An Exelon Company

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October 8, 2021

Ms. Brinda Westbrook-Sedgwick
Commission Secretary
Public Service Commission
of the District of Columbia
1325 G Street, N.W., Suite 800
Washington, DC 20005

Re: Formal Case No. 1167

Dear Ms. Westbrook-Sedgwick:

Enclosed please find Potomac Electric Power Company's 5 Year Action Plan in the above referenced matter.

Please contact me if you have any further questions.

Sincerely,

/s/ *Andrea H. Harper*

Andrea H. Harper

Enclosure:

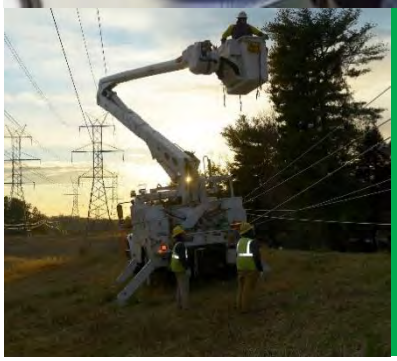
cc: All Parties of Record

Climate Solutions 5-Year Action Plan

Pepco's 5-Year Plan to Support the District of Columbia's Climate and Clean Energy Goals

October 8, 2021

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Contents

Executive Summary

Pepco presents its 5-Year Action Plan as the latest installment in Formal Case No. 1167, providing to the Public Service Commission of the District of Columbia (the "Commission"), District government, and stakeholders a proposed suite of near-term programs to accelerate decarbonization across all segments of the District's economy. The 5-Year Action Plan initiatives and programs are aligned with and support established District policy surrounding climate change and clean energy, and each action Pepco proposes is mapped to specific goals advanced in District law or policy guidance. Overall, the Plan represents 62 individual programs, grouped among 10 unique initiatives, which are aligned to address four main high-level portfolios. Of these 62 programs, 34 are already in-flight, 12 are an expansion of programs already in-flight, and 16 are new to the District but have precedent in other jurisdictions around the country. Through its approach and design of these programs, Pepco's intent is to help reduce barriers to adopting and deploying necessary clean energy and energy efficient technologies and resources for the benefit of all customers and the electric grid. Pepco's role in these programs is, therefore, that of a *connector* that facilitates connections between customers and efficient, electric technologies that interact with and optimize grid operations while driving deep decarbonization across the District.

The 5-Year Action Plan contributes substantially to a growing record supporting an efficient, electrification-based approach to decarbonization in the District. In Order No. 20662 the Commission opened Formal Case No. 1167 to advance the directives of the CleanEnergy DC Omnibus Amendment Act of 2018[1] ("CleanEnergy DC Act") and align with the District of Columbia's climate change and clean energy goals.[2] Subsequently, the Commission issued Order No. 20754 instructing Pepco to submit its strategy, programmatic approach, and supporting analyses to meet these goals.[3] On July 20, 2021 Pepco submitted its proposed Climate Solutions Plan in response to the Commission's requirement to file a high-level strategy, the first of a series of filings in this docket.[4] The Climate Solutions Plan lays out the Company's blueprint for an approach to decarbonization rooted in increasing amounts of energy efficiency and electrification, directly aligning with existing District policy, and establishes guiding principles to inform its development of specific, actionable programs for climate solutions. At its core, the Climate Solutions Plan leverages the unique nature of the grid, which is that of a "platform" or "connector," to provide programs and opportunities to

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1 D.C. Law 22-257 (2018).

2 *In the Matter of the Merger of AltaGas LTD. and WGL Holdings, Inc. and In the Matter of the Implementation of the Electric and Natural Gas Climate Change Proposals,* Formal Case Nos. 1142 and 1167, Order No. 20662 (Nov. 18, 2020) ("Order No. 20662"), as modified by Order No. 20664.

3 *In the Matter of the Matter of AltaGas LTD. And WGL Holdings, Inc. and In the Matter of the Electric and Natural Gas Climate Change Proposals,* Formal Case Nos. 1142 and 1167, Order No. 20754 (Jun. 4, 2021) ("Order No. 20754").

4 *Id.* at ¶66.

customers and communities to access and enable climate solutions equitably, inclusively, and affordably while driving innovation and building resilience.

In its second filing in this docket—filed on August 27, 2021—the Company filed a study of the impacts of increasing levels of electrification on the grid through 2050. That study showed that under the decarbonization pathway established by the CleanEnergy DC Act and in other District government plans, the electric grid would experience peak load growth that is below what Pepco has experienced and managed historically. Taken together, these filings show the broad scope and clear pathway for an efficient, electrification-based approach supported in District policy, laying a foundation for Pepco to present a list of programs the Company has already been authorized to offer, filed for authorization to offer, or intends to file for authorization in this or another existing docket under the Climate Solutions Plan over the next five years, as directed in Order No. 20754. The 5-Year Action Plan responds to this directive.

The 5-Year Action Plan is organized to align with the four major portfolios outlined in the Climate Solutions Plan, which was filed on July 20, 2021. Importantly, those portfolios included primary areas and actions codified in policies, studies, and reports from various District agencies. The 5-Year Action Plan expands upon these portfolios to present initiatives with specific climate solution programs either underway or proposed to initiate in the next five years.

Section 1 provides an overview of the Climate Solutions Plan portfolios and the foundational District policies upon which Pepco designed the Climate Solutions Plan. This section also explores the opportunities for and results of stakeholder outreach Pepco undertook as it developed the 5-Year Action Plan and the ongoing support and collaboration that will be needed as the Climate Solutions Plan moves to implementation.

Section 2 lays out the 5-Year Action Plan's composition and the climate solutions that Pepco proposes to pursue as part of the Climate Solutions Plan in the near term. The section provides an overview of the 5-Year Action Plan from Pepco's previously discussed portfolios, the initiatives within each portfolio, and then the multiple, individual programs within each initiative.

Section 3 discusses the 5-Year Action Plan initiatives and programs that will support electrification of the transportation sector. The programs in this portfolio are organized into

two initiatives and focused on providing rebates for make-ready work for several forms of electric transportation and new rates to allow owners and operators of charging stations to optimize their investment and encourage charging during off-peak times.

Section 4 discusses Pepco's programs and initiatives to help electrify the District of Columbia's diverse set of residential and commercial building stock, in alignment with District policy. This portfolio includes three initiatives that detail Pepco's recent application in Formal Case No. 1160 to reduce energy usage of customers over a three-year period, new programs that incentivize customers to invest in efficient, electric equipment and rates that encourage off-peak usage.

Section 5 focuses on Activating the Local Energy Ecosystem, or the advancement of distributed energy resources ("DERs"). For the District to reach its clean energy and decarbonization goals, it must swiftly transition its electric supply to carbon-free, clean energy resources. Programs in this portfolio will fall into three initiatives designed to make it easier to deploy DERs, programs that focus on deploying a range of DERs as community-based resources, and programs to grow the supply of renewables in the District in support of the District's Renewable Portfolio Standard.

Section 6 discusses the Enhancing Infrastructure for Climate Solutions portfolio, which underpins the three preceding portfolios as the need to actively manage demand on the system will become progressively more important to support increasing electrification. There are two initiatives in this portfolio, the first targeted to update and activate data-based tools to increase visibility of DERs, and the second will focus on the hard platform—or infrastructure —to reliably operate more DERs and mass electrification.

Section 7 identifies Pepco's path forward in this proceeding, discussing the final filings in this proceeding: the 30-year plan and the benefit cost analysis ("BCA") filing, which will include program cost and greenhouse gas ("GHG") reduction estimates, and the relation of the 5-Year Action Plan to those upcoming filings.

1. Introduction

Pepco's Climate Solutions Plan for the District of Columbia is an overarching blueprint for how the grid can enable the District to meet its leading decarbonization and broader climate change and clean energy goals. Importantly, the Climate Solutions Plan is based on the District's established goals, policies, and studies, which propose a range of efficiency and electrification-based actions that leverage the unique role of the grid. As reliability is foundational to Pepco's operations, the plan approaches decarbonization and electrification in a manner that maintains the ability to continue to provide safe and reliable service to all Pepco's customers, while enabling the deployment of more DERs, such as solar and storage, and supporting increasing electric load.

The Climate Solutions Plan advances the grid as a "platform," where Pepco is the "connector" to provide programs and opportunities for customers and communities to access and enable climate solutions equitably, inclusively, and affordably, while driving innovation and building resilience. Taken as a whole, the Climate Solutions Plan firmly establishes four major portfolios in which the Company proposes to offer specific programs to address climate change and maps those portfolios to District policy to derive a decarbonization plan rooted in the District's electrification vision, which Pepco's previously filed Electrification study supports. The Electrification Study Pepco filed on August 27, 2021 in Formal Case No. 1167 shows that electrification on the scale proposed in District policy is achievable and is projected to lead to peak load growth that is below what Pepco has experienced historically.[5] The Climate Solutions Plan and the Electrification Study are foundational documents, upon which Pepco planned and designed its customer and community programs included in this filing—the 5-Year Action Plan.

In response to Order No. 20754, Pepco presents its 5-Year Action Plan as a tangible, actionable list of portfolios, initiatives, and programs that build upon the core concepts, guiding principles, and portfolios established in the Climate Solutions Plan filed on July 20, 2021 and focuses on the near-term actions necessary to achieve District climate and clean energy goals. The 5-Year Action Plan will drive the District forward in a manner that ensures all residents have access to and benefit from the clean energy solutions that will accelerate decarbonization. The plan leverages the guidelines that the Company laid out in the Climate Solutions Plan to ensure each portfolio is balanced, accessible and equitable to customers.

[5] Available at: https://edocket.dcpsc.org/apis/api/Filing/download?attachId=140553&guidFileName=1211ecc8-254d-4fc1-9143-10c8442e3fbc.pdf

1.1 Background: Climate Solutions Plan

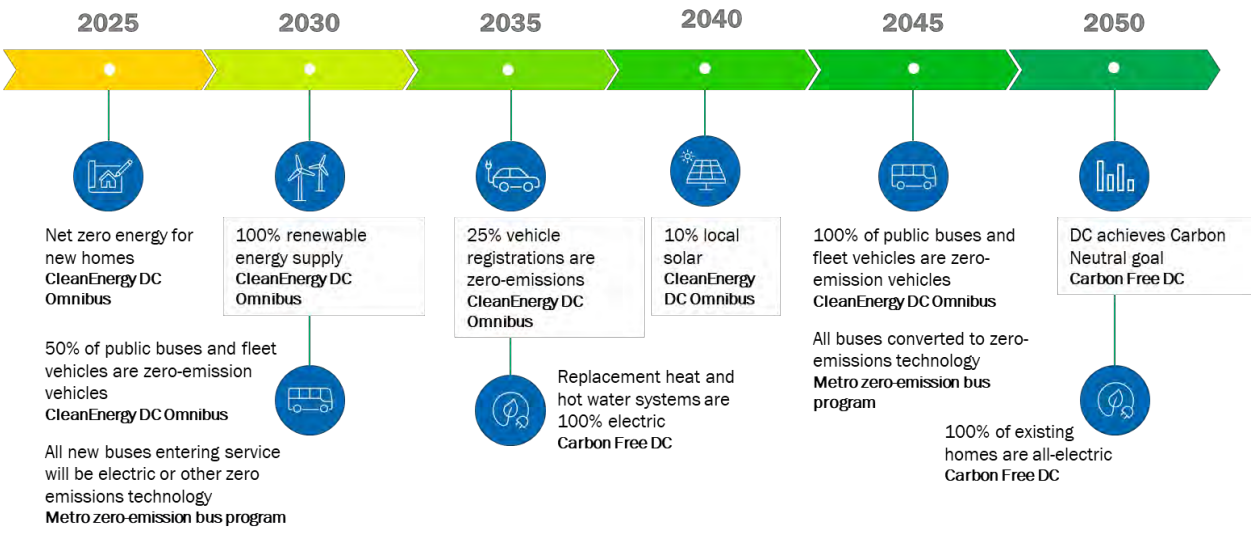
Pepco developed the portfolios included in Pepco's Climate Solutions Plan with the objective of supporting the District's goal to achieve carbon neutrality by 2050 as well as other climate and clean energy policies.[6] These policies—as established in, for example, the CleanEnergy DC, Carbon Free DC and Sustainable DC 2.0—define a series of actionable goals that the Company is well positioned to help achieve through a series of investments targeting key sectors, including energy supply, buildings, and transportation.

Pepco's Climate Solutions Plan, at a high level, is an efficiency- and electrification-based approach to decarbonization in the District; an approach that is firmly established in District policy and leverages an electricity supply that will be increasingly clean, due to the shift away from fossil fuels and to renewable energy. As outlined in established District's policy, this shift to clean energy will require investment to make the electric grid smarter and stronger and a diverse portfolio of actions and programs to equitably, inclusively and affordably meet the District's climate and clean energy goals. In the increasingly electrified future that the District envisions, the move away from fossil-fired generation—namely coal and natural gas—as an electricity source to 100% renewable energy will occur by 2032, and it is this decarbonized electricity that will be used to efficiently power as much of the District's economy as possible, as quickly as possible. This shift will result in higher rates of utilization of the underlying electric system and require the system to become more flexible, dynamic and resilient over time.

In this increasingly electrified future, the electric grid in the District will play a vital role in connecting and optimizing the value of various clean energy and end-use technologies across multiple sectors, while maintaining very high levels of reliability and resilience.

In this increasingly electrified future, the electric grid in the District will play a vital role in connecting and optimizing the value of various clean energy and end-use technologies across multiple sectors, while maintaining very high levels of reliability and resilience. The programs and initiatives proposed in Pepco's 5-Year Action Plan will, therefore, play an important role in enabling customer adoption of energy efficient and clean energy technologies: activating third parties, innovators and entrepreneurs; removing barriers to broad electrification and making electrification equitable and affordable; and supporting continued investment into the distribution system to make the grid smarter, stronger, and cleaner, while maintaining top-quartile reliability performance into the future.

[6] For example, the Climate Solutions Plan supports policies related to energy efficiency, transportation electrification, and renewable energy, as established in the CleanEnergy DC Act, and other documents and roadmaps published by the District government.

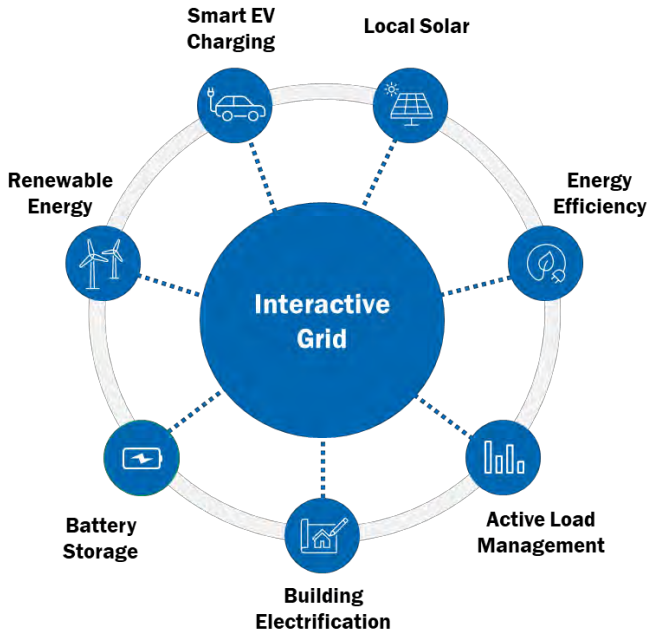


Key District Climate and Clean Energy Goals

Achieving the District's leading decarbonization goals will require coordination and collaboration across multiple stakeholders, including District and regional agencies and transit organizations, non-profit and community-based partners, individual customers, building owners and operators, innovators, academic institutions, workforce development organizations and agencies, and businesses, including Pepco. These partnerships will be essential to ensure interrelated initiatives across individuals, organizations and sectors are aligned and mutually supportive. In addition, through the 5-Year Action Plan, the programs have the ability to contribute to local job creation and economic development. Therefore, Pepco has and will continue to meet with customers, stakeholders and organizations across the District and nationally, through both virtual and in-person engagements, to align the Climate Solution Plan offerings with evolving decarbonization needs and strategies for our customers and communities and to identify best practices from around the country to gain important insights from existing programs and initiatives being implemented elsewhere.

As the only electric distribution utility serving District customers, the Company recognizes and embraces its responsibility to support the District's decarbonization and clean energy goals as well as its unique position to advance an efficient, electrification-based approach to achieving net-zero carbon emissions by 2050. Pepco is prepared to deliver on the District's vision of decarbonization by readying the grid and advancing programs that enable the connection and balancing of local DER and local loads to enhance resiliency, expand and maximize renewable energy use and make the most efficient use of infrastructure investments through an active platform model, or Interactive Grid. While this Interactive Grid model creates a more flexible and responsive model, Pepco will continue to ensure reliable service in the face of climate impacts and more extreme weather. The Climate Solutions Plan—and this 5-Year Action Plan, specifically—includes programs to advance a range of interactive smart devices and DER programs as well as operational enhancements to

effectuate this Interactive Grid. In this way, Pepco will serve as a connector for existing and future grid-edge technologies to optimize their value for both customers and the system as a whole.



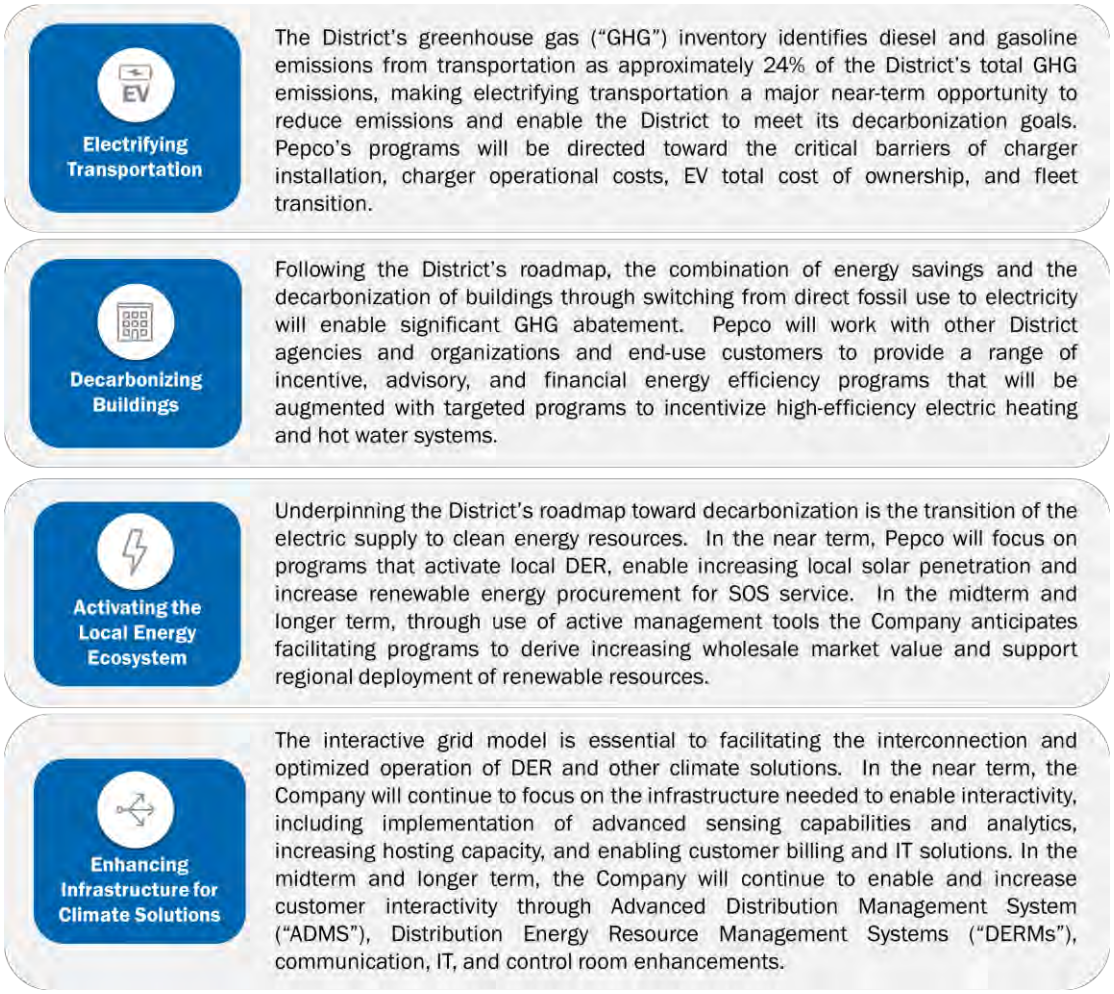
An interactive grid model serves as a "connector" that creates a holistic system to optimize both the value of these resources for customers and for operations at the edges of the grid to maximize benefits and improve the business case for climate solutions.

This enhanced functionality of an Interactive Grid will be needed to reliably meet the needs of an increasingly distributed electric supply that is more heavily weighted toward intermittent, renewable resources and to manage the need for new supportive infrastructure that will arise due to electrification. As this Interactive Grid evolves, Pepco will be able to enhance resilience and reliability for customers through reconfiguration of the system and matching available DER output with demand. Enabling an Interactive Grid will require the continued investment in and use of sophisticated modeling and forecasting tools, real-time communications and energy management systems, and grid-focused technologies to make it more automated, reduce latency, and enhance physical and cyber security, among other aspects.

1.2 Climate Solutions Plan Portfolios and Guiding Principles

As the Company described in its previously filed Climate Solutions Plan, Pepco envisions programs in four portfolios developed to achieve the District's specific goals. The portfolios targeting these four market segments are: (1) Electrifying Transportation, (2) Decarbonizing Buildings, (3) Activating the Local Energy Ecosystem, and (4) Enhancing Infrastructure for Climate Solutions. These portfolios, summarized below and in subsequent sections of the report, leverage the electric distribution grid and Pepco's role in equitably, inclusively and reliably operating, maintaining and readying the grid to holistically support the District's

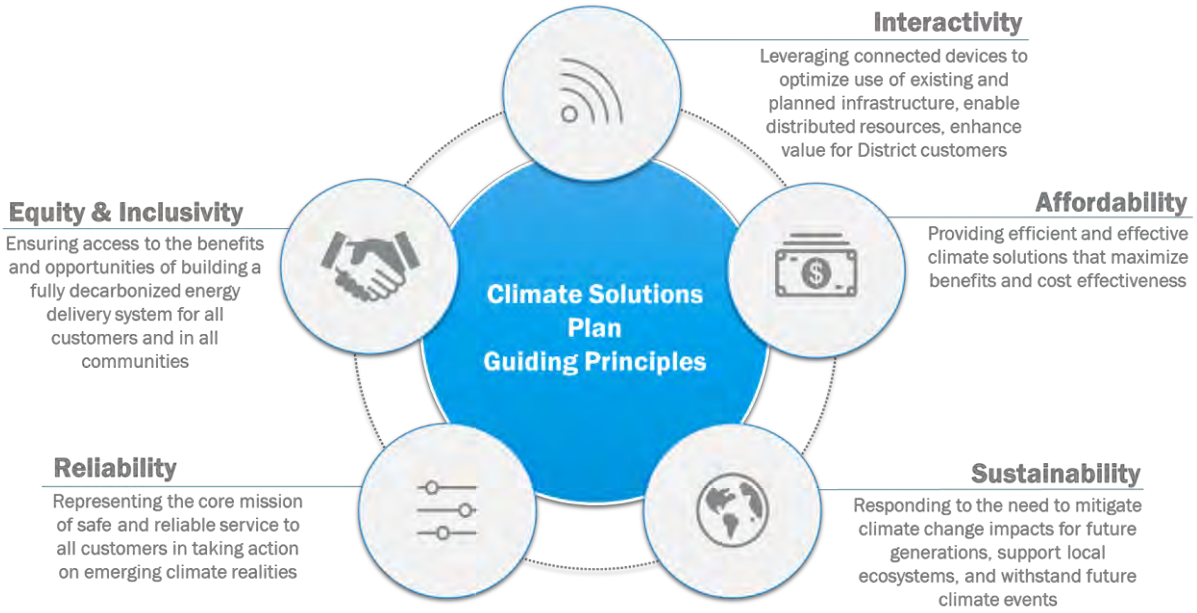
decarbonization and broader clean energy and resilience goals. The portfolios build on the Company's core role and competencies as a "wires-only" utility that does not own electric generation resources to enable emission reductions.



Within each of these portfolios, Pepco will implement and advance initiatives and programs over the next five years and beyond as it responds to the Commission's directive in Formal Case No. 1167, including programs the Commission previously authorized Pepco to implement and others that are currently pending before the Commission. To inform its program designs and provide a foundation for its actions, Pepco established five guiding principles that underpin its Climate Solutions Plan. These guiding principles are directly reflective of Commission guidance for utility programs in the PowerPath DC Revised Vision Statement ("Revised Vision Statement")[7] as well as the District's policy, as articulated in the

[7] *In the Matter of the Investigation into Modernizing the Energy Delivery System for Increased Sustainability,* Formal Case No. 1130, Order No. 20364 at ¶¶ 31, 98 and Appendix C (Jun. 5, 2020)

Clean Energy DC Action Plan,[8] Climate Ready DC,[9] and statutory guidelines. This alignment ensures that Pepco's programs for customers and communities will reinforce the District's vision directly. Building on this guidance and others, Pepco selected the following five core principles that will drive and inspire Pepco's Climate Solutions Plan's portfolio development: Sustainability, Equity & Inclusion, Interactivity, Reliability and Affordability.



Together, these principles support the vision that District stakeholders have described: a thriving community and energy ecosystem with equitable access to clean resources and funding to deploy strategies to produce, deliver, and use clean, decarbonized electricity. While Pepco's 5-Year Action Plan will reflect these core principles, a specific proposed offering may contribute to one principle more than others, and it is Pepco's overall goal to ensure balance across portfolios to advance all five principles through all portfolio programs in aggregate.

In addition, Pepco will factor supporting elements for these programs, such as workforce development and building capacity for and providing opportunities to local and diverse suppliers and businesses, into the 5-Year Action Plan implementation. For example, as the District transitions to greater levels of transportation electrification, there will be an increasing need for trained and qualified individuals to maintain these electric vehicles and buses. Similarly, as the District Department of Energy and Environment ("DOEE") implements the Building Energy Performance Standards, the need for trained and qualified individuals to install, operate and maintain new building energy management systems will grow significantly,

[8] *Clean Energy DC: The District of Columbia Climate and Energy Action Plan* (August 2018) at 3, 166.
[9] *Climate Ready DC: The District of Columbia's Plan to Adapt to a Changing Climate*, found at https://sustainable.dc.gov/climateready.

as well as the businesses to provide these services. Finally, as Pepco builds the infrastructure to support the additional electric load and increasing amounts of local solar on the system, there will be an increased need for trained and qualified individuals to construct and maintain the electric grid, such as the more than 105 District residents that have graduated from the DC Infrastructure Academy to date and received job offers with Pepco and its local contractors that support projects such as DC PLUG and Capital Grid, among others. The Company's future applications for these programs will identify and address these important elements to the successful implementation of programs.

1.3 Commission Directives and Basis for 5-Year Action Plan

The Commission has deliberately advanced proceedings that help the District achieve its landmark decarbonization goals, creating policy foundations that support longer-term plans for establishing a sustainable, interactive grid. These include the overarching vision and pathway established in the landmark PowerPath DC (Formal Case No. 1130) as well as transportation electrification (Formal Case No. 1155) and energy efficiency (Formal Case No. 1160) dockets. The order in this proceeding, Formal Case No. 1167, directed Pepco "to consider the potential application of utility-sponsored DER, including, but not limited to, energy efficiency, demand response, and energy storage programs."[10] The Commission recognized that some of these programs were already before the Commission in such dockets as Formal Case No. 1160.[11] The Commission was also clear that Pepco should identify in this 5-Year Action Plan the dockets in which the proposed programs and initiatives will be or have been filed.[12] Pepco's intention in this filing is not to duplicate program offerings but, rather, advance a holistic view of the totality of programs the Company believes will provide for a

The 5-Year Action Plan will enable a distribution system that is sustainable and well-planned, encourages and enables greater levels of DER deployment and penetration, and preserves the Pepco's ability to safely, reliably, affordably, and securely operate the electric distribution system for the benefit of all customers and communities in the District.

[10] Order No. 20754 at ¶48.
[11] *Id.*
[12] *Id.*

robust set of climate solutions to meet the varied needs of all its customers and communities equitably, inclusively, and affordably.

In response to Order No. 20754, the 5-Year Action Plan includes a variety of programs that follow guidance directly from District agencies, such as long-term Power Purchase Agreements ("PPAs") for renewable generation and third party-owned and utility-owned DER solutions. For all programs, Pepco looked first to programs that are currently in flight in existing dockets, next to opportunities to expand existing programs, and then lastly to creating programs that are new to the District but have precedent in other jurisdictions. Reflecting the Revised Vision Statement,[13] this 5-Year Action Plan will enable a distribution system that is sustainable and well-planned, encourages and enables greater levels of DER deployment and penetration and preserves the utility's ability to safely, reliably, affordably, and securely operate the electric distribution system for the benefit of all customers and communities in the District of Columbia. The plan enhances the Company's ability to provide service in an interactive and non-discriminatory manner, while preserving the Company's financial health, allowing it to continue to make necessary investments to meet the climate challenge.

1.4 Pepco Cost Recovery Considerations for Climate Solutions Programs

The programs in the 5-Year Action Plan require strategic utility investment to enable decarbonization and the deployment of clean DERs. Such new technology and interactive grid-enabling investment requires full and current cost recovery to ensure timely implementation—whether through a multiyear rate plan ("MYP"), a surcharge or regulatory asset treatment.[14] Timely recovery of these investments will enable Pepco to implement the Climate Solutions Plan programs at the level and pace required to fully support and advance the District's leading climate goals. Formal Case No. 1167 provides a path for Pepco to propose programs to support the District in achieving its landmark goals and a path for the Commission to provide necessary regulatory certainty once formal program applications are filed, similar to other programs such as those in Formal Case No. 1155 and Formal Case No. 1160. In Formal Case No. 1167, the Commission can approve proposed programs and associated cost-recovery mechanisms required to implement those programs after receiving comment from interested parties.

Regulatory certainty avoids ambiguity for customers and the utility regarding the programs that the utility will be able to offer and how and when those programs will appear on customers' bills (e.g., surcharge versus distribution rate through the MYP). The Commission

[13] Order No. 20364 at Appendix C.

[14] *See, e.g.,* D.C. Law 22-257 §201(g)(6) ("the Commission is authorized to approve an application by the electric company or gas company of energy efficiency and demand reduction program for their respective customers, including a multi-year program and cost recovery mechanisms to provide full and current cost recovery, including mechanisms to provide for a return on investment on capital and related costs, performance incentives, and surcharge mechanisms to be adjusted on at least an annual basis as approved by the Commission").

has provided this regulatory certainty previously for applications of programs that benefit customers and that support the District's decarbonization and clean energy goals. In Formal Case No. 1155, the Commission approved electrification transportation offerings and, at the same time, provided regulatory asset treatment for the make-ready programs and associated implementation and administrative costs.[15] In addition, in Formal Case No. 1160, the Commission approved the use of a surcharge to recover the costs of the energy efficiency programs that are currently pending before it.[16] Pepco recognizes that it can only implement or offer the proposed programs included in this 5-Year Action Plan after submitting an application for Commission authorization and approval and presenting the necessary information regarding the benefits and costs of these proposed programs and portfolios. When Pepco applies for specific approval to implement programs, it will also specify which type of cost recovery it believes would be appropriate for each program and seek approval of the cost-recovery mechanism at that time.

Pepco also recognizes that there may be opportunities to offset program costs, including through existing federal grants, as well as potential funding that could be made available from the infrastructure and reconciliation bills now pending before Congress and will work with the District government and other stakeholders to identify and leverage these potential funds. Finally, Pepco also recognizes that there are existing programs to help manage costs for income-eligible customers, through programs like the Residential Aid Discount program, which offsets all distribution energy charges and certain other distribution charges on an eligible customer's bill as well as the Senior and Disabled Rate Discount program, which provides $7.50 discount on the distribution portion of an eligible customer's bill.

1.5 Stakeholder Outreach Guides 5-Year Action Plan Programs

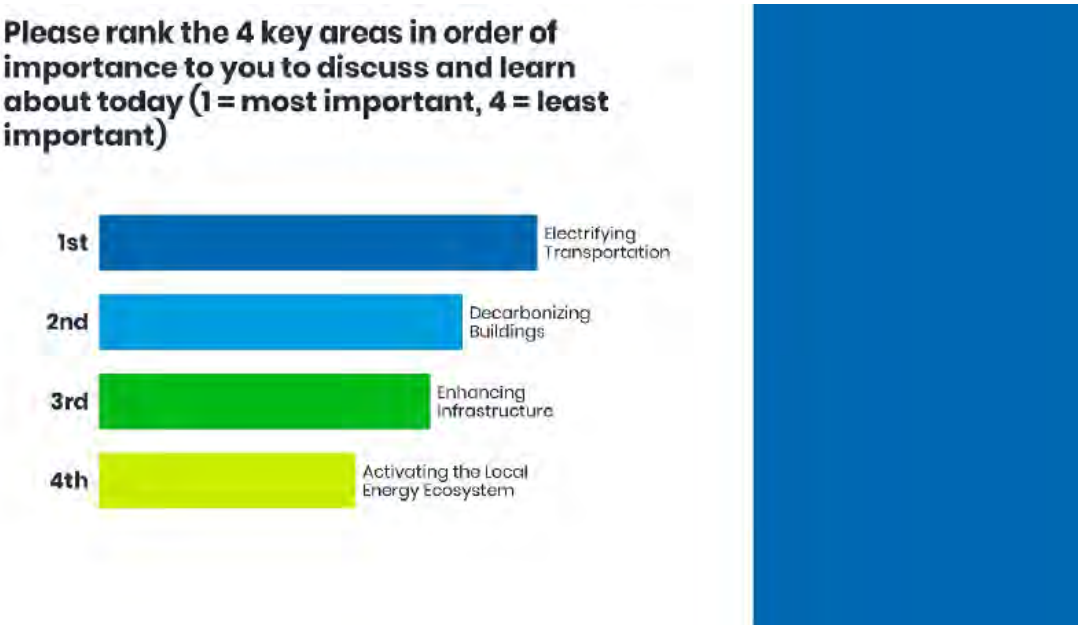
Achieving the District's leading climate goals, including achieving net zero emissions by 2050, will require the expertise of non-profit, public and private organizations and government agencies across the District and beyond. Pepco has worked to seek this expertise and align the 5-Year Action Plan's proposed programs with input received through direct engagement with dozens of stakeholders. Pepco will continue to engage with stakeholders across the District and in other jurisdictions for the remaining filings in this proceeding and prior to filing the Company's applications, as the Company recognizes that the initiatives and programs

[15] Formal Case No. 1155, Order No. 19898 at ¶58 ("The Commission approves establishment of a regulatory asset to track EV expenditures for the make-ready investments related to the approved offerings and for the coordination/management expenses such as billing, customer enrollment and outreach, program management, system interface and updates, analysis and reporting. The regulatory asset shall accrue a pre-tax rate of return at Pepco's authorized rate of return approved by the Commission in the most recent base rate case.")

[16] Formal Case No. 1160, Order No. 20654 at ¶78 ("Also, the Commission is persuaded that the Working Group's proposal to use a surcharge for cost recovery for EEDR programs which will allow the utilities to be able to recover the costs of the programs is reasonable.").

proposed must meet the needs and expectations of the customers and communities Pepco serves.

Following the filing of its Climate Solutions Plan on July 20, 2021 and Electrification Study on August 27, 2021, the Company held a stakeholder webinar to walk through these filings and gather feedback. A breadth of stakeholders representing 16 organizations attended the webinar, with the 80 participants that registered receiving a recording of the webinar. During the webinar, Pepco asked participants to vote in various polls about priorities and provide feedback on elements of the Climate Solutions Plan. The figure below shows the results of feedback from stakeholders about how they prioritize the four Climate Solutions Plan portfolios.



While this is a limited sample size, the takeaway was that stakeholders expressed a strong interest in ensuring that customers, from residential to fleets, have access to electric vehicle ("EV") charging infrastructure and innovative EV rate designs as well as support for District goals to reduce energy usage and increase electrification of building heating loads. This feedback, combined with additional outreach to stakeholders—including the District of Columbia Commission on Climate Change and Resiliency, DOEE, the District Department of Transportation ("DDOT"), the DC Sustainable Energy Utility ("DCSEU"), the Washington Metropolitan Area Transit Authority ("Metro"), numerous environmental groups, affordable housing organizations, and renewable, energy efficiency and charging company providers, among others—was incorporated into the program offerings included in the 5-Year Action Plan. Finally, Pepco will conduct further evaluation and seek additional stakeholder feedback on the programs included in this document, which may impact program criteria and design to support a future application.

To engage the specific topic of transportation electrification, the Company along with MJ Bradley & Associates, brought together a wide range of auto manufacturers, charging service providers, environmental groups, non-profit organizations, and District government entities to discuss challenges and solutions for this segment. This collaborative held regular sessions in 2021 to establish key actions and recommendations to District policymakers to boost EV adoption. Pepco's plan reflects concepts discussed in that forum, as stakeholders continue to hold meetings to continue to inform Pepco's approach and future District policy.

As Pepco shifts focus from planning to implementation, a robust communication, education and outreach strategy will be important to successfully deploy the Climate Solutions Plan programs and realize the District's vision. Pepco's role as the connector, as proposed in the Climate Solutions Plan, is to provide incentives for customers and third parties to deploy cleaner, more efficient and electric-based technologies, and adoption of those technologies by customers is tantamount to several programs' success. Pepco will rely, leverage, empower and seek guidance from communities, businesses, organizations and other District stakeholders to inform and execute the communications and outreach strategy. This continued partnership between Pepco and District stakeholders will contribute greatly to the success of the Climate Solutions Plan programs.

2. Climate Solutions Plan 5-Year Action Plan Structure

Pepco's Climate Solutions Plan—a portfolio of make-ready work, customer-focused programs and incentives, and distribution system investments enabling an interactive and resilient grid—will assist the District government in achieving its vision for climate change mitigation and adaptation. This 5-Year Action Plan presents a near-term suite of specific programs to activate Pepco's propose Climate Solutions Plan. The 5-Year Action Plan responds to evolving District policy and priorities, new technology that enables new customer and infrastructure solutions to advance decarbonization, and Commission guidance and prioritization.

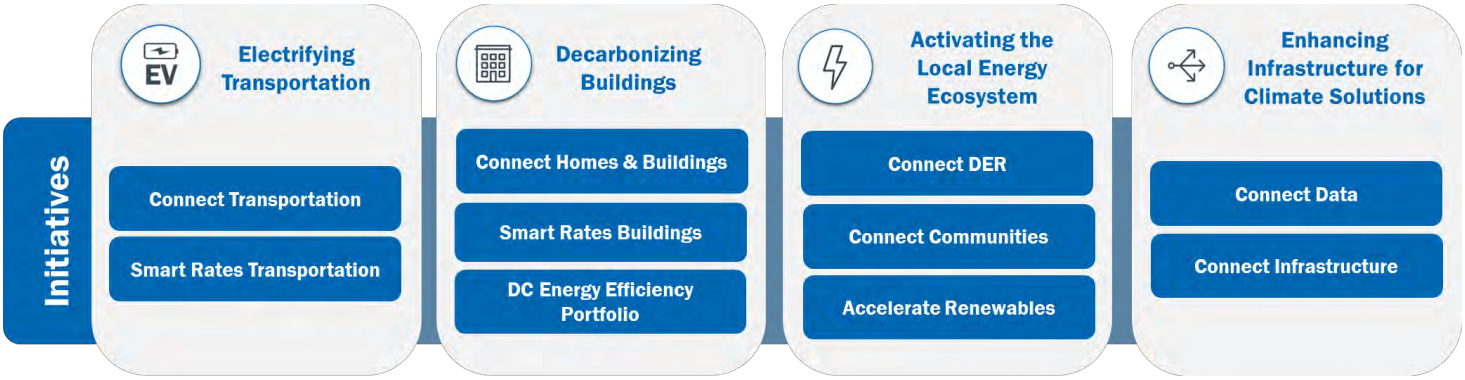
2.1 5-Year Action Plan Organization

In this section, the Company reviews the organization of the remainder of this document and how the portfolios, initiatives and proposed programs align and work together.

Starting at the highest level, as established in the Climate Solutions Plan, the Company presents four portfolios. These portfolios represent consistent and continuous areas of utility programs and investments over the 30-year horizon of climate solutions. The portfolios are those areas that require focus to achieve the deep decarbonization necessary to achieve the District's climate change and associated clean energy goals. Within those portfolios, the Company advances ten initiatives. Each "initiative" includes groupings of "programs" that are connected to one or more specific end goals, target multiple customer groups, and have similar associated utility action. It is at the program level that the Company puts forward individual program parameters, such as customer eligibility, scale, and technology criteria.

For example, the Electrifying Transportation Portfolio contains two initiatives: **Connect Transportation** and **Smart Rates Transportation**. Each of those initiatives has multiple

programs to support the intent of each initiative. The **Connect Transportation** initiative supports investments in infrastructure across all sectors of the District's transportation system. As a result, it contains multiple programs for residential, commercial, fleet, and public transportation, and the utility action is focused on make-ready work in support of the District's goal to enable broad-scale transportation electrification, including goals established in the DC Clean Energy Omnibus Act and Electric Vehicle Readiness Amendment Act of 2020, among other polices. The **Smart Rates Transportation** initiative is proposed to provide rate designs specific to supporting the business case for charging vehicles; therefore, it has multiple programs to effectuate that goal in customer rate offerings. Pepco's 5-Year Action Plan initiatives are displayed below:



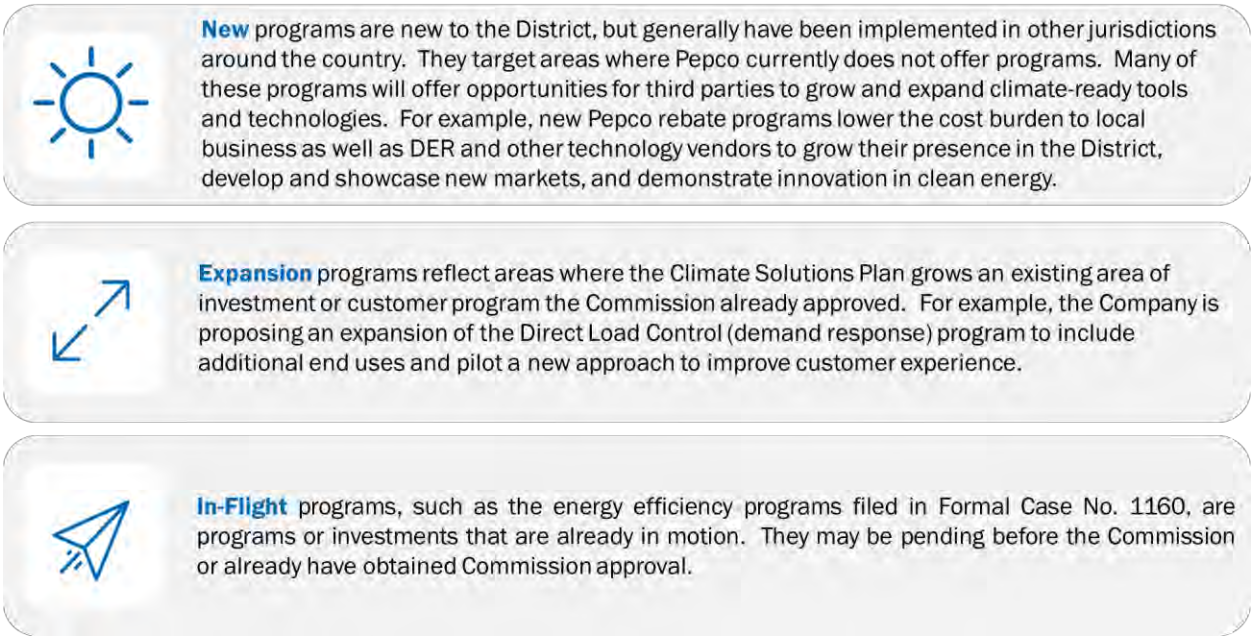
The initiatives within and across portfolios create synergies to amplify the impact of the Company's proposed programs. For example, innovative rate design initiatives enhance the value of make-ready programs in the electrifying transportation portfolio by helping to manage peak system load. As indicated above, the initiatives also work together across portfolios, such as the initiatives in the Enhancing Infrastructure for Climate Solutions portfolio that directly support the development of an interactive grid that can balance local DERs and local loads enabled in the Activating the Local Energy Ecosystem portfolio. Together these initiatives are envisioned to enhance resiliency, maximize renewable energy use, and make the most efficient use of infrastructure investments through an active grid platform model.

At the program level, each initiative in the 5-Year Action Plan is comprised of "New," "Expansion," and "In-flight" programs that the Company anticipates undertaking or beginning within the next five years.

New programs represent new areas of investment

Expansion programs build on existing programs

In-Flight programs are in motion



2.2 Guide to Reading the 5-Year Action Plan

Pepco has dedicated the majority of this 5-Year Action Plan, Sections 3-6, to the description of programs for Pepco's Climate Solutions Plan, which can launch within the next five years. There are two main themes that readers will notice throughout each portfolio 1) 'Connect' initiatives with programs that are customer-facing and in which Pepco's role is to connect the customer to those carbon-reducing technologies; and 2) 'Smart Rates' initiatives that allow customers to optimize charging and/or incentivize the use of electricity during off-peak hours. In addition, there are two one-off initiatives that are unique to the portfolios; one in Decarbonizing Buildings, and one in Activating the Local Energy Ecosystem.

At the start of each portfolio, the 5-Year Action plan will 1) describe how the topic is beneficial in reducing GHG emissions, 2) identify the District goals that the portfolio of programs addresses, 3) describe Pepco's role as well as the role of other key stakeholders in activating the change required to meet District goals, and 4) provide a description of the initiatives included in the portfolio. The program descriptions do not include an accounting of the greenhouse gas savings associated with each program. The associated savings, as well as portfolio cost, will be included in the Company's January 31, 2022 filing as part of the benefit cost analysis presented at that time. Also, importantly, as noted in Pepco's Climate Solutions Plan, each portfolio is designed to incorporate the guiding principles in a balanced manner. Pepco discusses each guiding principle and how different elements of the programs in the portfolio are designed in accordance with the guiding principle.

Pepco's 5-Year Action Plan initiatives were developed thematically to group programs. For example, programs proposed under **Connect Transportation** will provide rebates for the necessary infrastructure to help connect Pepco customers to multiple forms of electric-based transportation, helping to maximize the clean benefits of EVs by promoting their use in all parts of the District. Each initiative will provide an overview of the programs contained in that initiative, totaling between two and nine programs. Finally, each program will include a narrative describing how the program contributes to the District's decarbonization goals as well as a summary table that includes details on 1) the program's design and sizing, 2) which customers are eligible to participate in the program, 3) precedent for the program, and 4) how the program aligns with the District's specific decarbonization goals.

3. Electrifying Transportation Portfolio

By 2032, the District projects that more than 900,000 residents and up to 720,000 additional incoming daily commuters will travel into and around the District using diverse modes of transportation—from public buses to electric taxis.[17] A hub for national security, a business center for hundreds of leading companies, an international tourist destination, and home to hundreds of thousands of people from diverse backgrounds and socio-economic means, the District's decarbonized transportation system must support a wide range of needs and services.

Transportation emissions from diesel- and gasoline-powered vehicles made up approximately 22% of the District's total GHG emissions in 2019.[18] In addition, the transportation sector is a significant source of local air pollution: 95% of carbon monoxide; 69% of NOx; 54% of SO_2; and 34% of VOCs across the District in 2017 came from vehicles.[19] At the same time, automakers are introducing more EV options across segments to meet a wide range of

[17] Sustainable DC 2.0 at 9, 117. Available at https://sustainable.dc.gov/sdc2.
[18] Greenhouse Gas Inventories | ddoe (dc.gov), accessed July 18, 2021. This figure represents the percentage of emissions attributed to diesel and gasoline use for transportation. Total transportation emissions represented 24% of total GHG emissions in 2019.
[19] U.S. Environmental Protection Agency, 2017 National Emissions Inventory (NEI) Data, accessed September 2021. Available at https://www.epa.gov/air-emissions-inventories/2017-national-emissions-inventory-nei-data#dataq

customer needs. The total cost of ownership for those vehicles is becoming more competitive with the gasoline-powered fleet over time, with some manufacturers offering only electric models in their lineups by 2030.[20] Electrification of this sector is, therefore, a major near-term opportunity to reduce emissions and enable the District to meet its decarbonization and broader public health goals.[21]

The District has set leading transportation goals, calling for 50% of public buses and fleet vehicles and 25% of light-duty vehicle registrations to be zero-emission by 2030 and 100% of those vehicles to be zero-emission by 2045.[22] Metro has also set in motion plans to transition to a zero-emission fleet, with all new buses going electric or zero-emission by 2030.[23] To meet the District's transportation goals, District agencies as well as transportation and infrastructure organizations, including Pepco, will need to coordinate to meet decarbonization goals and activate significant emissions reductions across public and private modes of transportation.

Pepco's Programs Activate Change and Advance Guiding Principles

With a focus on electrification of transportation, Pepco's programs will be directed toward addressing the critical barriers to accelerating the adoption of various modes of electrified transportation, including EV charger installation, EV charging rate design, and large-scale fleet transition. Pepco's proposed programs are focused on lowering or removing barriers to EV charger deployment and services by providing financial, technical, and educational resources to customers across the transportation sector and are designed to smooth the transition for customers to increase electrification and adoption of EVs and other modes of transportation.

Many of the transportation electrification programs proposed in this 5-Year Action Plan significantly expand on Commission-approved programs that enable the District to meet its near-term transportation goals. In 2019, Pepco received approval from the Commission in Formal Case No. 1155 to implement a combined $4.78 million portfolio of EV offerings, including make-ready infrastructure deployment[24] to support electric taxi and rideshare deployment, publicly accessible chargers, and depot and on-route charging for electric buses.

To scale the EV market, Pepco will seek to expand on these existing programs, providing critical incentives to offset charger installation costs across EV charging segments as well as expand offerings to address other key barriers in the EV and charging ecosystem. Additionally,

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[20] https://www.media.volvocars.com/us/en-us/media/pressreleases/277409/volvo-cars-to-be-fully-electric-by-2030

[21] Pepco notes that EV use is also associated with several air quality-related benefits, including ozone and particulate matter reduction.

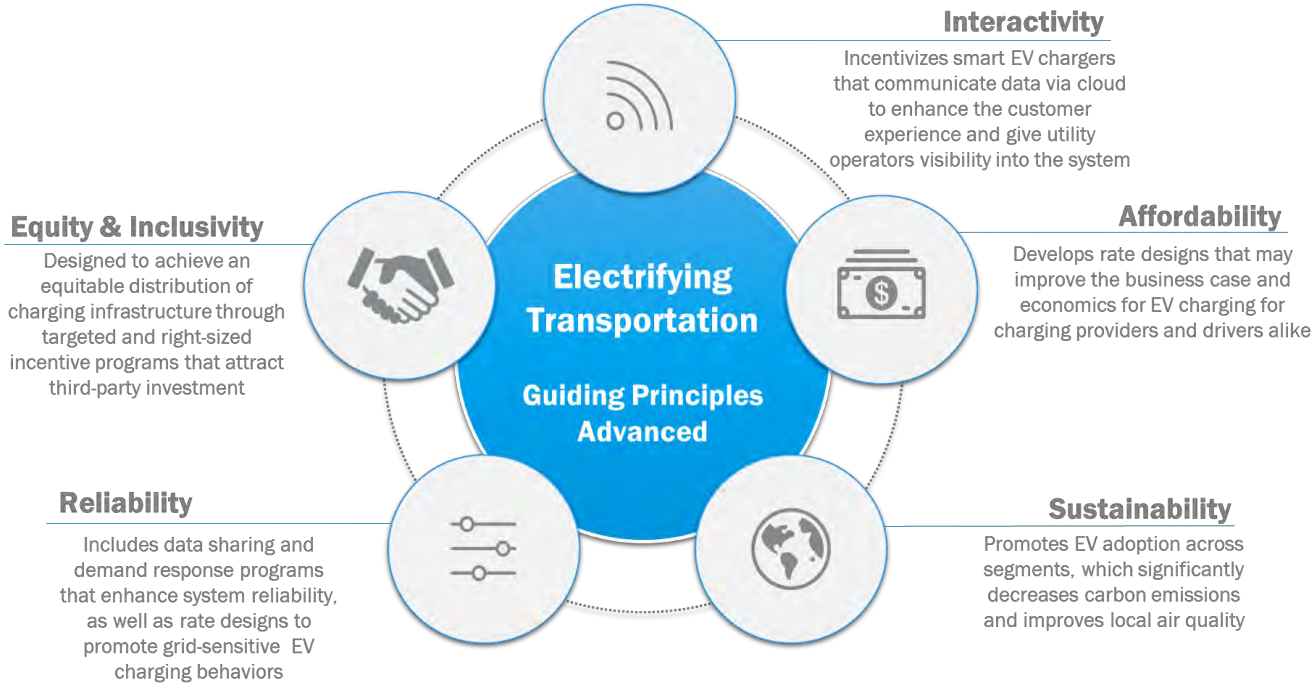
[22] https://www.wmata.com/about/news/Zero-Emission-Bus-Fleet.cfm

[23] *Id.*

[24] Make-ready is defined as the pre-wiring of electrical infrastructure at a parking space, or set of parking spaces, to facilitate easy and cost-efficient future installation of Electric Vehicle Service Equipment.

advancing these programs will require collaboration with multiple stakeholders and agencies, including business and building owners, EV charging companies, parking garage or lot owners and operators, Metro, DOEE and other District government agencies, such as DDOT and DC Circulator, permitting and land use agencies, the Department of Consumer and Regulatory Affairs ("DCRA"), Department of Motor Vehicles, and the DC Taxicab Commission, among others.

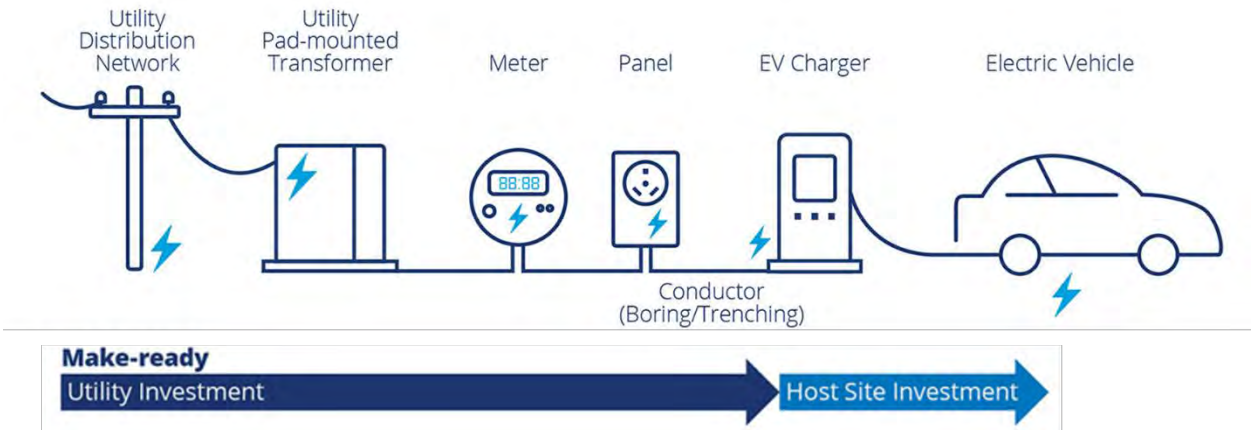
Taken as a whole, Pepco's Electrifying Transportation initiatives are designed to advance all of the guiding principles of the Climate Solutions Plan, with particular emphasis on the principles of equity and inclusivity and affordability. To advance equity and inclusivity, Pepco's programs are designed to offer incentives with levels scaled to attract charging deployments to under-resourced areas, where charging deployment is needed. In addressing affordability, Pepco proposes rate design offerings to improve the economics of charging for charging service providers and residents, which in turn improves the total cost of ownership of EVs.



Initiatives Support Diverse Customer Needs

The transportation electrification initiatives proposed in this 5-Year Action Plan support a diversity of customer needs and accelerate the District's efforts toward an advanced, decarbonized transportation system. Transportation sectors, including residential, fleet, and public transit, broadly face two categories of barriers to transitioning: 1) the cost to install charging stations and their availability in strategic locations; and 2) rate structures developed to reflect and optimize evolving EV charging patterns.

The first initiative Pepco proposes, **Connect Transportation,** will ensure that make-ready charging infrastructure will support transportation sectors across the District. As the only electric distribution company in the District, Pepco can support the development of electric infrastructure and equipment extending to a charging station pad, also referred to as make-ready infrastructure, necessary to support the deployment of charging infrastructure.



Source: MJ Bradley, 2019

Under the **Connect Transportation** programs, Pepco would provide incentives to offset the costs of the make-ready improvements, providing charging owners and operators lower costs of installation. These programs build on approved programs and concepts in Formal Case No. 1155. These make-ready incentives would enable customers to perform the work and then apply for a rebate for a portion of the cost. As make-ready is a common cost center among all vehicle charging segments, Pepco's programs expand to cover several modes of transportation and locations, including public and dedicated-use chargers, residential and commercial vehicles as well as light- and heavy-duty fleet vehicles. In addition, make-ready utility investment models have been approved and successfully employed throughout the nation and in a diversity of jurisdictions and service territories. Importantly, these offerings strategically address key market areas where additional charging infrastructure can have a meaningful impact on EV adoption and utilization. Advancing these programs will require collaboration with multiple stakeholders and agencies, including business and building owners, EV charging companies, parking garage/lot owners and operators Metro, DOEE and other District government agencies, including permitting and land use agencies, such as DDOT and DC Circulator, DCRA, and the DC Taxicab Commission, among others.

Second, the **Smart Rates Transportation** initiative programs will help ensure that as vehicles across the District electrify, owners and operators of those vehicles are able to optimize charging and save money through lower fueling costs. These programs will encourage off-peak charging and mitigate the impacts of demand charges and other distribution costs.

3.1 Connect Transportation Initiative

Connect Transportation Initiative

Make-ready across every segment – at home and around town

- Key Corridors Charging
- Residential Charging
- Multi-Unit Dwelling Charging
- EV-Ready System Design and Engineering
- Vehicle-to-Grid Demonstration
- Food Truck Service Electrification
- Destination Charging
- Rideshare & Taxi Charging Hubs
- Transit Bus Charging

The programs proposed under **Connect Transportation Initiative** will provide rebates for the necessary infrastructure to help connect Pepco customers to multiple forms of electric-based transportation. Reducing the cost of make-ready to charging stations will provide opportunities for a variety of stakeholders to benefit from the proliferation of EVs—including customers, charging station owners and operators, and charging service providers. The programs are designed to address a broad range of vehicles and their diverse infrastructure needs. Together, these programs will help maximize the clean benefits of EVs by promoting the use of EVs in all parts of the District—on the way to work, at home and on public transit or ridesharing. The broad array of incentives positively affects customers that depend on different forms of mobility, supporting affordability and equity. Finally, EVs have demonstrated an ability to be an asset to the utility distribution system. To better understand various EV use cases and the correlated impacts on /benefits to the distribution grid, all charging stations receiving an incentive will have smart charging features. These smart chargers will collect and provide detailed insights into the charging behavior of customers (e.g., when chargers are plugged in, the hours in which charging occurs, and when chargers are unplugged), which will improve the customer experience during charging and allow Pepco to gain visibility into charging patterns and loads. These data requirements enable the Company to collect data on charging behavior to inform future transportation electrification focused program offerings, especially those related to rate design.

3.1.1 Key Corridors Charging Program

Public DC fast charging ("DCFC") availability is a central consideration of EV drivers, especially those who may not have dedicated parking with charging onsite, convenient destination charging, or typically commute longer distances. According to the US Department of Transportation, the District has only 19 public DCFC ports at six locations. Given the unique characteristics of the District as a high-density residential urban center with a large commuting population, District residents and commuters need easy access to DCFC for quick refueling at strategic locations in all Wards. Facilitating the installation of new EV charging stations along key corridors will help focus investment in potential high-demand, high-utilization areas while increasing public visibility and encouraging greater adoption of EVs. These charging stations must be available to District residents, visitors, and commuters as well as rideshare or other EV operators who travel these high-traffic routes.

This program will provide make-ready rebate incentives for publicly available smart DCFC charging ports throughout heavily trafficked corridors in Pepco DC's service territory and additional incentives if near a multi-unit dwelling ("MUD"). For ports located in these high-utilization corridors, these incentives will be right-sized to support deployment of make-ready with a goal to deploy 40 to 60[25] new charging ports over the next five years, including shared make-ready costs for proprietary equipment on the same site as non-proprietary charging equipment. To ensure an equitable distribution of charging, Pepco will scale incentives to attract charging deployment in under-resourced communities. While site hosts or charging service providers will be responsible for ownership and operation of charging stations, all chargers will provide data to Pepco to provide visibility into charging patterns and inform future offerings.

[25] Pepco has already launched a make-ready program for DCFC in the District, with approval for up to 20 chargers. The target of 40 to 60 chargers for this program would be incremental to those approved stations.

Key Corridors Charging

Expansion

Summary of Program	• Make-ready rebate incentives of publicly available smart DC fast charging stations in high-utilization traffic corridors across Pepco DC's service territory
Customer Eligibility / Applicability	• Customers with publicly accessible site locations in high-utilization traffic corridors (criteria to be determined), within 1/4-mile radius of the corridor • Incentives for charging deployments in under-resourced communities will be scaled to ensure equitable distribution; additive incentive if within ¼ mile of MUD
Program Sizing / Number of Participants	• Limited to installations of new DCFC ports with a minimum rated nameplate capacity of 50 kW (DCFC) • 40 - 60 additional DCFC ports over five years
Other Program Requirements	• Charging stations that include proprietary charging connectors must co-locate with at least one charging station with a standard connector • Customers must agree to share charging data with Pepco DC as a condition of receipt of make-ready incentives
Regulatory Precedent	• Eversource Statewide Electric Vehicle Charging Program[26] • PSEG Clean Energy Future—Electric Vehicle Program[27] • FC 1155 approval of make-ready infrastructure for DCFC[28]
District Goal Alignment	25% vehicle registrations are zero-emission *CleanEnergy DC Omnibus* — **2030** 50% public buses and fleet vehicles are zero-emission *CleanEnergy DC Omnibus* — **2030** 100% vehicle registrations are zero-emission *Carbon Free DC* — **2045** 100% public buses and fleet vehicles are zero-emission *CleanEnergy DC Omnibus* — **2045**

26 https://portal.ct.gov/PURA/Press-Releases/2021/PURA-Establishes-Statewide-Electric-Vehicle-Charging-Program, Docket No. 17-12-03RE04, Connecticut's Public Utilities Regulatory Authority.

27 Helping New Jersey EV's charge up - Energize! (energizepseg.com)

28 Formal Case No. 1155, Order No. 19898 at ¶ 48.

3.1.2 Residential Charging Program

Assisting District residents in installing charging infrastructure at their properties will activate new EV ownership by lowering the burdens to at-home charging, while also encouraging current EV owners to charge their vehicles overnight during off-peak hours. Residential charging represents roughly 80% of all charging for most drivers, and availability of charging at home is a key factor influencing decisions to purchase an EV. This program will be designed to ensure that customers who live in a range of residential homes are able to access convenient home charging, making the transition to EVs more appealing and affordable. Pepco previously filed a program to cover costs for residential charging in Formal Case No. 1155. The 5-Year Action Plan updates this offering by incorporating new industry best practices as well as stakeholder feedback.

Customers will be eligible for make-ready rebate incentives for non-commercial residential properties and private garages and/or lots. All chargers will provide data to Pepco to provide visibility into charging patterns and inform future offerings, and to ensure an equitable distribution of incentives, Pepco will right-size and scale incentives to maximize coverage of costs for residents in under-resourced communities. In accommodating a range of residential charging locations and orientations, Pepco will review current line extension policies to accommodate more customer applications.

Residential Charging

New

Summary of Program	• Provide make-ready incentives for residential properties to support at-home charging and propose revisions to line extension policies to enable eligibility for a diversity of residential charging locations, including surface lots and detached garages.
Customer Eligibility / Applicability	• Customers with non-commercial, residential properties and private garage lots
Program Sizing / Number of Participants	• Program target of 2,000 charging ports over five-year period, scaling to market demand through 2050 • Limited to installations of new Level 2 smart charging infrastructure with a minimum rated nameplate capacity of between 3.8 kW and 7.7 kW
Other Program Requirements	• Customers must agree to share charging data with Pepco as a condition of receipt of make-ready incentives
Regulatory Precedent	• NC Utility Commission [29] • ACE [30]
District Goal Alignment	25% vehicle registrations are zero-emission *CleanEnergy DC Omnibus* — 2030 100% vehicle registrations are zero-emission *Carbon Free DC* — 2045

3.1.3 Multi-Unit Dwelling Charging Program

Incentivizing owners of commercial MUDs to install EV charging stations on their properties provides benefits to both MUD residents and owners and is in alignment with District law for new MUDs.[31] In accelerating MUD charging deployments, this program will make it more convenient for residents with existing EVs to charge their vehicles at home, particularly overnight during off-peak hours, and may encourage other residents to adopt EVs. Importantly, Pepco previously filed a program to deploy make-ready and provide cost coverage for MUDs in Formal Case No. 1155. The 5-Year Action Plan updates this offering by incorporating new industry best practices as well as stakeholder feedback.

[29] NC Utilities Commission (at 6-7, 10): DEC and DEP EV Make Ready Credit Tariffs_043021 (ncuc.net)

[30] https://www.atlanticcityelectric.com/News/Pages/AtlanticCityElectricReceivesGreenLightforNewElectricVehiclePrograms.aspx

[31] https://code.dccouncil.us/dc/council/laws/23-194.html

Specifically, Pepco will provide tiered make-ready rebate incentives to support up to ten new smart Level 2 charging ports[32] at MUDs located in Pepco DC's service territory. This program will support MUD owners in their implementation of the requirements in the Electric Vehicle Readiness Amendment Act of 2020.[33] To ensure equitable access to MUD charging, Pepco will offer full coverage of the make-ready costs for MUDs in low-to-moderate-income ("LMI") communities, which will increase the accessibility of EVs to District residents that live in under-resourced areas. To provide visibility into charging patterns and inform future offerings, all chargers will provide data to Pepco.

Multi-Unit Dwelling Charging

New

Summary of Program	• Make-ready rebate incentives targeted at installation of smart Level 2 charging ports located at MUDs in the District. Higher rebate incentive for charging ports installed in at MUDs in LMI communities
Customer Eligibility / Applicability	• Commercial properties that classify as MUDs located in Pepco DC's service territory
Program Sizing / Number of Participants	• Program target of 500 charging ports in five-year period, ramping program incentives offered to meet market demand to 2050 • Limited to installation of new qualified smart Level 2 chargers with rated nameplate capacity between 3.8 kW and 7.7 kW • Incentive to be limited to a maximum of 10 ports per site
Other Program Requirements	• Charging stations must be sited in locations accessible to all electric vehicle owner residents of the MUD • Customers must agree to share charging data with Pepco as a condition of receipt of make-ready incentives
Regulatory Precedent	• Eversource Statewide Electric Vehicle Charging Program[34]
District Goal Alignment	25% vehicle registrations are zero-emission *CleanEnergy DC Omnibus* — 2030 100% vehicle registrations are zero-emission *Carbon Free DC* — 2045

[32] A "port" is a connector capable of charging a vehicle. A single charging station may have two ports, both capable of charging cars simultaneously from the same station.

[33] The Electric Vehicle Readiness Amendment Act of 2020 requires make-ready infrastructure to support future electric vehicle charging at all "new construction or substantial improvement of commercial buildings." D.C. Law Library - D.C. Law 23-194. Electric Vehicle Readiness Amendment Act of 2020. (dccouncil.us)

[34] https://portal.ct.gov/PURA/Press-Releases/2021/PURA-Establishes-Statewide-Electric-Vehicle-Charging-Program, Docket No. 17-12-03RE04, Connecticut's Public Utilities Regulatory Authority.

3.1.4 EV-Ready System Design and Engineering Program

Pepco DC's customers are moving quickly to deploy charging stations to support the proliferation of EVs. The EV Ready System Design and Engineering program will advance charging station interconnection throughout the Pepco DC service territory to keep pace with customer demand.

For public and private charging deployments, Pepco's proposed program would standardize and streamline interconnection processes through new customer interfaces. For more complex and larger installations, such as commercial or public fleet depots, this program would provide enhanced service to support site planning and fleet evaluation. Commercial customers that operate vehicle fleets will face unique challenges as they move toward electrification of those vehicles. For medium- and large-scale commercial customers planning to electrify part or all of their fleets, Pepco's proposed EV Design and Engineering team would assist in the proactive assessment of transportation electrification plans for factors including charging site suitability and installation cost estimates from pre-application through the interconnection process. The team will also advise customers on rate plans and programs that could lower installation and operating costs. This design and engineering assistance will be available to all customers in Pepco DC's service territory.

EV	**EV-Ready System Design and Engineering** **Expansion**
Summary of Program	• Design and engineering process enhancements to streamline and accelerate interconnection applications for all charging installations. Pepco's Design and Engineering team will assess charging site suitability, estimate the cost of infrastructure installation, and advise customers on rate plans and programs to lower installation and operating costs.
Customer Eligibility / Applicability	• Target applications for medium- and large-scale commercial customers with plans to electrify some or all fleet vehicles
Program Sizing / Number of Participants	• Market responsive for public and private charging interconnection requests. 20 - 30 medium- and heavy-duty fleet assessments over a five-year period • Customers must agree to share charging data with Pepco as a condition of receipt of make-ready incentives
Other Program Requirements	• Not applicable
Regulatory Precedent	• Southern California Edison Charge Ready[35]
District Goal Alignment	50% public buses and fleet vehicles are zero-emission *CleanEnergy DC Omnibus* **2030** 100% public buses and fleet vehicles are zero-emission *CleanEnergy DC Omnibus* **2045**

[35] Charge Ready (sce.com)

3.1.5 Vehicle-to-Grid Demonstration Program

As EVs are poised to represent a larger share of the vehicles utilized by residents, businesses, and public transit agencies across the District, Vehicle-to-Grid ("V2G") technology is emerging as a tool that can contribute to integration of these vehicles onto the grid, potentially to serve as a dispatchable grid asset. V2G is a technology configuration that enables the bi-directional flow of electricity from the battery of an EV to the local power grid. In broader applications involving many vehicles serving as grid-interactive batteries, V2G could enhance reliability benefits across the distribution system, presenting a new use case for emerging EVs.[36] Pepco's V2G Demonstration program will be designed to explore the applicability of leveraging the bi-directional flow of electricity from EVs for future-state grid operations. It will focus on use cases including demand response, peak demand management, renewable energy integration, and provision of ancillary services to the bulk power system.

Vehicle-to-Grid Demonstration
New

Summary of Program	• V2G pilot program designed to explore the applicability of leveraging the bi-directional flow of electricity from EVs for future grid operations, such as use cases including demand response participation, renewable energy integration, and provision of wholesale market managed ancillary services. • Program would provide incentives to customers agreeing to V2G events and calls to support grid operations when car is plugged into home EV charger
Customer Eligibility / Applicability	• Commercial and/or residential customers with EV charger and EV capable of bi-directional charging and discharging of electricity to the local electric grid. Program would prequalify eligible equipment.
Program Sizing / Number of Participants	• Pilot program will be limited to a demonstration of specific V2G use cases
Other Program Requirements	• Customers must agree to charging /discharging parameters as defined by objective of V2G use case
Regulatory Precedent	• San Diego Gas & Electric V2G Pilot Program[37]
District Goal Alignment	25% vehicle registrations are zero-emission *CleanEnergy DC Omnibus* — 2030 100% vehicle registrations are zero-emission *Carbon Free DC* — 2045

[36] The Ford F-150 Lightening has an Intelligent Power feature that can enable vehicle-to-home peak shaving. https://media.ford.com/content/fordmedia/fna/us/en/news/2021/05/19/all-electric-ford-f-150-lightning.html

[37] CPUC Docket No., A18-01-012

3.1.6 Food Truck Service Electrification Program

Food trucks are excellent candidates for electrification, as they generally spend more time idling than in transit. Vehicle exhaust is the largest source of air pollution in the District and air pollutant emissions from diesel generators are also contributors.[38] Electric food trucks will not produce tailpipe or diesel generator emissions, resulting in improvements in local air quality. In addition, broader use of electric food trucks will facilitate compliance with the District's Engine Anti-Idling Law, which prohibits the idling of on-road gasoline or diesel-powered motor vehicles on public or private space for more than three minutes while the vehicle is parked, stopped, or standing.[39] Critically, electric food trucks require convenient and strategically sited charging infrastructure to enable electric-only idling.

The Food Truck Service Electrification program will offer targeted incentives to encourage charger buildout or electric extension in public spaces to support registered food trucks and demonstrate anti-idling and reduce generator emissions. As this program is designed to support food trucks parked on public streets, Pepco will continue to coordinate with and seek guidance from DDOT to allow for these incentives to be used for charging on a public right-of-way and to ensure an equitable distribution of charging, Pepco will scale incentives to attract charging deployment in under-resourced communities. While site hosts or charging service providers will be responsible for ownership and operation of charging stations, all chargers will provide data to Pepco to provide visibility into charging patterns and inform future offerings.

[38] D.C. Department of Energy and the Environment, Turn it Off Brochure. Available at https://doee.dc.gov/sites/default/files/dc/sites/ddoe/service_content/attachments/turn-it-off-combined.pdf
[39] 20 DCMR § 900.1. Available at http://dcrules.elaws.us/dcmr/20-900

Food Truck Service Electrification

New

Summary of Program	• Electrification of gas generator-powered food truck operations, such as cooking, by providing publicly accessible smart charging stations around the District to registered food truck operators. • Program will offer make-ready rebate incentives for installing smart charging stations in private parking lots and smart charging infrastructure in public space.
Customer Eligibility / Applicability	• Owners of private space or operators of spaces that host registered food truck operators during events
Program Sizing / Number of Participants	• Limited to installations of new DCFC and Level 2 smart charging infrastructure with a minimum rated nameplate capacity of 50 kW (for DCFC) and between 3.8 kW and 7.7 kW (for Level 2) • Targeted deployment of 50 ports, seeking a distribution among multiple food truck locations
Other Program Requirements	• Customers must agree to share charging data with Pepco as a condition of receipt of make-ready incentives
Regulatory Precedent	• Simply Grid Food Truck Electrification Pilot (ConEdison)[40]
District Goal Alignment	25% vehicle registrations are zero-emission *CleanEnergy DC Omnibus* — 2030 100% vehicle registrations are zero-emission *Carbon Free DC* — 2045

3.1.7 Destination Charging Program

For many drivers, the most convenient charging will take place where cars are parked for long durations—workplaces, retail establishments, hotels, and other long-term parking locations. For example, thousands of commuters park their vehicles in the District each day, and for commuters that continue to drive, facilitating workplace charging will make it convenient for commuters with EVs to charge their vehicles during the workday while not in use. This simultaneously helps District businesses provide competitive benefits and perks for their employees while encouraging car commuters to favor EVs over conventional vehicles, benefits that have been demonstrated in recent U.S. Department of Energy studies.[41] Similarly, charging at commercial properties may attract more drivers to a site and enable a passive park-and-charge experience—an EV charges while you shop at an establishment or eat at a

[40] New York City gets electric food carts to cut pollution | Smart Cities Dive
[41] https://afdc.energy.gov/files/u/publication/wpcc_mid-program_review.pdf

restaurant nearby. Additionally, commercial building owners must implement the requirements in the Electric Vehicle Readiness Amendment Act of 2020, which mandates a minimum level of EV-ready parking spaces for certain commercial facilities.[42]

The Destination Charging program will incentivize the installation of new charging stations for commercial facilities with right-sized incentives to offset make-ready costs for smart Level 2 charging ports. These commercial facilities include parking locations open to the public. To ensure an equitable distribution of charging, Pepco will scale incentives to attract charging deployment in under-resourced communities. While site hosts or charging service providers will be responsible for ownership and operation of charging stations, all chargers will provide data to Pepco to provide visibility into charging patterns and inform future offerings.

Destination Charging
Expansion

Summary of Program	• Customer-side-of-the-meter make-ready rebate incentives to support installations of new smart Level 2 charging stations at commercial facilities located in Pepco DC's service territory
Customer Eligibility / Applicability	• Limited to commercial facilities located in Pepco DC's service territory
Program Sizing / Number of Participants	• Limited to installation of new qualified smart Level 2 chargers with rated nameplate capacity between 3.8 kW and 7.7 kW • Program target of 2,000 ports over a five-year period
Other Program Requirements	• Requires installation of standard Level 2 connector • Customers must agree to share charging data with Pepco as a condition of receipt of make-ready incentives
Regulatory Precedent	• FC 1155 approval of make-ready for Level 2 charging[43]
District Goal Alignment	25% vehicle registrations are zero-emission *CleanEnergy DC Omnibus* — 2030 100% vehicle registrations are zero-emission *Carbon Free DC* — 2045 100% public buses and fleet vehicles are zero-emission *CleanEnergy DC Omnibus* — 2045

[42] The Electric Vehicle Readiness Amendment Act of 2020 requires make-ready infrastructure to support future electric vehicle charging at all "new construction or substantial improvement of commercial buildings." D.C. Law Library - D.C. Law 23-194. Electric Vehicle Readiness Amendment Act of 2020. (dccouncil.us)

[43] Formal Case No. 1155, Order No. 19898 at ¶48.

3.1.8 Rideshare & Taxi Charging Hubs Program

As taxi and rideshare transportation serves as an alternative to private vehicle ownership, the need to support electrification of this fleet is a near-term priority in the District. Unfortunately, the District's EV taxis have few places to quickly charge within the District, with only 19 public DCFC and few dedicated charging locations for just taxis.[44] Building on Pepco's previously approved program to lower barriers for chargers for this segment, the Rideshare & Taxi Charging Hubs program will facilitate the electric conversion of taxi fleets and vehicles used for ridesharing, supporting the District's specific goals to electrify high percentages of both personal and ridesharing vehicles. It will focus on the need for dedicated hubs for charging these fleets to avoid competition and utilization at public charging installations.

This program will offer make-ready rebate incentives to site hosts with privately owned lots to support a "charging hub" for EVs used for taxi or rideshare operations. The program will offer incentives for both new smart DCFC and Level 2 charging stations on site. This incentive includes shared make-ready costs for co-located proprietary equipment on site, and to ensure equitable access to charging, Pepco will offer full coverage of the make-ready costs for charging stations in LMI communities. Pepco will work with fleet operators to right-size program offerings to meet specific fleet needs and distribution of DCFC or Level 2 deployments. While site hosts or charging service providers will be responsible for ownership and operation of charging stations, all chargers will provide data to Pepco to provide visibility into charging patterns and inform future offerings.

[44] https://wamu.org/story/17/08/14/no-place-charge-d-c-s-electric-cab-drivers-ask-help/

Rideshare & Taxi Charging Hubs
Expansion

Summary of Program	• Make-ready rebate incentives to support dedicated installations of both smart Level 2 and DCFC stations enabling Electric Rideshare and Taxi fleet deployment in Pepco DC's service territory
Customer Eligibility / Applicability	• Site hosts with privately owned parking lot locations (i.e., charging hubs) for purposes of charging electric vehicles used for taxi/rideshare operations
Program Sizing / Number of Participants	• Limited to installations of new DCFC and smart Level 2 charging infrastructure with a minimum rated nameplate capacity of 50 kW (for DCFC) and between 3.8 kW and 7.7 kW (for Level 2) • Program target of 100 Level 2 or DCFC ports, based on needs of fleet operators
Other Program Requirements	• Charging stations that include proprietary charging connectors must co-locate with at least one charging station with a standard connector. Incentive to cover shared make-ready costs on co-located proprietary and standard equipment on a single site • Customers must agree to share charging data with Pepco as a condition of receipt of make-ready incentives
Regulatory Precedent	• FC 1155-approved make-ready for Taxi/rideshare Level 2 charging and DCFC ports[45]
District Goal Alignment	50% public buses and fleet vehicles are zero-emission *CleanEnergy DC Omnibus* — 2030 100% public buses and fleet vehicles are zero-emission *CleanEnergy DC Omnibus* — 2045

3.1.9 Transit Bus Charging Program

The early and efficient electrification of public bus systems is a critical step toward achieving the District's net-zero goals. Reducing emissions from buses is critical to improving air quality and also reducing noise and diesel particulate matter emissions in historically under-resourced and over-burdened communities. Transit is a public resource and a public good, providing access to opportunities, workplaces, and recreation for all of the District's residents and visitors. A program that addresses interconnection and infrastructure costs at strategic locations will provide public transit entities with the necessary support to accelerate the conversion of their bus fleets to zero emissions.

[45] Formal Case No. 1155, Order No. 19898 at ¶51.

To facilitate the District's target of converting 50% of the public bus fleet to zero emission vehicles by 2030, and in close coordination with Metro and other transit agencies, Pepco plans to launch a Transit Bus Charging program to offset the costs of installing charging infrastructure and support Metro's and DC government's plans for a transition to a zero-emission bus fleet.[46] For the installation of charging infrastructure, Pepco will collaborate with the transit providers to assess the level of charging needed and support the costs of installation and infrastructure needed on both the customer-side and utility-side-of-the-meter to serve the transit bus fleet.

Transit Bus Charging

Expansion

Summary of Program	• Assess the charging needs of transit providers on both the customer- and utility-side-of-the-meter to inform right-sized incentives and support of charger installation
Customer Eligibility / Applicability	• Customers that manage public bus fleets
Program Sizing / Number of Participants	• Limited to installations of new charging infrastructure at locations that support fleet operations • Target TBD based on consultation with fleet operators
Other Program Requirements	• Transit bus fleet to provide charging data to Pepco to gain visibility and charging insights to inform grid planning and operations, as well the development of future programs
Regulatory Precedent	• PG&E EV Fleet Program[47] • SCE Charge Ready Transport Program[48] • SDGE MD/HD EV Charging Infrastructure Program[49]
District Goal Alignment	50% public buses and fleet vehicles are zero-emission *CleanEnergy DC Omnibus* — 2025 All buses are electric/ zero-emission *WMATA* — 2045 100% public buses and fleet vehicles are zero-emission *CleanEnergy DC Omnibus* — 2045

[46] Metro's Zero-Emission Bus Initiative *and* https://www.dccirculator.com/explore/improvements-and-projects/dc-circulator-electric-bus-pilot/
[47] PG&E fleet program for electric vehicles (pge.com)
[48] Charge Ready Transport Program (sce.com)
[49] Medium/Heavy-Duty (MD/HD) EV Charging Infrastructure Program | San Diego Gas & Electric (sdge.com)

3.2 Smart Rates Transportation Initiative

Smart Rates Transportation Initiative
Enabling the deployment of all classes of electric vehicles

Residential Electric Vehicle Charging Time-of-Use Rate
Demand Charge Solution
Transit Bus Rate Solutions

The three programs proposed under the **Smart Rates Transportation Initiative** will complement the Connect Transportation programs by allowing owners and operators of EVs to benefit from new rate designs that are responsive to a smarter, more connected grid. The rates incentivize off-peak charging behavior, which lowers costs of refueling for EV drivers and shifts load to off-peak hours, which benefits the District's grid and all customers in the District. Furthermore, by integrating smart charging infrastructure, Pepco can study EV behavior and usage to inform future rate design and broader distribution system planning. Importantly, Pepco includes two programs offering solutions to address demand charges for higher-powered charging use cases. These programs will effectively improve the economics of charging services, which in turn creates a more favorable economic environment for investment in charging infrastructure. In all, smarter rates will drive affordability for drivers and maximize the benefits that customers experience from integrating this new load onto the grid.

3.2.1 Residential Electric Vehicle Charging Time-of-Use Rate Program

Incentivizing customers to charge vehicles during off-peak times is beneficial to the electric grid in that it attempts to shift usage from on-peak periods to off-peak periods. Currently, Pepco offers a whole-house time-of-use ("TOU") rate (Residential Service – Plug-in Vehicle Charging, or Schedule "R-PIV") to customers that meet certain conditions and who would otherwise be eligible to take electric service under Schedule "R". This existing Schedule "R-PIV" applies to the generation portion of the bill and includes both the charging of EVs and the electricity required for residential purposes.

The proposed residential EV TOU tariff would be tailored specifically to EV charging, rather than the whole house, and offered to EV owners with a smart Level 2 charger. This TOU rate would be applied only to EV charging and would be designed to encourage the off-peak charging of EVs. The TOU component of this rate would apply to the generation service charge, and Pepco would require access to the EV's on-board metrology or Level 2 charger metrology. Similar to the Pepco R-PIV rate, customers would fill out an application on the Company's website to apply for this rate.

Residential Electric Vehicle Charging Time-of-Use Rate

New

Summary of Program	• Residential electric vehicle TOU tariff available to electric vehicle owners with a Smart Level 2 charging station designed to encourage off-peak charging; TOU rate applied only to SOS generation service related to electric vehicle charging
Customer Eligibility / Applicability	• Residential customers with an EV and either an EV with on-board metrology or access smart Level 2 charger metrology
Program Sizing / Number of Participants	• Unlimited enrollment; estimated 1,000 - 5,000 in five-year period (based on currently registered EVs and expected growth in EV market in DC)
Other Program Requirements	• Requires customer education campaign & marketing • Requires investments in billing system to read charger or EV metrology and bill based on those readings
Regulatory Precedent	• FC 1155-approved R-PIV (generation-only TOU rate) [50]
District Goal Alignment	25% vehicle registrations are zero-emission *CleanEnergy DC Omnibus* — 2030 100% vehicle registrations are zero-emission *Carbon Free DC* — 2045

3.2.2 Demand Charge Solution Program

As new DCFC stations are deployed in communities, initial utilization of these chargers may be low, resulting in high demand for only a few sessions during a typical month. This can create challenges for DCFC operators who, in the early stages of EV adoption, can incur relatively large demand charges relative to their energy charges. This demand charge issue is due to the fact that the system must be able to serve the capacity of the charging station at all times, unrelated to how often it is used, and these revenues are critical to maintain system reliability and avoid cross subsidization among different customers. For example, a 50 kW charger may be charged a fee for 50 kW of demand whether it has one charging session in a month or a hundred sessions. While this challenge is expected to diminish as more EVs are adopted and the DCFC systems see higher use and therefore realize more revenue, EV charging providers desire a near-term solution in the early market to enable better project economics.

[50] Formal Case No. 1155, Order No. 19898 at ¶36.

For owners of existing and new DCFC systems, Pepco will propose either a distribution demand charge credit for DCFC chargers as a bridge to higher utilization rates or a permanent new Hours Use of Demand rate, which is a two-part rate featuring an energy charge that declines as a customer's load factor increases, for example. The objective is to provide rate relief for DCFC owners during early stages of deployment when load factors are low. Pepco will work collaboratively with EV charging infrastructure providers to determine and propose the appropriate solution for the District's market and regulatory policy.

Demand Charge Solution

New

Summary of Program	• DCFC demand charge rate reform via either 1) a temporary distribution demand charge credit for DCFC chargers; or 2) a permanent solution in the form of an Hours Use of Demand rate, which is a two-part rate featuring an energy charge that declines as a customer's load factor increases or 3) another solution developed with stakeholder input
Customer Eligibility / Applicability	• DCFC station owners
Program Sizing / Number of Participants	• Unlimited enrollment
Other Program Requirements	• AMI data to facilitate rate design
Regulatory Precedent	• Pepco Maryland EV Charging Distribution Demand Charge Credit Rider[51] • Xcel Critical Peak Pricing[52]
District Goal Alignment	25% vehicle registrations are zero-emission *CleanEnergy DC Omnibus* — **2030** 100% vehicle registrations are zero-emission *Carbon Free DC* — **2045**

[51] Available at fleet discount pepco.pdf
[52] Available at https://www.xcelenergy.com/staticfiles/xe-responsive/Programs%20and%20Rebates/Business/CO-Critical-Peak-Pricing-Info-Sheet.pdf

3.2.3 Transit Bus Rate Solutions Program

As electric bus charging depots and on-route charging solutions present the potential for significant loads within a concentrated area, Pepco sees the need to work with bus service providers to optimize charging rates and align fleet needs and system operations. An Electric Vehicle Public Bus Rate would provide rate and technology solutions to enable improved economics for fleets, which in turn can provide a budgetary framework to support cost control that a large scale publicly funded electric bus infrastructure deployment/investment requires, while enhancing grid flexibility. Pepco will work with Metro and other transit agencies as it develops these solutions and will file a proposal with the Commission once it has worked with stakeholders to consider and develop equitable solutions that will encourage the electrification of buses.

Transit Bus Rate Solutions
New

Summary of Program	• Pepco will work with the Metro and other transit agencies as it develops rate and technology solutions to optimize grid and fleet operations. Pepco will file a proposal with the Commission once it has considered and reviewed stakeholder input
Customer Eligibility / Applicability	• Rate and technology eligibility to be determined
Program Sizing / Number of Participants	• Unlimited
Other Program Requirements	• Electric buses only (public transportation, including school districts; not intended for private entities)
Regulatory Precedent	• Hawaiian Electric Bus Rates[53] • PG&E Commercial EV Rate Class[54]
District Goal Alignment	50% public buses and fleet vehicles are zero-emission *CleanEnergy DC Omnibus* — 2025 All buses are electric/ zero-emission *WMATA* — 2045 100% public buses and fleet vehicles are zero-emission *CleanEnergy DC Omnibus* — 2045

[53] PUC approves special rates for electric buses | Hawaiian Electric
[54] PG&E Corporation - PG&E Proposes to Establish New Commercial Electric Vehicle Rate Class (pgecorp.com)

4. Decarbonizing Buildings Portfolio

Decarbonizing Buildings Portfolio

1 DC Energy Efficiency Program Initiative

Portfolio of programs to reduce energy usage in the District

20 programs proposed in Formal Case 1160 to support residents and commercial customers in reducing energy usage through a variety of programs such as rebates, energy assessments, incentives for retrofits, targeted educational and behavioral, as well as weatherization assistance.

2 Connect Homes and Buildings Initiative

Incentives to use appliances that reduce GHG emissions

1. Appliance Electrification
2. Distribution System Power-Up Rebate
3. Rebates for Behind-the-Meter Heavy Up
4. Urban Heat Island
5. Dedicated LMI Electrification (Owner-Occupied)
6. Dedicated LMI Electrification (Rental Properties)
7. Commercial Building Energy Efficiency Financing Package
8. Demand Side Management Expansion
9. Income Eligible Multifamily

3 Smart Rates Buildings Initiative

Incentives to use appliances that reduce GHG emissions

1. Residential TOU Pilot
2. All-Electric Rate Study
3. Expand R-PIV Rate
4. Dynamic Pricing

The District has a diverse set of residential and commercial building stock, ranging from historic row homes to newly developed office towers, single family homes, light commercial, houses of worship, and federal and District government buildings. These buildings rely on a mix of technologies and fuels to provide heating, cooling, cooking, and other end uses. As CleanEnergy DC and Carbon Free DC emphasized, decarbonizing these end uses will require multiple strategies to increase efficiency and switch to lower- or no-carbon fuels.

Similar in magnitude to the transportation sector, GHG emissions from direct fossil fuel use in buildings are responsible for approximately 22% of the District's GHG emissions in 2019.[55] Substantially decarbonizing the building sector requires steps in the near term to reduce the energy demand and carbon intensity of both existing buildings and new construction.

[55] Greenhouse Gas Inventories | ddoe (dc.gov), accessed July 18, 2021. This figure represents the percentage of building and energy use attributed to natural gas, fuel oil, and kerosene.

Achieving these reductions will require coordination and collaboration across the District, including the engagement of many government agencies that have set strong targets and policies. For example, Pepco is proud to have partnered recently with the District government, DOEE, DCSEU and more than 20 other organizations to educate District residents and businesses on ways in which they can reduce their energy use and encouraged them to act through the Reduce Energy Use DC Initiative, which activated thousands across the District in 2020 and 2021 to save energy and money.

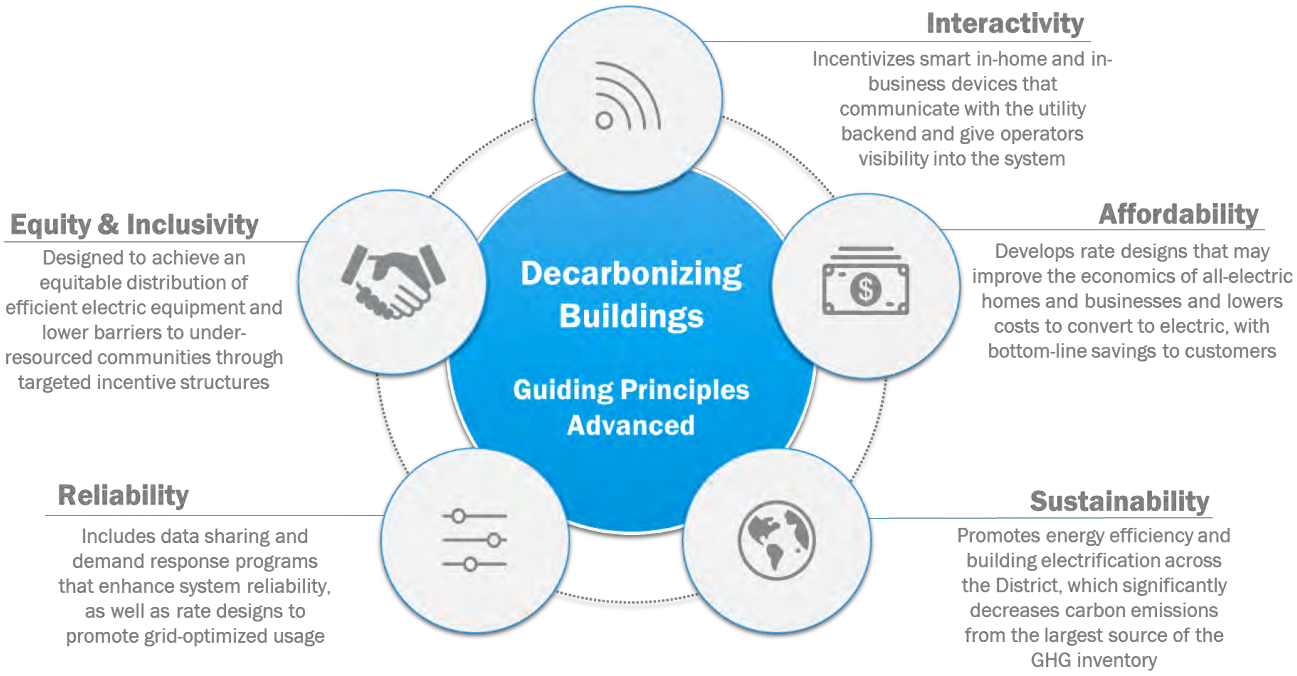
As the energy efficiency and electrification targets that the District established increase, including those in the Carbon Free DC roadmap that target 100% of all replacement heating and hot water systems to be all electric by 2035, additional collaboration and coordination will be required. For example, these goals are supported by policies, such as the Building Energy Performance Standards ("BEPS"), established in the CleanEnergy DC Act, requiring buildings over a certain size threshold to meet increasingly stringent energy consumption standards. Coordination and collaboration across stakeholders are not only part of the District's policy vision in this area but have been demonstrated and will lead to a more efficient and equitable, inclusive and affordable transition of the building sector.

Pepco's Programs Activate Change and Advance Guiding Principles

Pepco has recently filed with the Commission, in Formal Case No. 1160, a proposed portfolio of energy efficiency and demand response programs—after consultation and coordination with the DCSEU, DOEE and other stakeholders—aimed at helping customers save energy, save money and reduce their GHG footprint. These programs are proposed to occur over an initial three-year program cycle and include rebates, energy assessments, incentives for retrofits, targeted educational and behavioral programs, and weatherization assistance. The programs proposed in this filing are unique and complimentary to DCSEU's existing programs, with several targeting LMI customers, consistent with the CleanEnergy DC Omnibus Act.

As part of the Climate Solutions Plan, Pepco is proposing to build on and expand these programs, after the initial three-year program cycle proposed in its Formal Case No. 1160 filing, by establishing mid- and longer-term programs for decarbonizing homes and buildings that will increasingly focus on customer incentives and make-ready efforts for electrification and expanding interactivity. The programs will reduce barriers for customers to adopt efficient electric heating and hot water heating through incentives and make-ready programs. The Company will work with the DCSEU, DOEE and others going forward to ensure that programs continue to be complementary of existing DCSEU programs. The Company also anticipates complementing these proposed programs with an all-electric rate that accounts for changes to customer end uses. Once in place, more efficient and smarter appliances can be called upon to support the interactivity of the distribution grid, allowing for load flexibility, direct load control, and other advanced techniques to maximize load shedding and the use of local clean energy resources.

The initiatives in the Decarbonizing Buildings portfolio significantly contribute to all the guiding principles Pepco established in the Climate Solutions Plan, and this is especially the case for equity and inclusivity and affordability principles. In particular, the initiatives are designed to promote equity and inclusivity through incentive programs for under-resourced communities to switch to efficient electric devices. Wider availability of rate designs tailored to electric end-uses will improve in-home economics of fuel switching, greatly contributing to the principle of affordability.



Initiatives Support Diverse Customer Needs

Residential and commercial buildings use large quantities of energy for heating, cooling, lighting, and other needs, but these needs vary significantly by customer, by building ownership structure, and building type. Residential customers have different needs than commercial customers, and the strategies applicable to owner-occupied buildings may vary from renter-occupied buildings. Similarly, opportunities to decarbonize through electrification vary, as building owners face different incentives, available technologies, and adoption barriers. The programs proposed in the Climate Solutions Plan are designed with this spectrum in mind and will help to drive maximum short- and long-term reductions that increase the strength of the grid and provide cost savings to customers.

The energy efficiency and demand response program offerings proposed in Formal Case No. 1160 and Pepco's Energy Efficiency and Demand Response ("EEDR") Program Application will form the basis of the **DC Energy Efficiency Program**. These programs include both broad-based programs and dedicated support for LMI households to drive equity and inclusivity.

Pending Commission decision, Pepco will provide audit and design support, educational programs, and manufacturer and installation incentives to build the market and lower barriers to technological adoption.

Building on previously filed programs highlighted above in the **DC Energy Efficiency Program** and targeted to launch after the initial three-year program cycle, Pepco will provide incentives for advanced decarbonization through the **Connect Homes and Businesses Initiative**. The programs included in this initiative will provide incentives and assistance for residential and commercial customers to adopt efficient electric heating and other efficient electric end uses. They will make additional incentives available to LMI customers, who serve to benefit most from the cost savings and public health benefits resulting from this transition. In conjunction with the ongoing and progressive procurement of renewable and zero-carbon electricity, as well as the Solar for All program, the programs in **Connect Homes and Businesses Initiative** will help the District join other leading states, such as California and New York, in pursuing the deep decarbonization of buildings necessary to meet the District's strong economy-wide climate targets and do it equitably and affordably.

Finally, in response to the need to meet and exceed requirements related to increasingly electrified and interactive buildings, the **Smart Rates Buildings Initiative** will maximize the benefits and value of advanced technologies. The rate designs included in this initiative are intended to create price signals to encourage residents to use less energy during peak hours. The range of proposed designs will ensure that all customers have beneficial options.

4.1 DC Energy Efficiency Program Initiative

DC Energy Efficiency Program Initiative

Portfolio of programs to reduce energy usage in the District

20 programs proposed in Formal Case 1160 to support residents and commercial customers in reducing energy usage through a variety of programs such as rebates, energy assessments, incentives for retrofits, targeted educational and behavioral, as well as weatherization assistance.

In the DC Energy Efficiency Program, Pepco's already filed and pending EEDR Program Application proposes a suite of energy efficiency and demand response programs. These 20 proposed programs—including incentive programs, education, and technical assistance—will drive energy use reductions and GHG emission abatement. These programs include incentivizing energy efficient appliances and home products, recycling old appliances, whole-home retrofits, home energy assessments, behavior change through price signals and education. In addition, many programs offer increased incentives for LMI residents, ensuring that these customers can maximize the benefits and cost savings of reducing energy usage.

The 20 proposed programs include:

1. ***Efficient Products*:** The Pepco Efficient Products Program is designed to increase market share of ENERGY STAR® certified appliances and other efficient residential products sold through three different retail channels: 1) instant rebates for efficient appliances, such as smart thermostats, through the Pepco Marketplace platform—an online store available to all customers through their My Account; 2) midstream rebates that are paid to the retailer through the ENERGY STAR® Retail Products Platform ("ESRPP") to encourage greater stocking and discounting of efficient equipment in participating retail stores; and 3) Energy Efficiency Kits—inclusive of light-emitting diode ("LED") bulbs, smart strips, and faucet aerators or showerheads—at no additional cost to the customer receiving them. Over the next three years, Pepco anticipates over 107,000 residential customers will be able to purchase efficient products as result of this program.

2. ***Appliance Recycling Program:*** The Appliance Recycling Program offers residential customers the opportunity to remove their old, inefficient refrigerators, freezers, and room air conditioners ("ACs") while receiving an incentive in exchange and ensuring the responsible recycling of their old appliances. Removing these old, inefficient appliances off the grid realizes energy savings and GHG emissions reduction. Customers who participate will receive a $35 rebate for recycling room ACs and dehumidifiers and $50 rebate for refrigerators and freezers. Over the next three years, Pepco anticipates over 3,300 residential customers will participate in its Appliance Recycling Program.

3. *Quick Home Energy Checkup ("QHEC") Program:* The QHEC Program offers customers a home check-up conducted by a certified technician. The technician conducts a visual inspection of the home, noting health and safety concerns, information about energy use, and/or possible energy efficiency improvements. During the check-up, the technician offers and installs direct-install energy savings measures—such as LEDs, faucet aerators, efficient-flow showerheads—that immediately reduce the consumption of energy in customers' homes. Over the next three years, Pepco anticipates conducting over 19,800 QHECs.

4. *Home Performance with ENERGY STAR® ("HPwES") Program*: The HPwES Program is comprised of a Home Performance Audit and a Home Performance Job and is governed by the United States Department of Energy's national HPwES program requirements and guided by the standards of the Building Performance Institute. The goal of the HPwES Program is to connect residents with trusted contractors that can help them better understand their home's energy use, identify improvements to boost energy efficiency, lower their utility bills, and improve residential comfort, while also ensuring the health and safety of the occupants. The program is designed so after the initial audit, a customer has the option to move forward with a Home Performance Job, which will pay out incentives based on performance—the total energy savings—of the project. Over the three years of the program, Pepco anticipates nearly 2,800 residential customers will have either undertaken HPwES audits or completed jobs.

5. *Residential New Construction and Major Renovation Program:* The Pepco Residential New Construction and Major Renovation Program encourages builders, developers and contractors to build ENERGY STAR®-certified single-family homes and small multifamily buildings and is aimed at builders undertaking remodeling and renovation projects. Homebuilders and remodelers are only eligible to receive an incentive through the program and must have the home or apartment verified by a third-party Home Energy Rating System Rater to qualify. Program incentives encourage energy efficiency decisions, such as additional insulation, ENERGY STAR® Windows, incentives for pre-wiring the new house for EV charging, and incentives for installing high-efficiency electric equipment. Over the next three years, Pepco anticipates the program will incentivize a total of 130 new home and multifamily projects.

6. *Energy Engineers Program:* Customers who contact the Pepco Call Center regarding high bills may get escalated to Pepco's Energy Engineers team if their situation is not easily remedied by the initial service representative or Energy Advisor. The Pepco Energy Engineers Program offers residential customers one-on-one assistance with bill and energy use concerns via a team of in-house Energy Engineers, who may conduct an in-depth review of a customer's advanced metering infrastructure ("AMI") data or may also

schedule a home walkthrough to diagnose and remedy issues. Over the next three years, Pepco anticipates over 1,400 residential customers will be aided by this program at no additional cost to the customer.

7. ***My Energy Target Program:*** The My Energy Target Program provides customers with a customized energy target using AMI data, building modeling and energy consumption tools, and offers an incentive if the energy target is met. The customized energy target is created using customers' weather-normalized consumption history, representing what they should expect to consume, accounting for their home's characteristics (e.g., size, insulation, efficiency), actual weather, and "slightly efficient" behavior. Over the summer months, Pepco households will be selected randomly to participate in the My Energy Target challenge during which participants will have the opportunity to reduce their energy costs and receive a reward from Pepco. Participating households that reach their energy savings targets will receive an incentive payment of up to $150. Over the next three years, Pepco anticipates over 4,300 residential customers will participate in the My Energy Target challenge.

8. ***Residential Behavior Based Program:*** The Residential Behavior Based Program offers customers a Home Energy Report with comparisons against peers, along with customized recommendations for other Pepco programs in which the customer could participate, to encourage additional energy efficiency in the home. These Home Energy Reports will be sent to residential customers either through mail or email, depending on customer preference, several times a year. Pepco anticipates 180,000 residential customers will receive Home Energy Reports annually.

9. ***Schools and Education Program:*** The Schools and Education Program encourages energy efficiency among diverse populations and introduces low- or no-cost energy efficiency measures to students, parents, teachers, and school leaders. Teachers and schools who elect to enroll, with a focus on fifth grade and high school science teachers, will receive energy efficiency teaching curriculum materials and resources. In addition, the program provides students with a take-home kit of energy efficiency-related tests and energy efficiency measures—such as LEDs and faucet aerators—to install in their home, yielding verifiable energy savings. Over the next three years, Pepco anticipates that nearly 1,200 students will receive take-home energy efficiency learning materials and home kits.

10. ***LMI Efficient Products Program:*** The LMI Efficient Products Program offers LMI customers increased incentives on appliance products, such as rebates for ENERGY STAR®-certified appliances and other efficient residential products sold through retail channels. Pepco is working with dollar stores and smaller retailers to ensure this

segment has access to energy efficient products and will engage in segmented targeting of predominately LMI zip codes for appliance rebates and recycling promotion.

11. ***Assisted Home Performance with ENERGY STAR® ("Assisted HPwES"):*** The LMI Assisted HPwES component, which operates similar to the market-rate HPwES Program, will provide a comprehensive home energy assessment as well as increased incentives for customers that qualify as LMI to address the additional monetary participation barrier for whole-home retrofits. The program serves LMI single-family homes and small multifamily buildings, offering additional resources for AC replacement, high-efficiency room ACs, and potentially ductless mini-splits. Over the next three years, Pepco anticipates nearly 15,000 LMI residential customers will participate in a dedicated LMI program.

12. ***LMI Home Energy Assessment Program:*** The LMI Home Energy Assessment Program includes an in-depth energy audit (including direct-install measures) as well as education on efficiency measures for LMI income-eligible customers. Pepco will coordinate with DCSEU to cross-promote the Pepco LMI Home Energy Assessment Program with DCSEU offerings. Pepco will also coordinate with DCSEU to engage community groups and property owners with whom each has ongoing relationships. Pepco will target specific areas in the District with a high density of LMI customers to drive participation in this program; however, any LMI customer in the District would be eligible for participation. Through the LMI Home Energy Assessment Program, all homes in qualifying communities can receive QHEC visits. This element of the LMI Home Energy Assessment Program enables Pepco to serve the needs of the larger underserved community of the District in an effective and efficient manner. Furthermore, Pepco will offer, as part of the LMI Home Energy Assessment, an enhancement to DOEE's Emergency Mechanical System Program, which will provide heating, ventilation, and air conditioning ("HVAC") tune-ups to those participating customers.

13. ***Small Business Program:*** The Pepco Small Business Program is a consolidated program through which small businesses receive financial incentives, technical assistance, and energy efficiency information through a dedicated service provider. The program features the Small Business Energy Advance on-bill financing option, which allows participants to repay their cost share of installed measures as part of their monthly energy bill. The program offers a quick energy check-up, direct-installation services and retrofit opportunities to small business customers whose energy demand averages less than 100 kW. Over the next three years, Pepco anticipates over 5,300 small commercial customers will receive an incentive for energy efficiency upgrades for their businesses.

14. ***Commercial Behavior Based Program:*** Through the Pepco Commercial Behavior Based Program, commercial customers are identified and targeted for education on their energy use and how to improve their efficiency through a Customer Engagement Portal ("CEP") designed to drive behavioral savings and increased customer engagement. The program is a free, opt-in offering that enables commercial customers to utilize a suite of self-serve tools to gain greater insights and control over their electricity use, improve their energy efficiency, and reduce their utility bills through the CEP. Participating customers can use the self-service web platform at any time and as frequently as they wish. Over the next three years, Pepco anticipates nearly 3,000 commercial customers will actively participate in the CEP and realize energy savings through the program.

15. ***Midstream Program:*** The Midstream Program provides commercial customers with instant rebates for the purchase of qualifying measures from manufacturers and distributors, reducing the application process burden for those customers that would prefer a streamlined approach to participation. The Midstream Program is especially attractive to maintenance staff and contractors of larger facilities who make purchases directly from manufacturers and distributors to service their buildings and facilities. The program includes LED lighting, HVAC equipment, kitchen appliances, Smart Strips, and fixtures and luminaires. Over the next three years, Pepco anticipates nearly 2,000 commercial customers will take advantage of Midstream rebates.

16. ***Existing Buildings Program:*** The Existing Buildings Program is comprised of the following components: 1) Prescriptive; 2) Custom; and 3) Retro-commissioning. Major renovations are considered to fall under any of these three components for the purposes of the commercial offerings. Pepco's Existing Buildings Program will be available to commercial building owners and commercial tenants of buildings less than 50,000 square feet and not included in the 2019 BEPS Benchmarking cycle.[51] Over the next three years, Pepco anticipates over 1,300 commercial customers will receive an incentive to participate in one of the three Existing Buildings Program components.

17. ***New Construction Program:*** The New Construction Program offers comprehensive design support and/or technical assistance to incorporate energy efficiency systems into the design, construction and operation of business customers' new construction projects. The program is aimed at all new commercial construction in the District. The New Construction Program will offer incentives for cost-effective energy savings efficiency measures, including building automation systems, compressed air systems, induction lighting, industrial process equipment, and whole-building analyses. Incentives will be calculated based on the modeled energy savings over a design baseline. Over the next three years, Pepco anticipates 24 new commercial construction projects will be incentivized through the program.

18. ***Residential Demand Response Program:*** The Residential Demand Response Program offers residential customers a bring-your-own-device ("BYOD") option to expand eligibility and participation in Pepco's currently operating Energy Wise Rewards ("EWR") direct load control ("DLC") program. Customers who enroll will have their central air conditioner cycle off for a few hours during a handful of the hottest days of the year, when there is the most stress on the grid. An advantage for customers participating in EWR through BYOD is they can opt out at any time through their smart thermostat. Customers who do participate receive an enrollment credit when they enroll a smart thermostat into the EWR program and also receive a bill credit each month, June through October. Over the next three years, Pepco anticipates that nearly 5,700 residential customers will enroll in EWR through their smart thermostat devices.

19. ***Small Commercial Demand Response Program:*** The Small Commercial Demand Response Program provides commercial customers an opportunity to contribute to load reductions during peak usage periods in exchange for bill credits. The program helps small commercial customers reduce electricity consumption and electric costs when load reductions are achieved in much the same way as the Residential Demand Response Program, through enrolling their own smart thermostat. Over the next three years, Pepco anticipates that nearly 3,900 small commercial customers will participate in demand response through their smart thermostat devices.

20. ***Low-Income Home Weatherization Pilot Program:*** The Low-Income Home Weatherization Pilot Program will have three components. In the first component, Pepco will partner with two start-up companies to help identify predominately LMI multifamily buildings that have been underserved by existing energy efficiency programs. Utilizing analytical software and tools to perform site identification, Pepco will recruit the buildings to install weatherization measures, such as air sealing, caulking, and insulation as well as HVAC and water heating upgrades. Pepco will perform a post-project evaluation. In the second component, Pepco will look to alleviate the energy-cost burdens of LMI tenants by demonstrating that EE can provide eviction relief. In the final component, Pepco will offer additional incentives to a subset of LMI customers who use propane, fuel oil, or kerosene as their primary heating to help them transition to an efficient electric heat pump. Over the next three years, Pepco anticipates serving 7,500 LMI customers through the pilot program.

DC Energy Efficiency Program

In Flight

Summary of Program	• Set of 20 programs aimed at reducing energy usage in the District by utilizing incentive programs, educational and behavioral programs, technical assistance initiatives, and weatherization assistance
Customer Eligibility / Applicability	• Increased incentives for LMI customers • Commercial programs will focus on buildings or businesses residing in buildings less than 50,000 square feet
Program Sizing / Number of Participants	• Program size varies, ranging from 24 to 180,000 customers; most programs will be open to thousands of customers
Other Program Requirements	Requirements vary by program. Programs include: • Efficient Products • Appliance Recycling Program • Quick Home Energy Checkup Program • High Performance with ENERGY STAR® • Residential New Construction and Major Renovations • Energy Engineers Program • My Energy Target Program • Residential Behavior Based Program • School and Education Program • LMI Efficient Products Program • Assisted Home Performance with ENERGY STAR® • LMI Home Energy Assessment Program • Small Business Program • Commercial Behavior Based Program • Midstream Program • Existing Buildings Program • New Construction Program • Residential Demand Response Program • Small Commercial Demand Response Program • Low-Income Home Weatherization Pilot Program
Regulatory Precedent	• All programs are currently offered in Maryland and New Jersey and are approved through EmPOWER Maryland and New Jersey Clean Energy Act, respectively • The energy efficiency kits component is modeled after a current ComEd program approved through the Illinois Future Energy Jobs Act and will also complement an existing DCSEU program by focusing on medium-income customers and above, while the DCSEU program will continue to focus on low-income customers
District Goal Alignment	50% reduction in building energy usage *CleanEnergy DC Omnibus* — **2032** Replacement heat and hot water systems are 100% electric *Carbon Free DC* — **2035** 100% of existing homes are all electric *Carbon Free DC* — **2050**

4.2 Connect Homes and Buildings Initiative

Connect Homes and Buildings Initiative

Incentives to use appliances that reduce GHG emissions

- Appliance Electrification
- Distribution System Power Up Rebate
- Rebates for Behind-the-Meter Heavy Up
- Urban Heat Island Reduction
- Dedicated LMI Electrification (Owner-Occupied)
- Dedicated LMI Electrification (Rental Properties)
- Commercial Building Energy Efficiency Financing Package
- Demand Side Management Expansion
- Income Eligible Multifamily Program

Electrifying home and business appliances will be critical for reaching economy-wide deep decarbonization. Pepco has designed the programs within this initiative—targeted to be launched after the three-year program cycle associated with programs currently pending before the Commission in Formal Case No. 1160 and summarized in Section 4.1—to enable the connection of customers to efficient, electrified equipment, appliances, and associated infrastructure.

Programs will focus on incentives to assist customers with purchasing efficient electric-based appliances and equipment or incentives for electrical upgrades in front-of-the-meter or behind-the-meter. The programs proposed under this initiative also focus on equity and inclusivity, with dedicated programs for LMI customers and rebates that can help lower the upfront cost of electrification, allowing a broader range of customers to unlock the significant lifecycle cost savings of electric appliances.

4.2.1 Appliance Electrification Program

Customers in the District currently use a mix of fuels for appliances, including for heating, water heating, cooking, and drying clothes. To achieve the District's decarbonization goals and efficient, electrification-based strategy, these appliances will need to transition to electricity. For residential and commercial customers, Pepco will offer rebates to offset the costs of purchasing new efficient electric appliances. This program is designed to include a variety of equipment, such as heat pumps, electric stoves, water heating, dryers, and electric lawn equipment. Rebates for commercial upgrades only apply to heating, water heating, and commercial-grade kitchen equipment. This program will be complementary to some programs Pepco has already proposed in its EEDR Program Application, summarized in Section 4.1, in particular Assisted Home Performance with ENERGY STAR® and LMI Efficient Products Program for residential customers and existing commercial buildings. Eligible customers may pair incentives with the Distribution System Power-Up Rebate program or Rebates for Behind-the-Meter Heavy Up program to facilitate electrification.

Appliance Electrification

New

Summary of Program	• Provide rebates to offset the cost of new efficient electric appliances, such as heat pumps, electric or induction stoves, dryers, fireplaces, and lawn mowers.
Customer Eligibility / Applicability	• Residential and commercial Pepco customers with existing fossil fuel systems
Program Sizing / Number of Participants	• 20 – 600 program participants over a five-year period, depending on proposed measure category.
Other Program Requirements	• If customer does not have sufficient capacity to support electrification, this program may be paired with the Behind-the-Meter Heavy Up program to support electrical system upgrades. Commercial customers may also pair this program with the Distribution System Power-Up Rebate program. • Commercial sector upgrade rebates only apply to heating, heat pump water heaters, and commercial grade equipment.
Regulatory Precedent	• Con Edison's Income Eligible Switch to Electric Program[56] • Massachusetts Clean Energy Center Whole-Home Air-Source Heat Pump Pilot[57]
District Goal Alignment	50% reduction in building energy usage *CleanEnergy DC Omnibus* — **2032** Replacement heat and hot water systems are 100% electric *Carbon Free DC* — **2035** 100% of existing homes are all electric *Carbon Free DC* — **2050**

[56] Available at electrification-case-study_final.pdf (wordpress.com).
[57] Available at Rebates | Silicon Valley Power.

4.2.2 Distribution System Power-Up Rebate Program

Electrifying appliances and other end-uses may require commercial customers to upgrade electrical systems to serve the increased demand. The Distribution System Power-Up Rebate program will support commercial customers by providing rebates for front-of-the-meter distribution system upgrade costs required for increased electric demand directly associated with electrification of end uses. Upgrades may include some or all main control panels, branch control panels, conduit, customer-owned transformer(s), and switchgear(s). The needs for each building will vary based on the electrification upgrades planned and the current infrastructure. In front of the meter, upgrades would include utility-owned equipment that would otherwise be charged to the customer, such as conduit and cable.

Distribution System Power-Up Rebate
New

Summary of Program	• This program to reduces front-of-meter costs that are associated with decarbonization activities and distribution system upgrades.
Customer Eligibility / Applicability	• Commercial customers
Program Sizing / Number of Participants	• 160 - 700 program participants over a five-year period
Other Program Requirements	• Behind-the-meter upgrades: main control panels; branch control panels; conduit; customer-owned transformer(s); and switchgear(s). • Front-of-the-meter upgrades: adding or upgrading utility-owned equipment that would otherwise be the customers' responsibility, such as conduit and cable
Regulatory Precedent	• California's Low Income Weatherization Program for Multifamily Properties[58]
District Goal Alignment	50% reduction in building energy usage *CleanEnergy DC Omnibus* — 2032 Replacement heat and hot water systems are 100% electric *Carbon Free DC* — 2035 100% of existing homes are all electric *Carbon Free DC* — 2050

[58] Available at https://camultifamilyenergyefficiency.org/#:~:text=for%20Multifamily%20Properties,-Menu&text=The%20California%20Low%20Income%20Weatherization,gas%20emissions%20in%20multifamily%20properties

4.2.3 Rebates for Behind-the-Meter Heavy Up Program

The Rebates for Behind-the-Meter Heavy Up program will provide rebates to residential customers for necessary upgrade costs from the customer's meter to the end-use equipment. With the added load of electrification equipment, this could necessitate upgraded electrical panels and wiring. It is not expected that all customers would need this, and it is highly dependent on the specific project, existing infrastructure, and equipment installed.

Due to the relatively old building stock in the District, residential customers may need to upgrade to 200-amp service to accommodate the addition of electric space heating, water heating, and/or cooking equipment. Preliminary estimates for participation in this program over the next five years range from 100 to 1,000 customers.

Rebates for Behind-the-Meter Heavy Up
New

Summary of Program	• A program to provide rebates for make-ready investments that are necessary to upgrade electrical systems.
Customer Eligibility / Applicability	• Residential customers
Program Sizing / Number of Participants	• 100 – 1,000 participants over the next five years
Other Program Requirements	• Upgrades to 200-amp service • Program is highly dependent on specific project, existing infrastructure, and equipment installed
Regulatory Precedent	• California's Low Income Weatherization Program for Multifamily Properties[59] • Silicon Valley Power's Electric Panel Upgrade Rebate[60]
District Goal Alignment	50% reduction in building energy usage *CleanEnergy DC Omnibus* — 2032 Replacement heat and hot water systems are 100% electric *Carbon Free DC* — 2035 100% of existing homes are all electric *Carbon Free DC* — 2050

[59] Available at https://camultifamilyenergyefficiency.org/#:~:text=for%20Multifamily%20Properties.-Menu&text=The%20California%20Low%20Income%20Weatherization,gas%20emissions%20in%20multifamily%20properties

[60] Available at https://www.siliconvalleypower.com/residents/rebates-6214

4.2.4 Urban Heat Island Reduction Program

Effective tree planting can help shade buildings and protect from wind, allowing customers to use less air conditioning and heating. Trees can also improve air quality, reduce stormwater runoff, sequester carbon, and mitigate the urban heat island effect. Pepco maintains control and operation of utility rights-of-way and, in continued coordination with DDOT Urban Forestry Administration, will leverage available utility and public land to conduct strategic tree planting. There are a variety of trees that can be planted based on the available land and desired aesthetic. The Company proposes to collaborate with DDOT Urban Forestry Administration and others to plant up to 2,200 trees per year for five years or until identified locations have become saturated.

Urban Heat Island Reduction
New

Summary of Program	• Plant trees in utility rights-of-way and on public land to increase shade and wind cover and reduce use of air condition and/or heating units
Customer Eligibility / Applicability	• Residential and commercial customers located in the selected community
Program Sizing / Number of Participants	• 2,200 trees per year for five years or until identified locations are saturated
Other Program Requirements	• Locations will be identified in conjunction with DDOT Urban Forestry Administration
Regulatory Precedent	• SRP Shade Tree Program[61]
District Goal Alignment	50% reduction in building energy usage *CleanEnergy DC Omnibus* — **2032** Replacement heat and hot water systems are 100% electric *Carbon Free DC* — **2035** 100% of existing homes are all electric *Carbon Free DC* — **2050**

4.2.5 Dedicated LMI Electrification (Owner-Occupied) Program

An equitable transition to a decarbonized buildings sector requires inclusive strategies to ensure LMI customers are actively engaged and have equitable access to opportunities and can share equally in the benefits from clean energy and decarbonization programs. Programs

[61] Available at SRP offers free shade trees (srpnet.com)

for LMI customers typically offer additional assistance to income-eligible customers to ensure that they can afford the necessary investments to efficiently decarbonize their homes.

The Dedicated LMI Electrification (Owner-Occupied) program will provide a variety of electrification incentives for LMI customers for specific types of equipment or appliances. This program will supplement Pepco's proposed Assisted Home Performance with ENERGY STAR® program as well as the LMI Home Weatherization Pilot program to assist with electrification costs not covered by these programs or other existing energy efficiency programs. This program can be targeted to those customers who have already pursued envelope upgrades and participated in either a Pepco-administered energy efficiency program or DOEE Weatherization Assistance Program ("WAP"). Rebates would then go towards mechanical system replacement, appliance replacement, electrical panel or infrastructure upgrades as well as enrollment in demand response or demand side management expansion. Pepco may work with community engagement partners, such as BlocPower, to work with customers to identify and perform efficient electrification upgrades. Pepco estimates providing between 10 and 250 appliances or pieces of equipment for a variety of categories.

Dedicated LMI Electrification (Owner-Occupied)

Expansion

Summary of Program	• Supplement Pepco's proposed Assisted Home Performance with ENERGY STAR® and the LMI Home Weatherization Pilot to cover electrification costs not covered by these programs
Customer Eligibility / Applicability	• Income-eligible Pepco customers who are owner-occupants of the home
Program Sizing / Number of Participants	• 10 – 250 participants, depending on proposed electrification measure category
Other Program Requirements	• Participants must qualify as LMI (up to 120% of AMI) for rebates
Regulatory Precedent	• NYSERDA Multi Family Performance Program[62] • Con Edison's Income Eligible Switch to Electric Program[63]
District Goal Alignment	50% reduction in building energy usage *CleanEnergy DC Omnibus* — 2032 Replacement heat and hot water systems are 100% electric *Carbon Free DC* — 2035 100% of existing homes are all electric *Carbon Free DC* — 2050

[62] Available at Multifamily Performance Program (MPP) - NYSERDA

[63] Available at https://www.coned.com/en/save-money/rebates-incentives-tax-credits/rebates-incentives-tax-credits-for-residential-customers/switch-to-electric-heating-and-cooling

4.2.6 Dedicated LMI Electrification (Rental Properties) Program

In addition to programs for LMI customers who own their homes, the Company is proposing to provide electrification programs that focus on the LMI multifamily rental market. Pepco will focus on two key areas: 1) engaging LMI multifamily property owners regarding the benefits of efficient, electric-based upgrades both for the health of residents and reducing energy usage of the property; and 2) ensuring incentives are robust to mitigate the potential for property owners to pass costs of capital improvements onto their tenants.

Pepco would target rebates for electric heat pumps, water heating, clothes drying, and cooking appliances as well as supporting equipment, such as mechanical system replacement, electrical panel or infrastructure upgrades. Pepco estimates providing between 20 and 250 appliances or pieces of equipment for a variety of categories. Pepco may work with community engagement partners, such as BlocPower, to work with customers to identify and perform efficient electrification upgrades. Similar to the owner-occupied program, this program will be complementary to the proposed EEDR programs, such as the Assisted Home Performance with ENERGY STAR® and the LMI Home Weatherization Pilot.

Dedicated LMI Electrification (Rental Properties) **Expansion**	
Summary of Program	• Supplement Pepco's proposed Assisted Home Performance with ENERGY STAR® and LMI Home Weatherization Pilot programs to cover electrification costs not covered by these programs
Customer Eligibility / Applicability	• Income-eligible Pepco customers who are renters of the home • The program includes buildings that have already undertaken envelope upgrades and participated in either, Pepco's Income Eligible Multifamily Program, DOEE's WAP or a DCSEU's limited income multifamily programs
Program Sizing / Number of Participants	• 20 – 250 participants, depending on proposed electrification measure category
Other Program Requirements	• Participants will be classified as living in an income-eligible community (up to 120% of AMI) to be eligible for rebates
Regulatory Precedent	• NYSERDA Multi Family Performance Program[64] • Con Edison's Income Eligible Switch to Electric Program[65]
District Goal Alignment	50% reduction in building energy usage *CleanEnergy DC Omnibus* — 2032 Replacement heat and hot water systems are 100% electric *Carbon Free DC* — 2035 100% of existing homes are all electric *Carbon Free DC* — 2050

[64] Available at Multifamily Performance Program (MPP) - NYSERDA

[65] Available at https://www.coned.com/en/save-money/rebates-incentives-tax-credits/rebates-incentives-tax-credits-for-residential-customers/switch-to-electric-heating-and-cooling

4.2.7 Commercial Building Energy Efficiency Financing Package Program

The financing associated with energy efficiency and electrification upgrades can be a challenge for some businesses without access to low-cost financing through traditional options. Commercial Property Assessed Clean Energy ("C-PACE") enables the financing of a broad range of energy efficiency investments through long-term, low-cost financing. C-PACE is an existing District policy-enabled mechanism that allows property owners to finance these upgrades through a property's tax assessment.

Through this program, the Company will work with DC Green Bank as the PACE Administrator to market C-PACE financing products and services to assist customers with energy efficiency upgrades at commercial and multifamily properties. These products and services will be marketed to customers who qualify for rebates and incentives under the Pepco Building Decarbonization Portfolio. Pepco will coordinate with DOEE and the DC Green Bank to market these solutions to finance energy efficiency and decarbonization investments eligible under District policies.

Commercial Building Energy Efficiency Financing Package
New

Summary of Program	• Pepco will partner with DC Green Bank to market C-PACE financing products and services to customers identified as applicable to Pepco rebates
Customer Eligibility / Applicability	• Commercial and multifamily building owners with investments eligible for C-PACE financing
Program Sizing / Number of Participants	• Unlimited
Other Program Requirements	• Not Applicable
Regulatory Precedent	• None
District Goal Alignment	50% reduction in building energy usage *CleanEnergy DC Omnibus* — 2032 Replacement heat and hot water systems are 100% electric *Carbon Free DC* — 2035 100% of existing homes are all electric *Carbon Free DC* — 2050

4.2.8 Demand Side Management Expansion Program

Pepco's demand response currently focuses on central air conditioning; however, with growth in grid-interactive devices, the Company will aim to expand the program after the initial three-year program cycle in Formal Case No. 1160 to include other residential and commercial applications to diversify load reduction, in consultation and coordination with the DCSEU, DOEE and other stakeholders. Diversification is core to creating a more flexible and interactive grid to enable the electrification strategy to decarbonize the District with a customer-centric experience in mind.

Pepco's Demand Side Management ("DSM") Expansion will be extended to include appliances that can seamlessly cycle customer loads to create a less impactful event to the customer while simultaneously balancing demand and supply on the system. Pepco is proposing sub-programs as part of its DSM Expansion: Residential Direct Load Control – Battery Storage; Residential Direct Load Control – EV Chargers; and Residential Smart Thermostat Flexible Load and Management Pilot.

- Battery Storage: The residential battery storage program, which is a DLC program that will allow the utility to control the battery at the customer's residence, shifts the customer's energy usage of the battery during demand response events and recharges the battery when there are no expected events. Additionally, a minimum level of charge will be maintained on the battery to ensure minimum supply during outages. The battery storage program is modeled as a BYOD program, meaning Pepco will offer demand response incentives to those customers with an existing battery storage system. Pepco pays a one-time enrollment incentive and annual incentives to the homeowners based on the kW demand of their home battery storage system. The program is targeted for between 60 and 140 customers.

- EV Charger: The residential EV charger demand response program is a DLC program that manages charging of EVs during demand response events. The utility sends a signal to the customer's charging equipment that reduces the power of the charger. Customers will have the option to continue to charge their vehicles during the event but will experience a slower charge rate, thus decreasing the strain on the grid. Approved smart chargers or access to vehicle telematics are needed for this type of control. Customers with eligible equipment may enroll in the program. Pepco will provide a bill credit to the customer for enrolling in the EV DLC program. This program is complementary to the Connect EV programs, which provide rebates for Level 2 chargers. The program is targeted for between 390 and 920 customers.

- **Smart Thermostat Flexible Load Management Pilot:** The Residential Smart Thermostat Flexible Load Management ("FLM") Pilot is an enhanced demand response program through which Pepco manages connected thermostats for the purpose of reducing energy costs, GHG emissions, grid constraints, and increasing energy efficiency. The cycling of customer thermostats is designed to make the customer impact subtler, with events more frequent but shorter in duration. In contrast to Pepco's current program, which cycles all DLC customers for four hours, participating customers will be assigned to cohorts that are called sequentially during an event hour, in 15-minute intervals, thereby maximizing the FLM program savings delivered and reducing impacts to customer comfort (or perceived comfort). Pepco anticipates calling 150 to 250 of these events throughout the year during highest-priced times in both summer and winter. The program is targeted for between 1,000 to 3,000 customers.

DSM Expansion
Expansion

Summary of Program	• Three DSM programs designed to pilot energy-reducing opportunities with customers using three types of technologies
Customer Eligibility / Applicability	• Residential and small commercial customers
Program Sizing / Number of Participants	• Program size varies, ranging from 60 - 3,000, depending on the technology
Other Program Requirements	• Requirements vary by program but generally involve installing the applicable equipment and the ability to receive and respond to signals from the Company • Some programs may require additional program-specific equipment to be installed for the Company to directly control the load
Regulatory Precedent	• Eversource/National Grid/Cape Light Compact in Massachusetts as ConnectedSolutions Battery Storage[66] • Dominion Virginia Power residential DLC program, including EVs[67]
District Goal Alignment	50% reduction in building energy usage *CleanEnergy DC Omnibus* — 2032 Replacement heat and hot water systems are 100% electric *Carbon Free DC* — 2035 100% of existing homes are all electric *Carbon Free DC* — 2050

[66] Available at https://www.masssave.com/saving/residential-rebates/connectedsolutions-batteries.
[67] Available at https://www.dominionenergy.com/virginia/rates-and-tariffs/off-peak-plan

4.2.9 Income Eligible Multifamily Program

The Income Eligible Multifamily program was authorized by Commission Order No. 20663 in Formal Case No. 1148 for the purpose of assisting affordable multifamily building owners with energy efficiency retrofit financing and technical assistance in order help them identify other opportunities that would help reduce their buildings' energy usage. The program was launched by Pepco on January 1, 2021 and will operate for three years.

Income Eligible Multifamily

In Flight

Summary of Program	• Incentives for deep retrofits and technical assistance to income eligible multifamily building owners
Customer Eligibility / Applicability	• Must meet the income qualified definition of a low-income multifamily property by the District of Columbia (majority of tenants at or below 80% Area Median Income)
Program Sizing / Number of Participants	• 10,000 income-qualified households served • Average energy savings of 20% per building
Other Program Requirements	• An on-site energy assessment • A detailed report, including recommendations and estimated savings • Help with creating bid documents and specifications • Advice on financing options • Help to identify and leverage additional utility incentives • Assistance with benchmarking in ENERGY STAR® Portfolio Manager for BEPS
Regulatory Precedent	• Formal Case No. 1148 approved deep retrofit program focused on affordable master-metered multifamily buildings and master-metered multifamily buildings including LMI[68]
District Goal Alignment	50% reduction in building energy usage *CleanEnergy DC Omnibus* — **2032** Replacement heat and hot water systems are 100% electric *Carbon Free DC* — **2035** 100% of existing homes are all elec *Carbon Free DC* — **2050**

[68] *In the Matter of the Investigation into the Establishment of Energy Efficiency and Energy Conservations Programs Targeted towards both Affordable Multifamily Units and Master Metered Multifamily Buildings which include Low and Limited Income Residents in the District of Columbia*, Formal Case No. 1148, Order No. 20663 (Nov. 20, 2020); Formal Case No. 1148, Order No. 19428 (Aug. 9, 2018).

4.3 Smart Rates Buildings Initiative

Smart Rates Buildings Initiative
Incentives to use appliances that reduce GHG emissions
Residential TOU Pilot
All-Electric Rate Study
Expand R-PIV Rate
Dynamic Pricing

To maximize the benefits of energy efficient and advanced technologies, the **Smart Rates Buildings Initiative** programs will create opportunities for customers to modify their behavior or benefit from deploying efficient and electric devices. Importantly, these programs will encourage customers to modify their behavior and reduce strain on the grid by using the grid during off-peak times. This has an overall benefit to all customers by creating a more efficient and lower-emitting system that can accommodate cleaner and more dynamic generation and loads.

4.3.1 Residential TOU Pilot Program

Shifting consumption to off-peak periods can help customers lower their electricity bills and avoid electricity consumption during peak periods that may otherwise necessitate electricity from peaker power plants, which tend to be less efficient, higher emitting generation sources as well as some of the most expensive power. For example, Pepco MD currently offers an LMI-focused residential TOU pilot rate that incentivizes customers to shift usage from on-peak periods to off-peak periods. Results from the first year of the program demonstrated a significant response from participating customers.[69]

In 2020, Pepco proposed a residential TOU pilot in the District. The pilot specified a participant population of 835. This pilot is currently in discussion in the PowerPath DC Rate Design Working Group. TOU rate offerings are complementary to programs that provide customers with opportunities to reduce peak usage through demand response programs, such as the Demand Side Management programs, smart thermostats or similar devices.

Residential TOU Pilot
In-Flight

Summary of Program	• A pilot TOU rate for residential customers that would apply to the distribution, transmission, and generation rates.
Customer Eligibility / Applicability	• Residential SOS customers
Program Sizing / Number of Participants	• 835 participants
Other Program Requirements	• Excludes customers with behind-the-meter generation
Regulatory Precedent	• Ameren Missouri Morning/Evening Savers Rate, Overnight Savers rate, Smart Savers rate, Ultimate Savers rate[70]
District Goal Alignment	50% reduction in building energy usage *CleanEnergy DC Omnibus* — 2032 Replacement heat and hot water systems are 100% electric *Carbon Free DC* — 2035 100% of existing homes are all electric *Carbon Free DC* — 2050

[69] The final program Evaluation, Measurement and Verification study will be filed with the MD PSC mid-October 2021.
[70] Available at https://www.ameren.com/missouri/company/rate-options, https://www.moenergy.org/wp-content/uploads/2020/08/TOU-Rates-Steven-Wills.pdf.

4.3.2 All-Electric Rate Study Program

Pepco will conduct a study to investigate the re-introduction of an "All-Electric" Residential Rate ("R-AE") Schedule. The study will include an analysis of usage and demand data for electric and gas versus all-electric residential customers and provide a recommendation on whether to reintroduce R-AE in the District.

All-Electric Rate Study

New

Summary of Program	• Pepco will conduct a study to investigate the re-introduction of an "All-Electric" Residential Rate Schedule
Customer Eligibility / Applicability	• Residential customers with all electric services
Program Sizing / Number of Participants	• To be determined
Other Program Requirements	• To be determined
Regulatory Precedent	• Evergy all-electric heat plan, Schedule R.[71] • Pepco previously offered R-AE rates[72]
District Goal Alignment	50% reduction in building energy usage *CleanEnergy DC Omnibus* — 2032 Replacement heat and hot water systems are 100% electric *Carbon Free DC* — 2035 100% of existing homes are all electric *Carbon Free DC* — 2050

[71] Available at residential-service-081419.pdf (evergy.com)
[72] Formal Case No. 630, Order No. 5739 (directing Pepco to establish Rate R-AE); Formal Case No. 685, Order No. 6096 (extending to all qualifying residential customers)

4.3.3 Expand R-PIV Rate to All Residential SOS Customers Program

Shifting consumption to off-peak periods helps customers lower their electricity bills and avoid electricity consumption during peak demand periods. Higher peak demand periods may necessitate electricity from peaker power plants, which are typically less efficient, generate greater quantities of GHG per unit of demand served, and are more expensive.

Pepco proposes to expand its existing R-PIV rate eligibility to all residential Standard Offer Service ("SOS") customers. This will allow all residential SOS customers immediate access to an existing TOU Rate, on an opt-in basis, for the generation portion of their bill. Additionally, Pepco will revise the R-PIV rate to increase bill savings when customers shift load to off-peak periods. This rate offering will complement programs, such as smart thermostats and BYOD programs, that enable customers to more easily control their demand during higher-priced periods.

Expand R-PIV Rate to All Residential SOS Customers
In Flight

Summary of Program	• Provide SOS residential customers with a TOU price signal on their generation usage to reduce on-peak usage and shift load to off-peak periods.
Customer Eligibility / Applicability	• Residential SOS customers
Program Sizing / Number of Participants	• Unlimited
Other Program Requirements	• None
Regulatory Precedent	• SMUD Residential Time-of-Day Rate[73]
District Goal Alignment	50% reduction in building energy usage *CleanEnergy DC Omnibus* — 2032 Replacement heat and hot water systems are 100% electric *Carbon Free DC* — 2035 100% of existing homes are all electric *Carbon Free DC* — 2050

[73] Available at Chief Executive Officer and General Manager's Report and Recommendation on Rates and Services (smud.org).

4.3.4 Dynamic Pricing Program

This program would incentivize residential customers to conserve energy at those times when the grid is strained, thus helping to avoid future infrastructure investment and reducing GHG emissions. This program would establish a critical peak rebate ("CPR") program in the District that provides rebates for decreased usage during "peak events" to residential customers (Schedules R and R-PIV) who have an activated Company-furnished AMI system smart meter and are enrolled in a Company demand response program. Customers will receive the rebate as a credit on their bill.

Dynamic Pricing
In Flight

Summary of Program	• Establish a CPR program that provides a credit for reduction in demand during peak events
Customer Eligibility / Applicability	• Residential customers with AMI meters and enrolled in a Company demand response program • Customers choosing to participate in a third-party curtailment service provider's demand response program that is monetized in the PJM market are not eligible to participate in this program
Program Sizing / Number of Participants	• Unlimited • Estimated five-year participation of 25,000 customers
Other Program Requirements	• Not applicable
Regulatory Precedent	• Currently in discussion in the Commission's Rate Design Working Group • Pepco Maryland tariff includes rider Dynamic Pricing – Peak Energy Savings Credit- Rider [74]
District Goal Alignment	50% reduction in building energy usage *CleanEnergy DC Omnibus* — 2032 Replacement heat and hot water systems are 100% electric *Carbon Free DC* — 2035 100% of existing homes are all electric *Carbon Free DC* — 2050

[74] Available at About Peak Energy Savings Credit | Pepco - An Exelon Company

5. Activating the Local Energy Ecosystem Portfolio

For the District to reach its clean energy and decarbonization goals, it must swiftly transition its electric supply to clean energy resources. As a dense urban area, the District's pathway toward that clean energy supply necessarily includes local DER, including smart devices, solar, and energy storage. When deployed strategically, these DERs can provide additional benefits, such as enhanced resilience for customers and communities.

The District has clear goals emphasizing local and renewable resources. The CleanEnergy DC Act mandates 100% renewable energy by 2032 from qualifying sources. Of those renewable resources, 10% must come from local solar generation—located in the District or on a feeder that interconnects to the District by 2041.[75]

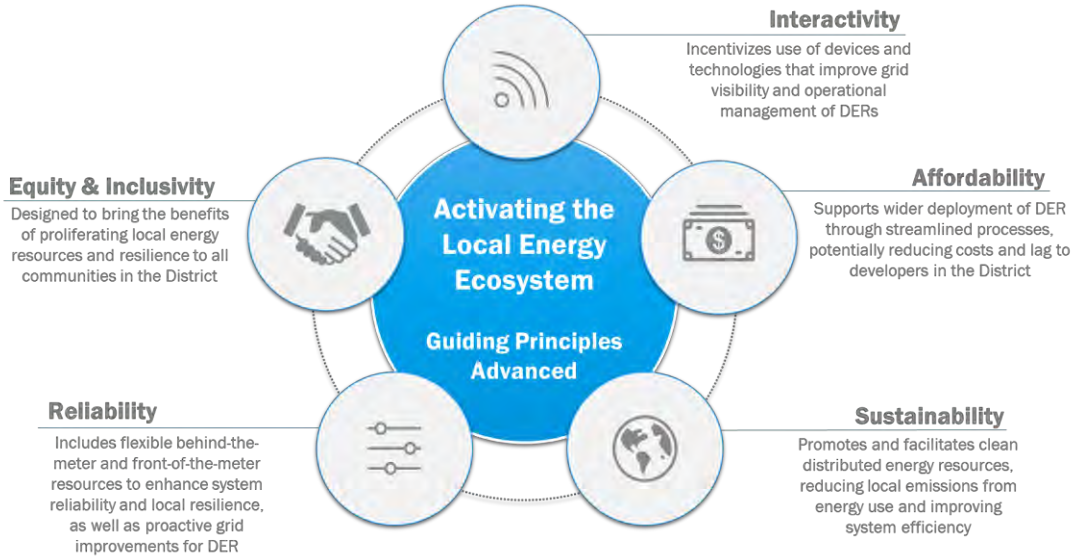
[75] Renewable energy credits from solar energy systems larger than 15 MW in capacity located on property owned by the District, or by any agency or independent authority of the District, may also be used to meet the local solar requirement. D.C. Official Code § 34–1432(e)(1). Available at https://code.dccouncil.us/dc/council/code/sections/34-1432.html

Pepco's Programs Activate Change and Advance Guiding Principles

Across its Mid-Atlantic service areas, Pepco and its sister Pepco Holdings utilities have already interconnected more than 1,000 MW of DERs with more than 86,000 individual resources, including local solar and grid-interactive storage.

To activate DERs and clean energy, Pepco focuses on programs to facilitate the deployment of third-party DERs in the District, demonstrate use cases to strategically deploy DERs and contract for renewable energy supplies. The Company is unique in its role of facilitating the deployment of DERs and is working to improve its processes to provide a more streamlined and seamless experience. From enabling developers, to identifying non-restricted feeders, to engineering support for complex interconnection infrastructure, and finally the interconnection process itself, Pepco leverages its existing system and resources to create the interactive platform to activate local DERs and is working to enhance all aspects of these efforts for developers and customers alike. Pepco is also currently pursuing multiple programs to meet local capacity demands and customer needs. These programs—including battery pilots, connected communities, and non-wires solutions—can help drive emissions reductions while improving both local and system reliability.

In assessing these initiatives and how they advance Pepco's guiding principles, there are clear contributions to all categories and especially those related to reliability and interactivity. With regard to reliability, Pepco's 5-Year Action Plan initiatives for this portfolio significantly increase managed, local energy resources that will be leveraged to improve systemwide reliability and local resilience. For similar reasons, the Company views these initiatives as drivers of interactivity. New DERs will be connected and visible to utility operators, who in turn can optimize grid services from these technologies and create new value streams for developers and customers.



Initiatives Support Diverse Customer Needs

DERs can be deployed to meet a range of customer and system needs depending on the technology, configuration, and location. The Company's three initiatives support diverse use-cases for DER and expand renewable energy resources to meet the District's clean energy goals through contracting with and interconnecting new resources. This support includes accelerating interconnection of community solar and other DERs through automation of processes and sustainable provision of Company provided engineering expertise.

The first initiative, **Connect DER Initiative**, includes programs that make it easier for customers, businesses and clean energy developers to deploy more DERs in the District. These programs aim to improve interconnection, increase automation, provide siting guidance, and leverage smart software to facilitate more dynamic load.

Second, the **Connect Communities Initiative** programs will focus on broader community initiatives to explore and demonstrate a broad range of mixed DER programs. These programs include community-oriented and community-based resources. These programs will provide value through enhancing resilience to individual customers, balancing behind-the-meter and front-of-meter resources, and providing distribution services.

Finally, Pepco will be **Accelerating Renewables Initiative** by facilitating programs to grow the renewable resources to serve District customers. These programs will help accelerate the amount of renewable energy supplied to customers in support of the District's Renewable Portfolio Standards.

5.1 Connect DER Initiative

Connect DER Initiative
Incentives to facilitate and accelerate DER deployment

Virtual Power Plant Demonstration
Interconnection Design and Process Streamlining DER Hosting Capacity Maps
Community Solar Automation
Virtual Community Renewable Energy Facility (VCEF) Automation

The suite of programs in Connect DER are designed to facilitate and accelerate the interconnection of DERs. These programs build on and expand Pepco's existing tools and processes to enable interconnection of DERs to reach the District's local solar generation goals as well as storage and other resources to fully enable an interactive grid. As the District's distribution utility, Pepco necessarily plays a key role in facilitating interconnection and, as the scale and complexity of customers' behind-the-meter DERs continues to increase, working with customers and developers to integrate new DERs into the distribution system safely and reliably.

5.1.1 Virtual Power Plant Demonstration Program

The Virtual Power Plant ("VPP") Demonstration program, which virtually aggregates the capacities of several types of power sources, will be available for participation from both residential and commercial customers. The demonstration project will involve Pepco control of behind-the-meter battery energy storage systems ("BESS") to provide grid services during defined periods. While the DSM Expansion program is based on pre-defined call windows, the VPP Demonstration program will be used to understand use cases to provide other grid services. Grid services could include bidding the BESS into the PJM capacity, energy, or ancillary services markets; increased hosting capacity; or potentially distribution capacity investment deferral. When not providing grid services, these batteries will be available to enhance management of customers' behind-the-meter load and enhance resilience and outage avoidance.

Pepco is currently exploring two options for the program: 1) utility-owned batteries leased by customers at a subsidized price; and 2) customer-purchased battery with a rebate from Pepco. In both cases, Pepco would control the batteries during select periods (e.g., limits on the number of days and hours during which Pepco can dispatch the batteries). Pepco is targeting initial enrollment of 100 to 200 customers to create an aggregate resource with of up to 1 MW of capacity and up to 3 MWh.

Summary of Program	• Installation of behind-the-meter storage that would be aggregated for a single point of control
Customer Eligibility / Applicability	• Residential and commercial customers
Program Sizing / Number of Participants	• Pepco is targeting initial enrollment of 100 to 200 customers to create an aggregate resource with of up to 1 MW of capacity and up to 3 MWh
Other Program Requirements	• Use of a control platform to manage the aggregated batteries
Regulatory Precedent	• Delmarva Power Elk Neck Virtual Power Plant project in Maryland[76] • Green Mountain Power[77] • Portland General Electric (Oregon)[78]
District Goal Alignment	100% renewable portfolio standard *CleanEnergy DC Omnibus* — 2032 10% local solar *CleanEnergy DC Omnibus* — 2040

[76] Case No. 9619, Order No. 89664, ML#232509
[77] Available at https://greenmountainpower.com/rebates-programs/home-energy-storage/bring-your-own-device/
[78] Available at https://portlandgeneral.com/about/who-we-are/innovative-energy/smart-battery-pilot

5.1.2 Interconnection Design and Process Streamlining Program

To achieve the District's local solar and broader decarbonization goals, Pepco recognizes a need to provide technical support to DER developers and accelerate the interconnection process for smaller sized DERs. The additional process automation and customer support proposed in this program will allow both residential and commercial customers applying to interconnect DERs to get resolution more quickly.

Pepco will establish the capability to automatically process smaller-sized interconnection requests from application receipt through Approval to Install. Currently, requests are addressed through manual technical reviews that require detailed calculations and review of data across systems, slowing down Pepco's approval time. This program would focus on automated analysis with manual verification of inputs and outputs to streamline DER interconnections and improve data quality through integration with other utility systems.

Large DER projects frequently require technical assistance from Pepco beyond analysis provided as part of an interconnection study. To enable dedicated support for these complex DER interconnections, the Company will establish a program specifically to support these interconnection design needs.

Interconnection Design and Process Streamlining
Expansion

Summary of Program	• Build and implement the capability to automatically process Level 1 interconnection requests. Improve processes and resources across multiple Pepco teams
Customer Eligibility / Applicability	• Automation: Level 1 (20 kW or less) and potentially Level 2 (2 MW or less) applicants • Interconnection Design: Based on project complexity
Program Sizing / Number of Participants	• Contingent on interconnection requests
Other Program Requirements	• Relies on updated DER analytics and geographic information systems ("GIS") Digitization and Optimization works
Regulatory Precedent	• ComEd, My Green Power Connection[79]
District Goal Alignment	100% renewable portfolio standard *CleanEnergy DC Omnibus* — 2032 10% local solar *CleanEnergy DC Omnibus* — 2040

[79] Smaller Generators | ComEd - An Exelon Company

5.1.3 DER Hosting Capacity Maps Program

To improve DER transparency and information sharing, Pepco will enhance the various DER maps and its existing Hosting Capacity Map. Pepco will improve existing data granularity and quality, expand information collection from interconnected DERs, automate quality control and correction for new interconnections, and improve data processing and storage capabilities. The maps will continue to be published on Pepco's public website, facilitating more informed DER decisions and improving customer experience.

DER Hosting Capacity Maps
Expansion

Summary of Program	• Enhance public online maps to provide more relevant information to guide DER siting decisions and improve customer experience • Enhance coordination with the Green Power Connection Team for customer experience. Refine algorithms, increase automation
Customer Eligibility / Applicability	• All customers seeking to interconnect DERs with the Pepco
Program Sizing / Number of Participants	• Unlimited
Other Program Requirements	• Advanced DER Analytics
Regulatory Precedent	• This program is an enhancement and extension of Pepco DC's Distributed Energy Resources maps fulfilling Merger Commitment 120(a) from Order No. 18160 in Formal Case No. 1119. • Dominion Energy Hosting Capacity Tool[80]
District Goal Alignment	100% renewable portfolio standard *CleanEnergy DC Omnibus* — 2032 10% local solar *CleanEnergy DC Omnibus* — 2040

[80] Hosting Capacity Tool | Dominion Energy

5.1.4 Community Solar Automation Program

This program will automate numerous processes needed to operate the Community Renewable Energy Facility ("CREF") program. CREF participants will benefit from increased operational efficiencies as a result of these automation upgrades. Specifically, this program would automate processes associated with subscription management, bill crediting, and unsubscribed energy payments. Eventually, the subscription management, bill crediting, and unsubscribed energy payments processes will be fully automated, minimizing potential billing errors and making the program seamless for all participants and stakeholders.

	Community Solar Automation **Expansion**
Summary of Program	• This program would automate numerous processes needed to operate the CREF program, resulting in operational efficiencies and improved customer experience • As the CREF market continues to grow, full automation of processes associated with subscription management, bill crediting, and unsubscribed energy payments will be necessary to make the program as seamless as possible for all stakeholders and enhance information accuracy and consistency
Customer Eligibility / Applicability	• All eligible CREF participants and subscriber organizations
Program Sizing / Number of Participants	• Not applicable
Other Program Requirements	• Software modifications to billing system
Regulatory Precedent	• This program builds on the existing CREF program, enabled by the District's Community Renewable Energy Act of 2013, FC 1050 and RM9-2015.
District Goal Alignment	100% renewable portfolio standard *CleanEnergy DC Omnibus* 2032 10% local solar *CleanEnergy DC Omnibus* 2040

5.1.5 Virtual Community Renewable Energy Facility ("VCREF") Automation Program

This initiative will establish billing system and process capability to allow for a VCREF program at scale. VCREFs are CREFs that are located behind-the-meter and provide the benefits of CREF through a billing transaction rather than direct connection in front of the meter to the grid. This behind-the-meter configuration can be advantageous because it avoids upgrades associated with front-of-the-meter connections. Though possible, VCREFs continue to evolve in their structures and will initially require individual project-by-project review, Pepco anticipates that this automation program will enable many future VCREF projects configurations. This program is for all customers eligible for District community solar and provides customers with additional options to go solar.

Virtual Community Renewable Energy Facility Automation
In-Flight

Summary of Program	• This program will fully establish the billing system and process capabilities to enable a VCREF program sustainably and at scale • The VCREF program is connected behind the meter and provides customers with additional choices to go solar by mitigating upgrade needs typically associated with front-of-the-meter connections.
Customer Eligibility / Applicability	• All customers eligible for community solar
Program Sizing / Number of Participants	• Not applicable
Other Program Requirements	• Software modifications to billing system • Special metering to enable VCREF transactions
Regulatory Precedent	• This program builds on the existing CREF program, enabled by the District's Community Renewable Energy Act of 2013, and leverages learnings from VCREF pilots currently underway as well as recent changes to 15 D.C.M.R. § 906.1 that eliminated the requirement for a CREF to be connected in front of the customer load meter
District Goal Alignment	100% renewable portfolio standard *CleanEnergy DC Omnibus* 2032 10% local solar *CleanEnergy DC Omnibus* 2040

5.2 Connect Communities Initiative

Connect Communities Initiative
Working with communities to enhance resilience
Resilience Hubs Program
Mt. Vernon Connected Community Roadmap and
Demonstration Project Program

The Connect Communities Initiative programs are designed to address specific, community-based needs through a collaborative process that results in newly identified energy resources and increased resilience for the community. These programs address two specific opportunities: 1) broad community engagement to address growing load requirements; and 2) ways to ensure under-resourced communities have enhanced grid capabilities and flexibilities in the event of an extended outage.

By focusing these programs on a stakeholder process, Pepco, community members and organizations can ensure that the solution is developed inclusively and reliably, and that community members have the necessary resources to power through unexpected grid events.

5.2.1 Resilience Hubs Program

Outages caused by increasingly severe weather due to climate change will disproportionately impact under-resourced communities. Back-up generation used to power customers through an event are typically from fossil-based generators that emit GHGs and local air pollutants. To increase resiliency for resource-constrained communities in a way that also abates GHG emissions in the District, Resilience Hubs can be built to supply power to communities during extended outages. Pepco participated in the development of the Jubilee Housing Resilience Center at the Maycroft Apartments ("Maycroft"), which uses onsite BESS and CREF to provide power for three days to the Resilience Center in times of need. The BESS at the Maycroft also works to extend the solar output available from the CREF. Pepco supported a similar project at the Ludlow Taylor Elementary School in Ward 6, in partnership with New Partners Community Solar.

Pepco will seek to establish approximately five Resilience Hubs in identified resource-constrained communities where District residents can find shelter during outages. The Company will explore partnerships with community organizations, such as the National Housing Trust, Jubilee Housing, New Partners Community Solar, and others to provide clear community resilience benefits. This program will include on-site BESS and renewable energy resources to provide the community with electricity to power through a potentially extended outage.

Resilience Hubs
New

Summary of Program	• Establish Resilience Hubs in the District that will serve essential needs of the resource-constrained communities in a time of extended outages • These Resilience Hubs will build on the award-winning Jubilee Housing Resilience Center at Maycroft model
Customer Eligibility / Applicability	• Buildings serving LMI communities, such as affordable housing developments and schools
Program Sizing / Number of Participants	• Pending site identification, five or more resilience hubs
Other Program Requirements	• To be determined concurrent with site and technology determination
Regulatory Precedent	• Resilient DC at 102-103.
District Goal Alignment	100% renewable portfolio standard *CleanEnergy DC Omnibus* — 2032 10% local solar *CleanEnergy DC Omnibus* — 2040

5.2.2 Mt. Vernon Connected Community Roadmap and Demonstration Project Program

This ongoing initiative will define the steps to modernize the local energy grid and lead to a clean energy future for Pepco's customers in the area served by the Mt. Vernon Substation. This will be achieved by identifying various non-wires solutions that can further defer the installation of a fourth transformer at the Mt. Vernon Substation while also providing additional community benefits, as identified by the community.

Pepco and DOEE are undertaking a collaborative effort, working closely with the community to evaluate the use of technologies like BESS, solar photovoltaic arrays, energy efficiency measures, and other technologies. Pepco and DOEE will hold a series of stakeholder engagements to review, receive input, and help generate ideas for inclusion in the Roadmap's design phase. The Roadmap design process should take approximately 12 months.

Since the outcome of this initiative is a Roadmap, it does not commit Pepco to implement any specific technology immediately. Therefore, any technical requirements that may be required will be based on the final proposed solutions.

	Mt. Vernon Connected Community Roadmap and Demonstration Project **In Flight**
Summary of Program	• Working with stakeholders to create a framework for a connected community in the area served by the Mt. Vernon Substation. Once the framework is completed and the technologies are defined, Pepco will file with the Commission for implementation
Customer Eligibility / Applicability	• Residential and commercial customers located in the area served by the Mt. Vernon Substation
Program Sizing / Number of Participants	• To be determined after development of the Roadmap
Other Program Requirements	• To be determined after development of the Roadmap
Regulatory Precedent	• FC 1144 Order No. 20274 directing Pepco to attempt to further defer the need for the fourth transformer at the Mt. Vernon Substation
District Goal Alignment	100% renewable portfolio standard *CleanEnergy DC Omnibus* 2032 10% local solar *CleanEnergy DC Omnibus* 2040

5.3 Accelerating Renewables Initiative

Accelerating Renewables Initiative
Contracting processes and offerings to leverage renewable generation
Renewable Energy Consumption Rates "Green" Rider Expansion
Standard Offer Service Contracting

The District has established nation-leading renewable energy goals to enable the District to meet its 2050 decarbonization goals, including mandating a 100% renewable energy standard for all electricity supplied to District customers by 2032. While Pepco is a wires-only utility, the programs proposed in this initiative can help accelerate the supply of renewable energy to District residents. Truly accelerating renewable energy is also dependent on programs in the Connect DER initiative as well Connect Data and Connect Infrastructure initiatives. Taken together, these programs will support the deployment of a cleaner electricity supply and local energy sources, which are key goals in the plans set forth by the District in legislation and policy roadmaps as well as by various agencies.

5.3.1 Renewable Energy Consumption Rates "Green" Rider Expansion Program

Pepco's "Green" Rider provides an opportunity for customers to directly support renewable and clean energy by allowing SOS customers to pay a surcharge in addition to their SOS rates to procure 100% renewable energy. The existing rider is currently only available to R-PIV customers (whole house TOU customers). To expand the reach of the existing "Green" Rider, Pepco will extend eligibility to all residential SOS customers. Pepco will also consider expanding the rider eligibility to commercial SOS customers.

Expanding this program to all Pepco customers on an opt-in basis will enable District residents to play a greater role in accelerating and scaling the broader transition to an energy system that is 100% clean and renewable.

Renewable Energy Consumption Rate "Green" Rider Expansion Expansion	
Summary of Program	• Residential SOS customers can pay a surcharge for 100% renewable energy through Company purchases of Renewable Energy Credits (RECs) on their behalf. The amount of renewable energy procured through the rider to serve a customer is the difference between the percentage of renewables in the existing SOS and 100%. This rider would sunset in 2032.
Customer Eligibility / Applicability	• Residential SOS customers
Program Sizing / Number of Participants	• Unlimited
Other Program Requirements	• Not applicable
Regulatory Precedent	• NV Energy, Northern NV Green Energy Choice. Docket No. 2109018[81]
District Goal Alignment	100% renewable portfolio standard *CleanEnergy DC Omnibus* 2032

[81] Available at Northern NV Green Energy Choice | NV Energy

5.3.2 Standard Offer Service Contracting Program

Pepco is the Administrator of SOS, which is the default service for electricity supply in the District. Per Commission regulations, the SOS Administrator obtains electric supply for SOS pursuant to a competitive wholesale procurement process. This includes procurement necessary to meet the District's Renewable Portfolio Standard (RPS), which increases each year as a percentage of total supply until 2032, when 100% of supply must be procured from Tier One renewable resources.

In this in-flight program, the Commission has directed Pepco to enter into long-term PPAs for Tier One renewables that would equate to approximately 5% or more of annual SOS load and that would begin in June 2024; this use of long-term PPAs for Tier One renewables is a new approach for SOS. Through implementation of this program, Pepco will explore additional means to incorporate renewables into SOS supply to mitigate the risk of imputed debt.

Pepco customers that are supplied by SOS would receive guaranteed renewable energy supply for the life of the contract. The pricing of the contract will be fixed for the duration of the contract and approved by the Commission, establishing price certainty for customers. This will effectively reduce the amount of renewable energy that other SOS suppliers will need to supply to satisfy the RPS obligation.

Standard Offer Service Contracting

In Flight

Summary of Program	• In accordance with Commission regulations, as the District's SOS electricity provider, Pepco will obtain electricity supply in line with the targets of the District's Renewable Portfolio Standard
Customer Eligibility / Applicability	• All SOS customers.
Program Sizing / Number of Participants	• Currently 85% of customers are served by SOS
Other Program Requirements	• Beginning in June 2024, Pepco to enter long-term Power Purchase Agreement with Tier One renewables that would equate to approximately 5% or more of annual SOS load • 100% of electricity supply must be procured from Tier One renewable resources by 2032
Regulatory Precedent	• FC 1017 Order No. 19897, as modified by Order No. 20327, approving a renewable agreement for 5% of SOS supply.
District Goal Alignment	100% renewable portfolio standard *CleanEnergy DC Omnibus* 2032 10% local solar *CleanEnergy DC Omnibus* 2040

6. Enhancing Infrastructure for Climate Solutions Portfolio

As the PowerPath DC process made clear and CleanEnergy DC emphasized, grid modernization is a keystone to unlocking the full value of other critical decarbonization technologies, such as electrified transportation and buildings as well as distributed solar. The electrification of transportation, electrification of building appliances, and increasing the number of DERs will require grid upgrades to enable these decarbonization technologies and maximize their value. In many ways, this portfolio underpins the three preceding portfolios, as opportunities to actively manage demand on the system will become progressively more important to support the increased demand from electrification. The distribution system must be resilient, strong, smart, and connected to accommodate 10% local solar and 70% all-electric homes by 2040 and 100% all-electric homes by 2050 as well as serve as the primary underlying fueling infrastructure for transportation.

Pepco's interactive grid model is essential to facilitating the interconnection and operation of DERs, electrified transportation, and new flexible resources. With a growing number of controllable devices, two-way power flows, and dynamic loads, there are new challenges to maintaining the safety and reliability of the system and new opportunities to optimize the use of the system. The programs proposed in this part of the Climate Solutions Plan will help Pepco make the grid stronger and smarter and enable the collection real-time data to better run the grid and prepare future offerings, allow for advanced customer and utility control to balance the system, and better integrate carbon-reducing technologies. These system enhancements

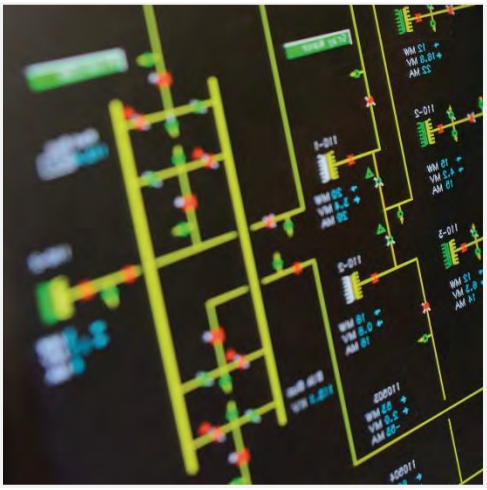
will ensure customers realize the full benefits and value associated with new and smarter devices and the holistic energy system they can enable under the interactive grid.

Pepco's Programs Activate Change and Advance Guiding Principles

The Company's investments in distribution system capabilities will create the interactive grid for customers and DER developers alike through enhanced planning and operational capabilities. As of this year, Pepco initiated implementation of an advanced distribution management system ("ADMS") to begin important upgrades to the distribution system overall, including backend soft and hard infrastructure and IT systems. These programs, which will continue under the Climate Solutions Plan, will provide greater visibility of distribution system operations, improving general service to all customers and providing a foundation for advanced integrated technologies like smart appliances, EVs, and local solar and storage solutions.

Pepco is also proposing to continue to develop and improve analytical tools to forecast DER output on an increasingly granular basis as well as improve analytical databases and processes to improve system modeling and automate processes. Pepco will continue to enable and increase customer interactivity through a distribution energy resource management system ("DERMS"), communication, IT, and control room enhancements, enabling greater active balancing of the local energy supply and customer value through other potential revenue streams.

In advancing Pepco's guiding principles, the Enhancing Infrastructure for Climate Solutions Portfolio contains a range of initiatives that contribute significantly across all guiding principles. The programs included in this portfolio are fundamental to scaling climate solutions while maintaining core reliability, and these key infrastructure enhancements will be necessary to achieve the District's climate goals. In promoting interactivity of the system, these programs also result in an interconnected grid that is better able to flexibly accommodate electric devices and optimize their use.



Initiatives Support Diverse Customer Needs

Customers across the District will benefit from a more responsive, resilient grid that is primed to integrate emerging technologies and advance customer solutions. Enhanced infrastructure will be necessary for residential customers to manage demand through smart devices and local generation opportunities. Commercial customers will need distribution circuits that are able to accommodate larger DERs, responsive technologies, and solutions that drive customer value while maintaining reliability and mitigating interconnection costs.

The **Connect Data Initiative** contains a number of critical programs to update and activate data tools and communications pathways to facilitate more DER deployment and smart devices. These programs will increase visibility into the grid and enhance operational control, which are foundational capabilities to accommodate the electrification and DER growth advanced throughout the Climate Solutions Plan. These programs will help DERs operate in ways that maximize value to customers and the grid and collect ongoing, protected and secure information to further improve grid performance and provide lessons learned for Pepco and customers in the future. Overall, with a state-of-the-art, data-driven grid, Pepco will optimize new grid conditions that require a more active and reactive system with greater visibility and control.

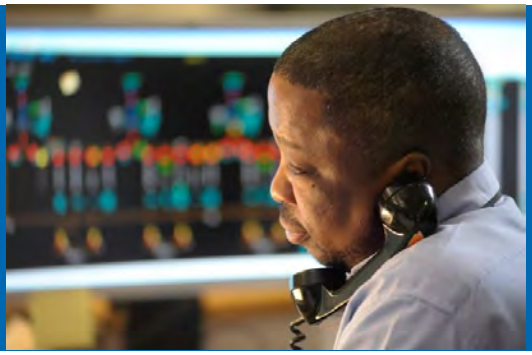
While the Connect Data Initiative focuses on the data and software tools to optimize the system, the programs proposed under the **Connect Infrastructure Initiative** will build the hard platform for the reliable operation of advanced DER and mass electrification. These programs are designed to defer new grid system assets and leverage expertise from third parties for potential solutions and make the most efficient use of the current distribution system with an active platform model—capable of optimizing new, dynamic loads such as DERs and other devices—as they emerge. The Connect Infrastructure Initiative programs and tangible grid enhancement projects will serve as the backbone of the interactive grid, necessary to enable all initiatives and programs in the Climate Solutions Plan.

6.1 Connect Data Initiative

Connect Data Initiative
Enhancing data connection pathways throughout the system
Advanced Distribution Management System
Advanced DER Analytics
Planning and Forecasting System
Geographic Information System and Data Digitization and Optimization

Similar to other Connect initiatives in the 5-Year Action Plan, the programs outlined in this section will enable greater adoption of DERs and electrified loads by utilizing data-based tools. Specifically, these tools will allow Pepco to encourage accelerated DER deployment and new electric loads and those entities' dynamic behavior. Through the 5-Year Action Plan, Pepco seeks to facilitate more DER deployment, which creates new grid conditions that require a more active and reactive system with greater visibility and control.

These data-based programs will help Pepco create programs and provide incentives to allow DERs, such as described in the Activating the Local Energy Ecosystem portfolio, to run in ways that maximize value to customers and the grid, both in terms of reliability and potential emissions reductions.



6.1.1 Advanced Distribution Management System Program

Operating the distribution system with increasing penetrations of DERs and interactive grid elements requires an increasingly smart and sensing grid to ensure safe and reliable operation for customers and utility workers. ADMS provides a suite of advanced applications that allow the operator to optimize the performance of the distribution grid under normal, heavily loaded, or during emergency conditions. Specifically, an ADMS is a technology platform that delivers a full suite of distribution control tools, automates outage management and restoration, and optimizes the performance of the distribution grid. Pepco will establish an ADMS technology platform to support a suite of distribution control, management, and optimization capabilities. This program will be implemented in three stages. Stage I, implemented within a five-year period will deploy a common ADMS that includes an Outage Management System ("OMS") and Distribution Supervisory Control and Data Acquisition ("D-SCADA"), among other advanced applications.

Stages II and III will build upon this platform to increase functionality, standardize business processes, and enable advanced grid capabilities, including DERMS. DERMS provides capabilities for real-time monitoring, management and dispatch DER, including renewable energy technologies, distributed generation, and energy storage.

Advanced Distribution Management System
In Flight

Summary of Program	• Pepco will establish an ADMS technology platform to support a suite of distribution control, management, and optimization capabilities. This program will be implemented in three stages.
Customer Eligibility / Applicability	• All customers will benefit from improved reliability and a platform to enhance DER integration.
Other Program Requirements	• Stage I, conducted over five years, will deploy a common ADMS that includes an OMS, D-SCADA, among other advanced applications • Stage II and III will be used to build upon this platform to increase functionality, standardize business processes, and enable advance grid capacities
District Goal Alignment	100% renewable portfolio standard *CleanEnergy DC Omnibus* — **2032** 10% local solar *CleanEnergy DC Omnibus* — **2040**

6.1.2 Advanced DER Analytics Program

Through monitoring of DER performance and system status, Pepco collects billions of datapoints, which can be analyzed using big data and other advanced techniques to inform system planning. These augmented data analytics and monitoring capabilities will enhance planning capabilities, facilitate identification of gaps in the current DER management system, and help identify other potential opportunities to increase system performance.

The program will create a computing platform with advanced analytics capable of analyzing large amounts of utility-owned and external datasets. Pepco will capture DER performance and metrics in a centrally managed database to enhance models used in the load forecasting process and DER impact analysis and planning. These data, combined with the analytic platform, will enable Pepco to process billions of records and perform analyses, such as analyzing DER operating characteristics, monitoring power-quality and voltage profiles, and performing predictive transformer load management, to ensure safe and reliable operation of the distribution grid.

Advanced DER Analytics

New

Summary of Program	• Pepco will capture DER performance to be synthesized into a centrally managed database to enhance DER integration, improve operations, and augment load forecasting
Customer Eligibility / Applicability	• All customers will benefit from improved DER integration
Other Program Requirements	• This effort will require dedicated full-time employees and third-party vendors • Program will build on recently developed information technology infrastructure to support advanced planning processes
District Goal Alignment	100% renewable portfolio standard *CleanEnergy DC Omnibus* — **2032** 10% local solar *CleanEnergy DC Omnibus* — **2040**

6.1.3 Planning and Forecasting System Program

The rapid adoption of DERs and grid-edge technologies has created a need for additional forecasting methodologies, datasets, and planning technologies to inform how DERs impact peak load and other stress points in the grid. The load forecasting system incorporates historical hourly load, peak load weather normalization, and an evolving and growing set of DER datasets. As the system continues to be developed, it will allow for system planners to include probabilistic DERs and grid-edge technology adoption trends, operating characteristics of grid-edge technologies, and scenario analysis capabilities to react to rapidly evolving technology and policy environments. This time-series, "8760 hour," forecast will integrate with existing power flow analyses to enable temporal and spatial analyses of the future impact of DERs and other grid-edge technologies on the distribution grid. This system will enable Pepco to conduct better lead-time planning, understand impacts of proposed projects, and proactively identify cost-saving infrastructure solutions.

Planning and Forecasting System

In Flight

Summary of Program	• The load forecasting system will incorporate historical data and forecasts to enable temporal and spatial analysis of the future impact of DER technologies on the distribution grid
Customer Eligibility / Applicability	• DER and grid-edge technology providers and all customers will benefit from enhanced DER forecasting in the planning process
Other Program Requirements	• Development and augmentation of the quality and availability of the underlying data sets (DER Analytics and Monitoring program) • Software procurement and licensing costs and engagement with third-party consultants
District Goal Alignment	25% vehicle registrations are zero-emissions *CleanEnergy DC Omnibus* — 2035 10% Local Solar *DC Omnibus* — 2035 70% of existing homes are all electric *CarbonFree DC* — 2040 100% of existing homes are all electric *CarbonFree DC* — 2050

6.1.4 Geographic Information Systems and Data Digitization and Optimization Program

An advanced interactive grid requires high-quality geospatial data and efficient, automated processes to enable an intelligent infrastructure platform. Inclusion and accuracy of DER assets in the GIS data model enables more precise modeling of evolving electrical distribution, streamlining asset integration and performance monitoring, and enhanced planning and analytical capabilities. This program will standardize the business processes, data model, and software in Pepco's GIS systems. The processes of asset design, as-built design, and data maintenance will support the long-term accuracy and usefulness of geospatial data. Together with a uniform data model for describing assets, such as energy sources and means of storage, the optimized GIS platform will provide the foundational elements for the interactive-grid vision, enabling advanced analytics and applications.

Pepco, as part of Exelon, is in the process of reviewing and updating its existing GIS information. Upon go-live, Pepco will benefit from a single GIS platform with a converged data model (a standard way to characterize all physical assets and their attributes) and enforced data quality standards. Customer benefits of the updated GIS platform include swifter response times during storms, more timely evaluations for capacity expansion, and better analytics to inform DER interconnections. At this basic level, the GIS program may help accelerate carbon intensity reduction through increased (and accelerated) DER installations.

Geographic Information Systems and Data Digitization and Optimization
In Flight

Summary of Program	• This program will standardize the business processes, data model, and software in Pepco's GIS database • The processes of asset design, as-built design, and data maintenance will support the long-term accuracy and usefulness of geospatial data
Customer Eligibility / Applicability	• All customers will benefit through improved DER integration and performance and accelerated responsiveness to storms and other outage events
Other Program Requirements	• Not applicable
District Goal Alignment	25% vehicle registrations are zero-emissions *CleanEnergy DC Omnibus* — 2035 10% Local Solar *DC Omnibus* — 2035 70% of existing homes are all electric *CarbonFree DC* — 2040 100% of existing homes are all electric *CarbonFree DC* — 2050

6.2 Connect Infrastructure Initiative

Connect Infrastructure Initiative
Building system infrastructure to unlock climate solutions

Radial Hosting Capacity Improvements
Mt. Vernon Substation Battery NWS Demonstration
Distribution System Planning/Non-Wires Alternatives Process
Ward 8 Investment Deferral

The programs described in this initiative are designed to act as the physical connection between Pepco's proposed programs in the other portfolios and the existing distribution system. These programs are designed to defer new utility-owned grid investments and leverage expertise from third parties for potential solutions and make the most efficient use of the current distribution system with an active platform model—capable of optimizing new, dynamic loads such as DERs and other devices, as they emerge. The following programs are the backbone of an interactive grid, which includes new communications tools to operate the system in real-time as well as analytics tools that can more effectively forecast grid conditions with higher penetrations of DER and smart devices. Pepco envisions more programs will be needed in this category to build out the interactive grid model—which will enable Pepco to seamlessly connect customers, businesses, entrepreneurs, third parties and their DERs, devices, EVs, and electrified homes to the interactive-based grid and each other—in the District. This physical and software infrastructure will proactively provide a foundation for emissions-reducing technologies while minimizing costs and ensuring customers can maximize the value of those resources.

6.2.1 Radial Hosting Capacity Improvements Program

As more DERs interconnect to the distribution system, investments will be needed to ensure safe and reliable service for new modes of operation. Pepco has technical interconnection requirements to maintain reliability and quality of service for all customers as DERs interconnect to the system. Under current regulatory processes, customers wishing to interconnect is responsible for 50% or more of the cost of any system improvement that would be required to host their potential DERs export capacity, which can present a barrier to new DERs.[82] Additionally, current regulatory processes enable Pepco to resolve hosting capacity constraints only after they materialize on the system, which can slow down interconnection of DERs until system improvements are approved.

This program will allow Pepco to initiate a proactive evaluation and resolution of interconnection constraints due to forecasted DER needs in specific parts of the system, enabling Pepco to analyze, plan, engineer, and execute hosting capacity improvements prior to constraints emerging that prevent customer interconnections. Pepco has already invested in software to model high volumes of DER saturation scenarios on the radial distribution system to identify limiting factors and potential violations of power quality and equipment capabilities without investing in system upgrades.

Radial Hosting Capacity Improvements

New

Summary of Program	• Pepco will invest in infrastructure improvements to its radial system to allow for increased customer DER installations • This proactive program will enable Pepco to analyze, plan, engineer, and execute hosting capacity improvements prior to imposing system restrictions that would prevent new customer interconnections
Customer Eligibility / Applicability	• Customers interconnecting to the radial portion of the system • Key beneficiaries of the program are customers with modest DERs that would otherwise bear responsibility for potentially significant system upgrades
Other Program Requirements	• Program sizing contingent on DER interconnection requests and targeted areas of the system
District Goal Alignment	10% local solar *CleanEnergy DC Omnibus* — **2040** 70% of existing homes are all-electric *Carbon Free DC* — **2040** 100% of existing homes are all-electric *Carbon Free DC* — **2050**

[82] Pepco may socialize up to $500,000 per year toward certain DER interconnection costs. After this cap is reached, customers are responsible for the full cost of DER interconnections. 15 D.C.M.R. §4005.6(a)(2).

6.2.2 Mt. Vernon Substation Battery NWS Demonstration Program

The Mt. Vernon Substation Battery Non-Wires Solution ("NWS") Demonstration is designed to demonstrate BESS as an NWS deferring the need for installation of a fourth transformer in the Mt. Vernon Substation. This deferral project will increase Pepco's understanding of the responsible deferral of wires solutions through use of DERs on the distribution system. The BESS will be used to gain an understanding of the impacts of storage on the distribution system and to defer the fourth transformer when the transformer would otherwise be needed.

To meet the capacity demands at the Mt. Vernon Substation and the growth in Ward 6, and in compliance with Commission approval in Formal Case No. 1144, Pepco is building a demonstration utility-owned and -operated BESS in the transformer bay that would otherwise house the fourth transformer. The planned BESS solution is a 1 MW / 3 MWh battery. BESS technology continues to evolve to allow more BESS capacity in smaller spaces. The residential and commercial customers served by the Mt. Vernon Substation will be partially served by the BESS during times of high demand. The BESS installation will be supported by inverters, an energy management system, and fire protection.

Mt. Vernon Substation Battery NWS Demonstration
In Flight

Summary of Program	• The Mt. Vernon Substation Battery NWS Demonstration is designed to demonstrate BESS as an NWS deferring the need for installation of a fourth transformer in the substation.
Customer Eligibility / Applicability	• All customers in the area served by the Mt. Vernon Substation.
Other Program Requirements	• Must be sited in the Mt. Vernon Substation fourth transformer bay
District Goal Alignment	10% local solar *CleanEnergy DC Omnibus* — **2040** 70% of existing homes are all-electric *Carbon Free DC* — **2040** 100% of existing homes are all-electric *Carbon Free DC* — **2050**

6.2.3 Distribution System Planning/Non-Wires Alternatives ("DSP/NWA") Process

To develop additional third-party proposals to defer utility investments, Pepco will solicit non-wires solutions to address capacity constraints through the DSP/NWA Process. The DSP/NWA Process is an outcome of the Formal Case No. 1130 PowerPath DC proceeding, in which the Company was directed to begin implementing the process in Order No. 20286. The DSP/NWA Process is designed to identify locational constraints on the distribution system, such as a substation overload, and solicit third-party solutions that may enable Pepco to defer these large-scale utility investments. These non-wires solutions identified by third parties may include BESS, solar arrays, demand response, and energy efficiency, among other technologies.

Through the pilot cycle of the DSP/NWA Process, the Company included extensive stakeholder outreach and developed a robust process to evaluate bids. Pepco held several workshops for stakeholders to ensure that the process and the various stakeholder points of input were well understood. As part of these workshops, the Company presented information related to the evaluation of bids, including the benefit-cost analysis ("BCA") framework. The Company also established a multi-phased bid evaluation approach to ensure rigorous technical evaluation in addition to the economic considerations included within the BCA framework.

Distribution System Planning / Non-Wires Alternatives Process
In Flight

Summary of Program	• The DSP/NWA Process solicits third-party non-wires solutions to address capacity constraints on the electric distribution system.
Customer Eligibility / Applicability	• Eligible capacity projects are identified on an annual basis
Other Program Requirements	• Third-party proposals must be designed to defer utility proposed investments
Regulatory Precedent	• The DSP/NWA Process is an outcome of the FC 1130 PowerPath DC proceeding. Pepco was directed to begin implementing the process in Order No. 20286.
District Goal Alignment	25% vehicle registrations are zero-emissions *CleanEnergy DC Omnibus* — 2035 10% Local Solar *DC Omnibus* — 2035 70% of existing homes are all electric *CarbonFree DC* — 2040 100% of existing homes are all electric *CarbonFree DC* — 2050

6.2.4 Ward 8 Investment Deferral Program

To meet growing capacity demands, a combination of demonstration projects and NWS will be used to defer a new substation, or similar investment, in Ward 8, in accordance with Order No. 20274. These NWS may be owned by third parties, Pepco, or a combination of ownership structures. Through the deployment of these solutions in Ward 8, all customers—residential and commercial alike—will experience the increased benefits of a lower carbon footprint throughout the District of Columbia while maintaining system reliability in an area of increased load growth. There are a range of projects the Company is advancing and planning to pursue as part of this potential deferral, leveraging a variety of technologies and business models to demonstrate the benefits of new solutions. These projects include the Resilient Homes Demonstration Project and the Congress Heights Battery Demonstration Project.

Resilient Homes Demonstration Project

In accordance with Order No. 20274,[83] Pepco will establish a new residential solar and battery storage demonstration program as part of the Ward 8 substation deferral strategy. The program will be designed to provide improved resilience to a participating income eligible community through a microgrid composed of on-site BESS, rooftop solar, and advanced inverter technology. In addition to providing a local source of back-up power during distribution outages, the DERs located within the microgrid will provide peak demand reduction. Pepco's role will focus on distribution system and operation, and the Company will partner with other stakeholders and organizations on BESS and to facilitate a third-party owned solar resource.

Congress Heights Battery Demonstration Project

The Congress Heights Battery Demonstration Project, which encompasses the Company's Alabama Avenue Substation, is designed to demonstrate BESS as an innovative distribution asset and to develop experience operating the BESS to meet distribution and other potential system needs. Pepco plans to test different use cases, including the potential to increase the feeder hosting capacity for renewable DERs and operational schemes that charge the battery during lower-GHG-emitting periods and discharge during higher-GHG-emissions periods. Pepco's local distribution center will operate the BESS to respond to local electric demand, and the Company will use the BESS to demonstrate other GHG-reducing use cases.

To meet capacity demands at the Alabama Avenue Substation and the growth in Ward 8, Pepco is building a demonstration, utility-owned and -operated BESS. The proposed project is a 1 MW / 3 MWh BESS that connects into Feeder 15165 out of Alabama Avenue Substation.

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83 Formal Case No. 1144, Order No. 20274 at ¶95.

The BESS is projected to be in operation for 15 years. The residential and commercial customers served on the feeder will be partially served by the BESS during times of high demand. The BESS installation will be supported by inverters, an energy management system, and fire protection, and will be located in the existing retired Congress Heights Substation building.

Ward 8 Substation Deferral Program

In Flight

Summary of Program	• Evaluating the use of non-wires solutions to meet capacity growth needs and defer the installation of a new substation in Ward 8 • Demonstrating a BESS to meet capacity demands at Alabama Avenue Substation and other potential GHG abatement use cases • Residential solar and battery storage demonstration program
Customer Eligibility / Applicability	• Congressional Heights BESS: The customers impacted directly will be those served by Feeder 15165 • Resilient Homes: The customers impacted directly and indirectly will be residential and/or commercial customers served by substations in Ward 8
Program Sizing / Number of Participants	• Congressional Heights BESS: single 1 MW / 3 MWh battery • Resilient Homes: 20 - 100 customers
Other Program Requirements	• Both programs must be sited to defer the need for additional investment in Ward 8
Regulatory Precedent	• This program is an extension of FC 1144 Order No. 20274 directive to implement demonstration projects in Ward 8 as well as of the DSP/NWA Process approved in FC 1130 Order No. 20286. • ConEd, BQDM Demand Response Program[84]
District Goal Alignment	25% vehicle registrations are zero-emissions *CleanEnergy DC Omnibus* — 2035 10% Local Solar *DC Omnibus* — 2035 70% of existing homes are all electric *CarbonFree DC* — 2040 100% of existing homes are all electric *CarbonFree DC* — 2050

[84] Brooklyn Queens Demand Management Demand Response Program | Con Edison

7. Conclusion

Within the 5-Year Action Plan, Pepco sets forth four sector-specific portfolios designed to support the District's goals to decarbonize by 2050. The District has dedicated significant planning and resources to present a vision to reach the District's overarching GHG-emission reduction and clean energy goals with actions targeting key GHG-emitting sectors and activities. That vision is captured in several Council-passed and Mayor-approved legislative measures as well as District agency reports and policy roadmaps. Taken together, the programs in the 5-Year Action Plan identify how Pepco, as the only electric distribution utility serving the District, can assist in enabling this decarbonized, highly efficient and electrified future by connecting a variety of clean energy and electrified technologies and acting as the platform—or connector—to optimize benefits and functionality for all customers, while driving innovation and enabling new market entrants and participants. Pepco looks forward to feedback from stakeholders regarding the substantial plans identified in the 5-Year Action Plan and incorporating that feedback, as applicable, into Pepco's forthcoming 30-year plan and analyses as well as any applications filed in the FC 1167 proceeding.

In the process of putting together the 5-Year Action Plan, Pepco identified several additional programs that will be important to continue driving reductions in GHG emissions and to meet the District's long-term goals. Some of these programs, such as next generation communication systems, are already being piloted in other jurisdictions but are not actionable in the District within the next five years and, therefore, were not included in the 5-Year Action Plan. In assessing whether programs were actionable, the Company considered many factors, including supporting infrastructure, software and potential benefits of a program relative to costs.

The Company will address longer-term programs and strategies in its forthcoming 30-year plan. This document will discuss multiple strategies within the Climate Solutions Plan portfolios that need to be undertaken to meet the goals laid out by the District's leaders and Commission. Following the 30-year plan, the Company will turn its focus to conducting a BCA for the portfolios of programs identified in the 5-Year Action Plan. The Company's BCA filing will build on the program details from this proposed 5-Year Action Plan, to include refined program sizing as well as projected participation and the associated cost estimates and benefits for each program.

As noted throughout the Climate Solutions Plan and the 5-Year Action Plan, the success of these plans and achieving the District climate and clean energy goals more broadly, relies extensively on external stakeholders as well as Pepco. The Company will continue to engage and collaborate with a broad range of external stakeholders, who have specific technology, policy, government, community and other valuable expertise to provide insight on the Company's 5-Year Action Plan. The Company will incorporate the feedback into the 30-year

plan and the BCA filing, as appropriate, as well as any future program applications. This feedback as well as formal comments filed by parties on Pepco's filings will continue to be a key part of the Company's upcoming response to Commission Order No. 20754.

CERTIFICATE OF SERVICE

I hereby certify that a copy of Potomac Electric Power Company's 5 Year Action Plan has been served this October 8, 2021 on:

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