The Commonwealth of Massachusetts

DEPARTMENT OF PUBLIC UTILITIES

D.P.U. 20-74 February 4, 2021

Petition of NSTAR Electric Company d/b/a Eversource Energy for approval of Supplemental Budgets for its 2018 to 2021 Grid Modernization Plan, its Five-Year Battery Energy Storage Demonstration Program, and its Five-Year Electric Vehicle Charging Infrastructure Program.

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I. INTRODUCTION

On July 1, 2020, NSTAR Electric Company d/b/a Eversource Energy ("Eversource" or "Company") filed a request with the Department of Public Utilities ("Department") for approval of a: (1) $56 million supplemental budget for its 2018 to 2021 Grid Modernization Plan; (2) $3.0 million supplemental budget for its battery energy storage demonstration program; and (3) $10 million supplemental budget for its electric vehicle ("EV") charging infrastructure program. The Company's filing was made pursuant to Grid Modernization, D.P.U. 15-120-D/D.P.U. 15-121-D/D.P.U. 15-122-D (May 12, 2020). The Department docketed this matter as D.P.U. 20-74.

II. BACKGROUND

On May 10, 2018, the Department approved Eversource's 2018 to 2020 Grid Modernization Plan ("Grid Modernization Plan").[1] Grid Modernization, D.P.U. 15-120/ D.P.U. 15-121/D.P.U. 15-122 (2018). As part of its Grid Modernization Plan, the Department preauthorized investment by the Company in specific grid-facing categories, subject to a $133 million budget cap, for a three-year investment term from calendar years 2018 through 2020. D.P.U. 15-120/D.P.U. 15-121/D.P.U. 15-122, at 172. Additionally, in the Company's most recent base distribution rate proceeding, the Department approved a five-year battery energy storage demonstration program and a five-year electric vehicle charging infrastructure program, with budgets of $55 million and $45 million, respectively.

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[1] Eversource's Grid Modernization Plan was docketed as D.P.U. 15-122.

NSTAR Electric Company and Western Electric Company, D.P.U. 17-05, at 470-471, 501-502 (2017). Pursuant to D.P.U. 15-120/D.P.U. 15-121/D.P.U. 15-122, at 186-187, Eversource recovers the costs associated with its battery energy storage demonstration program and EV charging infrastructure program through its grid modernization cost recovery mechanism.

On May 12, 2020, the Department extended the current grid modernization plan investment term through calendar year 2021. D.P.U. 15-120-D/D.P.U. 15-121-D/ D.P.U. 15-122-D at 4-7. To the extent that Eversource encountered budget constraints on its approved grid modernization projects as a result of the investment term extension, the Department determined that the Company may petition the Department for an expansion of its grid modernization budget. D.P.U. 15-120-D/D.P.U. 15-121-D/D.P.U. 15-122-D at 7 n.7. Further, to the extent that the Company required additional funds or sought to expand the Department-approved battery energy storage demonstration program or EV charging infrastructure program, the Department determined that the Company may petition the Department for an expansion of the applicable preauthorized budget cap and/or program. D.P.U. 15-120-D/D.P.U. 15-121-D/D.P.U. 15-122-D at 6-7.

III. PROCEDURAL HISTORY

On August 19, 2020, the Department issued a Notice of Filing and Request for Comments ("Notice") in the instant docket. The Department received comments from: (1) the City of Newton; (2) Greenlots; and (3) EVgo Services, LLC ("EVgo").

In its Notice, the Department determined that participation by limited intervenors and limited participants in the evidentiary phase of this proceeding would be allowed to the extent permitted in D.P.U. 15-122 and/or D.P.U. 17-05. D.P.U. 20-74, Notice of Filing and Request for Comment at 2 (August 19, 2020). The Department received timely notices of intent to participate in this proceeding from the following: (1) Attorney General of the Commonwealth of Massachusetts (intervenor in D.P.U. 15-122 and D.P.U. 17-05); (2) Department of Energy Resources ("DOER") (intervenor in D.P.U. 15-122 and D.P.U. 17-05); (3) Cape Light Compact JPE (intervenor in D.P.U. 15-122 and D.P.U. 17-05); (4) ChargePoint, Inc. ("ChargePoint") (limited intervenor D.P.U. 17-05 on the Company's EV infrastructure program and limited participant in D.P.U. 15-122); (5) The Energy Consortium ("TEC") (intervenor in D.P.U. 17-05); and (6) Green Energy Consumers Alliance and the Sierra Club, jointly ("Green Energy/Sierra Club") (limited intervenor in D.P.U. 17-05 on the Company's EV infrastructure program and battery energy storage demonstration program). Additionally, the Department granted EVgo limited participant status. D.P.U. 20-74, Hearing Officers' Ruling on Petition to Intervene (October 9, 2020).

In lieu of testimony, Eversource filed a report that describes the grid modernization investments it proposes for calendar year 2021 and supporting information, sponsored by Jennifer A. Schilling, Vice President of Grid Modernization for the Eversource Energy operating companies and Kevin M. Boughan, Manager, Research & Business Development for the Eversource Energy Service Company ("Report"). On October 16, 2020, ChargePoint filed the direct testimony of Kevin George Miller, its Director of Public Policy.

The Company responded to information requests issued by the Department, Attorney General, TEC, and Green Energy/Sierra Club.[2] On November 6, 2020, the Department determined that an evidentiary hearing was not necessary.[3] On November 18, 2020, initial briefs were submitted by the Company, DOER, ChargePoint, TEC, and Green Energy/Sierra Club. On November 25, 2020, reply briefs were submitted by the Company, ChargePoint, TEC, and Green Energy/Sierra Club.

IV. DESCRIPTION OF COMPANY PROPOSAL

A. Introduction

For calendar year 2021, Eversource requests approval of a total supplemental budget of $69 million for (1) grid-facing investments associated with its Grid Modernization Plan, (2) its battery energy storage demonstration program, and (3) its EV charging infrastructure program (Report at 14-15).

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2 Pursuant to 220 CMR 1.10(3), the Department on its own motion moves into the record (1) the Company's responses to information requests DPU 1-1 through DPU 1-6, DPU 2-1 through DPU 2-6, DPU 3-1 through DPU 3-8, DPU 4-1 through DPU 4-2, AG 1-1 through AG 1-35, TEC 1-1 through TEC 1-5, SC 1-1 through SC 1-23, and SC 2-1 through SC 2-9; and (2) the direct testimony and supporting exhibits of Kevin George Miller, CP-KGM-1 through CP-KGM-6.

3 The Department established a deadline of November 6, 2020 for the parties to request an evidentiary hearing. D.P.U. 20-74, Procedural Schedule (October 13, 2020). No party requested an evidentiary hearing and the Department determined that the evidentiary record provides an adequate basis to address the Company's filing without the need for an evidentiary hearing.

B. Grid Modernization Plan

1. Overview

Eversource seeks pre-authorization for calendar year 2021 of a $56 million supplemental budget for grid-facing investments in the following categories: (1) advanced sensing; (2) automated feeder reconfiguration; (3) urban underground automation; (4) distribution system network operations; and (5) communications (Report at 6, 14-15).

2. Advanced Sensing

Eversource proposes a supplemental budget of $15 million for the following investments: (1) $9.0 million to deploy microprocessor relays equipped with remote monitoring capability at 33 feeders in substations across Massachusetts; (2) $4.0 million to install substation supervisory control and data acquisition ("SCADA") technology, including relays with remote telemetry at 14 4-kilovolt ("kV") feeders in eastern Massachusetts; (3) $1.0 million to install power quality monitoring devices at one substation serving Harvard University, a commercial and industrial ("C&I") customer with equipment sensitive to power quality events; and (4) $1.0 million to deploy 300 line sensors across Massachusetts at high priority locations (e.g., step transformers, medium-sized solar facilities) (Report at 15-16, 22-24; Exhs. DPU 1-1, Att. (a); DPU 1-5, Att. (a); DPU 3-1). Of these investments, Eversource identifies power quality monitoring as a new technology, distinct from the advanced sensing technologies it has deployed pursuant to its Grid Modernization Plan (Exh. DPU 1-2).

3. Automated Feeder Reconfiguration

Eversource proposes a supplemental budget of $8.0 million to deploy approximately 100 distribution automation devices (i.e., reclosers) on the overhead distribution system in eastern Massachusetts (Report at 24-25). The Company maintains that this investment will continue progress in eastern Massachusetts toward sectionalizing the grid, isolating faults, and promoting self-healing capabilities (Report at 16, 24-27). The Company states that it will continue to prioritize deployments based on circuits with the largest customer blocks and on historical reliability performance (Report at 25).

4. Urban Underground Automation

Eversource proposes a supplement budget of $6.0 million to upgrade existing 4-kV oil switches and to complete a 4-kV auto-restoration loop in the Greater Boston and Cambridge service areas (Report at 16-17; 27-28). More specifically, Eversource requests (1) $5.0 million to replace approximately 35 older oil switches with modern vacuum fault interrupting switches and (2) $1.0 million to complete a new 4-kV auto-restoration loop scheme in 2021 in eastern Massachusetts pending completion of its first 4-kV auto restoration loop project in 2020 (Report at 27; Exhs. DPU 1-1, Att. (a); DPU 1-5).

5. Distribution System Network Operations

Eversource proposes a total supplemental budget of $22 million to: (1) install distribution management system ("DMS") technology; (2) automate its advanced load flow tool to produce updated hosting capacity maps; (3) continue its volt-VAR optimization ("VVO") program; (4) conduct a geographic information system survey; and (5) conduct

measurement and verification activities, and manage the programs within the distribution system network operations investment category (Report at 17-19, 28-41; Exhs. DPU 1-1, Att. (a); DPU 1-4).

Of the $22 million, the Company requests $8.0 million for the first year of a three-year project to install DMS technology at its four control centers (Report at 28-29). Eversource states that DMS will optimize distribution system performance to minimize electricity losses, improve reliability and asset utilization, integrate distributed energy resources, and use demand-side management as a resource (Report at 17). For 2021, the Company proposes to develop a pre-production DMS model in its New Bedford control center (Exh. DPU 3-2).

Second, the Company requests $5.0 million to automate its advanced load flow tool to produce high-resolution hosting capacity maps that are easy to use and can be updated regularly (Report at 35). As part of this effort, the Company proposes to enhance its load and generation forecasting capabilities and to upgrade its data historian environment to improve its engineering analysis and ability to respond to system condition changes over time (Report at 35-36). Eversource identifies this initiative as new technology, distinct from the technology deployed pursuant to its approved Grid Modernization Plan (Exh. DPU 1-2).

Third, Eversource requests $5.0 million to continue its VVO program, including expansion of the program to two additional substations in western Massachusetts and adding eight to twelve additional feeders to the existing VVO footprint of 26 feeders in Springfield and Hadley (Report at 18-19, 38-41). Additionally, Eversource proposes to (1) optimize the

location of capacitor banks in southeastern Massachusetts, adding remote monitoring and control to support grid management and stability to 25 to 30 capacitor banks in areas of high solar penetration, and (2) deploy an additional 400 to 500 pole-top micro-capacitors to feeders in western and southeastern Massachusetts (Report at 40).

Fourth, Eversource requests $2.75 million to conduct a geographic information system survey of its overhead assets (i.e., customer-to-overhead transformer routes and connections) in western Massachusetts to support its existing outage management system and DMS model build-out from 2022 to 2023 (Report at 31; Exhs. DPU 1-1, Att. (a); DPU 1-4; DPU 2-2).

Finally, Eversource requests $1.25 million for measurement and verification activities, and program management related to distribution system network operations investments (Exhs. DPU 1-1, Att. (a); DPU 1-4).

6. Communications

Eversource proposes a supplemental budget of $5.0 million to improve its communications networks (Report at 19, 42-44). Of the $5.0 million, Eversource requests $4.0 million to install additional nodes to improve wireless radio communications in eastern and western Massachusetts (Report at 19; Exh. DPU 1-1, Att. (a)). Eversource also requests $1.0 million to install fiber at five substations across its service territory to increase the bandwidth of data transmission between field devices and the Company's energy control system (Report at 42; Exh. DPU 1-1, Att. (a)). Specifically, the Company plans to replace an existing phone line with fiber at one substation in eastern Massachusetts and upgrade radio

transmission to fiber communications at four substations in western Massachusetts (Report at 43).

C. Battery Energy Storage Feasibility Study

Eversource proposes a supplemental budget of $3.0 million to conduct an engineering and design study to analyze the technical and economic feasibility of deploying battery energy storage at four substations in southeastern Massachusetts (Report at 44, 46). Eversource maintains that this proposal will allow it to continue energy storage program development in advance of its next grid modernization plan filing in July 2021 (Report at 46).

D. Electric Vehicle Charging Infrastructure Program

Eversource proposes a supplemental budget of $10 million to increase EV charging infrastructure development and support the adoption of zero emissions vehicles (Report at 20, 49-50; Exh. DPU 1-6). The Company expects that its site electrification efforts to date will fully exhaust its existing preauthorized $45 million budget by mid-2021 (Report at 49). With its supplemental budget, the Company proposes to construct 100 additional EV charging sites in 2021, at an average cost of approximately $100,000 each (Report at 50; Exh. DPU 1-1). These sites will be located at public and workplace charging locations, and multi-unit dwellings (Report at 50; Exh. DPU 1-1).

V. POSITIONS OF THE PARTIES

A. Eversource

The Company argues that it has made significant progress in implementing its Grid Modernization Plan, battery energy storage demonstration program, and EV charging

infrastructure program and urges the Department to approve its supplemental budget to avoid a disruption in program funding prior to its next grid modernization plan filing (Company Brief at 6-9, citing Report at 7; Company Reply Brief at 3). The Company argues that a disruption in funding would hinder its current progress and negatively affect its future grid modernization efforts (Company Brief at 10-11; Company Reply Brief at 3). Specifically, the Company contends that a funding disruption could result in loss of key contractor labor and vendors, present challenges for the Company internal labor resources, and interrupt the marketing efforts that support the deployment of additional EV infrastructure (Company Brief at 10-14).

Eversource projects that it will exhaust its existing preauthorized $133 million Grid Modernization Plan budget by the end of 2020, placing approximately $123 million of grid modernization investments into service, with the remaining $10 million associated with its geographic information system survey (Report at 8, citing 2019 Grid Modernization Annual Report, D.P.U. 20-45, Table 2.4.7, at 15; Exh. DPU 4-2). With respect to its proposed supplemental budget for grid-facing investments, the Company asserts that it has carefully planned each proposed investment through 2021, including detailed analyses of budgets, needs, benefits, and investment outcomes, and the methods to determine deployment locations (Company Brief at 14-23). The Company further contends that the proposed supplemental investments are an extension of its existing Grid Modernization Plan and build upon its experiences and lessons learned (Company Brief at 23).

For the EV infrastructure investment category, the Company emphasizes that it has not proposed any EV program design changes for 2021 (Company Brief at 9). Eversource asserts that, by the end of 2020, it will have spent approximately $35 million of its $45 million existing preauthorized EV infrastructure program budget (Company Brief at 9, 21). The Company further asserts that the number of EV projects in the pipeline currently exceeds its remaining $10 million preauthorized budget (Company Brief at 13-14, citing Report at 20; Exh. DPU 1-6).

The Company argues that it requires an additional authorization of $10 million in the EV infrastructure budget category (for a total authorization of $55 million) to maintain its marketing and construction activities at the current pace with no disruption (Company Brief at 21, citing Report at 20; Exh. SC 1-4). In this regard, the Company estimates that by mid-2021, it will install an additional 1,500 charging ports with the remaining $10 million EV infrastructure budget authorization and the $10 million supplemental preauthorization will enable it to install an additional 1,000 charging ports (Company Brief at 21, citing Exh. SC 1-3).

The Company argues that a smooth continuation of its EV charging infrastructure program depends on a pipeline of site hosts interested in deploying charging infrastructure (Company Brief at 13-14, citing Report at 14). The Company argues that any uncertainty regarding EV funding in 2021 could disrupt its marketing efforts and, in turn, delay implementation of additional EV infrastructure (Company Brief at 21, citing Report at 14).

Further, the Company argues that Chargepoint's proposed modifications to its EV charging infrastructure program are beyond the scope of the instant proceeding (Company Brief at 23-24; Company Reply Brief at 2). The Company argues that an investigation of changes to its current EV charging infrastructure program in the instant docket would impede the Department's ability to conduct a timely and efficient investigation of its supplemental budget request (Company Brief at 24; Company Reply Brief at 2). Instead, the Company maintains that it will collaborate with stakeholders to address potential EV program modifications as it develops its Grid Modernization Plan for the 2022 to 2024 term (Company Reply Brief at 2-3).

With regard to its battery energy storage program, Eversource argues that it needs an additional $3.0 million to continue the program[4] with new projects focused on the integration of distributed energy resources in southeastern Massachusetts, the area of highest penetration of solar on-line and in queue in the Company's service territory (Company Brief at 22-23, citing Report at 15). Specifically, the Company maintains that it requires the additional $3.0 million to study the feasibility of battery energy storage systems installations at four of the ten substations with a high penetration of distributed energy resources in southeastern Massachusetts (Company Brief at 22, citing Exh. AG 1-25).

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[4] The Company asserts that it has made substantial progress in siting and permitting its Provincetown and Martha's Vineyard battery energy storage projects and has begun construction of its Provincetown project (Company Brief at 21-22). By the end of 2021, Eversource contends that it will have spent nearly $34 million of its total $55 million preauthorized budget for these two projects (Company Brief at 10, 22, citing Report at 21).

The Company asserts that its proposed study will support a regional approach to increase hosting capacity for the interconnection of distributed generation and could mitigate associated voltage and reverse flow concerns (Company Brief at 22, citing Report at 21). Eversource argues that approval of its supplemental budget request is critical to avoid disruption in the development of new battery energy storage projects that provide benefits to customers and are necessary to support achievement of Massachusetts's energy storage targets (Company Brief at 22, citing Report at 21).

B. DOER

DOER supports approval of the Company's supplemental grid modernization budget request (DOER Brief at 3). DOER argues that continuity between investment terms is necessary to deliver the full benefits of grid modernization (DOER Brief at 5). DOER further asserts that the Company has adequately demonstrated that its proposed supplemental budget is necessary to avoid a disruption in grid modernization benefits in 2021 (DOER Brief at 3). Finally, DOER contends that continued support for grid modernization is warranted while the Company plans new investments for the upcoming 2022 to 2024 grid modernization plan term (DOER Brief at 6-7).

C. TEC

TEC supports the Company's proposed investments in power quality monitoring (TEC Brief at 6-7, 9; TEC Reply Brief at 1). TEC argues, however, that the Department should require the Company to consult with affected C&I customers and, in particular, to: (1) develop a plan for real-time communication with affected customers regarding the cause

of momentary interruptions, restoration, and long term solution; (2) post the results of the advanced monitoring and sensing program to a dedicated website as part of the Company's customer service metric; and (3) create a customer group to assist the Company in identifying locations for equipment installation and the methods of access to data regarding momentary interruptions (TEC Brief at 6-7, 9; TEC Reply Brief at 1).

In addition, TEC argues that momentary interruptions result in unfair demand charges for customers (TEC Brief at 8). While it acknowledges that an investigation of demand charges is outside the scope of the instant proceeding, TEC urges the Department to review the issue after data on the causes of momentary outages are available from the advanced sensing program (TEC Brief at 8-9; TEC Reply Brief at 2). In this regard, TEC argues that the Department should require the Company to include a proposal in its next grid modernization plan to use such data to resolve demand charge disputes (TEC Reply Brief at 2).

D. ChargePoint

ChargePoint supports Department approval of a supplemental budget for the Company's EV charging infrastructure program (ChargePoint Brief at 2). However, ChargePoint urges the Department to (1) require two program modifications to reduce barriers to EV deployment and (2) to authorize an additional $2.0 million for the program (for a total supplemental budget of $12 million) (ChargePoint Brief at 2-3; ChargePoint Reply Brief at 3-4).

First, ChargePoint asks the Department to direct the Company to remove the requirement for EV service equipment to be deployed as a new service (ChargePoint Brief at 3-4). ChargePoint contends that removing this requirement and allowing site hosts the option of installing EV service equipment behind existing service, establishing a new service, or upgrading existing service, would reduce costs and maximize the deployment of chargers (ChargePoint Brief at 4).

Next, ChargePoint recommends that the Company modify its EV charging infrastructure program to address the high upfront and operating costs that have impeded recruitment of direct current fast charger ("DCFC") site hosts (ChargePoint Brief at 4-5, citing Exhs. SC 1-13; SC 2-1; SC 2-5; CP-KGM-1, at 7). Specifically, ChargePoint recommends that the Company adopt the rebate design used in American Electric Power Ohio's EV infrastructure program to issue rebates to site hosts for DCFC equipment (ChargePoint Brief at 6). ChargePoint recommends that the Department authorize an additional supplemental budget of $2.0 million to provide these DCFC rebates, with at least 25 percent of such rebates to be disbursed to environmental justice communities (ChargePoint Brief at 6-7).

Finally, ChargePoint asserts that its recommendations address only incremental modifications to the Company's existing EV charging infrastructure program and do not require a full review of the program (ChargePoint Reply Brief at 3-4, citing Exhs. SC 1-13; SC 2-1; SC 2-6). Therefore, ChargePoint contends that consideration of its recommendations

would not impede the Department's ability to conduct a timely investigation of the Company's supplemental budget request in this proceeding (ChargePoint Reply Brief at 4).

E. Green Energy/Sierra Club

Green Energy/Sierra Club urge the Department to approve the supplemental budget request for the Company's EV charging infrastructure program (Green Energy/Sierra Club Brief at 6; Green Energy/Sierra Club Reply Brief at 2). Green Energy/Sierra Club contend that the supplemental funding is in the public interest, will facilitate the construction of a more extensive EV charging network and advance EVs in a manner unlikely to be met by the competitive EV charging market, and will not hinder development of the competitive EV charging market (Green Energy/Sierra Club Brief at 6-8).

Green Energy/Sierra Club recommend that the Department consider ChargePoint's proposal to expand the Company's EV charging infrastructure program in the instant proceeding (Green Energy/Sierra Club Reply Brief at 3-4). Finally, Green Energy/Sierra Club recommend that the Department require the Company to develop a more comprehensive EV charging infrastructure deployment proposal to take effect upon the conclusion of the Company's current program (Green Energy/Sierra Club Brief at 8; Green Energy/Sierra Club Reply Brief at 2). Specifically, Green Energy/Sierra Club recommend that the new program: (1) address cost barriers to DCFC deployment and include opportunities to co-locate DCFC equipment with storage and/or solar; (2) address challenges to access charging at multi-unit dwellings; (3) address rate design and managed charging to maximize benefits to customers, EV drivers, and the electric grid; (4) support deployment of medium- and heavy-duty

vehicles (e.g., electrification of public and private transportation) and the needs of light-duty fleets; and (5) ensure the benefits of electrified transportation to environmental justice communities (Green Energy/Sierra Club Brief at 9-14; Green Energy/Sierra Club Reply Brief at 2).

VI. ANALYSIS AND FINDINGS

A. Introduction

The Company maintains that, as a result of the Department's extension of the current Grid Modernization Plan investment term through calendar year 2021, it faces budget constraints for certain grid-facing grid modernization projects, its battery energy storage demonstration program, and its EV charging infrastructure program (Report at 8). Therefore, pursuant to D.P.U. 15-120-D/D.P.U. 15-121-D/D.P.U. 15-122-D at 6-7 & n.7, the Company seeks an expansion of its preauthorized grid modernization budget cap, as well as its Department-approved battery energy storage demonstration program and EV charging infrastructure program (Report at 14-15). As discussed below, the standards applied by the Department to determine eligibility for preauthorization of the grid modernization investments approved in D.P.U. 15-120/D.P.U. 15-121/D.P.U. 15-122 and the programs approved in D.P.U. 17-05, will guide our review of eligibility for preauthorization in this proceeding.

B. Grid Modernization Plan Investments

1. Introduction

In D.P.U. 15-120/D.P.U. 15-121/D.P.U. 15-122, at 99-106, the Department updated its grid modernization objectives. The Department found that grid modernization should

(1) optimize system performance (by attaining optimal levels of grid visibility, command and control, and self-healing); (2) optimize system demand (by facilitating consumer price-responsiveness); and (3) interconnect and integrate distributed energy resources. To support achievement of these objectives, the Department implemented a construct whereby an electric distribution company's grid modernization plan investments could be eligible for preauthorization.[5] D.P.U. 15-120/D.P.U. 15-121/D.P.U. 15-122, at 115; Modernization of the Electric Grid, D.P.U. 12-76-B at 19 (2014). In addition, where certain conditions are met, the Department determined that an electric distribution company could be eligible for short-term targeted cost recovery of preauthorized grid modernization investments. D.P.U. 15-120/D.P.U. 15-121/D.P.U. 15-122, at 115; D.P.U. 12-76-B at 19-20.

The Department's findings on preauthorization are based on a review of the proposed investments. D.P.U. 15-120/D.P.U. 15-121/D.P.U. 15-122, at 115; D.P.U. 12-76-B at 19. To be eligible for preauthorization, a company must demonstrate that its proposed investments: (1) are designed to make measurable progress towards achievement of the Department's grid modernization objectives; (2) are incremental to existing or business as usual investments; (3) are supported by a business case that shows that the projected benefits

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[5] Preauthorization means that the Department will not revisit whether a company should have proceeded with the investments as proposed. D.P.U. 15-120/D.P.U. 15-121/ D.P.U. 15-122, at 110. The Department will, however, review the prudence of a company's implementation of the preauthorized investments. D.P.U. 15-120/ D.P.U. 15-121/D.P.U. 15-122, at 110; D.P.U. 12-76-B at 19. This latter prudence determination is required before the Department can approve final recovery of any eligible grid modernization costs. D.P.U. 15-120/D.P.U. 15-121/D.P.U. 15-122, at 110.

justify the costs; and (4) will result in reasonable bill impacts. D.P.U. 15-120/ D.P.U. 15-121/D.P.U. 15-122, at 115-116; D.P.U. 12-76-B at 15-23; D.P.U. 12-76-C at 29-30; D.P.U. 17-05, at 469-470. As part of its business case, the company must demonstrate that the projected cost of the proposed investments is reasonable and that the projected benefits justify the costs. D.P.U. 15-120/D.P.U. 15-121/D.P.U. 15-122, at 116; D.P.U. 12-76-B at 15, 17. Further, the Department has determined that investments may be treated as incremental to current investment practices if their primary purpose is to accelerate progress in achieving the grid modernization objectives. D.P.U. 15-120/D.P.U. 15-121/ D.P.U. 15-122, at 116; D.P.U. 12-76-B at 19-20.

Applying the standards above, the Department preauthorized the Company's Grid Modernization Plan investments in specific grid-facing categories, subject to a $133 million budget cap, for a three-year investment term from calendar years 2018 through 2020. D.P.U. 15-120/D.P.U. 15-121/D.P.U. 15-122, at 172.

In the instant proceeding, the Company requests that the Department preauthorize a supplemental budget of $56 million for grid-facing investments in 2021 in the following five categories: (1) advanced sensing; (2) automated feeder reconfiguration; (3) urban underground automation; (4) distribution system network operations; and (5) communications (Report at 6, 14-15). These five investment categories are consistent with the grid-facing investment categories preauthorized by the Department in D.P.U. 15-120/D.P.U. 15-121/

D.P.U. 15-122.[6] Further, with the exception of the proposed investments in power quality monitoring (advanced sensing) and hosting capacity analytics (distribution system network operations), the technologies proposed by the Company in these categories are the same or similar to technologies preauthorized by the Department in Eversource's Grid Modernization Plan (Report at 11; Exhs. DPU 1-1, Att. (a); DPU 1-2). D.P.U. 15-120/D.P.U. 15-121/ D.P.U. 15-122, at 35-41, 172.

2. Previously Deployed Technologies

From 2018 to the present, the Company completed the following grid-facing investments as part of its Grid Modernization Plan: (1) deployed 193 substation microprocessor relays and 55 4-kV substation SCADA in the advanced sensing category; (2) deployed over 250 reclosers to sectionalize the grid in the automated feeder reconfiguration category and attained its sectionalization target for western Massachusetts;

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[6] In D.P.U. 15-120/D.P.U. 15-121/D.P.U. 15-122, at 172, the Department preauthorized the Company's grid-facing grid modernization investments in seven categories: (1) DMS; (2) advanced load flow analysis; (3) VVO; (4) overhead automated feeder reconfiguration; (5) underground automated feeder reconfiguration; (6) advanced sensing; and (7) communications. In the instant filing, the proposed advanced sensing and communications investment categories are identical to the previously preauthorized investment categories, whereas the proposed: (1) distribution system network operations category consists of investments in the preauthorized DMS, advanced load flow, and VVO investment categories; (2) automated feeder reconfiguration category is comprised of investments in the preauthorized overhead automated feeder reconfiguration category; and (3) urban underground automation category includes investments in the preauthorized underground automated feeder reconfiguration category. D.P.U. 15-120/ D.P.U. 15-121/D.P.U. 15-122, at 35-42. All seven preauthorized investment categories were part of the overall distribution system network operations category. D.P.U. 15-120/D.P.U. 15-121/D.P.U. 15-122, at 35-42.

(3) replaced 105 oil switches with modern vacuum fault interruption switches in the urban underground automation category; (4) enabled 26 feeders with VVO, conducted strategic planning for DMS, and implemented an advanced load flow analytics tool within the distribution system network operations category; and (5) installed ten communication nodes in the communications category (Report at 11, 17-18, 23-25, 31-34; Exh. DPU 2-3).

With its proposed supplemental budget for 2021, as part of the preauthorized advanced sensing investment category, the Company proposes additional investments in substation microprocessor relays, 4-kV substation SCADA, and line sensors to increase the deployment of remote telemetry devices (Report at 15, 23; Exh. DPU 1-1(a), Att.). In addition, as part of the automated feeder reconfiguration investments within the preauthorized overhead automated feeder reconfiguration investment category, the Company proposes to deploy an additional 100 reclosers in eastern Massachusetts to achieve a higher degree of segmentation and reduce the average number of customers in a circuit segment (Report at 16, 24-27; Exh. DPU 1-1(a), Att.). The Company maintains that these investments will further sectionalize the grid in eastern Massachusetts and achieve the Company's service territory-wide sectionalization target (Report at 16, 24-27; Exh. DPU 1-1(a), Att.). As part of the urban underground automation investment within the preauthorized urban underground automation investment category, the Company proposes to continue to replace older oil switches with new vacuum fault interrupting switches and expand the Company's 4-kV auto-restoration program to complete one loop scheme by the end of 2021 (Report at 11, 27; Exh. DPU 1-1(a), Att.).

In addition, as part of the distribution system network operations investments within the preauthorized VVO investment category, the Company proposes to continue the deployment of VVO in 2021 and expand the reach of VVO-enabled feeders across its service territory (Report at 40; Exh. DPU 1-1(a), Att.). Further, as part of the distribution system network operations investments within the preauthorized DMS investment category, Eversource proposes to initiate the first year of a three-year project to deploy DMS to enhance the Company's ability to optimize system performance and integrate distributed energy resources, among other functions[7] (Report at 29, 17; Exh. DPU 1-2(b)). Finally, as part of the preauthorized communications investment category, the Company proposes to enhance the Company's private radio network with additional investments in base stations and devices to increase network coverage in eastern and western Massachusetts and replace radio transmission at four substations with existing available fiber (Report at 43; Exh. DPU 1-1(a), Att.). No party objected to the Company's proposed grid-facing investments.

The Department finds that the proposed grid-facing investments described above are a continuation of or enhancement to the technologies and investments preauthorized in D.P.U. 15-120/D.P.U. 15-121/D.P.U. 15-122. Therefore, the Department will rely on our

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[7] The Company identified the proposed DMS investment as a new technology in the distribution system network operations category (Exh. DPU 1-2(b)). However, the Department preauthorized the Company's DMS initiative and related investments as part of the preauthorized DMS investment category in its Grid Modernization Plan. D.P.U. 15-120/D.P.U. 15-121/D.P.U. 15-122, at 172. Accordingly, the Department will review the proposed additional DMS investments as previously deployed technologies in the preauthorized DMS investment category.

findings in D.P.U. 15-120/D.P.U. 15-121/D.P.U. 15-122, at 137-145, to support our analysis of whether the proposed investments are designed to make measurable progress towards achievement of our grid modernization objectives.

In D.P.U. 15-120/D.P.U. 15-121/D.P.U. 15-122, at 144, the Department found that the interplay of foundational grid-facing investments in advanced sensing, SCADA, DMS, load flow analytics, advanced communications, VVO, and automated feeder reconfiguration or advanced distribution automation, will bring direct benefits to customers and make measurable progress toward achievement of our grid modernization objectives. Similarly, the Company has shown that the proposed grid-facing investments in this proceeding are a suite of investments designed to further the achievement of our grid modernization objectives. In particular, consistent with our findings in D.P.U. 15-120/D.P.U. 15-121/D.P.U. 15-122, at 40, the Company has shown that the advanced sensing technologies are enabling investments that will support the transition to a modern grid by (1) enhancing the Company's DMS model; (2) improving fault location reliability, isolation, and service restoration schemes; and (3) replacing older relay technology, installing additional relays at high priority 4-kV feeders, and deploying line sensors at high priority locations across the distribution system (Report at 15-16, 23). Further, Eversource has shown that the proposed automated feeder reconfiguration investments within the preauthorized overhead automated feeder reconfiguration investment category will continue sectionalization of the grid to isolate faults and promote self-healing capabilities (Report at 16, 24-27). In addition, the Company has demonstrated that the proposed urban underground automation investments within the

preauthorized urban underground automated feeder reconfiguration investment category are designed to improve remote control, monitoring, and automation, and reduce outage impacts (Report at 28). See D.P.U. 15-120/D.P.U. 15-121/D.P.U. 15-122, at 38. Eversource has also shown that the proposed communications investments will enable the Company to send data more quickly and accurately, supporting other functions including VVO and DMS (Report at 43-44). See D.P.U. 15-120/D.P.U. 15-121/D.P.U. 15-122, at 41. Finally, with one exception discussed below, Eversource has also shown that the proposed distribution system network operations investments within the preauthorized DMS and VVO investment categories will enable the Company to analyze system conditions in real-time and respond accordingly (Report at 18). See D.P.U. 15-120/D.P.U. 15-121/D.P.U. 15-122, at 35-38.

As part of the proposed distribution system network operations investments within the preauthorized VVO investment category, the Company proposes a project to: (1) optimize the location of traditional capacitor banks in southeastern Massachusetts; and (2) add remote monitoring and control to support grid management and stability to 25 to 30 capacitor banks in the area of highest solar penetration in its service territory[8] (Report at 40). The Company has not, however, shown that these devices will be controlled by VVO software (Report

[8] The Company did not specifically identify how much of the $5.0 million supplemental budget for its proposed VVO investments is attributable to this project (Report at 38, 41; Exh. DPU 1 1, Att. (a)). However, based on the Company's historical unit cost analysis, the average, minimum, and maximum unit cost for capacitor banks is $38,222, $28,177, and $83,044, respectively (Exh. DPU 1-1, Att. (b)). The Department estimates the cost of this proposed project to be approximately $1.2 million (Report at 38-41; Exh. DPU 1-1, Att. (b)).

at 38-41). Therefore, the Department is unable to preauthorize this project as an eligible grid modernization investment at this time. To the extent the Company seeks to recover costs associated with this project through its grid modernization factor, the Company must demonstrate that these investments are eligible grid modernization investments and not interconnection-related investments that are appropriately recovered through base distribution rates (as a capital investment) or otherwise through the interconnection process.[9] See D.P.U. 15-120/D.P.U. 15-121/D.P.U. 15-122, at 170; D.P.U. 17-05, at 241.

Based on our findings above and consistent with our findings in D.P.U. 15-120/ D.P.U. 15-121/D.P.U. 15-122, at 137-145, the Department finds that the proposed investments in previously deployed grid-facing technologies will make measurable progress towards achievement of the Department's grid modernization objectives through: (1) optimizing system performance by improving grid visibility, command and control, and self-healing; and (2) facilitating the interconnection and integration of distributed energy resources.

Further, the Department has stated that investments may be treated as incremental to current investment practices if their primary purpose is to accelerate progress in achieving the grid modernization objectives. See D.P.U. 12-76-B at 19-20. Consistent with our findings in D.P.U. 15-120/D.P.U. 15-121/D.P.U. 15-122, at 116, 146-149, the Department finds that

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[9] As part of its next applicable grid modernization factor filing where it seeks recovery of these costs, the Company shall include testimony and supporting exhibits demonstrating that these investments are eligible grid modernization investments.

the proposed investments in previously deployed grid-facing technologies are incremental to the Company's existing or business as usual investments. As noted above, with the exception of the proposed capacitor bank project, the proposed grid-facing investments continue the deployment of technologies that were preauthorized in the Company's Grid Modernization Plan with a primary purpose to accelerate progress in achieving the Department's grid modernization objectives. D.P.U. 15-120/D.P.U. 15-121/D.P.U. 15-122, at 116, 146-149.

Finally, after review, the Department finds that the projected costs of the proposed investments in previously deployed grid-facing technologies are reasonable[10] and, based on our analysis in D.P.U. 15-120/D.P.U. 15-121/D.P.U. 15-122, at 167-171, we find that the projected benefits justify the costs (Report at 15-19, 23, 25-26, 28, 32-34, 40-41, 43-44; Exhs. DPU 1-1; DPU 1-3).

3. Power Quality Monitoring

Of its total proposed $56 million supplemental budget for grid-facing investments, Eversource seeks $1.0 million to install power quality monitoring technology at a single substation in response to concerns raised by a large C&I customer regarding momentary outages, voltage sags, and the resultant negative impacts on the customer's equipment and facilities (Exh. DPU 3-1). Eversource identifies the proposed power quality monitoring

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[10] Eversource's cost estimates are based on vendor quotes and historical deployment costs (Exh. DPU 1-1). While the Department accepts Eversource's cost estimates to determine eligibility for preauthorization here, the Company bears the burden to demonstrate that its actual expenditures are reasonable and prudently incurred at the time it seeks final cost recovery. D.P.U. 15-120/D.P.U. 15-121/D.P.U. 15-122, at 166.

investment as a new technology deployment in the advanced sensing category (Exh. DPU 1-2). TEC supports the Company's proposed power quality monitoring investment and urges the Department to expand the proposal[11] (TEC Brief at 5-8; TEC Reply Brief at 1-2).

Momentary outages and their negative impacts on C&I customers are a real concern that may carry significant monetary repercussions (Exh. DPU 1-3, at 1; see also TEC Brief at 4-5). The proposed investment will be a first-of-its kind investment for the Company (Exh. TEC 1-1). Eversource maintains that the proposed investment will help the Company (1) identify and determine the nature of the system disturbance and the causal factors; (2) better understand whether the identified system disturbance is outside of published operating specifications; and (3) provide detailed data to assist the Company in addressing the power quality issues specific to the C&I customer associated with the proposed substation investment (Exhs. TEC 1-1; DPU 1-3). Further, the proposed investment is designed to improve system visibility, enable the Company to collect real-time data on the operational status of its distribution system, and inform the Company's decisions on future deployments to address other power quality issues (Report at 22; Exhs. TEC 1-1; DPU 1-3). While general investments to address service quality issues are not eligible grid modernization investments, the Department finds that this proposed power quality monitoring investment is designed to make measurable progress towards achievement of the Department's grid

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[11] No other party addressed the Company's proposed power quality monitoring investment.

modernization objectives through optimizing system performance by improving system visibility (Exhs. DPU 1-3, at 3-4; DPU 2-1, at 3). In addition, the Department finds that the proposed power quality monitoring investment is incremental to the Company's existing or business as usual investments as it is a first-of-its kind technology deployment with a primary purpose to accelerate progress in achieving the Department's grid modernization objective of optimizing system performance (Exhs. DPU 1-2(b); TEC 1-1).

The proposed power quality monitoring investment is limited to data collection and analysis at a single substation (Exhs. TEC 1-1; TEC 1-3). While the investment will reduce costs associated with the collection of power quality data from feeder relays, the investment will not provide other direct quantifiable benefits to customers unless the Company takes further action (Exh. DPU 1-3(d)). However, the scope of remedial actions, if any, necessary to resolve the power quality issues experienced by the C&I customer associated with the proposed investment cannot be determined at this time with any specificity (Exh. TEC 1-1). It is, therefore, difficult to assess the benefits of the proposed investment in relation to its estimated cost. Nevertheless, the Department determines that the proposed investment is an important first step towards resolution of a concern that has far reaching impacts on C&I customers and that the potential benefits of the proposed investment are sufficient to justify the proposed $1.0 million budget for this investment as a proof-of-concept pilot project (Report at 23-24; Exhs. DPU 1-3; TEC 1-3).

Accordingly, the Department finds that it is appropriate to preauthorize the proposed power quality monitoring investment as a one-time pilot project to allow the Company to gain

experience in deploying the power quality monitory advanced sensing technology and, more importantly, in analyzing the collected data and developing solutions to resolve power quality issues experienced by C&I customers.[12] In this regard, the Department finds that the proposed $1.0 million budget is reasonable and the potential benefits of the proposed investment justify the requested budget for this investment.

In its future Grid Modernization Annual Report filings, the Company shall include detailed information and analysis on the implementation of this pilot program including: (1) a detailed description of the implementation of the power quality monitoring technology; (2) information regarding data collection and analysis from this technology; (3) an analysis of the effectiveness of the power quality monitoring technology in identifying the cause of the power quality issues of the C&I customers associated with the substation where the technology has been deployed; and (4) a description of any actions taken to resolve these power quality issues.

The Department declines at this time to expand the power quality monitoring program as suggested by TEC (see TEC Brief at 6-7, 9; TEC Reply Brief at 1). Pursuant to its current work plan, Eversource states that it intends to expand its deployment of power quality

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[12] While the Department has preauthorized the Company's proposed power quality monitoring project as a pilot, we have not preauthorized as eligible grid modernization investments any potential solutions to the power quality issue at the identified substation. To the extent the Company seeks to recover costs associated with solutions to the power quality issue as grid modernization investments, it must demonstrate that they are incremental to business as usual investments and qualify as grid modernization investments at the time cost recovery is sought.

monitoring equipment during the next grid modernization plan investment term (i.e., 2022 through 2024)[13] (Exh. AG 1-1, at 3). The program modifications proposed by TEC are more appropriately considered in the context of the Company's next grid modernization plan filing. Nevertheless, the Department expects the Company to continue to communicate and work closely with C&I stakeholders to address power quality concerns as they arise.

4. Hosting Capacity Analytics

As part of its total proposed $56 million supplemental budget for grid-facing investments, Eversource seeks $5.0 million to automate the advanced load flow tool developed as part of its approved Grid Modernization Plan to produce advanced hosting capacity maps and to improve analysis of increased distributed energy resources on its distribution system (Report at 38; Exh. DPU 1-1, Att.). Eversource identifies this investment as a new technology deployment within its distribution system network operations category (Exh. DPU 1-2). Eversource maintains that this investment will improve accuracy of circuit segment-level hosting capacity values, provide timelier automated analysis results, and streamline the interconnection study process through the integration of related databases

[13] To the extent that Eversource seeks preauthorization to expand deployment of power quality monitoring equipment as part of its next grid modernization plan, the Company will be required to demonstrate how such investments qualify for preauthorization as eligible grid modernization investments. Further, any such proposal must contain a detailed description of the process the Company will use to (1) determine the cause of a customer's power quality issues; (2) evaluate the effectiveness of the power quality monitoring devices to identify the cause of power quality issues; and (3) implement solutions to resolve the power quality issues, including a detailed customer communications plan.

(Report at 36-37). No party addressed the Company's proposed hosting capacity analytics investment.

In D.P.U. 15-120/D.P.U. 15-121/D.P.U. 15-122, at 172, the Department preauthorized the advanced load flow analysis investment category. The Department finds that the proposed hosting capacity analytics investment within the preauthorized advanced load flow analysis category will make measurable progress toward the Department's grid modernization objective of interconnecting and integrating distributed energy resources[14] (Exh. DPU 1-3). D.P.U. 15-120/D.P.U. 15-121/D.P.U. 15-122, at 103, 167, 172-173. Further, the advanced hosting capacity maps and the deeper understanding of the role of distributed energy resources on the distribution system provided by this investment will support the Commonwealth in reaching its decarbonization objectives. In addition, the Department finds that the proposed hosting capacity analytics investment is incremental to the Company's existing or business as usual investments and its primary purpose is to accelerate progress in achieving the Department's grid modernization objective of interconnecting and integrating distributed energy resources (Report at 38; Exh. DPU 1-3).

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[14] The Department notes that there is a potential for overlap in the software applications deployed in the DMS, advanced load flow, and the hosting capacity analytics investments for various aspects of distribution system load flow analyses (Exhs. DPU 2-4; D.P.U. 20-46, DPU-AR 4-18). At the time final cost recovery is sought for these investments (i.e., after the close of the current Grid Modernization Plan term), the Company must be prepared to demonstrate the reasonableness and prudence of its spending, including that it has minimized, to the fullest extent possible, any overlapping software investments.

Finally, after review, the Department finds that the projected costs of the proposed hosting capacity analytics investment are reasonable and the projected benefits justify the costs (Report at 36-38; Exh. DPU 1-3).

5. Bill Impacts

The Department must also consider the bill impacts that customers would experience as a result of the proposed grid modernization investments. Eversource submitted a bill impact analysis showing the estimated increases to all applicable rate classes that would result from the total proposed supplemental budget for 2021[15] (Exh. DPU 3-8(b)). The Department finds that, on balance, the bill impacts resulting from the $56 million Grid Modernization Plan supplemental budget are reasonable in light of the anticipated benefits these investments will provide.[16]

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15 The Company did not provide a detailed breakdown of the estimated bill impacts by supplemental budget category (i.e., Grid Modernization Plan, EV charging infrastructure program, battery energy storage demonstration program) (Exh. DPU 3-8).

16 Eversource's proposed investments involve a combination of O&M as well as capital spending and, therefore, the Department must make certain assumptions about the likely investment mix in order to analyze the bill impacts (Exh. DPU 3-8). If the Department were to approve the total $69 million supplemental budget, as proposed, it would result in an annual revenue requirement increase of $5.0 million (i.e., approximately $2.0 million in capital additions and $3.0 million of incremental O&M expense), which would equate to a monthly bill increase of approximately 0.1 percent for a typical residential customer (Exh. DPU 3-8).

6. Conclusion

The Company has leveraged its experience from previous deployments under its Grid Modernization Plan and appropriately incorporated lessons learned from those deployments in developing its proposed deployment plan for 2021 (Report at 24, 26-27, 28, 34, 38, 41, 44; Exh. DPU 1-5). In addition, the Department has reviewed the Company's methods for prioritizing the deployment grid-facing investments in 2021 and finds that they are generally reasonable (Exhs. DPU 1-5; AG 1-2; AG 1-5; AG 1-8; AG 1-11; AG 1-14). The Department expects that the Company will continue to refine its deployment plan to ensure an efficient deployment of grid-facing technologies that will maximize benefits to customers.

Based on the analysis above, the Department finds that the proposed grid-facing investments meet the standards set forth in D.P.U. 15-120/D.P.U. 15-121/D.P.U. 15-122 for preauthorization. Accordingly, subject to the directives contained herein, the Department preauthorizes a total supplemental budget for 2021 of $56 million for grid-facing investments in: (1) advanced sensing; (2) automated feeder reconfiguration; (3) urban underground automation; (4) distribution system network operations; and (5) communications.

This preauthorized budget is a spending cap and any spending above the cap will not be eligible for short term-targeted cost recovery. D.P.U. 15-120/D.P.U. 15-121/ D.P.U. 15-122, at 113. Eversource may shift spending among the preauthorized grid-facing categories, subject to the budget cap. Eversource may not, however, reallocate any preauthorized funds to other spending categories (e.g., battery energy storage demonstration

program, EV charging infrastructure program, etc.). D.P.U. 15-120/D.P.U. 15-121/ D.P.U. 15-122, at 173.

C. Battery Energy Storage Demonstration Program

In 2017, the Department approved a five-year battery energy storage demonstration program for Eversource, with a total budget of $55 million for two projects in Martha's Vineyard and Wellfleet, Massachusetts.[17] D.P.U. 17-05, at 470-471. In evaluating the Company's proposed battery energy storage demonstration program, the Department considered: (1) the consistency of the proposed demonstration program with applicable laws, policies, and precedent; (2) the reasonableness of the size, scope, and scale of the proposed projects in relation to the likely benefits to be achieved; (3) the adequacy of the proposed performance metrics and evaluation plans; and (4) bill impacts to customers.[18] D.P.U. 17-05, at 457, citing NSTAR Electric Company and Western Massachusetts Electric Company, D.P.U. 16-178, at 16 (2017).

Here, Eversource seeks a supplemental budget of $3.0 million for 2021 to expand of its battery energy storage demonstration program (Report at 44). Specifically, the Company

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17 Eversource recovers the costs of its battery energy storage demonstration program through its grid modernization cost recovery mechanism. D.P.U. 15-120/ D.P.U. 15-121/D.P.U. 15-122, at 186-187.

18 The Department was unable to review four additional proposed battery energy storage demonstration projects because, given their early stage of development, the information provided by the Company regarding costs and likely benefits was not sufficient for the Department to analyze the size, scope, and scale of the projects. D.P.U. 17-05, at 471.

proposes to conduct an engineering and design study to analyze the technical and economic feasibility of deploying storage at four substations in southeastern Massachusetts (Report at 44). The Company states that the proposed study could lead to a regional approach to increase hosting capacity for the interconnection of distributed generation and mitigate associated voltage and reverse flow concerns (Report at 21, 46-48). No party objected to the Company's proposed expansion of its battery energy storage demonstration program.

Battery energy storage can be used as an effective solution to accommodate the growth of distributed generation interconnection. However, the Company's proposed feasibility study is conceptual and lacks the details necessary for the Department to review the proposal (Report at 44-48). For example, the Company does not identify which substations it intends to study, the use cases applicable to each substation, or the size and configuration of storage technologies to be considered and assessed (Report at 46). Given the lack of details, the Department is unable to review or approve this supplemental budget proposal.

The Department reiterates its commitment to the Commonwealth's long-term objectives for energy storage deployment and encourages the Company to continue its efforts to develop battery energy storage projects that will be used for the benefit of the energy system.[19] The Department expects that any proposed battery energy storage projects

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[19] On August 9, 2018, Governor Baker signed into law An Act to Advance Clean Energy, Chapter 227 of the Acts of 2018 ("Act"). Section 20 of the Act established a 1,000 megawatt-hour energy storage requirement to be achieved by December 31,

presented in the Company's next grid modernization plan filing will be fully developed and include complete and detailed project descriptions, use cases, and all necessary supporting analyses.

D. Electric Vehicle Charging Infrastructure Program

In 2017, the Department approved a five-year EV charging infrastructure program for Eversource, with a total budget of $45 million.[20] D.P.U. 17-05, at 501-502. The Company's program includes investments in EV charging make-ready infrastructure in public and workplace settings, and at multi-unit dwellings. D.P.U. 17-05, at 471. In the instant proceeding, Eversource requests a supplemental budget of $10 million for 2021 for its EV charging infrastructure program (Report at 20, 49-50; Exh. DPU 1-6). The Company does not propose any program design changes (Report at 50). Instead, the Company states that the supplemental budget is needed to complete the existing site host application queue and recruit new site hosts (Exh. DPU 1-6). In the second half of 2021, the Company anticipates it will construct an additional 100 EV charging sites at public and workplace charging locations and multi-unit dwellings (Report at 50; Exh. DPU 1-1). While Green Energy/Sierra Club and ChargePoint generally support the Company's supplemental budget proposal, these limited intervenors recommend some modifications to the design of the

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2025. This requirement replaced the previously established 200 megawatt-hour requirement by January 1, 2020 target.

[20] Eversource recovers the costs of its EV charging infrastructure program through its grid modernization cost recovery mechanism. D.P.U. 15-120/D.P.U. 15-121/D.P.U. 15-122, at 186-187.

Company's EV charging infrastructure program[21] (Green Energy/Sierra Club Brief at 6; Green Energy/Sierra Club Reply Brief at 2; ChargePoint Brief at 2).

The Department has determined that any distribution company EV infrastructure proposal must: (1) be in the public interest; (2) meet a need regarding the advancement of EVs in the Commonwealth that is not likely to be met by the competitive EV charging market; and (3) not hinder the development of the competitive EV charging market.[22] Electric Vehicles, D.P.U. 13-182-A at 13 (2014). The Department found that Eversource met this three-part standard in approving its EV charging infrastructure program in D.P.U. 17-05. D.P.U. 17-05, at 475-476, citing D.P.U. 13-182-A at 13.

To date, through its EV charging infrastructure program, Eversource has (1) deployed and energized 300 EV charging locations, with 18 percent of these sites in environmental justice communities, and (2) enabled over 2,400 charging ports across Massachusetts (Report at 11; Exh. SC 1-11). The Department finds that the Company's proposal to deploy an

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21 No other party addressed the Company's supplemental EV charging infrastructure budget proposal.

22 In D.P.U. 17-05, at 476, the Department stated that it would apply this standard to any cost recovery proposal related to "EVs, EV service equipment, and EV charging, including research, development, and deployment efforts." Further, the Department stated that an electric distribution company may design and propose its own EV programs in its grid modernization plan or as a separate pilot, as long as the proposals meet the three criteria set forth above. D.P.U. 17-05, at 481-482, citing D.P.U. 13-182-A at 13.

additional 100 charging sites in 2021 will assist the Commonwealth in meeting its Global Warming Solutions Act[23] ("GWSA") goals.

The Company has not proposed any EV charging infrastructure program design changes as part of its supplemental budget request (Report at 50). Consistent with our findings in D.P.U. 17-05, at 476-478, the Department finds that, with the proposed supplemental budget, the Company's EV charging infrastructure program remains in the public interest, advances EVs in a manner unlikely to be met by the competitive EV charging market, and will not hinder development of the competitive EV charging market. In addition, the Department has reviewed the bill impacts associated with the Company's supplemental budget proposal and finds them to be reasonable in light of the potential benefits of the proposed EV infrastructure program[24] (Exh. DPU 3-8). Accordingly, the Department approves the Company's request for a supplemental budget of $10 million for its EV charging infrastructure program in 2021.

Green Energy/Sierra Club urge the Department to require the Company to develop a comprehensive EV charging infrastructure deployment proposal to address what they contend are gaps in the Company's current program regarding DCFC deployment, multi-unit dwelling charging, EV rate design issues, and the needs of environmental justice communities (Green Energy/Sierra Club Brief at 8-14). The Company, however, has not proposed any program

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23 The GWSA, codified as G.L. c. 21N, establishes limits on greenhouse gas emissions in the Commonwealth.

24 See n.17-18, above.

design changes as part of its supplemental budget request and the Department finds that the instant proceeding is not the appropriate forum to address the design of the Company's next EV charging infrastructure program (Report at 49-50). Instead, the Department encourages the Company to incorporate knowledge and insights gained from implementation of the current program in any future EV charging proposals. The Department will review potential changes in EV charging infrastructure program design as part of the Company's next grid modernization plan filing.

Similarly, ChargePoint argues that the Department should require the Company to modify its current EV charging infrastructure program, including: (1) elimination of the EV service equipment installation requirement for new services; and (2) adoption of a DCFC rebate program with an additional $2.0 million supplemental budget earmarked for such rebates (ChargePoint Brief at 3-8, citing Exhs. CP-KGM-1, at 8-9; CP-KGM-2, at 26-30). While ChargePoint asserts that the EV service equipment installation requirement increases the complexity and cost of each make-ready installation, the Department declines to eliminate the new service equipment installation requirement without a detailed review of the potential impact of its elimination. In addition, although the Department acknowledges that upfront and operating costs may pose a barrier to DCFC deployment, the Department cannot adopt a DCFC rebate program, as proposed by ChargePoint, without a full review of its appropriateness in Massachusetts (Exhs. SC-1-13; SC-2-1; see also Exh. CP-KGM-1, at 7). Consistent with our findings above, the Department finds that the instant proceeding is not the appropriate forum to address potential changes in EV charging infrastructure program

design and we decline to adopt ChargePoint's recommended modifications to the Company's EV charging infrastructure program.

Nonetheless, reducing greenhouse gas emissions in the transportation sector continues to be an important policy goal for the Commonwealth. In D.P.U. 17-05, at 476-477, the Department determined that make-ready EV infrastructure would lower the investment barriers to ownership of EV service equipment and that the expansion of the EV charging network will assist the Commonwealth in meeting its GWSA goals. The Department recognizes that proposals to address barriers to EV charging infrastructure deployment, including DCFC stations, will play a critical role in achieving the Commonwealth's GWSA and greenhouse gas emissions reduction targets.[25] The Department encourages Eversource to consider input from a broad range of stakeholders to develop appropriate EV charging infrastructure program proposals for consideration as part of its next grid modernization plan filing.

E. Conclusion

Based on the findings above, and subject to the directives contained herein, the Department approves a supplemental budget of $56 million for the Company's grid-facing Grid Modernization Plan investments and $10 million for the Company's EV charging infrastructure program. For the reasons discussed above, the Department does not approve

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[25] On April 22, 2020, Governor Baker established under the GWSA a net zero greenhouse gas emissions as the Commonwealth's new legal emission limit for 2050. Determination of Statewide Emissions Limit for 2020, Executive Office of Energy and Environmental Affairs (April 22, 2020).

the proposed $3.0 million supplemental budget for the Company's battery energy storage demonstration program. Our approval of the Grid Modernization Plan and EV charging infrastructure supplemental budgets will provide continuity in funding through the one-year extension of the Grid Modernization Plan term and allow Eversource to continue its progress towards meeting the Department's grid modernization objectives.

Our preauthorization of proposed investments in this proceeding means that the Department will not revisit whether a company should have proceeded with the investments as proposed. D.P.U. 15-120/D.P.U. 15-121/D.P.U. 15-122, at 110. The Department will, however, review the prudence of the Company's implementation of the preauthorized investments. D.P.U. 15-120/D.P.U. 15-121/D.P.U. 15-122, at 110; D.P.U. 12-76-B at 19. This latter prudence determination is required before the Department can approve final recovery of any eligible grid modernization costs. D.P.U. 15-120/D.P.U. 15-121/ D.P.U. 15-122, at 110.

VII. ORDER

After due notice, opportunity for hearing, comment and consideration, it is

ORDERED: That NSTAR Electric Company d/b/a Eversource Energy's request for preauthorization of a supplemental budget for its Grid Modernization Plan of $56 million is APPROVED, subject to the directives contained herein; and it is

FURTHER ORDERED: That NSTAR Electric Company d/b/a Eversource Energy's request for preauthorization of a supplemental budget of $10 million for its Electric Vehicle Charging Infrastructure Program is APPROVED; and it is

FURTHER ORDERED: That NSTAR Electric Company d/b/a Eversource Energy shall comply with all directives contained in this Order.

By Order of the Department,

Matthew H. Nelson, Chair

Robert E. Hayden, Commissioner

Cecile M. Fraser, Commissioner

An appeal as to matters of law from any final decision, order or ruling of the Commission may be taken to the Supreme Judicial Court by an aggrieved party in interest by the filing of a written petition praying that the Order of the Commission be modified or set aside in whole or in part. Such petition for appeal shall be filed with the Secretary of the Commission within twenty days after the date of service of the decision, order or ruling of the Commission, or within such further time as the Commission may allow upon request filed prior to the expiration of the twenty days after the date of service of said decision, order or ruling. Within ten days after such petition has been filed, the appealing party shall enter the appeal in the Supreme Judicial Court sitting in Suffolk County by filing a copy thereof with the Clerk of said Court. G.L. c. 25, § 5.