mandates and policy commitments. The second Phase should incorporate these "core elements" into the Straw Framework that is the basis for Phase II (frames, governs, guides and shapes the Phase II process). The phase II process should take a form that assures that the Commission's BC Framework will apply to all DER types, applications and use cases; eliminating the current "siloed" approaches that already have resulted in inconsistencies (i.e., NWA/DSP, EE/DR, etc.). GRID2.0 supports the Commission's goal to use the CEAIWG BCA Methodology to "harmonize" BCAs across all related proceedings, working groups, rate cases, etc. Also, the next phase should assure that the Commission takes all relevant stakeholder interests into account.

B.2.1. *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 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.*

GRID2.0 CONCURS.

GRID2.0 CONSENSUS POSITION STATEMENT: GRID2.0 supports this Recommendation and commends to the Commission for review the NYPSC BCA Framework Order, issued in January of 2016, which rejected all of the utility recommendations to set narrow restrictions on the

applicability of BCAs to utility proposals. GRID2.0 believes that Utility proposals should be defined broadly as represented in this recommendation and, as in the case of the NYPSC Order, all climate change-related investments, procurements, pricing structures, rate cases, plans, programs that can benefit from the assessment of alternative options to achieve the most cost-effective solutions should be subject to B/C analysis under the Commission's BCA Framework.

B.2.2. *The BCA Framework will use a SCT for screening all the programs or portfolio categories listed in Recommendation B.1.1. 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.

GRID2.0 CONCURS.

B.2.3. *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.*

GRID2.0 CONCURS.

B.3.1. *For the Discount Rate for the BCA analysis for DER programs, projects, plans, procurements and pricing structures, the BCA should use a societal 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.*

GRID2.0 CONCURS.

B.4.1 *Impacts that cannot be monetized should be accounted for quantitatively or qualitatively. Examples of non-monetary 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 hurricane. Examples of relevant qualitative impacts are geographic diversity of investment, improved distribution planning, resilience, and environmental impacts.*

GRID2.0 CONCURS.

B.5.1. *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.*

GRID2.0 CONCURS.

B.5.2. *Equity should be addressed at the feeder level in an effort to account for distributional/geographical factors.*

GRID2.0 CONCURS.

B.6.1. *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) when considering the resource investment. Regardless, it is recommended that reliability and resilience benefits must be demonstrated, not merely asserted.*

GRID2.0 CONCURS.

GRID2.0 CONSENSUS POSITION STATEMENT: The BCA Framework should apply to both Mitigation and Adaptation. It is important for the implications for reliability and resiliency of decarbonization efforts to be assessed. GRID2.0 supports beginning to take steps, whether using the DCSEU "adder" or identifying key metrics, or both.

C.1.1. *The Working Group recommends the following practices for reporting and data production:*

- *Annual reporting to the PSC should include all relevant data that are reported to other agencies including EPA, EIA, DOEE, and the Metropolitan Washington Council of Governments (MWCG), as well as data used in climate change BCAs submitted to the PSC.*
- *Annual reporting to the PSC should also include new data requirements generated by the recommendations of the CEAIWG that are approved by the Commission.*
- *All data reported should be DC-specific (not utility-wide).*
- *To the extent feasible, data reported should be provided for geographies smaller than the District as a whole, for example, ward, quadrant, substation zone, feeder, or zip code while maintaining compliance with Critical Infrastructure Information security requirements, and customer data privacy requirements.*
- *Annual data should be submitted to the PSC by September 30 each year; proposal specific data should be submitted together with utility proposals.*
- *Written reports should include a spreadsheet appendix of all data and assumptions as well as GIS shapefiles (where applicable) relevant to the proceeding.*
- *All third-party electricity and gas utility suppliers should be required to submit sales and greenhouse gas emissions data for their customers in the District consistent with the approach used to provide utility data.*
- *The Commission should review all data submitted to ensure that comparable data are being presented by all parties.*

GRID2.0 CONCURS.

C.3.1. *That WGL be required to report the following data on gas usage and emissions:*

- *customer gas use by customer type,*
- *customer point of use emissions,*
- *the number and location of gas leaks within the District (by grade and line type), and*
- *the amount of measured and/or calculated fugitive emissions within the District (by pipe size).*

GRID2.0 CONCURS.

C.4.1 *That Pepco (and, as appropriate, third-party electric suppliers) be required to report the following data on electric usage, generation and emissions citywide and by substation:*

- *customer electric use by customer type,*

- *in front-of-meter generation located within the District,*
- *excess generation (net metering) back to the grid with temporal data at a minimum hourly interval, and*
- *generation emissions from customer electric use with temporal data at a minimum hourly interval.*

Data should be sought from other sources regarding:

- *in front-of-meter generation located within the District, and*
- *behind-the-meter generation located within the District.*

GRID2.0 CONCURS.

C.5.1 *The Working Group also recommends the following reporting criteria after considering appropriate reporting requirements relevant to evaluating the effect of utility proposals on the District's contribution to global climate change and the District's public commitments under the CleanEnergy DC Omnibus Amendment Act of 2018:*

- *Utilities should report on customer progress toward achieving the District's mandates, including with respect to Utility programs, projects, procurements, pricing structures and measures that impact the utility's customers and/or in which the customers participate.*
- *Customers and stakeholders should be kept informed of progress in meeting performance metrics, relevant energy and non-energy impacts (such as the non-energy benefits included in DSM assessment), customer impacts and bill savings, and impacts on special classes. Progress reporting should be accomplished via a web-based dashboard to provide regular progress updates with key metrics including number of participants, relevant programs, program expenditures, and projects completed.*
- *Reporting should include all information relevant to evaluating the utility proposal's impact on PowerPath DC Vision & Guiding Principles.*

GRID2.0 CONCURS.

C.6.1. *DOEE provided the Reporting Requirements Committee with a detailed presentation clarifying the District's emissions reporting requirements, practices, and categorizations. Similarly, WGL provided detailed information on its inventory data and processes and also met with Committee members. The District's emissions reporting follows the well-established three-scope emissions system used in jurisdictions around the United States and the world:*

- ***Scope 1** emissions come from onsite activities (manufacturing, electric generation) occurring directly within the District.*
- ***Scope 2** emissions include indirect emissions that are created as a result of fuel or electric usage by residents, businesses, and governments within the District, and include "fugitive" emissions occurring upstream in the production of fuels and electricity used in the District.*
- ***Scope 3** emissions include embodied emissions associated with product and services used in the District.*

GRID2.0 CONCURS.

OPC Consensus/Non-Consensus Comments

GD2019-04-M

November 8, 2021

I. General Statement

The Commission faces many critically important decisions in guiding the District's electricity and fuel sectors to meet the District's ambitious climate change goals justly, equitably and affordably. In making its decisions, the Commission has a statutory mandate to consider the "effects on global climate change and the District's public climate commitments."[263] OPC has the same mandate in developing its advocacy positions on behalf of DC utility consumers.[264] OPC commends the Commission for initiating this proceeding to develop the "analytical approach that it should take when considering the effects of a utility proposal on global climate change and the District's public policy commitments."[265] This analysis is essential for informed Commission consideration of climate change effects. Overall, the majority recommendations in this report, if adopted, would help the Commission effectively consider such effects. The recommended Benefit Cost Analysis ("BCA") analysis would enable the Commission to make more robustly informed decisions to steer the District toward a successful clean energy economy. Collectively, key majority recommendations consider a reasonable range of pollutants, examine the equity of utility proposals, meaningfully price pollution, and gather a useful range of data.

OPC also commends Commission Staff for engaging in an in-depth and substantive process to provide the Commission detailed recommendations on this much-needed analytical framework. OPC makes several suggestions to strengthen the analytical framework and ensure that it is equitable, technically sound, and sufficiently comprehensive, including noting OPC's points of disagreement with the Majority Recommendations. OPC's specific positions on each Majority Recommendation are below, and further OPC comments can be found in the body of the report. OPC highlights a few central topics below.

A. Equity

OPC applauds the focus on equity concerns in many of the majority recommendations. To address historic inequities and to ensure that the transition to clean energy is just, the Commission must receive and consider relevant quantified data and analysis. Such data and analysis must address the benefits and burdens of a proposal on District consumers across income class, race, and geographic distribution. Several of the recommendations would greatly facilitate developing more data regarding equity considerations and allow the Commission to utilize that data in its decision making. Recommendations regarding important equity considerations include: the

263 D.C. Code § 34-808.02 (Lexis 2021).

264 D.C. Code § 34-804(e).

265 *GD-2019-04-M, In the Matter of the Implementation of the 2019 Clean Energy DC Omnibus Act Compliance Requirements* ("*GD-2019-04-M*"), Notice of Inquiry ("NOI"), rel. November 25, 2019.

tracking of criteria air pollutants[266] that overburden low-income and communities of color; the inclusion of metrics for social equity, racial equity, and environmental justice in the BCA; and addressing equity at the feeder level in an effort to account for distributional/geographical factors. It is essential that the final analysis and reporting requirements retain these equity measures. For too long policies and proposals related to environmental concerns were first developed and then equity considerations were added as an afterthought, if at all. Equity analysis, if done at all, was too often limited to a qualitative discussion that was neither quantified, nor heavily weighted in determining outcomes. Yet, the questions of who benefits, who pays, and whether the distribution of benefits and burdens is equitable are centrally relevant to the transition to clean energy. The final BCA requirements should include the equity analyses described in the Majority Recommendations. And, as more information becomes available, those requirements should be updated to incorporate and quantitatively weigh this new information.

B. Comparison of Alternatives

The Commission can better understand that a proposal best advances the District's climate change goals in the most cost-effective way when that proposal is compared to realistic alternatives. As OPC recommended in its comments on the NOI, a utility proposal submitted to the Commission should be required to include: (1) a realistic alternative (whether the status quo or a second proposal or other scenario); and (2) expected emissions for both the proposal and the alternative. The difference in emissions between the proposal and the alternative (often called the "delta" emissions) is the impact of the proposal on global climate change.[267] The Majority Recommendations below do not address alternatives analysis as they focus solely on the components of a BCA. OPC recommends that in addition to the BCA, the Commission requires utility applications that could affect the District's public climate change commitments include a comparison of climate change impacts from reasonable alternatives.

C. Next Steps

As the conclusion of the report indicates, parties were not able to agree on the next step in developing the analytical framework for Commission evaluation of utility proposals' effects on the District's climate change commitments. Parties disagree regarding whether for Phase II a second round working group process is needed or whether the appropriate next step is a rulemaking or development of a draft BCA handbook. For a potential second round of the working group, Pepco has proposed using a Pepco-developed BCA as a "straw proposal" that the working group would iterate on in a new round of meetings. Yet, this report contains detailed technical recommendations to provide direction in developing a BCA rulemaking or draft BCA handbook. And, proceedings which the Commission has said will utilize the analytical approach developed in this proceeding are advancing, such as Formal Case 1167 and Formal Case 1160. For these reasons, OPC recommends that the Commission issue an order providing input on the

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[266] Criteria Air Pollutants are ground-level ozone, particulate matter, carbon monoxide, lead, sulfur dioxide and nitrogen dioxide. *See* EPA, Criteria Air Pollutants https://www.epa.gov/criteria-air-pollutants (last visit Nov. 8, 2021).

[267] *GD2019-04-M*, Office of the People's Counsel for the District of Columbia 's Comments Regarding the Implementation of the 2019 Clean Energy DC Omnibus Act Compliance Requirements, filed Jan. 13, 2020, at 9-10.

recommendations in this report and for Phase II institute a rulemaking to develop rules for BCA analysis and/or a draft BCA handbook. The initial rules and/or handbook should be drafted by Commission Staff with fulsome opportunities for input from Working Group members and the public.

OPC is particularly concerned about the language in Majority Recommendation B.1.4 of "*When* considering a straw proposal BCA . . . " (emphasis added). This language assumes that there will be a straw proposal BCA which has not been determined. Additionally, a straw proposal as the next step is potentially inefficient. If the Commission does adopt a straw proposal BCA as a next step, which it should not, OPC opposes Pepco's recommendation to use Pepco's own LCS BCA Handbook and its benefit and cost categories as the straw proposal (*see, e.g.*, p.57). The basis of any next step should be the recommendations from the Working Group contained in the final report, not a parallel alternative advanced by one party and not adopted as a Majority Recommendation.

II. OPC Positions and Comments on Majority Recommendations

D. METRICS
Majority Recommendation A.1.1. **Recommendation:** *i. The following three GHGs should be quantified and monetized in the BCA framework: Carbon Dioxide (*CO_2*), Methane (*CH_4*), and Nitrous Oxide (*N_2O*).* *ii. Two other GHGs — Hydrofluorocarbons (HFCs) and Sulfur hexafluoride (*SF_6*) — should be tracked when applicable, but not quantified or monetized in the BCA at this time.* **OPC Position:** Supports
Majority Recommendation A.1.2. **Recommendation:** *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: NOx,* SO_2*, and Particulate Matter (PM), with PM 2.5 noted separately.* [Note: NOx in this majority recommendation refers to Nitrogen Oxides other than N_2O which is a GHG.] **OPC Position:** Supports **OPC Comments:** OPC supports targeting important public health concerns through the tracking of these pollutants and through their potential inclusion in the BCA. OPC is confused by the language change from "future" in the prior draft to "after two years or sooner" in the final report. Does "after 2 years or sooner" mean doing it at two years the latest? Or does it mean it may happen before the two-year mark or also after? OPC supports setting a clear deadline for utility compliance with data provisions.
Majority Recommendation A.1.3.

Recommendation: *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.*

OPC Position: OPC agrees that criteria air pollution caused by DC energy consumption should be tracked and that it should use emissions factors appropriate to the area for which these pollutants are tracked.

OPC Comments: OPC continues to recommend that any pollution occurring within the District from DC gas and electric consumption should be tracked and reported by Ward. This practice is critical to both making transparent and resolving hotspots and other disproportionate pollution patterns.

Majority Recommendation A.1.4.

Recommendation: *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.*

OPC Position: Support

Majority Recommendation A.1.5.

Recommendation: *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, ISO 14064-1, 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.*

OPC Position: OPC supports the recommendation, but not the note regarding omitting offsets.

OPC Comments: In terms of the note regarding Formal Case No. 1167, it is OPC's understanding that the Commission intends to develop the analytical framework in this the GD-2019-04-M proceeding to evaluate utility proposals filed in FC 1167 and other Commission proceedings. How offsets should be treated for accounting purposes in an evaluation framework is a different question than how offsets are treated in a utility proposal.

Majority Recommendation A.1.6.

Recommendation: *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, beginning in 2022. The interim targets should be revised to account for shortfalls or exceedances in GHG reductions during previous performance periods.*

OPC Position: Support

Majority Recommendation A.1.7.

Recommendation: *'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 CO2 emissions per average unit of electricity delivered for an entire electricity system.
Short-Run Marginal Emissions Factor (SR-MEF): The change in CO2 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 CO2 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).

OPC Position: Agree in part, disagree in part

OPC Comments: OPC agrees that 'marginal' emissions factors (MEF) should be used to estimate the emission impacts. While OPC agreed that long-run factors are the most appropriate for reflecting the long-term impacts of utility proposals, NREL's current long-run factors are still underdevelopment and not yet ready to be used in policy making. Until these long-run factors are finalized by NREL and vetted, the short-run factors should be used in their place.

Majority Recommendation A.1.8.

Recommendation: *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.*

OPC Position: Support.

OPC Comment: In terms of the PJM Pepco Zone example OPC notes that this is historical data but recommendation A.1.7 focuses on projections, not historical data.

Majority Recommendation A.1.9.

Recommendation: *Upstream emissions of GHGs covered by A.1.1 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.*

OPC Position: Support.

Majority Recommendation A.1.10.

Recommendation: *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.*

OPC Position: Support.

Majority Recommendation A.2.1.

Recommendation: *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 N20 should be multiplied by the IPCC factors discussed in the next recommendation.

OPC Position: Support

Majority Recommendation A.3.1.

Recommendation: *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.*

The current 100-year IPCC values as per AR5 are:
Methane 28
N2O 265

OPC Position: Support

E. BENEFIT-COST ANALYSIS (BCA) FRAMEWORK

Majority Recommendation B.1.1.

Recommendation: *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.

OPC Position: See comment

OPC Comment: OPC thinks the language of this recommendation is subject to multiple interpretations and is unclear and therefore declines to take a position on this recommendation as worded here. OPC agrees that the framework adopted should be consistent and permitted to evolve over time.

Majority Recommendation B.1.2.

Recommendation: *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 Forward-Looking, Long-term, Incremental Analyses, (6) Avoid Double-Counting Impacts, (7) Ensure Transparency, and (8) Conduct BCAs Separately from Rate Impact Analyses.*

OPC Position: Support

Majority Recommendation B.1.3.

Recommendation: *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-making (see appendix D for an inventory of applicable policies); 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.*

OPC Position: Support

OPC Comment: OPC is strongly supportive of meeting the goals of the Act and setting a framework to make that possible, but only if the path is equitable, safe and affordable.

Majority Recommendation B.1.4.

Recommendation: *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.

OPC Position: agree in part; disagree in part

OPC Comment: OPC agrees that 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. OPC disagrees that the appropriate next step is Working Group consideration of a straw proposal and does not agree that the use of a straw proposal is a majority recommendation of the stakeholders. Instead, the Commission should issue an order directing a rulemaking or the development of a BCA handbook. Staff and their consultants should draft rules or a draft handbook with direction from the Commission's order on the Working Group report. Working Group process on that rulemaking or handbook may be valuable, but having the Working Group consider a "straw proposal BCA" next adds unnecessary, resource-intensive process undermines the results of this working group process by backtracking to a new set of inputs, assumptions and technical decisions. It also raising the critical question of what entity gets to present the straw proposal.

Majority Recommendation B.1.5.

Recommendation: *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.*

OPC Position: Support

Majority Recommendation B.1.6.

Recommendation: *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.*

OPC Position: Support

Majority Recommendation B.1.7.

Recommendation: *The BCA results will be calculated and presented in both benefit-cost ratio and net benefit form.*

OPC Position: Support

Majority Recommendation B.1.8.

Recommendation: *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.*

OPC Position: Generally support, see comment

OPC Comment: While OPC agrees that *all benefits and costs should be quantified and/or monetized to the extent possible, even when difficult,* OPC does not support the current language limiting the applicability of BCA analysis and reporting to certain proceedings. The phrase "*achievement of the District's climate change, clean energy and energy efficiency mandates and associated policy commitments*" should instead read "all applications that could affect the District's public climate change commitments including relevant non-climate programs, large-scale capital projects, major infrastructure investments, and projects and spending under consideration in rate cases."

Majority Recommendation B.1.9.

Recommendation: *BCA submissions should include a technical appendix with modeling inputs and outputs for all scenarios examined.*

OPC Position: Support

Majority Recommendation B.1.10.

Recommendation: *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 working group discussion and/or a rulemaking process, based on the Commission determination.*

OPC Position: Generally support, see comment

OPC Comment: While OPC agrees that *a consistent BCA framework should be used to assess new regulated utilities proposals,* OPC does not support the current language limiting the applicability of BCA analysis and reporting to certain proceedings. The phrase "*would assist the District in meeting and advancing its climate goals*" should instead read "all applications that could affect the District's public climate change commitments including relevant non-climate programs, large-scale capital projects, major infrastructure investments, and projects and spending under consideration in rate cases." In addition, while OPC agrees that *DCSEU cost-effectiveness test (as is currently applied)* is a useful *starting point* to be modified, OPC is

concerned by the introduction of an unspecified "Phase II" in this recommendation, which is not defined elsewhere in the working group report. As discussed above in B.1.4, the Commission should issue an order directing a rulemaking or the development of a BCA handbook.
]

Majority Recommendation B.2.1.

Recommendation: *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 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.*

OPC Position: Support

Majority Recommendation B.2.2.

Recommendation: *The BCA Framework will use a SCT for screening all the programs or portfolio categories listed in Recommendation B.1.1. 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.

OPC Position: Support

Majority Recommendation B.2.3.

Recommendation: *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.*

OPC Position: See comments

OPC Comments: OPC needs 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. OPC has reiterated this position from the beginning without further information forthcoming. OPC does support the use of RIM as a secondary test and this did not appear to receive majority support, OPC is unsure that the UCT and TRC tests, without further information, actually have majority support within the Working Group.

Majority Recommendation B.3.1.

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

OPC Position: support in part; raise questions in part

OPC Comments: OPC supports the recommendation that "*the BCA should use a societal 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*." However, OPC finds the language "*for DER programs, projects, plans, procurements and pricing structures,"* unclear. If the phrase is just missing a comma after "DER" OPC recommends adding that comma. If DER is meant to modify the list of "*programs, projects, plans, procurements and pricing structures"* OPC objects to that limitation and recommends the entire phrase be replaced by *"*all applications that could affect the District's public climate change commitments including relevant non-climate programs, large-scale capital projects, major infrastructure investments, and projects and spending under consideration in rate cases." In terms of the recommendation "*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[,]"* OPC needs more information about how the Commission utilize the results of this secondary test in decision making.

Majority Recommendation B.4.1.

Recommendation: *Impacts that cannot be monetized should be accounted for quantitatively or qualitatively. Examples of non-monetary 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 hurricane. Examples of relevant qualitative impacts are geographic diversity of investment, improved distribution planning, resilience, and environmental impacts.*

OPC Position: Disagree

OPC Comments: As OPC discussed in its comments on the NOI, a BCA approach is not the only possible framework for comparing the impacts of utilities proposals, has limitations, and the NOI did not require a focus exclusively on BCA frameworks. Outside of limitations of BCA analysis (using, for example, a question and answer rubric or multiple metric framework) OPC would agree that some impacts can be usefully considered by decision makers without translating them into monetary terms.

However, the working group has moved forward with a BCA framework, which in turn means that all benefits should be monetized in order to have their value considered in decision making. BCA frameworks in general, and the BCA framework described in the working group's recommendations in specific, do not provide for considering the importance of valuable things that are not exchanged in a market.

The recommendation presented here that i*mpacts that cannot be monetized should be accounted for quantitatively or qualitatively* could be interpreted as an escape valve of sorts: agreeing to leave important non-market measures out of the BCA. Committing to a BCA framework must come with the requirement to monetize every benefit, and a rich literature exists presenting methodologies and values for difficult to monetize benefits. Every benefit should be monetized in this BCA framework—even if it is difficult to do so. For reference, recommendation B.5.3 below includes one of many possible ways to include non-market benefits in a cost benefit analysis, suggesting *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.*

Majority Recommendation B.5.1.

Recommendation: *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.*

OPC Position: Support

Majority Recommendation B.5.2.

Recommendation: *Equity should be addressed at the feeder level in an effort to account for distributional/geographical factors.*

OPC Position: Support

Majority Recommendation B.6.1.

Recommendation: *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) when considering the resource investment. Regardless, it is recommended that reliability and resilience benefits must be demonstrated, not merely asserted.*

OPC Position: See comments.

OPC Comments: As OPC has asserted from the beginning of these discussions, OPC needs to see further information and discussion about how reliability and resilience would be included before supporting their inclusion as benefits. More discussion is needed regarding how reliability and resilience would be weighted to ensure an appropriate balance between cost and risk. OPC remains 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 black outs to acceptable standards. OPC is also not sure that this recommendation is supported by the majority of the Working Group.

OPC does agree that "reliability and resilience benefits must be demonstrated, not merely asserted."

F. REPORTING REQUIREMENTS

Majority Recommendation C.2.1.

Recommendation: *The Working Group recommends the following practices for reporting and data production:*

- *Annual reporting to the PSC should include all relevant data that are reported to other agencies including EPA, EIA, DOEE, and the Metropolitan Washington Council of Governments (MWCG), as well as data used in climate change BCAs submitted to the PSC.*
- *Annual reporting to the PSC should also include new data requirements generated by the recommendations of the CEAIWG that are approved by the Commission.*
- *All data reported should be DC-specific (not utility-wide).*
- *To the extent feasible, data reported should be provided for geographies smaller than the District as a whole, for example, ward, quadrant, substation zone, feeder, or zip code while maintaining compliance with Critical Infrastructure Information security requirements, and customer data privacy requirements.*
- *Annual data should be submitted to the PSC by September 30 each year; proposal specific data should be submitted together with utility proposals.*
- *Written reports should include a spreadsheet appendix of all data and assumptions as well as*

GIS shapefiles (where applicable) relevant to the proceeding.

- *All third-party electricity and gas utility suppliers should be required to submit sales and greenhouse gas emissions data for their customers in the District consistent with the approach used to provide utility data.*
- *The Commission should review all data submitted to ensure that comparable data are being presented by all parties.*

OPC Position: Support

Majority Recommendation C.3.1.

Recommendation: *That WGL be required to report the following data on gas usage and emissions:*

- *customer gas use by customer type,*
- *customer point of use emissions,*
- *the number and location of gas leaks within the District (by grade and line type), and*
- *the amount of measured and/or calculated fugitive emissions within the District (by pipe size).*

OPC Position: Support

Majority Recommendation C.4.1.

Recommendation: *That Pepco (and, as appropriate, third-party electric suppliers) be required to report the following data on electric usage, generation and emissions citywide and by substation:*

- *customer electric use by customer type,*
- *in front-of-meter generation located within the District,*
- *excess generation (net metering) back to the grid with temporal data at a minimum hourly interval, and*
- *generation emissions from customer electric use with temporal data at a minimum hourly interval.*

Data should be sought from other sources regarding:

- *in front-of-meter generation located within the District, and*
- *behind-the-meter generation located within the District.*

OPC Position: Support

OPC Comment: New language regarding "generation and emissions citywide and by substation" and "with temporal data at minimum hourly interval" has been added since the previous draft of the report. OPC questions whether such reporting is realistic and feasible but does not oppose it if it is realistic and feasible.

Majority Recommendation C.5.1.

Recommendation: *The Working Group also recommends the following reporting criteria after considering appropriate reporting requirements relevant to evaluating the effect of utility proposals on the District's contribution to global climate change and the District's public commitments under the CleanEnergy DC Omnibus Amendment Act of 2018:*

- *Utilities should report on customer progress toward achieving the District's mandates, including with respect to Utility programs, projects, procurements, pricing structures and measures that impact the utility's customers and/or in which the customers participate.*
- *Customers and stakeholders should be kept informed of progress in meeting performance metrics, relevant energy and non-energy impacts (such as the non-energy benefits included in DSM assessment), customer impacts and bill savings, and impacts on special classes. Progress reporting should be accomplished via a web-based dashboard to provide regular progress updates with key metrics including number of participants, relevant programs, program expenditures, and projects completed.*
- *Reporting should include all information relevant to evaluating the utility proposal's impact on PowerPath DC Vision & Guiding Principles.*

OPC Position: Support

Majority Recommendation C.6.1.

Recommendation: *DOEE provided the Reporting Requirements Committee with a detailed presentation clarifying the District's emissions reporting requirements, practices, and categorizations. Similarly, WGL provided detailed information on its inventory data and processes and also met with Committee members. The District's emissions reporting follows the well-established three-scope emissions system used in jurisdictions around the United States and the world:*

- ***Scope 1** emissions come from onsite activities (manufacturing, electric generation) occurring directly within the District.*
- ***Scope 2** emissions include indirect emissions that are created as a result of fuel or electric usage by residents, businesses, and governments within the District, and include "fugitive" emissions occurring upstream in the production of fuels and electricity used in the District.*
- ***Scope 3** emissions include embodied emissions associated with product and services used in the District.*

OPC Position: Support

Pepco Nonconsensus Comments:

Working Group Majority Recommendation A.1.1:

i. *The following three GHGs should be quantified and monetized in the BCA framework: Carbon Dioxide (*CO_2*), Methane (*CH_4*), and Nitrous Oxide (*N_2O*).*

ii. *Two other GHGs — Hydrofluorocarbons (HFCs) and Sulfur hexafluoride (*SF_6*) — should be tracked, when applicable, but not quantified or monetized in the BCA at this time.*

PEPCO: Pepco generally agrees with the proposed Working Group Majority Recommendation "i) The following three GHGs should be quantified and monetized in the BCA framework: Carbon Dioxide (CO_2), Methane (CH_4), and Nitrous Oxide (N_2O)," and generally agrees with the proposed Working Group Majority Recommendation "ii) Two other GHGs — Hydrofluorocarbons (HFCs) and Sulfur hexafluoride (*SF_6*) — should be tracked, when applicable, but not quantified or monetized in the BCA at this time," subject to further comment below.

Pepco supports quantifying and monetizing the social costs of CO_2, CH_4, and N_2O as they are most relevant GHG emission streams associated with electric production and distribution, natural gas production and distribution, and transportation. Metrics should be applied when they are appropriate to the specific project, program, or application (e.g., electrification of transportation may have different considerations than energy efficiency) and should focus on well-defined areas such as pipeline or electrical losses and combustion emissions. Finally, only well-defined costs and benefits should be included and evaluated when appropriate. These three streams also have defined federal "social cost of" values which should be utilized at this time

Working Group Majority Recommendation A.1.2: *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: NOx,* SO_2*, and Particulate Matter (PM), with PM 2.5 noted separately. [Note: NOx in this majority recommendation refers to Nitrogen Oxides other than* N_2O *which is a GHG.]*[268]

Pepco: Pepco generally supports the tracking of NOx, SO_2, and Particulate Matter, but it does not agree with the proposed Working Group Majority Recommendation, "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: NOx, SO_2, and Particulate Matter (PM), with PM 2.5 noted separately. [Note: NOx in this majority recommendation refers to Nitrogen Oxides other than N_2O which is a GHG.]," because this proposed recommendation makes assertions about the application of the BCA that are problematic and unclear.

Pepco supports the inclusion of effects of incremental NOx, SO_2, and Particulate Matter emissions in the BCA when there are well-vetted, generally accepted means of quantifying these emissions and their costs, that meet the general criteria laid out for inclusion in BCA (*i.e.*, the values are well-

[268] Nitrogen Oxides (NOx) can be of seven different types. https://www3.epa.gov/ttncatc1/dir1/fnoxdoc.pdf.

vetted, transparent, market-based or federally/industry established, non-duplicative, and appropriate to the specific project, program, or application). For instance, the Company agrees with tracking Particulate Matter emissions and incorporating a value once quantified and officially determined by the U.S. EPA.

However, the proposed Working Group Majority Recommendation makes assertions about the application of the BCA that are problematic and unclear. As noted in the LCS BCA, because market values of NOx and SO_2 above EPA-determined thresholds are already incorporated into electricity prices through Clean Air Act regulations and associated emission trading programs, SO_2 and NOx emissions costs that are avoided by displacing other power generating resources should already be captured in the quantification of avoided energy costs in the BCA. However, the LCS BCA also notes that the EPA's programs only apply to electricity generators with a nameplate capacity greater than 25 MW. To the extent that an LCS incorporates generation resources that have capacities less than or equal to 25 MW, the cost of the SO_2 and NOx emissions from those generation resources may be included as a societal cost (effectively netting from the gross SO_2 and NOx emissions that are avoided by displacing other power generating resources) in the BCA. Furthermore, the "Public Health" section of the BCA referenced in the proposed Working Group Majority Recommendation is not described or agreed upon, adding ambiguity to the proposed Working Group Majority Recommendation.

Finally, Pepco is unclear on the purpose of the addition of the language "after 2 years or sooner." Estimates for inclusion in the BCA are dependent upon the availability of well-vetted, generally accepted means of quantifying the costs of the emissions. Furthermore, both the start point for the two years and the rationale for the two years is unclear, and this language was not discussed by the Working Group.

Working Group Majority Recommendation A.1.3: *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.*

PEPCO: The proposed Working Group Majority Recommendation is insufficiently clear for Pepco to take a position on it. However, Pepco believes that it is important that the full geographic scope of damages (some pollutants have global effects and others have more local effects) caused by incremental emissions from applicable resources be included in the BCA if they can be adequately quantified.

For pollutants derived from the generation, transmission, and distribution of electricity, because Pepco acquires its electricity from the PJM markets, Pepco believes that the effects of incremental emissions from resources located in PJM should be included in the BCA if they can be adequately quantified. If a proposed program or initiative would affect incremental emissions from resources outside of PJM, then the effects of incremental emissions from those resources should also be considered. A more robust response to this proposed Working Group Majority Recommendation cannot be provided without the proposed Working Group Majority Recommendation providing

greater specificity about the specific boundaries and application that it proposes for each type of pollutant.

Working Group Majority Recommendation A.1.4: *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.*

Pepco: While Pepco is strongly supportive of equity-focused projects and measures, it does not agree with the proposed Working Group Majority Recommendation "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." Rather, equity-focused projects should be exempt from the BCA altogether.

Social equity is a critical aspect of the transition to a cleaner energy system. Pepco is engaged in significant programs to advance social equity, racial equity, and environmental justice in the communities that it serves. Examples include Pepco's support for resiliency hubs such as the Jubilee Housing and the Ludlow-Taylor Elementary School.[269][270] Furthermore, Pepco has embedded social equity goals in its own internal operations. For example, Pepco and its employees have annual Diversity, Equity and Inclusion (DEI) performance goals. Pepco believes that the most effective means by which to advance equity goals are to further deploy explicit equity-focused programs and initiatives, including making various system investments that are explicitly designed with an equity focus, and that such programs and initiatives should not be subject to a BCA.

Finally, there was no discussion in the working group of how "access to clean energy across income, race, and geography" would be measured. This proposal is speculative and no explanation for how it would be verifiably quantified and monetized in a BCA was presented to the Working Group.

Working Group Majority Recommendation A.1.5: *If applying carbon offsets, they must be purchased from a source that abides by one of the following standards: Climate SEED,*[271] *Community Climate Biodiversity Standard (CCBA),*[272] *Gold Standard,*[273] *ISO 14064-1,*[274] *UNFCCC Clean Development Mechanism,*[275] *or the Verified Carbon Standard (VCS).*[276]

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[269] *See* https://www.pepco.com/News/Pages/Press%20Releases/PepcoGrantSupportsInnovativeHousingPilotResiliencyProgram.aspx.
[270] *See* https://www.pepco.com/News/Pages/TenLocalProjectsReceiveNearly$125,000inFundingforOpenSpaceandResiliencyThroughNewPepcoProgram.aspx.
[271] *See* https://climateseed.com/.
[272] *See* https://www.climate-standards.org/.
[273] *See* https://www.goldstandard.org/.
[274] *See* https://www.iso.org/standard/66453.html.
[275] *See* https://unfccc.int/process-and-meetings/the-kyoto-protocol/mechanisms-under-the-kyoto-protocol/the-clean-development-mechanism.
[276] *See* https://verra.org/project/vcs-program/.

Pepco: More information is needed for Pepco to determine whether it supports the proposed Working Group Majority Recommendation, "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, ISO 14064-1, UNFCCC Clean Development Mechanism, or the Verified Carbon Standard (VCS)." Pepco has not analyzed specific offset "sources" proposed. The working group did not discuss whether offsets were consistent with the Clean Energy ACT or the District's Clean Energy DC plan, and the working group did not discuss whether the RTO (i.e., PJM) is an appropriate geographic footprint, should offsets be considered at all.

Working Group Majority Recommendation A.1.6: *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, beginning in 2022. The interim targets should be revised to account for shortfalls or exceedances in GHG reductions during previous performance periods.*

Pepco: At this time, Pepco does not agree with the proposed Working Group Majority Recommendation, "To ensure that the District is moving toward its energy and climate goals, interim GHG targets should be set for the utilities every three years, beginning in 2022. The interim targets should be revised to account for shortfalls or exceedances in GHG reductions during previous performance periods." Further research is required before considering interim greenhouse gas targets for the District, and only goals used for guidance should be considered at this time. Furthermore, Pepco understands "targets" to mean specific reduction levels that the utilities would be required to meet subject to penalties. Pepco believes the development of appropriate goals for the utilities would require significant future study to determine appropriate targets, not for the District overall, but specific to each regulated utility and its regulated business. Pepco further notes the Working Group did not discuss interim targets for utilities, and no party addressed how interim greenhouse gas targets could be developed specifically 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. Each utility has a regulated business, which informs and limits the types of programs that it may implement. No party in the Working Group has put forward how cost-recovery for such targets would be treated nor how they would be coordinated with other matters in front of the Commission. Further, Pepco notes that no party presented if the utilities would need to be given expanded authorization to implement new programs to meet utility-specific targets.

Working Group Majority Recommendation A.1.7: *'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:[277]

Average Emissions Factor (AEF): The average CO_2 *emissions per average unit of electricity delivered for an entire electricity system.*

Short-Run Marginal Emissions Factor (SR-MEF): The change in CO_2 *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_2 *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).*

Pepco: Given the wording of the proposed Working Group Majority Recommendation in the specific context of the working group meetings, Pepco does not support the proposed Working Group Majority Recommendation, "'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."

Pepco understands these emission factors to be those from NREL's Cambium model as presented by Pieter Gagnon. The emissions factors referenced in this question are the outcomes of a research model and rely on assumptions neither adequately discussed nor vetted by members of the working group.

Pepco understands that there is not full alignment between the evolving inventory and approaches to greenhouse gas accounting, used by cities and private companies[278] (e.g., Pepco in its Climate Commitment),[279] and the accounting of greenhouse gases that can be used for regulation of electric sector programs. No Working Group party presented a jurisdiction that uses the World Resource Institute Greenhouse Gas Protocol (WRI GGP) inventory methods to regulate the electric sector, and the WRI GGP is not used on the federal level to regulate electric sector emissions. Pepco notes it is amenable to discussions on how to bridge the gap between the WRI GGP and regulatory methods used across the country; however, this Working Group did not adequately discuss these issues. Finally, Pepco notes that, according to the WRI GGP a utility is responsible for its corporate emissions but that emissions related to customer generation are a "pass through" in a restructured jurisdiction where the utility does not own or control generation.

[277] *See* Long-run marginal CO2 emissions factors in national electricity systems, A.D. Hawkes, 2014. https://reader.elsevier.com/reader/sd/pii/S0306261914003006?token=D1FE51F39FADB0F274B61768BAE6A71AA1E1DA10A5A9E4583300177E4123B7B965905EB7910BDFF1C6CE788EDD476E94&originRegion=us-east-1&originCreation=20210906180600.

[278] *See* Greenhouse Gas Protocol | World Resources Institute (wri.org).

[279] *See* Pepco Climate Action | Pepco - An Exelon Company.

Working Group Majority Recommendation A.1.8: *The most local values available for the emissions factors should be used. PJM's latest marginal emissions data for the Pepco Zone as defined by PJM should be used.*

Pepco: Pepco notes that PJM has historically published monthly emission rates and provided data on hourly marginal fuel types for CO2. Recently (in September of 2021), PJM began providing five-minute marginal emission rates for CO2 by individual load node on the wholesale grid. To the extent that historical data is used to determine marginal emissions rates, applicable data from PJM for the PEPCO Zone should be the preferred data source for emissions from sources in the PEPCO Zone, provided that at least an entire year of historical data is available and the data is sufficiently robust.[280] More discussion is needed regarding how the emission rates will be applied (intra-hourly, hourly, On/Off Peak, etc.) for Pepco to fully support this Working Group Majority Recommendation.

Further discussion is needed on how this emissions data will be used, as Pepco believes the appropriate emission rate may be marginal or average depending on the application.

Working Group Majority Recommendation A.1.9: *Upstream emissions of GHGs covered by A.1.1 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.*

Pepco: Greater clarity is needed for Pepco to determine whether it supports the proposed Working Group Majority Recommendation, "Upstream emissions of GHGs covered by A.1.1 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." Pepco notes a specific definition of "upstream emissions" has not been presented for comment. Pepco supports the inclusion of distribution losses for both electricity and natural gas but does not support the inclusion of greenhouse gases attributable to the extraction and production of commodities used by District residents, including natural gas, in a BCA framework. The inclusion of emissions for the extraction and production of natural gas would logically extend to the emissions related to the production of other generators and their fuel including wind, coal, oil, and solar generation. Pepco believes such an "upstream" calculation would be arbitrary because neither Pepco nor the Working Group members have information on the source of fuel for individual generators, the production methods for the generators' fuel, or existing greenhouse gas regulations that may affect the production and extraction of such materials or fuels. Finally, Pepco does not track, control or otherwise influence the greenhouse gases attributable to the production and extraction of natural gas and does not own any generation for the purposes of sales to customer.

[280] PJM notes that "Because of the various constraints involved, PJM cannot make any guarantees as to the accuracy of the information, and PJM does not support the use of this information by any party to demonstrate compliance with environmental mandates in any jurisdiction."
See https://dataminer2-train.pjm.com/feed/fivemin_marginal_emissions/definition

Working Group Majority Recommendation A.1.10: *The upstream methane emissions attributable to each unit of natural gas delivered to DC should be determined proportionate to the total emissions from the natural gas supply chain to DC. The same method should be applied to the share of electricity delivered to DC that is derived from gas-fired generation.*

Pepco: Greater clarity is needed for Pepco to determine whether it supports the proposed Working Group Majority Recommendation, "The upstream methane emissions attributable to each unit of natural gas delivered to DC should be determined proportionate to the total emissions from the natural gas supply chain to DC. The same method should be applied to the share of electricity delivered to DC that is derived from gas-fired generation." Pepco notes a specific definition of "upstream emissions" has not been presented for comment. Pepco supports the inclusion of distribution losses for both electricity and natural gas but does not support the inclusion of greenhouse gases attributable to the extraction and production of commodities used by District residents, including natural gas, in a BCA framework. The inclusion of emissions for the extraction and production of natural gas would logically extend to the emissions related to the production of other generators and their fuel including wind, coal, oil, and solar generation. Pepco believes such an "upstream" calculation would be arbitrary because neither Pepco nor the Working Group members have information on the source of fuel for individual generators, the production methods for the generators' fuel, or existing greenhouse gas regulations that may affect the production and extraction of such materials or fuels. Finally, Pepco does not track, control or otherwise influence the greenhouse gases attributable to the production and extraction of natural gas and does not own any generation for the purposes of sales to customer.

Working Group Majority Recommendation A.2.1: *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 N20 should be multiplied by the IPCC factors discussed in the next recommendation.

The social cost of other GHGs such as Methane and N_2O should be multiplied by the IPCC factors discussed in the next recommendation.

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.

The current 100-year IPCC values as per AR5 are:

Methane 28

N2O 265[281]

Pepco: Pepco disagrees with the overall proposed Working Group Majority Recommendation, but it agrees that estimates of the social cost of greenhouse gases should be backed by federally recognized science to meet the District's goals, and that the estimates from the Interagency Working Group on the Social Cost of Greenhouse Gases (2021 numbers) should be the basis.

The use of a well-vetted, rigorously developed societal cost of greenhouse gases (SC-GHGs) is important to a successful BCA. The selection of an unvetted or contested cost of greenhouse gas emissions may result in protracted litigated processes due to the potential impact of greenhouse gas emission costs on a program's approval and the potential for performance-based regulation that incentivizes utilities to achieve greenhouse gas reductions. The only well-vetted, rigorously developed estimates of the societal costs of greenhouse gases (SC-GHGs) that were identified by the working group are the federal SC-GHG values.

Pepco is open to the use of social cost of carbon, cost of methane, and cost of nitrous oxide values that are calculated using a discount rate lower than the utility's WACC due to the intergenerational effects of GHG pollutants, if the values are based on federal cost of GHG scientific record. Pepco notes the SC-GHG values provided by the United States Government's Interagency Working Group on Social Cost of Greenhouse Gases in 2021[282] are transparent, objective, and unbiased estimates of the damages that would result from emitting one additional ton of carbon dioxide, methane, or nitrous oxide into the atmosphere. The IWG developed its SC-GHG values through an academically rigorous, transparent, and peer-reviewed process, consolidating multiple models drawn from academic literature and running them over a range of standardized input scenarios. The resultant SC-GHG values have been used by the U.S. federal government and state governments[283] for benefit-cost analyses of significant regulations and other actions, such as energy-sector resource planning and valuation.

Given the complexities and the magnified possibility of bias in estimating the cost of greenhouse gas emissions, Pepco has significant concerns about proposals that are not based on the IWG estimates of the SC-GHGs. Pepco supports the use of the federal social cost of carbon, social cost

[281] https://www.ghgprotocol.org/sites/default/files/ghgp/Global-Warming-Potential-Values%20%28Feb%2016%202016%29_1.pdf
[282] Technical Support Document: Social Cost of Carbon, Methane, (whitehouse.gov).
[283] The IWG values are used in federal cost-benefit analysis and states such as California, New York, Illinois, Colorado, Minnesota, Nevada, and Washington. Canada also has adopted the social cost of greenhouse gases methodology. Valuing_Climate_Impacts.pdf (policyintegrity.org) and Social Cost of Carbon 101 (rff.org).

of methane, and social cost of nitrous oxide (N_2O). These values were updated in February 2021 and available in a Technical Support Document.[284]

Pepco supports continuing conversations with stakeholders regarding this topic.

Working Group Majority Recommendation A.3.1: *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.*

The associated GWP values should follow the DCSEU guidance until updated Federal values are available. Currently, the 100-year GWP value for methane should be 36 (based on its oxidized value as per EPA) and for N_2O*, it should be 298 based on the IPCC AR5.*

To avoid double-counting this impact, if the Social Costs of Methane and other GHGs already account for their respective GWP, then their GWP value can be taken as equivalent to CO_2*.*

Pepco: Pepco supports using federal regulatory values for societal costs of greenhouse gas emissions and, to the extent relevant, US EPA's GWP values to maintain consistency with other US GHG regulations and markets. These values should be updated as revised by EPA.

Working Group Majority Recommendation B.1.1: *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.*

Pepco: The proposed Working Group Majority Recommendation should be rejected, and a different approach should be adopted as described below. The fact that the Clean Energy Act Implementation Working Group was not able to reach agreement on many issues regarding a BCA methodology does not justify imposing the positions espoused in the "National Standard Practice Manual for Benefit-Cost Analysis of Distributed Energy Resources" ("NSPM").[285,286] This is

[284] *See* Technical Support Document: Social Cost of Carbon, Methane, (whitehouse.gov).

[285] "National Standard Practice Manual – For Benefit-Cost Analysis of Distributed Energy Resources," NESP, August 2020.

[286] After stakeholders were allowed to submit comments on the CEAIWG Report, the wording of this recommendation was changed from "The NSPM BCA Framework and process should be adopted…" to " The Commission should adopt a consistent Benefit-Cost Analytical Framework based on the guidance of the [NSPM]…" Pepco is unclear as to the intent of the word "guidance" in this rewording, recognizing that any acceptance of the NSPM's "guidance" through this recommendation should not indicate automatic adoption of any of the hard policy positions that are embedded in the NSPM, given the problems with the NSPM that Pepco has identified and the fact that the NSPM has

especially important because (1) the NSPM has been positioned as "policy-neutral," but it actually contains problematic hard policy positions that have not been recognized or adequately discussed, (2) the NSPM lacks sufficient clarity which could lead to follow-on issues regarding interpretation, (3) the NSPM is not customized for the District's policy commitments, and instead includes its own core principles, and (4) a more straightforward approach, that builds upon the progress to date by stakeholders and the Commission, and that is better aligned with the District's policy goals, can and should be adopted.

1. **The NSPM has been positioned as "policy-neutral," but it actually contains problematic hard policy positions that have not been recognized or adequately discussed.** Adoption of the NSPM for BCA development would effectively constitute acceptance of contentious positions without specifically addressing or evaluating the validity of those positions. The NSPM is a report authored in August 2020 by a group of consultants who explicitly represent or have represented a subset of working group stakeholders in Commission dockets pertaining to contentious BCA or BCA-related issues, including GRID2.0 in the instant docket.[287] The slide deck summarizing the NSPM, which was presented at the November 12, 2020 BCA Framework Committee Meeting states, "This manual matches and expands on much of what was found in the Synapse/OPC Value of Solar report."[288] This 2017 Synapse report was contentious,[289] and similarly Pepco has identified significant problems associated with the NSPM, as it explains in this response and in its responses to proposed Working Group Majority Recommendations B.1.2, B.1.4, and B.1.6.

   In its comments, GRID2.0 attempts to diffuse any concerns about issues with the NSPM's positions on BCA design and the NSPM's lack of clarity on BCA matters that may be left to interpretation by the NSPM's authors, by claiming that the NSPM's content is "policy-neutral." However, a closer look at the NSPM shows that its core principles are tied to hard policy positions. Pepco identifies some of these policy positions and other problems with the NSPM in its in its responses to proposed Working Group Majority Recommendations B.1.2, B.1.4, and B.1.6. As explained by Pepco, several of these policy positions are not adequately defined and do not appear appropriate for inclusion in a BCA based on a Societal Cost Test. As Pepco also explains, adoption of the NSPM's positions could cause the BCA to be distorted, leading to inefficient and costly decisions for the District's residents and businesses, and the advancement of policy goals could be replaced by contentious proceedings regarding underlying assumptions and assigned values.

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been characterized by certain parties during the CEAIWG process as "policy-neutral" in order to promote acceptance of the NSPM.

[287] The lead author of the NSPM is a consultant from Synapse Energy Economics, and this same consultant also co-authored a report entitled, "Distributed Solar in the District of Columbia, Policy Options, Potential, Value of Solar and Cost-Shifting" that was filed at the Commission by the OPC on May 19, 2017 in Formal Case No. 1130. Similarly, the NSPM was co-authored by Karl R. Rábago and coordinated by Julie Michals, both of whom represent GRID2.0 in the instant docket. (*GD-2019-04-M, In the Matter of the Implementation of the 2019 Clean Energy DC Omnibus Act Compliance Requirements ("GD-2019-04-M")*. Third Joint Metrics and BCA Framework Committee Meeting Minutes, Attachment No. 1, filed March 9, 2021).

[288] *GD-2019-04, In the Matter of the Implementation of the 2019 Clean Energy DC Omnibus Act Compliance Requirements ("GD-2019-04")*, BCA Framework Committee First Meeting Minutes Report at Attachment No. 3, filed November 23, 2020.

[289] Contentious issues associated with this report are described in *In the Matter of the Investigation into Modernizing the Energy Delivery System for Increased Sustainability*, Formal Case No. 1130, Comments of Potomac Electric Power Company on the Office of the People's Counsel Report on Distributed Solar in the District of Columbia (Jul. 12, 2017).

2. **The NSPM lacks sufficient clarity which could lead to follow-on issues regarding interpretation.** Adoption of the NSPM's guidance would likely raise unnecessary and contentious follow-on issues for the Commission to address because, as the NSPM notes, the NSPM does not offer an analytical framework that is sufficiently developed to evaluate proposals.[290] Instead, it includes only high-level positions on some issues and specific points in other areas, while deliberately leaving other issues open and addressing certain other issues without sufficient clarity.[291] If the Commission were to approve the proposal to adopt the NSPM guidance for BCA development, the lack of clarity in the NSPM, especially on contentious issues, would likely lead to questions regarding how to interpret vaguely-defined aspects of the NSPM to produce a workable BCA. Furthermore, included in the 300 pages that comprise the NSPM are positions that were not vetted in the working group sessions and that Pepco does not endorse.[292] Pepco objects to any proposal that would effectively delegate the authority of the Commission to decide on contentious issues to the interpretations of the consultants who authored the NSPM and who represent a certain subset of stakeholders in the instant docket.

3. **The NSPM is not customized for the District's policy commitments, and instead includes its own core principles.** The NSPM is also not customized for the District's policy commitments, and instead the NSPM contains its own explicit "core principles" (a.k.a. "NSPM BCA Principles") and associated positions. The NSPM presents its core principles as "the foundation for developing and applying cost-effectiveness tests for BCAs,"[293] and these principles drive the positions espoused in the NSPM. The NSPM's core principles were developed independently of the PowerPath DC Vision Statement and Guiding Principles that the Commission adopted for modernizing the District's energy delivery system,[294] which the Commission emphasized in the instant docket in the context of the analytical approach that it should take when considering the effects of a utility proposal on global climate change and the District's public policy commitments,[295] and which the Commission revised and approved as the PowerPath DC Vision Statement and Guiding Principles for the District of Columbia.[296]

4. **A more straightforward approach, that builds upon the progress to date by stakeholders and the Commission, and that is better aligned with the District's policy goals, can and should be adopted.** In its response to proposed Working Group Majority Recommendation B.1.10, Pepco proposes a different approach than adoption of the NSPM's guidance. Pepco's recommended approach is more straightforward, it builds upon the progress to date by stakeholders and the

[290] "National Standard Practice Manual – For Benefit-Cost Analysis of Distributed Energy Resources," NESP, August 2020, p. i.
[291] Pepco describes this in greater detail in its responses to proposed Working Group Majority Recommendation B.1.2 and proposed Working Group Majority Recommendation B.1.4.
[292] Pepco describes this in greater detail in its responses to proposed Working Group Majority Recommendation B.1.2 and proposed Working Group Majority Recommendation B.1.4.
[293] "National Standard Practice Manual – For Benefit-Cost Analysis of Distributed Energy Resources," NESP, August 2020, p. i.
[294] Formal Case No. 1130, In the Matter of the Investigation into Modernizing the Energy Delivery System for Increased Sustainability ("Formal Case No. 1130"), Order No. 19275, rel. February 14, 2018.
[295] GD2019-04-M, In the Matter of the Implementation of the 2019 Clean Energy DC Omnibus Act Compliance Requirements, Notice of Inquiry, November 25, 2019, pp. 1-2.
[296] Formal Case No. 1130, In the Matter of the Investigation into Modernizing the Energy Delivery System for Increased Sustainability, Order No. 20364, rel. June 5, 2020, p. 11, Appendix C.

Commission, and it is better aligned with the District's policy goals. Specifically, as described in more detail in Pepco's response to proposed Working Group Majority Recommendation B.1.10, Pepco recommends 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 recommends that either the LCS BCA Handbook or the Climate Solutions BCA (pertaining to FC1167) serve as the initial proposal for comment. Pepco also notes that the NSPM cannot serve as the initial proposed BCA methodology for comment, as the NSPM does not offer a BCA methodology with sufficient detail and clarity for application. Instead, it only includes high-level positions on some issues while leaving other issues open, and it lacks clarity and detail in certain important areas for comment. Under Pepco's proposal, stakeholders may refer to the NSPM or any other document to support their positions if they desire.

Notably, Pepco's recommended approach is similar to the approach used by the NYPSC to successfully develop New York's BCA methodology, which the Commission referenced in its Notice of Inquiry in the instant docket.[297] Specifically, the NYPSC Staff issued a "BCA Whitepaper" that proposed the specific benefit and cost components to be included in the BCA and described the methodologies to value those benefits and costs.[298] Parties then provided feedback on the BCA Whitepaper, and the NYPSC issued an order on the contested issues.[299]

For all these reasons, while the NSPM may be a potential informational resource when developing a BCA, neither the NSPM nor any of its claims should be endorsed without further deliberation and agreement. The NSPM is just one report that was presented at the working group meetings, and it has not been accepted by the Commission in any proceeding.

Other BCA frameworks that were presented during the working group meetings (*e.g.*, the LCS BCA Handbook) or that have been developed through a public stakeholder process involving multiple rounds of filed comments from a broad spectrum of organizations, institutions, utilities, and DER service providers (*e.g.*, the New York BCA methodology[300]) should also be considered as resources for BCA development. As noted by Staff at the August 30 meeting of the Working Group, there was not enough time allotted to compare different methodologies.[301]

There also is no merit to GRID2.0's suggestions that the LCS BCA Handbook does not represent a "systematic" approach. The LCS BCA Handbook is based on a framework and principles that pertain to the full spectrum of applications that are the subject of the instant docket. The LCS BCA Handbook was developed as part of Pepco's Distribution System Planning and Non-Wires Alternatives Process as approved by the Commission and it was designed to be consistent with the PowerPath Vision Statement

[297] GD2019-04-M, In the Matter of the Implementation of the 2019 Clean Energy DC Omnibus Act Compliance Requirements, Notice of Inquiry, November 25, 2019, p. 2.
[298] Proceeding on Motion of the Commission in Regard to Reforming the Energy Vision, Staff White Paper on Benefit-Cost Analysis in the Reforming Energy Vision Proceeding, Department of Public Service Staff, State of New York Public Service Commission Case 14-M-0101, July 1, 2015.
[299] Proceeding on Motion of the Commission in Regard to Reforming the Energy Vision, Order Establishing the Benefit Cost Analysis Framework, State of New York Public Service Commission Case 14-M-0101 (Jan. 21, 2016).
[300] Proceeding on Motion of the Commission in Regard to Reforming the Energy Vision, Order Establishing the Benefit Cost Analysis Framework, State of New York Public Service Commission, Case 14-M-0101 (Jan. 21, 2016).
[301] Reference to be inserted after meeting minutes are posted.

and Guiding Principles: Sustainable, Well-Planned, Safe & Reliable, Secure, Affordable, Interactive and Non-Discriminatory.[302] Moreover, in light of this Vision Statement and Guiding Principles, which the Commission referenced in its Notice of Inquiry in the instant docket,[303] Pepco identified and elaborated on the principles and framework for BCA development in the context of the analytical approach to take when considering the effects of a utility proposal on climate change and the District's policy commitments, which is the subject of the instant docket.[304] The PowerPath Vision Statement and Guiding Principles, and the principles and framework for BCA development that follow from them, served as a foundation for the development of the LCS BCA Handbook.

Further, GRID2.0's argument that the LCS BCA Handbook does not constitute an analytical framework is incorrect because the LCS BCA Handbook presents a BCA methodology in sufficient detail for its current usage, and the Commission has explicitly recognized that a BCA is itself an analytical framework for the purposes of the instant docket.[305]

Regardless, any criticism levied on the LCS BCA Handbook does not constitute justification of adoption of the NSPM, as the NSPM still suffers from the problems described above, which make it unfit for adoption.

Working Group Majority Recommendation B.1.2: *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 Forward-Looking, Long-term, Incremental Analyses, (6) Avoid Double-Counting Impacts, (7) Ensure Transparency, and (8) Conduct BCAs Separately from Rate Impact Analyses.*

Pepco: Pepco rejects the proposed Working Group Majority Recommendation, "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 Forward-Looking, Long-term, Incremental Analyses, (6) Avoid Double-Counting Impacts, (7) Ensure Transparency, and (8) Conduct BCAs Separately from Rate Impact Analyses."

Rather, Pepco supports the guiding principles and associated BCA framework guidance that it presented at length in its filed comments,[306] and it does not support substituting these principles with those espoused in

[302] *In the Matter of the Investigation into Modernizing the Energy Delivery System for Increased Sustainability*, Formal Case No. 1130, Order No. 20286 (Jan. 24, 2020) ("Order No. 20286"), pp. 2, 34, and Statement of Commissioner Richard Beverly.
[303] GD2019-04-M, In the Matter of the Implementation of the 2019 Clean Energy DC Omnibus Act Compliance Requirements, Notice of Inquiry, November 25, 2019, pp. 1-2.
[304] *In the Matter of the Implementation of the 2019 Energy DC Omnibus Act Compliance Requirements,* General Docket No. 2019-04-M, Comments in Response to the Notice of Inquiry, (Jan. 13, 2020) ("Pepco Notice of Inquiry Comments"), pp. 1, 7-17.
[305] GD2019-04-M, In the Matter of the Implementation of the 2019 Clean Energy DC Omnibus Act Compliance Requirements, Notice of Inquiry, November 25, 2019, p. 2.
[306] Pepco Notice of Inquiry Comments at 8-12.

the NSPM. Some of the NSPM's principles suffer from significant issues regarding lack of clarity and inappropriateness for the BCA that is the subject of the instant docket.

For example, the NSPM's first principle reads, "Treat DERs as a Utility System Resource." According to the NSPM, this principle is supported by the claim, "DERs are resources that can be used to defer or avoid spending on traditional utility distribution, transmission, and/or generation resources."[307] Yet, the reliability of a DER in serving as a utility system resource in this manner depends upon the control that the system operator has over the DER, and there is no such control assumed in the NSPM. In addition, the NSPM states, "[t]his principle necessitates that the full range of utility system impacts serve as the foundation of a jurisdiction's primary cost-effectiveness test…"[308] However, unlike the benefits and costs in the LCS BCA Handbook, which are fully defined with valuation methodologies that are described in detail, several of the "utility system impacts" in the NSPM are not adequately defined and several do not appear appropriate for inclusion in a BCA based on a Societal Cost Test. Their inclusion could easily cause the BCA results to be distorted, leading to inefficient and costly decisions for the District's residents and businesses. For example, in its filed comments in the instant docket, Pepco identified the inappropriateness of including "Avoided RPS Compliance" in a BCA based on the Societal Cost Test.[309] The NSPM's "RPS/CES Compliance" appears to be effectively the same category. Similarly, the "Environmental Compliance" category may double count the "GHG Emissions" and "Other Environmental Impacts" categories. As another example, in filed comments in response to the Office of People's Counsel's report on distributed solar,[310] Pepco identified the inappropriateness of treating the type of wholesale price impacts that appear to be characterized by the "Market Price Effects" category. Specifically, resources should be evaluated based on whether they lead to an overall system cost reduction accounting for all stakeholders, not just a reduction in a subset of the costs or the cost to a subset of stakeholders. Also, while "Financial Incentives" and "Utility Performance Incentives" may be tools to align outcomes with policy goals, it may not be appropriate to treat their monetary values as benefits or costs in a BCA based on the Societal Cost Test because they may simply reflect a transfer of monetary value between parties to achieve the desired outcome with its benefits and costs captured elsewhere in the BCA. Other purported impacts such as "Credit and Collection" and "Risk" are especially vague, without sufficient detail to opine on whether they should be included. More information about the details and quantification of the suggested perceived benefits and costs is necessary to make appropriate decisions about whether or to what degree a given benefit or cost belongs in a Societal Cost Test, including in the context of all of the proposed benefits and costs.

In addition, the NSPM describes its fourth principle ("Account for relevant, material impacts") as follows: "Cost-effectiveness tests should include all relevant (according to applicable policy goals), material impacts including those that are difficult to quantify or monetize." Pepco is concerned about potential issues that could arise from an application of this principle, as it may directly contradict Pepco's stated principle: "Proposed benefits that…are overly speculative and unduly subject to bias should not be included in the BCA calculations." Indeed, proposed benefit categories that are quantified based on an overly speculative assessment could cause the BCA to

[307] "National Standard Practice Manual – For Benefit-Cost Analysis of Distributed Energy Resources," NESP, August 2020, p. 2-4.
[308] "National Standard Practice Manual – For Benefit-Cost Analysis of Distributed Energy Resources," NESP, August 2020, p. 2-4.
[309] Pepco Notice of Inquiry Comments at 11.
[310] *In the Matter of the Investigation into Modernizing the Energy Delivery System for Increased Sustainability,* Formal Case No. 1130, Comments of Potomac Electric Power Company on the Office of the People's Counsel Report on Distributed Solar in the District of Columbia (Jul. 12, 2017) at 25.

be distorted, leading to inefficient and costly decisions for the District's residents and businesses, and the advancement of policy goals could be replaced by contentious proceedings regarding underlying assumptions and assigned values. The NSPM also advances a specific evaluation approach to ratepayer impacts that has not been discussed by the working group.

In the Background section, it is noted that GRID2.0 has claimed that the LCS BCA Handbook is not based on an overarching framework or principles. This claim is incorrect. The LCS BCA Handbook is based on a framework and principles that pertain to the full spectrum of applications that are the subject of the instant docket. The LCS BCA Handbook was developed as part of Pepco's Distribution System Planning and Non-Wires Alternatives Process as approved by the Commission and it was designed to be consistent with the PowerPath Vision Statement and Guiding Principles: Sustainable, Well-Planned, Safe & Reliable, Secure, Affordable, Interactive and Non-Discriminatory.[311] Moreover, in light of this Vision Statement and Guiding Principles, which the Commission referenced in its Notice of Inquiry in the instant docket,[312] Pepco identified and elaborated on the principles and framework for BCA development in the context of the analytical approach to take when considering the effects of a utility proposal on climate change and the District's policy commitments, which is the subject of the instant docket.[313] The PowerPath Vision Statement and Guiding Principles, and the principles and framework for BCA development that follow from them, served as a foundation for the development of the LCS BCA Handbook.

Working Group Majority Recommendation B.1.3: *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-making (see appendix C for an inventory of applicable policies); thus, the selected framework should be aligned with the goals of the Act and those other District policies.*

Pepco: Pepco agrees with the proposed Working Group Majority Recommendation, "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-making; thus, the selected framework should be aligned with the goals of the Act and those other District policies." Pepco notes, however, that a framework alone cannot ensure that goals are met. Rather, it can be aligned with goals.

Working Group Majority Recommendation B.1.4: *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*

[311] *In the Matter of the Investigation into Modernizing the Energy Delivery System for Increased Sustainability*, Formal Case No. 1130, Order No. 20286 (Jan. 24, 2020) ("Order No. 20286"), pp. 2, 34, and Statement of Commissioner Richard Beverly.
[312] GD2019-04-M, In the Matter of the Implementation of the 2019 Clean Energy DC Omnibus Act Compliance Requirements, Notice of Inquiry, November 25, 2019, pp. 1-2.
[313] *In the Matter of the Implementation of the 2019 Energy DC Omnibus Act Compliance Requirements,* General Docket No. 2019-04-M, Comments in Response to the Notice of Inquiry, (Jan. 13, 2020) ("Pepco Notice of Inquiry Comments"), pp. 1, 7-17.

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.

Pepco: This proposed Working Group Majority Recommendation should be rejected. Unlike the benefits and costs in the LCS BCA Handbook, which are fully defined with valuation methodologies that are described in detail, several of the "impacts" in this proposed Working Group Majority Recommendation, which are sourced from the NSPM, are not adequately defined, and several may not be appropriate for inclusion in a BCA based on a Societal Cost Test, which in turn could easily cause the BCA results to be distorted, leading to inefficient and costly decisions for the District's residents and businesses.

For example, in its filed comments in the instant docket, Pepco identified the inappropriateness of including "Avoided RPS Compliance" in a BCA based on the Societal Cost Test.[314] The NSPM's "RPS/CES Compliance" appears to be effectively the same category. Similarly, the "Environmental Compliance" category may double count the "GHG Emissions" and "Other Environmental Impacts" categories. As another example, in filed comments in response to the Office of People's Counsel's report on distributed solar,[315] Pepco identified the inappropriateness of treating the type of wholesale price impacts that appear to be characterized by the "Market Price Effects" category. Specifically, resources should be evaluated based on whether they lead to an overall system cost reduction accounting for all stakeholders, not just a reduction in a subset of the costs or the cost to a subset of stakeholders. Also, while "Financial Incentives" and "Utility Performance Incentives" may be tools to align outcomes with policy goals, it may not be appropriate to treat their monetary values as benefits or costs in a BCA based on the Societal Cost Test because they may simply reflect a transfer of monetary value between parties to achieve the desired outcome with its benefits and costs captured elsewhere in the BCA. Other purported impacts such as "Credit and Collection" and "Risk" are especially vague, without sufficient detail to opine on whether they should be included. Furthermore, in Pepco's comments on proposed Working Group Majority Recommendation B.1.6, Pepco identifies problems associated with that proposed Working Group Majority Recommendation's proposal to include impacts that are also proposed as "Host Customer Impacts" in this proposed Working Group Majority Recommendation. Pepco's comments in response to Stakeholder Comment B.1.6 also apply to this proposed Working Majority Group Recommendation. More information about the details and quantification of the suggested perceived benefits and costs is necessary to make

[314] Pepco Notice of Inquiry Comments at 11.
[315] *Formal Case No. 1130*, Comments of Potomac Electric Power Company on the Office of the People's Counsel Report on Distributed Solar in the District of Columbia at 25, filed July 12, 2017.

appropriate decisions about whether or to what degree a given benefit or cost belongs in a Societal Cost Test, including in the context of all of the proposed benefits and costs.

Pepco supports a BCA test that includes impacts that are well-vetted, transparent, market-based or federally/industry established, non-duplicative, and appropriate to the specific project, program, or application. The specific impacts should be clearly defined, transparently quantifiable, and neither speculative nor duplicative. Several of the impacts listed in the NSPM do not fit these criteria. While the NSPM may be a potential resource, the NSPM is just one report that was presented at the working group meetings. Pepco supports the LCS BCA Handbook and its benefit and cost categories as the basis for BCA development, especially given the fact that, unlike the NSPM's benefits and costs, the benefits and costs in the LCS BCA Handbook are clearly defined with valuation methodologies explained in sufficient detail. This includes the identification of appropriate benefit and cost components, as well as detailed descriptions of how to value these components. The LCS BCA Handbook is customized for the District of Columbia's unique service area and context, including the District's clean energy and climate goals.[316] The LCS BCA Handbook's Societal Cost Test includes the following benefits and costs: Avoided Generation Capacity Costs, Avoided Energy Costs, Avoided Ancillary Service Costs, Avoided PJM Transmission Investment and O&M Costs, Deferred Distribution and Subtransmission Investment and O&M Costs, Greenhouse Gas Emission Reductions, SO_2 and NO_X Emission Reductions, Incremental Reliability and Resiliency Benefits, LCS Costs, Administrative Costs, Incremental Distribution System Costs, and Implementation Risk Premiums (cost).[317]

Pepco also notes that New York utilities' BCA Handbooks, which are based on the New York Public Service Commission "Order Establishing the Benefit Cost Analysis Framework,"[318] may also be useful resources, as this Order outlines a model that has been developed through a public stakeholder process involving multiple rounds of filed comments from a broad spectrum of organizations, institutions, utilities, and DER service providers.[319]

Finally, Pepco notes that the "impacts to be included" from the NSPM SCT were never adequately discussed or vetted through the working group process, and that, per the NSPM Authors own comments in August 30 and 31, 2021 Working Group meetings, individual impacts should be vetted through a stakeholder process that considers jurisdictional goals.

Working Group Majority Recommendation B.1.5: *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.*

Pepco: Greater clarity is needed for Pepco to determine whether it supports the proposed Working Group Majority Recommendation, "Inclusion of temporal and locational impacts should be

[316] LCS BCA Handbook, p. 2.
[317] LCS BCA Handbook.
[318] Proceeding on Motion of the Commission in Regard to Reforming the Energy Vision, Order Establishing the Benefit Cost Analysis Framework, State of New York Public Service Commission Case 14-M-0101 (Jan. 21, 2016).
[319] Proceeding on Motion of the Commission in Regard to Reforming the Energy Vision, Order Establishing the Benefit Cost Analysis Framework, State of New York Public Service Commission Case 14-M-0101 (Jan. 21, 2016), p. 5.

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."

Pepco supports the incorporation into the BCA of reliable locational and temporal data that is likely to be material to the BCA result. However, this specific proposed Working Group Majority Recommendation is excessively open-ended. System conditions are dynamic, and there will be significant uncertainty in developing detailed locational values. Because of this uncertainty, Pepco recommends that locational values could be considered pending rigorous review. Further, the Company's DSP/NWA Process, whereby DER providers can be compensated if able to economically defer a utility-proposed solution, already provides an indication of value. Moreover, any value of DER is dependent on the value provided by the electric grid that serves it; therefore, value of DER must be evaluated against the value that the electric grid provides. Furthermore, while Pepco hopes that the PowerPath Pilot Projects that serve as the foundation for the "upcoming Value of DER Study" will provide useful learnings about temporal and locational impacts of DER, a finding about the expectations regarding those learnings would be premature and unnecessary.

Working Group Majority Recommendation B.1.6: *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.*

Pepco: The proposed Working Group Majority Recommendation, "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," should be rejected.

As explained in Pepco's filed comments in the instant docket, the BCA should reflect net welfare from a societal perspective, considering benefits and costs from the perspective of the District's policy goals and the associated impact on all relevant stakeholders rather than only the benefits and costs to a subset of affected parties.[320] Consequently, the Societal Cost Test should be the primary test. The "Benefit-to-Cost Analysis Handbook for Locational Constraint Solutions" ("LCS BCA Handbook"),[321] which was completed in October 2020 in accordance with Commission Order No. 20286,[322] and which provides the methodology in use by Pepco to evaluate third-party and utility solutions (including the use of DERs) for grid constraints, contains a detailed description of a Societal Cost Test BCA methodology applicable to the District.

In contrast, this proposed Working Group Majority Recommendation leaves more questions than answers, it is flawed, and it therefore it should not be adopted. Issues relate to both the ambiguity of the components listed in the proposed Working Group Majority Recommendation and the potential for these components to double count other components that may also be in the BCA.

[320] Pepco Notice of Inquiry Comments at 10.
[321] "Benefit-to-Cost Analysis Handbook for Locational Constraint Solutions," Pepco, October 1, 2020.
[322] *Formal Case No. 1130,* Order No. 20286.

For example, would the proposed Working Group Majority Recommendation's proposed inclusion of "Interconnection Fees" be additive to the system costs that these fees are designed to cover? If so, then this could constitute double counting. As another example, in what context is "Risk" for the host customer proposed to be included? Furthermore, there is no specificity as to the types of Low-Income Host Customer Non-Energy Impacts" to which the proposed Working Group Majority Recommendation refers. In addition, "host customer bill savings" could be driven by a number of factors that are captured separately in the BCA or that represent cross-subsidies rather than true overall societal benefits. Even the NSPM itself states, "Host Customer Bill Savings" should not be included in the cost-effectiveness tests used to determine which DERs warrant utility support on behalf of all utility customers. Host customer bill savings overlap significantly with utility system benefits, which are already accounted for in the utility system impacts in BCA tests. As such, including them in a BCA would double-count some of those impacts."[323]

Working Group Majority Recommendation B.1.7: *The BCA results will be calculated and presented in both benefit-cost ratio and net benefit form.*

Pepco: In order to eliminate confusion around concepts like "negative benefits" and "negative costs," Pepco recommends presenting the BCA results as net benefits rather than as a ratio. Not all streams are intuitively defined as clearly costs or benefits, and the results of the ratio approach are affected by the classification of the streams. For instance, where a project involves an emitting generator, the carbon emissions could be categorized as 1) a "negative benefit" or 2) a "cost." If a benefit-cost ratio is used, the two treatments are not mathematically equivalent. A "negative benefit" reduces the numerator of the ratio and a "cost" increases the denominator. If a new impact stream that could be considered a negative benefit or cost is added to the analysis, the net benefit stays the same, but the BCA ratio varies. For example, take a hypothetical BCA with benefits of $100 and costs of $100. If a new impact of $25 is treated as a negative benefit, then the BCA ratio is 0.75 (benefits are $100-$25 = $75, costs are $100, BCA ratio is $75/$100 = 0.75). If the new impact is treated instead as a positive "cost" then the benefit ratio is 0.8 (benefits are $100, costs are $100+$25 = $125, BCA ratio is $100/$125 =0.8). The net benefits are same regardless ($100 - $100 - $25 = -$25).

Working Group Majority Recommendation B.1.8: *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*

[323] "National Standard Practice Manual for Distributed Energy Resources," NESP, August 2020, p. 4-19.

mandates and associated policy commitments, taking into account recognized industry practices and techniques. The BCA should avoid double-counting impacts.

Pepco: Pepco only agrees with the second part of this proposed Working Group Majority Recommendation, "The BCA should avoid double-counting impacts," but (subject to greater clarity regarding specifics) it disagrees with the first part of the proposed Working Group Majority Recommendation, "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."

Regarding the first part of this proposed Working Group Majority Recommendation, proposed benefits and costs should not be included in the BCA calculations when quantification would be overly speculative. This focus on non-speculative calculations can mitigate future litigation and debate over the correct quantification of values.

The methodology outlined in the LCS BCA Handbook uses market-based data and appropriate extrapolation where practical. When market data is not available, widely vetted and widely accepted electric industry values are used. Values that are theoretical, overly speculative, poorly defined, or subject to bias are avoided.[324]

In its filed comments in the instant docket, Pepco argued that proposed benefits that have fundamental flaws or that are overly speculative and unduly subject to bias should not be included in the BCA calculations.[325] As an example, Pepco explained that significant problems have been identified with respect to proposals to treat "Macroeconomic Benefits" as a quantifiable benefit in certain contexts, such as the problems that were identified in a "Value of Solar" study in Maryland.[326] Pepco argued that proposed benefit categories that are quantified based on an overly speculative assessment 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.

In its "Order Establishing the Benefit Cost Analysis Framework," the New York Public Service Commission ("NYPSC") established the framework for New York utilities' BCAs for investments in distributed system platform capabilities, the procurement of distributed energy resources through competitive selection, the procurement of DER through tariffs, and energy efficiency programs.[327] This Order was issued in a proceeding that entailed a public stakeholder process involving multiple rounds of

[324] "Benefit-to-Cost Analysis Handbook for Locational Constraint Solutions," Pepco, October 1, 2020, p. 6.
[325] Pepco Notice of Inquiry Comments at 12-13.
[326] Joint Comments of Baltimore Gas and Electric Company, Potomac Electric Power Company, and Delmarva Power & Light Company on the Final Report Prepared by Daymark Energy Advisors Entitled Benefits and Costs of Utility Scale and Behind the Meter Solar Resources in Maryland, PC44 at 3-4 (Dec. 14, 2018). ML#223272.
[327] Proceeding on Motion of the Commission in Regard to Reforming the Energy Vision, Order Establishing the Benefit Cost Analysis Framework, State of New York Public Service Commission Case 14-M-0101 (Jan. 21, 2016), pp. 1-2.

filed comments from a broad spectrum of organizations, institutions, utilities, and DER service providers.[328] In its Order, the NYPSC rejected the inclusion of certain non-energy net benefits in the BCA framework, due to a lack of accurate valuation.[329] The NYPSC also rejected the adoption of a generalized adder to accommodate such net benefits, stating, "Such an adder would increase the price of electricity without necessarily resulting in value to ratepayers."[330]

Furthermore, Pepco agrees that valuations should avoid double counting. In its filed comments in the instant docket, Pepco argued the importance of avoiding double counting in the BCA.[331] Specifically, Pepco argued that the double counting of benefits distorts the true value of a given initiative, leading to decisions that waste precious resources and increase costs for District of Columbia customers, ultimately threatening the reliability, safety, and affordability of service as well as the achievement of climate goals. Moreover, the separate types of benefits included in the BCA must be mutually exclusive. All proposed benefits and/or their calculation methodologies must be scrutinized for aspects of double counting before they are included in the BCA.

Working Group Majority Recommendation B.1.9: *BCA submissions should include a technical appendix with modeling inputs and outputs for all scenarios examined.*

Pepco: Pepco believes 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.

Working Group Majority Recommendation B.1.10: *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 working group discussion and/or a rulemaking process, based on the Commission determination.*

Pepco: The proposed Working Group Majority Recommendation B.1.10, "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

[328] Proceeding on Motion of the Commission in Regard to Reforming the Energy Vision, Order Establishing the Benefit Cost Analysis Framework, State of New York Public Service Commission Case 14-M-0101 (Jan. 21, 2016), p. 5.
[329] Proceeding on Motion of the Commission in Regard to Reforming the Energy Vision, Order Establishing the Benefit Cost Analysis Framework, State of New York Public Service Commission Case 14-M-0101 (Jan. 21, 2016), p. 22.
[330] Proceeding on Motion of the Commission in Regard to Reforming the Energy Vision, Order Establishing the Benefit Cost Analysis Framework, State of New York Public Service Commission Case 14-M-0101 (Jan. 21, 2016), p. 22.
[331] Pepco Notice of Inquiry Comments at 11-12.

applied) as a starting point and modify that if there is a Working Group consensus. In Phase II, there will be additional working group discussion and/or a rulemaking process, based on the Commission determination," should be rejected.

This proposed Working Group Majority Recommendation was inserted after stakeholders were allowed to submit comments on the CEAIWG Report, leaving no opportunity to clarify within the working group exactly what is being proposed here or to discuss the merits of this proposed recommendation. The bullets below provide more detail regarding the lack of clarity and the problems associated with this proposed Working Group Majority Recommendation.

- The first statement of this proposed recommendation, "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," appears to simply restate a main purpose of the working group process.
- The second statement, "The NSPM guidance recommends a phased approach and applies to both electric and gas utility investments," appears to be an observation about the NSPM, an external 2020 report that is not customized for the District, that was presented in the working group meetings, and with which Pepco has identified significant problems for the purposes of the instant docket, as discussed in its responses to proposed Working Group Majority Recommendations B.1.1, B.1.2, B.1.4, and B.1.6. Pepco is concerned that the proposed Working Group Majority Recommendation here is in some way intended to advocate for some degree of adoption of the NSPM. Pepco refers to its responses to proposed Working Group Majority Recommendations B.1.1, B.1.2, B.1.4, and B.1.6 to explain why this would be problematic and inappropriate. Furthermore, in the B.1.10.1 Background section, text is included from E4theFuture and Rábago Energy, who were among the authors of the NSPM. This text contains a conceptual proposal regarding the approach to develop the BCA framework, a proposal that the "NSPM BCA Principles" in the NSPM be adopted, and some opinions that these parties have about secondary tests. Pepco is unclear to what extent the proposed Working Group Majority Recommendation here is intended to tie to these parties' proposals included in the "Background" section. In any case, the proposal to adopt the NSPM BCA Principles should be rejected, given the reasons that Pepco presents in its response to proposed Working Group Majority Recommendation B.1.2.
- The third statement of this proposed Working Group Majority Recommendation, "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," appears to recommend trying to apply the DCSEU cost-effectiveness test to evaluate the full scope of initiatives applicable to the instant docket, then modifying it over time if there is some unspecified level of consensus to do so among the current, or possibly future, working group stakeholders. This statement ignores the fact that this test is not designed for the full scope of initiatives applicable to the instant docket, and that this test contains elements that have been opposed in this docket or that have not been vetted or may not be appropriate for the BCA to be developed in this docket (e.g., discount rate assumption, source and values of estimates of the cost of greenhouse gases, Reduced Renewable Portfolio Standard Compliance Costs, Risk Adder, Non-Energy Benefits Adder, etc.).
- Finally, the last sentence of the proposed Working Group Majority Recommendation, "In Phase II, there will be additional working group discussion and/or a rulemaking process, based on the Commission determination," discusses a "Phase II" without clarity as to how it would be triggered or structured.

Pepco proposes a more straightforward approach, that builds upon the progress to date by stakeholders and the Commission, and that is better aligned with the District's policy goals. The Clean Energy Act Implementation Working Group has not been able to reach agreement on many issues regarding a BCA methodology. The lack of agreement does not justify effectively ignoring stakeholders' issues and instead granting a blanket approval of the positions expressed in a document (*i.e.*, the NSPM) that suffers from the problems described in Pepco's responses to proposed Working Group Majority Recommendations B.1.1, B.1.2, B.1.4, and B.1.6.

Instead, Pepco recommends that the working group process be renewed with a material improvement. Specifically, since the working group has not been able to address or develop a record regarding BCA design issues at a level that can provide for an executable BCA, Pepco advocates that the working group process be centered around a BCA methodology with sufficient detail and clarity for application that is offered as a proposal, allowing stakeholders to provide their positions and recommended changes to this detailed BCA methodology, if any. In this way, the working group process should result in a record of positions on matters at an executable level, rather than circling at a conceptual and undefined level, and the Commission should then be able to use the resultant record to decide on issues for which there is not agreement. To be clear, the proposed BCA methodology would not be deemed adopted up-front, but instead it would serve as a proposal for comment and proposed amendments, with the Commission deciding on the BCA methodology after stakeholders are provided the opportunity to comment. This approach is similar to the approach used by the NYPSC to successfully develop New York's BCA methodology, which the Commission referenced in its Notice of Inquiry in the instant docket.[332] Specifically, the NYPSC Staff issued a "BCA Whitepaper" that proposed the specific benefit and cost components to be included in the BCA and described the methodologies to value those benefits and costs.[333] Parties then provided feedback on the BCA Whitepaper, and the NYPSC issued an order on the contested issues.[334]

Under this approach, the NSPM cannot serve as the initial proposed BCA methodology for comment. As described earlier, the NSPM does not offer a BCA methodology with sufficient detail and clarity for application. Instead, it only includes high-level positions on some issues while leaving other issues open, and it lacks clarity and detail in certain important areas for comment. While the NSPM does not provide a BCA methodology with sufficient completeness or clarity to be offered as the initial proposal for comment, stakeholders may refer to the NSPM or any other document to support their positions if they desire. However, any position taken from the NSPM that a party presents should be evaluated on its own merits, rather than prejudicing the NSPM as having any more validity than any other document presented during the working group sessions.

[332] GD2019-04-M, In the Matter of the Implementation of the 2019 Clean Energy DC Omnibus Act Compliance Requirements, Notice of Inquiry, November 25, 2019, p. 2.
[333] Proceeding on Motion of the Commission in Regard to Reforming the Energy Vision, Staff White Paper on Benefit-Cost Analysis in the Reforming Energy Vision Proceeding, Department of Public Service Staff, State of New York Public Service Commission Case 14-M-0101, July 1, 2015.
[334] Proceeding on Motion of the Commission in Regard to Reforming the Energy Vision, Order Establishing the Benefit Cost Analysis Framework, State of New York Public Service Commission Case 14-M-0101 (Jan. 21, 2016).

Pepco recommends that either the "Benefit-to-Cost Analysis Handbook for Locational Constraint Solutions" ("LCS BCA Handbook"), or the benefit-to-cost analysis methodology that Pepco will be using in its Full Analytical Filing for its Climate Solutions Plan in FC1167 ("Climate Solutions BCA"), serve as the initial proposal for comment.

- Pepco presented the LCS BCA Handbook at the November 12, 2020 BCA Framework Committee meeting.[335] The LCS BCA Handbook was completed in October 2020 in accordance with Order No. 20286.[336] The LCS BCA Handbook provides the methodology Pepco uses to evaluate third-party and utility solutions for grid constraints, it is designed for the evaluation of a variety of resources including DERs, and it directly addresses climate considerations, so it certainly can serve as the initial proposal for comment and evolution in the development of the analytical approach that should be taken when considering the effects of a utility proposal on global climate change and the District's public policy commitments, which is the subject of the instant docket.[337] The methodology outlined in the LCS BCA Handbook addresses the cost-effectiveness test, identification and valuation of benefit and cost streams, implementation of the BCA analysis, and specific calculations for benefit and cost streams.[338] The LCS BCA Handbook is customized for the District of Columbia's unique service area and context, including the PowerPath Vision Statement and Guiding Principles and the District's clean energy and climate goals.[339]
- The Climate Solutions BCA is being developed using the LCS BCA Handbook as a foundation, with adaptations based in part on feedback from the CEAIWG, to evaluate Pepco's Climate Solutions Plan. Pepco's Climate Solutions Plan is designed to advance the District's energy and climate goals. Greater detail regarding the requirements for this plan can be found in Commission Order Nos. 20754 and 21024 in FC1167. The ability to adapt the LCS BCA Handbook to develop the Climate Solutions BCA also provides clear evidence, despite suggestions made by GRID2.0 in B.1.1.3 or elsewhere, that the LCS BCA Handbook's application to certain types of projects or programs make the LCS BCA Handbook unable to serve as a foundation for the development of a BCA methodology for a wider range of applications, such as that related to the advancement of the District's energy and climate goals.

In sum, Pepco's recommended approach would build upon, and would not ignore or conflict with, the District's vision, principles, and progress achieved thus far in this and other Commission dockets. Pepco's recommended approach would help to ensure alignment with the District's policy goals, and it would use a BCA methodology with sufficient detail for actual application as a starting point for discussion, facilitating more structured discussions on BCA design and progress toward necessary decisions. At the same time, it would not preclude any party from referencing the NSPM if a party finds that document to be useful to support its positions.

Any criticism levied on the LCS BCA Handbook does not constitute justification of adoption of the NSPM, as the NSPM still suffers from the problems described above and in Pepco's response

[335] *GD-2019-04, In the Matter of the Implementation of the 2019 Clean Energy DC Omnibus Act Compliance Requirements ("GD-2019-04")*, BCA Framework Committee First Meeting Minutes Report at 4, filed November 23, 2020.
[336] *In the Matter of the Investigation into Modernizing the Energy Delivery System for Increased Sustainability*, Formal Case No. 1130, Order No. 20286 (Jan. 24, 2020) ("Order No. 20286").
[337] GD2019-04-M, In the Matter of the Implementation of the 2019 Clean Energy DC Omnibus Act Compliance Requirements, Notice of Inquiry, November 25, 2019, p. 1.
[338] "Benefit-to-Cost Analysis Handbook for Locational Constraint Solutions," Pepco, October 1, 2020, p. 2.
[339] "Benefit-to-Cost Analysis Handbook for Locational Constraint Solutions," Pepco, October 1, 2020, p. 2.

to proposed Working Group Majority Recommendation B.1.1. As described above in this response, because the working group has not been able to address or develop a record regarding BCA design issues at a level that can provide for an executable BCA, Pepco advocates that the working group process be centered around a BCA methodology with sufficient detail for application that is offered as a proposal, allowing stakeholders to provide their positions and recommended changes to this detailed BCA methodology, if any. In this way, the working group process should result in a record of positions on matters at an executable level, rather than circling at a conceptual and undefined level, and the Commission should then be able to use the resultant record to decide on issues for which there is not agreement. While the NSPM does not provide sufficient detail for application, the LCS BCA does, so it is suitable to serve as the proposed strawman BCA methodology for stakeholder comment in the next phase of this proceeding.

Finally, GRID2.0's alternative proposal should be rejected. Specifically, this proposal states, "The Commission should undertake a notice and comment rulemaking proceeding, based on the guidance provided by the 'National Standard Practice Manual for Benefit-Cost Analysis of Distributed Energy Resources' ('DER'), to establish a consistent Benefit-Cost Analytical Framework for DER; and this proceeding shall be framed and governed, in its structure, process and agenda, by a 'Strawman Framework' that incorporates the Recommendations developed by the Clean Energy Act Implementation Working Group and approved by the Commission and that takes into account the Working Group's work product." This proposal includes adoption of the recommendations included in the CEAIWG Report. Pepco has communicated its opposition, and supported its reasoning for its opposition, to several of these CEAIWG Report recommendations (including adoption of the NSPM) in Pepco's comments elsewhere in this report.

Working Group Majority Recommendation B.2.1: *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 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.

Pepco: Fundamentally, Pepco maintains that the BCA under development in this WG should be applied to utility programs proposed to meet the District's decarbonization goals such as those the

Company is proposing in its Climate Solutions Plan in FC1167, which will be subject to the Climate Solutions BCA that Pepco intends to file with the Commission in January of 2022. As described in the Company's filings in FC 1167, these programs include a broad array of programs developed to activate customers and other partners to decarbonize buildings, electrify transportation, and demonstrate new value DER options, amongst other programs. These programs are tied directly to the achievement of decarbonization goals within the District and reflect the District's approach to decarbonization discussed across numerous policy reports and reflected in legislation. However, in Pepco's view the Company's investments in Customer and Reliability-Driven work are largely neutral to the District's climate goals and should not be subject to a climate BCA. Pepco's position is aligned with the Commission's stated goals for this proceeding in Order No. 20754 "in GD2019-04-M, the Commission is: (1) establishing the framework for measurement and metrics for GHG and CO2 equivalents; *(2) setting the framework for the benefit/cost analysis regarding utility climate change projects*; and (3) establishing reporting requirements regarding GHG reductions and performance."[340]

Because Reliability-driven projects—projects identified to maintain the distribution system's ability to deliver energy to customers—are required for the Company to provide safe and reliable service to customers and are often needed immediately, a BCA is inappropriate for these projects. The requirement to complete a BCA for reliability work could delay needed investments and result in unreliable service for customers, conflicting with Commission requirements to maintain reliability standards and conflicting with the Company's core commitment to reliable service for customers. Instead, the Company uses competitive procurement for identified components of these projects in order to minimize costs to customers. Further, the District's decarbonization- and electrification-based goals rely on customers continuing to receive high reliability levels of service. Thus, no BCA for these investments is appropriate or necessary.

For Customer-Driven investments—which are the result of customer service needs, such as interconnection requests, installation of meters for new customers, and District Department of Transportation requests for utility service to be moved to accommodate road construction—the Company has no alternative but to fulfill the customer request under its obligations as the jurisdictional utility. Thus, these projects are also inappropriate for BCA treatment.

The long lead times for Capacity-driven projects—projects identified to meet customer load growth—make them more appropriate for BCA treatment. The Company already applies a BCA to appropriate Capacity-driven as part of its Distribution System Planning for Non-Wires Alternatives (DSP/NWA) process, including the LCS BCA Handbook methodology for evaluating the cost-effectiveness of proposed solutions that may include a variety of storage, demand response, and other DER. The long lead times for these projects make them more appropriate for BCA treatment as part of the evaluation of alternatives because the Company has time to consider alternatives.

[340] *In the Matter of the Merger of AltaGas Ltd. And WGL Holdings, Inc. and Formal Case No. 1167, In the Matter of the Implementation of Electric and Gas Climate Change Proposals*, Formal Case No. 1167, Order No. 20754 (July 4, 2021) at P 52.

Working Group Majority Recommendation B.2.2: *The BCA Framework will use a SCT for screening all the programs or portfolio categories listed in Recommendation B.1.1. 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.

Pepco: The primary test should be the Societal Cost Test, as the BCA should reflect net welfare from a societal perspective, considering benefits and costs from the perspective of the District's policy goals and the associated impact on all relevant stakeholders rather than only the benefits and costs to a subset of affected parties. The sentence stating that "a shorter timeframe may be used to analyze the cost-effectiveness of storage resources" was added after all working group discussions and after all comments were complete. As a result, the working group never discussed timeframes regarding cost-effectiveness analyses for storage resources and would require discussions in a further phase of the working group in order to provide ample opportunity for the participants to understand what is being proposed and set forth their positions. Further, Pepco is unclear what is intended by the phrase "for screening all the programs." Furthermore, Pepco strongly disagrees with the recommendation to apply to electric-system planning, which was not discussed in this working group, and which the Company believes is beyond the scope of this working group. Finally, Pepco refers to its response to Recommendation B.2.1 above regarding the scope of application of a BCA to utility projects, and restates its position that the BCA should only apply to utility programs and projects which are designed to support the District's clean energy goals. Pepco's position is aligned with the Commission's stated goals for this proceeding in Order No. 20754 "in GD2019-04-M, the Commission is: (1) establishing the framework for measurement and metrics for GHG and CO2 equivalents; *(2) setting the framework for the benefit/cost analysis regarding utility climate change projects*; and (3) establishing reporting requirements regarding GHG reductions and performance."[341]

Due to differences in technologies and configurations, projects or programs may vary with respect to technical assumptions, quantifications of benefit or cost components, or which benefit or cost categories are relevant. However, a single applicable BCA should be able to assess a wide variety of project or program types if appropriately designed. It is critical that the BCA be based on the Societal Cost Test because the BCA should reflect net welfare from a societal perspective, considering benefits and costs from the perspective of the District's policy goals and the associated impact on all relevant stakeholders rather than only the benefits and costs to a subset of affected parties. An evaluation of a project or program from another perspective can also be performed for informational purposes.

[341] *Id.*

While the NSPM may offer potential benefit and cost categories that could be considered for inclusion in a Societal Cost Test, other information resources should be relied upon for consideration, such as the LCS BCA Handbook. The LCS BCA Handbook provides the methodology in use by Pepco to evaluate third-party and utility solutions (including the use of DERs) for grid constraints, and it was presented by Pepco at the November 12, 2020 BCA Framework Committee meeting.[342] Another useful information source is the New York Public Service Commission's ("NYPSC") established framework for New York utilities' BCAs for investments in distributed system platform capabilities, the procurement of distributed energy resources through competitive selection, the procurement of DER through tariffs, and energy efficiency programs.[343] The Order that outlines this framework was developed through a public stakeholder process involving multiple rounds of filed comments from a broad spectrum of organizations, institutions, utilities, and DER service providers.[344] Both the LCS BCA Handbook and the New York BCA framework employ a Societal Cost Test. Furthermore, the NSPM appears to be electric-utility focused and does not fully address a framework for programs applicable to natural gas utilities.

Pepco opposes DOEE's recommendation that the SCT apply to all utility business-as-usual programs and investments. More detail on Pepco's position on this matter can be found in its response to proposed Working Group Majority Recommendation B.2.1.

Pepco opposes recommendations to apply the NSPM's guidance. More detail on Pepco's position on this matter can be found in its responses to proposed Working Group Majority Recommendations B.1.1, B.1.2, B.1.1.4, B.1.1.6, and B.1.1.10.

Finally, the proposed Working Group Majority Recommendation here discusses the calculation of a "benefit/cost ratio." Proposed Working Group Majority Recommendation B.1.7 addresses the topic of whether the output of the BCA should be a ratio or whether it should be calculated differently. Pepco addresses this issue in its response to that proposed Working Group Majority Recommendation. Pepco's comments here are written in the context of the general output of the BCA, which may not be a ratio. Pepco's comments here should not be misconstrued to imply any agreement on the part of Pepco that the BCA output should be a ratio.

Working Group Majority Recommendation B.2.3: *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.*

Pepco: The primary test should be the Societal Cost Test, as the BCA should reflect net welfare from a societal perspective, considering benefits and costs from the perspective of the District's policy goals and the associated impact on all relevant stakeholders rather than only the benefits and costs to a subset of affected parties. While other information about a project or program may be useful for informational purposes on a situational basis, Pepco does not see a compelling reason

[342] *GD-2019-04*, BCA Framework Committee First Meeting Minutes Report at 4, filed November 23, 2020.
[343] Proceeding on Motion of the Commission in Regard to Reforming the Energy Vision, Order Establishing the Benefit Cost Analysis Framework, State of New York Public Service Commission Case 14-M-0101 (Jan. 21, 2016).
[344] Proceeding on Motion of the Commission in Regard to Reforming the Energy Vision, Order Establishing the Benefit Cost Analysis Framework, State of New York Public Service Commission Case 14-M-0101 (Jan. 21, 2016), p. 5.

to require that secondary test(s) be performed. Requiring such test(s) could increase administrative costs.

Working Group Majority Recommendation B.3.1: *For the Discount Rate for the BCA analysis for DER programs, projects, plans, procurements and pricing structures, the BCA should use a societal 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.*

Pepco: The proposed Working Group Majority Recommendation, "For the Discount Rate for the BCA analysis for DER programs, projects, plans, procurements and pricing structures, the BCA should use a societal 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," should be rejected.

The discount rate to be applied in the BCA generally should be the utility's WACC. 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. Furthermore, the WACC is a figure that is approved by the Commission and reflected in Commission-approved rates, and it is not a loosely defined concept like the "societal discount rate" which was also discussed during the Working Group sessions. While the WACC generally should be applied, a lower discount rate may be appropriate for the discounting of the future damages due to incremental greenhouse gas emissions (to the time at which the incremental emissions occur), given their intergenerational context, consistent with the United States Environmental Protection Agency Interagency Working Group's Social Cost of Carbon estimates.[345] This overall approach is consistent with the (societal cost test) BCA approach approved and applied in New York, and the approach that is employed in the District per the LCS BCA Handbook.[346]

Applying a lower discount rate in place of the WACC (aside from the discounting of the future damages due to incremental greenhouse gas emissions, given their intergenerational context, as described above) would tend to separate the assessment of certain value streams from the true costs that the utility's customers face. Furthermore, value streams with significant uncertainty such as the value of avoided energy over time would be discounted at a low rate that could be substantially different from a rate more commensurate with the risk associated with the value stream. This could result in materially inaccurate assessments of projects or programs, in turn leading to the adoption

[345] Interagency Working Group on Social Cost of Greenhouse Gases, United States Government. 2021. "Technical Support Document: Social Cost of Carbon, Methane, and Nitrous Oxide Interim Estimates under Executive Order 13990." https://www.whitehouse.gov/wp-content/uploads/2021/02/TechnicalSupportDocument_SocialCostofCarbonMethaneNitrousOxide.pdf.
[346] LCS BCA Handbook, pp. 8, 19.

of projects or programs that are costly for customers. Instead, the WACC generally should be applied, and a lower discount rate should be considered for the value stream associated with the future damages due to incremental greenhouse gas emissions (to the time at which the incremental emissions occur), given the intergenerational context of these damages, consistent with the United States Environmental Protection Agency Interagency Working Group's Social Cost of Carbon estimates. As noted earlier, this overall approach is consistent with the (societal cost test) BCA approach approved and applied in New York and the approach that is employed in the District per the LCS BCA Handbook.

A critical aspect of the BCA is the ability to objectively assess the tradeoffs associated with a project or program, and to determine how various projects and programs compare considering the complex interplay of the various policy goals. Consequently, modifying the BCA via the application of a biased low discount rate could distort the results of the BCA, undermine the purpose of the BCA to provide an objective assessment, and lead to the approval of projects or programs that are costly to customers (or conversely lead to the rejection of projects or programs that would be beneficial to customers).

Furthermore, the proposed Working Group Majority Recommendation's restriction of the use of the WACC to a secondary test should be rejected. As noted above, the discount rate to be applied in the BCA generally should be the utility's WACC, and the discussion above that supports this pertains to the primary, societal cost test of the BCA. Secondary tests are typically designed to have little or no direct bearing on decision making, and they are often only for informational purposes.

Finally, Pepco objects to any suggestion in the Background section that the utility's WACC is inappropriate for the Societal Cost Test. Much of this text in the Background section is copied directly from the NSPM, and therefore it reflects the views of the consultants who wrote the NSPM. Similarly, Pepco notes that a section of Appendix B of this report, which has been carved out for additional commentary from GRID2.0, entitled, "Considerations for Determining a Discount Rate," contains text and tables taken directly from the NSPM, and these reflect opinions and misleading assertions. For example, this section indicates that a discount rate less than or equal to 3% should be used throughout a BCA that reflects a societal perspective. This is based on the claim, in this section's tables, that "typical values" for this type of discount rate are less than or equal to 3%. However, there is no justification for this alleged range, and in fact this range conflicts with the U.S. Government's Office of Management and Budget's guidance on regulatory analysis, which provides for real discount rates that are generally between 3% and 7% in BCAs that are designed to maximize the net benefits to society. This purported range also conflicts with New York's BCA methodology, which has received significant attention and has been praised during the workshop process, which the Commission referenced in its Notice of Inquiry in the instant docket, which is designed to reflect a societal perspective, and which uses the utility WACC for its discount rate (with the exception of the discount rate for the calculation of the Social Cost of Carbon).

Working Group Majority Recommendation B.4.1: *Impacts that cannot be monetized should be accounted for quantitatively or qualitatively. Examples of non-monetary 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 hurricane. Examples of relevant qualitative impacts are geographic diversity of investment, improved distribution planning, resilience, and environmental impacts.*

Pepco: In its response to proposed Working Group Majority Recommendation B.1.8, Pepco states that attempts to monetize potential benefits and costs should not be made when quantification would be overly speculative. Attempts to quantify proposed benefit categories that are 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. In its response to proposed Working Group Majority Recommendation B.1.4, Pepco states that the BCA impacts to be included should be well-vetted, transparent, market-based or federally/industry established, non-duplicative, and appropriate to the specific project, program, or application. The specific impacts should be clearly defined, transparently quantifiable, and neither speculative nor duplicative. Examples listed in this Working Group Majority Recommendation may not meet this standard.

Working Group Majority Recommendation 5.1 and 5.2: *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.*

Equity should be addressed at the feeder level in an effort to account for distributional/geographical factors.

Pepco: While Pepco is strongly supportive of equity-focused projects and measures, it does not agree with the Working Group Majority Recommendation to consider equity as part of the BCA; rather, equity-focused projects should be exempt from the BCA altogether.

Social equity is a critical aspect of the transition to a cleaner energy system. Pepco is engaged in significant programs to advance social equity and environmental justice in the communities that it serves. Examples include Pepco's support for resiliency hubs such as the Jubilee Housing and the Ludlow-Taylor Elementary School.[347][348] Furthermore, Pepco has embedded social equity goals in its own internal operations. For example, Pepco and its employees have Diversity, Equity, and Inclusion (DEI) performance goals. Pepco believes that the most effective means by which to advance equity goals are to further deploy explicit equity-focused programs and initiatives, including making various system investments that are explicitly designed with an equity focus, and that such programs and initiatives should not be subject to a BCA. Furthermore, since there is no widely accepted methodology to determine the monetary value of the various types of social

[347] *See* https://www.pepco.com/News/Pages/Press%20Releases/PepcoGrantSupportsInnovativeHousingPilotResiliencyProgram.aspx.

[348] *See* https://www.pepco.com/News/Pages/TenLocalProjectsReceiveNearly$125,000inFundingforOpenSpaceandResiliencyThroughNewPepcoProgram.aspx.

equity, attempting to include a monetary value for social equity in the BCA for projects and programs that do not have an explicit equity focus could easily result in distorted BCA results, leading to the approval of projects or programs that are unnecessary and entail excessive costs for customers.

Regarding the Recommendation that "Equity should be addressed at the feeder level," Pepco notes that customer data privacy issues may come into play at that granular a level, and instead recommends the areas served by a substation (the "substation zone") as an alternative that will provide both the geographic/distributional information sought as well as protect customer data.[349]

Finally, regarding the GRID2.0 proposal that "Within 30 days of Commission approval, a utility should report and file into a Commission-designated database/file the benefit-cost analysis estimating the cost-effectiveness of the utility's proposal that was reviewed and approved by the Commission," Pepco notes that without knowing what will be required for the benefit-cost analysis, and given the complexity of benefit-cost analyses, 30 days may be insufficient time for the Company to respond to the Commission with the level of detail being discussed in the instant docket.

Working Group Majority Recommendation B.6.1: *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. Regardless, it is recommended that reliability and resilience benefits must be demonstrated, not merely asserted.*

Pepco: Pepco notes that a methodology for measuring reliability and resilience issues was not discussed in the working group process. As Pepco states in its response to Working Group Majority Recommendation B.2.1, it is critical that Pepco, as the entity responsible for safe and reliable electric service, be provided sufficient flexibility to make the investments needed in a timely manner to serve customers safely and reliably, and to work toward the satisfaction of policy goals. Accordingly, 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. Requiring a full BCA for approval of necessary projects such as these could result in needless costs or hamper such necessary projects from being implemented in a timely manner, or from being implemented at all, threatening the utility's ability to satisfy its basic obligations to the residents and businesses that it serves. Consequently, only the incremental value of reliability and resilience in the BCA, between alternatives, or between implementing a project or program without

[349] For a detailed explanation of District protections for customer data, see 34 D.C. Code Section 1507, 8 D.C. Code Section 1774.07, and 15 D.C.M.R. Section 308.

a primary reliability or resilience purpose and not implementing that project or program, is relevant to the BCA.

The incremental value of reliability and resilience, or of reliability and resilience in general, is truly difficult to quantify, it is not necessarily linearly proportional to outage duration, and it can vary significantly across types of electric utility customers due to their different uses of power and their needs. 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 has been accepted in the District. 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.

Further, the proposed Working Group Majority Recommendation here discusses the calculation of a "benefit/cost ratio." Proposed Working Group Majority Recommendation B.1.7 addresses the topic of whether the output of the BCA should be a ratio or whether it should be calculated differently. Pepco addresses this issue in its response to proposed Working Group Majority Recommendation B.1.7. Pepco's comments here are written in the context of the general output of the BCA, which may not be a ratio. Pepco's comments here should not be misconstrued to imply any agreement on the part of Pepco that the BCA output should be a ratio.

Finally, regarding the statement that "reliability and resilience benefits must be demonstrated, not merely asserted," Pepco notes that reliability benefits are not linear, and can vary depending on the nature of or source of stress on the system, and that as of now there is no accepted methodology for measuring resilience, so any measure would be speculative.

Working Group Majority Recommendation C.2.1: *The working group recommends the following practices for reporting and data production:*

- *Annual reporting to the PSC should include all relevant data that are reported to other agencies including EPA, EIA, DOEE, and MWCG, as well as data used in climate change BCAs submitted to the PSC.*
- *All data reported should be DC-specific (not utility-wide).*
- *To the extent feasible, data reported should be provided for geographies smaller than the district as a whole, for example, ward, quadrant, substation zone, or zip code within the boundaries of technical constraints, Critical Infrastructure Information security requirements, and customer data privacy requirements.*
- *Annual data should be submitted to the PSC by September 30 each year; proposal specific data should be submitted together with utility proposals.*
- *Written reports should include a spreadsheet appendix of all data and assumptions as well as GIS shapefiles (where applicable) relevant to the proceeding.*
- *All third-party suppliers should be required to submit sales and greenhouse gas emissions data for their customers in the District consistent with the approach used to provide utility data.*
- *The Commission should review all data submitted to ensure that comparable data are being presented by all parties.*

Pepco: Pepco expresses concern that data requirements should not be too broad and should be limited to data relevant to the District's Clean Energy goals. Pepco also points out it may not be possible or practicable to disaggregate all data below the District level. The Company cites critical infrastructure security, customer data protection, and technical requirements as constraints on data-sharing. However, Pepco is developing data it could share at the substation level to support equity analyses and plans on having additional Committee discussions to refine potential available data. Pepco further recommends reporting utility data for projects that support the District's Clean Energy goals and customer equity programs and is interested in stakeholder input for proposing these types of programs in FC 1167.

Pepco recommends utilities receive full and timely cost recovery for expenditures associated with the cost of data production required by these proceedings and to facilitate tracking of costs to customers associated with emissions reporting requirements.

Pepco opposes requiring data submission for every project reported in rate cases as unnecessary and in many cases unduly burdensome, resulting in additional costs to ratepayers for little identifiable benefit. Specifically, Pepco does not believe all projects should be assessed for greenhouse gases through a BCA process or that it is appropriate to conduct a BCA for system performance, reliability, equity, customer-driven, or safety projects.

Pepco opposes "reporting information on costs, emissions, and benefits in a reproducible way using detailed bottom-up accounting and via spreadsheet format for **all** utility proposals" [emphasis added] as unnecessary and in many cases unduly burdensome, resulting in additional costs to ratepayers for little identifiable benefit. Pepco does not believe all projects should be assessed for greenhouse gases through a BCA process or that it is appropriate to conduct a BCA for system performance, reliability, equity, customer-driven, or safety projects. However, Pepco supports "reporting information on costs, emissions, and benefits in a reproducible way" using detailed bottom-up accounting and via spreadsheet format for projects supporting the District's Clean Energy goals. Finally, Pepco notes that data reporting is constrained by limited Company resources and the need to balance data reporting and program implementation to support the District's Clean Energy goals.

Working Group Majority Recommendation C.4.1: *That Pepco (and, as appropriate, third-party electric suppliers) be required to report the following data on electric usage, generation and emissions citywide and by substation:*

- *customer electric use by customer type,*
- *in front-of-meter generation located within the District,*
- *excess generation (net metering) back to the grid with temporal data at a minimum hourly interval, and*
- *generation emissions from customer electric use with temporal data at a minimum hourly interval.*

Data should be sought from other sources regarding:

- *in front-of-meter generation located within the District, and*
- *behind-the-meter generation located within the District*

Pepco: Pepco notes that its system demand data and customer billing data are maintained in separate databases, therefore reporting this data by geographic locations would require extensive technology upgrades to the Company's database infrastructure, and any such upgrades would necessarily have to follow the current upgrades being made to Pepco's billing system. Pepco recommends this data only be reported in aggregate, if at all. Pepco further notes that data collection is constrained by limited utility resources and the need to balance data reporting and program implementation to support the District's Clean Energy goals. Finally, Pepco notes several alternative data reporting capabilities with respect to stakeholder recommendations:

- reporting peak load contribution by customer class instead of annual demand,
- reporting greenhouse gas emissions based on the PJM fuel mix, or
- reporting customer net energy metering at a PJM zonal level only. Pepco DC is already a sub-zone of PJM.

Pepco also explains that it does not have access to data on either behind-the-meter and in front-of-the-meter generation within the District, and that it cannot report excess customer behind-the-meter generation on a sub-zonal level.

Working Group Majority Recommendation C.5.1: *The Working Group also recommends the following reporting criteria after considering appropriate reporting requirements relevant to evaluating the effect of utility proposals on the District's contribution to global climate change and the District's public commitments under the CleanEnergy DC Omnibus Amendment Act of 2018:*

- *Utilities should report on customer progress toward achieving the District's mandates, including with respect to Utility programs, projects, procurements, pricing structures and measures that impact the utility's customers and/or in which the customers participate.*

- *Customers and stakeholders should be kept informed of progress in meeting performance metrics, relevant energy and non-energy impacts (such as the non-energy benefits included in DSM assessment), customer impacts and bill savings, and impacts on special classes. Progress reporting should be accomplished via a web-based dashboard to provide regular progress updates with key metrics including number of participants, relevant programs, program expenditures, and projects completed.*

Reporting should include all information relevant to evaluating the utility proposal's impact on PowerPath DC Vision & Guiding Principles.

Pepco: As a general matter, Pepco supports reporting the progress toward achieving the District's goals and mandates. However, Pepco has concerns with the specific proposals offered here.

Pepco notes that the CEAIWG has not discussed performance metrics, the definitions of energy and non-energy impacts, customer impacts and bill savings, or impacts on special classes. Consequently, Pepco does not agree with this proposed Working Group Majority Recommendation. In addition, Pepco notes that the recommendation appears to assume the utility is responsible for its customers energy choices, including the District government's itself, which is inappropriate.

Finally, Pepco notes that PowerPath DC's Guiding Principles are not themselves metrics and were not intended to be, so more specificity is needed to assess the proposed Working Group's statement,

"Reporting should include all information relevant to evaluating the utility proposal's impact on PowerPath DC Vision & Guiding Principles."

C.6.1.2 Stakeholder Comments

Working Group Majority Recommendation: *DOEE provided the Reporting Requirements Committee with a detailed presentation clarifying the District's emissions reporting requirements, practices, and categorizations. Similarly, WGL provided detailed information on its inventory data and processes and also met with Committee members. The District's emissions reporting follows the well-established three-scope emissions system used in jurisdictions around the United States and the world:*

- ***Scope 1*** *emissions come from onsite activities (manufacturing, electric generation) occurring directly within the District.*
- ***Scope 2*** *emissions include indirect emissions that are created as a result of fuel or electric usage by residents, businesses, and governments within the District, and include "fugitive" emissions occurring upstream in the production of fuels and electricity used in the District.*
- ***Scope 3*** *emissions include embodied emissions associated with product and services used in the district.*

Pepco: Similarly, Pepco argues that it cannot track upstream emissions for similar reasons, namely that—as a distribution company—it cannot know the precise source of the electricity it sells. Pepco notes that data reporting is constrained by limited Company resources and the need to balance data reporting and program implementation to support the District's Clean Energy goals. Further, Pepco does not believe it is appropriate for the utility to be held responsible for upstream emissions it has no control over, such as the PJM fuel mix it acquires on the wholesale market to serve the District's SOS, and to the use of data which cannot be verified for accuracy. Finally, Pepco has committed to working with stakeholders to develop data products to address equity questions raised by OPC and is open to discussions of other utility data products to support the District's Clean Energy goals. Pepco is interested in stakeholder input for proposing these types of data and programs in FC 1167.

Pepco suggested changes to Conclusion Section:

IV. Conclusion

The CleanEnergy DC Omnibus Amendment of 2018 imposed on the Commission a critical regulatory role that requires the Commission and the utilities it regulates to account, in all cases, meaningful steps to achieve the District's energy and climate change commitments while ensuring affordable, reliable, and secure electric and natural gas distribution service for all customers. Specifically, Section 103 of the Act states:

> In supervising and regulating utility or energy companies, the Commission shall consider the public safety, the economy of the District, the conservation of natural resources, and

the preservation of environmental quality, including effects on global climate change and the District's public climate commitments.

As a direct result of its expanded role and responsibilities in addressing climate change, the Commission invited, through a Notice of Inquiry in this GD-2019-04-M proceeding, public comment and inputs on the "analytical approach" that the DCPSC should take to evaluate the effects of a utility proposal on global climate change and the District's public policy climate commitments. To undertake this charge to advance the District's bold targets and policy commitments for addressing climate change, the Commission also directed that this Working Group be convened.

In March 2020, the CEAIWG was convened to develop a set of recommendations to the Commission on a proposed analytical framework, consisting of underlying measurements, metrics, standards, a Benefit-Cost Analytical Framework and reporting requirements, to evaluate utility proposals for compliance with the Act. The Working Group formed three committees: the Metrics Committee, the Benefit-Cost Analysis Framework Committee, and the Reporting Requirements Committee. Together, these Committees developed recommendations after a series of WG meetings, two surveys, and multiple rounds of editing the report.

The work of the CEAIWG was focused on recommending an overall cohesive and systematic analytical approach to enable the DCPSC to address and assess, in an economically sound and consistent manner, regulated activities that it oversees which can result in climate impacts, whether associated with mitigation or adaptation. The Majority Recommendations in this report reflect the opinions of a majority of the Working Group's members regarding direction and ideas to develop practical and meaningful evaluation frameworks for assessing the climate change impacts of the activities regulated by the Commission.

Though the Working Group made progress toward developing an analytical framework, stakeholders agree there is a need for an extended process because the time constraints imposed on the CEAIWG did not allow for consensus on the Majority Recommendations or for the development of further guidance on the elements of the BCA framework. The members of the Working Group agree that additional time is required to discuss and finalize an executable, District-specific BCA framework. The Group could not reach consensus on what this extended process should entail. In other words, the Group could not agree whether the next step should be facilitated through rulemaking, another working group, or a combination of the two.

Therefore, as a final recommendation, the CEAIWG proposes the Commission approve a Phase II process, wherein a methodological approach is developed and approved by the Commission. This Phase II process should be framed and governed by the DCPSC's regulatory authorities, the Commission's charge under Section 103 of the CleanEnergy DC Omnibus Amendment Act (and related District climate change, clean energy and energy efficiency commitments and plans), and the Commission's directives in its Notice of Inquiry establishing the GD 2019-04-M docket.

The Phase II process should be centered around a "Strawman Framework" to facilitate productive discussion toward an actionable BCA for the District. Under this approach, the elements of the analytical framework would not be deemed adopted up-front, but instead the Strawman Framework would serve as a proposal for comment and proposed amendments, with the Commission deciding on nonconsensus issues after stakeholders provide their opinions on the Strawman Framework. This analytical framework can leverage the foundational work of the CEAIWG and further test the Majority Recommendations as the analytical framework develops. As part of the Phase II process, Pepco's BCA and other models could be considered in the development of a District-specific analytical framework. However, the Commission will need to determine the process by which Phase II will be executed.

Sierra Club Consensus or Non-Consensus Positions on the CEAIWG Final Draft Recommendations

GD-2019-04-M

November 8, 2021

Report	Sierra Club position	Consensus or Non-Consensus Position	Statement
I.	Support as written		
II.	Support as written		
III.A.1.1	Concur		
III.A.1.2	Concur	Consensus Position	Use second phase of process to examine by when information might become sufficiently available to allow for a quantitative assessment of air pollutants.
III.A.1.3	Concur		
III.A.1.4	Concur		Equity should include intergenerational equity considerations.
III.A.1.5	Do Not Concur	Non-Consensus Position	Offsets have fundamental problems with verifiability, additionality and durability. Singling out a few protocols creates the impression that these protocols may be able to solve some or all of these problems. They do not.
III.A.1.6	Concur		
III.A.1.7	Concur		In future, a marginal emissions factor for gas may need to be computed using the same principles as discussed for electricity if natural gas had more than just fracked methane in the gas supply system.
III.A.1.8			
III.A.1.9	Concur		
III.A.1.10	Concur		
III.A.2.1	Do Not Concur	Non-Consensus Position	The cost of carbon adopted for the District of Columbia should be consistent with limiting the rise of global warming to 1.5 degrees Celsius, as identified by IPCC's latest report. Relying on federal

			SCC or NYS's SCC is misguided because neither the federal government nor the State of NY have committed to achieving carbon neutrality by 2050. The federal government's carbon reduction pledge falls well below the amount that is needed to achieve carbon neutrality. Adopting a carbon price that is already known to be too low to achieve the targeted level of GHG reductions defeats the purpose of the framework, and it amounts to a plan to fail.
III.A.3.1	Do not concur	Non-Consensus Position	Sierra Club supports 20 GWP for methane .
III.B.1.1	Concur		
III.B.1.2	Concur		
III.B.1.3	Concur		
III.B.1.4	Concur		
III.B.1.5	Concur	Consensus Position	In a second phase, tools and methods for quantification could be inventoried/assessed; also, could consider tracking benefits in a second phase.
III.B.1.6	Concur		
III.B.1.7	Concur		
III.B.1.8	Concur		
III.B.1.9	Concur		
III.B.1.10	Concur	Consensus Position	Of the options set forth in the Recommendation, strong consideration should be given in the second phase to a hybrid rulemaking/working group process to ensure consistent application across use cases.
III.B.1.10.1	Concur	Consensus Position	Of the options presented in the Recommendation, strong consideration should be given to a hybrid rulemaking/working group process in a second phase to ensure consistent application across use cases.
III.B.2.1	Concur		
III.B.2.2	Concur		
III.B.2.3	Concur		

III.B.3.1	Concur	Consensus Position	Sierra Club strongly supports the using the intergenerational discount rate in the primary SCT between 1% - 2.5%.
III.B.4.1	Concur		
III.B.5.1	Concur		
III.B.5.2	Concur		
III.B.6.1	Concur	Consensus Position	In a second phase of the process, Sierra Club would like further focus on how resilience benefits may be demonstrated.
III.C.1	Concur		
III.C.2.1	Concur		
III.C.3.1	Concur	Consensus Position	A second phase of the process should require information on the number and location of gas leaks for integrated planning.
III.C.4.1	Concur	Consensus Position	A second phase of the process could examine the usefulness of reporting information by substation zone, for example to take into account in integrated planning.
III.C.5.1	Concur		
III.C.6.1	Concur		

GD2019-04-M - Washington Gas Non-Consensus Statement

I. INTRODUCTION

Washington Gas Light Company ("Washington Gas" or "Company") has been providing reliable energy service to the DC metro area for more than 170 years. The Company provides natural gas delivery and supply service to approximately 1.2 million customer meters system-wide, including approximately 164,000 residential and commercial customer meters in the District of Columbia. Approximately 97% of customers receive their critical peak winter energy heat through the Washington Gas system.

The Public Service Commission of the District of Columbia's ("Commission") enabling statute is provided in D.C. Code § 1–204.93:

> *There shall be a Public Service Commission whose function shall be to ensure that every public utility doing business within the District of Columbia is required to furnish service and facilities reasonably safe and adequate and, in all respects, just and reasonable. The charge made by any such public utility for any facility or services furnished, or rendered, or to be furnished or rendered, shall be reasonable, just, and nondiscriminatory. Every unjust or unreasonable or discriminating charge for such facility or service is prohibited and is hereby declared unlawful.*

This statutory mandate requires the Commission to ensure that the services provided by public utilities operating in the District of Columbia are safe and adequate and offered at just and reasonable rates.[350]

By the enactment of the CleanEnergy DC Omnibus Amendment Act of 2018 ("CleanEnergy Act")[351], the Commission has the added responsibility to take into consideration, *inter alia*, the effects of global

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[350] The CleanEnergy DC Omnibus Amendment Act of 2018 requires that the Commission, "in supervising and regulating utility or energy companies . . . shall consider the public safety, the economy of the District, the conservation of natural resources, and the preservation of environmental quality, including effects on global climate change and the District's public climate commitments." D.C. Code § 34-808.02. PowerPath DC also requires, however, that the District's modern energy delivery system must "be sustainable, well-planned, encourage distributed energy resources, and preserve the financial health of the energy distribution utilities in a manner that results in an energy delivery system that is safe and reliable, secure, affordable, interactive, and non-discriminatory." *Formal Case No. 1142*, Order No. 20634, at C-1 (June 5, 2020). To that end, the Commission also "has a duty to ensure that rates for distribution service are just and reasonable," and it must "balance the desire of customers to keep rates down with the need to ensure that utilities remain financially healthy, able to attract investors, and pay for needed infrastructure and development." *Id.* at C-3.

[351] The District aims to reduce overall greenhouse gas emissions 50% below 2006 levels by 2032 and 80% by 2050. It also seeks to reach carbon neutrality by 2050. To achieve these public policy commitments, and because the District's emissions are attributable to a variety of sectors, many of the District's more specific climate commitments target those sectors specifically, separate from the Commission's regulation of gas and electric utilities. *Compare In the Matter of the Implementation of the 2019 Clean Energy DC Omnibus Act Compliance Requirements*, GD 2019-04-M, Washington Gas Light Company's Comments at 4 (Jan. 13, 2020) (explaining D.C. emissions inventory across sectors) *with* D.C. Code § 8-1772.21(b)(1)(B) (requiring DOEE to develop green performance standards for all privately-owned businesses in the District that help the District achieve these commitments); *with id.* § 8-1172.22 (requiring the Department of General Services to reduce emissions generated by District government-owned buildings by 30% between 2021 and 2024); *with id.* § 50-741 (requiring public buses and other licensed vehicles operating in the District to be only zero-emissions vehicles by 2045).

climate change and the District of Columbia's climate commitments, in regulating public utilities and energy companies:

> *In supervising and regulating utility or energy companies, the Commission shall consider the public safety, the economy of the District, the conservation of natural resources, and the preservation of environmental quality, including effects on global climate change and the District's public climate commitments.*[352]

Washington Gas supports the District's public climate commitments in a manner that maintains affordable and reliable energy service. To be clear, however, the CleanEnergy Act does not impose upon the Commission a statutory mandate or legal obligation to adopt any specific District of Columbia climate policies or commitments. Rather, the law compels the Commission to take the District's climate commitments under consideration in its decision-making. These climate commitments, however, must be considered in the context of the Commission's legal obligation to ensure safe and adequate utility service at just and reasonable rates.

Many of the Working Group's positions in the Working Group Report (the "Report") wrongly suggest or assume that the Commission is free to disregard aspects of its statutory mandate because the CleanEnergy Act requires implementation of the District's current climate policies and recommendations, irrespective of their impact on the rest of the Commission's statutory obligations. Under the law, after considering the District's climate commitments, the Commission has the discretion—and in some cases the duty—to adopt only those climate policies that also fulfill its statutory duty to provide for safe and adequate utility service at just and reasonable rates. In developing a framework to evaluate utility climate proposals, the Commission must ensure that it is meeting all of its legal obligations as it continues its path towards decarbonization of the District of Columbia's energy delivery system.[353]

Most notably, the CleanEnergy Act does not impose a statutory mandate for the Commission to adopt any particular pathway to meeting the District's ambitious climate goals of a 50% reduction in greenhouse gas ("GHG") emissions by 2032 and carbon neutrality by 2050. Yet, in their comments in the Report, several of the participant advocates misrepresent this legislation as imposing an obligation on the Commission to achieve the District's climate goals through adoption of full electrification, without consideration of other pathways to decarbonization. Any analytical framework to evaluate utility climate proposals that is adopted by the Commission should be designed to ensure that alternative pathways to decarbonization are not hindered or eliminated as a result of a biased approach to evaluation of proposals that favors one pathway over another and without consideration of the Commission's legal mandate. The Commission should also ensure that such a framework is consistent with the PowerPath DC guiding principles for modernizing the energy delivery system.[354]

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[352] *D.C. Code § 34-808.02.*

[353] The Commission has recognized that, in seeking to "advance the District's climate goals by the utilities that it regulates," it must "still be[] consistent with [its] statutory mandates, Clean Energy DC, Climate Ready DC, and the *Formal Case No. 1130* PowerPath DC Revised Vision Statement's goal of ensuring safety, reliability, affordability, and consistency." *Formal Case No. 1142*, Order No. 20754 ¶ 45 (June 4, 2020).

[354] *See Formal Case No. 1142*, Order No. 20634, Appendix C (June 5, 2020) (updating the MEDSIS Vision Statement and Guiding Principles).

In its comments in this Working Group Report, Washington Gas has raised concerns about many of the "majority" recommendations and positions taken in the Report which, if adopted, would preclude a fair and reasonable assessment of utility climate proposals. Washington Gas has consistently recommended that a long-range, integrated, multi-sector approach to decarbonization will be necessary to appropriately consider utility climate proposals on a broader scale, rather than on a short-term, individual project basis as suggested in this Report. This approach would assess the cumulative long-term impact of these proposals on District of Columbia ratepayers, particularly with regard to cost and affordability, as well as the reliability and resilience of the energy delivery system. Otherwise, adoption of many of the "majority" positions taken in the Report will result in a benefit/cost analysis ("BCA") that favors individual projects that, in the short-term, may be cost-effective, without consideration of costs that will be borne by ratepayers in the long-term for electric infrastructure enhancements, customer appliance replacements and retrofits, and other costs required to meet the projected increased demand for electricity. Washington Gas's comments herein highlight many of the flaws and biases in the Report and recommend an alternative approach to evaluating utility climate proposals that satisfies the Commission's statutory obligations in a just and reasonable manner.

II. BACKGROUND AND OPENING COMMENTS

In November 2019, the Commission issued a Notice of Inquiry ("NOI") seeking public comment and inputs on the "analytical approach" that the Commission should take to evaluate the effects of a utility proposal on global climate change and the District's public policy climate commitments. The Working Group was convened with the expectation that it would inform the Commission in its development of three critical regulatory guidelines to enable the Commission to execute its expanded role in addressing climate change pursuant to the CleanEnergy DC Act, while remaining committed to the Guiding Principles of the PowerPath DC Vision Statement to provide citizens with a clean, affordable, reliable, secure and sustainable supply of energy.[355] The three regulatory guidelines will answer these questions:

(1) Analytical Framework - What evidence does the Commission require to assess a utility proposal that is designed to achieve climate goals?[356] Will a BCA or some other analytical framework provide the Commission with the insights it requires to assess a proposed program or collection of actions (e.g., a comprehensive utility climate business plan)?

(2) Measurement and Verification Metrics - How can the Commission assess the potential benefits of a proposal and then measure progress? What specific metrics should be tracked?

(3) Reporting Requirements - What reporting regimen should be adopted to communicate utility actions and outcomes and their contribution to overall progress toward the District's goals?

A lot of good work has preceded this effort. We are referring specifically to (1) the climate goals established by the District of Columbia to reduce greenhouse gas emissions by 50% by 2032 and to reach carbon neutrality by 2050, and (2) the "Vision and Guiding Principles" developed in the MEDSIS collaborative and subsequently adopted with modification in the PowerPath DC proceeding. By clarifying

[355] Natural gas service providers must "meet an adequate level of quality, reliability, and safety" in providing service to customers in the District. 15 DCMR § 3700.1.

[7] Any order by the Commission must be supported by substantial evidence in the record. See, e.g., Apartment and Office Building Association of Metropolitan Washington v. Public Service Commission, 203 A.3d 772, 777 (D.C. 2019).

the goals and the evaluation criteria, these two achievements established a solid foundation for an integrated regulatory framework that works together to produce cost efficient and effective climate plans. The current proceeding and FC1167 fill in important gaps so that utilities and other stakeholders understand where infrastructure investments and other decisions will be made and how they will be made.

The Working Group attempted to cover a lot of ground as evidenced by the length of the Working Group Report and by the depth of discussion on still to be developed arcane and complex issues. Where consensus was not achieved, the Report presents recommendations that reflect majority voting even where the majority does not capture the diversity of participants. This resulted in recommendations that gravitated toward a singular decarbonization pathway dominated by electrification. These recommendations may not align with either the Commission's mission and statutory mandate or with the PowerPath DC vision and guiding principles.

It is within this context that Washington Gas submits this non-consensus position, with the goal of providing a more balanced perspective to enable the Commission in developing analytical framework, measurement and verification metrics and reporting requirements for utility proposals. This approach does not inappropriately prejudice one climate action avenue over the others, while fulfilling its statutory mandate to ensure the District's utilities provide safe and adequate service with just and reasonable rates, thereby ensuring the District's customers have access to affordable, reliable, resilient and secure energy.

At a high level, Washington Gas has two concrete suggestions for the Commission and policy makers to consider.

- The first suggestion is that achieving the District's climate goals will require a long-range, integrated, multi-sector approach to decarbonization that evaluates significant[357] utility climate proposals on a broader scale, to assess the long-term, cumulative impact of these proposals on the District's energy demand and supply, and how that impacts the District's customers, particularly with regard to cost and affordability, as well as the resilience of the energy delivery system. If this wasn't clear before Winter Storm Uri, it is now.
- Our second suggestion is that the Commission leverage the collaborative effort that led to the Vision and Guiding Principles (included here as Appendix A) and apply the spirit and substance of those principles in evaluating every recommendation in the Report.

The Vision and Guiding Principles will help the Commission evaluate programs in a way that considers the potential vulnerabilities with, and adequacy of, the existing infrastructure of the energy delivery systems that would be needed to support the programs. This would take into account the adequacy of the electric transmission and distribution facilities, costs, and customer acceptance of building electrification.[358]

[357] A significant climate program is one with a material impact on energy supply and demand. As discussed, Washington Gas proposes a simpler, easier to administer BCA approach based on the DCSEU approach for climate programs with small or insignificant impacts on supply and demand.

[358] Current information on electric infrastructure requirements for major building electrification used in the DCSEU process is flawed and inadequate.

This is particularly relevant to ensure the resilience of the overall energy system during a transition period while building and transportation loads are decarbonized. Similarly, application of the Guiding Principles would recognize the critical safety and resiliency role that the gas infrastructure plays during periods of peak winter demand and during increasingly intense and variable weather events.

Washington Gas is committed to the communities we serve and to providing our customers with affordable, reliable, resilient, and safe energy service – consistent with the Vision and Guiding Principles. We incorporated these principles as we developed our Climate Business Plan ("CBP") which provides a fuel-neutral pathway to decarbonization in support of the District's public climate commitments to achieve 50% reduction in GHG emissions by 2032 and carbon neutrality by 2050.

On the following pages, we offer supplemental comments and solutions that enable the Commission to establish a regulatory framework to evaluate utility climate proposals that will support the District's climate goals and uphold the Commission's Vision and Guiding Principles. Please note that additional, more detailed descriptions of Washington Gas's positions and comments regarding the majority recommendations are found in the Appendix of the Report.

III. SUPPLEMENTAL COMMENTS

A. ANALYTICAL METHODS

C.7. The Role of the Climate Action BCA in Decision-Making:

1. A BCA, if designed and applied properly, will provide insights that contribute to the review of actions that are primarily intended to address climate change and/or decarbonization goals and are of sufficient scale to justify the effort to develop a BCA.
2. The BCA needs to take into account the proposal's long term, cumulative effect on energy demand and supply across all sectors of the economy, including electricity, gas and transportation sectors, taking into consideration not only quantifiable metrics but also qualitative factors that have a significant impact on energy reliability and resilience.
3. The BCA should calculate Societal Cost Test ("SCT") results under alternative scenarios and be supplemented by results of the Ratepayer Impact Measurement ("RIM") test.

The application of a full BCA should be particularly focused on those utility climate action proposals that have significant long-term implications on energy demand and supply across multiple sectors. For instance, some climate action proposals (e.g., electrification of building heating and cooling) will impact both the electric and gas sectors and will have long-term implications on the energy demand and supply in the District. Those are the type of climate actions that warrant the use of a full BCA to evaluate their effectiveness. Although the costs and benefits in the BCA analysis are estimates and reflect assumptions that may deviate from future values, a robust BCA can address these variables by incorporating scenario and sensitivity analyses and take into account cumulative investments over time rather than a single incremental investment made at a point in time.

In addition to considering the joint impacts of a climate action proposal across the electricity, natural gas, and transportation sectors, an effective BCA should use the SCT[359] to evaluate the proposal's cost effectiveness, to be supplemented by a RIM test as well as an assessment of hard-to-quantify factors (discussed in further detail in the next section), to reflect the importance of energy affordability, equity and resilience in considering climate actions and infrastructure planning.

Finally, as Washington Gas stated in its September 27, 2021 comments to OPC's Additional Recommendation, while a BCA is a useful tool to compare alternative climate action programs:

- a BCA should not be applied when evaluating an investment that is primarily intended to address a safety or reliability requirement, even if the investment yields secondary climate benefits;
- a rate case has well established rules, precedent, and legal standards and is not a BCA candidate;
- a BCA is not appropriate for application to pilot programs which may be needed to demonstrate and test new and emerging technologies for GHG reduction; and

[359] The Commission currently generally applies the SCT when requiring a program BCA. *See* NOI ¶ 4. The SCT accounts for the costs to society, particularly external costs and benefits, while also considering the costs and benefits to utilities and consumers.

- Actions, such as those that reduce GHG emissions and do not materially or significantly affect energy supply, demand, or cost, should not be delayed by the need to perform a full, complex BCA; rather in these cases a simplified BCA could be developed and applied. For expediency, a starting point could be the application of a streamlined version of the DC SEU BCA.

C.8. Hard-to-Quantify Outcomes:

4. The BCA decision-making process that applies to utility programs with the potential for material long-term impacts on supply and demand must reflect and evaluate hard-to-quantify or non-quantifiable considerations, particularly those that pertain to one or more of the Guiding Principles.
5. Resilience is a "whole energy system" outcome that must be reflected in all operating and infrastructure investment decisions.

The Guiding Principles, as presented in Appendix A, are: Sustainable (defined to include "social equity"), Well-Planned, Safe & Reliable, Secure (including physical and cyber resiliency), Affordable, Interactive, and Non-Discriminatory.[360]

Adherence to the guiding principles that relate to equity, affordability, and resilience can be challenging to quantify in a full BCA, yet they must be reflected in the evaluation of climate programs that are likely to require significant investment over time. Where possible in evaluating climate action proposals, Washington Gas proposes that an effort can and should be made to quantify all of these factors through a qualitative-based question and answer scoring guide that produces a weighted average scoring system for these hard-to-quantify factors that can then be combined with the quantitative considerations that BCAs are designed to measure.

Equity and affordability are among the most challenging outcomes to reflect in a BCA. Although the RIM test does not directly measure the impact of climate actions on affordability for lower-income families, it has to be an integral part of the analytical assessment for climate programs that may require significant investment. This is particularly important in the District as compared to other cities given its high proportion of customers that are low-resourced.

Similarly, the question of how best to measure and assess resiliency has not yet been fully resolved. There are many reasons for this including the lack of accepted metrics (in contrast to reliability where industry-wide metrics were adopted decades ago). Yet, as demonstrated by Winter Storm Uri, resilience is increasingly important to customers from safety, welfare, and cost perspectives. Most importantly, Winter Storm Uri demonstrated that resiliency is a "whole energy system" issue. It requires an integrated approach to planning, design, and operations between electricity and gas infrastructure inclusive of considerations relating to peak energy demand and the electrification of transportation.

Washington Gas's proposal to use a qualitative-based question and answer scoring guide to complement the quantitative assessment in a BCA, is a practical and sensible way to measure qualitative factors as part of a BCA framework so that these foundational principles of a modern energy delivery system are not omitted in the assessment of climate action proposals with the potential for significant impacts on energy supply and demand.

[360] *Formal Case No. 1142*, Order No. 20634, at C-1 (June 5, 2020).

C.9. Other Considerations:

6. The BCA must be transparent and reviewable with a clear line of sight from assumptions to results, including the consideration of non-quantifiable factors, especially for climate change programs with significant impacts on energy supply and demand.

A properly applied BCA provides transparency and reveals the impact of key assumptions on the results. The BCA is intended to inform decision-making. All key assumptions must be identified. Forecast assumptions that are subject to uncertainty or variation should be tested through scenario and sensitivity analyses and reported in the outcomes, including implications for decisions.

From the outset, it became clear that the NSPM BCA methodology was not acceptable to the diverse set of stakeholders, including Washington Gas and PEPCO. The District of Columbia Sustainable Energy Utility ("DCSEU") methodology that is currently used to evaluate energy efficiency programs is familiar to many stakeholders but has not been thoroughly vetted to apply broadly to significant climate proposals, contributing to the lack of agreement over its suitability.

The controversy surrounding various BCA methodologies is further exacerbated by the lack of clarity as to how the BCA will be used, and whether the BCA will be supplemented by other analyses or insights when needed to prudently and reasonably evaluate a particular infrastructure investment or climate action program.

7. Washington Gas recommends that a simplified BCA should be applied to implement climate solutions that will not have significant impacts on supply and demand.

For example, Washington Gas expects to file for approval an advanced leak detection ("ALD") program after assessing the findings of its ALD pilot. The ALD program would be designed to provide immediate GHG emission reduction benefits with little to no material or cumulative effect on energy supply or demand. The ALD program would be supported by an appropriate BCA submitted by the Company, incorporating findings from the ALD pilot, an assessment of the program relative to the PowerPath DC guiding principles and other information that may help the Commission reach a decision. Intervening stakeholders then could file comments on the overall approach, the BCA assumptions and methodology, and other factors that they believe the Commission should consider. The Commission's order in turn would provide guidance for future filings. Most importantly, meaningful progress can be made in the near-term toward addressing methane emissions.

8. The Social Cost of Carbon ("SCC") should be based on the U.S. Environmental Protection Agency ("EPA") value, as updated from time to time.

The federal SCC developed by EPA will provide BCA analyses with a solid and consistent foundation for decision-making, reflecting the scope, rigor, and resources devoted by the EPA to developing their value. As compared to any other option that has been proposed in this case, the federal SCC is anchored by more robust analyses and more extensive documentation. The decisions on SCC need to be based on transparent and comprehensive documentation to ensure that benefits exceed costs, and therefore, ensure cost recovery under current law.

Washington Gas opposes the stakeholders' recommendations to apply a novel District-specific calculation of SCC instead of the best available scientific assessment of the costs imposed on society from GHGs, as reflected in the EPA SCC.

The SCC is used as the basis for the Social Cost of other GHG – e.g., Methane – i.e., the Social Cost of Methane is a multiple of the SCC. The SCC equals the upper bound on the willingness to pay for incremental emission reductions. Any reduction activity costing less than the SCC is potentially economically viable. Any reduction that costs more is not. Hence, the SCC is the most critical parameter in evaluating decarbonization options.

The choice of an SCC can have large impacts on rates. For example, given that the District's most recent inventories reflect GHG emissions of approximately seven million tons, a SCC of $100/ton carbon results in the conclusion that it is worth paying up to approximately $700 million per year, or approximately $2,401 per household. While average costs might be lower, the willingness to pay needs to be considered in light of rates paid by customers and its overall impact including its effect on equity since it helps determine the average rates, the competitiveness of the District, and the amount of funds available for other priorities.

In the EPA's calculation of the SCC, society is appropriately defined as a global society given that GHG emissions have a global, not local effect. The SCC is measured as the discounted present value of benefits in that year and generally varies by year. Most estimates show the SCC increasing annually, over time. This is because studies such as the EPA study show impacts of climate change intensifying over time.

9. <u>The discount rate applied to calculate utility cost recovery should reflect the Utility's cost of capital.</u>

A BCA relies on a discount rate to convert future dollars into net present value dollars thereby comparing all options equally. The discount rate applies to benefits and costs. The choice of discount rate can have a significant impact on net present value dollars and on the results of the BCA. The stakeholders have adopted the use of two discount rates, one for the primary test (e.g., the SCT), and one for secondary tests (e.g., RIM). The majority view of the stakeholders is to apply a very low societal discount rate of 1.0 to 2.5 percent in the primary BCA test and the Weighted Average Cost of Capital ("WACC") for secondary tests. The WACC is the discount rate for utility-financed investments as determined in the last rate case. Washington Gas is concerned about this approach and believes more consideration should be given to the implications of not using the WACC. The Report's majority recommendation is based on inter-generational considerations that were not sufficiently considered and could result in current customers paying more than future customers.

10. <u>A blanket policy rejecting participation in offset, emission credits or emission allowance markets like the Regional Greenhouse Gas Initiative ("RGGI") would be premature and be inconsistent with the affordability and cost effectiveness principles.</u>

Acquiring carbon offsets or similar actions such as obtaining emission credits or buying traded emissions allowances are climate actions that could significantly reduce the cost of meeting the District's climate commitments and help to ensure feasibility and safety. Until the issuance of the November 1 draft, the majority of parties recommended rejecting the use of offsets and any related credits or market traded allowances. However, the Report excludes this

recommendation and indicates that the use of Offsets will be addressed in FC1167 and other pending cases.

Washington Gas disagrees with the arbitrary and capricious rejection of using carbon offsets and similar credits or allowance. A blanket policy prohibiting participation in offset markets that meet standards analogous to those established by RGGI would be potentially very costly. Both Maryland and Virginia participate in RGGI and recognize the importance of these approaches in achieving climate goals. Indeed, net neutrality goals contemplate the use of offsets to achieve the goals. In fact, the Commission should require Washington Gas to take advantage of offset transactions in circumstances where it is cost effective – irrespective of the location of carbon offsets, given that climate change is a global matter. Such an approach is in accordance with statutorily required consideration of affordability and safety.

Furthermore, an approach that failed to consider offsets and similar options also would undermine evaluations of cost effectiveness because it would ignore widely available, published data on the prices of these GHG reduction alternatives. Such an approach would be inconsistent with the flexibility afforded the electric sector which offsets use of fossil generation supplied by PJM with renewable energy credits. It also would be inconsistent with the recommendation to include upstream emissions because it offers no opportunity to reduce them – an opportunity that would otherwise exist through the use of offsets. DOEE's proposal to only use offsets in the case of electric sector emissions unfairly penalizes gas customers and does not recognize the key element of system-wide energy analysis. [361]

No BCA should be required to evaluate offset transactions; rather Washington Gas would acquire offsets when it was beneficial to customers (*i.e.*, the costs of offsets are lower than climate actions available to Washington Gas) by participating in a regulated market such as RGGI.[362] Although a BCA is not required to evaluate offset transactions, there is an obvious relationship between offsets established by a regulated market or other mechanisms and the cost of carbon assumption in BCAs that are applied to alternative actions that a utility can take to reduce carbon emissions.

For the reasons cited above, consistency among the electricity, gas, and transportation sectors in the treatment of carbon offsets and similar credits or allowance is critical to avoid distorted and inefficient decisions that serve only to "justify" pre-ordained outcomes.

11. Washington Gas supports the District's targets and opposes the establishment by the Commission of multiple interim targets that will heighten the risk of negative unintended consequences.

The majority of stakeholders recommend that the Commission adopt interim targets every three years beginning in 2022 even though it is the District's responsibility to propose interim targets. The District has not yet performed the analysis required to establish targets (e.g., reflecting feasibility, costs, affordability, risks, resiliency implications, etc.) In fact, the District's 2032 targets are not based on such an analysis. Interim targets would exacerbate this current

[361] Public Service Commission of the District of Columbia, First Metrics Committee Meeting Minutes, October 22, 2020 p. 3 and Attachment 3, https://edocket.dcpsc.org/apis/api/Filing/download?attachId=108886&guidFileName=144bbba9-8e27-441f-b974-de1744788038.pdf

[362] As described on their website, RGGI has established a certification process to ensure that "projects represent CO_2 emissions reductions or carbon sequestration that is real, additional, verifiable, enforceable, and permanent."

flaw and likely would lead to unintended, costly, and misdirected efforts by utilities to meet the targets.

B. METRICS AND VERIFICATION MEASURES

Metrics identify and define outcomes that can be objectively measured and influenced by policy and utility actions.

1. The BCA should rely on the methodology that the EPA has developed to convert GHG emissions to their CO2 equivalent values for purposes of quantifying emissions impacts in the BCA.

Washington Gas agrees that CO2, Methane ("CH4"), and Nitrogen Dioxide ("NO2") emissions, as GHGs, should be quantified with a monetary value assigned to each in the BCA and observes further that the NO2 emissions are likely to be trivial. However, with respect to methane ("CH4"), Washington Gas notes that the EPA applies the 100-year Global Warming Potential ("GWP") to determine the CO2 equivalent impacts. The EPA has arrived at its methodology through rigorous, thoroughly documented analyses that considers all of the relevant factors and the District should adopt this methodology for both validity and consistency reasons. In contrast with other stakeholders, Washington Gas supports the consistent application of the EPA's rigorous and science-based approaches to *both* the calculations of emission values and the SCC.

2. NOx, SOx and other non-GHG emissions (e.g., particulate matter) should not be incorporated in the BCA.

These emissions are not GHGs and have no known relationship to achievement of the District's climate commitments. These air pollutants are already regulated via complex regulatory and legal proceedings developed over decades. They should not be incorporated as part of the BCA. A decision to track non-GHGs for informational purposes only should consider whether they are already being tracked, and if not, the incremental costs of tracking them.

3. The natural gas, electricity, and transportation sectors must be treated in an equivalent manner with respect to incorporating upstream emissions in BCAs.

Including a value for upstream emissions would have significant impacts on BCA results and potentially on the cost burdens passed on to customers, including low- and moderate-income customers, to the extent that decisions to pursue actions and programs were informed by these results. If upstream emissions are to be included for natural gas distribution, then they must be accounted for in all sectors in order for alternative climate actions to be compared on a consistent basis. Under this approach, Washington Gas would consider emissions reductions from an increased supply portfolio reliance on certified natural gas and renewable natural gas.

4. Marginal emissions factors are the right inputs and must be used in the BCA.

The Report's majority recommendation to include year-by-year marginal emissions factors that account for long term impacts of electricity demand is theoretically correct.

However, the recommendation fails to adequately address how such factors will be developed. Furthermore, the current DCSEU approach that utilizes such factors for long-term analysis is simplistic, flawed, and undocumented and has been subject to multiple challenges. In order to develop accurate and transparent long-term emission factors, complex power sector modeling is required. It must account for: (i) the fact that in most circumstances the District's demand for power is directly met via fossil generating plants, (ii) the purchase of PJM RECS does not always fully offset the physical and direct emissions from operating fossil generators, and (iii) emissions calculations must account for and model power sector operations using generally accepted tools that account for differences between off-peak and on-peak electricity usage, and variation in locational operations. This complex modeling affects diverse GHG emissions and reduction decisions and should be considered within the context of a long-term, all sector, integrated planning approach to BCA. Although Washington Gas consistently encouraged the adoption of this approach, the CEAIWG chose not to address this recommendation. The adoption of the recommendation to use the unsubstantiated DCSEU long-term factors likely would create obstacles to implementation.

C. REPORTING REQUIREMENTS

Effective and efficient utility public reporting requirements are critical to measuring the contribution of utilities to achievement of the District's climate goals. Where possible, Commission reporting requirements should leverage data that is already being compiled and reported to other government entities, including the EPA, EIA, and DOEE. Washington Gas offers the following comments with respect to reporting requirements:

1. There are two distinct levels of reporting that are relevant for policy purposes.

The first is relatively high-level emissions data that helps policy makers address two important questions: (1) is the District on pace to meet its climate goals and if not, (2) where is further inquiry required in order to get the District back on track? This data should also be easy to access for all interested stakeholders, including the general public. The public will be interested in emissions results for the natural gas, electricity, and transportation industries with some further disaggregation within each sector.

The second level is more detailed data that helps the Commission and participants in regulatory proceedings answer the questions: (3) why a particular utility or program is not producing the expected climate-related results, and (4) what changes should be made to improve emissions outcomes? Much of this data will be defined in reporting requirements that are established when the Commission approves a climate activity or program. This data can be voluminous but should be readily accessible to stakeholders interested in the particular climate activity or program. It is not evident that any incremental data "reporting requirements" (or associated costs) are necessary to address climate issues. To the extent that additional requirements may be necessary, they should be established in the appropriate regulatory proceedings, not in this proceeding. The Commission can also take action to accord certain data confidential treatment to address security, privacy, or competitive concerns.

This two-path approach meets the needs of the general public and interested stakeholders in an effective and efficient manner.

2. Washington Gas recommends using available reporting wherever possible, including for upstream natural gas emissions and distribution system analysis, as more cost-effective and reliable.

Washington Gas questions whether it should be responsible for reporting upstream emissions from the gathering and production of natural gas until such time as the EPA requires reporting on this data using a common and consistently applied methodology for linking various production basins, and perhaps individual well pads, as well as gathering systems and pipelines to downstream usage. In fact, considerable progress needs to be made before any entity can generate reliable estimates of upstream emissions. However, Washington Gas has the ability to impact and intends to directly address the issue of upstream emissions by acquiring "certified gas" from suppliers that have committed to reducing fugitive emissions during their gas production and gathering processes. We will report volumes of certified gas and RNG as part of our gas purchase filings, to inform stakeholders of progress made in reducing the carbon intensity of the energy we deliver to our customers. This effort, in combination with new technology and other ongoing efforts, will improve the gas industry's ability to assess and report emissions.

With respect to fugitive emissions on Washington Gas's distribution system, these results are reported to EPA, the District of Columbia and other local and regional governmental entities. We are also launching an ALD pilot to test and verify emissions data collected by satellite technology. The results of the ALD pilot will inform the development of a program to enhance the identification and repair of pipe with high emission rates. The program will augment our existing inspection protocols and our risk-related pipeline replacement assessments.

Finally, Washington Gas supports the continued reliance on the 100-year value reporting protocol for methane emissions as used by the EPA.

IV. CONCLUSION

As noted at the outset, Washington Gas is committed to providing the communities and customers we serve with affordable, reliable, resilient, and safe energy service. We support an approach to decarbonization that evaluates utility climate proposals on a broader scale, to assess the long-term, cumulative impact of these proposals on the District's energy demand and supply across all sectors, and how that impacts the District's customers, particularly with regard to cost and affordability, as well as the resilience of the energy delivery system. Our comments and solutions set forth herein and the detailed description of our positions in the Appendix of the Report, endeavor to provide a more balanced perspective to enable the Commission to establish an effective, practical and unbiased regulatory framework to evaluate utility climate proposals that will achieve the District's climate goals while enabling the Commission to fulfill its statutory mandate to ensure the District's utilities provide safe and adequate service with just and reasonable rates. This will ensure the District's customers have affordable, reliable and secure supply of energy, now and into the future.

Appendix A to Washington Gas Non-Consensus Statement

PowerPath DC Vision Statement and Guiding Principles

THE POWERPATH DC VISION STATEMENT

The District of Columbia's modern energy delivery system must be sustainable, well-planned, encourage distributed energy resources, and preserve the financial health of the energy distribution utilities in a manner that results in an energy delivery system that is safe and reliable, secure, affordable, interactive, and non-discriminatory.

GUIDING PRINCIPLES

SUSTAINABLE: A sustainable energy delivery system will meet the energy needs of the present without compromising the ability of future generations to meet their own energy needs by focusing on the *triple bottom line*: environmental protection, economic growth, and social equality.

- **Environmental Protection:** Recognize the negative impact that energy usage and demand have on the environment and the human component of climate change. Protect the District's natural resources and assist the District Government in reaching its *Clean Energy DC*[363] goals by fostering the use of more efficient energy and renewable energy sources, Distributed Energy Resource ("DER") technologies, and controllable demand alternatives to reduce greenhouse gas (GHG) emissions and overall energy consumption.

[363] The District Government, through the Department of Energy and Environment, has established a "new climate and energy plan, with 55 actions in three major areas: Buildings, Energy Supply System, and Transportation." The Commission's work through PowerPath DC aims to help the District meet its goal to reduce District-wide energy use by 50% (relative to 2012 levels) by 2032. To meet these energy usage reduction targets, the District is focused on reducing GHG emissions by cutting energy use, increasing renewable energy penetration, and reducing the District's reliance on fossil fuels. https://doee.dc.gov/cleanenergydc

- **Economic Growth:** Foster economic growth in the District's energy markets by supporting innovation and making the District a desirable place for the industry to invest by: (1) removing regulatory barriers that prevent the deployment of DER technologies in the District; (2) engaging industry and community stakeholders in the regulatory reform process; (3) promoting the deployment of pilot programs that will yield lasting economic benefits to District ratepayers; and (4) encouraging innovative business models and the use of scalable financial solutions to reach grid modernization goals.

- **Social Equality:** Recognize the positive impact that energy usage has on the daily lives of District residents. Ensure that, to the extent economically and technically feasible, all District ratepayers have equal access to energy efficiency programs, other DER programs, and modernization technologies approved and implemented by the Commission, as well as access to the Commission's regulatory process. Strengthen community involvement in reaching environmental protection and economic growth goals related to modernizing the District's energy delivery systems by: (1) encouraging and approving programs that fully consider, engage, and benefit all District ratepayers, especially the most vulnerable populations; (2) encouraging continued utility and stakeholder investment in educational programs and community outreach initiatives that explain how ratepayers can reduce their energy consumption and use energy more efficiently, including the role of various energy sources, distributed generation (DG), and DERs; and (3) working with utilities and industry stakeholders to develop ways to reduce the soft costs related to the deployment of photovoltaic (PV) systems and DERs in the District.

WELL-PLANNED: With no large-scale generation in the District, the Commission must ensure that the distribution and transmission systems are strong and robust enough to withstand low probability, high impact events like storms, floods, and physical and cyber threats. To meet these needs, the District's modern energy delivery system must be developed in a strategic manner that is data-driven, incorporates advanced technologies, and is collaborative and open – allowing for consumer and stakeholder input. Therefore, utilities must:

- Develop detailed, data-driven Distribution and Integrated Resource Plans that, among other things: make infrastructure planning cost-effective; enable the optimal combination of DERs with traditional capital investment by exploring non-wires alternatives; comply with legislatively mandated deployment of DER in the District; permit rational participation of consumers and distribution service providers; and plan for, track, and monitor DER penetration rates on the grid.

SAFE & RELIABLE: The Commission will ensure that utilities meet and improve safety and reliability performance and that the increasing volume of DERs interconnecting to the District's grid does not negatively impact the safety or reliability of the energy delivery system by:

- Requiring the continued investment in prudent infrastructure improvements to the energy system, like Pepco's reliability investments and WGL's advance pipeline replacement program, so that the energy delivery system can meet the power needs of the District's current and future consumers.

- Reviewing and, where appropriate, updating the Commission's Electricity Quality of Service Standards (EQSS) and Natural Gas Quality of Service Standards (NGQSS) to ensure that the utilities are continually meeting and improving their safety and reliability performance.

- Updating and continually reviewing interconnection rules to facilitate the interconnection of DERs as well as all generation and storage options in a manner that does not compromise overall system safety and reliability.

- Where technically and economically feasible, encouraging the deployment of technologies that will not compromise system safety, will increase system reliability, and can accommodate two-way power flow like smart inverters, distributed automation, and sensors to better handle power fluctuations and outages.

- Enhancing data collection and real-time data sharing between utilities, third party suppliers, and stakeholders, like PJM, to increase system visibility, communication, and DER dispatchability, in a manner that increases the safety, reliability, and resiliency of the energy delivery system, and facilitates new product and service options for customers.

- Classifying DER and microgrid providers generating energy and serving more than one customer as subject to the Commission's authority thus enabling the Commission to protect District ratepayers, enforce the Consumer Bill of Rights (CBOR), and ensure the continued safe and reliable provision of energy service.

SECURE: The modern energy delivery system must be secure from both physical attacks to critical infrastructure components as well as from cybersecurity attacks that target energy information systems and private consumer information. Therefore, utilities and energy service providers must:

- Develop, utilize, and maintain robust physical and cybersecurity protections and risk management strategies that incorporate industry best practices like those established by the National Institute of Standards and Technology's (NIST) Framework for Improving Critical Infrastructure Cybersecurity.

- Ensure that the energy delivery system is resilient, uses modern grid security protocols, and is designed to resist, discourage, and rapidly recover from physical and cybersecurity attacks and system disruptions.

- Safeguard private and or confidential business data and consumer information from intentional or unintentional release or disclosure to untrusted environments.

AFFORDABLE: The Commission has a duty to ensure that rates for distribution service are just and reasonable. The Commission balances the desire of customers to keep rates down with the need to ensure that utilities remain financially healthy, able to attract investors, and pay for needed infrastructure maintenance and development. Balancing these interests, in the context of system modernization, becomes especially challenging when considering costly upgrades to the distribution system as well as potential ratepayer subsidization of costly renewable and DER technologies.

- The Commission recognizes that rapid technological change in the electric and natural gas industries increases the danger of "stranded assets" – capital investments that turn out

to be unneeded. For this reason, before making investments in large capital projects, utilities must thoroughly examine the feasibility of non-wires alternatives as solutions to meet the stated investment objective at the lowest overall life-cycle cost. Utilities must also undertake holistic planning approaches that fully examine technological options that can be deployed at a pace and scale that can meet policy objectives and customer expectations for continued system reliability and affordability.

- In the long-term, the Commission expects that, under fair interconnection procedures, DER's will be able to stand on their own in the competitive marketplace without subsidies from electric and natural gas distribution ratepayers. Therefore, benefits and costs of any proposals to use electric and natural gas distribution rates to compensate new DERs must be weighed carefully and considered in connection with the benefits and efficiencies such DER may bring to the distribution system.

- The Commission is committed to ensuring that ratepayers obtain maximum benefit from their over $90 million investment in Advanced Metering Infrastructure (AMI) by requiring the utility, to the extent economically and technically feasible, to maximize the use of AMI data in Distribution and Integrated Resource Planning, load forecasting, distribution system operations, and rate design as well as require activation of the Home Area Network[364] capabilities of the smart meters.

INTERACTIVE: As an increasing number of smaller scale and more localized resources come online the relationship between the energy distribution company, the consumer, and service providers will become increasingly complex and dynamic. New services will become available, energy and data will increasingly flow in multiple directions, and different types and scales of resources will enter the distribution system. A modern energy delivery system must become more interactive and flexible to accommodate these types of resources while maintaining system reliability and security. This interactivity is critical both in terms of managing the distribution system and in providing locational transparency and technical feasibility which will allow ratepayers, customer-generators, and DER providers to make informed energy choices. Therefore, the Commission:

- Recognizes the importance of the customer's ability to access and share energy data. Access to data empowers customers and third parties to utilize and develop new products and services. This includes activating the Home Area Network capability on customers' smart meters to realize additional benefits of existing AMI infrastructure and streamlining AMI data sharing through tools such as *Green Button Connect My Data* which can securely transfer AMI data to authorized third parties.

[364] A Home Area Network uses a low-power radio transmitter than can communicate with digital devices within the home to make use of energy consumption data from the smart meter.

- Emphasizes the importance of improving and expanding consumer and stakeholder access to publicly available data related to distribution system constraints and technical capacity. Providing public access to Geographic Information Systems (GIS) such as hosting capacity maps, restricted circuits, and installed and pending solar projects provides critical distribution system information to customer-generators, community renewable energy facility owners, and DER providers.

- Encourages the interaction and communication between DERs, the distribution system, and the macro grid and that technologies that provide value to the distribution system, such as smart inverters, should be prioritized over technologies that merely benefit individual customers.

NON-DISCRIMINATORY: Nondiscrimination in the operation of the District's energy infrastructure is integral to the Commission's mandate to supervise energy utilities in the District of Columbia. Furthermore, since the restructuring of the energy markets, the need for the Commission to ensure that energy utilities operate in a nondiscriminatory manner has proliferated. Nondiscrimination covers both the technical operation of and the rates and fees charged for utilizing and accessing the energy utility infrastructure. The Commission will ensure that the District's modern energy system is non-discriminatory, open to competition, and provides for customer choice in accordance with District law by:

- Affording DER providers with a low-cost and streamlined interconnection process to facilitate customer generation. Encouraging continuous improvement and development of initiatives, like Pepco's *Green Power Connection*, that facilitate DER interconnection and build off past experience to reduce or eliminate barriers so that DERs can compete on a level playing field with wholesale energy.

- Unlocking customer and system data held by the incumbent utility in a controlled manner so that customers, DER providers, and third-party suppliers can provide targeted offerings to meet system needs and better serve the needs of customers.

- Pursuing policies that are technology neutral in both system operations and rate structure so that rates remain just and reasonable.

- Achieving the maximum benefits of competition and encouraging stakeholders to bring forward proposals for the competitive provision of services now included in the regulated monopoly distribution services.

APPENDIX B

STAKEHOLDER COMMENTS ON MAJORITY RECOMMENDATIONS AND SURVEY QUESTIONS

(See DCPSC E-Docket System for filed comments by each individual stakeholder.)

A.1.1.3 Stakeholder Comments

Working Group Majority Recommendation:

iii. The following three GHGs should be quantified and monetized in the BCA framework: Carbon Dioxide (CO_2), Methane (CH_4), and Nitrous Oxide (N_2O).

iv. Two other GHGs — Hydrofluorocarbons (HFCs) and Sulfur hexafluoride (SF_6) — should be tracked, when applicable, but not quantified or monetized in the BCA at this time.

Survey Question for Stakeholder Comment: *The following GHGs should be included in the GHG evaluation framework: Carbon Dioxide (CO_2), Methane (CH_4), and Nitrous Oxide (N_2O). HFCs and SF_6 should be tracked but not be included in the BCA at this time.*

A. **OPC, DCSUN, DOEE, and Sierra Club**: Yes.

B. **GRID2.0**: Yes but an explanation of why HFCs and SF_6 are tracked but not included in BCA is necessary. If they are to be tracked but the data not used in BCA, a date needs to be specified when they will be re-evaluated for consideration.

C. **DCCA**: No HFCs and SF_6 should be included at this time. [DCCA is 'For' including the major pollutants but wants to broaden the scope.]

D. **PEPCO**: Pepco generally agrees with the proposed Working Group Majority Recommendation "i) The following three GHGs should be quantified and monetized in the BCA framework: Carbon Dioxide (CO_2), Methane (CH_4), and Nitrous Oxide (N_2O)," and generally agrees with the proposed Working Group Majority Recommendation "ii) Two other GHGs — Hydrofluorocarbons (HFCs) and Sulfur hexafluoride (SF_6) — should be tracked, when applicable, but not quantified or monetized in the BCA at this time," subject to further comment below.

   Pepco supports quantifying and monetizing the social costs of CO_2, CH_4, and N_2O as they are most relevant GHG emission streams associated with electric production and distribution, natural gas production and distribution, and transportation. Metrics should be applied when they are appropriate to the specific project, program, or application (e.g., electrification of transportation may have different considerations than energy efficiency) and should focus on well-defined areas such as pipeline or electrical losses and combustion emissions. Finally, only well-defined costs and benefits should be included and evaluated when appropriate. These three streams also have defined federal "social cost of" values which should be utilized at this time.

E. **WGL**: Yes, with modification. Some consideration should be made on prioritizing activities given large important issues to be addressed, as discussed elsewhere. For example, the N_2O emission rates are 0.00022/MMBtu from combustion. In any case, the key is that it be done consistently and using transparent, widely accepted and documented data to withstand legal challenge and ensure customers do not pay for activities that are not net beneficial.

In general, WGL seeks to inform the Commission that the 50% energy reduction goal was not a topic of discussion during the WG process, and stakeholders were not polled on this issue in circulated surveys. While energy efficiency and energy reduction are key priorities of both District utilities; neither has proposed such a steep reduction. Furthermore, there has been no discussion as to the feasibility of this goal, and no investigation of the reliability and resilience consequences of achieving the goal, especially during peak demand periods.

The Clean Energy DC Report acknowledges these concerns, stating "(d)uring the technical analysis undertaken for this Plan, the consultant team concluded that achieving all three goals in unison will prove exceptionally difficult, if not impossible."[365] Indeed, section 1.2 of Clean Energy DC states: "DOEE prioritized the GHG reduction target, one of the key Sustainable DC energy and climate goals, and chose actions that can significantly reduce GHGs, while reducing energy use and increasing renewable energy."[366]

Stakeholders also indicate that the goal is not clear, given that The Sustainable DC 2.0 defines the goal as 'by 2032, cut *per capita* energy use District-wide by 50%."[367]

It is important to note that no evidence has been presented that any major US city has successfully cut energy demand by 50% in an 11.5-year period in the absence of a major decrease in population and/or economic activity. Rather, as Sustainable DC 2.0 quantifies, the District population is projected to increase by 250,000 residents by 2032[368], not contract.

In any case, the goal must be defined (per capita or total), and determined to be feasible to implement. This is especially important because if the expected decrease in demand does not occur, or in fact peak demand increases, there could be a critical infrastructure shortage during peak demand periods. Increasingly variable weather will exacerbate any miscalculation. Recent events in Texas and California illustrate the catastrophic human and economic consequences of such circumstances. The location of the District as the nation's capital, with its concomitant national security issues, makes this an especially critical issue for evaluation.

F. **AOBA**: Supports tracking and monetizing the impact of CO_2, CH_4, and N_2O as this is what we believe the Clean Energy Act defines as the GHG to be tracked and mitigated, anything more seems outside of the scope of the legislation.

A.1.2.3 **Stakeholder Comments**

Working Group Majority Recommendation: *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: NOx, SO_2, and Particulate Matter (PM), with PM 2.5 noted separately.* [NOTE: NOx in this recommendation refers to Nitrogen Oxides other than N_2O which is a GHG.[369]]

Survey Question for Stakeholder Comment: *The following air pollutants (not GHG) should be tracked now for future inclusion in the Public Health portion of the BCA: NOx, SO_2, and Particulate Matter.*

A. **OPC, DCSUN, and DOEE**: Yes.

[365] DOEE, Clean Energy DC: The District of Columbia Climate and Energy Action Plan, page 8.
[366] IBID, page 8
[367] Government of the District of Columbia, Sustainable DC 2.0, page 35
[368] Government of the District of Columbia, Sustainable DC 2.0, page 13
[369] Nitrogen Oxides (NOx) can be of seven different types. https://www3.epa.gov/ttncatc1/dir1/fnoxdoc.pdf.

B. **GRID2.0**: Yes but PM2.5 should be distinguished – it is an important emission from diesel combustion.

C. **DCCA**: Yes, but with a separate specification for PM2.5.

D. **Sierra Club**: Yes, PM 2.5 should be specified in addition to total PM.

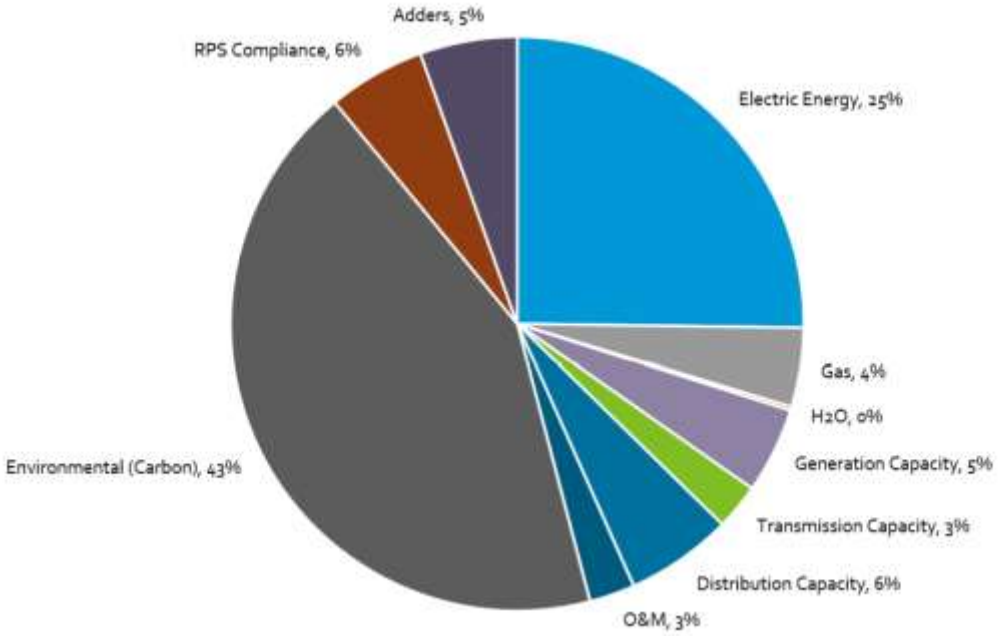
E. **WGL**: This issue has not been adequately discussed in the CEAIWG, [and WGL is] not sure why this is included in [the] survey at all. Non-GHG pollutants and particulate matter are already regulated.

   WGL points out that The Clean Air Act requires EPA to set National Ambient Air Quality Standards (NAAQS) for six common air pollutants (also known as "criteria air pollutants"). These pollutants include particulate matter, photochemical oxidants (including ozone), carbon monoxide, sulfur oxides, nitrogen oxides and lead. These pollutants are highly regulated. National standards are set and reviewed on a regular basis to account for the latest science. While these pollutants are found all over the U.S., their concentrations differ regionally which is why the EPA requires States and the District of Columbia to create state implementation plans (or "SIPs") tailored to their individual circumstances, which are complex as they relate to seasonality and location. Conversely, GHG emissions are a major global, largely unregulated environmental problem whereby they accumulate in the atmosphere over many years and have the same impact regardless of where on earth they are emitted.

   Setting targets for potential criteria pollutants, (which to date have not been identified in the report) is a redundant and potentially complicating effort. An example of the deleterious impact of complicating an already challenging topic appears to be that analogies are being incorrectly drawn between GHG and non-GHG pollutants regarding geographical issues. All non-GHG pollutants have localized impacts while scientifically GHGs have global impacts only. The global impacts of GHGs are not even mentioned.

   Also, the very large gap between the District's stringent GHG targets and those of nearly all other states is not mentioned, whereas for other pollutants there is national regulation and alignment. WGL supports the climate goals and believes it is important to be clear in the exposition. Another example of confusion is due in part to the failure to distinguish the potential impacts of very ambitious GHG targets and emission controls on other pollutants which have not had large impacts. Greater clarity may help avoid exacerbating impacts on affordability and reliability/resiliency. These concerns are not only mandated by law but also especially important given the very unequal income distribution in the District.

   WGL also believes such definitions and context must be defined within the body of the report. Failure to do so contributes to confusion between GHGs and criteria pollutants in the discussion. Also, the overriding importance of carbon/GHGs should be emphasized. In the NMR report to the CEAIWG on December 1, 2020, the carbon equivalent impacts were 9 times the impacts of all other adders (see below). Criteria pollutants are highly regulated and carbon is not. Criteria pollutants are much more complex because the precise timing and location of emission is important while GHG emissions have the same impact regardless of where on earth they are emitted.



F. Pepco: Pepco generally supports the tracking of NOx, SO_2, and Particulate Matter, but it does not agree with the proposed Working Group Majority Recommendation, "Apart from GHG, the following air pollutants should be tracked now for future inclusion in the Public Health portion of the BCA: NOx, SO_2, and Particulate Matter (PM), with PM 2.5 noted separately," because this proposed recommendation makes assertions about the application of the BCA that are problematic and unclear.

Pepco supports the inclusion of effects of incremental NOx, SO_2, and Particulate Matter emissions in the BCA when there are well-vetted, generally accepted means of quantifying these emissions and their costs, that meet the general criteria laid out for inclusion in BCA (*i.e.*, the values are well-vetted, transparent, market-based or federally/industry established, non-duplicative, and appropriate to the specific project, program, or application). For instance, the Company agrees with tracking Particulate Matter emissions and incorporating a value once quantified and officially determined by the U.S. EPA.

However, the proposed Working Group Majority Recommendation makes assertions about the application of the BCA that are problematic and unclear. As noted in the LCS BCA, because market values of NOx and SO_2 above EPA-determined thresholds are already incorporated into electricity prices through Clean Air Act regulations and associated emission trading programs, SO_2 and NOx emissions costs that are avoided by displacing other power generating resources should already be captured in the quantification of avoided energy costs in the BCA. However, the LCS BCA also notes that the EPA's programs only apply to electricity generators with a nameplate capacity greater than 25 MW. To the extent that an LCS incorporates generation resources that have capacities less than or equal to 25 MW, the cost of the SO_2 and NOx emissions from those generation resources may be included as a societal cost (effectively netting from the gross SO_2 and NOx emissions that are avoided by displacing other power generating resources) in the BCA. Furthermore, the "Public Health" section of the BCA referenced in the proposed Working Group Majority Recommendation

is not described or agreed upon, adding ambiguity to the proposed Working Group Majority Recommendation.

A.1.3.3 **Stakeholder Comments**

Working Group Majority Recommendation: *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.*

Survey Question for Stakeholder Comment: *What should be the geographic boundary to capture air pollutants?*

A. **WGL**: First, WGL points out that the survey question used to poll WG members does not correspond to the recommendation. The recommendation now addresses criteria pollutants which are not defined. The survey mentions only air pollutants. This has led WGL's conclusion that this issue has not been adequately discussed by the Working Group. WGL is also concerned that adding in non-GHGs such as criteria pollutants is creating confusion and complexity. These pollutants are reported and regulated.

The reader is never told that GHG impacts are global, and that no other pollutant discussed has a remotely comparable impact in terms of geography of emission. Moreover, the reader is not told that there is no comparable technology in use for emissions control of GHG and those of criteria pollutants.

WGL noted consistent and equitable treatment is necessary for all emissions / pollutants / particulates in terms of geographic boundaries. See other comments above and on offsets, and upstream emissions where geographic boundaries are involved. It is illogical to include emissions upstream in gas and not in power (or selectively, by possibly addressing methane but not emissions associated with the extraction of other fossil fuels that support power generation delivered to the District). It is even more illogical and arbitrary to include upstream emissions and not the offsets available for upstream emissions. This approach impairs affordability, and implementation feasibility. It is unreasonable as seen in later recommendations and other policies to: (i) exclude GHG offsets from adjacent cities and counties even though these counties are included in the geography for emission rates (2) allow offset or offset-like programs in power that facilitate affordability such as the RPS which allows for greater fossil generation in meeting the District's power needs in exchange for offsetting generation via purchases of PJM RECs. See our comments on the need to avoid discrimination against gas. The recommendations in this report often default to PJM which is electrical and not gas-supply related.

The recommendations ignore the second largest source of GHG emissions in the District, transportation. This occurs even though transportation intersects with power and utilities via electric vehicles with huge potential implications for peak demand. The WGL Climate Business Plan identified the electrification of passenger vehicles as among the most preferred GHG reductions. In opening this proceeding to criteria pollutants, it has made the recommendation process overly complex. For example, it is well known that criteria pollutant impacts are measured at exact locations for violations of ambient air quality standards, reflect the location of emissions from vehicles on a granular basis, and reflect 50 plus years of policy and law. GHGs have no nexus with this situation as impacts are not distinguished based on the emission location.

B. **OPC**: The District. District-located generation is limited to solar, biomass, and small natural-gas fired generation facilities, often with combined heat and power. It is unlikely to cause local air pollution outside of the city. OPC believes the District bears some responsibility for local air pollution of generators elsewhere in PJM, but it would be impossible to ascertain what share of emissions at what power plants. More generally, OPC recommends reporting of air pollutants at the Ward level to identify localized impacts of avoided pollution, including that of mobile sources.

C. **GRID2.0**: Air pollutants anywhere contribute to poor air quality everywhere. However, GRID2.0 believes there are several geographic boundaries that make sense for DC with respect to air quality contribution to human health. One is the SMA for compliance with the Clean Air Act. Another is the air shed from which DC receives prevailing weather during periods of poor air quality.

D. **DOEE**: Yes. DOEE noted, for NOx and SOx, the maximum geographic airshed boundary would be those states that contribute at least 1% to DC's ozone: IL, IN, KY, MD, MI, MO, NC, OH, PA, VA, WV. DOEE stated the minimum boundary would be 5% contribution: MD, OH, PA, VA, WV. DOEE notes this is all based on modeling from the Ozone Transport Commission/Mid-Atlantic Northeastern Visibility Union.370 DOEE noted, for direct PM, the boundary should be: DC, MD, VA.

E. **PEPCO**: The proposed Working Group Majority Recommendation is insufficiently clear for Pepco to take a position on it. However, Pepco believes that it is important that the full geographic scope of damages (some pollutants have global effects and others have more local effects) caused by incremental emissions from applicable resources be included in the BCA if they can be adequately quantified.

   For pollutants derived from the generation, transmission, and distribution of electricity, because Pepco acquires its electricity from the PJM markets, Pepco believes that the effects of incremental emissions from resources located in PJM should be included in the BCA if they can be adequately quantified. If a proposed program or initiative would affect incremental emissions from resources outside of PJM, then the effects of incremental emissions from those resources should also be considered. A more robust response to this proposed Working Group Majority Recommendation cannot be provided without the proposed Working Group Majority Recommendation providing greater specificity about the specific boundaries and application that it proposes for each type of pollutant

F. **DCCA**: DCCA defers to DOEE.

G. **DCSUN**: The geographic boundary should be the same region as the region used to determine the source of emission factors (whether that is NREL PJM-East, eGrid, or PJM-wide).

H. **AOBA**: Agree that this metric is skewed against gas with the limitation on offsets that are currently available for electric generation. AOBA feels a deeper dive discussion is warranted for this topic.

A.1.4.3 **Stakeholder Comments**

Working Group Majority Recommendation: *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.*

370 *Id.*

Survey Question for Stakeholder Comment: *Are there any other critical metrics that should be used as inputs to the BCA?*

A. **GRID2.0 and Sierra Club**: Yes, equity as identified through geographic regions of the District.

B. **DOEE**: DOEE supports the NSPM-DER framework.

C. **DCCA**: Yes (see comment and recommendation). Where there are localized benefits from GHG reduction measures (e.g., volt/VAR on specific circuitry) prioritize lower income groups where there is a locational choice.

D. **DCSUN**: Yes.

E. **WGL**: The issues of reliability and resiliency and affordability/equity have not been adequately addressed by the CEAIWG process, and a combination of quantitative and qualitative considerations may be required. WGL has proposed a scoring methodology for solving the limitations of quantification, a Q&A based rubric where quantitative measures and qualitative measures are both weighted in the evaluation. WGL made its recommendation in its January 2020 NOI comments but there has been no response and no discussion. WGL believes that a lack of consideration of reliability/resilience is contrary to the Commission's statutory mandate under DC Code § 1-204.93 to ensure that utilities furnish safe and adequate service and ensure that charges made by utilities are reasonable, just and non-discriminatory.[371] Resiliency and reliability can be assessed and addressed but have not been sufficiently considered within the CEAIWG deliberations. The process needs to assess quantitatively infrastructure costs of non-incremental changes in energy systems, programs and regulations. Part of this is consideration of changes in the values for incremental unserved electrical energy costs, scarcity values and costs, particularly due to the lack of resilience during the critical periods of winter energy delivery. ERCOT has demonstrated that these costs can be high – over 57 deaths – and in excess of $100 billion in insurance claims and other economic costs to date. ERCOT, like the District, is summer peaking but experienced an unexpected record winter peak and could not provide for public health and safety, particularly for the most vulnerable residents. ERCOT is subject to the same reliability regulation by FERC as PJM. While quantification can help, it cannot be the only tool given the unprecedented nature of "black swan" events that are predicted to be both more extreme and frequent, including hurricanes, nor'easters and thunderstorms.[372] This is also the case when unprecedented changes in winter and summer peak supply and demand may be required or occur. WGL emphasizes it is not Pepco directed but rather a generic concern if the extremely large reliance on the very reliable winter gas delivery system is replaced by large scale electrification. The consequences of putting all of one's eggs in one basket during blizzards in the nation's capital could be catastrophic from both human and economic perspectives. Bold goals require extra planning and WGL wants to ensure success via proper planning.

   As noted, Commission's statutory mandate means that equity concerns including the potential large rate hikes must be considered. WGL believes that equity concerns should also be treated in large part via scoring of issues subject to qualitative evaluation, or quantitative non-SCT analysis. WGL has presented a methodology to do so, the aforementioned Q&A rubric. This evaluation would also require rate impact considerations. WGL notes the importance of the RIM test as a secondary test to facilitate this evaluation of non-incremental "tipping point" programs. WGL further notes

[371] *See* https://code.dccouncil.us/dc/council/code/sections/1-204.93.html.
[372] *See* https://wamu.org/story/19/09/16/climate-change-is-making-d-c-weather-warmer-wetter-and-wilder/.

past programs have not change energy demand greatly, but the CEAIWG should consider rate impacts. In order to consider rates, and in order to conduct long-term RIM tests, WGL believes there needs to be assumptions about long-term fixed and variable costs, demand and supply to comply with the Commission's statutory mandate.

WGL believes assessment of transportation (a major source of GHG emissions that must be considered within this process which include some of the most cost-effective reductions available) metrics must be addressed as it has large emissions than gas and intersects with power including peak winter and summer demand. The costs and benefits of EV programs need to be addressed. This is an example of why WGL is concerned about lack of focus on GHGs and their key issues. The effort spent on non-GHG issues is needed to avoid unbalanced consideration and exposition on GHGs.

Decisions on areas of focus will be important. For example, if modeling is to be used to determine marginal electricity emission rates, then numerous metrics need to be determined such as RPS CES levels, capacity expansion and retirement withdrawals, powerplant dispatch, etc. Baseline costs are required for the existing District RPS which requires modeling, especially if assumptions are made about future RPS, Clean Energy Standard (CES) levels in each PJM state change from current levels.

F. **Pepco**: The Survey Question for Stakeholder Comment is insufficiently clear for Pepco to provide a full response to it. More specificity is needed regarding how a "critical metric" is intended to be characterized, included, and treated in the BCA.

While Pepco is strongly supportive of equity-focused projects and measures, it does not agree with the proposed Working Group Majority Recommendation "The BCA should include metrics for social equity, racial equity, and environmental justice." Rather equity-focused projects should be exempt from the BCA altogether.

Social equity is a critical aspect of the transition to a cleaner energy system. Pepco is engaged in significant programs to advance social equity and environmental justice in the communities that it serves. Examples include Pepco's support for resiliency hubs such as the Jubilee Housing and the Ludlow-Taylor Elementary School.[373][374] Furthermore, Pepco has embedded social equity goals in its own internal operations. For example, Pepco and its employees have annual Diversity, Equity and Inclusion (DEI) performance goals. Pepco believes that the most effective means by which to advance equity goals are to further deploy explicit equity-focused programs and initiatives, including making various system investments that are explicitly designed with an equity focus, and that such programs and initiatives should not be subject to a BCA.

G. **OPC**: Not at this time. Additional metrics will be addressed in the reporting committee.

H. **AOBA**: Resiliency and reliability have not been adequately considered and weighed within this Working Group specifically as it relates to the push for an all-electric District. The actual impact on the Pepco grid will be if the District moves towards an all-electrification model we do not believe

[373] *See* https://www.pepco.com/News/Pages/Press%20Releases/PepcoGrantSupportsInnovativeHousingPilotResiliencyProgram.aspx.
[374] *See* https://www.pepco.com/News/Pages/TenLocalProjectsReceiveNearly$125,000inFundingforOpenSpaceandResiliencyThroughNewPepcoProgram.aspx.

have been vetted and this seemingly mad dash to rid the District of safe reliable, cost effective natural gas for heating and cooking is fraught with pitfalls. The stranded costs associated with abandoning Washington Gas in the District would cause rate increases that would impact all rate classes but particularly the commercial office building and multi-family housing sectors.

A.1.5.3 **Stakeholder Comments**

This working group recommendation was deleted from the report.

Survey Question for Stakeholder Comment: *Carbon offsets should be allowed to offset proposal emissions, provided that the offsets are located within the RTO.*

A. **GRID2.0**: No. For beginners this can work OK, but over time this should be reined back to no more than our SMA for purposes of the Clean Air Act regulation of CO_2.

B. **DCCA**: No. Carbon offsets are an unreliable way of reducing overall carbon emissions. Their additionality is suspect, their certification is open to misuse, and their permanency is open to question. These factors are outside our capacity to monitor. We should focus at least for the medium term on verifiable reductions of GHG emissions within the District. Meanwhile we should seek out kinds of offsets that are free from the weaknesses cited here.

C. **DOEE**: No, this suggestion is inconsistent with Clean Energy DC and the current 2050 Carbon Free DC, which considers the use of carbon offsets only for "residual emissions" (i.e., emission-producing activities that do not have any feasible alternatives in terms of fuels), such as heavy industrial processes. Carbon offsets for the utilities should not be allowed because carbon neutral sources for electricity and space heating and cooking are available.

D. **Sierra Club**: No, offsets are plagued by numerous flaws associated with additionality, verifiability, permanence. Often it is impossible to determine whether a particular GHG savings measure is additional to baseline or would have happened anyway even in the absence of the DC policy measure that claims to produce the offset. It is also often difficult to precisely measure the claimed GHG reductions that are deemed to result from offsets. Furthermore, offsets may never result in the claimed long-term savings (forests burn down, etc.) For these reasons, we are categorically opposed to using offsets.

E. **DCSUN**: No, the RTO is far too large of an area for offsetting. Offsets should be locationally limited to the region directly delivering into DC.

F. **Pepco:** More information is needed for Pepco to determine whether it supports the proposed Survey Question for Stakeholder Comment, "Carbon offsets should not be allowed to offset proposal emissions." Pepco has not analyzed specific offset "sources" proposed, the working group did not discuss whether offsets were consistent with the Clean Energy ACT or the District's Clean Energy DC plan, and the working group did not discuss whether the RTO (i.e., PJM) is an appropriate geographic footprint, should offsets be considered at all. Environmental certifications such as offsets, "responsibly sourced gas," "certified gas," or other similar environmental certifications should meet regulatory requirements analogous to the certification of renewable energy credits, which are subject to local regulation and DC Council approval, deliverability requirements, and independent verification.

G. **OPC**: Yes, assuming these offsets meet standard eligibility requirements.

H. **WGL**: Yes, offsets need to be tools available given statutory mandates on affordability and issues related to equity. WGL's Climate Business Plan (CBP) analysis almost completely eschews offsets, but requests guidance on this issue from the Commission. Unfortunately, rather than guidance on this important issue, the WG drafted recommendations on this issue without even minimal consideration. The issues of offsets, reliability of offsets, and the offset certification process was never fully discussed. WGL notes the benefits offsets can play in lowering costs, rate impacts, and impacts on the most vulnerable segments of the District's population. Offsets today trade between 10 and 25 $/ton while the SCC proposed is $100/ton. WGL notes no cost estimate has been provided related to decarbonization, consideration of rate impacts, or costs of the RPS program. DOEE has proposed discriminatory treatment of offsets (for power only, not allowed for gas), and limitations on offsets usage without any cost feasibility or rate analysis whatsoever. WGL believes given the potential for higher costs, and unaffordable rate impacts once incremental options are exhausted, it is imperative that cost savings options be given full consideration. This is especially necessary given the large efforts to control rate and cost impacts with a form of offsets in the RPS program. WGL's Climate Business Plan (CBP) analysis shows that such analysis can be performed related to costs of different options.

Even if potential affordability and impacts on poor people of large rate increases do not warrant focus on offsets in this process, offsets recommendations should not be blatantly discriminatory. The District's mandated approach for gas and electric must be symmetrical; offsets must be available for both gas and power systems or neither (similarly for transportation, the District second largest emissions source after power). WGL also believes rejecting offsets is unfair to gas while Renewable Energy Credits, a form of offsets, is the core of the RPS. They are used in a manner closely parallel to offsets namely to find the most cost-effective reductions in non-renewable generation; the parallel is the most cost effective GHG emission reductions.

WGL believes the absence of discussion of these issues creates the potential for large, unexpected inconsistencies, and fails to provide the Commission with minimal required information, and invites program design errors. The proposed quantitative BCA is designed to determine cost effective GHG emission reductions. The proposed analytic approach for BCA is complex for non-incremental programs, could be costly to undertake, and have significant lead time. Further, this lead time could be critical for meeting deadlines. Lack of discussion and consideration of even offsets from contiguous polities like Arlington Virginia could lead to a program set costing near the SCC at $100/ton, and the need to explain how that is considered cost effective when the published offsets market is at $10-25/ton (current levels for August 2021 for RGGI and California).

The approach should consider incorporation of offsets for reduced emissions from the potential transportation system as well. For example, centralized charging standard that facilitates EVs reduces emissions associated with petroleum fuels. The WGL Climate Business Plan analysis shows that significant EV activity is the most economic decarbonization program available. It is important to consider offsets and all sectors including the second largest sector which could become a critical power customer.

During October consensus meetings, WGL commented on both the deletion of the recommendation related to Offsets from the body of the report and reiterated its concern with respect to the absence of support for the use of offsets for natural gas. WGL commented that this approach contradicts the District's 2050 climate targets which seek to achieve carbon *neutrality.* It eliminates the use of a potentially lower cost customer option for GHG reduction and, in doing so, calls into question the legitimacy of trading platforms like RGGI, which are used by the District's neighbors. There

was also no explanation or discussion regarding the withdrawal of this recommendation topic from the body of the report, which was included in multiple earlier drafts. WGL further stated that structurally, the placement of the discussion of its deletion is also problematic – a reader would need to plow through nearly 100 pages of text to discover that though certain offsets certifications might be allowed (per upfront discussion), the more important topic of offset usage for natural gas was opposed by the majority of WG members, most of whom bear no responsibility for providing affordable energy, and was deleted.

The CEAIWG has not addressed any of the offset programs which are critical to meet the District goals of net neutrality. Net neutrality means on net some emissions are offset by reductions elsewhere. Parties cannot change climate commitments by rendering them infeasible.

I. **AOBA**: Supports the use of offsets for both natural gas and electric supply.

A.1.5.4 **Stakeholder Comments**

Non-majority Recommendation:

If applying carbon offsets, they must be purchased from a source that abides by one of the following standards: Climate SEED,[375] *Community Climate Biodiversity Standard (CCBA),*[376] *Gold Standard,*[377] *ISO 14064-1,*[378] *UNFCCC Clean Development Mechanism,*[379] *or the Verified Carbon Standard (VCS).*[380]

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.*

Survey Question for Stakeholder Comment: *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, ISO 14064-1, UNFCCC Clean Development Mechanism, or the Verified Carbon Standard (VCS).*

A. **OPC and DCSUN**: Yes.

B. **GRID2.0**: Ok.

C. **WGL**: See comments elsewhere. Here it is emphasized that the CEAIWG has not addressed any of the offset programs which are critical to meet the District goals of net neutrality. Parties are not entitled to change District Climate commitments by refusing to consider options. The requirement to consider affordability, efficiency, social cost minimization, feasibility and reliability prevents elimination of offsets and considerations of offsets. The text directly below the recommendation describes the rigorous approach to offsets, but WG stakeholder claims contesting their reliability are made without a process for verifying the claims and the contradiction with the text. Consideration requires additional focus, especially since the 2050 goal is explicitly "carbon neutral" (a recognition of the role of offsets). For example, [is the Working Group] using

[375] *See* https://climateseed.com/.
[376] *See* https://www.climate-standards.org/.
[377] *See* https://www.goldstandard.org/.
[378] *See* https://www.iso.org/standard/66453.html.
[379] *See* https://unfccc.int/process-and-meetings/the-kyoto-protocol/mechanisms-under-the-kyoto-protocol/the-clean-development-mechanism.
[380] *See* https://verra.org/project/vcs-program/.

international or domestic approaches for social cost of carbon? If [the Working Group is] using an international approach to the determination of social cost of carbon, there should be consideration of a parallel approach to offsets or geographical distinctions with a rationale. "If applying GHG offsets, for any major emitting source of greenhouse gases (i.e., electric, power and transportation) they must be purchased from a source that abides by one of the following standards: Climate SEED, Community Climate Biodiversity Standard (CCBA), Gold Standard, ISO 14064-1, UNFCCC Clean Development Mechanism, or the Verified Carbon Standard (VCS)." The offsets standards must account for any GHG otherwise measured by the District – e.g., Methane.

D. **Pepco**: More information is needed for Pepco to determine whether it supports the proposed Working Group Majority Recommendation, "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, ISO 14064-1, UNFCCC Clean Development Mechanism, or the Verified Carbon Standard (VCS)." Pepco has not analyzed specific offset "sources" proposed. The working group did not discuss whether offsets were consistent with the Clean Energy ACT or the District's Clean Energy DC plan, and the working group did not discuss whether the RTO (i.e., PJM) is an appropriate geographic footprint, should offsets be considered at all. Environmental certifications such as offsets, "responsibly sourced gas," "certified gas," or other similar environmental certifications should meet regulatory requirements analogous to the certification of renewable energy credits, which are subject to local regulation and DC Council approval, deliverability requirements, and independent verification.

E. **DCCA**: No. [*Referred to previous comment, reproduced here*]: Carbon offsets are an unreliable way of reducing overall carbon emissions. Their additionality is suspect, their certification is open to misuse, and their permanency is open to question. These factors are outside our capacity to monitor. [The Working Group] should focus at least for the medium term on verifiable reductions of GHG emissions within the District. Meanwhile [the Working Group] should seek out kinds of offsets that are free from the weaknesses cited here.

F. **DOEE**: No. [*Referred to previous comment, reproduced here*]: This suggestion is inconsistent with Clean Energy DC and the current 2050 Carbon Free DC, which considers the use of carbon offsets only for "residual emissions" (i.e., emission-producing activities that do not have any feasible alternatives in terms of fuels), such as heavy industrial processes. Carbon offsets for the utilities should not be allowed because carbon neutral sources for electricity and space heating and cooking are available.

G. **Sierra Club**: No. [Sierra Club is] opposed to using offsets and hence cannot support any certification program as all of them suffer from the problems outlined [in the survey response] to varying degrees.

A.1.6.3 **Stakeholder Comments**

Working Group Majority Recommendation: *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, beginning in 2022. The interim targets should be revised to account for shortfalls or exceedances in GHG reductions during previous performance periods.*

Survey Question for Stakeholder Comment: *Should an interim GHG target be set for D.C.?*

A. **Sierra Club**: Yes. Sierra Club supported a small number of interim targets (2 or 3) between 2032 and 2050 in which relatively large reductions (more than linear) are made relatively early on and more time is left for the very difficult task of moving from 90 percent reduction to full carbon neutrality. Sierra Club noted support for the basic idea behind the GHG trajectory in DOEE's carbon free DC plan and indicated specific numbers could be taken from that plan.

B. **OPC**: Yes. Linear interpolation between latest inventory data on reduction below 2006 and 2032 target. Interim annual targets are helpful for tracking and evaluating progress:

2021 31%

2022 33%

2023 35%

2024 35%

2025 38%

2026 40%

2027 41%

2028 43%

2029 45%

2030 47%

2031 48%

2032 50%

C. **DOEE**: Yes. DOEE noted an interim target is needed to ensure that collective efforts are on track to help the District achieve its climate and energy goals. Because these target dates (2032, 2050) are far removed from now, we need milestones to make sure we are on track or to provide sufficient time for course correction. DOEE recognizes that projects and programs often take more than a year and sometimes several years for completion. Therefore, DOEE recommends that GHG reductions are tracked and reported annually, but the interim targets should be set in 3-year performance periods beginning in 2022.

DOEE also noted the interim targets should be based on the utility's business-as-usual scenario of emissions from 2022 until 2050, and the BAU scenario should consist of two broad sources of emissions: energy (electricity or natural gas) distributed to customers, and facility operations in the District. DOEE believes 3-year milestones can be plotted from 2022 to 2050, using utilities' reasonable assumptions for the rate (whether linear or logarithmic) of reductions that meet the goals. Once the amount of emissions for the BAU scenario has been estimated, 50% of that amount can be identified as the 2032/2033 target, and zero emission can be assigned as the 2050 target. DOEE notes the purpose of this work is to reduce emissions associated with the utilities and energy companies subject to PSC oversight, and to appropriately estimate the emissions that are avoided directly due to their intervening programs, projects, and actions. These emissions may result from facility operations (e.g., energy consumed in buildings, fleet fuels) as well as the sale and distribution of commodity such as electricity or natural gas.

D. **Pepco**: At this time, Pepco does not agree with the proposed Working Group Majority Recommendation, "To ensure that the District is moving toward its energy and climate goals, interim GHG targets should be set for the utilities every three years, beginning in 2022. The interim targets should be revised to account for shortfalls or exceedances in GHG reductions during previous performance periods." Further research is required before considering interim greenhouse gas targets for the District, and only goals, used for guidance, should be considered at this time. Furthermore, Pepco understands "targets" to mean specific reduction levels that the utilities would be required to meet subject to penalties. Pepco believes the development of appropriate goals for the utilities would require significant future study to determine appropriate targets, not for the District overall, but specific to each regulated utility and its regulated business. Pepco further notes the Working Group did not discuss interim targets for utilities, and no party addressed how interim greenhouse gas targets could be developed specifically 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. Each utility has a regulated business, which informs and limits the types of programs that it may implement. No party in the Working Group has put forward how cost-recovery for such targets would be treated nor how they would be coordinated with other matters in front of the Commission. Further, Pepco notes that no party presented if the utilities would need to be given expanded authorization to implement new programs to meet utility-specific targets.

E. **WGL**: The CEAIWG has not discussed the development or implementation of interim targets. WGL believes interim targets would be a significant undertaking in order to reflect realities of the energy sector including the timelines for regulatory approvals, permitting, deployments, construction, testing, inclusion in rates, etc. WGL believes the DC PSC Order to the CEAIWG is to establish metrics, not create new targets, and therefore interim targets are out of scope for the CEAIWG. WGL notes **t**here has been no systematic review of the costs or consequences, including to ratepayers, of meeting the existing targets (e.g., 100% RPS requirements of *Clean Energy Act*). Thus, this recommendation continues the pattern of not considering major GHG or RPS feasibility and costs. Similarly, WGL notes there has been no study of the adequacy of the existing distribution system to accommodate substitution of gas winter peak delivery with electricity.

WGL further notes, due to long lead times in the regulatory process, customer adoption rates, and the realities of permitting and building infrastructure, it would be unrealistic to set targets prior to the existing 2032 target for a 50% reduction in greenhouse gases. WGL believes utility investment in new programs will not be possible until there is transparency with respect to the Commission's guidance and framework and assurances of recovery of prudently incurred costs. WGL explains it will take additional time to stand up non-incremental programs, achieve customer adoption/penetration and/or construct suitable infrastructure and/or secure decarbonized fuels. Therefore, WGL believes an interim target before 2032 would be impractical. Similarly, WGL states that achieving carbon neutrality while addressing other regulatory mandates like energy affordability, access/equity, reliability, resiliency will be a complex matter. WGL notes most analysts believe that additional infrastructure and technology will be required to achieve carbon neutrality. WGL states that while key gains can be made, especially by 2032, reducing the remaining emissions will be more complex and likely more expensive. Many programs for reductions will take some time for regulatory approval and then a number of years to deploy.

WGL points to transportation as a major source of GHG emissions that significantly impacts District-wide GHG emissions. WGL notes the focus on electric vehicles will create additional

demand for electricity, and that a multi-sector integrated resource planning process is likely to reveal that electrification of transportation could reduce emissions more cost effectively than reductions in other sectors and thus should affect prioritization of programs adopted. WGL believes interim targets are incompatible with integrated resource planning necessary to evaluate non-incremental program proposals. Without study and analysis of existing targets (and a wholistic look at all sectors, including transportation), it would seem unproductive to set new targets before assessing feasibility and costs associated with existing targets.

Analysis done for Washington Gas by ICF, in preparation for the company's Climate Business Plan filing, concluded that by 2032, current District of Columbia energy policy related to renewable electricity is expected to result in a reduction in overall GHG emissions attributed to the District of Columbia to about 27% of 2006 levels (a 73% reduction), before consideration of further reductions in emissions from fossil fuel use, including natural gas used in the buildings sector, and gasoline and distillate fuel in the transportation sector.381 While on an actual basis (as acknowledged by DOEE, WGL, and others), this over-states the reduction due to challenges meeting the RPS requirements. However, WGL believes by combining this with current trends in energy efficiency in each of the gas and electric sectors, the District is still well positioned to exceed its 50% reduction target by 2032, especially given potential new policies for electric transportation. Thus, study of the feasibility and costs of 2032 compliance should be studied before embarking on changes of district policy.

F. **GRID2.0**: Use the Clean Energy DC plan to derive targets for 2 year increments, and convene GHG summits to determine optimal investments for reductions. Method of setting target is use of the published Clean Energy DC GHG reduction graph to ID default 2 year interim targets and refine them in stakeholder summits.

G. **DCSUN**: Targets should be set to encourage timely, proportional abatement to prevent backsliding, missing the 100% by 2032 target, or incurring high costs in the final years to do so.

H. **DCCA**: Interim targets are helpful if they are not more frequent than the time during which meaningful changes can be accomplished – perhaps triennially – and if they are accompanied by serious review and course correction as necessary with the participation of a stakeholder group.

I. **AOBA:** Agree with WG that more review of the costs of 2032 compliance should be performed before significant changes in district policy that would have significant cost and rate impacts to residents and businesses in the District.

A.1.7.3 **Stakeholder Comments**

Working Group Majority Recommendation: *'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.*

[381] "Opportunities for Evolving the Natural Gas Distribution Business to Support DC's Climate Goals" ICF, March 2020, p. ES – 3.

Definitions:[382]

Average Emissions Factor (AEF): The average CO_2 *emissions per average unit of electricity delivered for an entire electricity system.*

Short-Run Marginal Emissions Factor (SR-MEF): The change in CO_2 *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_2 *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).*

Survey Question for Stakeholder Comment: *The long-run hourly marginal emissions factors rather than average emission factors should be used to estimate emission impact.*

A. **Sierra Club**: Sierra Club supports the statement.

B. **OPC**: No. The short-run marginal emissions factors rather than average emission factors should be used to estimate emission impact. As acknowledged by NREL in its presentation to the Working Group, the Cambium long-run marginal emissions factors are still underdevelopment and do not appear to be ready for use in policy analysis. Until those factors are better developed and thoroughly vetted, the better established short-run marginal factors should be used. In addition, some consideration should be made of whether or not DC's REC purchases have any effect on marginal emissions rates.

   NREL mentioned in its presentation to the working group that it does not have DC-specific results - does their model include DC policies like RPS or its emissions targets? Questions to consider are:

   * Is PJM-East a good representation of DC's impacts on the margin?

   * DC's RPS is more stringent than some of its neighbors in PJM-East. Given this stringency, in later years, will the share of hours in which renewables are on the margin be different for DC than for its neighbors?

   * It's important to always use the latest version of NREL's marginal emission rate projections; understand whether NREL is updating these results as electric sector policies and load projections change throughout PJM; and that the lab produce a DC version (as they do for all states).

C. **DOEE**: DOEE supports the statement. DOEE noted that currently, there is no easy method to fairly estimate the emissions intensity of the electricity purchased by District residents and businesses. The grid-based method and the market-based method may produce two significantly different results. However, there appears to be more comfort among the stakeholders in using the grid-based method, perhaps because it is more familiar and it is less susceptible to "green-washing." DOEE is willing to support the grid-based method, on the condition that the issue of emissions rate be

[382] *See* Long-run marginal CO2 emissions factors in national electricity systems, A.D. Hawkes, 2014. https://reader.elsevier.com/reader/sd/pii/S0306261914003006?token=D1FE51F39FADB0F274B61768BAE6A71AA1E1DA10A5A9E4583300177E4123B7B965905EB7910BDFF1C6CE788EDD476E94&originRegion=us-east-1&originCreation=20210906180600.

carefully considered. DOEE believes that using the short-run marginal emissions factor for projects and programs that result in creating permanent load changes (i.e., building electrification, transit electrification) may significantly distort the picture of avoided emissions. DOEE may oppose using the grid-based method, and opt for a market-based method instead, if only short-run marginal emissions factor is used.

DOEE notes the LR-MEF may be better suited for estimating avoided emissions rates because it considers a more comprehensive set of factors than the SR-MEF, such as the structural characteristic of the load (e.g., temporal vs. persistent/permanent), and the type of generation that is likely to be selected to respond to the new load based on market trends. Moreover, the authors of eGRID emissions data caution against using non-baseload emissions data for intermittent renewable resources such as wind power. DOEE is concerned that relying only on the SR-MEF may result in a highly inaccurate or misleading emissions accounting. DOEE is open to considering an approach where both SR-MEF and LR-MEF are used depending on the types of projects and load that are targeted.

D. **Pepco**: Given the wording of the proposed Working Group Majority Recommendation in the specific context of the working group meetings, Pepco does not support the proposed Working Group Majority Recommendation, "'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."

Pepco understands these emission factors to be those from NREL's Cambium model as presented by Pieter Gagnon. The emissions factors referenced in this question are the outcomes of a research model and rely on assumptions neither adequately discussed nor vetted by members of the working group.

Pepco understands that there is not full alignment between the evolving inventory and approaches to greenhouse gas accounting, used by cities and private companies[383] (e.g., Pepco in its Climate Commitment),[384] and the accounting of greenhouse gases that can be used for regulation of electric sector programs. No Working Group party presented a jurisdiction that uses the World Resource Institute Greenhouse Gas Protocol (WRI GGP) inventory methods to regulate the electric sector, and the WRI GGP is not used on the federal level to regulate electric sector emissions. Pepco notes it is amenable to discussions on how to bridge the gap between the WRI GGP and regulatory methods used across the country; however, this Working Group did not adequately discuss these issues. Finally, Pepco notes that, according to the WRI GGP utilities can only control their own emissions.

E. **WGL**: WGL's position is as follows:

   a. Direct emission factors are only a significant issue in the case of using electric power.
   b. Electricity is coming from the PJM grid. Practically no generation occurs in the District. One can model emissions with and without the District's power demand and determine emissions due to the District's power demand. This allows for average and marginal emission rate determination (as was done for the WGL Climate Business Plan).

[383] *See* Greenhouse Gas Protocol | World Resources Institute (wri.org).
[384] *See* Pepco Climate Action | Pepco - An Exelon Company.

c. Determining emission factors requires the use of a recognized model. (WGL used the IPM model in the WGL Climate Business Plan, the same as the US EPA uses.)

d. This work is very sensitive to assumptions (base case and program electricity demand, RPS levels in DC and in all states, RGGI, the costs of new technologies, federal subsidies, fuel costs, entry and exit of powerplants, etc.) This work is difficult and costly to perform and needs to be transparent.

e. The most common impact of electricity demand changes such as electrification is high reliance on fossil fuel as the marginal source. This is due in turn to fossil fuel being on the margin in nearly every hour. There is a low average PJM RPS, RPS programs do not match actual power usage which is hourly not yearly. There is also little in terms of PJM CO2 programs with $/ton average CO2 costs close to zero.

f. The District's 100% RPS does not mean that District electricity demand does not result in GHG emissions. DC RPS can have little impact on actual emissions; the exact level in each year requires detailed grid modeling.

g. WGL understands there is little history of detailed analysis of stringent decarbonization programs. That contributes to why WGL recommends a long-term multi-sector IRP study.

h. The District should first commit to assessment of the costs of the RPS, before undertaking a complex exercise on emission and emission factor modeling. Even though the RPS has been in place for years, no analysis has yet been undertaken and made publicly available. This analytic gap highlights the problematic nature of undertaking a complex modeling exercise. [35]

i. No proposal has been made for modeling the transportation or gas sectors. [36]

j. In the event that detailed modeling is delayed, no reason has been given for not using the DCSEU long term marginal emission rate. This emission rate has been in use for years and was discussed during the CEAIWG presentation of NMR (December 1, 2021) and by WGL. WGL opposes leveraging the NREL model for this purpose because the model is unproven in any regulatory context, is not disaggregated, and there is no process for assumption development, and assessment.[37]

The DCSEU uses a year-by-year emission rate estimate (tons per MWh) which decreases monotonically each year for the 2010-2050 period. This estimate is immediately available. It is inconsistent not to even show and discuss this rate without explanation. This is because the report places much emphasis on the DCSEU's $/ton SCC while totally ignoring tons per MWH of carbon emissions.

WGL recognizes that electricity consumption is the largest source of emissions from the District's energy use. The importance is emphasized by the fact that the emission rate together with the SCC and the level of demand are the determinants of the impacts of emissions from electricity consumption ($/ton x tons/MWh x MWh = $). Proper treatment of electricity is of added importance given electricity consumption could increase under some programs such as programs encouraging thermal electrification and EV adoption, with potential impacts on many other parameters such as the level of electrical infrastructure investment, implementation feasibility and rates. The electricity emission rate is complex and requires modeling of the PJM grid using accepted tools that account for the large size and diversity of PJM and the RPS

program. The primary emphasis in the document on electricity emission rates however obscures the need to a systematic examination of all sectors including transportation which is the next largest and intersects power via the electric vehicle option.

WGL supports a long term, multi-sector integrated resource planning process that can identify future emission levels, and marginal emission rates. The reference case emissions from power are compared to the program case in situations in which there is non-incremental energy policy change. WGL refers to non-incremental programs also as "tipping point" programs. WGL notes the process to date has not examined the issues sufficiently. For example, no consideration was given to transportation fuel use and emissions over time. During this process, there would be forecasting of the average and marginal emission rates over time, especially if there is evidence of a difference. This modeling is not easy and involves making assumptions about numerous parameters and using a methodology that simulates the functioning of the PJM grid over time. Examples of key parameters include RPS of PJM states, CO_2 emission regulations, fuel prices, costs of powerplants, demand, regulations applicable to renewables and storage including reliability contribution, etc. WGL believes this is feasible as illustrated by the WGL Climate Business Plan and PJM's presentation to the CEAIWG reporting results of its forecasts.[385]

WGL's position is that the marginal emission rate is appropriate for incremental changes, and the proposed process will provide an estimate. The reference case's marginal emissions rate will be used. There is no relationship directly between the average emission rate and the marginal emission rate except for the possibility they are similar given the very small size of load in the district compared to the total in PJM. In nearly every hour, changes in electricity demand in the district result in changes in dispatch of fossil fueled powerplants. This is because the fossil fuel plants have higher variable costs, which primarily reflect the cost of coal, oil or natural gas fuel, than variable costs of nuclear, wind, hydro and solar plants whose short run variable costs are usually zero. That is, there is a direct relationship between short run variable costs and emission; the lower the emissions, the lower the variable costs and vice versa. PJM is federally required to minimize costs, and hence, uses non-emitting sources to their maximum level such that changes in demand can only be met via changes in the operation of fossil units.

If a decision is made without adequate consideration of the following issues raised by WGL, WGL would be reluctant to take the position that the current parameters of the DC SEU should be used except as a temporary measure.

- **DC SEU Marginal Emission Rates:** The DCSEU approximately equals the emission rate of natural gas generation and decreases over time.[386] The forecast assumes improving thermal efficiency over time and differentiates modestly by season and time of day. The consulting firm NMR responsible for the forecast relies on PJM data, a transparent, authoritative source for historical data. PJM determines in each hour the marginal source of power as part of its pricing and dispatching algorithm (see Table where in 2019 natural

[385] *See* Anthony Giacomoni, op cit.

[386] The value of CO_2 emissions in the SCT is the product of the avoided cost of CO_2 emissions and the assumed emissions rate. The emissions rate is the assumed tons of CO_2 released by generating a MWh of electricity or combusting an MMBTU of natural gas. The electric emission rates in the FY2019 analysis are based on the marginal emission rates for the PJM system and held constant through 2050. The grid will likely become cleaner over the next 30 years, so the NMR team recommends the District consider a declining marginal emissions rate in future cost-effectiveness testing.

gas is the marginal source approximately 69% of the time).[387] The DC SEU does not address the fact that coal is on the margin one-quarter of the time, and hence, may already be understating the rate of emissions.[388] The importance of the DC SEU emission rate forecast derives in part from the collateral impact of any decision on emission rates on existing programs of the DC SEU. Approximately 43% of the benefits of the DC SEU existing programs and nearly all net benefits arise from CO_2 emission reductions. WGL believes therefore, for example, that a 50% reduction in the emission rate eliminates the economic rationale for existing DC SEU programs, all else equal.

- **Average Emission Rate -** The use of average emission rate is wholly unsatisfactory since generation requirements of DC do not impact the amount of nuclear generation, hydro generation, and in the short run renewable generation.

- **Long-term vs Short-term Marginal Emissions Rates:** WGL opposes the use of long-run versus each year's short run marginal emission rates. This modeling proposed, with and without DC electrical load should, as was the case in the WGL Climate Business Plan analysis, provides any parameter required, assuming an accepted model and reasonable assumptions. Other expedients should not be relied on – e.g. WGL believes that assuming that the long-run marginal emission rate is half the short run is improper. WGL also opposes reliance on NREL results of future modeling until the model is demonstrated to be broadly accepted for regulatory work and especially given available of proven constructs. WGL also believes that relying on the NREL system of models is premature with respect to the required assumptions development process. The potential for tipping point non-incremental programs creates the need for there to be multi-sector, long-term Integrated Resource Planning process that creates the ability to analyze programs such as those proposed by utilities. This process is exactly the one needed to create the needed inputs to the modeling. In the absence of this process, WGL believes proper decisions cannot be made regarding important technical issues such as:

    - Examination of how the NREL models is formulated to project the evolution of the electric grid through 2050, or how it differs from US DOE EIA forecasts, US EPA forecasts, or PJM forecasts. As noted, there is no evidence that the model has a proven track record of widespread use in a regulatory setting.

    - Determination of why the DC SEU might have a different year by year marginal result for future emission rates. The NMR provided good information about the critical and complex electricity emission rate used, and hence, the surprise that the default was completely ignored in the draft. Nonetheless, there was no discussion

[387] See also, PJM Carbon Pricing Study Update Anthony Giacomoni, Ph.D. Senior Market Strategist DC Commission December 1, 2020, page 2. "Average Emissions Rate Calculation: – Generation for each PJM generator is received monthly from the PJM Market Settlement Reporting System."

[388] The highest CO_2 emitting source is coal generation at approximately one ton per MWh, followed by gas combined cycles at approximately one-half ton per MWh. Oil is intermediate but rarely used in power generation. CO_2 emissions from generation is a function of the carbon content per unit energy of the fuel, if any, and the thermal efficiency of the generator. There is no control of CO_2 emissions in any powerplant in the US due to high costs, high power losses, and challenges in sequestering CO_2.

of whether the DC SEU reviews of forecasting in other states corroborate or found problems with their long-term approach.

- Examination of whether there is a meaningful difference between marginal (small changes in DC demand) or average marginal (large changes in DC demand)

- **DC RPS and Emission Rate:** WGL prefers a transparent, well-founded examination of the relationship between the electricity emission rate and the RPS. Hence, the need for modeling. WGL notes the DC SEU does not sufficiently address when the decrease in the DCSEU emission rate reflects the DC RPS. There must be a careful modeling based adjustment of the CO_2 emission rate for the District's RPS.389 No DC analysis adjusts the emissions estimates of the District for the level of RPS. There is also no DC study of the future costs of the RPS by the District to determine whether the amount of renewable generation is impacted by the RPS.

- **Emission Level over Time:** WGL strongly opposes the use of DOEE forecast of emissions for 2020-2050. DOEE's analysis does not address costs, rate impacts, reliability and resiliency impacts, feasibility and statutory requirements, and the need for a reasonable forecasting approach. Its proposals have also shown themselves to be discriminatory against gas. WGL acknowledges that DOEE address transportation, but again without any cost analysis or the other minimum statutory mandated considerations. WGL believes the DOEE forecast violates statutory requirements regarding costs, rates, rate affordability, safety, reliability and resilience and prudence. The DOEE analysis ignores the WGL Climate Business Plan as an example of meeting the need for integrated multi-sector long term assessment of emissions costs and implementation,

- **Emission Baseline Year:** The emission target is determined in part by the baseline. The current target for 2032 is 50% below 2006. This target was adopted even after it was well known that emissions had fallen between 2006 and 2020. WGL opposes changing the emission baseline year from the 2006 year as it was not discussed at CEAIWG meetings and raises costs and emission reduction requirements, hurting parties with the largest reductions to date.

- **Regional/Local Issues:** Nearly all power used in the District is from PJM. The PJM grid power production is much larger than the amount of power consumed by the District, which accounts for approximately 2.5% of the total. As noted, PJM determines in each hour the marginal source of power as part of its pricing and dispatching algorithm.390 This determination assumes that there is no congestion on the PJM grid. WGL believes that if sub-regional differentiation is used on marginal rates, PJM should provide estimates based ideally on forecasts, but as a second best via historical estimates.

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389 *See* https://dcpsc.org/Orders-and-Regulations/PSC-Reports-to-the-DC-Council/Renewable-Energy-Portfolio-Standard.aspxThe District's Renewable Energy Portfolio Standard (RPS) was enacted in 2005 and the first compliance year started in 2007. The RPS changed through legislation several times before the Clean Energy DC Omnibus Amendment Act of 2018. The most recent update puts the District on track to 100% renewable energy by 2032 with a 10% solar carve-out coming from local solar by 2041. Since the 2018 legislation was enacted, the Commission has continued increasing solar energy in the District.

390 *See also*, PJM Carbon Pricing Study Update Anthony Giacomoni, Ph.D. Senior Market Strategist DC Commission December 1, 2020, page 2. "Average Emissions Rate Calculation: – Generation for each PJM generator is received monthly from the PJM Market Settlement Reporting System."

F. **DCSUN, DOEE, Sierra Club, DCCA,** and **Grid2.0**: Yes.

A.1.8.3 **Stakeholder Comments**

Working Group Majority Recommendation: *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.*

Survey Question for Stakeholder Comment: *The source for emissions factors to be used in the analysis should be the NREL PJM-East region values rather than eGrid or PJM-wide. These factors can be revised annually per NREL's annual Standard Scenarios Outlook of U.S. Electricity Sector.*

A. **WGL:** WGL noted its response above to the survey question. Nearly all power used in the District is from PJM, which accounts for approximately 2.5% of the total PJM consumption. As noted, PJM determines in each hour the marginal source of power as part of its pricing and dispatching algorithm.391 This determination assumes that there is no congestion on the PJM grid. WGL believes that if sub-regional differentiation is used on marginal emission rates, PJM or some process should provide estimates based ideally on modeling forecasts, but as a second best via historical estimates. Overall there needs to be more discussion on local/regional issues. Too narrow a regional examination could miss distant impacts of the District's RPS program and hence bias results. Also, local and regional issues for gas and oil are highly separated with respect to some aspects of emissions – e.g. upstream emissions should they be tracked, potential for offsets from both regions where upstream emissions are being tracked and elsewhere.

B. **OPC:** Yes

C. **DOEE:** DOEE supports the Statement. eGRID does not provide long-run marginal emissions factor (LR-MEF). Therefore, if the Working Group wants to use LR-MEF, then it would have to use NREL's emissions modeling, which can be aggregated by balancing authorities or states. NREL's modeling includes a territory called PJM-East, which is similar to eGRID's RFC-East, but they do not match exactly.

D. **Pepco**: Given the proposed Working Group Majority Recommendation in the context of the specific material presented in the working group meetings, Pepco does not support the proposed Working Group Majority Recommendation. Pepco understands this question to refer to emissions rates using NREL's Cambium model as presented by Pieter Gagnon. The "Standard Scenarios" referenced in this question are similarly the outcomes of a research model and rely on assumptions neither adequately discussed nor vetted by members of the working group. Pepco notes that PJM publishes historical monthly emission rates and it provides data on hourly marginal fuel types. To the extent that historical data is used to determine emissions rates, applicable data from PJM should be the preferred data source when two or more data sources provide data at a similar level of granularity.

E. **Sierra Club:** Sierra Club does not support the Statement. Sierra Club states the concept of long-run hourly marginal emissions that it supports cannot be computed from the emissions factors reported in the NREL PJM East region. By its very nature, the long-run marginal emissions factor

[391] *See also*, PJM Carbon Pricing Study Update Anthony Giacomoni, Ph.D. Senior Market Strategist DC Commission December 1, 2020, page 2. "Average Emissions Rate Calculation: – Generation for each PJM generator is received monthly from the PJM Market Settlement Reporting System."

takes into account how the generation capacity of the system is changed ("marginal") over the entire relevant planning period ("long-run") by the measure considered in a particular BCA application. For example, DC has a local solar carve out reaching 10% of total load in 2041. If additional load is put on the grid as a result of some hypothetical measure under consideration, then this will lead to additional local solar generation under the solar RPS carve out by that percentage in the long-run and needs to be measured with an emissions factor that is very different than the factor in PJM East. A similar argument applies to the non-local solar renewable energy required under the DC RPS. A detailed protocol for how to compute the long-run marginal emissions needs to be developed, but relying on PJM East is totally inadequate.

F. **DCSUN:** Emissions factors should be determined based on the highest resolution available on power that is delivered into the District of Columbia. This could be eGrid D.C. value, PJM Delmarva Power Company Zone emissions, or an aggregate of PJM zones delivering to D.C. Cannot find a PJM-East region value in the NREL 2020 Standard Scenarios Report: A U.S. Electricity Sector Outlook and D.C. is excluded from its dataset. If this is referencing PJM EMAAC then it is not the right market, and the RTO is far too large to use either.

G. **DCCA**: The concept of long-run hourly marginal emissions that we support in 2 a above cannot be computed from the emissions factors reported in the NREL PJM East region. By its very nature, the long-run marginal emissions factor takes into account how the generation capacity of the system is changed ("marginal") over the entire relevant planning period ("long-run") by the measure considered in a particular BCA application. For example, DC has a local solar carve out reaching 10% of total load in 2041. If additional load is put on the grid as a result of some hypothetical measure under consideration, then this will lead to additional local solar generation under the solar RPS carve out by that percentage in the long-run and needs to be measured with an emissions factor that is very different than the factor in PJM East. A similar argument applies to the non-local solar renewable energy required under the DC RPS. A detailed protocol for how to compute the long-run marginal emissions needs to be developed, but relying on PJM East is totally inadequate.

H. **Grid2.0**: A protocol responsive to this analysis to compute long-run marginal emissions needs to be developed. The NREL PJM East values are not well tailored to DC's policies and clean energy incentives.

A.1.9.3 **Stakeholder Comments**

Working Group Majority Recommendation: *Upstream emissions of GHGs covered by A.1.1 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.*

Survey Question for Stakeholder Comment: *Should upstream methane emissions be considered when calculating the natural gas emission factor?*

A. **Sierra Club**: Supports the Statement. Sierra Club believes all Scope 1, 2, and 3 emissions[392] should be counted. Sierra Club notes it is particularly important for methane, since given high GWP, even low leakage rates can dramatically impact climate impact of gas use.

B. **OPC**: Yes, see comment. However, upstream emissions of natural gas used in electric generation should also be included. Additional research should be undertaken in this area.

[392] *See* https://www.carbontrust.com/resources/briefing-what-are-scope-3-emissions.

C. **DOEE**: Supports the Statement. DOEE notes fugitive emissions from the upstream segments of natural gas delivery—exploration & production, gathering, boosting, processing, transmission, and storage—are not reported accurately. Currently EPA uses a national default number for fugitive emissions from upstream segments, but numerous field reports have shown that EPA's numbers are significantly underestimated.393 ICF has produced a methane emissions estimator for the Carbon Neutral Cities Alliance, of which DC is a member, which estimates the fugitive emissions from upstream segments based on EDF's field findings. The upstream fugitive emissions numbers can be applied to natural gas power plants' emission factor as well. DOEE believes these emissions should be captured in any accounting methodology.

D. **Pepco**: Greater clarity is needed for Pepco to determine whether it supports the proposed Working Group Majority Recommendation, "Upstream methane emissions should be included when calculating the natural gas emissions factor for all utility supply based on natural gas." Pepco notes a specific definition of "upstream emissions" has not been presented for comment. Pepco supports the inclusion of distribution losses for both electricity and natural gas but does not support the inclusion of greenhouse gases attributable to the extraction and production of commodities used by District residents, including natural gas, in a BCA framework. The inclusion of emissions for the extraction and production of natural gas would logically extend to the emissions related to the production of other generators and their fuel including wind, coal, oil, and solar generation. Pepco believes such an "upstream" calculation would be arbitrary because neither Pepco nor the Working Group members have information on the source of fuel for individual generators, the production methods for the generators' fuel, or existing greenhouse gas regulations that may affect the production and extraction of such materials or fuels. Pepco does not track, control or otherwise influence the greenhouse gases attributable to the production and extraction of natural gas.

E. **WGL**: WGL does not support the Statement. WGL reports fugitive emissions associated with losses from its distribution system but does not support efforts to identify and report emissions beyond its system. As noted in our presentation to the CEAIWG Reporting Committee, there are numerous challenges relating to data collection and accuracy in attempting to report such emissions. However, if an attempt is made to include these emissions, symmetrical, non-discriminatory, logical and equitable reporting for ALL energy sources must be required. This includes emissions from both the electric utility sector (which is referenced in the modified recommendation) as well as transportation fuels which are a major source of emissions, both at endpoint and upstream, and have not been discussed. If Scope 3 upstream fugitive methane emissions are included for direct use natural gas, the District should seek to include evaluation of all other Scope 3 sources. WGL believes that all the purchased goods and services by city residents/businesses and embodied carbon in construction materials, from methane and other fossil sources, would far outweigh any upstream fugitive methane emissions from the natural gas.

F. **GRID2**.0: Yes. Absolutely.

G. **DCCA and DCSUN**: Yes.

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[393] *See* https://www.edf.org/climate/methane-studies (reporting that 16 studies from 2012-2018, combining experts from 40 institutions and 50 companies, indicate that observed numbers are 60% higher than EPA's estimates). *See also,* Source: RMI, "The Impact of Fossil Fuels in Buildings", slide 25, December 2019.

H. **AOBA**: AOBA is concerned with the scope of emissions calculations and how quickly this can run afar from what is truly emissions tied to serving the residents of the District. As we try and go deeper down the rabbit hole of Scope emissions, the daisy chain on counting of emissions could become a never-ending story. Do we count the emissions from China for the extraction of solar components as well as any emissions in the production of panels and shipment for use here? This is an extreme example but is used to illustrate that this warrants further discussion.

A.1.10.3 **Stakeholder Comments**

Working Group Majority Recommendation: *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.*

Survey Question for Stakeholder Comment: *If upstream emissions are considered, how could we calculate the DC attributable portion?*

A. **Pepco**: Greater clarity is needed for Pepco to determine whether it supports the proposed Working Group Majority Recommendation, "The upstream methane emissions attributable to each unit of natural gas delivered to DC should be determined proportionate to the total emissions from the natural gas supply chain to DC." Pepco notes a specific definition of "upstream emissions" has not been presented for comment. Pepco supports the inclusion of distribution losses for both electricity and natural gas but does not support the inclusion of greenhouse gases attributable to the extraction and production of commodities used by District residents, including natural gas, in a BCA framework. The inclusion of emissions for the extraction and production of natural gas would logically extend to the emissions related to the production of other generators and their fuel including wind, coal, oil, and solar generation. Pepco believes such an "upstream" calculation would be arbitrary because neither Pepco nor the Working Group members have information on the source of fuel for individual generators, the production methods for the generators' fuel, or existing greenhouse gas regulations that may affect the production and extraction of such materials or fuels. Pepco notes the Company does not track, control or otherwise influence the greenhouse gases attributable to the production and extraction of natural gas.

B. **OPC***:* Upstream emissions should increase effective emission rates—in this way upstream emissions are attributed to DC in direct proportion to natural gas used to provide energy in the District.

C. **Sierra Club**: Supports the Statement. Sierra Club believes upstream emissions calculated at an aggregate level should be allocated according to usage of the associated downstream product. In other words, it should be assumed that all downstream users are responsible for the upstream emissions in a manner proportional to the downstream usage of the end product. Sierra Club also states that DC should account for the lifecycle emissions of all gas combusted in the District. Leakage rates at the well-head, in the transmission system, and in the distribution system should be estimated and accounted for by scaling up the climate impacts of gas combusted in the District by this factor.

D. **WGL**: WGL refers back to its response above to the survey question, *Should upstream methane emissions be considered when calculating the natural gas emission factor?* WGL does not support the inclusion of upstream emissions. However, if this is done, WGL believes it must be done equitably across all sources to prevent a distorted view and response to these emissions. In the

absence of upstream treatment of fuel used to produce electricity and oil, this is a discriminatory and illogical recommendation. WGL is disappointed that after repeated efforts to raise this glaring deficiency, it remains in the document and recommendations, though it notes that the recommendation has evolved and now appears to include gas used for upstream electricity production, though it fails to address emissions from transportation which account for a larger percentage of gas usage in the District emissions inventory. WGL also states that utility voluntary efforts to reduce upstream emissions should be supported and encouraged.

E. **DOEE:** Supports the Statement. DOEE refers back to its response above to the survey question, *Should upstream methane emissions be considered when calculating the natural gas emission factor?* DOEE understands WGL purchases gas from certain supply basins, mostly from the Marcellus Shale region. The attributable portion for the District could be estimated based on Washington Gas's purchased volume compared to the total volume of gas sold from those basins.

F. **DCCA:** All upstream methane emissions are attributable to demand, so the percentage of such emissions (from wellhead through transmission network) as a share of final delivery to the distribution networks should apply to DC.

G. **GRID2.0:** % loss for N.A. multiplied by DC's % of N.A. consumption

H. **DCSUN:** Attribute it proportionally to the natural gas-derived MWh delivered into DC relative to the total natural gas MWh generated in the area at which upstream emissions are calculated.

A.2.1.3 **Stakeholder Comments**

Non-majority Recommendation: *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 N20 should be multiplied by the IPCC factors discussed in the next recommendation.

Survey Question for Stakeholder Comment: *Given the complexity of calculating a specific DC social cost of carbon, the BCA will utilize the social cost of carbon used by the DC SEU in their internal B/C analysis. This is currently $110.23 per metric ton. Further discussion is needed after changes in federal guidelines. In future iterations, the PSC may consider other approaches to pricing carbon, including but not limited to the marginal abatement cost approach and modified social cost of carbon for achieving carbon neutrality by 2050.*

A. **Pepco**: Pepco disagrees with the proposed Working Group Majority Recommendation "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 is needed once

Federal guidelines regarding science and price change, which is anticipated to occur in one year. This 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 N2O should be multiplied by the IPCC factors discussed in the next recommendation."

The use of a well-vetted, rigorously developed societal cost of greenhouse gases (SC-GHGs) is important to a successful BCA. The selection of an unvetted or contested cost of greenhouse gas emissions may result in protracted litigated processes due to the potential impact of greenhouse gas emission costs on a program's approval and the potential for performance-based regulation that incentivizes utilities to achieve greenhouse gas reductions. The only well-vetted, rigorously developed estimates of the societal costs of greenhouse gases (SC-GHGs) that were identified by the working group are the federal SC-GHG values.

Pepco is open to the use of social cost of carbon, cost of methane, and cost of nitrous oxide values that are calculated using a discount rate lower than the utility's WACC due to the intergenerational effects of GHG pollutants, if the values are based on federal cost of GHG scientific record. Pepco notes the SC-GHG values provided by the United States Government's Interagency Working Group on Social Cost of Greenhouse Gases in 2021[394] are transparent, objective, and unbiased estimates of the damages that would result from emitting one additional ton of carbon dioxide, methane, or nitrous oxide into the atmosphere. The IWG developed its SC-GHG values through an academically rigorous, transparent, and peer-reviewed process, consolidating multiple models drawn from academic literature and running them over a range of standardized input scenarios. The resultant SC-GHG values have been used by the U.S. federal government and state governments[395] for benefit-cost analyses of significant regulations and other actions, such as energy-sector resource planning and valuation. Pepco supports the use of the commonly used "central value" for evaluation of programs. The resulting social costs of greenhouse gases are used in regulatory frameworks on both the federal and state levels. [396]

Given the complexities and the magnified possibility of bias in estimating the cost of greenhouse gas emissions, Pepco has significant concerns about proposals that are not based on the IWG estimates of the SC-GHGs. Pepco supports the use of the federal social cost of carbon, social cost of methane, and social cost of nitrous oxide (N_2O). These values were updated in February 2021 and available in a Technical Support Document.[397]

B. **DOEE**: DOEE makes the following suggestion for the first part of the Statement: *Given the complexity of calculating a specific DC social cost of carbon, the BCA will utilize the social cost of carbon equivalent used by the DC Sustainable Energy Utility (SEU) in their internal B/C analysis. The BCA will use a cost of carbon equivalent based on DCSEU's $110.23 per metric ton*

[394] Technical Support Document: Social Cost of Carbon, Methane, (whitehouse.gov).
[395] The IWG values are used in federal cost-benefit analysis and states such as California, New York, Illinois, Colorado, Minnesota, Nevada, and Washington. Canada also has adopted the social cost of greenhouse gases methodology. Valuing_Climate_Impacts.pdf (policyintegrity.org) and Social Cost of Carbon 101 (rff.org).
[396] Technical Support Document: Technical Update of the Social Cost of Carbon for Regulatory Impact Analysis - Under Executive Order 12866, August 2016 (epa.gov).
[397] *See* Technical Support Document: Social Cost of Carbon, Methane, (whitehouse.gov).

for 2020 for the first implementation cycle of 2-3 years. Prices should be inflation-adjusted annually. The DCSEU's figure is based on the New England figure, which is in 2018 dollars, so the price should be inflation-adjusted to $117 per metric ton for 2021.

DOEE notes that the DCSEU has adopted the SCC framework for evaluating damages from GHG emissions. At the Working Group meeting on February 2, 2021, the Working Group reviewed carbon pricing schemes from other jurisdictions and from the DC SEU. DOEE observed that while there were disagreements on the methodology for setting a social cost of carbon, the parties appeared to express tentative support for DC SEU's $110/mT CO_2e ($100 per short ton). This price is consistent with the lower bound identified by J.C.J.M. van den Bergh and W.J.W. Botzen in *Nature Climate Change*398 and a number of other SCC values in the table below that are consistent with the District's climate goal of carbon neutrality by 2050 and 1.5°C of warming. DOEE proposes using the $117 figure for the first performance period, as it represents the floor of carbon pricing that is consistent with the District's climate goals.

Assessment	**Price per Metric Ton of CO_{2e}**	**Price in 2021 dollars**
Van den Bergh & Botzen lower bound[399]	$125 (2014 dollars)	$140
EPA high impact (i.e. 95th percentile and 3% discount rate) [400]	$123 (2007 dollars)	$159
Vermont PUC[401], Rhode Island,[402] AESC Study New England[403]	$110 (2018 dollars)	$117
IPCC (1.5°C)[404]	Median: ~$450; Range: ~$125-$650 (2018 dollars)	Median: ~$475; Range: ~$132-$687
Nordhaus revised modeling (2.5 °C)[405]	$133 (2010 dollars)	$161

DOEE is concerned with SCC values that are too low, which includes the current EPA SCC values: EPA's SCC numbers are based on the work of the Interagency Working Group, which in turn adopted the inputs and assumptions that are consistent with global warming of 3 degrees or more.406 Because these SCC values project a future warming of 3 degrees or higher, DOEE

[398] As van den Bergh and Botzen note in their assessment: "The lower bound to the SCC of US$125 per tCO_2 is far below various estimates found in the literature that attribute a high weight to potentially large climate change impacts. Therefore, the proposed lower bound can be considered a realistic and conservative value."
[399] van den Bergh, J., Botzen, W. A lower bound to the social cost of CO_2 emissions. Nature Climate Change 4, 253–258 (2014). https://doi.org/10.1038/nclimate2135.
[400] *See* https://19january2017snapshot.epa.gov/climatechange/social-cost-carbon_.html.
[401] *See* https://epsb.vermont.gov/?q=downloadfile/417666/138298.
[402] *See* http://rieermc.ri.gov/wp-content/uploads/2019/09/2020-eepp-attachment-4-ri-test-third-draft.pdf.
[403] *See* https://www.synapse-energy.com/sites/default/files/AESC-2018-17-080.pdf.
[404] *See* https://www.ipcc.ch/site/assets/uploads/sites/2/2019/06/SR15_Full_Report_Low_Res.pdf, pg. 153.
[405] *See* Table 1, See: https://www.pnas.org/content/114/7/1518#sec-4.
[406] *See* Figure 2, showing the DICE 2016R model by Dr. William Nordhaus reaching 4 degrees of global warming by 2100 https://www.pnas.org/content/114/7/1518#sec-4; Dr. Nordhaus's modeling results have been incorporated by EPA in developing the SCC table. See also https://www.pik-potsdam.de/en/news/latest-news/an-economic-case-for-the-un-climate-targets-early-and-strong-climate-action-pays-off ("So what level of climate action is best,

believes these values do not support the District's goal that projects a future warming of well-below 2 degrees. DOEE is concerned that the much-anticipated update to EPA's SCC in 2022 may be inconsistent with the District's goal as well. DOEE believes it is essential that the PSC demonstrate that any SCC value for the BCA directly result in 50% reductions by 2032 and carbon neutrality by 2050.

DOEE makes the following suggestion for the second part of the Statement: *Further discussion regarding the social cost of carbon equivalent is needed after changes to federal guidelines. After the first implementation period of 2-3 years, the PSC should consider moving to a marginal abatement cost approach for achieving carbon neutrality by 2050.*

DOEE states that the CEA or marginal abatement cost approach is consistent with a jurisdiction that has already established GHG reduction goals.407 DOEE believes the CEA is preferred in future cycles, because choosing a discount rate for SCC implies making a judgment about the value of climate damages for future generations. DOEE further notes this judgment has already been made by the District through the adoption of a carbon neutrality goal: the value of future climate damages is equal to or greater than the cost of achieving carbon neutrality by 2050.

C. **WGL**: WGL disagrees with the Statement. WGL raises the following points:

- This differs from Final Survey Question which starts:" Given the complexity of calculating a specific DC social cost of carbon, the BCA will utilize the social cost of carbon used by the DC SEU in their internal B/C analysis." Final Survey, page 13. No reason is given. The report indicates that stakeholders voted, however a question not on the survey cannot be voted on. Notwithstanding the process concerns, the key is that the BCA have an adequate foundation for action for such a critical parameter, and helps the District avoid potentially large mistakes that have adverse consequences on the district. The wrong approach also decreases the feasibility or reaching the goals.

  There is no evidence of any other SCC study being comparable to the EPA work in terms of scope, rigor, and resources devoted. There is no shortcoming identified, and no reason why the DCSEU parameter should be used instead of the February 2021 EPA value. By picking other sources that do not have probabilities and multiple cases, there is no way to even address claims about the SCC such as insufficient weight has been given to a particular outcome like worse climate change than expected. WGL emphasizes that the sole methodological basis for discounted benefits analysis is use of expected values (probability weighted value for SCC and all parameters) of the SCC. That is, the discounted cost methodology must assume the expected value is discounted. As alluded to above, during the CEAIWG process claims have been made that the SCC value of EPA fails to account for extreme climate change adequately. If there is not a showing that a study (e.g. EPA SCC) fails to account for the potential for extreme climate outcomes and uses the wrong probabilities, one should not change the SCC, and especially one should not simply adopt a lower discount rate to achieve a result of higher benefits from GHG reduction (i.e. lower the denominator instead of raise the numerator). If the SCC is a problem, demonstrate that and change the SCC. Conclusory statements on such an important parameter should not be used. Otherwise, one risks double counting extreme events (via a higher SCC

economically speaking? This question has puzzled economists for decades, and in particular since the 2018 Nobel Prize in Economics went to William Nordhaus, who found 3.5 degrees of warming by 2100 might be an economically desirable outcome.").

[407] *See* 2018 IPCC report, description of CEA. See: https://www.ipcc.ch/sr15/chapter/chapter-2/.

even though it is properly accounted and a lower discount rate as a mathematical kluge). WGL opposes use of a discount rate other than utility costs of capital in the District. The discount rate should only be changed based on a reason showing why the District's determination of the cost of capital is in error, and why utility programs which rely on the utility's balance sheet should not use the utility's cost of capital. If government programs on the District's balance sheet are to be used, then the District's cost of capital can be used. The goal is to have adequate foundation for the policies pursued and to reach the goals of the District and WGL.

- In the current calculation by the US EPA of the SCC, society is defined as the world – i.e., reductions by DC benefit the entire world's population. The program's costs would be incurred by the District ratepayers. The SCC is measured as the discounted present value of benefits in that year. The SCC generally varies by year. Most estimates show the SCC increasing annually, over time. This is because studies such as the US EPA study show impacts of climate change intensifying over time.

- The SCC is used as the basis for the Social Cost of other Greenhouse Gases (GHG) – e.g., Methane – i.e., the Social Cost of Methane is a multiple of the SCC. The SCC equals the upper bound on the willingness to pay for incremental emission reductions. Any reduction activity costing less than the SCC is economic (as long as lower cost alternatives such as offsets are not available). Any reduction costing more is not. Hence, the SCC is the most critical parameter in evaluating decarbonization options. If the set of programs is chosen based on economic considerations, the average costs of reductions for the set of reduction programs is less than the marginal cost because the least cost options are prioritized first. The SCC and its documentation could directly bear on whether the utility costs of decarbonization programs can be included in utility rates, given current legal requirements. That is, programs that are not economic may not be includable in utility rates. Inaccurate measurements of the SCC could result in exclusion of costs.

- No District decarbonization cost estimates exist, whether total, average or marginal. In addition, the cost estimates for the renewable portfolio standard (RPS) also do not exist. Therefore, it cannot be known if the SCC will support the achievement of decarbonization targets.

- The SCC must be consistently applied by the District. The DCSEU has used a SCC of \$110/mT CO_2e (which equals \$100/short ton) for many years that plays a very large role in determining net benefit estimates of existing programs. The determination of a different SCC could therefore have potential collateral ramification for DCSEU programs. At the same time, the SCC should not differ across the US or the world without an explanation. The resources required by the District to develop an explanation, and update that explanation, are not likely to be available. The range of issues is vast creating these high costs.

- The SCC can have large impacts on rates. For example, given that starting emissions are approximately 7 million tons, a SCC of \$100/ton carbon results in the conclusion that it is worth paying up to approximately \$700 million per year. While average costs might be lower, the willingness to pay needs to make sense in light of the budget of the city, current rates, etc.

- The SCC can also have important impacts on equity since it helps determine the average rates, the competitiveness of the District, the amount of funds available for other priorities, etc.

WGL supports the use of the federal social cost of carbon, social cost of methane, and social cost of nitrous oxide (N_2O). These values were updated in February 2021, are available in a Technical Support Document, there is no evidence of major updates in the offing, and finally, if one waits for updates of parameters, the process will never reach conclusions.[408]

WGL supports the EPA SCC because of the far greater and extensive documentation and analysis for the federal SCC compared to any other proposed option. The decisions on SCC need to be based on transparent and comprehensive documentation in order to ensure that benefits exceed costs, and therefore, ensure cost recovery under current law. Using the federal SCC also facilitates updating, since it ties the SCC to a public source. The District should attempt to be consistent with new information, assuming a reasonable basis for the change. The District should also attempt to harmonize its SCC, if practical, with neighboring states.

WGL believes there is no acceptable rationale for the DCSEU number. Furthermore, WGL notes that the DCSEU consultants have acknowledged that it is much higher than what is being used by many other states. There is no estimate of the resources required to separately determine the SCC, which requires a very broad range of scientific capabilities.

WGL opposes use of the marginal cost of abatement in place of the SCC because there is no regard for benefits, the evaluation is therefore not a BCA analysis. Rather it is a CA analysis, in direct contradiction to the terms of the NOI, and is equivalent to a willingness to pay for reductions regardless of impacts on affordability, equity, including impacts on the poorer portion of the district's population. Regardless of statutory requirements, this approach seems wholly inappropriate when the District is the city with the second most inequitable income distribution in the US, and poor people pay a larger share of their income for energy. They also lack the means to compensate for the potential impacts of high cost, high risk strategies via moving (temporarily relocating to other jurisdictions during blackouts), building their own energy infrastructure (e.g. home long duration batteries) or managing any adverse economic impacts.

WGL is unaware of the cost benefit analysis underlying the 1.5 degree or any other degree target. Simply pointing to international statements is not adequate because these studies lack detailed analysis of the resilience impacts of shifting, for example, all space heating load and transportation to power. This is not a criticism of PEPCO's system but rather a generic statement that detailed analysis of the costs and impacts is lacking. The gas system has much less blackouts than the power system because it is below ground and is designed knowing that restarts are much harder.

WGL does not agree that the District can set a target without cost benefit analysis and comply with current laws identified elsewhere in WGL comments. There is no explanation how this comports with existing legal requirements that utilities pass only the costs of activities with positive net benefits to ratepayers. There is also no explanation on how this interacts with the RIM test, e.g., should the program costs be included or not. Even if there were a conceptual basis for using the marginal abatement cost, there is no estimate of marginal abatement costs or determination of the geographic scope for developing such an estimate (e.g. the district, RGGI states, the US?), and it will be complicated by what other states do vis a vis climate programs.

Lastly, many of the stakeholder comments are effectively legal opinions. As noted, the claim that affordability and other statutory consideration cannot bar compliance with goals is the essence of

[408] *See* Technical Support Document: Social Cost of Carbon, Methane, (whitehouse.gov).

the marginal abatement cost argument. Legal arguments should be handled properly, and explicitly. Notwithstanding, it appear contradictory to argue that language about climate goals overrides utility obligations for safety, reliability, resilience, and affordability, but language on net neutrality and offsets can be overridden via a vote of parties in a survey most of whom are not bound by the legal obligation to serve District ratepayers reliably and affordably even in blizzards. Lastly, the public should also be aware of willingness to pay not based on benefits.

WGL states the level of emission reduction cannot be identified until the issue of offsets usage has been determined. Marginal abatement cost estimation requires level of in-district reduction versus reduction elsewhere. WGL believes offsets might create a "backstop price" making some in district reductions uneconomic.

WGL emphasizes it is attempting to correct the process and put it on an adequate foundation in order to achieve the Climate goals as well as the environmental, safety affordability and feasibility goals.

Final comments: WGL recommended using Federal WGL notes the previous SCC recommendation was:

The social cost of carbon should be aligned with DOEE/DCSEU values published in February 2021. WGL pointed out that discounted cash flow analysis must use the expected or 50th percentile estimate and hence the only basis for using the 95th percentile is a clear showing that the expected value is in error, which there is not in the record.[409] *to keep the district analyses consistent. A review is needed after changes in Federal guidelines anticipated in one year. In future iterations, the Commission should also consider other approaches to pricing carbon, including but not limited to the marginal abatement cost approach and modified social cost of carbon for achieving carbon neutrality by 2050.*

The current recommendation is unclear and appears quite arbitary. Furthermore it was not discussed by the WG.

> *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 is needed once Federal guidelines regarding science and price change, which is anticipated to occur in one year. This 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.*

For this and the follow reasons WGL opposes the recommendation. How is it defensible to reinterpret the SCC to "reflect the goals of the District" when the SCC is an objective measure equal to the benefit of decreasing a ton of CO2 emissions? WGL objected to the use of marginal abatement cost because it is directly contradicted by every US EPA approach. Also, the marginal abatement cost converts a BCA approach to a CA cost analysis approach only – there is no regard

[409] Final Survey, page 13, "There is no rationale for DC SEU number."

to benefits and therefore is, by definition, not a BCA analysis.[410] This is entirely inconsistent with the stated purpose of the process. The use of an arbitrary, undocumented, non-transparent approach cannot be the basis for cost recovery of utilities or a determination of cost effectiveness. This is especially the case because the SCC is the single most important parameter in the BCA. This also seems highly irregular given that the federal government is devoting millions of dollars to estimate this parameter, and continual investment and revisions are expected. It is not feasible for the District to conduct this analysis independently and expect it to withstand scrutiny.

WGL recommended using Federal values published in February 2021 and that the use of the readily available Federal values must be properly applied. WGL pointed out that discounted cash flow analysis must use the expected or 50th percentile estimate and hence the only basis for using the 95th or some other percentile is a clear showing that the expected value is in error.[411]

WGL objected to the use of marginal abatement cost because it is directly contradicted by every US EPA approach. Also, the marginal abatement cost converts a BCA approach to a cost analysis approach – there is no regard to benefits and is, by definition, not a BCA analysis.[412]

Care is needed to properly interpret the available estimates due to the use of nominal and real dollars, combined with nominal discount rates. At 5% discount rate, using the expected value, the social cost of carbon by 2050 is $32/metric ton according to the EPA report of February 2021 (in real 2020$) and approximately $110 per metric ton in nominal dollars assuming a 2.5% inflation rate. **this sentence makes no sense in the absence of these edits**. The DCSEU value for the SCC of $110/mT CO_2e.[413] for all years in nominal dollars and has no clear basis.[414]

The Federal SCC accounts for all costs of carbon regardless of source of the emission, domestic or foreign. Equivalently, the benefit should be given equal weight regardless of where on the globe the benefit accrues. Therefore, the combination of this parameter with a no offsets policy is even more illogical because it is effectively treating District emissions as the only emissions source of significance.

D. **Sierra Club**: It is fundamental to note that the District's climate commitments are not formulated in terms of a carbon price, but instead in terms of quantities, namely GHG reduction goals for 2032 and 2050. Therefore, Sierra Club believes any approach that uses a social cost of carbon as a principal tool in upholding the District's climate commitments would need to demonstrate that using a specific assumed social cost of carbon would in fact result in the required reduction in GHG quantities. For a social cost of carbon to be effective at reducing GHG emissions to zero by 2050, the cost must be high. The International Monetary Fund estimates that a carbon tax of $75 per ton would reduce CO_2 emissions in the United States by about 30 percent by 2030.[415] Achieving carbon

[410] Ibid.
[411] Final Survey, page 13, "There is no rationale for DC SEU number."
[412] Ibid.
[413] At 4% discount rate, the value is close to the DCSEU. Technical Support Document: Social Cost of Carbon, Methane, (whitehouse.gov), Page 4. Cited in Final Survey on page 4 (interpolation between 3% and 5% value).
[414] At 4% discount rate, the value is close to the DCSEU. Technical Support Document: Social Cost of Carbon, Methane, (whitehouse.gov), Page 4. Cited in Final Survey on page 4 (interpolation between 3% and 5% value).
[415] International Monetary Fund, Fiscal Monitor: How to Mitigate Climate Change, at 7, Figure 1.2 (Oct. 2019). https://www.imf.org/en/Publications/FM/Issues/2019/10/16/Fiscal-Monitor-October-2019-How-to-Mitigate-Climate-Change-47027.

neutrality by 2050 would require a higher cost. Simple linear approximation suggests roughly tripling the carbon cost, to about $200.

Sierra Club further notes that DC has committed to carbon neutrality by 2050, not 2030, which could be viewed to suggest a social cost of carbon lower than our estimate. However, achieving additional emissions reductions beyond 30 percent would certainly be more costly, because the easiest and least expensive pathways to reduced emissions – the "low-hanging fruit" – would already have been accomplished. Given these factors, Sierra Club believes a social cost of carbon for emissions in 2020 of about $200 per ton is therefore required to achieve the emissions reductions that the District's climate commitments have set forth.

If a social cost of carbon is used in the Commission's framework, Sierra Club requests that it be applied to both CO_2 and methane emissions, as a social cost of GHG emissions, rather than for carbon alone. The EPA arrived at a much higher social cost for methane than carbon because methane is 84 times more powerful a greenhouse over a 20-year timeframe than carbon. Sierra Club asks that if a social cost of GHGs is used by the Commission, the cost for methane should be calculated from the social cost of carbon scaled up by the relative potency of methane vs CO_2 using the 20 year horizon.

Finally, Sierra Club notes that previous estimates of the social cost of carbon that are available in the literature from a few years ago are outdated due to the continued trend to lower risk free interest rates. Lower interest rates have dramatically reduced the relevant discount rates for computing lifetime damages from carbon. As interest rates discount factors fall, the present value of future damages rise. As a result, earlier estimates of damages are too low and should not be used.

E. **OPC, Grid2.0, DCSUN**: Yes.

F. **DCCA**: No.

G. **AOBA**: Supports using the federal standard.

A.3.1.3 **Stakeholder Comments**

Non-majority Recommendation: *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.*

The current 100-year IPCC values as per AR5 are:

Methane 28

N2O 265

Survey Question for Stakeholder Comment: *GWP values should follow IPCC guidelines for 100-year potentials (as opposed to 20- or 500 year). GWP values should follow the latest IPCC guidance: at present AR5 (IPCC's technical guide), and updating as the IPCC releases new guidance.*

A. **WGL**: [Methane GWP should be based on a 100-year value following the EPA protocol and should be updated as EPA updates its values.] Reports need to be consistent with US EPA's reporting

requirements. Pepco joins WGL in this view. WGL believes the parameters used need to be transparent and well-documented, and deviations from established values have to be adequately justified to avoid possibility of error – e.g., costs exceeding benefits. Also, decisions have to be applied consistently and in a non-discriminatory basis. WGL believes, unless these factors underlying the decision were demonstrated based on adequate sources, the costs might not be recoverable in utility rates.

B. **OPC**: Yes.

C. **DOEE**: Yes, that [GWP Values] the update should be automatic [as per IPCC guidance updates]. [For Methane] DOEE recommends using 36, which is the appropriate value that fully considers the actual global warming contributions of methane. In IPCC AR5, GWP100 of 28 does not account for climate-carbon feedbacks or oxidation of methane into carbon dioxide. In IPCC AR5, GWP100 of 34 accounts for climate-carbon feedbacks but does not account for oxidation. 36 GWP for methane would account for oxidation.[416]

D. **Pepco**: Pepco supports using federal regulatory values for societal costs of greenhouse gas emissions and, to the extent relevant, US EPA's GWP values to maintain consistency with other US GHG regulations and markets. These values should be updated as revised by EPA.

E. **GRID2.0**: Probably not. Rapidly changing climate conditions suggest that a shorter time frame would be more prudent.

F. **DCCA**: No, using a lower GWP tied to a 100-year horizon makes achieving our climate goals more difficult. Since our carbon-neutrality goal is 29 years away, we can with equal justification set the GWP to the figure for 30 years (rounded), which (interpolating the IPCC AR5 figures for methane at 20 and 100 years) corresponds to a GWP range of 78-81.

G. **DCSUN**: No, methane GWP should be based on its 20-year potential, reflecting its lifetime of 10-12 years once emitted. This gives methane 84-87 GWP per the EPA and IPCC AR5. The EPA uses the 100-value in its Inventory of Greenhouse Gas Emissions and Sinks (Inventory),[417] to comply with the United Nations Framework Convention on Climate Change. D.C. has no such obligation, and the EPA cites the 20-year GWP of methane as a valid alternative value. The 20-year value is also much closer in-line to the timeframe D.C. has mandated 100% renewable energy compliance; utilizing 100-year values when there is a mandate to stop emissions by 2032 is incongruous.

H. **Sierra Club**: No, 20-year GWP should be used. Given temporal severity of climate crisis, 100 years is simply not a relevant time frame.

B.1.1.3 **Stakeholder Comments**

Working Group Majority Recommendation: *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.*

[416] *See* https://www.ipcc.ch/site/assets/uploads/2018/02/WG1AR5_all_final.pdf, pg. 714.
[417] *See* https://www.epa.gov/ghgemissions/understanding-global-warming-potentials.

Survey Question for Stakeholder Comment: *The NSPM BCA Framework and process should be adopted to put into place an "organic" framework that can be evolved in a consistent manner to assimilate technology, policy and market/customer changes, as well as to evolve B/C analyses to address multi-sited DER and their interactive effects; multi-sectoral applications; dynamic utility system optimization planning, comprehensive end-to-end electricity system planning.*

A. **Pepco:** The proposed Working Group Majority Recommendation should be rejected, and a different approach should be adopted as described below. The fact that the CEAIWG was not able to reach agreement on many issues regarding a BCA methodology does not justify imposing the positions espoused in the "National Standard Practice Manual for Distributed Energy Resources" ("NSPM").[418] This is especially important when the report has been positioned as "policy-neutral" but actually contains hard policy positions that have not been recognized or adequately discussed, the report lacks sufficient clarity which could lead to follow-on issues regarding interpretation, and it is neither customized for the District's policy commitments nor designed to address the scope of the issue that is the subject of the instant proceeding.

   Adoption of the NSPM for BCA development would effectively constitute acceptance of contentious positions without specifically addressing or evaluating the validity of those positions. The NSPM is a report authored in August 2020 by a group of consultants who explicitly represent or have represented a subset of working group stakeholders in Commission dockets pertaining to contentious BCA or BCA-related issues.[419] The slide deck summarizing the NSPM, which was presented at the November 12, 2020 BCA Framework Committee Meeting states, "This manual matches and expands on much of what was found in the Synapse/OPC Value of Solar report."[420] This 2017 Synapse report was contentious,[421] and similarly Pepco has identified significant problems associated with the NSPM in its responses to proposed Working Group Majority Recommendation B.1.2, proposed Working Group Majority Recommendation B.1.4, and proposed Working Group Majority Recommendation B.1.10.

   In its response to proposed Working Group Majority Recommendation B.1.2, Pepco explains that the NSPM's high-level principles suffer from significant issues. These issues pertain to lack of clarity and inappropriateness for the BCA that is the subject of the instant proceeding. They also relate to concerns that adoption of the NSPM could lead to inefficient and costly decisions for the District's residents and businesses. In its response to proposed Working Group Majority Recommendation B.1.4, Pepco explains that several of the "impacts" in the NSPM are not

[418] "National Standard Practice Manual – For Benefit-Cost Analysis of Distributed Energy Resources," NESP, August 2020.

[419] The lead author of the NSPM is a consultant from Synapse Energy Economics, and this same consultant also co-authored a report entitled, "Distributed Solar in the District of Columbia, Policy Options, Potential, Value of Solar and Cost-Shifting" that was filed at the Commission by the OPC on May 19, 2017 in Formal Case No. 1130. Similarly, the NSPM was co-authored by Karl R. Rábago and coordinated by Julie Michals, both of whom represent GRID2.0 in the instant docket. (*GD-2019-04-M, In the Matter of the Implementation of the 2019 Clean Energy DC Omnibus Act Compliance Requirements ("GD-2019-04-M")*. Third Joint Metrics and BCA Framework Committee Meeting Minutes, Attachment No. 1, filed March 9, 2021).

[420] *GD-2019-04, In the Matter of the Implementation of the 2019 Clean Energy DC Omnibus Act Compliance Requirements ("GD-2019-04")*, BCA Framework Committee First Meeting Minutes Report at Attachment No. 3, filed November 23, 2020.

[421] Contentious issues associated with this report are described in *In the Matter of the Investigation into Modernizing the Energy Delivery System for Increased Sustainability*, Formal Case No. 1130, Comments of Potomac Electric Power Company on the Office of the People's Counsel Report on Distributed Solar in the District of Columbia (Jul. 12, 2017).

adequately defined, and several may not be appropriate for inclusion in the BCA. In its response to proposed Working Group Majority Recommendation B.1.10, Pepco explains that the NSPM has been positioned as "policy-neutral" yet it actually contains hard policy positions that have not been recognized or adequately discussed, the report lacks sufficient clarity which could lead to follow-on issues regarding interpretation, and it is neither customized for the District's policy commitments nor designed to address the scope of the issue that is the subject of the instant proceeding.

In its comments, GRID2.0 attempts to diffuse any concerns about issues with the NSPM's positions on BCA design and the NSPM's lack of clarity on BCA matters that may be left to interpretation by the NSPM's authors, by claiming that the NSPM's content is "policy-neutral." However, a closer look at the NSPM shows that its core principles are tied to hard policy positions. Pepco identifies some of these policy positions in its response to proposed Working Group Majority Recommendation B.1.2. As explained by Pepco, several of these policy positions are not adequately defined and do not appear appropriate for inclusion in a BCA based on a Societal Cost Test. As Pepco also explains, adoption of the NSPM's positions could cause the BCA to be distorted, leading to inefficient and costly decisions for the District's residents and businesses, and the advancement of policy goals could be replaced by contentious proceedings regarding underlying assumptions and assigned values.

In its response to proposed Working Group Majority Recommendation B.1.10, Pepco proposes a different approach than the adoption of the NSPM. Pepco's recommended approach is more straightforward, it builds upon the progress to date by stakeholders and the Commission, and it is better aligned with the District's policy goals. Specifically, as described in more detail in Pepco's response to proposed Working Group Majority Recommendation B.1.10, Pepco recommends 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 recommends that either the LCS BCA Handbook or the Climate Solutions BCA (pertaining to FC1167) serve as the initial proposal for comment. Pepco also notes that the NSPM cannot serve as the initial proposed BCA methodology for comment, as the NSPM does not offer a BCA methodology with sufficient detail and clarity for application. Instead, it only includes high-level positions on some issues while leaving other issues open, and it lacks clarity and detail in certain important areas for comment. Under Pepco's proposal, stakeholders may refer to the NSPM or any other document to support their positions if they desire.

Notably, Pepco's recommended approach is similar to the approach used by the NYPSC to successfully develop New York's BCA methodology, which the Commission referenced in its Notice of Inquiry in the instant docket.[422] Specifically, the NYPSC Staff issued a "BCA Whitepaper" that proposed the specific benefit and cost components to be included in the BCA and

[422] GD2019-04-M, In the Matter of the Implementation of the 2019 Clean Energy DC Omnibus Act Compliance Requirements, Notice of Inquiry, November 25, 2019, p. 2.

described the methodologies to value those benefits and costs.[423] Parties then provided feedback on the BCA Whitepaper, and the NYPSC issued an order on the contested issues.[424]

For all these reasons, while the NSPM may be a potential informational resource when developing a BCA, neither the NSPM nor any of its claims should be endorsed without further deliberation and agreement. The NSPM is just one report that was presented at the working group meetings, and it has not been accepted by the Commission in any proceeding.

Other BCA frameworks that were presented during the working group meetings (e.g., the LCS BCA Handbook and the DCSEU approach) or that have been developed through a public stakeholder process involving multiple rounds of filed comments from a broad spectrum of organizations, institutions, utilities, and DER service providers (e.g., the New York BCA methodology[425]) should also be considered as resources for BCA development. As noted by Staff at the August 30 meeting of the Working Group, there was not enough time allotted to compare different methodologies.[426]

There also is no merit to GRID2.0's suggestions that the LCS BCA Handbook does not represent a "systematic" approach. The LCS BCA Handbook is based on a framework and principles that pertain to the full spectrum of applications that are the subject of the instant docket. The LCS BCA Handbook was developed as part of Pepco's Distribution System Planning and Non-Wires Alternatives Process as approved by the Commission and it was designed to be consistent with the PowerPath Vision Statement and Guiding Principles: Sustainable, Well-Planned, Safe & Reliable, Secure, Affordable, Interactive and Non-Discriminatory.[427] Moreover, in light of this Vision Statement and Guiding Principles, which the Commission referenced in its Notice of Inquiry in the instant docket,[428] Pepco identified and elaborated on the principles and framework for BCA development in the context of the analytical approach to take when considering the effects of a utility proposal on climate change and the District's policy commitments, which is the subject of the instant docket.[429] The PowerPath Vision Statement and Guiding Principles, and the principles and framework for BCA development that follow from them, served as a foundation for the development of the LCS BCA Handbook.

Further, GRID2.0's argument that the LCS BCA Handbook does not constitute an analytical framework is incorrect because the LCS BCA Handbook presents a BCA methodology in sufficient

[423] Proceeding on Motion of the Commission in Regard to Reforming the Energy Vision, Staff White Paper on Benefit-Cost Analysis in the Reforming Energy Vision Proceeding, Department of Public Service Staff, State of New York Public Service Commission Case 14-M-0101, July 1, 2015.
[424] Proceeding on Motion of the Commission in Regard to Reforming the Energy Vision, Order Establishing the Benefit Cost Analysis Framework, State of New York Public Service Commission Case 14-M-0101 (Jan. 21, 2016).
[425] Proceeding on Motion of the Commission in Regard to Reforming the Energy Vision, Order Establishing the Benefit Cost Analysis Framework, State of New York Public Service Commission, Case 14-M-0101 (Jan. 21, 2016).
[426] Reference to be inserted after meeting minutes are posted.
[427] *In the Matter of the Investigation into Modernizing the Energy Delivery System for Increased Sustainability*, Formal Case No. 1130, Order No. 20286 (Jan. 24, 2020) ("Order No. 20286"), pp. 2, 34, and Statement of Commissioner Richard Beverly.
[428] GD2019-04-M, In the Matter of the Implementation of the 2019 Clean Energy DC Omnibus Act Compliance Requirements, Notice of Inquiry, November 25, 2019, pp. 1-2.
[429] *In the Matter of the Implementation of the 2019 Energy DC Omnibus Act Compliance Requirements,* General Docket No. 2019-04-M, Comments in Response to the Notice of Inquiry, (Jan. 13, 2020) ("Pepco Notice of Inquiry Comments"), pp. 1, 7-17.

detail for its current usage, and the Commission has explicitly recognized that a BCA is itself an analytical framework for the purposes of the instant docket.[430]

Regardless, any criticism levied on the LCS BCA Handbook does not constitute justification of adoption of the NSPM, as the NSPM still suffers from the problems described above, which make it unfit for adoption.

B. **WGL:** WGL expressed concerns about the NSPM even though WGL appreciates the importance of objective analytic standards. The NSPM is overall a contribution to this goal. WGL is also open to a full dialogue on these issues and recognizes that the novel nature of the goals means that all parties are having to adjust including the authors of NSPM. WGL is nonetheless concerned that wholesale reliance on NSPM may not be appropriate or legal.

One concern is that many of the gas and electrification issues, and transportation issues, have not received proportionate treatment in the NSPM framework compared to energy efficiency analysis in the power sector. Such assessment must be done. For example, the NSPM literature, as far as WGL has been able to determine, has failed to call to the attention of NSPM users the importance of assessing the impacts of a heavy strain on the electric system's infrastructure due to extensive electrification. This is especially important in light of February 2021 events in Texas when the grid failed during a record winter peak. This is particularly urgent given the lack of even a single detailed study of the impacts on distribution infrastructure of a shift to winter peaking and a massive increase in the peak. This lack is not a Pepco issue; it is an energy industry issue. WGL is not aware of any detailed study to the feasibility, lead time and costs of major upgrades to the distribution system where system security is maintained (i.e. treatment of thermal and voltage limits). This statement applies domestically or internationally. This is not entirely surprising given how new are the existence of proposals of full electrification of space heating and transportation. Though NSPM's BCA framework as discussed within the CEAIWG process may be theoretically adequate on a project-by-project basis, its significant weaknesses concerning focus, notably the absence of data and investigation of gas and transportation issues, must be urgently recognized.

As discussed elsewhere, WGL's concern is <u>not</u> directed at Pepco or Pepco's system, but rather an overarching and broad-based concern that NSPM has missed a critical energy issue, namely the lack of consideration of the effects of electrification on the integrated energy infrastructure, reliability and resilience. To say that concerns about putting "all of one's eggs in one basket" is against Pepco misses the issue and creates a false narrative; non-incremental climate change programs could have impacts that are not anticipated because they never happened before or technical data is lacking (e.g. how likely is a black swan event). Theoretically correct high-level treatment focused on energy efficiency combined with superficial theoretical treatment of new, systemic issues is not adequate.

WGL is also concerned about the inclusion in the NSPM of marginal cost of abatement as a basis for determining the benefits of emission reduction. This is fundamentally at variance with the logic of a BCA, converts the BCA to a CA and does not address the statutory requirements to consider affordability, safety etc. WGL is also concerned about the NSPM discussion of discount rates. This is because the NSPM appears to envision a different cost of capital than set in rate cases even while using the utility's balance sheet rather than someone else's e.g. the District's.

[430] GD2019-04-M, In the Matter of the Implementation of the 2019 Clean Energy DC Omnibus Act Compliance Requirements, Notice of Inquiry, November 25, 2019, p. 2.

WGL is also concerned about the NSPM's discussion of the methodology of discounting costs. There does not appear to be clear and adequate discussion that the sole basis for discounting that it use the expected costs and the expected risk adjusted costs of capital. These are the only theoretically acceptable approach to discounted cash flow analysis.

Our concerns notwithstanding, the NSPM as one source of guidance may be beneficial. WGL itself proposes that the DC SEU BCA approach needs modification and improvement. To be clear, WGL proposes that there be clear instructions to use the BCA framework in appropriate settings – namely climate change programs. Furthermore, the DC SEU or similar frameworks cannot be used in situations where the climate change program is not incremental. Here, WGL proposes long-term, multi-sector integrated resource planning process. NSPM guidance likely supports this important modification for major climate change programs. Moreover, WGL wants the district to succeed and is proposing a way to success that avoids numerous pitfalls. WGL discusses the fatal flaws likely to greatly delay or impede achievement of the goals that WGL has strongly supported in other venues such as the Climate Business Planning process and elsewhere. WGL is also disappointed that its s proposals for modifications to the framework, which supports the District's targets, including affordability and resiliency, was not included as a question in the survey. This is in spite of explicit requests in this regard. Perhaps some input and guidance from NSPM will help; nonetheless, the Commission should act now to give WGL's proposals and concerns adequate attention.

WGL appreciates that the recommendation treats all utilities equally. This is especially the case because the District depends much more on gas system energy delivery in the winter peak than power delivery in the summer peak. Here, WGL is bringing its industry expertise to the process in order to avoid unexpected technical problems with lack of resiliency, safety and affordability and to achieve joint environmental goals. This is a difficult and complex problem with huge risks and hence must be evaluated properly. Proposals based on analysis that lack adequate costing, feasibility, affordability, safety and resiliency basis must be avoided. WGL is emphasizing that the analysis required does not exist, not domestically, not internationally and not in the District. There has not been adequate focus on distributed gas industry resources for GHG reduction, including decarbonized gases and differentiated geologic gas, as well as gas energy efficiency solutions within this framework. This issue is a broad-based shortcoming of the process heretofore in spite of repeated requests to properly and fairly address gas and transportation. While the focus on all utilities as opposed to some also requires consideration of the transportation sector due to the interaction this sector has with power. In conclusion, WGL strongly supports the goals of the District. This support adds to WGL's support for theoretically correct comprehensive analysis that extends beyond DERs to gas, electric, and transportation and must consider all policies and programs with respect to GHG reduction efficacy and cost, as well as energy reliability and resiliency.

C. **GRID2.0:** In setting up this Docket and the CEAIWG, the Commission, in its NOI, particularly focused on the need to develop and implement appropriate "analytical" frameworks. An analytical framework goes beyond addressing individual issues or proceeding to conduct benefit-cost analyses from one application to another in a siloed manner. A BCA Framework consists of a "systematic" accounting methodology that not only identifies and applies relevant component elements and impacts common to any DER and DER application, but also differentiates material impacts of DER and different applications within the accounting framework. An "analytical" framework such as, the NSPM's BCA framework, based on best practices, provides a holistic and

coherent methodology that can assure the systematic assessment of the cost-effectiveness of the benefits and costs of DER impacts across all utility actions/proposals (whether planning, programs, procurement, pricing mechanisms, infrastructure investments, etc.), based on consistent methods, assumptions and definitions. In response to WGL and Pepco comments, GRID2.0 states that the NSPM applies its BCA Framework to both gas utilities and electric utilities, addressing the benefits and costs of the full range of DER impacts with respect to electric utility systems, gas utility systems and other fuel systems, (including addressing the benefits and costs of different DER types and applications with respect to gas and electric utility systems and other fuel systems). As indicated earlier, the NSPM Framework can assist utilities in addressing the GHG emissions impacts of DER and evaluating the cost-effectiveness of pursuing alternative investment options (both DER and conventional) in connection with "long-term, multi-sector, integrated resource planning." By way of example, the NSPM addresses the application of the Framework to electrification investments; utility system-wide DER portfolio planning and implementation strategies; dynamic system planning, that includes integrated distribution planning and integrated grid planning. The NSPM addresses "DER" because DER are emerging as Grid resources and there is, therefore, a need for the systematic valuation of these resources in terms of their benefits and costs; accounting methodologies already exist under the legacy system for valuing traditional/conventional resources. As a consistent and systematic approach to DER accounting, the NSPM enables comparison between DERs and between DERs and conventional utility investment options. Finally, the NSPM incorporates the guidance from the 2017 NSPM *for Assessing Cost-Effectiveness of Energy Efficiency Resource*, and expands that guidance to address the full range of distributed resources, taking into account best practices across the U.S.

GRID2.0 responded that this is a "case-specific" benefit-cost analysis and does not represent a "Benefit-Cost Analytical Framework," as this term is generally understood in the industry. GRID2.0 noted that Pepco's tailored BCA has some good features for its specified purpose, but it represents a "case by case" approach to conducting benefit-cost analyses. Pepco's NWA cost-effectiveness analysis may be coherent as to the particular DER application it is addressing, but undertaking benefit-cost analyses in this "siloed" manner will not assure systematic, coherent and consistent analyses across different DER types, applications and different levels of cost-effectiveness analysis, which will increase the prospects for bias and the risk of over or underinvestment with respect to utility decision-making. GRID2.0 challenged Pepco's claim that such a case-specific approach is warranted because each DER application is "unique." This view, however, would make a "DER benefit-cost accounting system or BCA Framework" infeasible. Pepco also indicated that its NWA BCA is based on the NYPSC's approach to benefit-cost analyses. GRID2.0 indicated that the NYPSC, within its "REV" proceeding, established a "Benefit-Cost Analytical Framework" that governs the benefit-cost analyses conducted by the utilities that the NYPSC regulates. The NYPSC BCA Framework and the NSPM BCA Framework (which reflects best practices across the U.S. including New York) both affirm the need for an overall BCA Framework (consisting of certain core elements and common definitions, assumptions and methods) to assure systematic, coherent and consistent analyses of the benefits and costs of DER impacts across DER types, applications and various levels of cost-effectiveness analysis. As reflected in the NYPSC and NSPM BCA Frameworks, establishing an overall analytical Framework for DER accounting not only allows for the "tailored" application of the Framework to specific DER applications, but also reduces the risk of inconsistencies and bias that can arise from case specific, siloed benefit-cost analyses. Using an overall, DER Accounting Framework increases

understanding about and clarifies component elements common to DER cost-effectiveness analyses, as well as variations relating to specific applications.

GRID2.0 agrees with WGL that an overarching BCA Framework should be able to assist utilities in connection with long-term, multi-sector integrated planning that takes into account District GHG emissions across gas, electric and transportation sectors. GRID2.0 notes that, as detailed in the Manual, the NSPM BCA Framework addresses WGL's objective. The NSPM Framework lays out a systematic accounting approach for assessing the cost-effectiveness of utility investments by comparing the benefits and costs of alternative options. This Framework can be applied to assist utilities, both gas and electric, in assessing the impacts/effects of DER and conventional investments on "global climate change and the District's climate commitments." In this regard, this Framework addresses the impacts of multi-sited DER and DER portfolios, as well as the impacts of multi-sector DER and conventional applications (for example, with respect to the electrification of transportation and buildings). The NSPM BCA Framework, therefore, can be an effective tool for evaluating the cost-effectiveness of alternative options for reducing District GHG emissions and increasing the deployment of clean energy technologies in long-term integrated grid planning.

GRID2.0 notes that the NSPM B/C Analytical Framework is comprised of: (1) A set of fundamental principles for assessing the cost-effectiveness of all potential DER investments in an economically sound and policy-neutral manner; (2) A policy-neutral and systematic multi-step process for developing or informing a jurisdiction's primary test, as guided by the NSPM principles; and (3) Guidance on when and how to use secondary tests to inform the prioritization of cost-effective DER, as determined by the primary cost-effectiveness test, as well as decisions with respect to marginally non-cost-effective DER. The NSPM describes the full range of potentially relevant DER benefits and costs (i.e., impacts) associated with alternative cost-effectiveness tests; presents cross-cutting considerations on how to account for certain impacts; provides guidance on single-DER BCA for various types of DER technologies and guidance on key factors and challenges that affect the accounting of impacts of each DER type. Finally, the NSPM provides guidance on multiple-DER analysis for a customer site; for a geographic region; and for an entire utility service territory. It also addresses dynamic system planning at a high level. The NSPM for benefit-cost analysis of DER is designed to assure systematic and economically sound cost-effectiveness assessments of potential DER investments based on consistent definitions, assumptions and methods. In this way, a B/C Analytical Framework, based on the NSPM, will reduce the risks of inconsistencies and bias which can result in over-investment and under-investment decisions. All of the BCA Section Recommendations relate to elements and features of a common B/C Analytical Framework and are addressed in the NSPM. An NSPM-based B/C Analytical Framework can apply to all DER types and applications, including electrification and Integrated Resource Planning. The NSPM also advises on tools and studies that can support estimations of impacts and provides guidance on presenting BCA results.

Adopting a common B/C Analytical Framework, based on the NSPM, can provide a means for attaining the "higher level of regulatory certainty and transparency into the decision-making process that the Commission is seeking. This Framework will provide assure the Commission a systematic and economically sound analytical approach to assessing the cost-effectiveness of DER (between DER and between DER and conventional investments), based on the consistent definitions, assumptions and methods. It, therefore, can support and enhance the Commission's

ability to evaluate the "effects of a utility proposal on global climate change and the District's public policy commitments."

WGL's Integrated Resource Planning proposal to evaluate long-term benefits and costs, as well as Pepco's Handbook relating to its benefit-cost analysis of NWA solutions to address grid constraints, can help to inform the development of a common, comprehensive B/C Analytical Framework, but these do not represent such a framework by themselves.

The NYPSC's Order establishing a DER B/C Analytical Framework is a model to examine, one that has been fully taken into account in the NSPM. Also, the BCA Handbooks that the NYPSC directed ConEd and the other NY utilities to develop apply the NYPSC DER B/C Analytical Framework, which enables comparisons, facilitates the tracking of progress in achieving the NYPSC's policy priorities and very importantly for New York is accelerating the integration of DER into Utility planning, procurement, infrastructure investments, pricing structures, programs and projects. EPRI also supports the development and adoption of B/C Analytical Frameworks by regulators to support the evolution of an "integrated grid" that can harness the net benefits of distributed energy resources.

D. **DOEE:** DOEE agrees with the statement. It is essential that the Commission have an adaptive tool for reducing GHG pollution from utility pricing, programs, and procurements, while increasing climate resiliency. The NSPM offers an overarching framework that will be useful to serve as the basis of a BCA for both electric and gas utilities.

E. **Sierra Club, OPC, DCCA, DCSUN:** Yes

B.1.2.3 **Stakeholder Comments**

Working Group Majority Recommendation: *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 Forward-Looking, Long-term, Incremental Analyses; (6) Avoid Double-Counting Impacts; (7) Ensure Transparency; and (8) Conduct BCAs Separately from Rate Impact Analyses.*

Survey Question for Stakeholder Comment: *The BCA should adopt the NSPM "Principles" to govern the development and application of a BCA Framework. (See these NSPM BCA Principles below this survey)*

A. **WGL:** The programmatic approach put forth by the NSPM is too narrow to address many urgent issues relating to a District-wide approach to greenhouse gas emissions reductions and the preservation of access to affordable, reliable, resilient energy systems. See WGL response and position in 2.1.1.3 Stakeholder Comments.

B. **GRID2.0**: The NSPM "Principles" are an essential element of the NSPM's BCA Framework. The "Principles" are designed to govern and to assure the economically sound and systematic development and application of the BCA Framework for assessing the cost-effectiveness of DER impacts (both benefits and costs) that are associated with the DCPSC's policy goals (as derived from the DC Clean Energy Omnibus Act). Principles such as Avoiding Double-Counting; Aligning with Policy Goals; Ensuring Symmetry; Accounting for all Relevant Material Impacts; and Ensuring Transparency are essential for assuring that DER Benefits and Costs are properly addressed and treated consistently across DER types/applications and across Utility proposals/actions. The NSPM "Principles" are foundational "accounting" standards for assessing DER cost-effectiveness. NSPM Principles are intended to be "policy-neutral," "technology-

neutral," and in line with sound economic principles. These principles are, therefore, distinguishable from the MEDSIS/PowerPath "Principles," which are designed to support the District's clean energy, energy efficiency and climate goals and to facilitate the deployment of clean, efficient and reliable technologies towards achieving the District's mandates and policy commitments. Moreover, the MEDSIS/PowerPath Principles are not intended to serve as foundational "accounting" standards for conducting DER BCAs. The NSPM Principles apply in connection with determining an appropriate DER BCA test. It also applies when a utility undertakes to evaluate alternative DER and conventional investment options to meet utility system needs in a manner that will be cost-effective for its customers and then, based on such an analysis, raises its proposal for Commission review and approval.

The NSPM "Principles" do not make assumptions about different technologies or about policies relating to the control of such technologies; again, the Principles are technology and policy neutral. Moreover, throughout the Manual, the NSPM delineates challenges associated with assessing the impacts of different DER types and applications; and, among other steps, emphasizes the need for accurate forecasting (including forecasting of customer adoption of technologies and participation in utility programs), as well as risk identification and evaluation to address these challenges.

It is important to clarify the difference between the NSPM "Principles" and the MEDSIS/PowerPath "Guiding Principles" and Vision Statement. The NSPM are "accounting principles," designed to assure proper and consistent accounting treatment in evaluating the cost-effectiveness of DER impacts. These principles are technology and policy neutral. On the other hand, the MEDSIS/PowerPath Guiding Principles and Vision Statement reflect the District's priority policy goals and aspirations. The NSPM principles, therefore, do not themselves determine any jurisdiction's appropriate cost-effectiveness test for DER and conventional investments. The principles are intended to be applied in a manner that takes into consideration the characteristics and circumstances of each jurisdiction and its approach to energy resources, and can result in different cost-effectiveness tests for different jurisdictions.

The NSPM Principles are all relevant and fundamental for assessing the cost-effectiveness of potential DER investments in an economically sound and policy-neutral manner. The principles set the foundation for developing a BCA cost-effectiveness test, as well as guide the application of the cost-effectiveness testing, selection of a discount rate, reporting of BCA results and can inform the prioritization of DER to be implemented.

The Principle to "Treat DER as a Utility System Resource" is important to assure that DER are treated consistently in BCAs, which requires that benefit and cost assumptions are consistent across DER types. The inputs and per-unit values used for the impacts of different DER types should be the same or based on the same methodologies and assumptions, accounting for differences in magnitude, timing, or location where warranted. The NSPM notes as an example that the values for avoided energy or avoided generation capacity for any given time or location should be the same for all DER types. By evaluating DER types using consistent cost-effectiveness principles, methodologies and assumptions, DER types can be compared to one another and other energy resources.

C. **Pepco**: Pepco rejects the proposed Working Group Majority Recommendation, "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 Forward-Looking,

Long-term, Incremental Analyses, (6) Avoid Double-Counting Impacts, (7) Ensure Transparency, and (8) Conduct BCAs Separately from Rate Impact Analyses."

Rather, Pepco supports the guiding principles and associated BCA framework guidance that it presented at length in its filed comments,[431] and it does not support substituting these principles with those espoused in the NSPM. Some of the NSPM's principles suffer from significant issues regarding lack of clarity and inappropriateness for the BCA that is the subject of the instant proceeding.

For example, the NSPM's first principle reads, "Treat DERs as a Utility System Resource." According to the NSPM, this principle is supported by the claim, "DERs are resources that can be used to defer or avoid spending on traditional utility distribution, transmission, and/or generation resources."[432] Yet, the reliability of a DER in serving as a utility system resource in this manner depends upon the control that the system operator has over the DER, and there is no such control assumed in the NSPM. In addition, the NSPM states, "[t]his principle necessitates that the full range of utility system impacts serve as the foundation of a jurisdiction's primary cost-effectiveness test…"[433] However, unlike the benefits and costs in the LCS BCA Handbook, which are fully defined with valuation methodologies that are described in detail, several of the "utility system impacts" in the NSPM are not adequately defined and several do not appear appropriate for inclusion in a BCA based on a Societal Cost Test. Their inclusion could easily cause the BCA results to be distorted, leading to inefficient and costly decisions for the District's residents and businesses. For example, in its filed comments in the instant docket, Pepco identified the inappropriateness of including "Avoided RPS Compliance" in a BCA based on the Societal Cost Test.[434] The NSPM's "RPS/CES Compliance" appears to be effectively the same category. Similarly, the "Environmental Compliance" category may double count the "GHG Emissions" and "Other Environmental Impacts" categories. As another example, in filed comments in response to the Office of People's Counsel's report on distributed solar,[435] Pepco identified the inappropriateness of treating the type of wholesale price impacts that appear to be characterized by the "Market Price Effects" category. Specifically, resources should be evaluated based on whether they lead to an overall system cost reduction accounting for all stakeholders, not just a reduction in a subset of the costs or the cost to a subset of stakeholders. Also, while "Financial Incentives" and "Utility Performance Incentives" may be tools to align outcomes with policy goals, it may not be appropriate to treat their monetary values as benefits or costs in a BCA based on the Societal Cost Test because they may simply reflect a transfer of monetary value between parties to achieve the desired outcome with its benefits and costs captured elsewhere in the BCA. Other purported impacts such as "Credit and Collection" and "Risk" are especially vague, without sufficient detail to opine on whether they should be included. More information about the details and quantification of the suggested perceived benefits and costs is necessary to make appropriate decisions about

[431] Pepco Notice of Inquiry Comments at 8-12.
[432] "National Standard Practice Manual – For Benefit-Cost Analysis of Distributed Energy Resources," NESP, August 2020, p. 2-4.
[433] "National Standard Practice Manual – For Benefit-Cost Analysis of Distributed Energy Resources," NESP, August 2020, p. 2-4.
[434] Pepco Notice of Inquiry Comments at 11.
[435] *In the Matter of the Investigation into Modernizing the Energy Delivery System for Increased Sustainability,* Formal Case No. 1130, Comments of Potomac Electric Power Company on the Office of the People's Counsel Report on Distributed Solar in the District of Columbia (Jul. 12, 2017) at 25.

whether or to what degree a given benefit or cost belongs in a Societal Cost Test, including in the context of all of the proposed benefits and costs.

In addition, the NSPM describes its fourth principle ("Account for relevant, material impacts") as follows: "Cost-effectiveness tests should include all relevant (according to applicable policy goals), material impacts including those that are difficult to quantify or monetize." Pepco is concerned about potential issues that could arise from an application of this principle, as it may directly contradict Pepco's stated principle: "Proposed benefits that…are overly speculative and unduly subject to bias should not be included in the BCA calculations." Indeed, proposed benefit categories that are quantified based on an overly speculative assessment could cause the BCA to be distorted, leading to inefficient and costly decisions for the District's residents and businesses, and the advancement of policy goals could be replaced by contentious proceedings regarding underlying assumptions and assigned values. The NSPM also advances a specific evaluation approach to ratepayer impacts that has not been discussed by the working group.

In the Background section, it is noted that GRID2.0 has claimed that the LCS BCA Handbook is not based on an overarching framework or principles. This claim is incorrect. The LCS BCA Handbook is based on a framework and principles that pertain to the full spectrum of applications that are the subject of the instant docket. The LCS BCA Handbook was developed as part of Pepco's Distribution System Planning and Non-Wires Alternatives Process as approved by the Commission and it was designed to be consistent with the PowerPath Vision Statement and Guiding Principles: Sustainable, Well-Planned, Safe & Reliable, Secure, Affordable, Interactive and Non-Discriminatory.[436] Moreover, in light of this Vision Statement and Guiding Principles, which the Commission referenced in its Notice of Inquiry in the instant docket,[437] Pepco identified and elaborated on the principles and framework for BCA development in the context of the analytical approach to take when considering the effects of a utility proposal on climate change and the District's policy commitments, which is the subject of the instant docket.[438] The PowerPath Vision Statement and Guiding Principles, and the principles and framework for BCA development that follow from them, served as a foundation for the development of the LCS BCA Handbook.

D. **DOEE**: DOEE agrees with the statement. The principles of the NSPM are important for the development of an overarching analytical framework for ensuring that utility activities shift from business as usual, resulting in lower GHG emissions. The NSPM also points out that integrated distribution planning (IDP) is a critical step to take in unlocking the value of DER, by enabling the treatment of DER as system resources.[439] DOEE notes that Principle 1, "Treat DERs as a Utility System Resource," accounts for a standardized method for DER valuation that takes into account the level of dispatchability and control.[440]

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[436] *In the Matter of the Investigation into Modernizing the Energy Delivery System for Increased Sustainability*, Formal Case No. 1130, Order No. 20286 (Jan. 24, 2020) ("Order No. 20286"), pp. 2, 34, and Statement of Commissioner Richard Beverly.

[437] GD2019-04-M, In the Matter of the Implementation of the 2019 Clean Energy DC Omnibus Act Compliance Requirements, Notice of Inquiry, November 25, 2019, pp. 1-2.

[438] *In the Matter of the Implementation of the 2019 Energy DC Omnibus Act Compliance Requirements,* General Docket No. 2019-04-M, Comments in Response to the Notice of Inquiry, (Jan. 13, 2020) ("Pepco Notice of Inquiry Comments"), pp. 1, 7-17.

[439] "National Standard Practice Manual – For Benefit-Cost Analysis of Distributed Energy Resources," NESP, August 2020, p. 14-3

[440] "National Standard Practice Manual – For Benefit-Cost Analysis of Distributed Energy Resources," NESP, August 2020, p. 2-4.

E. **DCCA, OPC, DCSUN, Sierra Club**: Yes

F. **AOBA**: Does not support WG recommendation.

B.1.3.3 Stakeholder Comments

Working Group Majority Recommendation: *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-making (see Appendix D for an inventory of applicable policies); 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.*

Survey Question for Stakeholder Comment: *The basis of the development of this BCA framework is the DC Omnibus Act, and the selected framework should assure that those goals will be met.*

A. **WGL:** Section 103 of the Act amends D.C. Code § 34-808.02 to require that, in supervising and regulating utility or energy companies, the Commission shall consider not only the public safety, the economy of the District, the conservation of natural resources, and the preservation of environmental quality, but also the "effects on global climate change and the District's public climate commitments." The Commission's statutory mandate under DC Code § 1-204.93 requires the Commission to ensure that utilities furnish safe and adequate service and ensure that charges made by utilities are reasonable, just and non-discriminatory. This fundamental duty has not been adequately considered during the CEIAWG process and must be a basis of the BCA.

   These critical Commission responsibilities are recognized and supported within the Washington Gas Climate Business Plan,[441] released in March, 2020. The Plan represents the first and only comprehensive effort to review multiple pathways to help the District meet its climate targets. In addition to focusing on achieving the targeted GHG reductions, it also considered the costs and benefits associated with the various approaches, taking into consideration the seven factors articulated in the DC PSC Vision for modernizing the District's energy delivery system; namely that the energy systems be: (1) sustainable – including three subfactors environmental protection, economic growth and social equity (2) well-planned, (3) safe and reliable, (4) secure, (5) affordable, (6) interactive, and (7) non-discriminatory.[442]

   The plan was based upon a detailed technical analysis prepared by the international energy consulting firm ICF Resources, LLC.[443] That analysis resulted in the conclusion that: "Among its many benefits, a Fuel Neutral Decarbonization strategy provides the desired GHG emission reductions at a fraction (59 percent) of the cost of full electrification, while maintaining energy reliability for District residents, businesses, government agencies, and visitors."[444] The benefits of avoiding an unfair cost burden on District ratepayers (the fuel neutral approach resulted in a

[441] Washington Gas, *Natural Gas and its Contribution to a Low Carbon Future,* March 2020 https://washingtongasdcclimatebusinessplan.com/wp-content/uploads/2020/04/Climate-Business-Plan-March-16-2020-FOR-WEB.pdf.
[442] Washington Gas, *Natural Gas and its Contribution to a Low Carbon Future,* March 2020, page 40
[443] ICF, Opportunities for Evolving the Natural Gas Distribution Business to Support the District of Columbia's Climate Goals, March 2020; *See also,* https://washingtongasdcclimatebusinessplan.com/wp-content/uploads/2020/04/Technical-Study-Report-Opportunities-for-Evolving-the-Natural-Gas-Distribution-Business-to-Support-DCs-Climate-Goals-April-2.pdf; *See also,* ICF, Opportunities for Evolving the Natural Gas Distribution Business to Support the District of Columbia's Climate Goals, March 2020.
[444] Washington Gas, *Natural Gas and its Contribution to a Low Carbon Future,* March 2020, page 2.

projected $2.7 billion cost savings) was further reinforced by the Plan's ability to help stabilize costs by providing a 'hedge' against price increases and volatility from competition for projected escalation in demand for renewable electricity supply and renewable energy credits (REC), as well as protection against unknown costs of electric utility system distribution and transmission upgrades the Plan emphasized the benefits to reliability and resilience, noting that beyond the 99.9 percent reliability of the natural gas delivery system, [445] maintaining multiple energy sources and distribution networks would provide the benefit of reducing the District's risk exposure to disruptions in energy delivery from weather or other events. It is this kind of robust analysis that must be undertaking to identify the criteria and determine the true costs and benefits.

B. **GRID2.0:** GRID2.0 noted that no BCA Framework is a tool which can "assure" that policy goals are met; but the NSPM BCA Framework can assure that a consistent methodology is applied to assessing the benefits/costs of DER, in order to achieve policy goals cost-effectively. The Commission needs to clarify/make explicit (in a generic, not prescriptive manner), the Policy Goals that the Commission is committed to achieving, based on the DC Omnibus Act. In this regard, the Commission can draw upon the extensive and consensual inputs of all relevant stakeholders that have been registered in quite an array of relevant proceedings (for example, MEDSIS/PowerPath proceeding), workshops (PIMs/PBR), technical conferences (Alternative regulatory mechanisms). Based on the best practices of utility regulators across the country, a Commission's priority policy goals can be set out in a general/ conceptual way (such as Reducing Greenhouse Gas Emissions, Engaging and Leveraging Customer Participation to create value, Promoting Energy Efficiency, Increasing Utility System Efficiency, Building Resilience, Increasing Energy Diversity, Addressing Low-Income and Equity Issues, etc.). Explicitly setting out such policy goals is a vital step under the NSPM BCA Framework. This establishes the District's "regulatory perspective," based on the DC Omnibus Act, and is the basis for selecting the most appropriate cost-effectiveness test and other accounting elements such as the discount rate. GRID2.0 also notes that this CEAIWG is addressing the DCPSC's specific request in its NOI for an analytical framework or frameworks, including a BCA Framework, that the Commission can apply in assessing the "effects of a utility proposal" to the DCPSC on global climate change and the District's public policy commitments, as directed by the CleanEnergy DC Act. Section 103 of that Act is a specific requirement that the Act has imposed on the Commission in connection with its supervision and regulation of utilities or energy companies. Since Section 103 amends DC Code Section 34-808.02, this requirement should be factored into the Commission's supervision and regulation of utilities or energy companies in the public interest – public interest that takes into account traditional values of reliability, power quality and availability, safety and affordability, but also sustainability, climate change effects, clean energy and energy efficiency mandates.

   Aligning the development of a common B/C Analytical Framework with the District's regulatory perspective is crucial. The District's legislative mandates and climate change commitments should be accounted for in determining the primary test for cost-effectiveness analysis (in this case, the societal cost test), as well as in identifying the relevant impacts to be addressed by the test and the appropriate discount rate to use. Doing so will avoid sub-optimal resource selections with respect to stated goals, targets and mandates.

   In addition, based on the inventory of relevant District legislative mandates, plans, regulatory directives, etc., this WG should recommend explicit policy priorities that derive from these sources,

[445] Washington Gas, *Natural Gas and its Contribution to a Low Carbon Future,* March 2020, page 4.

as well as that are aligned with the policy outcome areas for which the Commission recently ordered performance-based tracking metrics in its Pepco Rate Case decision (FC 1156).

C. **DCSUN:** The DC Omnibus Act is the legal basis for the development of the framework. Technically, all policies that the Commission develops should comply with the Act. However, other regulations and policies such as the PowerPath Guiding Principles and DOEE's CleanDC Plan can be considered. The PowerPath DC Vision and Guiding principles are policies that this Commission has adopted and should be incorporated into at least the reasoning behind the framework as well as its goal. DOEE's CleanDC plan can be a secondary guide that is already well developed and can be helpful to the development of this framework.

D. **OPC:** Yes, generally see comment. OPC is strongly supportive of meeting the goals of the DC Omnibus Act and setting a framework to ensure we can do that. However, the path to meeting these goals must be equitable, safe, and affordable.

E. **Pepco:** Pepco agrees with the proposed Working Group Majority Recommendation, "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-making; thus, the selected framework should be aligned with the goals of the Act and those other District policies." Pepco notes, however, that a framework alone cannot ensure that goals are met. Rather, it can be aligned with goals.

F. **DCCA, DOEE, Sierra Club:** Yes

B.1.4.3 Stakeholder Comments

Working Group Majority Recommendation: *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.

Survey Question for Stakeholder Comment: *The BCA should utilize a primary societal cost test based on the NSPM for DERs that includes the utility system impacts and some of the societal impacts listed in the manual. The societal impacts to be included are: Resilience, GHG Emissions, Other Environmental Impacts, Public Health, and Low-Income Impacts. Utility System Impacts to be included: 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.

Some of the inputs here may be placeholders only. For example, for reliability and resilience we currently do not have a fully supported industry values for D.C.

A. **WGL**: *See WGL comments on safety, reliability and resilience which can be found in the Reliability and Resilience section of this report. Notwithstanding, we repeat our comments here to give them the appropriate salience.*

   In the third Joint Metrics/BCA meeting, WGL recommended a framework that suggested that the SCT be used as the primary quantitative test with the RIM test as a secondary test. This framework would use a long-term IRP process that would include assessments of infrastructure adequacy and associated costs, evaluate customer equipment costs, upstream energy costs/availability/carbon intensity, and assess costs for utility infrastructure upgrades and/or retirements.[446] In addition, WGL's January 13, 2020, comments on the NOI stated that in its Recommendation II of IV, a question and answer/factor ranking and scoring system rubric is required to supplement quantitative measures specifically in part due to the need to address reliability, resilience, safety, and disruptions related to climate change.[447] WGL believes there are many issues that cannot be reasonably addressed via program-by-program quantitative evaluation, because the impacts of each program are cumulative, long term and have complex issues that require both explicit and serious quantitative and qualitative consideration. WGL is especially concerned about treatment of resilience and equity.

B. **DCSUN:** Supports the inclusion of all listed impacts. However, none of the societal impacts listed can be regarded as placeholders. To the extent that there is insufficient information on costs and benefits of the societal impacts, a process must be established for determining values.

C. **OPC:** Yes, generally see comment. Low-Income benefits should be expanded to include a larger set of equity benefits including moderate-income benefits and geographic distribution-related benefits. Equity-related benefits should not be zero-value placeholders: these benefits should be monetized in the BCA. See chart below for examples from other states OPC will need to see further information about how reliability and resilience would be included before supporting their inclusion as benefits. More discussion is needed regarding how reliability and resilience would be weighted to ensure an appropriate balance between cost and risk.

D. **GRID2.0:** Yes, select the Societal Cost Test, but also address "delineated" host customer and participant impacts (correlated with increasing DER investments), in alignment with policy goals that the Commission is seeking to achieve based on the DC Omnibus Act, such as Low-Income, host customer (DER investment) and other fuel impacts (See, NSPM for DER). The DCPSC should identify relevant DER impacts based on its stated policy goals which are reflected in the Omnibus Act's requirements and that the Commission ascertains need to be addressed to help to advance the objectives of the Omnibus Act, consistent with the Commission's mandate to operate in the public interest. For example, from the discussions in BCA Committee meetings to date, the Commission staff and Working Group members have expressed the need not only to address low-income societal effects of operating DER, but also the impacts on low-income customers, which is part of

[446] *GD-2019-04*, Joint Metrics and BCA Framework Committee Third Meeting Minutes Report Attachment No.3 at 5.
[447] WGL Comments, page 10 and 16.

addressing "host customer and participant" impacts. Based on applicable policy goals, derived from the Omnibus Act, it would be appropriate to apply the SCT to cover these host customer/participant impacts in addition to utility system and societal impacts. GRID2.0 also notes that this subsection does not explain the basis for the Recommendation to select as the primary cost-effectiveness test the "societal cost test," or for the Recommendation that specifies certain utility system and societal impacts that would be evaluated under the SCT. GRID2.0 notes that the NSPM outlines and describes in detail a multi-step process for developing a jurisdiction's primary cost-effectiveness test. This five-step process includes the full range of utility system impacts; evaluates whether to include non-utility system impacts based on the jurisdiction's applicable policy goals; emphasizes that all impacts identified (benefits and costs) much be properly addressed under the NSPM accounting principles and that benefits and costs are to be treated consistently across all DER types; and establishes the need for full and transparent documentation (documentation with respect to the process for determining the primary test; and reporting requirements and/or use of templates for presenting assumptions and results with respect to conducting DER BCAs).

The NSPM for the benefit-cost analysis of DER describes the full range of relevant Utility System and Non-Utility System impacts that a jurisdiction can consider based on the cost-effectiveness test that it selects (here, the societal cost test). Applying the NSPM Principles in assessing the benefits and costs of potential DER investments will assure that impacts that have been identified and included in the primary test (here, societal test) are properly accounted for: Benefits and costs are treated symmetrically; relevant and material impacts are included, even if hard to quantify; benefits and costs are not double-counted; benefits and costs are treated consistently across DER types. BCA practices also should be transparent, where all relevant assumptions, methodologies and results are clearly documented and available for stakeholder review and input. Cost-effectiveness analyses should be forward-looking, long term, and incremental to what would have occurred absent the DER to assure that a resource can be properly compared with alternatives.

E. **DCCA:** Need to also address "delineated" host customer and participant impacts, including as they evolve over time.

F. **Pepco:** This proposed Working Group Majority Recommendation should be rejected. Unlike the benefits and costs in the LCS BCA Handbook, which are fully defined with valuation methodologies that are described in detail, several of the "impacts" in this proposed Working Group Majority Recommendation, which are sourced from the NSPM, are not adequately defined, and several may not be appropriate for inclusion in a BCA based on a Societal Cost Test, which in turn could easily cause the BCA results to be distorted, leading to inefficient and costly decisions for the District's residents and businesses.

For example, in its filed comments in the instant docket, Pepco identified the inappropriateness of including "Avoided RPS Compliance" in a BCA based on the Societal Cost Test.[448] The NSPM's "RPS/CES Compliance" appears to be effectively the same category. Similarly, the "Environmental Compliance" category may double count the "GHG Emissions" and "Other Environmental Impacts" categories. As another example, in filed comments in response to the Office of People's Counsel's report on distributed solar,[449] Pepco identified the inappropriateness

[448] Pepco Notice of Inquiry Comments at 11.

[449] *Formal Case No. 1130*, Comments of Potomac Electric Power Company on the Office of the People's Counsel Report on Distributed Solar in the District of Columbia at 25, filed July 12, 2017.

of treating the type of wholesale price impacts that appear to be characterized by the "Market Price Effects" category. Specifically, resources should be evaluated based on whether they lead to an overall system cost reduction accounting for all stakeholders, not just a reduction in a subset of the costs or the cost to a subset of stakeholders. Also, while "Financial Incentives" and "Utility Performance Incentives" may be tools to align outcomes with policy goals, it may not be appropriate to treat their monetary values as benefits or costs in a BCA based on the Societal Cost Test because they may simply reflect a transfer of monetary value between parties to achieve the desired outcome with its benefits and costs captured elsewhere in the BCA. Other purported impacts such as "Credit and Collection" and "Risk" are especially vague, without sufficient detail to opine on whether they should be included. Furthermore, in Pepco's comments on proposed Working Group Majority Recommendation B.1.6, Pepco identifies problems associated with that proposed Working Group Majority Recommendation's proposal to include impacts that are also proposed as "Host Customer Impacts" in this proposed Working Group Majority Recommendation. Pepco's comments in response to Stakeholder Comment B.1.6 also apply to this proposed Working Majority Group Recommendation. More information about the details and quantification of the suggested perceived benefits and costs is necessary to make appropriate decisions about whether or to what degree a given benefit or cost belongs in a Societal Cost Test, including in the context of all of the proposed benefits and costs.

Pepco supports a BCA test that includes impacts that are well-vetted, transparent, market-based or federally/industry established, non-duplicative, and appropriate to the specific project, program, or application. The specific impacts should be clearly defined, transparently quantifiable, and neither speculative nor duplicative. Several of the impacts listed in the NSPM do not fit these criteria. While the NSPM may be a potential resource, the NSPM is just one report that was presented at the working group meetings. Pepco supports the LCS BCA Handbook and its benefit and cost categories as the basis for BCA development, especially given the fact that, unlike the NSPM's benefits and costs, the benefits and costs in the LCS BCA Handbook are clearly defined with valuation methodologies explained in sufficient detail. This includes the identification of appropriate benefit and cost components, as well as detailed descriptions of how to value these components. The LCS BCA Handbook is customized for the District of Columbia's unique service area and context, including the District's clean energy and climate goals.[450] The LCS BCA Handbook's Societal Cost Test includes the following benefits and costs: Avoided Generation Capacity Costs, Avoided Energy Costs, Avoided Ancillary Service Costs, Avoided PJM Transmission Investment and O&M Costs, Deferred Distribution and Subtransmission Investment and O&M Costs, Greenhouse Gas Emission Reductions, SO_2 and NO_X Emission Reductions, Incremental Reliability and Resiliency Benefits, LCS Costs, Administrative Costs, Incremental Distribution System Costs, and Implementation Risk Premiums (cost).[451]

Pepco also notes that New York utilities' BCA Handbooks, which are based on the New York Public Service Commission "Order Establishing the Benefit Cost Analysis Framework,"[452] may also be useful resources, as this Order outlines a model that has been developed through a public

[450] LCS BCA Handbook, p. 2.
[451] LCS BCA Handbook.
[452] Proceeding on Motion of the Commission in Regard to Reforming the Energy Vision, Order Establishing the Benefit Cost Analysis Framework, State of New York Public Service Commission Case 14-M-0101 (Jan. 21, 2016).

stakeholder process involving multiple rounds of filed comments from a broad spectrum of organizations, institutions, utilities, and DER service providers.[453]

Finally, Pepco notes that the "impacts to be included" from the NSPM SCT were never adequately discussed or vetted through the working group process, and that, per the NSPM Authors own comments in August 30 and 31, 2021 Working Group meetings, individual impacts should be vetted through a stakeholder process that considers jurisdictional goals.

G. **Sierra Club:** Yes, select the Societal Cost Test, but also address "delineated" host customer and participant impacts.

H. **DOEE:** DOEE agrees with the statement with the following comments. The Societal Cost Test under the NSPM should be adopted in a manner that addresses the broad range of societal, host customer, and participant impacts. DOEE finds the following example table from the NSPM[454] to be instructive and recommends addressing all of the categories in the table, as well as the complete list of utility impacts for both the electric and gas utilities. DOEE also notes that the local solar carve-out under the 2018 Act should be accounted for in DC's Jurisdiction Specific Test and that an expansion of hosting capacity in compliance with that mandate be quantified. Where any impacts are difficult to quantify, they should still be captured to the extent possible through tracking or qualitative assessment, with a plan to implement a cost in the next phase of implementation of the framework.

Non-Utility Impact	Description
Other fuel impacts	Impacts on fuels that are not provided by the relevant utility, for example, electricity (for a gas utility), gas (for an electric utility), oil, propane, gasoline, and wood
Host customer impacts	Host customer portion of DER costs and host customer non-energy impacts (NEI), such as impacts on productivity, comfort, health and safety, mobility, and more
Impacts on low-income customers	Impacts that are different from or incremental to non-low-income customer impacts such as energy affordability and poverty alleviation
Environmental impacts	Impacts associated with GHG emissions, criteria pollutant emissions, land use, solid waste, etc.; includes only those impacts not embedded in the utility cost of compliance with environmental regulations, which should always be treated as a utility system cost
Public health impacts	Impacts on public health; includes health impacts that are not included in host customer impacts or environmental impacts and includes benefits in terms of reduced healthcare costs
Economic development and jobs	Impacts on direct and indirect economic development and jobs
Energy security	Reduced reliance on fuel or energy imports from outside the state, region, or country

B.1.5.3 **Stakeholder Comments**

Working Group Majority Recommendation: *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.*

[453] Proceeding on Motion of the Commission in Regard to Reforming the Energy Vision, Order Establishing the Benefit Cost Analysis Framework, State of New York Public Service Commission Case 14-M-0101 (Jan. 21, 2016), p. 5.
[454] "National Standard Practice Manual – For Benefit-Cost Analysis of Distributed Energy Resources," NESP, August 2020, p. 4-2.

Survey Question for Stakeholder Comment: *Inclusion of temporal and location impacts will depend on current data availability from other sources. As these data become available, they should be added to the analysis in future years. Our Value of DER study will shed some light for the future.*

A. **WGL:** In order to assess the impact of DER, there first needs to be a baseline assumption of electrical distribution costs and infrastructure requirements given the potential shift to winter peaking and the large increase in annual peak demand that will result from some of the electrification programs proposed for the District. This analysis will necessarily be spatial, temporal and reflective of the underlying power flow for both real and importantly reactive power. This is a reason that WGL recommends a long-term IRP process that would include assessments of infrastructure adequacy and associated costs, evaluate customer equipment costs, upstream energy costs/availability/carbon intensity, and assess costs for utility infrastructure upgrades and/or retirements.[455] In addition, in its January 13, 2020, comments on the NOI, WGL stated in its Recommendation II of IV, a question and answer/factor ranking and scoring system rubric is required to supplement quantitative measures specifically in part due to the need to address reliability, resilience, safety, and disruptions related to climate change.[456] WGL believes there are many issues that cannot be reasonably addressed via program-by-program quantitative evaluation when the programs are non-incremental, because the impacts of each program are cumulative, long term and have complex issues that require both explicit and serious quantitative and qualitative consideration.

B. **GRID2.0:** The analytical framework being developed must stress that the value of some DERs depends on when the DER is operated and where it is located. An important objective of the BCA Framework, per the NSPM, must be to estimate/calculate DER benefits and costs using temporal and locational detail sufficient in granularity to adequately represent the DER operating patterns and consequent Benefit/Cost impacts. From such information, utility system, host customer/participant, and societal impacts can be more accurately assessed, and investments can be better targeted to locations that can generate the greatest value. GHG emissions impacts will depend upon when the DER operates and which energy resources are used differently/displaced at that time. In light of the purpose of the CEAIWG, GRID2.0 recommends that this subsection indicate the importance of two key factors which are addressed in the NSPM with respect to assessing the GHG emissions impacts of a DER: (1) The BCA must identify the time period for which to measure this impact (e.g., hourly, daily, monthly; seasonal time period, etc.); the temporal granularity with which a BCA measures the impact could materially affect how a DER is credited with GHG emissions reductions (or not due to increases), relative to its actual impact; (2) The BCA needs to assess, to the extent possible, and making use of best available analytical tools, what the marginal emissions rate is of the resource being displaced by the DER's operation during the specified time period. Also, as the NSPM discusses, there are three factors that affect the direction and magnitude of GHG emissions impacts with respect to distributed storage resources and EVs: (1) The marginal emissions rate of the resource used to charge the DER resource; (2) The marginal emissions rate of the resource displaced by the discharge of the DER resource; and (3) The round trip efficiency of the DER resource (i.e., energy losses associated with a charge-discharge cycle).

   As the NSPM points out, the benefits and costs of certain DER can vary significantly depending on when the DER operates and where it is located. GRID2.0 strongly agrees that DER benefits and

[455] *GD-2019-04*, Joint Metrics and BCA Framework Committee Third Meeting Minutes Report Attachment No.3 at 5.
[456] WGL Comments, page 10 and 16.

costs should be estimated using temporal and locational detail sufficient in granularity to adequately represent the DER operating patterns and consequent benefits and costs. GRID2.0 supports adding to the Recommendation that the Commission actively promote and facilitate the use of new smart technologies, software, data management and analytical tools, simulation modelling and other techniques and best practices that can generate relevant, material temporal and locational detail to inform accurate quantification and monetization of DER impacts, especially in connection with DR, Demand-side management/controllable load, NWAs, etc.

C. **Pepco**: Greater clarity is needed for Pepco to determine whether it supports the proposed Working Group Majority Recommendation, "Inclusion of temporal and locational impacts will depend on current data availability from other sources. As these data sources become available, they should be added to the analysis in future years. The Commission's upcoming Value of DER study should offer some clarity on data/data availability when it is completed and can be considered alongside other new methods for system planning and evaluating the net benefits of DER."

   Pepco supports the incorporation into the BCA of reliable locational and temporal data that is likely to be material to the BCA result. However, this specific proposed Working Group Majority Recommendation is excessively open-ended. The proposed Working Group Majority Recommendation directs the use of "these data" without defining specifically to what data the proposed Working Group Majority Recommendation is referring. System conditions are dynamic, and there will be significant uncertainty in developing detailed locational values. Because of this uncertainty, Pepco recommends that locational values could be considered pending rigorous review. Further, the Company's DSP/NWA Process, whereby DER providers can be compensated if able to economically defer a utility-proposed solution, already provides an indication of value. Moreover, any value of DER is dependent on the value provided by the electric grid that serves it; therefore, value of DER must be evaluated against the value that the electric grid provides. Furthermore, while Pepco hopes that the PowerPath Pilot Projects that serve as the foundation for the "upcoming Value of DER Study" will provide useful learnings about temporal and locational impacts of DER, a finding about the expectations regarding those learnings would be premature and unnecessary.

D. **DOEE**: DOEE agrees with the statement. DOEE looks forward to the output of the Value of DER study that is currently underway, noting that a number of the impacts listed in the NSPM are location and temporally specific. The outcome of the Value of DER study can add sufficient granularity to the overarching BCA framework.

E. **OPC, DCCA, DCSUN, Sierra Club**: Yes

B.1.6.3 **Stakeholder Comments**

Working Group Majority Recommendation: *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.*

Survey Question for Stakeholder Comment: *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, host customer bill savings.*

A. **WGL:** WGL assumes that the RIM test as well as others might capture some of these items, but there has been no discussion of the application of the RIM test within the group – especially with respect to how decarbonization programs affect energy demand patterns and potentially changing customer counts.

B. **OPC:** OPC needs more information to respond.

C. **GRID2.0:** GRID2.0 notes that Customer "bill savings" are not addressed under "Host-customer/participant" impacts. Customer bill savings are already accounted for in utility system impacts in BCA tests. Actual impacts on host customers, including bill savings, can be addressed separately in the PCT, which does not address utility system benefits. Also, RIM test is designed to identify how DER will impact rates. Host customer/Participant impacts should be addressed based on the Commission's stated policy goals which are drawn from the Omnibus Act mandates. The Commission should "delineate" the impacts to be addressed based on the policy goals the Commission is seeking to achieve, as derived from the Omnibus Act. Addressing these impacts should be tailored to Policy objectives, defined by available information, and correlated with increasing DER investment to avoid adding undue complexity to B/C analyses. Also, care must be taken that "double-counting" does not occur (as for example, with utility system costs. The NSPM addresses programs applicable to electric and gas utility systems.

D. **DCCA:** Yes, but the impacts should be weighted according to the DC Clean Energy goals and mandates.

E. **Pepco**: The proposed Working Group Majority Recommendation, "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," should be rejected.

   As explained in Pepco's filed comments in the instant docket, the BCA should reflect net welfare from a societal perspective, considering benefits and costs from the perspective of the District's policy goals and the associated impact on all relevant stakeholders rather than only the benefits and costs to a subset of affected parties.[457] Consequently, the Societal Cost Test should be the primary test. The "Benefit-to-Cost Analysis Handbook for Locational Constraint Solutions" ("LCS BCA Handbook"),[458] which was completed in October 2020 in accordance with Commission Order No. 20286,[459] and which provides the methodology in use by Pepco to evaluate third-party and utility solutions (including the use of DERs) for grid constraints, contains a detailed description of a Societal Cost Test BCA methodology applicable to the District.

   In contrast, this proposed Working Group Majority Recommendation leaves more questions than answers, it is flawed, and it therefore it should not be adopted. Issues relate to both the ambiguity of the components listed in the proposed Working Group Majority Recommendation and the potential for these components to double count other components that may also be in the BCA. For example, would the proposed Working Group Majority Recommendation's proposed inclusion of "Interconnection Fees" be additive to the system costs that these fees are designed to cover? If so, then this could constitute double counting. As another example, in what context is "Risk" for the

[457] Pepco Notice of Inquiry Comments at 10.
[458] "Benefit-to-Cost Analysis Handbook for Locational Constraint Solutions," Pepco, October 1, 2020.
[459] *Formal Case No. 1130,* Order No. 20286.

host customer proposed to be included? Furthermore, there is no specificity as to the types of Low Income Host Customer Non-Energy Impacts" to which the proposed Working Group Majority Recommendation refers. In addition, "host customer bill savings" could be driven by a number of factors that are captured separately in the BCA or that represent cross-subsidies rather than true overall societal benefits. Even the NSPM itself states, "Host Customer Bill Savings" should not be included in the cost-effectiveness tests used to determine which DERs warrant utility support on behalf of all utility customers. Host customer bill savings overlap significantly with utility system benefits, which are already accounted for in the utility system impacts in BCA tests. As such, including them in a BCA would double-count some of those impacts."[460]

F. **DCSUN and Sierra Club**: Yes

G. **DOEE**: DOEE agrees with the statement and recommends following the list provided for host customer impacts in the NSPM (table below).[461]

Type	Host Customer Impact	Description
Host Customer	Host portion of DER costs	Costs incurred to install and operate DERs
	Host transaction costs	Other costs incurred to install and operate DERs
	Interconnection fees	Costs paid by host customer to interconnect DERs to the electricity grid
	Risk	Uncertainty including price volatility, power quality, outages, and operational risk related to failure of installed DER equipment and user error; this type of risk may depend on the type of DER
	Reliability	The ability to prevent or reduce the duration of host customer outages
	Resilience	The ability to anticipate, prepare for, and adapt to changing conditions and withstand, respond to, and recover rapidly from disruptions
	Tax incentives	Federal, state, and local tax incentives provided to host customers to defray the costs of some DERs
	Host Customer NEIs	Benefits and costs of DERs that are separate from energy-related impacts
	Low-income NEIs	Non-energy benefits and costs that affect low-income DER host customers

Type	Host Customer Impact	Description
Host Customer	Host portion of DER costs	Costs incurred to install and operate DERs
	Host transaction costs	Other costs incurred to install and operate DERs
	Interconnection fees	Costs paid by host customer to interconnect DERs to the electricity grid
	Risk	Uncertainty including price volatility, power quality, outages, and operational risk related to failure of installed DER equipment and user error; this type of risk may depend on the type of DER
	Reliability	The ability to prevent or reduce the duration of host customer outages
	Resilience	The ability to anticipate, prepare for, and adapt to changing conditions and withstand, respond to, and recover rapidly from disruptions
	Tax incentives	Federal, state, and local tax incentives provided to host customers to defray the costs of some DERs
	Host Customer NEIs	Benefits and costs of DERs that are separate from energy-related impacts
	Low-income NEIs	Non-energy benefits and costs that affect low-income DER host customers

B.1.7.3 Stakeholder Comments

Working Group Majority Recommendation: *The BCA results will be calculated and presented in both benefit-cost ratio and net benefit form.*

[460] "National Standard Practice Manual for Distributed Energy Resources," NESP, August 2020, p. 4-19.
[461] NSPM, 4-15.

Survey Question for Stakeholder Comment: *The BCA results will be calculated and presented in benefit-cost ratio form.*

A. **GRID2.0:** GRID2.0 believes that the preferred approach should be to calculate the net benefits of DER rather than to calculate BCA results in "benefit-cost ratio" form. However, the ratio is useful information too; and it is also important that BCA results for hard to quantify impacts that have material effects should be reported in qualitative terms. Also, it might be beneficial to calculate and report BCA results both ways (benefit-cost ratio and net benefits) because each provides distinctive useful information and both will be based on the same data and information that the BCA analyzes.

B. **DCCA:** Results should also be presented in net benefit form to allow selection of projects with larger net benefits even if their BC ratio is lower than competing but smaller projects.

C. **DOEE:** The line items of the full calculation should be presented, and an observer should be able to reproduce the calculation with the same inputs.

D. **Pepco**: In order to eliminate confusion around concepts like "negative benefits" and "negative costs," Pepco recommends presenting the BCA results as net benefits rather than as a ratio. Not all streams are intuitively defined as clearly costs or benefits, and the results of the ratio approach are affected by the classification of the streams. For instance, where a project involves an emitting generator, the carbon emissions could be categorized as 1) a "negative benefit" or 2) a "cost." If a benefit-cost ratio is used, the two treatments are not mathematically equivalent. A "negative benefit" reduces the numerator of the ratio and a "cost" increases the denominator. If a new impact stream that could be considered a negative benefit or cost is added to the analysis, the net benefit stays the same, but the BCA ratio varies. For example, take a hypothetical BCA with benefits of $100 and costs of $100. If a new impact of $25 is treated as a negative benefit, then the BCA ratio is 0.75 (benefits are $100-$25 = $75, costs are $100, BCA ratio is $75/$100 = 0.75). If the new impact is treated instead as a positive "cost" then the benefit ratio is 0.8 (benefits are $100, costs are $100+$25 = $125, BCA ratio is $100/$125 =0.8). The net benefits are same regardless ($100 - $100 - $25 = -$25).

E. **Sierra Club**: Maximizing the ratio of benefits to costs favors projects for which small benefits can be achieved at minuscule costs. It can be more appropriate to choose projects based on the maximizing total excess benefit over total cost.

F. **WGL**: WGL seeks at least minimal discussion of this issue. WGL has some proposals related to this issue, including a long term all sector integrated resource planning process which would allow for analysis of proposed utility programs that are non-incremental.

G. **OPC and DCSUN**: Yes

B.1.8.3 **Stakeholder Comments**

Working Group Majority Recommendation: *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.*

Survey Question for Stakeholder Comment: *All benefits and costs should be quantified, even when difficult (truly non-quantifiable benefits, costs, and considerations can be listed but are not part of any scoring). The BCA should avoid double-counting impacts.*

A. **WGL:** WGL strongly disagrees with the notion that reliability and resiliency can be fully quantified given the potential for black swan events as a result of climate change or major changes in the energy delivery infrastructure. WGL has similar concerns about affordability and equity. WGL also believes that difficult issues must be evaluated both quantitatively and qualitatively. The qualitative elements can be addressed through a question and answer or a weighted scoring analysis that uses a pre-set protocol based on the importance of the issues. See discussion in other sections including in WGL's January 2020 comments on the NOI, and in the CEAIWG process. Adoption of such a scoring methodology is required because quantified analysis may be too narrow in scope unless supplemented and bolstered by qualitative analysis of critical issues. More attention is required on this issue given the challenging responsibilities of the Commission implementing its statutory mandate (e.g. resiliency, affordability, safety, equity).

B. **OPC:** Yes.

C. **GRID2.0:** This is especially the case for impacts that can have material effects in DER assessments, albeit hard to quantify. The Commission needs to be proactive in encouraging utilities to identify and apply analytical methods and tools to account for hard to quantify but material impacts.

   While some impacts (for example, DER impacts) may be difficult currently to quantify in monetary terms (due to the nature of the impacts or the lack of available information about the impacts), GRID2.0 supports using recognized proxies and other techniques for approximating hard to quantify impacts, rather than assuming that the relevant, material benefits and costs do not exist or have no value. The value of relevant, material DER impacts that have been identified for inclusion into the primary societal cost test should be accounted for in monetary terms to the extent practical or their values should be established using valid approximations/proxies. However, any benefit or cost value used in DER BCAs should be based on a logical, documented, justified method.

D. **DCCA:** Increasing numbers of factors previously deemed non-quantifiable are now being quantified.

E. **DCSUN:** Strongly agree.

F. **Pepco**: Pepco agrees with second part of this proposed Working Group Majority Recommendation, "[t]he BCA should avoid double-counting impacts," but (subject to greater clarity regarding specifics) it disagrees with the first part of the proposed Working Group Majority Recommendation, "[a]ll benefits and costs should be quantified, even when difficult (truly non-quantifiable benefits, costs, and considerations can be listed but are not part of any scoring)."

   Regarding the first part of this proposed Working Group Majority Recommendation, proposed benefits and costs should not be included in the BCA calculations when quantification would be overly speculative. This focus on non-speculative calculations can mitigate future litigation and debate over the correct values.

   The methodology outlined in the LCS BCA Handbook uses market-based data and appropriate extrapolation where practical. When market data is not available, widely vetted and widely

accepted electric industry values are used. Values that are theoretical, overly speculative, poorly defined, or subject to bias are avoided.[462]

In its filed comments in the instant docket, Pepco argued that proposed benefits that have fundamental flaws or that are overly speculative and unduly subject to bias should not be included in the BCA calculations.[463] As an example, Pepco explained that significant problems have been identified with respect to proposals to treat "Macroeconomic Benefits" as a quantifiable benefit in certain contexts, such as the problems that were identified in a "Value of Solar" study in Maryland.[464] Pepco argued that proposed benefit categories that are quantified based on an overly speculative assessment 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.

In its "Order Establishing the Benefit Cost Analysis Framework," the New York Public Service Commission ("NYPSC") established the framework for New York utilities' BCAs for investments in distributed system platform capabilities, the procurement of distributed energy resources through competitive selection, the procurement of DER through tariffs, and energy efficiency programs.[465] This Order was issued in a proceeding that entailed a public stakeholder process involving multiple rounds of filed comments from a broad spectrum of organizations, institutions, utilities, and DER service providers.[466] In its Order, the NYPSC rejected the inclusion of certain non-energy net benefits in the BCA framework, due to a lack of accurate valuation.[467] The NYPSC also rejected the adoption of a generalized adder to accommodate such net benefits, stating, "Such an adder would increase the price of electricity without necessarily resulting in value to ratepayers."[468]

Furthermore, Pepco agrees that valuations should avoid double counting. In its filed comments in the instant docket, Pepco argued the importance of avoiding double counting in the BCA.[469] Specifically, Pepco argued that the double counting of benefits distorts the true value of a given initiative, leading to decisions that waste precious resources and increase costs for District of Columbia customers, ultimately threatening the reliability, safety, and affordability of service as well as the achievement of climate goals. Moreover, the separate types of benefits included in the BCA must be mutually exclusive. All proposed benefits and/or their calculation methodologies must be scrutinized for aspects of double counting before they are included in the BCA.

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[462] "Benefit-to-Cost Analysis Handbook for Locational Constraint Solutions," Pepco, October 1, 2020, p. 6.
[463] Pepco Notice of Inquiry Comments at 12-13.
[464] Joint Comments of Baltimore Gas and Electric Company, Potomac Electric Power Company, and Delmarva Power & Light Company on the Final Report Prepared by Daymark Energy Advisors Entitled Benefits and Costs of Utility Scale and Behind the Meter Solar Resources in Maryland, PC44 at 3-4 (Dec. 14, 2018). ML#223272.
[465] Proceeding on Motion of the Commission in Regard to Reforming the Energy Vision, Order Establishing the Benefit Cost Analysis Framework, State of New York Public Service Commission Case 14-M-0101 (Jan. 21, 2016), pp. 1-2.
[466] Proceeding on Motion of the Commission in Regard to Reforming the Energy Vision, Order Establishing the Benefit Cost Analysis Framework, State of New York Public Service Commission Case 14-M-0101 (Jan. 21, 2016), p. 5.
[467] Proceeding on Motion of the Commission in Regard to Reforming the Energy Vision, Order Establishing the Benefit Cost Analysis Framework, State of New York Public Service Commission Case 14-M-0101 (Jan. 21, 2016), p. 22.
[468] Proceeding on Motion of the Commission in Regard to Reforming the Energy Vision, Order Establishing the Benefit Cost Analysis Framework, State of New York Public Service Commission Case 14-M-0101 (Jan. 21, 2016), p. 22.
[469] Pepco Notice of Inquiry Comments at 11-12.

G. **DOEE and Sierra Club**: Yes

B.1.8.4 **Stakeholder Comments**

This working group recommendation was deleted from the report.

Survey Question for Stakeholder Comment: *When using the determined cost of carbon, only costs currently being paid to carbon regimes by the District will be subtracted. Currently this is $0 and it will apply if the District joins RGGI or if a District, PJM, or National carbon price is imposed.*

A. **WGL:** As quantified by PJM staff during their December 1 presentation to the CEAIWG, the existence of the RGGI program, whether or not the District is actively participating, increases electricity prices. Therefore, this cost must be taken into account to avoid double counting, thereby overstating the value of DER programs. PJM can estimate the impact of RGGI on prices to avoid double counting.

B. **OPC:** Yes.

C. **GRID2.0:** This is just a place-holder until this factor can be better informed. This factor is illustrative of the need to agree to interim defaults for the BCA, but to reconvene the work group periodically to refine BCA inputs and to learn from experience. With respect to this Survey Recommendation and the related Survey Recommendation addressing the social cost of carbon as a monetization factor, GRID2.0 supports consideration of the marginal abatement cost approach that DOEE discussed with the CEAIWG and also recommends a closer evaluation of the merits of each method in light of the District's mandates, policy goals and objectives, and any interim targets that may be established.

D. **DCCA:** This is to prevent double counting.

E. **DCSUN:** DCSUN refers to and agrees with the survey responses from Sierra Club, GRID2.0, DC Climate Action, and DOEE.

F. **Pepco**: A netting of the effect of the RGGI carbon price must be included to avoid double counting. Residents in the District rely upon electricity generators outside of the District to satisfy their electricity needs. Notably, both the states surrounding the District, Maryland and Virginia, participate in RGGI. The generators in these states are subject to RGGI's carbon prices, and as a result electricity prices in the District reflect the effects of these carbon prices.

G. **Sierra Club**: How the Commission intends to factor in this variation needs to be explained more fully.

H. **DOEE**: Yes

I. **AOBA**: Support as long as double counting is avoided via a netting mechanism.

B.1.9.3 **Stakeholder Comments**

Working Group Majority Recommendation: *BCA submissions should include a technical appendix with modeling inputs and outputs for all scenarios examined.*

Survey Question for Stakeholder Comment: *BCA submissions should include a technical appendix with modeling inputs and outputs for all scenarios examined.*

A. **GRID2.0:** Such information can provide detailed insights to inform decisions by taking into account different resource options considered within different scenarios and changing market conditions; informing the development of more dynamic utility system planning; as well as eventually informing decisions based on the interactive effects of multiple DER. GRID2.0 also supports the use of appropriate, cost-effective smart technologies, software, data management and analytical methods, simulation modelling and other techniques and best practices that can help to generate the necessary data, information and analyses with respect to alternative investment options to inform the Commission's decision-making and its determinations regarding utility compliance under the Act.

B. **Pepco**: Pepco believes 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.

C. **DOEE**: DOEE supports the statement. The line items of the full calculation (including inputs, assumptions, outputs) should be presented with sufficient granularity that an observer should be able to reproduce the calculation and comparison of scenarios.

B.1.10.4 **Stakeholder Comments**

Non-majority Recommendation: *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 working group discussion and/or a rulemaking process, based on the Commission determination.*

No Survey Question corresponding to Working Group Majority Recommendation.

See section 2.1.11.1 for context.

A. **DOEE**: DOEE has concerns about using the DCSEU methodology in Phase I. The DCSEU methodology, while valuable, is mismatched for the BCA under development in this working group because it is not intended for utility activities, and is narrowly focused on EE, DR, and DER. This working group is charged with developing a BCA to apply to the entire portfolio of utility programs, pricing, and procurement. The NSPM is a flexible tool that can serve as a basis for this BCA development and be implemented in phases if the working group and Commission are not prepared at this time to fully value certain inputs (although those metrics should still be tracked and assessed qualitatively). DCSEU's methodology has developed quantitative metrics for several of the categories under consideration in this working group, which could certainly be incorporated into Phase I of an NSPM-based BCA. DOEE recommends developing a societal cost test under the NSPM framework in both Phase I and Phase II, with additional inputs added in Phase II as they are quantified.

B. **WGL**: WGL does not understand why this section does not have comments or position section. WGL also does not understand how such a detailed proposal can be adopted without any precedential discussion whatsoever. WGL opposes any approach that ignores critical safety, reliability, resilience and other issues as it discussed in other sections.

C. **GRID2.0:** GRID2.0 strongly supports this proposal for a two-phased process to develop a consistent BCA Framework to be used to assess utility investments in DERs and enable comparisons between DER investments and between DER investments and conventional resource investments, guided by the NSPM for Benefit-Cost Analysis of DERs. This Report documents the reasons that GRID2.0 has discussed during CEAIWG meetings concerning the need for a benefit-cost analytical framework to address DER impacts with respect to electric and grid utility systems, as well as relevant non-utility impacts, in an economically sound and systematic manner, based on consistent methods, definitions and assumptions. This is not achievable by proceeding "case by case" in analyzing the impacts of different DER applications in a "siloed" manner. Moreover, a consistent and systematic framework is vitally needed to assess the effects of utility proposals on global climate change and District climate commitments. A consistent, coherent and systematic BCA Framework will enable the Commission to assess efficiently and effectively such "effects"/impacts which "cross-cut" different DER types, applications and different levels of DER cost-effectiveness analysis. Such a consistent, coherent and systematic approach is necessary in connection with the Commission's review of the full range of utility proposals/utility expenditures, including DER programs, procurement and pricing mechanisms. A consistent framework, unlike a siloed, case by case approach to DER applications, will enable the Commission to assess and track progress under the CleanEnergy DC Act with respect to single DER impacts and multiple DER impacts (i.e., multiple on-site DER, non-wires solutions within a specific geographic area, and system-wide DER portfolios) and evaluate utility priorities with respect to investments in DERs. Overtime, a consistent framework will also enable the Commission to promote and oversee high-level, dynamic utility system planning (involving assessing multiple DER types relative to a dynamic set of alternative resources, with the goal of optimizing both DERs and alternative utility-scale resources. Absent such a consistent BCA Framework, the Commission will not be able to attain its stated NOI goal of achieving a "higher level of regulatory certainty and transparency" with respect to its decision-making process.

In general, GRID2.0 supports the proposed objectives and steps for Phase I. GRID2.0 believes that these objectives and steps are achievable within the timeframe of the CEAIWG and are generally compatible with the discussions and consensus that has been achieved to date with respect to selecting an appropriate cost-effectiveness test and identifying, under that test and NSPM principles, the range of DER impacts (electric and gas utility system and non-utility system impacts) that align with the Act's and the Commission's policy goals. GRID2.0 also believes that the efforts to date can be made more concrete and specific using the DC SEU model as "a guide;" but Phase I needs to assure that the outcomes of the steps taken are fully consistent with the Commission's authorities, its policy goals based on the CleanEnergy DC Act (and any related legislation, directives, programs, MEDSIS Principles, etc.); and, in particular, section 103 of the Act.

GRID2.0 generally supports the Phase II objectives and steps, but again, would use the DC SEU model as a guide in connection with developing a consistent BCA framework to assess utility investments in DERs, based on the NSPM accounting principles and guidance. Using the DC SEU as a guide would help to promote alignment between District agencies with respect to evaluating the cost-effectiveness of DER investments, with a view to advancing overall the Act's clean energy, climate and energy efficiency mandates within the District.

The NSPM BCA Principles are not only "broader, " they also are technology and policy neutral and intended to serve as "foundational accounting" standards with respect to assessing the cost-effectiveness of DER impacts on electric/gas utility systems and non-utility systems.

GRID2.0, as indicated earlier, believes that Commission adoption of the NSPM principles is fundamental to supporting sound, consistent and systematic economic and regulatory practices within the electric and gas utility sectors.

GRID2.0 strongly supports the need for a two-stage process for the development of a common B/C Analytical Framework, based on the NSPM, that can be applied to all DER types and applications; address cross-cutting impacts such as Greenhouse Gas emissions, air pollutants, temporal and locational impacts; and assess the benefit and cost impacts for multiple DER types, whether multiple on-site DER, Non-wires solutions, system-wide DER portfolios and ultimately, dynamic system planning. Due to the time constraints imposed on the CEAIWG, GRID2.0 thinks that, in the first phase, the CEAIWG can offer for the Commission's consideration constructive recommendations relating the development of a common B/C Analytical Framework and the process to be followed in the second phase. Because of the importance of developing a common B/C Analytical Framework to achieving the District's policy mandates and the Commission's climate change policy commitments and charge under Section 103 of the Act, GRID2.0 supports a notice and comment rulemaking process in stage two (like the notice and comment rulemaking process that the NYPSC undertook to develop its DER B/C Analytical Framework.

GRID2.0 especially supports framing a Recommendation for a two-stage process in light of recent Commission Orders recognizing the critical need for alignment across relevant proceedings, workshops and activities relating to climate change, the use of more efficient energy and renewable energy sources, DER technologies, controllable demand alternatives, building and transportation electrification, etc. to reduce greenhouse gas emissions and overall energy consumption. Establishing a common DER B/C Analytical Framework, based on the NSPM, would be a vital tool to assure the systematic, consistent and environmentally sound assessment of the cost-effectiveness of alternative DER investment strategies, DER procurement, NWA solutions, pricing structures, etc.

D. **Pepco:** This proposal should be rejected, and a different approach should be adopted as described below. The fact that the CEAIWG was not able to reach agreement on many issues regarding a BCA methodology does not justify imposing the positions espoused in an external report authored by consultants who work on behalf of a subset of stakeholders, especially when the report has been positioned as "policy-neutral" yet it actually contains hard policy positions that have not been recognized or adequately discussed, the report lacks sufficient clarity which could lead to follow-on issues regarding interpretation, and it is neither customized for the District's policy commitments nor designed to address the scope of the issue that is the subject of the instant proceeding. These issues are further described below. A more straightforward approach, that builds upon the progress to date by stakeholders and the Commission, and that is better aligned with the District's policy goals, should be adopted and is also described below.

Adoption of the "National Standard Practice Manual for Distributed Energy Resources" ("NSPM")[470] for BCA development, or adoption of its "NSPM BCA Principles," would effectively

[470] "National Standard Practice Manual – For Benefit-Cost Analysis of Distributed Energy Resources," NESP, August 2020.

constitute acceptance of contentious positions without specifically addressing or evaluating the validity of those positions. The NSPM is a report authored in August 2020 by a group of consultants who explicitly represent or have represented a subset of working group stakeholders in Commission dockets pertaining to contentious BCA or BCA-related issues.[471] The slide deck summarizing the NSPM, which was presented at the November 12, 2020 BCA Framework Committee Meeting states, "This manual matches and expands on much of what was found in the Synapse/OPC Value of Solar report."[472] This 2017 Synapse report was contentious,[473] and similarly Pepco has identified problematic aspects of the NSPM in its responses to proposed Working Group Majority Recommendation B.1.1, proposed Working Group Majority Recommendation B.1.2, and proposed Working Group Majority Recommendation B.1.4. Furthermore, Pepco's response to proposed Working Group Recommendation B.1.2 specifically discusses problems (especially given the context of BCA development related to the instant proceeding) with the policy positions that the NSPM ties to its "NSPM BCA Principles" as described in the NSPM.

Adoption of the NSPM's guidance and/or principles also would likely raise unnecessary and contentious follow-on issues for the Commission to address because, as the NSPM notes, the NSPM does not offer an analytical framework that is sufficiently developed to evaluate proposals.[474] Instead, it includes only high-level positions on some issues and specific recommendations in other areas, while deliberately leaving other issues open and addressing certain other issues without sufficient clarity.[475] If the Commission were to approve the proposal to adopt the NSPM guidance for BCA development, the lack of clarity in the NSPM, especially on contentious issues, would likely lead to questions regarding how to interpret vaguely-defined aspects of the NSPM to produce a workable BCA. Furthermore, included in the 300 pages that comprise the NSPM are positions that were not vetted in the working group sessions and that Pepco does not endorse.[476] Pepco objects to any proposal that would effectively delegate the authority of the Commission to decide on contentious issues to the interpretations of the consultants who authored the NSPM and who represent a certain subset of stakeholders in the instant docket.

The NSPM is also not customized for the District's policy commitments, and instead the NSPM contains its own explicit "core principles" (a.k.a. "NSPM BCA Principles") and associated

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[471] The lead author of the NSPM is a consultant from Synapse Energy Economics, and this same consultant also co-authored a report entitled, "Distributed Solar in the District of Columbia, Policy Options, Potential, Value of Solar and Cost-Shifting" that was filed at the Commission by the OPC on May 19, 2017 in Formal Case No. 1130. Similarly, the NSPM was co-authored by Karl R. Rábago and coordinated by Julie Michals, both of whom represent GRID2.0 in the instant docket. (*GD-2019-04-M, In the Matter of the Implementation of the 2019 Clean Energy DC Omnibus Act Compliance Requirements ("GD-2019-04-M")*, Third Joint Metrics and BCA Framework Committee Meeting Minutes, Attachment No. 1, filed March 9, 2021).

[472] *GD-2019-04, In the Matter of the Implementation of the 2019 Clean Energy DC Omnibus Act Compliance Requirements ("GD-2019-04")*, BCA Framework Committee First Meeting Minutes Report at Attachment No. 3, filed November 23, 2020.

[473] Contentious issues associated with this report are described in *In the Matter of the Investigation into Modernizing the Energy Delivery System for Increased Sustainability*, Formal Case No. 1130, Comments of Potomac Electric Power Company on the Office of the People's Counsel Report on Distributed Solar in the District of Columbia (Jul. 12, 2017).

[474] "National Standard Practice Manual – For Benefit-Cost Analysis of Distributed Energy Resources," NESP, August 2020, p. i.

[475] Pepco describes this in greater detail in its responses to proposed Working Group Majority Recommendation B.1.2 and proposed Working Group Majority Recommendation B.1.4.

[476] Pepco describes this in greater detail in its responses to proposed Working Group Majority Recommendation B.1.2 and proposed Working Group Majority Recommendation B.1.4.

positions. The NSPM presents its core principles as "the foundation for developing and applying cost-effectiveness tests for BCAs,"[477] and these principles drive the positions espoused in the NSPM. The NSPM's core principles were developed independently of the PowerPath DC Vision Statement and Guiding Principles that the Commission adopted for modernizing the District's energy delivery system,[478] which the Commission emphasized in the instant docket in the context of the analytical approach that it should take when considering the effects of a utility proposal on global climate change and the District's public policy commitments,[479] and which the Commission revised and approved as the PowerPath DC Vision Statement and Guiding Principles for the District of Columbia.[480]

GRID2.0 discounts the fact that the NSPM's core principles are independent from the PowerPath DC Vision Statement and Guiding Principles, alluding to a statement in the NSPM that reads, "[T]he NSPM principles are intended to be policy-neutral."[481] However, a closer look at the NSPM shows that its core principles are tied to hard policy positions. Pepco identifies some of these policy positions in its response to proposed Working Group Majority Recommendation B.1.2. As explained by Pepco, several of these policy positions are not adequately defined and do not appear appropriate for inclusion in a BCA based on a Societal Cost Test. As Pepco also explains, adoption of the NSPM's positions could cause the BCA to be distorted, leading to inefficient and costly decisions for the District's residents and businesses, and the advancement of policy goals could be replaced by contentious proceedings regarding underlying assumptions and assigned values.

The NSPM is also not designed to address the scope of the issue that is the subject of the instant docket. While the purpose of the instant docket is to advance the development of the analytical approach that it should take when "considering the effects of a utility proposal on global climate change and the District's public policy commitments,"[482] including to support the District's clean energy goals, the NSPM is focused only on the development of BCAs to assess the cost-effectiveness of DERs.[483] So even if the Commission approved the proposal to adopt the NSPM's positions, the positions of the NSPM are not directly transferable without further direction about how to adapt them for the purposes of the instant docket.

A more straightforward approach, that builds upon the progress to date by stakeholders and the Commission, and that is better aligned with the District's policy goals, is available and should be adopted instead. The CEAIWG has not been able to reach agreement on many issues regarding a BCA methodology. The lack of agreement does not justify effectively ignoring stakeholders' issues and instead granting a blanket approval of the positions expressed in a document that suffers from

[477] "National Standard Practice Manual – For Benefit-Cost Analysis of Distributed Energy Resources," NESP, August 2020, p. i.
[478] Formal Case No. 1130, In the Matter of the Investigation into Modernizing the Energy Delivery System for Increased Sustainability ("Formal Case No. 1130"), Order No. 19275, rel. February 14, 2018.
[479] GD2019-04-M, In the Matter of the Implementation of the 2019 Clean Energy DC Omnibus Act Compliance Requirements, Notice of Inquiry, November 25, 2019, pp. 1-2.
[480] Formal Case No. 1130, In the Matter of the Investigation into Modernizing the Energy Delivery System for Increased Sustainability, Order No. 20364, rel. June 5, 2020, p. 11, Appendix C.
[481] "National Standard Practice Manual – For Benefit-Cost Analysis of Distributed Energy Resources," NESP, August 2020, p. 2-1.
[482] GD2019-04-M, In the Matter of the Implementation of the 2019 Clean Energy DC Omnibus Act Compliance Requirements, Notice of Inquiry, November 25, 2019, p. 1.
[483] "National Standard Practice Manual – For Benefit-Cost Analysis of Distributed Energy Resources," NESP, August 2020, p. i.

the problems described above. Instead, Pepco recommends that the working group process be renewed with a material improvement. Specifically, since the working group has not been able to address or develop a record regarding BCA design issues at a level that can provide for an executable BCA, Pepco advocates that the working group process be centered around a BCA methodology with sufficient detail and clarity for application that is offered as a proposal, allowing stakeholders to provide their positions and recommended changes to this detailed BCA methodology, if any. In this way, the working group process should result in a record of positions on matters at an executable level, rather than circling at a conceptual and undefined level, and the Commission should then be able to use the resultant record to decide on issues for which there is not agreement. To be clear, the proposed BCA methodology would not be deemed adopted up-front, but instead it would serve as a proposal for comment and proposed amendments, with the Commission deciding on the BCA methodology after stakeholders are provided the opportunity to comment. This approach is similar to the approach used by the NYPSC to successfully develop New York's BCA methodology, which the Commission referenced in its Notice of Inquiry in the instant docket.[484] Specifically, the NYPSC Staff issued a "BCA Whitepaper" that proposed the specific benefit and cost components to be included in the BCA and described the methodologies to value those benefits and costs.[485] Parties then provided feedback on the BCA Whitepaper, and the NYPSC issued an order on the contested issues.[486]

Under this approach, the NSPM cannot serve as the initial proposed BCA methodology for comment. As described earlier, the NSPM does not offer a BCA methodology with sufficient detail and clarity for application. Instead, it only includes high-level positions on some issues while leaving other issues open, and it lacks clarity and detail in certain important areas for comment. While the NSPM does not provide a BCA methodology with sufficient completeness or clarity to be offered as the initial proposal for comment, stakeholders may refer to the NSPM or any other document to support their positions if they desire. However, any position taken from the NSPM that a party presents should be evaluated on its own merits, rather than prejudicing the NSPM as having any more validity than any other document presented during the working group sessions.

Pepco recommends that either the "Benefit-to-Cost Analysis Handbook for Locational Constraint Solutions" ("LCS BCA Handbook"), or the benefit-to-cost analysis methodology that Pepco will be using in its Full Analytical Filing for its Climate Solutions Plan in FC1167 ("Climate Solutions BCA"), serve as the initial proposal for comment.

- Pepco presented the LCS BCA Handbook at the November 12, 2020 BCA Framework Committee meeting.[487] The LCS BCA Handbook was completed in October 2020 in accordance with Order No. 20286.[488] The LCS BCA Handbook provides the methodology

[484] GD2019-04-M, In the Matter of the Implementation of the 2019 Clean Energy DC Omnibus Act Compliance Requirements, Notice of Inquiry, November 25, 2019, p. 2.
[485] Proceeding on Motion of the Commission in Regard to Reforming the Energy Vision, Staff White Paper on Benefit-Cost Analysis in the Reforming Energy Vision Proceeding, Department of Public Service Staff, State of New York Public Service Commission Case 14-M-0101, July 1, 2015.
[486] Proceeding on Motion of the Commission in Regard to Reforming the Energy Vision, Order Establishing the Benefit Cost Analysis Framework, State of New York Public Service Commission Case 14-M-0101 (Jan. 21, 2016).
[487] *GD-2019-04, In the Matter of the Implementation of the 2019 Clean Energy DC Omnibus Act Compliance Requirements ("GD-2019-04")*, BCA Framework Committee First Meeting Minutes Report at 4, filed November 23, 2020.
[488] *In the Matter of the Investigation into Modernizing the Energy Delivery System for Increased Sustainability*, Formal Case No. 1130, Order No. 20286 (Jan. 24, 2020) ("Order No. 20286").

Pepco uses to evaluate third-party and utility solutions for grid constraints, it is designed for the evaluation of a variety of resources including DERs, and it directly addresses climate considerations, so it certainly can serve as the initial proposal for comment and evolution in the development of the analytical approach that should be taken when considering the effects of a utility proposal on global climate change and the District's public policy commitments, which is the subject of the instant docket.[489] The methodology outlined in the LCS BCA Handbook addresses the cost-effectiveness test, identification and valuation of benefit and cost streams, implementation of the BCA analysis, and specific calculations for benefit and cost streams.[490] The LCS BCA Handbook is customized for the District of Columbia's unique service area and context, including the PowerPath Vision Statement and Guiding Principles and the District's clean energy and climate goals.[491]

- The Climate Solutions BCA is being developed using the LCS BCA Handbook as a foundation, with adaptations based in part on feedback from the CEAIWG, to evaluate Pepco's Climate Solutions Plan. Pepco's Climate Solutions Plan is designed to advance the District's energy and climate goals. Greater detail regarding the requirements for this plan can be found in Commission Order Nos. 20754 and 21024 in FC1167. The ability to adapt the LCS BCA Handbook to develop the Climate Solutions BCA also provides clear evidence, despite suggestions made by GRID2.0 in B.1.1.3 or elsewhere, that the LCS BCA Handbook's application to certain types of projects or programs make the LCS BCA Handbook unable to serve as a foundation for the development of a BCA methodology for a wider range of applications, such as that related to the advancement of the District's energy and climate goals.

In sum, Pepco's recommended approach would build upon, and would not ignore or conflict with, the District's vision, principles, and progress achieved thus far in this and other Commission dockets. Pepco's recommended approach would help to ensure alignment with the District's policy goals, and it would use a BCA methodology with sufficient detail for actual application as a starting point for discussion, facilitating more structured discussions on BCA design and progress toward necessary decisions. At the same time, it would not preclude any party from referencing the NSPM if a party finds that document to be useful to support its positions.

Any criticism levied on the LCS BCA Handbook does not constitute justification of adoption of the NSPM, as the NSPM still suffers from the problems described above and in Pepco's response to proposed Working Group Majority Recommendation B.1.1. As described above in this response, because the working group has not been able to address or develop a record regarding BCA design issues at a level that can provide for an executable BCA, Pepco advocates that the working group process be centered around a BCA methodology with sufficient detail for application that is offered as a proposal, allowing stakeholders to provide their positions and recommended changes to this detailed BCA methodology, if any. In this way, the working group process should result in a record of positions on matters at an executable level, rather than circling at a conceptual and undefined level, and the Commission should then be able to use the resultant record to decide on issues for which there is not agreement. While the NSPM does not provide sufficient detail for application,

[489] GD2019-04-M, In the Matter of the Implementation of the 2019 Clean Energy DC Omnibus Act Compliance Requirements, Notice of Inquiry, November 25, 2019, p. 1.
[490] "Benefit-to-Cost Analysis Handbook for Locational Constraint Solutions," Pepco, October 1, 2020, p. 2.
[491] "Benefit-to-Cost Analysis Handbook for Locational Constraint Solutions," Pepco, October 1, 2020, p. 2.

the LCS BCA does, so it is suitable to serve as the proposed strawman BCA methodology for stakeholder comment in the next phase of this proceeding.

Finally, GRID2.0's alternative proposal to the NSPM Authors' proposal should be rejected. Specifically, this proposal states, "The Commission should undertake a notice and comment rulemaking proceeding, based on the guidance provided by the 'National Standard Practice Manual for Benefit-Cost Analysis of Distributed Energy Resources' ('DER'), to establish a consistent Benefit-Cost Analytical Framework for DER; and this proceeding shall be framed and governed, in its structure, process and agenda, by a 'Strawman Framework' that incorporates the Recommendations developed by the CEAIWG and approved by the Commission and that takes into account the Working Group's work product." This proposal includes adoption of the recommendations included in the CEAIWG Report. Pepco has communicated its opposition, and supported its reasoning for its opposition, to several of these CEAIWG Report recommendations (including adoption of the NSPM) in Pepco's comments elsewhere in this report.

B.2.1.3 **Stakeholder Comments**

Working Group Majority Recommendation:
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 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.*

Survey Question for Stakeholder Comment: *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.*

A. **WGL:** This is the purpose of conducting a Long-term Multi-sector, Integrated Resource Planning Process that would enable appropriate programmatic evaluation when non-incremental options are being considered. There is no way to "shoe horn in" the consideration of critical issues and impacts within a rubric narrowly focused on individual incremental programs. The DCSEU default is based on the assumption that programs are incremental and not involved in the GHG goals of the scope envisioned. These impacts include potential direct threats to health and safety, reliability and resilience, equity, and compliance with nearly all aspects of the statutory framework. WGL addresses the need to create a process that addresses baselines for infrastructure, demand, rates, program options, program costs, program scope, etc.

   WGL disagrees with the OPC recommendation. The BCA should apply to climate change programs of sufficient scale to justify the BCA, while also being mindful of the cumulative impact

of such programs. The BCA is particularly useful when comparing alternative climate change programs. These comparisons can reflect scenario or sensitivity analyses where input assumptions may vary. Even under these circumstances, the BCA informs a decision that must also incorporate the judgment of commissioners, particularly when there are important considerations that are hard to reflect in a BCA (e.g., equity or resilience). Washington Gas has previously proposed that such issues should be accommodated through the addition of qualitative factors, that could be weighted and then scored in a comprehensive rubric, along with quantitative factors.

The BCA should not be applied to determine whether to address a significant safety or reliability issue even if that safety or reliability program may also provide environmental benefits. Neither is a BCA appropriate for a rate case which typically relies upon decades of foundational precedent. Finally, WGL does not believe that a BCA is appropriate for application to pilot programs which may be needed to demonstrate and test new and emerging technologies for GHG reduction.

The BCA should not be applied to utility activities not directly related to climate change such as rate cases, reliability and safety measures, etc. Although parties may be inclined to broadly interpret any utility action as one that "could affect" DC's climate commitments, OPC's criterion is not helpful.

WGL bases its view on the following considerations:

- The highly undefined nature of the OPC proposal. For example, how would the BCA apply to rate cases or matters that primarily support safety and reliability? What would be the changes to each process OPC proposes to now incorporate the BCA?
- The lack of discussion during the CEAIWG process or even hypothetical examples related to OPC's proposal.
- The District's lack of experience with the proposed BCA structure which, until now, has been primarily used by the DC SEU for energy efficiency programs,
- The current recommendations which in WGL's view are incorrect, and therefore, an overly broad application would exacerbate the impacts of the errors while also diffusing limited regulatory capabilities, and
- The costs of BCA evaluation.

In addition, WGL opposes the deferential treatment of the OPC proposal compared to comments and suggestions of WGL. The CEAIWG process has never established the means for parties such as WGL to make proposed recommendations or requests for parties to comment on specific points. For example, WGL has repeatedly proposed changes or positions but the process never provided an opportunity for comments on the record via a request from other parties to comment on those proposed recommendations and/or positions. The solution is to clarify the process for recommendations and requests for comments so that all working group members can provide similar proposals. Examples of issues raised by WGL, but not circulated for comment include:

- a long-term, all-sector planning process for climate changes programs likely to result in major changes in supply and demand,
- requirements that Pepco estimate the feasibility, costs and resilience implications of the utility becoming a winter peaking utility with a much higher annual peak load. WGL is not

proposing this requirement because of shortcomings of the Pepco system but because this analysis has never been done anywhere.

- formal inclusion and consideration of the transportation sector (due to its intersection with the electric grid),
- a scoring approach built around a Q&A rubric that would permit the inclusion of qualitative factors such as feasibility, resilience and reliability, and affordability and equity.
- fair treatment of all customers and utilities such as application of emission measurements to electricity as well as gas
- Recognizing that a BCA without benefit measurements is not a BCA
- Recognition that elimination of all offsets has the following individual sub-elements that the parties should be asked to comment on. Namely, offsets prohibition:
    - is contrary to the plain meaning of the 2050 net neutrality limit,
    - is contrary to the need for affordability, equity, and feasibility; WGL's climate business plan does not rely materially on offsets but is generally concerned about impacts on its customers.
    - renders the BCA suspect because programs costing more than offsets could be incorrectly treated as net beneficial regardless of the offset cost,
    - is discriminatory because it denies gas ratepayers the compliance flexibility available under the RPS,
    - is discriminatory when reserving offsets for power and not gas without explanation as supported by some parties
    - is discriminatory when reserving offsets for ratepayers in other jurisdictions without regard to the cost, feasibility, reliability or other impacts on ratepayers of the District as is supported by parties
    - is ill-founded when the recommendation is based on claims by some parties that offsets cannot be subject to reliable measurement and verification (M&V) without opportunity for organizations providing offsets to respond to these claims
    - is ill-founded when the recommendation is supported by parties who believe that energy efficiency programs can be successfully and reliably subject to M&V, but that offsets cannot be reliably subject to M&V, and no opportunity was provided to respond to these claims by organizations currently selling offsets at a huge discount to the SCC
    - illogical because when it is supported by parties that propose to count emissions outside of the district without counting the benefits of decreasing these emissions.
    - Inconsistent with the need to cooperate across the DMV as there is no utility serving only the District because even offsets in contiguous jurisdictions would be prohibited

B. **OPC:** Yes.

C. **GRID2.0:** A BCA Framework could provide guidance on the application of DER benefit/cost analyses at different scales; the NSPM's BCA analytical framework would apply to decision-making at different scales (program, procurement, pricing mechanism program, infrastructure NWA investment, overall DER portfolio). The analytical framework offers a systematic, consistent and coherent methodology for addressing utility actions/proposals at different scales, but consideration should be given to "Materiality" criteria for project-level analyses. The NSPM BCA Framework also applies to different time horizons; the Framework can inform, for example, long-term, multi-sector, integrate resource planning. Pepco offered an illustration of a specific benefit-cost analysis that it has undertaken, not an illustration of a BCA Framework with its Core Elements that would apply across different DER types, applications and different levels of cost-effectiveness analysis. The NYPSC has established such a Benefit-Cost Analytical Framework to aide that Commission in assessing proposed DER investments and expenditures by the utilities it regulates (relating to the utility's procurements, pricing structures, and programs). In that BCA Framework proceeding, the NYPSC evaluated the benefits of developing a BCA framework to guide utility assessments of the cost-effectiveness of DER investments versus proceeding without an overarching framework, as Pepco is proposing. The NYSPC determined that a BCA Framework (a systematic, consistent and coherent accounting approach) is necessary to achieving its policy objectives cost-effectively and consistent with the public interest. Moreover, the NSPM has taken into account the NYPSC model in reflecting best practices within the U.S. with respect to developing a BCA Framework.

GRID2.0 supports an NSPM-based, common B/C Analytical Framework that applies to different scales of utility plans, programs, procurements, pricing structures, as well as different time horizons, subject to a materiality criterion for project-level analyses. However, this Survey Recommendation reveals a "gap" with respect to certain considerations that need to be addressed in developing a common B/C Framework for the Commission to apply to utility proposed investments. The CEAIWG needs to address the "scope" of climate impacts and utility proposals to which a B/C Analytical Framework will apply, consistent with the Commission's charge under Section 103 of the Act, the MEDSIS Vision Statement and Guiding Principles, the Act's and other District legislative mandates, plans and directives, and the Commission's policy commitments and directives. GRID2.0 maintains that a B/C Analytical Framework should apply to the full range of climate impacts associated with both mitigation (reduction of GHG emissions) and adaptation (increasing resiliency; and addressing grid stability, safety and reliability associated with an increasing share of intermittent renewable energy in the generation mix and with managing variable and differentiated loads). In connection with such climate impacts, the B/C Analytical Framework should apply to all utility plans, programs, procurements, infrastructure investments, pricing structures and projects (with project-level analyses subject to a materiality criterion) that are subject to Commission approval (subject to exceptions that the Commission may establish). A B/C Analytical Framework needs to apply to Utility proposals that are submitted to the Commission for its review and approval and that can materially and incrementally impact achievement of the CleanEnergy DC mandates and policy goals; proposals that can foster the use of more efficient energy and renewable energy sources, DER technologies, controllable demand alternatives, as well as electrification of buildings and transportation, to reduce greenhouse gas emissions and overall energy consumption.

GRID2.0 recommends the follow edits to OPC's proposed text:

Recommendation: 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.

OPC believes it is important to apply BCA to the appropriate scopes in order to support policy making decisions. The BCA guidance should contain materiality criteria for performing BCAs; which materiality criteria would be applied consistently to address the scale question and determine which applications are appropriate for benefit-cost analysis. OPC agrees with GRID 2.0 that not every application needs a BCA, particularly routine decisions that do not affect DC's climate commitments. Also, consideration of "scale" as a factor for B/C analysis should not have the effect of removing from benefit-cost analysis certain material categories of utility proposals (e.g., programs, plans, procurements, projects, pricing structures, etc.). The BCA guidance should discuss techniques that utilities can use to meet "materiality criteria," such as bundling projects or clustering comparable projects within programs.

OPC believes that BCAs 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, including relevant non-climate programs, large-scale capital projects, major infrastructure investments, and rate cases. Both the Commission and OPC have statutory mandates to consider the effects on global climate change and the District's public climate commitments. Decisions regarding whether or not to support and advance policies that impact climate commitments and greenhouse gas emissions should be informed by a B/C analysis prepared by the applicant, using the jurisdiction's selected cost-effectiveness test; a B/C analysis that justifies the merits of the investment/procurement and evaluates alternative options.

D. **DCCA:** This is important in order to capture potential synergies between different projects.

E. **Pepco**: Because concepts like application scale, project specific, phases of a project, and bundled projects can be difficult to define, Pepco believes that the scale of the BCA application should be tailored to the relevant situation.

It is critical that Pepco, as the entity responsible for safe and reliable service, be provided sufficient flexibility to make the investments needed in a timely manner to serve customers safely and reliably, and to work toward the satisfaction of policy goals. Accordingly, 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. Requiring a full BCA for approval of necessary projects such as these could result in needless costs or hamper such necessary projects from being implemented in a timely manner, or from being implemented at all, threatening the utility's ability to satisfy its basic obligations to the residents and businesses that it serves.

A BCA also may not be appropriate for pilot projects, demonstration or similarly innovative projects. Such projects are often designed to advance or evaluate certain technologies or configurations, and/or to learn more about their characteristics or their value to society. Accordingly, important benefits of such projects are difficult to quantify, and attempts to quantify and capture these benefits in a BCA could result in highly unreliable results.

In the Background section for this proposed Working Group Majority Recommendation and in GRID2.0's comments regarding this proposed Working Group Majority Recommendation,

GRID2.0 makes comparative claims about the LCS BCA Handbook and the NSPM; these claims are false or misleading and therefore require a response.

First, there is no merit to GRID2.0's claims that the LCS BCA Handbook does not represent an "enterprise level" or "systematic" approach, that building from the LCS BCA Handbook would constitute proceeding without an overarching framework, and that, by the LCS BCA Handbook, "Pepco offered an illustration of a specific benefit-cost analysis that it has undertaken, not an illustration of a BCA Framework with its Core Elements that would apply across different DER types, applications and different levels of cost-effectiveness analysis." The LCS BCA Handbook is based on a framework and principles that pertain to the full spectrum of applications that are the subject of the instant docket. The LCS BCA Handbook was developed as part of Pepco's Distribution System Planning and Non-Wires Alternatives Process as approved by the Commission and it was designed to be consistent with the PowerPath Vision Statement and Guiding Principles: Sustainable, Well-Planned, Safe & Reliable, Secure, Affordable, Interactive and Non-Discriminatory.[492] Moreover, in light of this Vision Statement and Guiding Principles, which the Commission referenced in its Notice of Inquiry in the instant docket,[493] Pepco identified and elaborated on the principles and framework for BCA development in the context of the analytical approach to take when considering the effects of a utility proposal on climate change and the District's policy commitments, which is the subject of the instant docket.[494] The PowerPath Vision Statement and Guiding Principles, and the principles and framework for BCA development that follow from them, served as a foundation for the development of the LCS BCA Handbook. Finally, GRID2.0's argument that the LCS BCA Handbook does not constitute an analytical framework is incorrect because the LCS BCA Handbook presents a BCA methodology in sufficient detail for its current usage, and the Commission has explicitly recognized that a BCA is itself an analytical framework for the purposes of the instant docket.[495]

Second, in an attempt to criticize the LCS BCA Handbook that GRID2.0 includes as part of its comments regarding this proposed Working Group Majority Recommendation, GRID2.0 makes an unjustified claim about the NSPM.[496] Specifically, GRID2.0's claims that "the NSPM has taken into account the NYPSC model in reflecting best practices within the U.S. with respect to developing a BCA Framework." While GRID2.0 has attempted to validate the NSPM by characterizing it as being based on "best practices," GRID2.0 has presented no evidence to support this claim, nor is there any evidence that the NSPM is based on "best practices" to a greater extent than other BCA-related reports presented during the working group meetings. In fact, while GRID2.0 has touted the fact that the NSPM has taken into account the BCA framework adopted by

[492] *In the Matter of the Investigation into Modernizing the Energy Delivery System for Increased Sustainability*, Formal Case No. 1130, Order No. 20286 (Jan. 24, 2020) ("Order No. 20286"), pp. 2, 34, and Statement of Commissioner Richard Beverly.
[493] GD2019-04-M, In the Matter of the Implementation of the 2019 Clean Energy DC Omnibus Act Compliance Requirements, Notice of Inquiry, November 25, 2019, pp. 1-2.
[494] *In the Matter of the Implementation of the 2019 Energy DC Omnibus Act Compliance Requirements,* General Docket No. 2019-04-M, Comments in Response to the Notice of Inquiry, (Jan. 13, 2020) ("Pepco Notice of Inquiry Comments"), pp. 1, 7-17.
[495] GD2019-04-M, In the Matter of the Implementation of the 2019 Clean Energy DC Omnibus Act Compliance Requirements, Notice of Inquiry, November 25, 2019, p. 2.
[496] "National Standard Practice Manual – For Benefit-Cost Analysis of Distributed Energy Resources," NESP, August 2020, Acknowledgements.

the New York Public Service Commission ("NYPSC")[497] in reflecting best practices, the two frameworks conflict in important areas. For example, the NYPSC found that it would be inappropriate to include "Wholesale Market Price Impacts" in a Societal Cost Test, but the NSPM would mandate the inclusion of this effect in a Societal Cost Test (NSPM, pp. 2-4, 3-6, F-6). As another example, the NYPSC rejected the inclusion of certain non-energy net benefits in the BCA framework, due to a lack of accurate valuation. The NYPSC also rejected the adoption of a generalized adder to accommodate such net benefits, stating, "Such an adder would increase the price of electricity without necessarily resulting in value to ratepayers." However, one of the core principles of the NSPM entails including "all relevant (according to applicable policy goals), material impacts including those that are difficult to quantity or monetize" (NSPM, p. 2-3) and the NSPM proposes the use of a generalized adder "to account for difficult-to-quantify benefits." (NSPM, p. 3-11.) As another example, with respect to the choice of the discount rates to be applied, a decision that the NSPM asserts "can have a significant impact on present value dollars and therefore on the results of the BCA" (NSPM, p. 5-16), the NYPSC prescribed the use of the utility weighted cost of capital ("WACC") for the Societal Cost Test (with the exception of the discount rate for the calculation of the Social Cost of Carbon), noting, "To use a rate other than the WACC would distort evaluation of the value of measures that are alternatives to utility service." In contrast, the NSPM indicates that the WACC is inconsistent with a societal perspective (NSPM, pp. G-4, G-6), and one of the NSPM's authors stated that the NSPM's guidance is that a discount rate lower than the WACC should be used when relatively broad impacts are being tested (presumably such as under a Societal Cost Test).[498]

Third, despite GRID2.0's suggestions to the contrary, like the BCA framework adopted by the New York Public Service Commission ("NYPSC"), [499] the LCS BCA Handbook is equipped to evaluate proposals at different scales and time horizons.

A BCA does not offer an evaluation of technology alternatives, but rather an evaluation of the cost effectiveness of the particular project or program. However, Pepco is interested in working with stakeholders to explore new technology applications as they become available and to discuss alternative information instead of BCAs that can help the Commission and other District stakeholders evaluate the Company's Reliability-driven investments. As discussed in its filings in FC 1167, the Company is proposing to launch multiple programs demonstrating various use cases for distributed energy resources ("DER"). The Company notes that nation-wide there are currently few cases where non-wires solutions ("NWSs"), such as DER, are being used to replace other utility investments, and the conditions that allow use of NWSs as a substitute for other reliability investments are rare in the District.[500]

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[497] Proceeding on Motion of the Commission in Regard to Reforming the Energy Vision, Order Establishing the Benefit Cost Analysis Framework, State of New York Public Service Commission Case 14-M-0101 (Jan. 21, 2016).
[498] (GD-2019-04-M, In the Matter of the Implementation of the 2019 Clean Energy DC Omnibus Act Compliance Requirements ("GD-2019-04-M"), Third Joint Metrics and BCA Framework Committee Meeting Minutes at 5, filed March 9, 2021.
[499] Proceeding on Motion of the Commission in Regard to Reforming the Energy Vision, Order Establishing the Benefit Cost Analysis Framework, State of New York Public Service Commission Case 14-M-0101 (Jan. 21, 2016).
[500] Generally, NWAs have only been applied to reliability situations where a long, radial feeder with heavy exposure to outage causes and a load pocket at the end of the radial, in which cases a utility-scale battery has been deployed to maintain customer load while the fault is being remedied. This is not a reliability situation one would find in the District of Columbia. See the following for an example: https://www.nationalgeographic.com/pages/article/100325-presidio-texas-battery

Fundamentally, Pepco maintains that the BCA under development in this WG should be applied to utility programs proposed to meet the District's decarbonization goals such as those the Company is proposing in its Climate Solutions Plan in FC1167, which will be subject to the Climate Solutions BCA that Pepco intends to file with the Commission in January of 2022. As described in the Company's filings in FC 1167, these programs include a broad array of programs developed to activate customers and other partners to decarbonize buildings, electrify transportation, and demonstrate new value DER options, amongst other programs. These programs are tied directly to the achievement of decarbonization goals within the District and reflect the District's approach to decarbonization discussed across numerous policy reports and reflected in legislation. However, in Pepco's view the Company's investments in Customer and Reliability-Driven work are largely neutral to the District's climate goals and should not be subject to a climate BCA.

Because Reliability-driven projects—projects identified to maintain the distribution system's ability to deliver energy to customers—are required for the Company to provide safe and reliable service to customers and are often needed immediately, a BCA is inappropriate for these projects. The requirement to complete a BCA for reliability work could delay needed investments and result in unreliable service for customers, conflicting with Commission requirements to maintain reliability standards and conflicting with the Company's core commitment to reliable service for customers. Instead, the Company uses competitive procurement for identified components of these projects in order to minimize costs to customers. Further, the District's decarbonization- and electrification-based goals rely on customers continuing to receive high reliability levels of service. Thus no BCA for these investments is appropriate or necessary.

For Customer-Driven investments—which are the result of customer service needs, such as interconnection requests, installation of meters for new customers, and District Department of Transportation requests for utility service to be moved to accommodate road construction—the Company has no alternative but to fulfill the customer request under its obligations as the jurisdictional utility. Thus, these projects are also inappropriate for BCA treatment.

The long lead times for Capacity-driven projects—projects identified to meet customer load growth—make them more appropriate for BCA treatment. The Company already applies a BCA to appropriate Capacity-driven as part of its Distribution System Planning for Non-Wires Alternatives (DSP/NWA) process, including the LCS BCA Handbook methodology for evaluating the cost-effectiveness of proposed solutions that may include a variety of storage, demand response, and other DER. The long lead times for these projects make them more appropriate for BCA treatment as part of the evaluation of alternatives because the Company has time to consider alternatives.

F. **DOEE**: In addition to the *scope* of the BCA guidance, the Working Group also needs to address the *scale* of the BCA implementation. The Working Group has already addressed scope in the Recommendation B1.1: "*The NSPM BCA Framework and process should be adopted to put into place an "organic" framework that can evolve in a consistent manner to assimilate technology, policy and market/customer changes, as well as to evolve Benefit-Cost Analyses to address multi-sited DERs and their interactive effects; multi-sectoral applications; dynamic utility system optimization planning, and comprehensive end-to-end electricity and gas system planning*." DOEE agrees with OPC that the BCA guidance should also include direction as to the appropriate scale

that a utility should conduct the BCA, stressing that the scale guidance should allow for sufficient comparison of alternatives.[501]

DOEE does not agree that "routine decisions" should be excepted from the BCA framework, given that decisions currently accepted as routine may not be so in the future and may already have viable alternatives that may have a different climate impact (e.g. non-wires alternatives). DOEE agrees with Grid 2.0 that "programs, plans, procurements, projects, pricing structures, etc." should be part of the BCA. DOEE finds that for the optionality embedded within the BCA process, it will be required to assess those options under the BCA at a sufficiently granular level in order to be able to weigh such alternatives effectively.

DOEE agrees with this statement (as written by OPC and amended by Grid 2.0) and would support its inclusion as a standalone recommendation or merged into Recommendation B1.1: "BCAs 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, including relevant non-climate programs, large-scale capital projects, major infrastructure investments, and rate cases."

B.2.2.3 **Stakeholder Comments**

Working Group Majority Recommendation: *The BCA Framework will use a SCT for screening all the programs or portfolio categories listed in Recommendation B.1.1. 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.

Survey Question for Stakeholder Comment: *Using SCT for screening for all the program or portfolio categories listed in NSPM, EE, DR, DG, electrification, and storage; however, B/C components and details may vary (for example, storage life may be shorter comparing to EE measures).*

A. **WGL:** Issues associated with electrification and storage have not been adequately addressed within the CEAIWG. The existing District 100% RPS program has not been assessed for its impact on cost nor the impacts on reliability, or resilience. This issue being ignored facilitates proceeding without a structure for evaluating the benefits of gas infrastructure on rates, reliability, safety and resilience. As the District addresses climate issues, it must not do so in a vacuum, but must also evaluate reduction strategies with consideration of cost, rate and reliability assessments. To date, policy and tactics are advancing without analysis of these and other considerations. For example, the transition to a winter peaking power system has significant adverse implications for the contributions of solar. Solar cannot contribute to winter reliability. Since this is the first time the District has considered conversion to a winter peaking power system, it is necessary to consider this heretofore unaddressed issue especially the large resources being devoted to solar and the solar carve out to the RPS. Similarly, there has been no consideration of the impacts on the reliability

[501] Note: The NSPM defines BCA as "a systematic approach for comparing the benefits and costs of alternative options to determine whether the benefits exceed the costs over the lifetime of the program or project under consideration."

contribution of electric versus gas storage. Electric assumptions made in Texas proved disastrously miscalculated and uncorrected in spite of having the same regulators of reliability: FERC and NERC.

B. **OPC:** Yes.

C. **GRID2.0:** Distinguish between the use of SCT (or any other cost-effectiveness test) to "screen" as to relevant impacts within the definition of SCT (or other test), and the "application" of the SCT to evaluate material effects of DER on BCA results. Selecting the SCT to apply in assessing the benefits and costs of DER impacts will establish the "scope" of "relevant" impacts that may be evaluated. However, with respect to the application of the SCT, assessments will still need to accurately evaluate and represent the actual impacts of different types of DERs (based on unique physical and operational characteristics) and different applications (according to particular circumstances/features, technology and operational profiles). GRID2.0 respectfully disagrees with the Staff's characterization of a "common framework" or "BCA Framework" in the Background section, as well as respectfully disagrees with the points that the Staff has made concerning a BCA Framework developed based on the NSPM guidance. See above, under the "Attribution Boundaries Title," GRID2.0 Comments on this Draft Report regarding the purpose of a consistent BCA Framework and addressing the Staff statements in the Background part of this subsection. In those remarks, GRID2.0 states how the NSPM applies the "common test," governed by common principles, definitions, assumptions and methods to assessing whether and how the benefits and costs covered by that test apply to specific DER types. As these comments indicate, using a common BCA Framework does not at all remove the need for taking into account factors specific to different DER types in the application of that common framework. The NSPM in its discussion of different DER types, applications and levels of different cost-effectiveness analysis makes this clear in detailing key factors that need to be taken into account and challenges relating to assessing the costs and benefits of specific DER and multiple DER types.

   GRID2.0 asserts that this recommendation needs to be framed to recognize the purpose and nature of a B/C Analytical Framework, which is to assure systematic and economically sound accounting based on consistent definitions, assumptions and methods. A B/C Analytical Framework sets forth such common elements or inputs in order to allow for comparisons and to promote standardization as appropriate and the quantification and monetization of impacts. However, in applying the primary cost-effectiveness test, principles and other such common elements (definitions, assumptions and methods), the B/C Analytical Framework takes into account and evaluates differences in impacts associated with, for example, different types of DER and their technical and operational profile/characteristics, different types of DER applications and cross-cutting benefit and cost impacts and considerations. The NSPM also addresses key factors that affect the accounting of specific DER impacts and electrification impacts, as well as common challenges in determining/estimating DER impacts and electrification impacts. Moreover, the NSPM extends the B/C Analytical Framework into new emerging areas for analysis, including multiple DER types, Non-Wires Solutions, System-wide DER Portfolios, Dynamic System Planning.

D. **DCCA:** This recommendation needs further explanation.

E. **DOEE:** DOEE supports the statement with an important modification. SCT should apply to all utility business-as-usual programs and investments (including infrastructure, NWA) and not be limited to investments that are enabling of DER or that have a clear reduction in GHG emissions. BCA components should be standardized and should not vary between investments. Some

components may not be applicable in every instance, and in those circumstances, they could be assigned a zero value. DOEE reiterates that the purpose of developing an overall analytical framework is to ensure that utility business strategies shift from business as usual towards pricing, programs, and procurements with reduced GHG emissions and furtherance of the District's climate mandates and resilience goals.

F. **Pepco**: The primary test should be the Societal Cost Test, as the BCA should reflect net welfare from a societal perspective, considering benefits and costs from the perspective of the District's policy goals and the associated impact on all relevant stakeholders rather than only the benefits and costs to a subset of affected parties. While other information about a project or program may be useful for informational purposes on a situational basis, Pepco does believe that a compelling case has been made to require that a secondary test necessarily be performed, and that the need for a secondary test will be informed by the design of the primary test.

Due to differences in technologies and configurations, projects or programs may vary with respect to technical assumptions, quantifications of benefit or cost components, or which benefit or cost categories are relevant. However, a single applicable BCA should be able to assess a wide variety of project or program types if appropriately designed. It is critical that the BCA be based on the Societal Cost Test because the BCA should reflect net welfare from a societal perspective, considering benefits and costs from the perspective of the District's policy goals and the associated impact on all relevant stakeholders rather than only the benefits and costs to a subset of affected parties. An evaluation of a project or program from another perspective can also be performed for informational purposes.

While the NSPM may offer potential benefit and cost categories that could be considered for inclusion in a Societal Cost Test, other information resources should be relied upon for consideration, such as the LCS BCA Handbook. The LCS BCA Handbook provides the methodology in use by Pepco to evaluate third-party and utility solutions (including the use of DERs) for grid constraints, and it was presented by Pepco at the November 12, 2020 BCA Framework Committee meeting.[502] Another useful information source is the New York Public Service Commission's ("NYPSC") established framework for New York utilities' BCAs for investments in distributed system platform capabilities, the procurement of distributed energy resources through competitive selection, the procurement of DER through tariffs, and energy efficiency programs.[503] The Order that outlines this framework was developed through a public stakeholder process involving multiple rounds of filed comments from a broad spectrum of organizations, institutions, utilities, and DER service providers.[504] Both the LCS BCA Handbook and the New York BCA framework employ a Societal Cost Test. Furthermore, the NSPM appears to be electric-utility focused and does not fully address a framework for programs applicable to natural gas utilities.

[502] *GD-2019-04*, BCA Framework Committee First Meeting Minutes Report at 4, filed November 23, 2020.
[503] Proceeding on Motion of the Commission in Regard to Reforming the Energy Vision, Order Establishing the Benefit Cost Analysis Framework, State of New York Public Service Commission Case 14-M-0101 (Jan. 21, 2016).
[504] Proceeding on Motion of the Commission in Regard to Reforming the Energy Vision, Order Establishing the Benefit Cost Analysis Framework, State of New York Public Service Commission Case 14-M-0101 (Jan. 21, 2016), p. 5.

Pepco opposes DOEE's recommendation that the SCT apply to all utility business-as-usual programs and investments. More detail on Pepco's position on this matter can be found in its response to proposed Working Group Majority Recommendation B.2.1.

Pepco opposes GRID2.0's recommendation to modify the proposed Working Group Majority Recommendation to apply the NSPM BCA Framework. More detail on Pepco's position on this matter can be found in its responses to proposed Working Group Majority Recommendation B.1.1 and proposed Working Group Majority Recommendation B.1.11.

Finally, the proposed recommendation for stakeholder comment discusses the calculation of a "benefit/cost ratio." A separate survey question asks about whether the output of the BCA should be a ratio or whether it should be calculated differently. Pepco addresses this issue in its response to that question. Pepco's answer to the question here is written in the context of the general output of the BCA, which may not be a ratio. Pepco's answer here should not be misconstrued to imply any agreement on the part of Pepco that the BCA output should be a ratio.

G. **Sierra Club**: How the PSC intends to factor in this variation needs to be explained more fully.

H. **DCSUN**: Yes

I. **AOBA**: Agree with concerns about the reliability and adequacy of a future winter load electric system in the District and what that would mean to energy costs and ability for District residents to heat their homes. The missteps in Texas that caused such severe losses cannot be overlooked and some shortsighted decisions unfortunately have lasting impacts. Without analysis, grounded in reality and practicality, we cannot calculate what impacts these decisions will have on serving energy loads to residents of the District.

B.2.3.3 **Stakeholder Comments**

Working Group Majority Recommendation: *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.*

Survey Question for Stakeholder Comment: *The BCA will use UCT, TRC, and RIM as secondary tests in the program evaluation.*

A. **WGL:** WGL appreciates the recommendation to assess programs with RIM on a secondary basis. The possibility of very large changes in demand compared to heretofore considered programs requires the primary test, SCT, to be combined with the RIM test. The RIM test that is required, at a minimum, must address long-term issues, due to the accumulating effects of potential electrification programs. In a program context with considerations covering 2021-2050, there is no structure proposed for considering long term rate impacts such as a baseline and a change due to decarbonization. This adds to the importance of a multi-sector, long-term IRP process to complement the program specific review as proposed by WGL. Given the impacts of large increases in rates on equity for District energy users, the decision on RIM needs to be combined with a process change. WGL has also made recommendations for assessing the affordability and equity impacts using a Q&A rubric that deserves more attention and discussion.

B. **DOEE:** DOEE supports NSPM's guidance that secondary tests be used "cautiously." NSPM cautions against using secondary tests, reserving them only in the limited circumstance of when the primary test result is inconclusive: "However, secondary tests should be used cautiously to ensure

that they do not make the BCA decision-making process burdensome or undermine the purpose of the primary test." – Ch.3, p.16. NSPM's BCA test already encompasses the components of UCT and TRC (UTC + host-customer impacts). The RIM test does not include granular impacts other than answering the question "will rates go up or down?" whereas the proposed BCA framework would address overall societal impacts as well as impacts to the host/participant, including both bill impacts and non-energy benefits. It would also be possible to build a secondary test that focuses solely on the District's climate commitments or solely on distributional equity to address utility investments that are only marginally cost-effective (but not for investments whose cost-effectiveness have been clearly determined under the primary test). DOEE could consider including the findings from these tests in an annual report for the purpose of providing greater information/insight, but not for the purpose of making decisions about investments or programs unless it falls under the narrow exception described here.

C. **OPC:** See comments. Secondary tests should be utilized. OPC supports the use of RIM but needs 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.

D. **GRID2.0:** Using these tests as "secondary" tests can generate further information that can guide investment decision-making. But the UCT and TRC tests need to be separated from the RIM test, which is not a "cost-effective" test. The RIM test addresses different questions than the UCT and TRC tests. The UCT and TRC tests could generate information to inform the prioritization of DER to fund/support; as well as to inform decisions regarding marginally cost-effective resources. The RIM can provide information relating specifically to impacts of funding/supporting DER investments on customer rates. GRID2.0 agrees with the NSPM and DOEE that secondary tests should be used cautiously to ensure that they do not make the BCA decision-making process burdensome or undermine the purpose of the primary test.

E. **Pepco**: The primary test should be the Societal Cost Test, as the BCA should reflect net welfare from a societal perspective, considering benefits and costs from the perspective of the District's policy goals and the associated impact on all relevant stakeholders rather than only the benefits and costs to a subset of affected parties. While other information about a project or program may be useful for informational purposes on a situational basis, Pepco does not see a compelling reason to require that a secondary test be performed, and requiring such a test could increase administrative costs.

F. **DCCA, DCSUN, and Sierra Club:** Yes

B.3.1.3 **Stakeholder Comments**

Working Group Majority Recommendation: *For the Discount Rate for the BCA analysis for DER programs, projects, plans, procurements and pricing structures, the BCA should use a societal 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.*

Survey Question for Stakeholder Comment: *For Discount rate for BCA analysis for DER programs, using DCSEU's methodology, the BCA should base the real Discount Rate on the Ten-year treasury rate posted in the Wall Street Journal on the first business day of October plus 2%. This is typically 3-5%.*

A. **Pepco:** The proposed Working Group Majority Recommendation, "For the Discount Rate for the BCA analysis for DER programs, using DCSEU's methodology, the BCA should base the real Discount Rate on the ten-year treasury rate posted in the Wall Street Journal on the first business day of October, plus 2%. This is typically 3-5%," should be rejected.

The discount rate to be applied in the BCA generally should be the utility's WACC. 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. Furthermore, the WACC is a figure that is approved by the Commission and reflected in Commission-approved rates, and it is not a loosely defined concept like the "societal discount rate" which was also discussed during the Working Group sessions. While the WACC generally should be applied, a lower discount rate may be appropriate for the discounting of the future damages due to incremental greenhouse gas emissions (to the time at which the incremental emissions occur), given their intergenerational context, consistent with the United States Environmental Protection Agency Interagency Working Group's Social Cost of Carbon estimates.[505] This overall approach is consistent with the BCA approach approved and applied in New York, and the approach that is employed in the District per the LCS BCA Handbook.[506]

Applying a lower discount rate in place of the WACC (aside from the discounting of the future damages due to incremental greenhouse gas emissions, given their intergenerational context, as described above) would tend to separate the assessment of certain value streams from the true costs that the utility's customers face. Furthermore, value streams with significant uncertainty such as the value of avoided energy over time would be discounted at a low rate that could be substantially different from a rate more commensurate with the risk associated with the value stream. This could result in materially inaccurate assessments of projects or programs, in turn leading to the adoption of projects or programs that are costly for customers. Instead, the WACC generally should be applied, and a lower discount rate should be considered for the value stream associated with the future damages due to incremental greenhouse gas emissions (to the time at which the incremental emissions occur), given the intergenerational context of these damages, consistent with the United States Environmental Protection Agency Interagency Working Group's Social Cost of Carbon estimates. As noted earlier, this overall approach is consistent with the BCA approach approved and applied in New York and the approach that is employed in the District per the LCS BCA Handbook.

A critical aspect of the BCA is the ability to objectively assess the tradeoffs associated with a project or program, and to determine how various projects and programs compare considering the complex interplay of the various policy goals. Consequently, modifying the BCA via the application of a biased low discount rate would distort the results of the BCA, undermine the purpose of the BCA to provide an objective assessment, and lead to the approval of projects or programs that are costly to customers (or conversely lead to the rejection of projects or programs that would be beneficial to customers).

[505] Interagency Working Group on Social Cost of Greenhouse Gases, United States Government. 2021. "Technical Support Document: Social Cost of Carbon, Methane, and Nitrous Oxide Interim Estimates under Executive Order 13990.*"* https://www.whitehouse.gov/wp-content/uploads/2021/02/TechnicalSupportDocument_SocialCostofCarbonMethaneNitrousOxide.pdf.
[506] LCS BCA Handbook, pp. 8, 19.

Finally, Pepco objects to any suggestion in the Background section that the utility's WACC is inappropriate for the Societal Cost Test. Much of this text in the Background section is copied directly from the NSPM, and therefore it reflects the views of the consultants who wrote the NSPM. Similarly, Pepco notes that a section of Appendix B of this report, which has been carved out for additional commentary from GRID2.0, entitled, "Considerations for Determining a Discount Rate," contains text and tables taken directly from the NSPM, and these reflect opinions and misleading assertions. For example, this section indicates that a discount rate less than or equal to 3% should be used throughout a BCA that reflects a societal perspective. This is based on the claim, in this section's tables, that "typical values" for this type of discount rate are less than or equal to 3%. However, there is no justification for this alleged range, and in fact this range conflicts with the U.S. Government's Office of Management and Budget's guidance on regulatory analysis, which provides for real discount rates that are generally between 3% and 7% in BCAs that are designed to maximize the net benefits to society. This purported range also conflicts with New York's BCA methodology, which has received significant attention and has been praised during the workshop process, which the Commission referenced in its Notice of Inquiry in the instant docket, which is designed to reflect a societal perspective, and which uses the utility WACC for its discount rate (with the exception of the discount rate for the calculation of the Social Cost of Carbon).

B. **WGL:** WGL believes that the starting point is the utility WACC, not that used by the DCSEU for its programs, or other WACCs such as the cost of debt the District uses to support governmental activities. If the District wants utilities to use their balance sheet to support utility operated decarbonization activities, then the utility WACC must be utilized as it reflects the actual financing costs incurred by the utilities. This approach aligns with customer interests that depends upon low cost of utility capital to support reasonable interest and other capital costs and rates. This is also a critical statutory obligation. The Commission's statutory mandate under DC Code § 1-204.93 requires the Commission to ensure that utilities furnish safe and adequate service and ensure that charges made by utilities are reasonable, just and non-discriminatory. Section 103 of the Act amends D.C. Code § 34-808.02 to require that, in supervising and regulating utility or energy companies, the Commission shall consider not only the public safety, the economy of the District, the conservation of natural resources, and the preservation of environmental quality, but also the "effects on global climate change and the District's public climate commitments."

   WGL amplifies on its belief that the background discussion in the draft report incorrectly characterizes costs of capital and therefore discount rates. The goal of utility investors is to maximize the returns on their investments. However, the utility is also obligated to minimize costs, and failure to properly estimate costs including financing costs leads to over or under investment and higher costs for ratepayers. Therefore, even if the time preference of utility investors is not necessarily the same as the time preference of utility customers, proper determination of the financing costs is critical for ratepayers. Indeed, this is the reason for an elaborate cost of capital determination process, and the option for the government to subsidize higher cost activities or simply to use their balance sheet for activities permitted by law. WGL does not accept the characterization that there is a gap between the regulatorily approved cost of capital and the cost minimization obligations and interests of ratepayers. If parties have another view, they should put forth an explanation of what aspects of the regulatory process is not properly functioning, and participate in the determination of the utility cost of capital.

   WGL also disagrees regarding the issue of individual ratepayer costs of capital and discounting. The goal of utility activity is to minimize costs which is done using the correct costs of capital, and

the discount rate that reflects this cost. Individual consumer activity is not appropriate unless the activity is being performed by individuals. Moreover, individual costs of capital are well known on average to be well above utility costs of capital and difficult to estimate. Rather than attempt to address this dispute, the utilities recommend that utility activity be assessed at the utility cost of capital, and government activity including subsidies reflect government rates.

WGL believes that the costs of capital of utilities reflect consideration of trade-offs between the short and long term as discussed above and reject the characterization of the process for determining the cost of capital shown in the background section. Furthermore, utility rate making has long considered trade-offs between current and future customers.[507] Future customers are not charged more than average costs and are not required to pay for legacy investments made years and even generations before their arrival. Again, government activities are not bound in general to the use of utility costs.

C. **OPC**: See comment. OPC is generally supportive of setting a discount rate at a percentage that equitably balances current costs and future benefits. OPC reserves the right to weigh in on an exact percentage as this process continues.

D. **DOEE**: It should use a Societal Discount Rate to reflect the long-term purpose of a societal cost test. Using a normal business discount rate to assess the effectiveness of climate mitigation measures is a mismatch of the tool and inappropriate. DOEE recommends exploring a range of rates well below 3%.

E. **GRID2.0:** The Commission should evaluate the merits of alternative options based on Policy Goals derived from the CleanEnergy Omnibus Amendment Act of 2018. GRID2.0 supports a 2-3% discount rate, consistent with the policy objectives. The SEU rate might be a point of departure. Per best practices/NSPM, one discount rate should be used for consistency and comparisons under the BCA Framework. This factor is hugely influential in a BCA and should be revisited periodically, especially if the rate is found to be unduly affecting outcomes in a way inconsistent with the purported function of the BCA to advance agreed to goals.

Because the Commission is seeking an analytical approach that comprises relevant evaluations frameworks, measures and metrics, GRID2.0 thinks discount rate recommendations should address the Commission's responsibilities and policy objectives/mandates in evaluating the appropriate discount rate and WG Members should take such responsibilities and policy objectives/mandates into account in recommending an appropriate discount rate to the Commission, including, for example, assuring that utilities provide safe, reliable, low-cost service to customers; accounting for costs and benefits that pertain to all customers as a whole; accounting for climate change, clean energy, renewable energy, controllable demand and efficient energy impacts over the short, medium, and long-term; achieving the District's applicable environmental policy goals/mandates; and achieving outcomes/mandates that are generally in the public interest.

F. **DCCA**: The Commission should use a low rate commensurate with the long-term social good associated with achieving our climate goals, which means our valuation of the welfare of future generations. A discount rate of 1% would be appropriate for environmental investments whose benefits are expected to enter over a long period. The choice of rate is important: the present value of benefits 50 years in the future is 8 times higher using a 1% rate than a 5% rate – and for benefits at 100 years, 62 times higher. Using a topped-up T-bill rate is not at all appropriate. (a) It fluctuates

[507] *See* Bonbright, Principles of Utility Rates.

according to both monetary and fiscal policy, not our environmental needs, which would mean the same project could fail a B/C test in one year and pass a year later – an absurd outcome. (b) It is oriented to private transactions and private goods, not the broad public good which the Commission is tasked with protecting.

G. **DCSUN**: Refer to survey responses from Sierra Club, Grid 2.0, DC Climate Action, and DOEE. DC SUN agrees with those answers.

H. **Sierra Club**: The Sierra Club does not support the use of a 2% add-on to the ten-year treasury rate. Sierra Club believes a discount rate around 2 or 3% is appropriate.

Survey Question for Stakeholder Comment: *If there is a better alternative to the DCSEU discount rate, please explain it here. Please also indicate whether we should have two discount rates, one for social cost of carbon when modelling the long-term damages and the other for the utility program B/C test.*

A. **Pepco:** Refer to Pepco's comments on the first part of this proposed Working Group Majority Recommendation.

B. **WGL:** WGL believes the utility's WACC should be used for utility programs, and District financing costs for District-funded programs. There is insufficient linkage between the proposed discount rate, and the utility costs of capital. The evidence for this is the existence of a rate case determination of the costs of capital, not a simple formula. See extensive comments elsewhere by WGL on this issue including the rationale for not changing the discount rate as a mathematical kluge when a claim is made that the expected value (probability weighted) of the SCC or some other parameter is wrong. Namely, there is the risk of double counting and not vetting the actual claim. There is also the risk that this leads to the use of the wrong source e.g. rejecting the EPA SCC even though it is the only source capable of addressing the claim that the expected value is wrong because it is the only source with values for multiple cases and probabilities with each one. If in spite of the pressing importance of using the WACC, a decision is nonetheless made to take a different approach, better approaches exist. WGL supports transparency but using a single number from a single day (first business day of October) for a 30-year analysis is an unnecessary and unreasonable simplification. WGL calls attention to an important document, namely, the Office of Management and Budget Circular A-4 which uses the 30-year average of the ten-year treasury rate as a better starting point.[508] OPC is generally supportive of setting a discount rate at a percentage that equitably balances current costs and future benefits. OPC reserves the right to weigh in on an exact percentage as this process continues.

C. **DOEE**: Refer to DOEE's comments on the first part of this suggestion. DOEE is open to considering two discount rates as suggested. However, most utility measures will have long-term consequences, which is the reason for having a proceeding such as this one. Having two separate discount rates may create misalignment and confusion.

D. **GRID 2.0:** It will be counter-productive to use different rates for the SCT and the UCT when they will need to be scored together in the final B/C analyses because they will create conflicting values of carbon reduction in technology choices. Generally, a lower discount rate makes longer term investment in environmental and health outcomes of higher value, recognizing the value of environmental protection as a long-term investment. Alternative options should be vetted based on considerations/factors deriving from the District's applicable policy objectives; the DCPSC

[508] *See* Foreign Affairs, March/April 2021, page 178.

"regulatory perspective" and the selected cost-effectiveness test. GRID2.0 is open to further discussions to consider the Team's proposal for using two discount rates. However, GRID2.0 believes that it is important to use a societal discount rate to reflect the long-term purpose of a SCT. GRID2.0 believes that the Commission has a responsibility to ensure that utility resources will meet the District's applicable policy goals and that the Commission has a responsibility to consider current and future customer interests. In connection with the Commission's consideration of the effects of a utility proposal on global climate change and the District's climate commitments, GRID2.0 supports the use of a societal discount rate to reflect the long-term time preference reflected in the Act's requirement. The choice of discount will not affect a utility's ability to recover its actual cost of capital if prudently incurred. Applying a societal discount rate will help the Commission make decisions about whether an investment is consistent with regulatory goals, in particular those set out in the CleanEnergy DC Act and consistent with Section 103 of the Act.

E. **DCCA**: The Commission should use a low rate commensurate with the long-term social good associated with achieving our climate goals, which means our valuation of the welfare of future generations. A discount rate of 1% would be appropriate for environmental investments whose benefits are expected to enter over a long period. The choice of rate is important: the present value of benefits 50 years in the future is 8 times higher using a 1% rate than a 5% rate – and for benefits at 100 years, 62 times higher. Using a topped-up T-bill rate is not at all appropriate. (a) It fluctuates according to both monetary and fiscal policy, not our environmental needs, which would mean the same project could fail a B/C test in one year and pass a year later – an absurd outcome. (b) It is oriented to private transactions and private goods, not the broad public good which the Commission is tasked with protecting.

F. **DCSUN**: Refer to survey responses from Sierra Club, Grid 2.0, DC Climate Action, and DOEE. DC SUN agrees with those answers.

G. **Sierra Club**: A single discount rate between 2 and 3% is appropriate.

B.4.1.3 **Stakeholder Comments**

Working Group Majority Recommendation: *Impacts that cannot be monetized should be accounted for quantitatively or qualitatively. Examples of non-monetary 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 hurricane. Examples of relevant qualitative impacts are geographic diversity of investment, improved distribution planning, resilience, and environmental impacts.*

Survey Question for Stakeholder Comment: *All benefits and costs should be quantified, even when difficult (truly non-quantifiable benefits, costs, and considerations can be listed but are not part of any scoring). The BCA should avoid double-counting impacts.*

A. **WGL:** WGL opposes a process that does not provide for a quantification of qualitative factors via a protocol for evaluating factors handled qualitatively and a weighting assigned to them.[509] While the final BCA should address the values for unserved energy costs, scarcity values and costs, particularly of lack of resilience during the critical periods of winter energy delivery to the extent possible, the risks that cannot be quantified must still be given weight. WGL suggests that resiliency and reliability of the electrical system can be quantified via a "weighted-scoring analysis." WGL emphasizes that lack of resilience to sudden weather events—as occurred recently in Texas can

[509] WGL Comments, January 13, 2020, GD2019-04-M. pages 16-18.

result in dramatic economic (as well as human) costs. WGL argues that proposals for extensive electrification could put significant strain on the system and WGL's belief is this stakeholder process did not adequately consider those costs and WGL comments that resiliency and reliability of the electrical system can be quantified via a "weighted-scoring analysis" and WGL suggests that the benefits and costs of electric vehicle programs should be included in the BCA. WGL further notes that the qualification of these matters with regard to natural gas programs, outside of energy efficiency, is still a novel and emerging area of consideration. To date, most efforts have focused on electricity programs.

B. **Pepco:** In its response to proposed Working Group Recommendation B.1.8, Pepco states that attempts to monetize potential benefits and costs should not be made when quantification would be overly speculative. Attempts to quantify proposed benefit categories that are 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. In its response to proposed Working Group Recommendation B.1.4, Pepco states that the BCA impacts to be included should be well-vetted, transparent, market-based or federally/industry established, non-duplicative, and appropriate to the specific project, program, or application.

C. **DCCA:** DCCA notes that an increasing number of factors previously deemed non-quantifiable are being quantified in more recent BCAs.

D. **OPC:** OPC asserts that important customer benefits should be monetized for inclusion in the BCA—and not valued as $0—and flags difficult to monetize impacts on low- and moderate-income communities in particular as critical to include in BCAs.

E. **GRID 2.0:** In a discussion of whether benefits should be presented in benefit-cost ratio form, Grid 2.0 noted that BCA results for hard to quantify impacts that have *material effects* should be reported in qualitative terms. GRID 2.0 states that BCAs have been recognized as a useful tool that provides the opportunity to quantify or address qualitatively intangible benefits, including environmental externalities such as climate change and air pollution. Relevant, material impacts of DER and conventional investments that have been identified for inclusion into the B/C Analytical Framework's primary cost-effectiveness test (i.e., societal cost test) should be quantified and monetized to the extent practical. GRID2.0 also supports using recognized proxies, approximations, alternative thresholds, jurisdiction-specific studies to account for and establish values of relevant, material impacts. Relevant qualitative information should be used to consider impacts that cannot be monetized. In light of the District's policy mandates and objectives, approximating hard to quantify impacts is preferable to assuming that the relevant benefits and costs do not exist or have no value. Utilities, energy companies and energy solution providers should be encouraged to take advantage of smart technologies, software, data management and analytical tools, simulation and modelling, etc. to generate the necessary information, data and analyses that can support the quantification and monetization of hard to quantify impacts, especially of new DER resources.

B.5.1.4 **Stakeholder Comments**

This set of stakeholder comments refers to two sets of recommendations.

Working Group Majority Recommendation: *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.*

Working Group Majority Recommendation: *Equity should be addressed at the feeder level in an effort to account for distributional/geographical factors.*

Survey Question for Stakeholder Comment: *Equity benefits will be addressed in the societal portion of the BCA, specifically in the Low Income: Society section which can potentially consider the benefits of poverty alleviation and local environmental justice.*

A. **GRID2.0:** Equity benefits will be addressed in the societal portion of the BCA, specifically in the Low Income: Society section which can potentially consider the benefits of poverty alleviation and local environmental justice. GRID2.0 agrees with DCSUN that the WG should think creatively beyond "rate impacts" in addressing equity/distributional factors and considerations. GRID2.0, therefore, believes it is important to include both the low-income category of societal impacts, as well as the low-income category of host customer/program participant impacts in the primary societal cost-effectiveness test, addressing both energy and non-energy impacts. In its NOI, the Commission specifically emphasized the need to impact positively the daily lives of all District residents and to strengthen community engagement in reaching environmental protection and economic growth goals related to modernizing the District's energy delivery system. This means that the WG needs to consider Recommendations that are attuned to redressing inequities and undue distributional impacts on certain classes of District residents and businesses.

B. **OPC:** Yes.

C. **C. DCSUN:** Equity benefits will be addressed in the societal portion of the BCA, specifically in the Low Income: Society section which can potentially consider the benefits of poverty alleviation and local environmental justice.

D. **Pepco:** While Pepco is strongly supportive of equity-focused projects and measures, it does not agree with the Working Group Majority Recommendation to consider equity as part of the BCA; rather, equity-focused projects should be exempt from the BCA altogether.

Social equity is a critical aspect of the transition to a cleaner energy system. Pepco is engaged in significant programs to advance social equity and environmental justice in the communities that it serves. Examples include Pepco's support for resiliency hubs such as the Jubilee Housing and the Ludlow-Taylor Elementary School.[510][511] Furthermore, Pepco has embedded social equity goals in its own internal operations. For example, Pepco and its employees have Diversity, equity and inclusion (DEI) performance goals. Pepco believes that the most effective means by which to advance equity goals are to further deploy explicit equity-focused programs and initiatives, including making various system investments that are explicitly designed with an equity focus, and that such programs and initiatives should not be subject to a BCA. Furthermore, since there is no widely accepted methodology to determine the monetary value of the various types of social equity,

[510] *See* https://www.pepco.com/News/Pages/Press%20Releases/PepcoGrantSupportsInnovativeHousingPilotResiliencyProgram.aspx.

[511] *See* https://www.pepco.com/News/Pages/TenLocalProjectsReceiveNearly$125,000inFundingforOpenSpaceandResiliencyThroughNewPepcoProgram.aspx.

attempting to include a monetary value for social equity in the BCA for projects and programs that do not have an explicit equity focus could easily result in distorted BCA results, leading to the approval of projects or programs that are unnecessary and entail excessive costs for customers.

E. **WGL:** See discussion on treatment of equity elsewhere.

F. **AOBA:** Supports equity focused measures but think that the social equity considerations are better served and calculated outside of the BCA framework.

B.6.1.3 **Stakeholder Comments**

Working Group Majority Recommendation: *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) when considering the resource investment. Regardless, it is recommended that reliability and resilience benefits must be demonstrated, not merely asserted.*

Survey Question for Stakeholder Comment: *The BCA should utilize a primary societal cost test based on the NSPM for DERs that includes the utility system impacts and some of the societal impacts listed in the manual. The societal impacts to be included are: Resilience, GHG Emissions, Other Environmental Impacts, Public Health, and Low-Income Impacts. Utility System Impacts to be included: 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. Some of the inputs here may be placeholders only. For example, for reliability and resilience we currently do not have a fully supported industry values for D.C.*

A. **Pepco:** Pepco notes that reliability and resilience issues were not adequately discussed in the working group process. As Pepco states in its response to Working Group Majority Recommendation B.2.1, it is critical that Pepco, as the entity responsible for safe and reliable service, be provided sufficient flexibility to make the investments needed in a timely manner to serve customers safely and reliably, and to work toward the satisfaction of policy goals. Accordingly, 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. Requiring a full BCA for approval of necessary projects such as these could result in needless costs or hamper such necessary projects from being implemented in a timely manner, or from being implemented at all, threatening the utility's ability to satisfy its basic obligations to the residents and businesses that it serves. Consequently, 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.

   The incremental value of reliability and resilience, or of reliability and resilience in general, is truly difficult to quantify, it is not necessarily linearly proportional to outage duration, and it can vary

significantly across types of electric utility customers due to their different uses of power and their needs. 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.

Finally, the proposed Working Group Majority Recommendation discusses the calculation of a "benefit-cost ratio." A separate proposed Working Group Majority Recommendation asks about whether the output of the BCA should be a ratio or whether it should be calculated differently. Pepco addresses this issue in its response to that proposed Working Group Majority Recommendation. Pepco's response to the proposed Working Group Majority Recommendation here is written in the context of the general output of the BCA, which may not be a ratio. Pepco's answer here should not be misconstrued to imply any agreement on the part of Pepco that the BCA output should be a ratio.

B. **WGL:** WGL agrees that the issues of reliability and resilience are primary considerations in this matter and also a critical statutory obligation. The Commission's statutory mandate under DC Code § 1-204.93 requires the Commission to ensure that utilities furnish **safe** and adequate service and ensure that charges made by utilities are reasonable, just and non-discriminatory. Section 103 of the Act amends D.C. Code § 34-808.02 to require that, in supervising and regulating utility or energy companies, the Commission shall consider not only **the public safety**, the economy of the District, the conservation of natural resources, and the preservation of environmental quality, but also the "effects on global climate change and the District's public climate commitments."[512] Public safety, resilience and reliability are likely to be endangered by programs that electrify space heating which could shift the electric annual peak from summer to winter while increasing peak electric demand by 50-100%. Furthermore, electrifying transportation and space heating effectively decreases the energy delivery systems in the winter from three (power, gas, and oil) to one (power), directly threatening public safety.

   WGL emphasized repeatedly and strongly this concern in its January 13, 2020 comments on the NOI, in its Climate Business plan filed in March 2020, and throughout the CEAIWG.[513] Within one month, between February 15-19, 2021, ERCOT (Electric Reliability Council of Texas) experienced a shift of its annual peak demand from summer to winter and set a new all-time record peak demand. There was substantial loss of life and property damage due to forced load shedding in spite of the same federal regulation of reliability that the PJM and District have. That is, WGL emphasized its concerns before the Texas energy disaster of February 2021, which only make WGL's concerns more urgent and trenchant.

   As noted by WGL in the aforementioned documents, and the CEAIWG process, there has never been, anywhere, a detailed study on the infrastructure requirements for the distribution, transmission and generation requirements of electrification – costs, lead times, and impacts on equipment choice.[514] Furthermore, it is **not known** how to make the power grid as reliable and resilient as the gas delivery system in part because the gas system is below ground and the power system is primarily above ground. WGL emphasizes that these concerns are **not directed at**

[512] Bold added.
[513] WGL's Comments, Section IV, WGL's Commitment and Contribution to reliability and resiliency, pages 6-9.
[514] WGL Climate Business Plan, March 2020, Technical appendix, page TS – 19 to TS – 21.

Pepco's specific system or studies but rather are generic and reflect the novel and unprecedented nature of proposals embedded in DOEE proposals advocating the electrification of space heating and eliminating the efficient use of thermal applications utilizing gaseous fuels (even if those fuels have lower greenhouse gas emissions than conventional geologic gas or are carbon neutral).

In its January 13, 2020, comments on the NOI, WGL stated that in its Recommendation II of IV, a question and answer/factor ranking and scoring system rubric is required to supplement quantitative measures specifically in part due to the need to address reliability, resilience, safety, and disruptions related to climate change.[515] In the CEAIWG, WGL proposed a long-term multi-sector, Integrated Resource Planning process to consider, among other issues, reliability, safety and resilience. WGL believes there are many issues that cannot be reasonably addressed via program-by-program quantitative evaluation, because the impacts of each program are cumulative, long term and have complex issues that require both explicit and serious quantitative and qualitative consideration.

WGL specifically believes that the quantification of reliability is useful, but not sufficient. Reliability metrics (SAIDI, SAIFI, etc.) in the power sector can be compared to similar data in the gas industry and combined with the literature on unserved energy needs to capture some of the quantitative aspects of the loss of energy supply.[516] However, the black swan nature of the problem, especially the resilience aspect, namely that one cannot quantitatively predict events outside experience, requires careful qualitative evaluation. The District does not have operating experience depending upon electricity as its sole source of space heating nor has the District's energy infrastructure been designed for this purpose. Furthermore, while the District lacks operational experience meeting heating demand with electricity, it certainly has no experience meeting this demand while simultaneously losing some or all power supply during an extreme blizzard. A failure to accurately quantify this issue cannot equate to a failure to fully consider the qualitative issues associated with this matter. Texas demonstrated that the absence of quantitative data cannot justify ignoring critical qualitative factors.

WGL does not see the connection between the well-stated description of the problem, and the very concerning recommendation to delay consideration and action on one of the most critical issues facing the District in the energy/decarbonization space.

C. **OPC:** OPC will need to see further information about how reliability and resilience would be included before supporting their inclusion as benefits. More discussion is needed regarding how reliability and resilience would be weighted to ensure an appropriate balance between cost and risk. OPC is 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 black outs to acceptable standards.

D. **DOEE:** DOEE agrees with the first part of the statement, and notes that there are available tools now to begin quantification of resilience for certain customer classes. While resilience may be difficult to quantify for other customer classes, resilience should be assessed and tracked even if a monetary value has not yet been assigned for resilience in all cases. The BCA could begin with valuation methods that are currently available, such as Value of Lost Load for commercial

[515] WGL's Comments, page 10 and 16.

[516] The unserved energy cost literature indicates that the cost of load shedding is in the range of $10,000-$20,000 per MWh, and recent events in Texas indicate that this level could be higher.

customers. Reliability and resilience values should have locational and temporary outputs from the Commission's Value of DER study that could inform this group's quantification.

DOEE defines urban resilience as the capacity of individuals, communities, institutions, businesses, and systems within a city to survive, adapt, and thrive no matter what kinds of chronic stresses and acute shocks they experience. Resilience is directly related to climate change, as it defines the extent to which climate change impacts will affect District of Columbia residents.

Energy resilience can be increased in a number of ways:

- Interconnection of back -up power systems and microgrids that serve critical loads, particularly those that use renewable energy and batteries
- Electric supply diversity
- Percentage of load served by distributed energy resources
- Increasing electrical infrastructure's ability to withstand major storms (e.g., through elevating substations above flood levels)
- Deployment of advanced sensors, automated controls, and other strategies designed to isolate problems and restore power quickly

E. **AOBA**: Agree that an adequate study of impact on reliability and resiliency and the costs has not been completed within this WG and we need a more practical analysis of what the grid in the District would look like as this push for all electrification continues in the District.

C.2.1.2 Stakeholder Comments

Working Group Majority Recommendation: *The Working Group recommends the following practices for reporting and data production:*

- *Annual reporting to the PSC should include all relevant data that are reported to other agencies including EPA, EIA, DOEE, and the Metropolitan Washington Council of Governments (MWCG), as well as data used in climate change BCAs submitted to the PSC.*
- *Annual reporting to the PSC should also include new data requirements generated by the recommendations of the CEAIWG that are approved by the Commission.*
- *All data reported should be DC-specific (not utility-wide).*
- *To the extent feasible, data reported should be provided for geographies smaller than the District as a whole, for example, ward, quadrant, substation zone, feeder, or zip code while maintaining compliance with Critical Infrastructure Information security requirements, and customer data privacy requirements.*
- *Annual data should be submitted to the PSC by September 30 each year; proposal specific data should be submitted together with utility proposals.*
- *Written reports should include a spreadsheet appendix of all data and assumptions as well as GIS shapefiles (where applicable) relevant to the proceeding.*
- *All third-party electricity and gas utility suppliers should be required to submit sales and greenhouse gas emissions data for their customers in the District consistent with the approach used to provide utility data.*
- *The Commission should review all data submitted to ensure that comparable data are being presented by all parties.*

Survey Question for Stakeholder Comment: *Annual reporting to the PSC must include all data reported to (i) other agencies such as EPA, EIA and DOEE, (ii) data used in BCAs submitted to the PSC, and/or (iii) requested here.*

A. **Pepco**: Pepco expresses concern that data requirements should not be too broad and should be limited to data relevant to the District's Clean Energy goals. Pepco also points out it may not be possible or practicable to disaggregate all data below the District level. The Company cites critical infrastructure security, customer data protection, and technical requirements as constraints on data-sharing. However, Pepco is developing data it could share at the substation level to support equity analyses and plans on having additional Committee discussions to refine potential available data. Pepco further recommends reporting utility data for projects that support the District's Clean Energy goals and customer equity programs and is interested in stakeholder input for proposing these types of programs in FC 1167.

   Pepco recommends utilities receive full and timely cost recovery for expenditures associated with the cost of data production required by these proceedings and to facilitate tracking of costs to customers associated with emissions reporting requirements. (WGL suggests classifying the cost of data production required by these proceedings as "regulatory assets" and allowing this asset to earn a return at the WACC but none of the remaining stakeholders agree with that recommendation.)

   Pepco opposes requiring data submission for every project reported in rate cases as unnecessary and in many cases unduly burdensome, resulting in additional costs to ratepayers for little identifiable benefit. Specifically, Pepco does not believe all projects should be assessed for greenhouse gases through a BCA process or that it is appropriate to conduct a BCA for system performance, reliability, equity, customer-driven, or safety projects. The Company recommends continuing to use the LCS BCA Handbook for assessing capacity projects for deferral by deployment of non-wires alternatives. Pepco notes that the LCS BCA Handbook was customized for the District of Columbia's unique service area and context, including the PowerPath Vision Statement and Guiding Principles and the District's clean energy and climate goals.[517]

   Pepco opposes "reporting information on costs, emissions, and benefits in a reproducible way using detailed bottom-up accounting and via spreadsheet format for **all** utility proposals" [emphasis added] as unnecessary and in many cases unduly burdensome, resulting in additional costs to ratepayers for little identifiable benefit. Pepco does not believe all projects should be assessed for greenhouse gases through a BCA process or that it is appropriate to conduct a BCA for system performance, reliability, equity, customer-driven, or safety projects. However, Pepco supports "reporting information on costs, emissions, and benefits in a reproducible way" using detailed bottom-up accounting and via spreadsheet format for projects supporting the District's Clean Energy goals. Finally, Pepco notes that data reporting is constrained by limited Company resources and the need to balance data reporting and program implementation to support the District's Clean Energy goals.

B. **OPC:** OPC notes the cost of data production is a cost of doing business and utilities have failed to demonstrate that collection would necessitate extraordinary expenses or that these are capital expenses necessitating a return.

[517] "Benefit-to-Cost Analysis Handbook for Locational Constraint Solutions," Pepco, October 1, 2020, p. 2.

C. **GRID2.0:** GRID2.0 points out that compliance costs will be tracked and accounted for in utility proposal BCAs, utility rate plans, programs, and procurements. GRID 2.0 echoes comments cited above that data collection should assist the Commission with analytical approaches to help assess compliance by utilities with the Clean Energy DC Act.

D. **AOBA:** AOBA agrees that these additional costs should not be included as a regulatory asset and questions the benefit of collecting this data if the cost is so prohibitive for both utilities that it would require regulatory asset treatment and that any benefits derived must outweigh the costs incurred.)

E. **WGL**: WGL similarly shared concerns relating to customer data protection, infrastructure security, and system capabilities for data extraction, and costs related to data extraction and reporting. As required by the Commission's most recent Order, WGL does intend to supply BCA data for its climate proposals. WGL reiterated its ongoing emphasis on the need for long-term, multi-sector integrated resource planning. It expressed concern that certain near-term programmatic data evaluations may lead to skewed outcomes and unintended long-term consequences that could negatively affect energy affordability and access as well as GHG emissions. While certain customer programs may lend themselves to near-term evaluations, other objectives including programming that emphasizes substantial electrification, will fail to sufficiently capture long term costs and impacts and thus could artificially advantage individual programs in the near term while burdening ratepayers and emissions loading over the long term. At the same time, structural changes, similar to the early adoption of solar and wind which depended upon extensive subsidization, including technology innovation to decarbonize gaseous fuels, may appear expensive in the near term but are likely to be substantially less expensive over the long term. Both near-term and long-term decarbonization strategies should be considered as a portfolio and in consideration of the District's long-term energy needs and resilience, inclusive of transportation which will affect electricity requirements.

   The rest of the stakeholders disagree and recommend reporting that information for all utility proposals.

C.3.1.2 Stakeholder Comments

Working Group Majority Recommendation: *That WGL be required to report the following data on gas usage and emissions:*

- *customer gas use by customer type,*
- *customer point of use emissions,*
- *the number and location of gas leaks within the District (by grade and line type), and*
- *the amount of measured and/or calculated fugitive emissions within the District (by pipe size).*

Survey Question for Stakeholder Comment: *WGL and PEPCO data reported must include:*

6a) customer gas use by customer type

6b) customer point of use emissions

number of gas leaks within DC (by grade & type – service line/main line)

6c) amount of gas leaked within DC (by pipe size and/or psi)

6d) upstream emissions resulting from customer gas use and leaked gas (outside of DC: transmission, refining and extraction)

A. **WGL:** WGL responds that much of the requested data is already supplied to the DC PSC and has already been addressed in multiple proceedings, most notably OPC 2021-01-6. WGL further suggests that reporting the number of leaks does not closely correlate with emissions or actions to reduce emissions. For example, third-party damage to pipelines is a significant issue, both for safety and GHG emissions. Washington Gas avers that it has a highly effective program to reduce these strikes and is a nationally recognized best practice company. Similarly, Washington Gas is preparing to launch an Advanced Leak Detection pilot, the results of which are expected to improve leak detection and reduction, especially related to the identification of high emission leak locations which can be far more environmentally impactful than a number of lower emitting leaks. Finally, Washington Gas's ongoing PROJECTPipes program replaces older, higher emitting pipe material with modern lower emitting pipe material, improving safety and reliability while also reducing GHGs.

C.4.1.2 Stakeholder Comments

Working Group Majority Recommendation: *That Pepco (and, as appropriate, third-party electric suppliers) be required to report the following data on electric usage, generation and emissions citywide and by substation:*

- *customer electric use by customer type,*
- *in front-of-meter generation located within the District,*
- *excess generation (net metering) back to the grid with temporal data at a minimum hourly interval, and*
- *generation emissions from customer electric use with temporal data at a minimum hourly interval.*

Data should be sought from other sources regarding:

- *in front-of-meter generation located within the District, and*
- *behind-the-meter generation located within the District.*

Survey Question for Stakeholder Comment: *Electric utility data reported must include:*

7a) customer demand by customer type

7b) within DC, in front of meter generation

7c) excess generation (net metering) back to the grid

7d) line losses

7e) emissions from customer electric use

7f) upstream emissions resulting from customer electric use and line losses (outside of DC: transmission, refining and extraction of fuels used in generation.

A. **Pepco**: Pepco notes that its system demand data and customer billing data are maintained in separate databases, therefore reporting this data by geographic locations would require extensive technology upgrades to the Company's database infrastructure, and any such upgrades would necessarily have to follow the current upgrades being made to Pepco's billing system. Pepco recommends this data only be reported in aggregate, if at all. Pepco further notes that data collection is constrained by limited utility resources and the need to balance data reporting and

program implementation to support the District's Clean Energy goals. Finally, Pepco notes several alternative data reporting capabilities with respect to stakeholder recommendations:

- reporting peak load contribution by customer class instead of annual demand,
- reporting greenhouse gas emissions based on the PJM fuel mix, or
- reporting customer net energy metering at a PJM zonal level only. Pepco DC is already a sub-zone of PJM.

Pepco also explains that it does not have access to data on either behind-the-meter and in front-of-the-meter generation within the District, and that it cannot report excess customer behind-the-meter generation on a sub-zonal level.

B. **WGL**: WGL suggests that Pepco should report:

- Winter and summer peak load contribution by customer class in light of the critical importance of planning for resilient and reliable winter and summer electricity supply, given a focus on electrification and recent events in Texas where there was an unexpected all-time record peak during the winter.
- Winter and summer peak load net metering in light of the potential elimination of solar contribution to reliability if the District becomes winter peaking, and the District's growing solar carve out and RPS requirements.

C.5.1.2 Stakeholder Comments

Working Group Majority Recommendation: *The Working Group also recommends the following reporting criteria after considering appropriate reporting requirements relevant to evaluating the effect of utility proposals on the District's contribution to global climate change and the District's public commitments under the CleanEnergy DC Omnibus Amendment Act of 2018:*

- *Utilities should report on customer progress toward achieving the District's mandates, including with respect to Utility programs, projects, procurements, pricing structures and measures that impact the utility's customers and/or in which the customers participate.*
- *Customers and stakeholders should be kept informed of progress in meeting performance metrics, relevant energy and non-energy impacts (such as the non-energy benefits included in DSM assessment), customer impacts and bill savings, and impacts on special classes. Progress reporting should be accomplished via a web-based dashboard to provide regular progress updates with key metrics including number of participants, relevant programs, program expenditures, and projects completed.*
- *Reporting should include all information relevant to evaluating the utility proposal's impact on PowerPath DC Vision & Guiding Principles.*

Survey Question for Stakeholder Comment: "*Other" Reporting:*

22a) Utilities must report to customers and stakeholders progress towards achieving the District's mandates.

22b) If yes, this reporting should:

1) include metrics based on PowerPath DC Vision & Guiding Principles and NSPM BCA Framework Principles.

2) inform customers and stakeholders on progress in meeting performance metrics; relevant energy and non-energy impacts; customer impacts and bill savings; impacts on special classes, etc.

3) be done via a "dashboard" to provide regular progress updates.

4) key metrics in the "dashboard" should include number of participants in relevant programs; program expenditures; and projects completed.

A. GRID2.0: GRID2.0 asserts that the "Vision Statement/Guiding Principles" are not metrics, nor are they accounting/reporting principles. During several CEAIWG meetings, discussions have taken place regarding performance metrics, energy and non-energy impacts, customer impacts, bill savings, impacts on special classes—especially in connection with several meetings that discussed the NSPM for BCA of DER. In particular, during the briefing by authors of the NSPM, questions were raised on all of these matters and addressed by the authors.

B. **WGL:** WGL suggests that much of that the NSPM framework is primarily focused on evaluations of electric distributed energy resources and is not applicable to decarbonization and energy reduction efforts initiated by gas distribution companies like Washington Gas. WGL stated that cost impacts relative to the benefits of data collection should also be considered. WGL believes utility costs should be recovered (see the discussion of paying for reporting compliance in Section 1). WGL also notes that many stand-alone programs must be considered within the context of a long-term integrated multi-resource plan rather than individually, as stated in section 1.1.3, above.

C. **Pepco:** As a general matter, Pepco supports reporting the progress toward achieving the District's goals and mandates. However, Pepco has concerns with the specific proposals offered here.

The survey question's reference to the NSPM BCA Framework Principles is problematic. As explained in its response to proposed Working Group Majority Recommendation B.1.2, Pepco opposes the adoption of the NSPM BCA Framework Principles. Rather, Pepco supports the guiding principles and associated BCA framework guidance that it presented at length in its filed comments,[518] and it does not support substituting these principles with those espoused in the NSPM. As explained in its response to proposed Working Group Majority Recommendation B.1.2, some of the NSPM's principles suffer from significant issues regarding lack of clarity and inappropriateness for the BCA that is the subject of the instant proceeding. Furthermore, it is unclear from this proposed Working Group Majority Recommendation what kinds of metrics would be developed from the NSPM BCA Framework Principles. Furthermore, Pepco notes that the CEAIWG has not discussed performance metrics, the definitions of energy and non-energy impacts, customer impacts and bill savings, or impacts on special classes. Consequently, Pepco cannot agree with the survey question.

The proposed Working Group Majority Recommendation does not tie the proposed metrics to the NSPM BCA Framework Principles, which avoids certain issues described above. Still, Pepco notes that PowerPath DC's Guiding Principles are not themselves metrics and were not intended to be, so more specificity is needed to assess the proposed Working Group's statement, "Reporting should include all information relevant to evaluating the utility proposal's impact on PowerPath DC Vision & Guiding Principles."

[518] Pepco Notice of Inquiry Comments at 8-12.

C.6.1.2 Stakeholder Comments

Working Group Majority Recommendation: *DOEE provided the Reporting Requirements Committee with a detailed presentation clarifying the District's emissions reporting requirements, practices, and categorizations. Similarly, WGL provided detailed information on its inventory data and processes and also met with Committee members. The District's emissions reporting follows the well-established three-scope emissions system used in jurisdictions around the United States and the world:*

- ***Scope 1*** *emissions come from onsite activities (manufacturing, electric generation) occurring directly within the District.*
- ***Scope 2*** *emissions include indirect emissions that are created as a result of fuel or electric usage by residents, businesses, and governments within the District, and include "fugitive" emissions occurring upstream in the production of fuels and electricity used in the District.*
- ***Scope 3*** *emissions include embodied emissions associated with product and services used in the District.*

No Survey Question corresponding to Working Group Recommendation.

A. **WGL**: WGL suggests that voluntary initiatives are already underway to measure and reduce upstream greenhouse gas emissions, for both gas and electric sources. The Company argues that this voluntary effort should be prioritized instead of mandatory upstream emissions reporting. WGL further stated that if reporting "embedded" emissions from upstream suppliers was to be required for the gas utility, it should similarly be required for the electric utility that currently receives power from fossil generation and will continue to do so even with a 100 percent RPS, since marginal power will continue to be largely supplied by fossil plants. The District inventory does not currently capture these emissions. To inequitably account for these emissions would be prejudicial because it "puts a finger on the scale" for one energy source and not others. Similarly, if the District were to pursue this approach, which WGL opposes, it should also seek to capture and report upstream emissions associated with all transportation fuel, a major source of District GHG emissions.

   WGL also commented that a presentation attached to the March meeting minutes incorrectly stated that "many states required gas and electric utilities to report emissions upstream from their operations or purchased generation" giving a misleading impression that this is common practice. During the May 5th meeting OPC's consultant AEC clarified that, far from established practice, "upstream emission reporting is uncommon but does happen in Massachusetts".[519]

B. Pepco: Similarly, Pepco argues that it cannot track upstream emissions for similar reasons, namely that—as a distribution company—it cannot know the precise source of the electricity it sells. Pepco notes that data reporting is constrained by limited Company resources and the need to balance data reporting and program implementation to support the District's Clean Energy goals. Further, Pepco does not believe it is appropriate for the utility to be held responsible for upstream emissions it has no control over, such as the PJM fuel mix it acquires on the wholesale market to serve the District's SOS, and to the use of data which cannot be verified for accuracy. Finally, Pepco has committed to working with stakeholders to develop data products to address equity questions

[519] Public Service Commission of the District of Columbia, Reporting Requirements Committee Meeting Virtual Meeting (sic), page 3, paragraph 5.
https://edocket.dcpsc.org/apis/api/Filing/download?attachId=125004&guidFileName=92b555b0-128d-458c-b525-d64fa60012e0.pdf.

raised by OPC and is open to discussions of other utility data products to support the District's Clean Energy goals. Pepco is interested in stakeholder input for proposing these types of data and programs in FC 1167.

C. **AOBA:** To the extent data from the reporting will guide and inform decision makers on what sources of energy will power the District in the future, AOBA recommends the exclusion of Scope 2 and Scope 3 emissions reporting. AOBA argues that inclusion of that analysis for all sources of energy—a "daisy chain" of counting emissions—would theoretically never end and result in a reporting obligation that is impractical and overly burdensome, and suggests the following examples:

- Under the Pepco proposal, vehicle emissions caused by transporting solar panels manufactured overseas as well as the extraction and related manufacturing emissions would be reported. The scope of such reporting under this example is virtually limitless.
- The Pepco proposal also runs the risk "double counting" or overstating emissions because other states report emissions at a macro level.

From AOBA's perspective, the key factor is balance: the benefits of safe and affordable sources of energy must be balanced against the aspirational goal of clean energy. Failure to achieve this proper balance will not only result in high utility costs for both District of Columbia residents and businesses, but over-burden an already over-burdened electric grid incapable of providing the statutorily required safe, reliable and reasonable service. Thus, in order to move toward this required balance, AOBA recommends exclusion of the Scope 2 and Scope 3 emissions reporting.

Additional Stakeholder Comments

Survey Question for Stakeholder Comment: *Annual reports on GHG emissions are required. What else should be reported besides the federal reporting requirements?*

A. **OPC**: Pending discussions with the reporting committee.

B. **GRID2.0**: Yes. Equitability reports such as localized reliability reports correlated with EJ considerations should be developed to aid in the equity analysis. OPC needs to undertake an inventory of relevant reports currently being filed, but also to identify the specific relevance of the reports and how the information can help to track, monitor and provide accountability with respect achieving the goals of the DC Omnibus Act and the DCPSC's clean energy, climate and energy efficiency commitments. Furthermore, Principles are needed to govern new reporting requirements and information sharing related specifically to achieving the selected performance metrics and documenting Benefit/Cost assessment of impacts and assessment results.

C. **DCCA**: Yes. Localized reliability reports and localized air quality reports (e.g., by Ward).

D. **Sierra Club**: Yes. Equitability reports such as localized reliability reports correlated with EJ considerations should be developed to aid in the equity analysis.

E. **WGL**: As a result of Washington Gas' recent rate case settlement, it will work with stakeholders to develop a GHG report. Therefore, no additional reporting is necessary for Washington Gas.

F. **DOEE**: Air pollutants.

G. **Pepco**: Pepco is unclear on the meaning to the question above and interprets it to mean what information should be made publicly available to customers. All public documents are available on the Commission's website. [Reports publicly available on website]

Survey Question for Stakeholder Comment: *What to report to customers? Total GHG emissions of customer consumption; anything else?*

A. **OPC**: Pending discussions with the reporting committee.

B. **DCCA**: Yes (see comment). This depends upon what we would like to convey to customers.

   a. Customer behavior: provide their electric and gas usage-related GHG emissions and annual emissions comparisons on bills.

   b. District Progress: Total GHG emissions for the last 5 years.

C. **Sierra Club**: Yes. Total GHG emissions of customer consumption and a reference value for GHG emissions of the average customer in DC. The PSC should characterize progress toward the District's GHG reduction goals and other metrics associated with MEDSIS/NSPM principles. – (This is an opportunity)

D. **WGL**: Total GHG emissions of customer consumption.

E. **GRID2.0**: Total GHG emissions of customer consumption; but also overall progress toward the District's GHG reduction goals and other metrics associated with MEDSIS/NSPM principles. This is an opportunity to educate citizens on how the grid and energy use and DER investments are evolving. Information should be provided regarding progress in achieving performance metrics; but also, effects with respect to bill savings and other customer impacts, relevant energy and non-energy DER impacts should be reported, as well as impacts on special classes such as low-income, senior and disabled. PCT and RIM tests can be used to address how DER will impact rates. Again, establish criteria regarding relevancy, reliability and accuracy. Consideration should be given to using a "dashboard" to provide regular progress updates, especially relating to key metrics such as number of participants in particular programs; program expenditures and projects completed.

APPENDIX C

APPLICABILITY OF THE NSPM FOR DERS TO ELECTRIC AND GAS UTILITY DER INVESTMENTS

Applicability of the NSPM-DER

A few Working Group stakeholders have expressed doubt that the NSPM for DERs covers both electric and gas utility investments, claiming that the manual is electric-centric. The NSPM for DERs does cover gas utility investments and much thought has been given to both gas and electric investments and how to analyze them. Gas service providers manage or interact with production, transportation, and delivery systems that are similar to the electric grid. These service providers face similar investment and spending decisions. A growing array of spending options are related to distributed gas resources and to the tradeoffs between electric and gas devices and appliances that can provide similar services to ultimate customers.

Gas service customers also have a growing range of options for obtaining energy services, many of which may require evaluation of the impacts of gas versus electric equipment, or combinations of the two.

Policy priorities aimed at societal objectives, including reducing greenhouse gas emissions require the evaluation of the impacts of gas spending and investments as well. Gas resources, like electric resources can have useful lives and impacts that extend throughout the gas utility supply chain. As with electricity, for example, increases in gas consumption can increase costs for wholesale supply as well as transmission and delivery infrastructure and services. Direct combustion of gas for electricity production or thermal energy services at the local level can create local emissions that can impact energy justice policy preferences. Of course, today methane gas is a very low-price fuel. As a result, policy priorities relating to energy services affordability are also in play.

Finally, gas services and utilities are regulated in a manner substantially the same as electric services and utilities. Regulators review and approve gas utility investments and rates, evaluating the prudence of spending and the just apportionment of costs through cost allocation and rate design.

For all these reasons, the NSPM-DER was written with the understanding that the principles, concepts, and guidance in the Manual are relevant to gas utilities just as they are to electric utilities. This alignment of approach is especially important in light of the growth in electrification policies and the adoption of carbon emissions goals and policies.

Table A-1, below, maps electric utility and gas utility system impacts and demonstrates the high level of commonality that arises in evaluating the cost-effectiveness of investments and spending in both systems. Descriptions of these impacts and what they include are summarized in Table S-3 of the NSMP-DER, which includes references to both gas and electric system impacts. Gas utility and other fuel system impacts are discussed in section 4.3 of the NSPM-DER.

Type of Impact	Electric Utility System Impact	Type of Impact	Gas Utility or Other Fuel System Impact
Generation	Energy Generation	**Supply**	Natural Gas/Other Fuel Commodity and Variable O&M
	Capacity		Natural Gas/Other Fuel Capacity (including fuel storage)
	Environmental Compliance		Environmental Compliance
	RPS/CES Compliance		Market Price Effects
	Market Price Effects		
	Ancillary Services		
Transmission	Transmission Capacity	**Delivery**	Pipeline and/or Distribution Capacity
	Transmission System Losses		Pipeline and/or Distribution Losses
Distribution	Distribution Capacity		Pipeline and/or Distribution O&M
	Distribution System Losses		
	Distribution O&M		
	Distribution Voltage		
General	Financial Incentives	**General**	Financial Incentives
	Program Administration		Program Administration Costs
	Utility Performance Incentives		Utility Performance Incentives
	Credit and Collection		Credit and Collection Costs
	Risk		Risk
	Reliability		Reliability
	Resilience		Resilience

Conducting Gas Utility Benefit-Cost Analysis

The NSPM-DER can be and has been applied to gas utility planning activities, and in particular, the evaluation of pipe and non-pipeline solutions to demand for gas services. NSPM-DER co-author Chris Neme prepared a report on gas utility integrated resource planning that specifically addresses benefit-cost analysis, and that aligns with the NSPM-DER. In particular, Mr. Neme notes: [520]

- Cost-effectiveness analysis of any gas utility investment options, including pipe and non-pipe solutions, must include all gas utility system impacts, including avoided gas commodity costs, avoided gas storage costs, avoided carbon taxes, and effects on market clearing prices for gas (e.g. market price suppression effects of efficiency programs).
- As with electricity cost-effectiveness analysis, any cost-effectiveness analyses of any gas utility investment options – including pipe and non-pipe solutions – should also account for all impacts related to government policy goals.
- As the Working Group has done, the regulatory authority should consider establishing a stakeholder workshop process to identify policy goals relevant to cost-effectiveness analysis and to ensure that all relevant costs, benefits, and risks are included in the benefit-cost analysis.

[520] C. Neme, *Best Practices for Gas IRP and Consideration of "Non-Pipe" Alternatives to Traditional Infrastructure Investments*, Green Energy Coalition & Environmental Defense Fund Submission in Ontario Energy Board Case No. EB-2020-0091 (EGI IRP Proposal – GEC/ED Evidence) (Nov. 23, 2020), at section 4.2, https://www.rds.oeb.ca/CMWebDrawer/Record?q=CaseNumber%3DEB-2020-0091&sortBy=recRegisteredOn-&pageSize=400.

- Economic risk should always be quantified – and ideally monetized – as part of any planning analyses. That should be the case regardless of what cost-effectiveness test is used (i.e., regardless of what categories of impacts, costs and benefits are included in cost-effectiveness assessments). It is particularly essential that the risks related to climate change are monetized and included in benefit-cost analyses because these risks could be very important from a financial perspective.
- The discount rate used for cost-effectiveness analysis of gas utility investment decisions should be a function of the District's policy objectives.

CONSIDERATIONS FOR DETERMINING A DISCOUNT RATE[521]

GRID2.0 proffered that the following steps can assist regulators in determining the discount rate for their cost-effectiveness test(s):

- Articulate the jurisdiction's applicable policy goals;
- Consider the relevance of a utility's WACC;
- Consider the relevance of the average utility customer discount rate;
- Consider the relevance of an intergenerational societal discount rate;
- Consider an alternative discount rate;
- Consider risk implications.[522]

Based on the considerations described above, regulators determine a discount rate that best reflects the jurisdiction's regulatory perspective, with input from stakeholders. The Table below offers suggestions for how this determination might be made.

Time Preference Considerations:	**If the answer is "yes"**
Does the regulatory perspective suggest the same time preference as utility investors?	Choose a discount rate equal to the utility's WACC.
Does the regulatory perspective suggest placing a higher value on long-term impacts than utility investors?	Choose a discount rate less than the utility's WACC.
Does the regulatory perspective suggest the same time preference as that of all utility customers?	Choose a discount rate that represents all utility customers on average.
Does the regulatory perspective suggest the same time preference as that of society?	Choose a societal discount rate.

[521] "A New Tool to Improve Energy Efficiency Practices," The American Council for an Energy-Efficient Economy, July 2019, p. 5-17.
[522] "A New Tool to Improve Energy Efficiency Practices," The American Council for an Energy-Efficient Economy, July 2019, p. G-1.

Does the regulatory perspective suggest placing a lower value on long-term impacts than society does?	Choose a discount rate greater than a societal discount rate, or at the high end of the range of societal discount rates.
Risk Considerations (for use in situations where resource-specific risks are not accounted for in the BCA inputs):	
Will [project] result in a net reduction in risk relative to alternatives?	Choose a relatively low-risk discount rate, such as the societal discount rate.
Will [project] result in a net increase in risk relative to alternatives?	Choose a relatively high discount rate.

In general, it is preferable to account for such resource-specific risks separately and explicitly for each resource type rather than embed it in a discount rate. Discount rates are applied to all resources in a cost-effectiveness analysis. Applying a single discount rate to all resources to reflect risks associated with any one of those resources could conflate the treatment of resource-specific risk with the overall choice of time preference. Instead, resource-specific risk should be accounted for in developing the benefit-cost and inputs to the cost-effectiveness analysis.

Discount Rate Options for Cost-Effectiveness Analyses[523]

Type of Discount Rate	Potential Indicator of Time Preference	Typical Values	Notes and Sources
Societal	Societal cost of capital, adjusted to consider intergenerational equity or other societal values	<0% to 3%	In addition to low-risk financing, government agencies have a responsibility to consider intergenerational equity, which suggests a lower discount rate (US OMB 2003). Society's values regarding environmental impacts might warrant the use of a negative discount rate (Dasgupta, Maler, and Barrett 2000).
Low-Risk	Interest rate on 10-year U.S. Treasury Bonds	-1.0% to 3%	Over the past 20 years, the real interest rate on 10-year U.S. Treasury Bonds ranged between roughly -1.0% and 3.0% percent (multpl.com).
Utility Customers on Average	Customers' opportunity cost of money	varies	Customers' opportunity costs can be represented by either the cost of borrowing or the opportunity costs of alternative investments (Pindyck and Rubinfeld 2001, 550). The real rate on long-term government debt may provide a fair approximation of a discount rates for private consumption (US OMB 2003).

[523] "A New Tool to Improve Energy Efficiency Practices," The American Council for an Energy-Efficient Economy, July 2019, p. G-4.

Investor-Owned Utility	Investor-owned utility's weighted average cost of capital	5% to 8%	Investor-owned utility costs of capital are available from the Federal Energy Regulatory Commission Form 1, Securities Exchange Commission 10k reports, and utility Annual Reports.

APPENDIX D

INVENTORY OF DC APPLICABLE POLICIES

Key: Blue filled in spaces indicate that the policy includes regulations or goals in that category.

Customer choice	Equity	Renewable energy	Energy efficiency / System efficiency	Energy security / Independence / Local	Reliability / Resiliency	Economic development / Growth	Job creation	Price stability / Cost reduction	Cost-effectiveness	Environmental quality	Air quality / Health risks	GHG reductions	Customer resources	Utility resources	Risk reduction	
Retail Electric Competition and Consumer Protection Act of 1999																
Omnibus Utility Amendment Act of 2004																
Renewable Energy Portfolio Standard Act of 2004																
Green Building Act of 2006																
Clean and Affordable Energy Act of 2008																
Distributed Generation Amendment Act of 2011																
Community Renewable Energy Amendment Act of 2013																
Renewable Portfolio Standard Expansion Amendment Act of 2016																

Customer choice	Equity	Renewable energy	Energy efficiency / System efficiency	Energy security / Independence / Local	Reliability / Resiliency	Economic development / Growth	Job creation	Price stability / Cost reduction	Cost-effectiveness	Environmental quality	Air quality / Health risks	GHG reductions	Customer resources	Utility resources	Risk reduction	
Green Finance Authority Establishment Act of 2018																
CleanEnergy DC Omnibus Amendment Act of 2018																
Sustainable DC 2.0																
Clean Energy DC																
Climate Ready DC																
Mayoral Commitment/Paris Accord																
PowerPath (MEDSIS): DC PSC Orders 19275, 20286, 20364 and 20724																

D.C. Energy Policy	Description	Legislative/Policy Purpose	Values Relevant to Cost/Benefit Analysis
Retail Electric Competition and Consumer Protection Act of 1999	This legislation provides for the establishment of retail choice in the District. In addition, it required the Public Service Commission to report to the DC Council every two years, beginning July 1, 2003, on fuel mix information for the electricity sold in the District and the amount of electricity sold in the District that comes from renewable sources, among other things. Moreover, the Commission may promulgate regulations regarding net metering, establish programs to assist low-income customers in the District and to promote energy efficiency and encourage the use of electricity from renewable energy sources.	**§ D.C. Law 13-107.** The Commission addressed many electric restructuring issues, such as: (1) customer protection; (2) customer education; (3) billing and metering; (4) supplier licensing/procedures; (5) codes of conduct; (6) technical implementation; and (7) universal service. The Commission also established a detailed implementation plan for retail choice and set up the guidelines, procedures and standards for consumer protection, certification of suppliers, and electronic data interchange (EDI). Energy efficiency and low-income programs were developed through the Reliable Energy Trust Fund (RETF), for electricity programs, and the Natural Gas Trust Fund (NGTF), for natural gas programs.	• Customer choice • Customer Resources • Energy efficiency • Renewable energy • Low-income assistance/Equity
Omnibus Utility	Amended the Retail Electric Competition and Consumer Protection Act of 1999	**§ D.C. Law 15-342**.Among other things, required the Commission to determine the feasibility of requiring an electricity supplier to disclose every six months the	• Environmental quality

D.C. Energy Policy	Description	Legislative/Policy Purpose	Values Relevant to Cost/Benefit Analysis
Amendment Act of 2004		emissions on a pound per megawatt-hour basis and the fuel mix of the electricity sold by that supplier in the District.	• Air Quality/Health Risks • GHG Reductions
Renewable Energy Portfolio Standard (REPS) Act of 2004	Established an annual renewable portfolio standard (RPS) that required a minimum percentage of the District's electricity suppliers' retail sales must be derived from renewable energy resources beginning January 1, 2007.	**§ D.C. Law 15-340**.The REPS Act required that the Commission adopt regulations governing the application and transfer of renewable energy credits and implementation of the REPS Act. In addition, the Commission was required to report on the implementation of the RPS program.	• Environmental quality • GHG reductions • Air quality • Renewable Energy • Biofuels
Green Building Act of 2006		**From the DOEE Website:** "Green building is an integral part of the District's sustainable development strategy. The Green Building Act of 2006 requires that all non-residential District public buildings meet the U.S. Green Building Council's LEED certification standards for environmental performance at the "Silver" level or higher. District owned or financed residential projects 10,000 square feet or larger must meet or exceed the Green Communities certification standard. Since January 2012, all new private development projects 50,000 square feet or larger are now required to meet LEED certification at the "Certified" level or higher."	• Energy Efficiency • Economic Development • Job Creation
Clean and Affordable	Included various amendments to the REPS Act of 2004; established the	**§ D.C. Law 17-250**. The SEU replaced the Commission's implementation of energy efficiency programs that were funded through the RETF and NGTF, which	• Renewable energy

D.C. Energy Policy	Description	Legislative/Policy Purpose	Values Relevant to Cost/Benefit Analysis
Energy Act of 2008	Sustainable Energy Utility (SEU) to implement energy efficiency programs; amended the Green Building Act of 2006; established submetering provisions for nonresidential units;	were eliminated. The legislation established benchmarking requirements for all qualified public and private buildings.	• Energy efficiency • Equity • Economic Development • Job Creation • Price Stability/Cost Reductions • Environmental quality • Air Quality/Health Risks • GHG Reductions
Distributed Generation Amendment Act of 2011	Amended the RPS legislation.	**§ D.C. LAW 19-36**. Restrict the location of solar energy facilities eligible to meet the solar carve-out requirement of the RPS program to be within the District or in locations served by a distribution feeder serving the District. Grandfathered some out-of-state solar facilities to meet the RPS solar requirement.	• Renewable energy • Local Generation • Job Creation • Environmental quality • Air Quality/Health Risks

D.C. Energy Policy	Description	Legislative/Policy Purpose	Values Relevant to Cost/Benefit Analysis
			• GHG Reductions • Economic development
Community Renewable Energy Amendment Act of 2013	The intent of the Act was to allow a greater number of participants in renewable energy efforts by creating a new class of project, the community-owned rather than the individually- owned facility. The Act establishes a new class of electric generators known as Community Renewable Energy Facilities (CREFs).	**§ DC Law 20-186** "To amend the Retail Electric Competition and Consumer Protection Act of 1999 to update the net metering provisions to ensure consistency across programs, to allow for the creation of community renewable energy facilities that are renewable energy facilities interconnected at the distribution system level and located in a community served by an electric company, to allow retail customers of an electric company whose meters or accounts are within the District of Columbia and within the same service territory as a community renewable energy facility to subscribe to a community renewable energy facility, to allow for the establishment of subscriber organizations to beneficially own or operate community renewable energy facilities for subscribers, to allow for third parties under contract with subscriber organizations to build, own, or operate community renewable energy facilities, to allow for the monetary value of electricity generated by a community renewable energy facility to be credited to its subscribers to offset subscribers' electricity bills, and to allow the SOS administrator to offset wholesale purchases via community net metering, and to provide appropriate public-private financing mechanisms for renewable energy and related investments; and to amend the Renewable Energy Portfolio Standard Act of 2004 to require that the District Department of the Environment report progress towards solar generation goals."	• Renewable energy • Local generation • Customer Choice • Economic Development • Job Creation • Environmental quality • Air quality / Health risks • GHG reductions
Renewable Portfolio Standard	Amended the RPS legislation to goals of 50% renewable by 2032 with 5% coming from solar energy and established the Solar for All Program for the purpose	**§ DC Law 21-154** "To amend the Renewable Energy Portfolio Standard Act of 2004 to allow raw or treated wastewater used as a heat source or sink for a heating or cooling system to qualify as a tier one renewable source, to raise the renewable portfolio standard for tier one renewable sources to 50% by 2032 and the solar requirement to 5% by 2032, to require the Public Service Commission to provide a report to the Council relating to solar energy generated in the District that could	• Renewable energy • Local generation • Customer Resources

D.C. Energy Policy	Description	Legislative/Policy Purpose	Values Relevant to Cost/Benefit Analysis
Expansion Amendment Act of 2016	of increasing the access of seniors, small local businesses, nonprofits, and low-income households to the benefits of solar power.	qualify to be used to meet the annual solar energy requirement, but for which renewable energy credits cannot be purchased by electricity suppliers to meet the solar energy requirement, to change the alternative compliance payment for the solar requirement through 2032, and to expand the uses of the Renewable Energy Development Fund; and to amend the Clean and Affordable Energy Act of 2008 to increase the Sustainable Energy Trust Fund fee, and to establish a Solar for All Program within the Department of Energy and Environment for the purpose of increasing the access of seniors, small local businesses, nonprofits, and low-income households to the benefits of solar power."	• Equity • Environmental quality • Air quality / Health risks • GHG reductions
Green Finance Authority Establishment Act of 2018	Establish a Green Finance Authority to increase private investment in clean energy, clean transportation, clean water, stormwater management, energy efficiency, water efficiency, and green infrastructure projects in the District.	**§ DC Law 22-155** "To establish the Green Finance Authority as an instrumentality of the District government to increase private investment in clean energy, clean transportation, clean water, stormwater management, energy efficiency, water efficiency, and green infrastructure projects in the District, to establish the Green Finance Authority Board to manage the Green Finance Authority and to authorize the Green Finance Authority to issue bonds, to establish the Green Finance Authority Fund to be administered by the Green Finance Authority, to require the Green Finance Authority to publish an annual report, and to make conforming amendments."	• Renewable energy • Energy efficiency/System Efficiency • Environmental quality • Air quality / Health risks • GHG reductions • Local generation • Economic development • Job Creation

D.C. Energy Policy	Description	Legislative/Policy Purpose	Values Relevant to Cost/Benefit Analysis
CleanEnergy DC Omnibus Amendment Act of 2018	Updated the District Renewable Energy Portfolio Standard to ramp to 100% renewable energy by 2032 (tier I) and 10% solar by 2041. Other goals/mandates include adding climate change considerations to OPC and PSC decision making, established a new building energy efficiency improvements standard, establishing an Energy Efficiency working group at the DC PSC, and setting new transportation electrification goals.	**§ DC ACT 22-583** "To amend the Renewable Energy Portfolio Standard Act of 2004 to increase the renewable energy portfolio standard to 100% by 2032, to establish a solar energy standard after 2032, and to clarify the factors that the Office of the People's Counsel and the Public Service Commission must consider in making decisions; to amend the Clean and Affordable Energy Act of 2008 to remove restrictions on the types of energy efficiency measures that the Sustainable Energy Utility must offer, to increase the Sustainable Energy Trust Fund fee assessments, to add an assessment on fuel oil, and to expand the uses of the Sustainable Energy Trust Fund; to establish a building energy performance standard program at the Department of Energy and Environment; to amend the Green Building Act of 2006 to expand the Department of Energy and Environment's benchmarking program to include buildings of 10,000 square feet or more by 2024; to establish an energy efficiency program; to amend the District of Columbia Traffic Act to require the Department of Motor Vehicles to issue regulations tying the vehicle excise tax to fuel efficiency; to establish a transportation electrification program, and to authorize the Mayor to commit the District to participation in regional programs with the purpose of limiting greenhouse gas emissions."	• Renewable energy • Energy efficiency / System efficiency • Environmental quality • Air quality / Health risks • GHG reductions • Economic development • Job Creation • Local generation • Utility Resources • Customer Resources
Sustainable DC 2.0	Sustainable DC aims to make the District the healthiest, greenest, and most livable city in the nation by outlining several goals and targets to be met by the year 2032 to improve	"The Sustainable DC 2.0 Plan is the city's plan to make DC the greenest, healthiest, most livable city. Sustainability is about balancing the environmental, economic, and social needs of the District of Columbia today as well as the needs of the next generation, and the one after that. Addressing climate change and restoring our natural environment remain top priorities for DC under Mayor Bowser, and in	• Renewable energy • Energy efficiency / System efficiency

D.C. Energy Policy	Description	Legislative/Policy Purpose	Values Relevant to Cost/Benefit Analysis
	the areas of: (1) jobs and its economy; (2) health and wellness of District citizens; (3) equity and diversity; and (4) climate change and the environment. The Sustainable DC Plan's goals and targets complement Clean Energy DC. These include improvements to transportation, building energy efficiency, energy supply, and energy infrastructure will deliver the District's decarbonization in a way that also promotes resiliency, innovation, and local action. The plan adopts the goals of 50% reduction of District GHG emissions by 2032 (relative to a 2006 baseline), reducing GHG emission to elimination by 2050, cutting per capita energy use District-wide by 50% by 2032, increasing the proportion of energy sourced from clean/renewable	Sustainable DC 2.0, it was a top priority to also address the equally pressing economic and social needs of residents."	• Environmental quality • Air quality / Health risks • GHG reductions • Economic development • Job Creation • Resilience/Reliability • Energy security / Independence / Local generation • Utility Resources • Equity

D.C. Energy Policy	Description	Legislative/Policy Purpose	Values Relevant to Cost/Benefit Analysis
	supplies, and ensuring all residents live near a facility with clean back up power during outages.		
Clean Energy DC	Clean Energy DC is the District Government's proposed roadmap of action to increase the supply of zero GHG emission energy. Clean Energy DC states that an electricity distribution system with a high number of local renewable energy systems will require a modernized electricity system to: (1) allow more renewable energy to be generated within the District; (2) improve the efficiency and reliability of the energy we use; (3) improve the resiliency of the District's energy system; and (4) provide economic benefits to District residents and businesses by reducing the need for costly utility infrastructure investments	"Clean Energy DC is the District's proposal to reduce greenhouse gas (GHG) emissions at least 50% below 2006 levels by 2032 while increasing renewable energy and reducing energy consumption, as directed by the landmark Sustainable DC plan; and to put us on a path to achieve carbon neutrality by 2050, a goal announced by Mayor Bowser in December 2017 in recognition of the importance of local action to achieve the Paris Agreement goal to limit the global average temperature increase to 1.5°C. Sustainable DC Plan's direction to reduce energy use, increase renewable energy, and reduce GHG emissions proposes an important framework for decarbonizing the District's energy system, a framework that focuses on resiliency, efficiency, innovation, and local action. This bold and necessary commitment aligns the District with other global cities that are similarly working to avoid the worst impacts of climate change.... Energy will prove central to the District's efforts to reach its GHG goals. Fossil fuels remain the dominant source of energy for electricity, for heating buildings through natural gas or fuel oils, and for motor vehicles. Over the long term, phasing fossil fuels out of the District's energy supply will be essential to achieving the city's climate commitments."	• Renewable energy • Energy efficiency / System efficiency • Environmental quality • Air quality / Health risks • GHG reductions • Economic development • Job Creation • Resilience/Reliability • Energy security / Independence / Local generation • Risk Reduction

D.C. Energy Policy	Description	Legislative/Policy Purpose	Values Relevant to Cost/Benefit Analysis
	where possible. Clean Energy DC also set the goals of 50% reduction of District GHG emissions by 2032 (relative to a 2006 baseline), 50% reduction of energy use in the District by 2032 relative to a 2012 baseline, carbon neutral buildings for all new buildings by 2030, all building operating at net zero carbon levels by 2050.		• Price stability / Cost reduction • Utility Resources • Customer Resources • Customer Choice • Equity
Climate Ready DC	Climate Ready DC is the District's plan to adapt to a changing climate by acting to reduce the potential impacts of climate change to people, buildings, and infrastructure like water systems, roads and electricity and natural gas networks. Climate Ready DC suggests that the Commission partner with DOEE to	"**Climate Ready DC: The District of Columbia's Plan to Adapt to a Changing Climate** Climate change adaptation means being prepared for a changing climate by taking action today to reduce the potential impacts of climate change to people, buildings, and infrastructure. While the District does its part to reduce greenhouse gas emissions, we are already seeing the impacts of climate change due to historic carbon emissions. Climate Ready DC is the District's strategy to make our city more resilient to future climate change. It is based on the best available climate science and was developed through consultation with leading experts within and outside of the District government."	• Reliability/Resiliency • Equity

D.C. Energy Policy	Description	Legislative/Policy Purpose	Values Relevant to Cost/Benefit Analysis
	conduct site-level studies of extreme heat risk to electric grid infrastructure including transformers and overhead transmission and distribution lines and identify necessary upgrades and mitigation strategies. Climate Ready DC also suggests that the Commission partner with DOEE, the Historic Preservation Review Board, and the Zoning Commission to ensure that projects are allowed/encouraged to incorporate greater resilience during design and permitting.	"It is clear from our discussions with stakeholders and the comments we received that the District must prioritize better solutions for communities that, in addition to the impacts of climate change, face fundamental challenges related to housing affordability, rising utility costs, and limited access to services and economic opportunities. Our most vulnerable residents should not only bounce back after disasters but bounce forward. This fundamental principle is echoed by our Sustainable DC goals to advance equity and diversity. To ensure the goal of providing equitable access to services, resources, and economic opportunities remains at the forefront of this and future initiatives, DOEE will convene a group of diverse community stakeholders and city leaders to guide the equitable implementation of Climate Ready DC."	
Mayoral Commitments/Paris Agreement Resolution	The 2017 Paris Agreement Resolution passed by the DC Council reaffirms the commitment to the Sustainable DC plan, RPS, the DCSEU and commits to	The Paris Agreement resolution emphasizes the GHG targets of the District (at the time 50% reduction by 2032 and 80% by 2050) and the District's policy commitment to the global accord on GHG reduction.	• GHG reductions

D.C. Energy Policy	Description	Legislative/Policy Purpose	Values Relevant to Cost/Benefit Analysis
	working with the Mayor to ensure that the District meets the commitments in the Paris Agreement, including keeping the increase in the global average temperature below 2 degrees Celsius above pre-industrial levels and pursuing efforts to limit the temperature increase to 1.5 degrees Celsius. 2017 Mayoral announcement commits the District to Carbon Neutrality, specifically GHG emission neutrality by 2050 in the District.	The Mayoral Commitment sets a specific GHG commitment of carbon neutrality which must be reached by 2050.	
PowerPath (MEDSIS): Order Nos. 19275, 20286, 20364 and 20724	Order No. 19275: Adopts the modernizing the distribution energy delivery system for increased sustainability (MEDSIS) Vision Statement: "The District of Columbia's modern energy delivery	<u>MEDSIS Guiding Principles:</u> - **Sustainable (Environmental Protection, Economic Growth, Social Equity):** A sustainable energy delivery system will meet the energy needs of the present without compromising the ability of future generations to meet their own energy needs by focusing on the *triple bottom line:* environmental protection, economic growth, and social equality.	• Renewable energy • Energy efficiency / System efficiency • Environmental quality

D.C. Energy Policy	Description	Legislative/Policy Purpose	Values Relevant to Cost/Benefit Analysis
	system must be sustainable, well-planned, encourage distributed energy resources, and preserve the financial health of the energy distribution utilities in a manner that results in an energy delivery system that is safe and reliable, secure, affordable, interactive, and nondiscriminatory." Order No. 20364: Updated the principles. Order No. 20286: Implementation of the outcome of the MEDSIS process. Order No. 20724: Implementing the remaining components of the MEDSIS process/recommendations.	- **Well-Planned**: With no large-scale generation in the District, the Commission must ensure that the distribution and transmission systems are strong and robust enough to withstand low probability, high impact events like storms, floods, and physical and cyber threats. - **Safe & Reliable**: The Commission will ensure that utilities meet and improve safety and reliability performance and that the increasing volume of DERs interconnecting to the District's grid does not negatively impact the safety or reliability of the energy delivery system - **Secure:** The modern energy delivery system must be secure from both physical attacks to critical infrastructure components as well as from cybersecurity attacks that target energy information systems and private consumer information. - **Affordable:** The Commission has a duty to ensure that rates for distribution service are just and reasonable. The Commission balances the desire of customers to keep rates down with the need to ensure that utilities remain financially healthy, able to attract investors, and pay for needed infrastructure maintenance and development. - **Interactive:** A modern energy delivery system must become more interactive and flexible to accommodate these types of resources while maintaining system reliability and security. This interactivity is critical both in terms of managing the distribution system and in providing locational transparency and technical feasibility which will allow ratepayers, customer-generators, and DER providers to make informed energy choices. - **Non-Discriminatory:** Nondiscrimination in the operation of the District's energy infrastructure is integral to the Commission's mandate to supervise energy utilities in the District of Columbia.	• Air quality / Health risks • GHG reductions • Economic development • Job Creation • Resilience/Reliability • Energy security / Independence / Local generation • Risk Reduction • Utility Resources • Customer Resources • Customer Choice • Equity • Price-stability/cost-reduction

D.C. Energy Policy	Description	Legislative/Policy Purpose	Values Relevant to Cost/Benefit Analysis
		Order No. 20286: "By this Order, the Commission is taking the first of a series of steps that will bring grid modernization to fruition. This Order adopts, with modifications, the following seven (7) proposed decisions contained in the Final Working Group Report and Staff Proposed Order…(1) the Distribution System Planning ("DSP") and Non-Wires Alternative ("NWA") Process; 2) creation of a secure web portal; (3) the creation of a customer microsite for energy service providers; (4) the establishment of the rate design working group and the creation of a time of use rate; (5) the establishment of a microgrid proceeding; (6) the formation of the Pilot Project Governance Board; and (7) funding of various studies from the Modernizing the Energy Delivery System for Increased Sustainability ("MEDSIS") Pilot Project Fund Subaccount. The Commission also plans to publish a rulemaking proposing definitions for "advanced inverters" and "Non-Wires Alternative" as recommended in the Final WG Report." Order No. 20724: "In this Order, the Commission will address the remaining five (5) Recommendations and Learnings in the Final Working Group Report and Staff Order as follows: (a) Enhance and Consolidate Customer Education Materials; (b) Energy Efficiency ("EE") Programs for Master Metered Apartment ("MMA") Buildings: submetering; (c) Enhance Customer Participation in Low-Income Programs; (d) Revise the Consumer Bill of Rights ("CBOR") to Support the MEDSIS Pilot Projects Phase; and (e) Ensure Connection Between Customers' Energy Usage and the Environmental Impact."	• Cost Effectiveness

	DC Code §34-1101(a)	The Commission's statutory mandates include the following: Every public utility doing business within the District of Columbia is required to furnish service and facilities reasonably safe and adequate and in all respects just and reasonable. The charge made by any public utility for a facility or service furnished, rendered, or to be furnished or rendered, shall be reasonable, just, and nondiscriminatory. Every unjust, unreasonable, or discriminatory charge for the facility or service is prohibited and unlawful. Every public utility is required to obey the lawful orders of the Commission created by this subtitle.	

APPENDIX E

COMPARISON OF APPLICABLE POLICIES AND DCSEU TEST

PRIMARY TEST DEVELOPMENT (AND SECONDARY TEST CONSIDERATIONS)

DATE:

Impact Category	Specific Impact	Is the impact relevant to DC DER Related Policies?	Is Impact in Current DC SEU BCA Test? (yes, no, not sure)	PRIMARY TEST for All DERs	SECONDARY TEST for all DERs	Notes: Address in Phase I or II? Key Considerations and Next Steps
				Yes or No	Yes or No	
Electric Utility System Impacts	Generation: Energy Generation	YES	yes			
	Generation: Capacity		yes			
	Generation: Ancillary Services		no			
	Generation: Environmental Compliance		yes			
	Generation: RPS/CES Compliance		yes			
	Generation: Market Price Effects		no			
	Transmission: Capacity		yes			
	Transmission: System Losses		not sure			
	Distribution: Capacity		yes			
	Distribution: O&M		no			
	Distribution: Voltage (NA for EE and DR)		n/a to EE			
	Distribution: System Losses		no			
	Risk		yes			
	Reliability		yes			
	Resilience		no			
	Credit and Collection Costs		not sure			
	Financial Incentives		yes			
	Program Administration Costs		yes			
	Utility Performance Incentives		n/a			
	Other: Describe					
Gas Utility System Impacts	Supply: Gas/Other Fuel Commodity and Variable O&M	YES				
	Supply: Gas/Other Fuel Capacity (including storage)					
	Supply: Environmental Compliance					
	Supply: Market Price Effects					
	Delivery: Pipeline and/or Distribution Capacity					
	Delivery: Pipeline and/or Distribution Losses					
	Delivery: Pipeline and/or Distribution O&M					
	General: Financial Incentives					
	General: Program Administration Costs					
	General: Utility Performance Incentives					
	General: Risk					
	General: Reliability					
	General: Resilience					
	Other: Describe					
Societal Impacts	Resilience	yes	no			
	Economic Development and Jobs	yes	no			
	Energy Security	yes	no			
	Greenhouse Gases	yes	yes			
	Other Environmental Impacts	yes	yes			
	Public Health	yes	no			
Host Customer Impacts	Measure Costs (Host)	Yes for all?	yes			
	Transaction costs (Host)		n/a for EE			
	Interconnection Fees (NA for EE and DR)		n/a for EE			
	Risk		no			
	Reliability		no			
	Resilience		no			
	Non-Energy Impacts (Low Income)		yes			
	Non-Energy Impacts (Non-Low Income)		yes			
	Other Fuel		not sure			

APPENDIX F

AVOIDED COSTS

In FY2019, DCSEU modified their avoided cost assumptions to align with NMR's previously recommended cost assumptions. This update allowed for a streamlined review process and simplified the scenarios presented for cost-effectiveness. For FY2020, additional updates were made to reflect the latest available historical data and forecasts. The DCSEU model, as well as the three presented scenarios, use the same avoided cost assumptions. Table 34 summarizes the values and sources applied by DCSEU in their cost-effectiveness testing.

Table 1: DCSEU FY2020 Avoided Cost Summary

Screening Assumption	Value	Source
Future Inflation Rate	1.740%	Based on the past ten years of consumer price index data published by the U.S. Labor Department for the month of August.
Water Avoided Cost	$3.071/CCF	Approved_fy_2018_operating_and_capital_budgets_final.pdf, 2017 Engineering Feasibility Report WATER.pdf
Real Discount Rate	3. 638%	Ten-year treasury rate posted in the Wall Street Journal on the first business day of October 2019 (1.638%) plus 2% (as specified in the DCSEU contract no. DOEE-2016-C-0002).
Line Losses	1.046 (energy) 1.077 (demand)	PEPCO Zone Capacity and Transmission Peak Load Calculations for Year 2018.
Natural Gas Capacity Adder	5%	Per Section C.40.10.3 of contract DOEE-2016-C-0002.
Transmission Cost	$31.75/kW-year	PEPCO's 2019 filing of the FERC formula transmission rate update.
Distribution Cost	$64.02/kW-year	Distribution rate deduced from the 2017 DC Public Commission order re: Pepco distribution rate increase request.
Electric & Fuel Externalities	$100 per short ton (2,000 pounds) ($110.23 per metric ton)	Avoided Energy Supply Components in New England: 2018 Report and PJM's 2013-2017 CO_2, SO_2, and NOx Emissions Rate Report, published in March 2018.
Electric Energy Cost	Forecast by Year and Period	Hourly real-time locational marginal prices (LMPs) for PEPCO zone from January 2015 to May 2018 are used in conjunction with hourly load data for PEPCO zone for the same period to calculate load-weighted marginal price by energy period. This establishes the 2017 value. Price escalation over the remainder of the forecast horizon (2018-2050) is calculated by averaging growth projections from a series of EIA Annual Energy Outlook forecasts for the Mid-Atlantic region.
Generation Capacity	Actual Prices for 2020-2022,	PJM Base Residual Auction clearing prices for PEPCO zone. Historic prices used for forecasting.

	$62.97/kW-yr for 2023+	
Natural Gas Cost	Forecast by Year and Sector	Projected prices for the industrial sector (Mid-Atlantic region) are adopted from the EIA Annual Energy Outlook 2019 supporting tables for energy price by sector and source.
Other Fuels Cost	Forecast by Year, Fuel, and Sector	Projected prices for the industrial sector (Mid-Atlantic region) (where possible, transportation sector used as a substitute for kerosene cost) are adopted from the EIA Annual Energy Outlook 2019 supporting tables for energy price by sector and source.
Risk Adder	5%	Specified in the DCSEU contract no. DOEE-2016-C-0002.
NEB Adder	5%	Specified in the DCSEU contract no. DOEE-2016-C-0002.
Low-income Adder for Solar Measures	15%	Modeled on regulatory order: State of Vermont Public Service Board "Order Re Cost-Effectiveness Screening Of Heating And Process-Fuel Efficiency Measures And Modifications To State Cost-effectiveness Screening Tool," 2/7/2012.

DEFINITIONS

Proposed Definitions by Staff:[524]

- Average Emissions Factor: The average CO_2 emissions per average unit of electricity delivered for an entire electricity system
- Short-Run Marginal Emissions Factor (SR-MEF): The change in CO_2 emissions relating to a unit change in electricity demand, where there is usually little structural change in the electricity system being analyzed.
- Long-Run Marginal Emissions Factor (LR-MEF): The change in CO_2 emissions relating to a unit change in electricity demand, where structural change in the electricity system is explicitly taken into account (i.e., demand-side interventions dynamically inter-act with power stations commissioning and decommissioning, and with system operation).

Compare with EPA's eGRID definitions:[525]

https://www3.epa.gov/ttn/chief/conference/ei18/session5/rothschild_pres.pdf

- Total Output Emissions (average emissions rate):

eGRID annual "total" output emission rate is the measure of the emissions as it relates to the generation output. (Note that in this paper, the word total is used in the term "total output emission rate." However, in the eGRID2007 files, the word total is absent.) It is calculated as the emissions mass value divided by the generation MWh multiplied by a unit conversion factor. Units are in lb/MWh (lb/GWh for CH_4, N_2O, and Hg).

- Non-baseload Emissions (short-run marginal emissions rate):

Non-baseload emission rates are a slice of the system total mix, with a greater weight given to plants that operate coincident with peak demand for electricity. In eGRID, the capacity factor of each plant is used as a surrogate for determining whether a plant is baseloaded and how much of each plant's generation is considered to be non-baseloaded. Non-baseload emission rates are the output emission rates for plants that combust fuel and have capacity factors less than 0.8, weighted by generation and a percent of generation determined by capacity factor. The non-baseload emissions and generation include only emissions and generation from combustion sources and exclude emissions and generation from plants that have high capacity factors. The remaining emissions and generation are weighted by a factor which is a function of capacity factor. These data values are derived from plant level data and factor out baseload generation, which is generally unaffected by measures that affect marginal generation. This rate is the sum of the non-baseload emissions divided by the sum of non-baseload net generation, divided by a unit conversion factor. In eGRID, these values are displayed beginning at the state aggregation level. " It should be noted that the emissions reported in eGRID do not account for the upstream emissions associated with fuel production, processing, or transport.

[524] Source: "Long-run marginal CO_2 emissions factors in national electricity system", *Applied Energy, Vol. 125 (2014), pp. 197-205*, A.D. Hawkes, Centre for Energy Policy and Technology, Imperial College London. https://core.ac.uk/download/pdf/82036145.pdf.
[525] *See* https://www3.epa.gov/ttnchie1/conference/ei18/session5/rothschild.pdf.

- Upstream Emissions for Natural Gas:

Upstream emission refers to fugitive emissions throughout the natural gas supply chain except for the distribution segment. The gas supply segments can be divided as follows:

Applicable Gas Segment(s)	Description	Data Location
Production, Gathering	Natural Gas Gross Withdrawals	EIA Natural Gas Annual[13]
Processing	Natural Gas Processed[14]	EIA Natural Gas Annual[15]
Transmission	Natural Gas Delivered to Customers	EIA Natural Gas Annual
Distribution	Natural Gas Delivered to Customers from LDCs	EIA Form 176

Source: ICF Methane Emissions Estimator

- Scope 1, 2, 3 emissions:

Greenhouse gas emissions are categorized into three groups or 'Scopes' by the most widely-used international accounting tool, the Greenhouse Gas (GHG) Protocol. Scope 1 covers direct emissions from owned or controlled sources. Scope 2 covers indirect emissions from the generation of purchased electricity, steam, heating and cooling consumed by the reporting company. Scope 3 includes all other indirect emissions that occur in a company's value chain.[526]

Following are definitions of the metrics proffered for inclusion by DOEE.

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."[527]

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."[528]

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

[526] *See* https://www.carbontrust.com/resources/briefing-what-are-scope-3-emissions.
[527] International City/County Management Association.
[528] District of Columbia Council Office of Racial Equity.

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."[529]

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."[530]

5. Energy Burden

"Energy burden is defined as the percentage of gross household income spent on energy costs."[531]

[529] US Environmental Protection Agency.
[530] National Institutes of Health.
[531] US Department of Energy.