



The Commonwealth of Massachusetts

DEPARTMENT OF PUBLIC UTILITIES

D.P.U. 17-05

November 30, 2017

Petition of NSTAR Electric Company and Western Massachusetts Electric Company, each doing business as Eversource Energy, Pursuant to G.L. c. 164, § 94 and 220 CMR 5.00 et seq., for Approval of General Increases in Base Distribution Rates for Electric Service and a Performance Based Ratemaking Mechanism.

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I. INTRODUCTION

On January 17, 2017, NSTAR Electric Company (“NSTAR Electric”)¹ and Western Massachusetts Electric Company (“WMECo”), each doing business as Eversource Energy (collectively, “Eversource” or “Companies”) filed a petition with the Department of Public Utilities (“Department”) seeking approval of increases in base distribution rates for electric service pursuant to G.L. c. 164, § 94 (“Section 94”), as well as other proposals. NSTAR Electric’s last base distribution rate proceeding was in 2005. Boston Edison Company, Cambridge Electric Light Company, Commonwealth Electric Company, NSTAR Gas Company, D.T.E. 05-85 (2005). WMECo’s last base distribution rate proceeding was in 2010. Western Massachusetts Electric Company, D.P.U. 10-70 (2011).

At the time of the initial filing in this matter, NSTAR Electric and WMECo existed as individual, wholly owned subsidiaries of Eversource Energy (Exh. ES-GMBC-1, at 24). However, the subsidiaries were operated on a fully consolidated basis, with two geographic areas designated as “Eversource East” (NSTAR Electric’s service area) and “Eversource West” (WMECo’s service area) (Exh. ES-GMBC-1, at 24). The service area designated as Eversource East encompasses the City of Boston and surrounding communities, extending west to Sudbury, Framingham, and Hopkinton, as well as communities in southeastern Massachusetts extending from Marshfield, south through Plymouth, Cape Cod, and Martha’s Vineyard, and west through New Bedford and Dartmouth (Exh. ES-GMBC-1, at 24). Within

¹ NSTAR Electric is comprised of three operating units – Boston Edison Company, Cambridge Electric Light Company, and Commonwealth Electric Company (Exh. ES-RDP-1, at 5). See also BEC Energy/Commonwealth Energy Systems, D.T.E. 99-19 (1999).

this geographic area, NSTAR Electric serves approximately 1.2 million residential and commercial and industrial (“C&I”) customers in approximately 80 communities, covering approximately 1,700 square miles (Exh. ES-GMBC-1, at 24-25).

The service area designated as Eversource West encompasses the City of Springfield and surrounding communities, extending west to the New York border and north to Greenfield and the Vermont border (Exh. ES-GMBC-1, at 25). Within this geographic area, WMECo serves approximately 209,000 residential and C&I customers in approximately 59 communities in western Massachusetts, covering approximately 1,500 square miles (Exh. ES-GMBC-1, at 25).

In the instant case, Eversource seeks to increase NSTAR Electric’s rates to generate \$56.1 million in additional revenues, an approximate 6.6 percent increase over current total operating revenues (Exh. ES-DPH-2 (East), Sch. DPH-1 (Rev. 4)).² Eversource seeks to increase WMECo’s rates to generate \$34.7 million in additional revenues, an approximate 25.4 percent increase over current operating revenues (Exh. ES-DPH-2 (West), Sch. DPH-1 (Rev. 4)).³ The cost of service component of the Companies’ filing is based on a test year of July 1, 2015 through June 30, 2016 (Exhs. ES-CAH-1, at 8; ES-DPH-1, at 8).

² In its initial filing, Eversource sought to increase NSTAR Electric’s rates to generate \$60.2 million, a seven percent increase over current operating revenues (Exh. ES-DPH-2 (East), Sch. DPH-1). Eversource revised the proposed increase during the course of this proceeding.

³ In its initial filing, Eversource sought to increase WMECo’s rates to generate \$35.7 million, a 27 percent increase over current operating revenues (Exh. ES-DPH-2 (West), Sch. DPH-1). Eversource revised the proposed increase during the course of this proceeding.

The Companies' requested rate increase includes the recovery of merger-related costs and, for WMECo, exogenous costs associated with a settlement approved by the Department in NSTAR/Northeast Utilities Merger, D.P.U. 10-170 (2012) and discussed below in additional sections of this Order. The Companies also request approval, pursuant G.L. c. 164, § 96 ("Section 96"), to complete the corporate consolidation of NSTAR Electric and WMECo. Further, NSTAR Electric proposes, pursuant to Investigation into Rate Structures that will Promote Efficient Deployment of Demand Resources, D.P.U. 07-50-A (2008), to implement a rate mechanism to decouple its electric revenues from its sales.

The Companies also propose to implement a performance-based ratemaking ("PBR") mechanism that would allow each company to adjust its distribution rates on an annual basis through the application of a revenue-cap formula. Within the PBR mechanism, the Companies propose to undertake \$400 million in incremental capital investments over the next five years on projects the Companies state are designed to integrate distributed energy resources and improve service reliability, including projects to develop electric vehicle infrastructure and electric-storage capabilities. The Companies also propose to implement a credit/debit card payment system that will allow customers to pay their bills electronically without a transaction fee. Further, the Companies propose to make certain changes to their existing storm fund mechanisms, vegetation management programs, and methods used to recover property taxes.

Finally, the Companies' initial filing included a number of rate design proposals, including the elimination of separate rates for NSTAR Electric's three operating units (i.e., Boston Edison Company, Cambridge Electric Light Company, and Commonwealth Electric Company) and the establishment of one rate for each rate class; the consolidation and alignment of NSTAR Electric's and WMECo's general service rate classes; the consolidation of a number of reconciling mechanism rates; the introduction of a new optional time-of-use rate (rate G-5) for certain small general service (rate G-1) customers; and the implementation of a monthly minimum reliability contribution ("MMRC") rate for new customers seeking to install distributed generation. In their initial filing, the Companies did not propose to consolidate the distribution rates of NSTAR Electric and WMECo. On June 1, 2017, the Companies filed a revised rate design proposal that contained several key differences from the Companies' initial filing. In particular, the Companies now propose to: (1) consolidate the revenue requirements of NSTAR Electric and WMECo for rates effective January 1, 2018 and January 1, 2019; (2) maintain existing rate classes, using legacy cost allocation studies, for rates effective January 1, 2018; (3) consolidate rate classes and rates for NSTAR Electric's and WMECo's residential customers effective January 1, 2019; (4) retain rate class WR in 2019; and (5) modify the proposed transmission revenue allocation and rate design, the low-income discount, and certain components of the MMRC rate.

The Department docketed this matter as D.P.U. 17-05 and suspended the effective date of the proposed rate increases to investigate the propriety of the Companies' request. The Companies have requested that any new rates approved in this proceeding be

implemented in two phases, with the first phase to take effect on January 1, 2018, and the second phase to take effect on January 1, 2019.

II. PROCEDURAL HISTORY

On January 25, 2017, the Attorney General of the Commonwealth of Massachusetts (“Attorney General”) filed a notice of intervention pursuant to G.L. c. 12, § 11E (a). The following entities were granted full party intervenor status: (1) Acadia Center; (2) Associated Industries of Massachusetts (“AIM”); (3) the City of Cambridge; (4) the towns of Aquinnah, Barnstable, Bourne, Brewster, Chatham, Chilmark, Dennis, Edgartown, Eastham, Falmouth, Harwich, Mashpee, Oak Bluffs, Orleans, Provincetown, Sandwich, Tisbury, Truro, West Tisbury, Wellfleet, and Yarmouth, as well as Barnstable County and Dukes County, acting together as the Cape Light Compact (collectively, “Cape Light Compact”); (5) Conservation Law Foundation (“CLF”); (6) Department of Energy Resources (“DOER”); (7) the Federal Executive Agencies (“FEA”); (8) Low-Income Weatherization and Fuel Assistance Program Network and the Massachusetts Energy Directors Association (“Low Income Network”); (9) Northeast Clean Energy Council (“NECEC”); (10) Retail Energy Supply Association (“RESA”); (11) The Energy Consortium (“TEC”); (12) University of Massachusetts (“UMass”); and (13) Western Massachusetts Industrial Group (“WMIG”).

The following entities were granted limited intervenor status: (1) the Town of Barnstable; (2) Cape and Vineyard Electric Cooperative (“CVEC”); (3) ChargePoint, Inc. (“ChargePoint”); (4) Choice Energy, LLC (“Choice Energy”); (5) Direct Energy Business,

LLC, Direct Energy Business Marketing, LLC, Direct Energy Services, LLC, and Direct Energy Solar, LLC (collectively, as “Direct Energy”); (6) the Energy Consumers Alliance of New England, Inc., d/b/a Massachusetts Energy Consumers Alliance (“Mass. Energy”) and the Sierra Club; (7) the City of Newton and the Towns of Arlington, Lexington, Natick and Weston (“Municipalities”); (8) PowerOptions, Inc. (“PowerOptions”); (9) Sunrun, Inc. (“Sunrun”) and the Energy Freedom Coalition of America, LLC (“EFCA”); and (10) Vote Solar.⁴ Finally, the following entities were granted limited participant status: (1) The Berkshire Gas Company; (2) Massachusetts Electric Company and Nantucket Electric Company, each d/b/a National Grid; (3) the Massachusetts Water Resources Authority; (4) Microgrid Resources Coalition; (5) the Union of Concerned Scientists; and (6) Wal-Mart Stores East, LP.

Pursuant to notice duly issued on January 30, 2017, the Department held ten public hearings in the Companies’ service areas: (1) in Natick on March 22, 2017; (2) in Boston on March 23, 2017; (3) in Cambridge on March 30, 2017; (4) in Barnstable on April 3, 2017; (5) in New Bedford on April 5, 2017; (6) in Plymouth on April 6, 2017; (7) in Pittsfield on April 10, 2017; (8) in Springfield on April 12, 2017; (9) in Tisbury on April 24, 2017; and (10) in Greenfield on April 26, 2017. The Department also received written comments from numerous public officials and NSTAR Electric and WMECo ratepayers.

⁴ Regarding intervention and limited intervention, see D.P.U. 17-05, Hearing Officer Ruling on Petitions for Intervention at 6-8 (July 17, 2017); D.P.U. 17-05, Hearing Officer Ruling on Petitions for Intervention at 5-9 (March 13, 2017).

On June 9, 2017, the Department issued an Interlocutory Order that allowed for additional public hearings, discovery, and testimony addressing the investigation of the Companies' revised rate design proposal. D.P.U. 17-05, Interlocutory Order at 13-14 (June 9, 2017) ("Interlocutory Order"). Pursuant to the Interlocutory Order, the Department will issue a separate Order to address rate design issues. Interlocutory Order at 14.⁵

Pursuant to notice duly issued on June 23, 2017, the Department held three additional public hearings in the Companies' service area to receive comment on the revised rate design proposal: (1) in Boston on July 26, 2017; (2) in Pittsfield on August 1, 2017; and (3) in Barnstable on August 2, 2017. The Department also received additional written comments from public officials and NSTAR Electric and WMECo ratepayers.

The Department held 15 days of evidentiary hearings from June 7, 2017, through June 29, 2017, to address the non-rate design issues raised in the Companies' initial filing. The Department held four days of evidentiary hearings from September 11, 2017 through September 14, 2017, to address all aspects of the Companies' initial and revised rate design proposals.

In support of the Companies' filings, the following witnesses, all of whom are employed by Eversource Energy Service Company ("ESC"), have provided testimony:

(1) Craig Hallstrom, President, Regional Electric Operations for Massachusetts and

⁵ Based on the revenue requirements approved in this Order, the Department directs the Companies to provide updated allocated cost of service studies and bill impacts in the same format as set forth in responses to Record Requests DPU-49 and DPU-50. This update will be provided for illustrative purposes only. The Companies shall make this filing within five (5) business days of this Order.

Connecticut; (2) Penelope M. Conner, Chief Customer Officer and Senior Vice President; (3) Douglas P. Horton, Director, Revenue Requirement – Massachusetts; (4) Paul R. Renaud, Vice President of Engineering-Massachusetts; (5) Jennifer A. Schilling, Director of Strategy and Performance; (6) Samuel G. Eaton, Project Director, Electric Vehicle Charging and Energy Storage; (7) Sasha Lazor, Director, Compensation; (8) Michael P. Synan, Director, Benefits Strategy; (9) Vera L. Admore-Sakyi, Director, Vegetation Management; (10) Leanne M. Landry, Director, Budget and Investment Planning; (11) Edward A. Davis, Director of Rates; (12) Richard D. Chin, Manager of Rates; (13) Jessica Cain, Vice President of Customer Operations; and (14) Karen Hodge, Manager of Load Settlement and Analysis. In addition, the following outside consultants provided testimony on behalf of the Companies: (1) Mark E. Meitzen, Ph.D, Vice President, Christensen Associates; (2) Dennis L. Weisman, Professor Emeritus of Economics, Kansas State University; (3) Carl G. Degen, President, Christensen Associates; (4) Robert B. Hevert, Partner, ScottMadden, Inc.; (5) John J. Spanos, Senior Vice President, Gannett Fleming Valuation and Rate Consultants LLC; (6) James D. Simpson, Senior Vice President, Concentric Energy Advisors; (7) David A. Heintz, Vice President, Concentric Energy Advisors; and (8) Melissa F. Bartos, Assistant Vice President, Concentric Energy Advisors.

The Attorney General sponsored the testimony of the following witnesses:

(1) David Dismukes, Ph.D., Consulting Economist, Acadian Consulting Group;
(2) J. Randall Woolridge, Ph.D., Professor of Finance, Goldman, Sachs & Co. and Frank P. Smeal Endowed University Fellow in Business Administration at the University

Park Campus of the Pennsylvania State University; (3) David Efron, Consultant, Berkshire Consulting Services; (4) Donna Ramas, Principal, Ramas Regulatory Consulting, LLC; (5) Gregory L. Booth, P.E., President, PowerServices, Inc., UtilityEngineering, Inc., and Booth, PLLC; (6) Scott J. Rubin, independent consultant; and (7) William W. Dunkel, Principal, William Dunkel and Associates.

Acadia Center sponsored the testimony of: (1) Abigail Anthony, Ph.D., former Director, Grid Modernization Initiative, Rhode Island; and (2) Mark LeBel, Staff Attorney, Acadia Center. The Town of Barnstable sponsored the testimony of: (1) Douglas N. Riley, Esq.; and (2) Daniel Wolf, Chief Executive Officer, Cape Air. The City of Cambridge sponsored the testimony of Stephen J. Lenkauskas, City Electrician.

CVEC sponsored the testimony of: (1) Paul Gromer, president, Peregrine Energy Group; (2) Jennifer Rand, Town Administrator, West Tisbury; and (3) Carol A. Woodbury, Superintendent of Schools, Dennis-Yarmouth Regional School District. Cape Light Compact sponsored the testimony of: (1) Paul L. Chernick, president, Resource Insight, Inc.; (2) Kevin F. Galligan, president, Galligan Energy Consulting, Inc.; (3) Karl R. Rábago, Executive Director, Pace Energy and Climate Center at the Elisabeth Haub School of Law; and (4) Jonathan F. Wallach, Vice President, Resource Insight, Inc.

ChargePoint sponsored the testimony of Michael K. Waters, Director, Utility Solutions (East), ChargePoint. CLF, Mass. Energy, and the Sierra Club jointly sponsored the testimony of Douglas B. Jester, Partner, 5 Lakes Energy LLC. FEA sponsored the testimony of: (1) Michael P. Gorman, Managing Principal, Brubaker & Associates, Inc.;

and (2) Amada M. Alderson, Senior Consultant, Brubaker & Associates, Inc. The Municipalities sponsored the testimony of: (1) William H. Ferguson, Energy Program Manager, City of Newton; (2) Mark Sandeen, Managing Director, RePower Partners LLC; (3) Jillian Wilson-Martin, Sustainability Coordinator, Town of Natick; and (4) Donna VanderClock, Town Manager, Town of Weston.

RESA sponsored the testimony of Frank Lacey, independent consultant. Sunrun and EFCA jointly sponsored the testimony of: (1) Tim Woolf, Vice President, Synapse Energy Economics; (2) Melissa Whited, Senior Associate, Synapse Energy Economics; and (3) David J. Garrett, Managing Member, Resolve Utility Consulting, PLLC. TEC sponsored the testimony of James D. Bride, Principal, Energy Tariff Experts, LLC.

UMass sponsored the testimony of: (1) Raymond Jackson, Director, Physical Plant Division, UMass; (2) Michael McGerigle, Deputy Director, Facilities, UMass; and (3) Richard Silkman, Ph.D., Chief Executive Officer, Competitive Energy Services, LLC. Finally, Vote Solar sponsored the testimony of: (1) Ronald J. Binz, public policy consultant; and (2) Nathan Phelps, Program Manager, Distributed Generation Regulatory Policy, Vote Solar.

Following the June 2017 evidentiary hearings, the following parties filed initial and reply briefs: (1) Eversource; (2) Acadia Center; (3) the Attorney General; (4) Cape Light Compact; (5) ChargePoint; (6) Choice Energy; (7) DOER; (8) FEA; (9) Low Income Network; (10) Mass. Energy and the Sierra Club; (11) NECEC; (12) RESA; (13) Sunrun and

EFCA; (14) Vote Solar; and (15) WMIG and TEC. The following parties filed only initial briefs: (1) AIM; (2) CLF; and (3) UMass.

Following the September 2017 rate design-related hearings, the following parties filed initial and reply briefs related to rate design issues: (1) Eversource; (2) Acadia Center; (3) Attorney General; (4) Cape Light Compact; (5) City of Cambridge; (6) CVEC; (7) DOER; (8) FEA; (9) Low Income Network; (10) Municipalities; (11) NECEC; (12) Sunrun and EFCA; (13) TEC; (14) Town of Barnstable; (15) UMass; (16) Vote Solar; and (17) WMIG.

The evidentiary record includes responses to 242 sets of information requests issued to the Companies, intervenors, and limited intervenors and responses to 111 record requests.

III. VERIFICATION OF NSTAR ELECTRIC'S ANNUAL RETURNS AND DISTRIBUTION RATE BASE ASSETS

A. Introduction

Pursuant to a settlement between the Companies, DOER, and NSTAR Gas Company (“NSTAR Gas”) (“DOER Settlement”) approved in D.P.U. 10-170 (see also Sections V.A and VIII.M below),⁶ NSTAR Electric was required to file with the Department an independent study that included: (1) an examination and verification of the annual returns to the Department for the four-year period ending December 31 of the test-year period; and (2) verification of the assets contained in NSTAR Electric’s distribution rate base as of the test year end, developed through a systematic review as described in the National Association of Regulatory Commissioners (“NARUC”) Rate Case and Audit Manual (DOER Settlement

⁶ Pursuant to 220 CMR 1.10(3), the Department incorporates by reference the DOER Settlement filed and approved in D.P.U. 10-170-B.

at Art. 3.3 & n.1). In its decision approving the DOER Settlement, the Department directed NSTAR Electric to submit the required information by April 15, 2015, or 60 days prior to the filing of its next base rate case, whichever occurred first. D.P.U. 10-170-B at 3, 66.

Pursuant to the DOER Settlement, the examination and verification of NSTAR Electric's annual returns and the verification of the company's distribution rate base assets was to be conducted by an independent accounting firm identified through a competitive bid process conducted by NSTAR Electric in consultation with the Attorney General and DOER (DOER Settlement at Art. 3.3). More specifically, the Attorney General and DOER were to select the independent accounting firm, subject to the consent of NSTAR Electric (DOER Settlement at Art. 3.3). The costs of the independent study would not be eligible for rate recovery (DOER Settlement at Art. 3.3).

With respect to the examination and verification of NSTAR Electric's annual returns, the selected independent accounting firm was tasked to verify the mathematical accuracy of the returns; verify that the operating costs reported in the annual returns reconcile to NSTAR Electric's financial statements, including, but not limited to, the company's audited income statement and balance sheet; and confirm that the annual returns were rendered in accordance with regulatory accounting standards and requirements, as applicable (DOER Settlement at Art. 3.3).

Regarding the verification of NSTAR Electric's distribution rate base assets, the systematic review was to include a comprehensive listing of assets, and include a verification of assets in plant-in service, plant held for future use, construction work in progress,

gains/losses from property sales, and acquisition adjustments/goodwill (DOER Settlement at Art. 3.3 n.1).

Finally, as part of its decision in D.P.U. 10-170, the Department directed NSTAR Electric to provide the following additional information, traceable to the annual returns, for calendar years 2012 through 2015:⁷ (1) total operations and maintenance (“O&M”) expense; (2) depreciation and amortization; (3) taxes other than income taxes; (4) income taxes; (5) total plant in service; (6) rate of return; and (7) total operating revenues by rate component. D.P.U. 10-170-B at 23, 66.⁸

Following a competitive bid process, Ernst & Young, LLP (“Ernst & Young”) was selected to perform the independent accounting study of NSTAR’s Electric’s annual returns and distribution rate base assets (Exh. ES-DPH-1, at 8, 11-12). On April 15, 2015, NSTAR Electric submitted the verification of its annual returns performed by Ernst & Young for calendar years 2010 through 2014 (Exhs. ES-DPH-1, at 10; ES-DPH-4, Sch. DPH-2, at 56-60). On October 30, 2015, following extensions granted by the Department, NSTAR Electric submitted: (1) the rate base examination performed by Ernst & Young as of December 31, 2014; and (2) information regarding the aforementioned seven categories of

⁷ As part of its decision in D.P.U. 10-170, the Department approved a base rate freeze applicable to the distribution rates of NSTAR Electric, NSTAR Gas, and WMECo, so that base rates in effect on January 1, 2012, remained in place until January 1, 2016. D.P.U. 10-170-B at 18-19, 107.

⁸ For purposes of this additional information, the Department directed NSTAR Electric to provide the information separately for each of its component companies: Boston Edison Company, Cambridge Electric Light Company, and Commonwealth Electric Company. D.P.U. 10-170-B at 66 n.67.

financial information for calendar years 2012 through 2015 (Exhs. ES-DPH-1, at 10; ES-DPH-4, Sch. DPH-2, at 5-27, 76-79). On November 15, 2016, NSTAR Electric submitted Ernst & Young's verification of the company's 2015 annual return (Exhs. ES-DPH-1, at 11; ES-DPH-4, Sch. DPH-2, at 66-70). The same day, NSTAR Electric submitted the rate base examination performed by Ernst & Young updated through June 30, 2016, the end of the test year in this case, and information regarding the seven categories of financial information, also updated through June 30, 2016 (Exhs. ES-DPH-1, at 11; ES-DPH-4, Sch. DPH-2, at 34-49, 81-82).

B. Positions of the Parties

On brief, the Companies summarize the scope and results of Ernst & Young's work and, in particular, note that the verification of the assets in NSTAR Electric's distribution rate base supports the company's rate base computation used to develop its cost of service (Companies Brief at 152-156). Thus, the Companies assert that Ernst & Young's examination of NSTAR Electric's rate base assets provides an independent verification that the company's computed rate base is accurate and appropriate to use in computing NSTAR Electric's revenue requirement (Companies Brief at 156). No other party addressed the independent accounting study of NSTAR Electric's annual returns and distribution rate base assets.

C. Analysis and Findings

1. Retention of Ernst & Young

As noted above, the examination and verification of NSTAR Electric's annual returns and the verification of the company's distribution rate base assets was to be conducted by an independent accounting firm identified through a competitive bid process conducted by NSTAR Electric in consultation with the Attorney General and DOER (DOER Settlement at Art. 3.3). The record shows that NSTAR Electric developed a request for proposals ("RFP") in consultation with DOER and the Attorney General, and the RFP was issued to five national accounting firms (Exh. ES-DPH-1, at 11). NSTAR Electric subsequently received two qualifying bids in response to the RFP (Exh. ES-DPH-1, at 11). NSTAR Electric, DOER, and the Attorney General agreed to retain Ernst & Young (Exh. ES-DPH-1, at 11). Based on the foregoing, the Department finds that NSTAR Electric complied with the requirements of the DOER Settlement by working with the Attorney General and DOER and selecting Ernst & Young through a competitive bidding process (Exh. ES-DPH-1, at 11-12). Further, we note that the Companies have not included for recovery in this proceeding any expenses associated with Ernest & Young's scope of work.

2. Examination and Verification of NSTAR Electric's Annual Returns

With respect to the examination and verification of NSTAR Electric's annual returns, the record shows that Ernst & Young analyzed NSTAR Electric's annual returns and Federal Energy Regulatory Commission ("FERC") Form 1 filings for the years ending December 31, 2010 through December 31, 2015 (Exh. ES-DPH-4, Sch. DPH-2, at 56-60, 66-70). More specifically, for each of the foregoing years, Ernst & Young agreed the balance sheets and

income statements found in NSTAR Electric's FERC Form 1 filings with those found in the company's general ledger (Exh. ES-DPH-4, Sch. DPH-2, at 59, 69). Next, Ernst & Young traced NSTAR Electric's general ledger back to the audited financial statements for each subject year, and considered any differences or reclassifications from the audited financial statements to the FERC Form 1 filings (Exh. ES-DPH-4, Sch. DPH-2, at 59, 69). In addition, Ernst & Young confirmed the mathematical accuracy and internal consistency of the FERC Form 1 filings (Exh. ES-DPH-4, Sch. DPH-2, at 59, 69).

For each of the subject years, Ernst & Young also analyzed the calculations of NSTAR Electric's return on equity (or "ROE") as they appeared in the FERC Form 1 filings (Exh. ES-DPH-4, Sch. DPH-2, at 59, 69). More specifically, Ernst & Young agreed the revenue and expense items contained within the return calculation to the corresponding FERC Form 1 income statement (Exh. ES-DPH-4, Sch. DPH-2, at 59, 69). Next, Ernst & Young agreed the asset and equity items contained within the return calculation to the corresponding FERC Form 1 balance sheet (Exh. ES-DPH-4, Sch. DPH-2, at 59, 69). In addition, Ernst & Young recalculated applicable allocation factors, average balances, and the ROE percentage (Exh. ES-DPH-4, Sch. DPH-2, at 59, 69).

As a standard for guidance in analyzing NSTAR Electric's annual ROE calculation, Ernst & Young used the Department's April 3, 2003, letter to gas and electric distribution companies, which sets forth the manner in which an electric distribution company's ROE should be calculated (Exh. ES-DPH-4, Sch. DPH-2, at 59, 69; see also Department Letter Re: Annual Returns (April 3, 2003)). Ernst & Young determined that NSTAR Electric's

calculation of total common equity was not fully consistent with the Department's guidelines, as NSTAR Electric neglected to make a necessary adjustment in deriving total proprietary capital (Exh. ES-DPH-4, Sch. DPH-2, at 59-60, 69-70). However, Ernst & Young noted that the effect of such an adjustment was modest, with "minimal effect on the average rate of return" for the 2010-2015 period (Exh. ES-DPH-4, Sch. DPH-2, at 59-60, 69-70).⁹

Based on the foregoing, the Department finds that the scope of work performed by Ernst & Young was sufficient to verify the mathematical accuracy of NSTAR Electric's annual returns and to verify that the operating costs reported in the annual returns reconcile to NSTAR Electric's financial statements. Further, Ernst & Young's examination was sufficient to confirm whether the annual returns were rendered in accordance with regulatory accounting standards and requirements. The Department also accepts Ernst & Young's corrections to NSTAR Electric's earned ROE calculations for proprietary capital, and further note that these corrections have a negligible effect on NSTAR Electric's earned ROE as reported to the Department (Exh. ES-DPH-4, Sch. DPH-2, at 60). Accordingly, the Department concludes that Ernst & Young's examination and verification of NSTAR Electric's annual returns complies with the requirements set forth in the DOER Settlement (DOER Settlement at Art. 3.3). The Department directs the Companies, going forward, to

⁹ Specifically, the average ROE reported on the FERC Form 1 for the years 2010 through 2015 is 11.39 percent, while the average ROE for the same period taking into account the adjustment associated with total proprietary capital is 11.41 percent (see Exh. ES-DPH-4, Sch. DPH-2, at 60, 70). Ernst & Young notes that it did not consider the impact, if any, of verification of NSTAR Electric's rate base assets on the annual return analysis or ROE calculation (Exh. ES-DPH-4, Sch. DPH-2, at 60, 70).

revise their calculation of total utility common equity in a manner consistent with the Department's April 3, 2003, letter.

3. Verification of the Assets in NSTAR Electric's Distribution Rate Base

As noted above, Ernst & Young also was retained to verify the assets in NSTAR Electric's distribution test year end rate base (DOER Settlement at Art. 3.3). The record shows that Ernst & Young conducted a comprehensive review of NSTAR's Electric's plant in service, which included physically observing assets; comparing and corroborating accounting records and asset operating systems; testing sample work orders to confirm accurate and timely updating of accounting and operating systems and appropriate recording of assets; identifying "unusual items" that required further investigation; applying general analytics to the reasonableness of unit costs of various assets over time; and validating the cost of general plant by analyzing the related work orders and agreeing the work order amounts to the balances in the accounting records (Exh. ES-DPH-4, Sch. DPH-2, at 10-21, 39-43). Ernst & Young also confirmed, through review and analysis of supporting documentation, the accuracy of other items in NSTAR Electric's distribution rate base, including plant held for future use, gains and losses, accumulated depreciation, and accumulated deferred income taxes (Exh. ES-DPH-4, Sch. DPH-2, at 7, 21-25, 36, 44-46). The record shows that Ernst & Young conducted this systematic review in a manner consistent with the NARUC audit manual (Exh. ES-DPH-4, Sch. DPU-2, at 9, 38).

Based on its examination, Ernst & Young identified small discrepancies in quantities and types of assets, but no errors that would materially affect the assets in NSTAR Electric's

distribution rate base (Exh. ES-DPH-4, Sch. DPH-2, at 7, 25, 36, 47). Ernst & Young attributed the discrepancies to the early vintage of many of the assets and the different methodology for maintaining records between NSTAR Electric's accounting and operating systems (Exh. ES-DPH-4, Sch. DPH-2, at 7, 25).

Ernst & Young made a number of recommended adjustments to costs to correct for the aforementioned discrepancies. In particular, Ernst & Young recommended that:

(1) certain assets should be retired totaling \$11,301,550 (see Exhs. ES-DPH-4, Sch. DPH-2, at 7, 13, 16; ES-DPH-3 (East), WPs DPH-28, at 3, DPH-29); (2) certain assets should be reclassified between accounts totaling \$6,651,075 (Exhs. ES-DPH-4, Sch. DPH-2, at 20, 27, 36, 40; ES-DPH-3 (East), WP DPH-28, at 3); and (3) certain assets should be removed from plant in service totaling \$418,733 (see Exhs. ES-DPH-4, Sch. DPH-2, at 2, 36-37, 40; ES-DPH-3 (East), WP DPH-28, at 3). The record shows that the Companies incorporated these corrections into NSTAR Electric's plant in service and depreciation and amortization reserve accordingly (Exhs. ES-DPH-1, at 14; ES-DPH-3 (East), WPs DPH-28, at 3, DPH-29).

Based on the foregoing, the Department finds that Ernst & Young conducted a systematic review of the assets in NSTAR Electric's test year end distribution rate base, which included a comprehensive listing of assets, and a verification of assets in plant in service, plant held for future use, construction work in progress, gains/losses from property sales, and acquisition adjustments/goodwill, in a manner consistent with the NARUC audit manual. Accordingly, the Department concludes that Ernst & Young's verification of the

assets in NSTAR Electric's distribution rate base complies with the requirements set forth in the DOER Settlement (DOER Settlement at Art. 3.3).

4. Other Information

Pursuant to the Department's Order approving the DOER Settlement, NSTAR Electric provided the following information for 2012 through the end of the test year in this case:

(1) total O&M expense; (2) depreciation and amortization; (3) taxes other than income taxes; (4) income taxes; (5) total plant in service; (6) rate of return; and (7) total operating revenues by rate component (Exh. ES-DPH-4, Sch. DPH-2, at 76-79, 81-82).

See also D.P.U. 10-170-B at 66. Further, for each category, NSTAR Electric provided the applicable reference in the FERC Form 1 (Exh. ES-DPH-4, Sch. DPH-2, at 76, 81). The Department has reviewed this information, and we find that NSTAR Electric has substantially complied with the directives set forth in D.P.U. 10-170-B.¹⁰

IV. COMPANIES' USE OF A SPLIT TEST YEAR

A. Introduction

The cost of service component of the Companies' filing is based on a test year of July 1, 2015, through June 30, 2016, a non-calendar or "split" test year (Exhs. ES-CAH-1,

¹⁰ In its approval of the DOER Settlement, the Department directed NSTAR Electric to provide this information separately for each of its three component companies (i.e., Boston Edison Company, Cambridge Electric Light Company, and Commonwealth Electric Company). D.P.U. 10-170-B at 66 n.67. In response, NSTAR Electric noted that it had ceased separate tracking and reporting for its legacy operating companies as of January 1, 2007 (Exh. ES-DPH-4, Sch. DPH-2, at 76). In view of the unavailability of legacy company-specific data and the fact that NSTAR Electric began operations as a single corporate entity effective January 1, 2007, the Department accepts this information in the format provided.

at 8; ES-DPH-1, at 8).¹¹ Non-calendar test years have, on occasion, been accepted by the Department. See, e.g., Massachusetts Electric Company and Nantucket Electric Company, D.P.U. 15-155, at 21-22 (2016); Plymouth Water Company, D.P.U. 14-120, at 16 (2015); Milford Water Company, D.P.U. 12-86, at 1 (2013). However, the Department has expressed its strong preference for a calendar year test year and has noted that any company that seeks to rely on a split test year faces a high burden to demonstrate as a threshold matter that its proposed test year is reviewable and reliable and represents a full accounting of the company's operations for the period. D.P.U. 14-120, at 16 & n.11.

In support of its split test year filing, the Companies retained the accounting firm of Deloitte & Touche LLP ("Deloitte & Touche") to review the Companies' operations and verify the accuracy of its non-calendar year test year financial data (Exhs. ES-DPH-1, at 9, 15; ES-DPH-4, Sch. DPH-3; Tr. 4, at 794). Deloitte & Touche issued a report of its findings, which the Companies submitted as part of the initial filing in this case (Exh. ES-DPH-4, Sch. DPH-3). Further, the Companies provided account level detail at the six-digit FERC account level, along with a mapping to the balances as reported on the Companies' respective FERC Form 1, and an explanation of adjustments, if any (Exh. ES-DPH-4, Schs. DPH-4 (East), (West)). In addition, the Companies provided documentation showing historical account data of expense and revenue activity for the years

¹¹ A test year that spans two calendar years, as opposed to a test year based on a calendar year, is often referred to as a "split" test year. NSTAR Gas Company, D.P.U. 14-150, at 45 n.26 (2015); Plymouth Water Company, D.P.U. 14-120, at 12, 16 (2015). A test year, whether a calendar test year or a "split" test year, comprises a period of twelve consecutive calendar months.

2015 and 2016, as well as the split test year ending June 30, 2016 (Exhs. ES-DPH-1, at 17; AG-51-4 & Atts.).

B. Positions of the Parties

On brief, Eversource summarizes the scope and results of Deloitte & Touche's work and argues that the Companies have satisfied the Department's requirements for reliance on a split test year (Companies Brief at 156-158). No other party addressed the Companies' use of a split test year.

C. Analysis and Findings

1. Introduction

It is well-established Department precedent that base rate filings are based on an historic test year, adjusted for known and measurable changes. NSTAR Gas Company, D.P.U. 14-150, at 45 (2015); D.P.U. 07-50-A at 52-53; Massachusetts Electric Company, D.P.U. 18204, at 4 (1975); see also Massachusetts Electric Company v. Department of Public Utilities, 383 Mass. 675, 680 (1981). In establishing rates pursuant to Section 94, the Department examines a test year on the basis that the revenue, expense, and rate base figures during that period, adjusted for known and measurable changes, provide the most reasonable representation of a distribution company's present financial situation, and fairly represent its cost to provide service. D.P.U. 14-120, at 9; see Ashfield Water Company, D.P.U. 1438/1595, at 3 (1984).

The selection of the test year is largely a matter of a distribution company's choice, subject to Department review and approval. Fitchburg Gas and Electric Light Company, D.P.U. 15-80/D.P.U. 15-81, at 145-146 (2016), citing D.P.U. 07-50-A at 51; Boston Edison

Company, D.P.U. 1720, Interlocutory Order at 7-11 (January 17, 1984). The Department requires that the historic test year represent a twelve-month period that does not overlap with the test year used in a previous rate case unless there are extraordinary circumstances that render a previous Order confiscatory. D.P.U. 14-150, at 45, n.26; Massachusetts Electric Company, D.P.U. 19257, at 12 (1977). The test year is generally the most recent twelve-month period for which financial information exists. D.P.U. 14-150, at 45 n.26; Boston Edison Company v. Department of Public Utilities, 375 Mass. 1, 24, cert. denied, 439 U.S. 921 (1978).

As noted above, the Department has expressed strong preference for a test year cost of service based on a calendar year as opposed to a split test year. D.P.U. 14-120, at 12, 16; see also D.P.U. 14-150, at 45, n.26. Although the Department has, on occasion, accepted a non-calendar test year, see D.P.U. 15-155, at 21-22; D.P.U. 14-120, at 10, 16; D.P.U. 12-86, at 1, we also have recognized that there are significant complications associated with the use of a split test year that can call into question the use of such data to establish rates. D.P.U. 14-120, at 10; see AT&T Communications of New England, Inc., D.P.U. 90-133-A at 5-6 (1991). For example, test year amounts associated with a split test year will not tie back to amounts included in the Annual Returns submitted to the Department, which are prepared on a calendar-year basis. D.P.U. 15-155, at 14-15; D.P.U. 14-120, at 11. The use of a split test year also limits the Department's ability to review year-to-year changes in expense levels. D.P.U. 15-155, at 15; D.P.U. 14-120, at 11. This limitation is of significant concern to the Department because reliance on a split test

year may create an improper incentive for utilities to book expenses into a certain time period for purposes of creating an inflated test year expense. D.P.U. 15-155, at 15;

D.P.U. 14-120, at 11. Another complication associated with use of a split test year involves year-end accounting for accrued revenues and expenses which, if not properly recognized in the rate setting process, may result in distorted measurement of net operations.

D.P.U. 15-155, at 15; D.P.U. 14-120, at 11; see The Berkshire Gas Company,

D.P.U. 1490, at 35-37 (1983).

It also is well established that the burden is with a company to satisfy the Department that the company's proposal will result in just and reasonable rates. D.P.U. 15-155, at 15; D.P.U. 14-120, at 11-12; Boston Gas Company, D.T.E. 03-40, at 52, n.31 (2003), citing The Berkshire Gas Company, D.T.E. 01-56-A at 16 (2002); New England Gas Company, D.P.U. 10-114, at 22 (2011); Boston Gas Company, D.P.U. 93-60, at 212 (1993); Blackstone Gas Company, D.P.U. 19579, at 2-3 (1978).¹² Therefore, given the importance of the concerns discussed above and their significance for ratepayers, the Department affirms its very clear preference to use an historic calendar year test year to establish rates. D.P.U. 15-155, at 15; D.P.U. 14-120, at 11-12.

The Department has noted that any decision to rely on a non-calendar test year will carry with it a high burden for a company to demonstrate that its proposed rates are just and reasonable. D.P.U. 15-155, at 15-16; D.P.U. 14-120, at 12. Specifically, any company that

¹² That the burden of proof is always with those who take the affirmative in pleading is a long-held tenet in Massachusetts jurisprudence. Phelps v. Hartwell, 1 Mass. 71, 73 (1804).

seeks to rely on a split test year, as a threshold matter, must demonstrate by clear and convincing evidence that its proposed test year is reviewable and reliable and represents a full accounting of the company's operations for the period. D.P.U. 15-155, at 16;

D.P.U. 14-120, at 16; see D.P.U. 19579, at 2-4; Cape Cod Gas Company/Lowell Gas Company, D.P.U. 18571/18572, at 4-14 (1976). Further, at a minimum, a company that proposes to use a split test year must be prepared to make a threshold showing:

- (1) how its test year account balances tie back to the account balances as reported in the Annual Returns;
- (2) that the amounts have been properly audited (or, in the case of a small water company that is not a subsidiary of a publicly traded entity, otherwise verified) and are available for review;
- (3) that a meaningful year-to-year review of changes in expense levels and revenues is possible, such that the Department can determine whether the company's test year expenses and revenues are representative of its ongoing costs and revenues, are reasonable in amount, and account for any seasonal variability; and
- (4) that the company has properly recognized accruals booked to reserve accounts, including any end of period reconciliations of those account balances.

D.P.U. 15-155, at 16; D.P.U. 14-120, at 16 n.11.

2. Analysis and Findings

The record shows that Eversource retained Deloitte & Touche to verify that: (1) data contained in the FERC Form 1 and Form 3-Q information prepared for the split test year was from the books and records of the Companies; (2) data included in the computation of the revenue requirement reconciles to the FERC Form 1 and Form 3-Q data, as appropriate; and (3) amounts included in Eversource's calculations of revenue requirements agree to other amounts within the Companies' filing as appropriate (Exhs. ES-DPH-1, at 9; ES-DPH-4,

Sch. DPU-3). As noted above, the Companies also provided internal account data in support of its use of a split test year (Exhs. ES-DPH-1, at 17; ES-DPH-4, Schs. DPH-4 (East), (West); AG-51-4 & Atts.).

Based on our review of the Deloitte & Touche report and the account level detail provided by the Companies, we find that it is possible to tie the Companies' test year account balances back to the account balances as reported in the annual returns. See D.P.U. 14-120, at 16 n.11. Further, while the Deloitte & Touch report does not represent an audit or an unqualified opinion letter, we find that Deloitte & Touche's examination provides an independent and extensive review of the Companies' test year cost of service data that is sufficient to make the D.P.U. 14-120 threshold showing. See D.P.U. 15-155, at 18.¹³ Given the scope of Deloitte & Touche's examination, as set forth in the report, the review was comparable to the scope of a typical financial audit.

In addition, we conclude that the aforementioned information, when reviewed in conjunction with the annual return verification conducted by Ernst & Young (as discussed above) and the historical account data provided by the Companies, allows for a meaningful review of year-to-year changes in expense levels in order to determine whether the Companies' test year expenses and revenues are representative of their ongoing costs and revenues, are reasonable in amount, and account for any seasonal variability.

See D.P.U. 14-120, at 16 n.11.

¹³ We note that Deloitte & Touche performs regular annual audits of the Companies' financial statements (Tr. 4, at 796).

Finally, we find that the Companies have demonstrated that they properly recognized accruals booked to reserve accounts, including any end of period reconciliations of those account balances. See D.P.U. 14-120, at 16 n.11. In particular, the Companies incorporated several adjustments to test year data in order to ensure the proper recognition of expenses in the test year (Exhs. ES-DPH-1, at 18; ES-DPH-2 (East), Sch. DPH-6, at 4 (Rev. 2); ES-DPH-2 (West), Sch. DPH-6, at 4 (Rev. 1)).

3. Conclusion

Based on the above considerations, the Department finds that Eversource has satisfied the split test year threshold requirements set forth in D.P.U. 14-120 and has demonstrated that its financial data is reviewable and reliable and represents a full accounting of the Companies' operations for the test year period. D.P.U. 14-120, at 16; see D.P.U. 19579, at 2-4; D.P.U. 18571/18572, at 4-14.¹⁴ Therefore, we conclude that there is sufficient reviewable and reliable information in the record to evaluate Eversource's filing based on a test year for the twelve months ending June 30, 2016. While we accept Deloitte & Touche's report for purposes of determining the accuracy and reviewability of the financial information submitted by the Companies in this case, we do not accept the report as a proxy for establishing the appropriate cost of service in this case. The Department will evaluate the reasonableness of costs and appropriate ratemaking treatment in the specific sections of this Order that follow.

¹⁴ Further, we note that Eversource has not included for recovery in this case the costs associated with Deloitte & Touche's retention for purposes of supporting the Companies' use of a split test year.

Finally, we emphasize that our findings here are limited to the specific facts and circumstances of this case and in no way change the Department's clear preference for companies to use a calendar year test year as the norm. D.P.U. 15-155, at 22; D.P.U. 14-120, at 16. We reiterate that any company that seeks to rely on a split test year must, at a minimum threshold level, make a prima facie showing by clear and convincing evidence that its proposed test year is reviewable and reliable and represents a full accounting of the company's operations for the period. D.P.U. 15-155, at 22; D.P.U. 14-120, at 16; see D.P.U. 19579, at 2-4; D.P.U. 18571/18572, at 4-14. Failure to make such a robust showing will result in dismissal of the company's rate proceeding.

V. CORPORATE CONSOLIDATION

A. Introduction

In D.P.U. 10-170, NSTAR Gas and NSTAR Electric, along with their parent holding company NSTAR, and WMECo, along with its parent holding company Northeast Utilities (collectively "joint petitioners") sought approval from the Department to merge NSTAR and Northeast Utilities into a consolidated organization.¹⁵ On February 15, 2012, the joint petitioners, the Attorney General, and DOER submitted a proposed settlement ("Merger Settlement") to the Department. That same day, the joint petitioners and DOER submitted to the Department a separate proposed settlement, the DOER Settlement (see Section III.A above).¹⁶ On April 4, 2012, the Department approved both the Merger Settlement and the

¹⁵ The merger was reviewed by the Department pursuant to Section 96.

¹⁶ Pursuant to 220 CMR 1.10(3), the Department incorporates by reference the Merger Settlement filed and approved in D.P.U. 10-170-B.

DOER Settlement and, consequently, the joint petitioners' proposed merger.

D.P.U. 10-170-B at 107-108. In the Order approving the settlements, the Department approved a rate freeze applicable to Eversource's base distribution rates until January 1, 2016. D.P.U. 10-170-B at 36, 39-41.

While the Department's approval of the Merger Settlement allowed for the merger of NSTAR and Northeast Utilities, neither the Merger Settlement itself nor the Department's approval of the Settlement constituted approval of the merger or consolidation of the separate operating companies (*i.e.*, NSTAR Electric, NSTAR Gas, and WMECo). D.P.U. 10-170-B at 103. These companies remain legally and functionally separate and subject independently to the Department's jurisdiction under G.L. c. 164, § 1. D.P.U. 10-170-B at 103. The Companies now seek to legally consolidate WMECo with and into NSTAR Electric,¹⁷ with NSTAR Electric as the surviving entity (Exhs. DPU-20-1; AG-30-7, at 49-50).¹⁸

¹⁷ Upon obtaining Department's approval, the Companies will execute a merger agreement to accomplish the corporate reorganization (Exh. DPU-20-1, at 2-3).

¹⁸ On July 6, 2016, the Companies filed a petition with the Department for an advisory ruling that the provisions of Section 96(d) made it unnecessary to seek Department approval of the consolidation of NSTAR Electric and WMECo into a single legal entity. NSTAR Electric Company/Western Massachusetts Electric Company, D.P.U. 16-108, at 1 (2017). The Department determined that the enactment of Section 96(d) did not eliminate the need for the Companies to seek approval of such a merger, because: (1) the Merger Settlement predated the enactment of Section 96(d); and (2) the terms of the Merger Settlement demonstrated the intent of the settling parties in that proceeding to require review and approval by the Department of the merger of NSTAR Electric and WMECo under Section 96. D.P.U. 16-108, at 14-21. The Department concluded that the proposed consolidation of NSTAR Electric and WMECo would require Department review and approval on the merits pursuant to Section 96, and that such a proposal could be submitted as part of Eversource's then-anticipated rate case filing. D.P.U. 16-108, at 20.

B. Description of the Proposed Merger

As a result of the Merger Settlement, NSTAR Electric and WMECo are fully integrated from a management and operational perspective (Exh. ES-CAH-1, at 7). The Companies have consolidated day-to-day field operations, capital-investment planning, including electric field operations, electric system operations, resource planning, and emergency response planning for NSTAR and WMECo (Exh. ES-CAH-1, at 39-41). The Companies' Proposed Merger represents a legal consolidation of two affiliates of a single holding company, and would require no operational changes (Exhs. ES-CAH-1, at 39; DPU-20-1).

As a result of the Proposed Merger, WMECo's outstanding common stock would be converted into that of NSTAR Electric using an exchange rate of 0.00023007 shares of NSTAR Electric common stock per share of WMECo common stock, whereupon WMECo will cease to exist (Exhs. DPU-20-1; AG-30-7, Att. at 49-51).¹⁹ NSTAR Electric would then, as the surviving entity, acquire all of WMECo's state and FERC-jurisdictional facilities, contracts, and assets, including assets dedicated to providing utility service, as well as associated obligations (Exhs. DPU-20-1; AG-30-7, at 7-8, 50). The consolidated entity would provide electric service to approximately 1.4 million customers in Boston and 139 cities and towns in eastern and western Massachusetts, covering a collective area of approximately 3,200 square miles (Exh. DPU-20-1). The Companies anticipate that, pending

¹⁹ As discussed further below, because WMECo currently has 434,653 shares of common stock outstanding, the stock exchange will result in these shares being converted into 100 shares of NSTAR Electric common stock (see Exh. AG-30-7, Att. at 49).

approval by the Department, the corporate consolidation would be effective January 1, 2018, coinciding with the effective date of new rates resulting from this proceeding (Exh. ES-CAH-1, at 8).

On March 2, 2017, the Companies received authorization from FERC for NSTAR Electric's acquisition of WMECo's jurisdictional facilities (Exhs. ES-DPH-1, at 4; DPU-20-1(e)). As part of a separate request, also on March 2, 2017, the Companies obtained FERC approval, pursuant to Section 203(a)(1)(B) of the Federal Power Act, for an internal corporate reorganization (Exh. DPU-20-1, at 2). The Companies also sought FERC approval of NSTAR Electric's assumption of WMECo's short-term debt obligations; however, this request remains pending (Exh. DPU-20-1, at 2).

C. Section 96 Considerations

1. Standard of Review

Section 96 sets forth the Department's authority to review and approve mergers, consolidations, and acquisitions and, as a condition for approval, requires the Department to find that the proposed transaction is "consistent with the public interest." Section 96 is the lineal descendent of St. 1908, c. 529, § 2, and these core words of the standard, "consistent with the public interest," date from that century-old enactment. In the past, the Department has construed the Section 96 standard of consistency with the public interest as requiring a balancing of the costs and benefits attendant on any proposed merger or acquisition, stating that the core of the consistency standard is "avoidance of harm to the public." Boston Edison Company, D.P.U. 850, at 5-8 (1983). Thus, the Department has historically interpreted the merger standard as a "no net harm" test, meaning that a proposed merger or

acquisition is allowed to go forward upon a finding by the Department that the public interest would be at least as well served by approval of a proposal as by its denial. NEES/EUA Merger, D.T.E. 99-47, at 16 (2000); BECo/ComEnergy Acquisition, D.T.E. 99-19, at 10 (1999); Eastern/Colonial Acquisition, D.T.E. 98-128, at 5 (1999); NIPSCO/Bay State Acquisition, D.T.E. 98-31, at 9 (1998); Eastern/Essex Acquisition, D.T.E. 98-27, at 8; D.P.U. 850, at 5-8.

In D.P.U. 10-170, the Department modified the Section 96 standard from a “no net harm” test to a “net benefits” test. D.P.U. 10-170, Interlocutory Order on Standard of Review at 21 (March 10, 2011). Accordingly, to satisfy the statutory requirement that a transaction is “consistent with the public interest,” petitioners must demonstrate that the benefits of a consolidation, merger, or acquisition outweigh the costs. D.P.U. 10-170, Interlocutory Order on Standard of Review at 21-22, 27. To determine whether petitioners have satisfactorily met this burden, the Department continues to consider the special factors surrounding an individual proposal. D.P.U. 10-170, Interlocutory Order on Standard of Review at 26-27.

The Department has held that various factors may be considered in determining whether a proposed merger or acquisition is consistent with the public interest pursuant to Section 96. Traditionally, the Department has considered the following factors: (1) effect on rates; (2) effect on the quality of service; (3) resulting net savings; (4) effect on competition; (5) financial integrity of the post-merger entity; (6) fairness of the distribution of resulting benefits between shareholders and ratepayers; (7) societal costs; (8) effect on economic

development; and (9) alternatives to the merger or acquisition. Guidelines and Standards for Mergers and Acquisitions, D.P.U. 93-167-A at 7-9 (1994) (“Mergers and Acquisitions”).

The Department has held that this list of factors is illustrative and not “exhaustive,” and the Department may consider other factors, or a subset of these factors, when evaluating a Section 96 proposal. D.T.E. 99-47, at 17-18; D.T.E. 99-19, at 11-12; D.T.E. 98-128, at 6. No one factor is controlling.

As amended in 2008, Section 96 expressly requires the Department to consider, at a minimum, the following four factors: (1) proposed rate changes, if any; (2) long-term strategies that will assure a reliable, cost-effective energy delivery system; (3) any anticipated interruptions in service; and (4) other factors that may negatively impact customer service. The second factor, regarding long-term strategies, is the only one not previously addressed in the so-called “nine-factor test” established in Mergers and Acquisitions.²⁰

Although Section 96 mandates that the Department consider the specific factors enunciated in the statute, the Department is not foreclosed from considering the nine factors, or a subset of those factors, established in Mergers and Acquisitions. Furthermore, depending upon the nature of the transaction, in determining whether the transaction is consistent with the public interest, the Department may consider additional factors not

²⁰ The remaining statutory factors correspond to factors established in Mergers and Acquisitions. Specifically, the first factor in Section 96 is subsumed by the first factor established in Mergers and Acquisitions, the effect of the proposed transaction on rates. The third and fourth factors delineated in Section 96 correspond to the second factor established in Mergers and Acquisitions, the effect on the quality of service.

delineated in the statute or established in Mergers and Acquisitions. D.T.E. 99-47, at 17-18; D.T.E. 99-19, at 11-12; D.T.E. 98-128, at 6.

The Department's determination as to whether the merger or acquisition meets the requirements of Section 96 must rest on a record that quantifies costs and benefits to the extent such quantification can be made. The Department also may undertake a more qualitative analysis of those aspects that are hard to measure. D.P.U. 10-170, Interlocutory Order on Standard of Review at 27; Boston Edison Company/Cambridge Electric Light Company/Commonwealth Electric Company/Canal Electric Company, D.T.E. 06-40, at 16-17 (2006); D.T.E. 99-47, at 18; Mergers and Acquisitions at 7. A Section 96 petition that expects to avoid an adverse result cannot rest on generalities, but must instead demonstrate benefits that outweigh the costs, including the cost of any acquisition premium sought. D.P.U. 10-170, Interlocutory Order on Standard of Review at 21-22, 27; D.T.E. 99-47, at 18; D.T.E. 99-19, at 12; D.T.E. 98-128, at 7; D.T.E. 98-31, at 11; D.T.E. 98-27, at 10; Mergers and Acquisitions at 7.

2. Positions of the Parties

a. Attorney General

While the Attorney General does not specifically object to the Proposed Merger, she notes her concern that the Department has not yet considered the associated rate effects of the Companies' proposal to consolidate various rates and rate classes for NSTAR and WMECo (Attorney General Brief at 211). She asserts that the Department should defer any decision on the Proposed Merger until it has heard all the evidence on the Companies' current rate design proposals and the rate effects on customers (Attorney General Brief at 211-212).

Further, the Attorney General argues that regardless of whether the Department approves the Proposed Merger, it should require Eversource to maintain separate financial accounting records and to file separate Annual Returns with the Department if and until all rate classes are merged (Attorney General Reply Brief at 100-101). According to the Attorney General, absent separate accounting records for each operating company, there will be no accounting data to support the rates and charges Eversource bills to customers in the two service territories (Attorney General Reply Brief at 100). Additionally, she contends that if the Department wanted to perform a cost of service for WMECo's customers, Eversource no longer would have the data available if separate financial accounting is eliminated, and the tracing back of base rate, transmission, transition, and basic service costs to the operating companies would be "impossible" (Attorney General Reply Brief at 100).

b. RESA

Although RESA asserts that it has no inherent problem supporting the concept of the proposed corporate consolidation of NSTAR Electric and WMECo and its efforts to enhance operational efficiencies, RESA opposes the Companies' rate class and rate consolidation proposals, which RESA claims is part of the corporate consolidation proposal (RESA Brief at 5; RESA Reply Brief at 3). Specifically, RESA maintains that Eversource's proposals for consolidation of rate classes and rates, as well as proposed changes to basic service procurement, could potentially have a negative impact on competition, and, as a result, are not in the public interest (RESA Reply Brief at 3).

c. Companies

Eversource argues that the Department should allow the corporate consolidation of NSTAR Electric and WMECo (Companies Brief at 159-160). According to the Companies, the Proposed Merger will eliminate the need to prepare and file separate Securities and Exchange Commission (“SEC”) Forms 10K and 10Q for WMECo, as well as separate FERC Forms 1 and 3Q (Companies Brief at 159, citing Exh. ES-DPH-1, at 183-184). Further, Eversource contends that although the financial reporting systems and processes will be consolidated, such a consolidation will not prevent the Companies from maintaining separate rates for customers in the pre-merger service territories (Companies Brief at 159). Finally, the Companies note that they are not proposing to consolidate the revenue requirement calculation as part of the Proposed Merger, though they provided a consolidated revenue requirement for illustrative purposes (Companies Brief at 160).

3. Analysis and Findings

a. Section 96

i. Introduction

As noted above, Section 96 requires the Department to consider, at a minimum, four statutory factors in evaluating the Proposed Merger. The Department also may consider any of the additional factors set forth in the “nine-factor test” established in Mergers and Acquisitions. Further, depending upon the nature of the transaction, the Department may consider additional factors, not delineated in the statute or established in Mergers and Acquisitions. See D.T.E. 99-47, at 18; D.T.E. 99-19, at 12; D.T.E. 98-128, at 6.

The Department's analysis will focus on the following factors: (1) proposed rate changes at the time of the transaction, if any; (2) costs and resulting net savings of the merger; (3) long-term strategies that will assure a reliable, cost-effective energy delivery system; (4) effect on customer service, including interruptions in service; and (5) financial integrity of the post-acquisition entities. The Department considers these factors to encompass the four factors specified in Section 96, and deems these to be relevant here in light of the specific terms of the Proposed Merger.

ii. Effects on Rates

The first factor we consider in our Section 96 analysis is the proposed rate changes at the time of the transaction. The Attorney General and RESA argue that the Department must consider the effect of the Proposed Merger on customers' bills, and RESA specifically expresses concern with the effect of the Companies' proposed consolidation on competition (Attorney General Brief at 211-212; RESA Brief at 3-7; RESA Reply Brief at 3). In addition, the Attorney General argues that the Department should defer any decision on the Proposed Merger until it has heard all of the evidence on the Companies' current rate design proposals and the rate effects on customers (Attorney General Brief at 211-212).

The Department finds that the corporate consolidation of NSTAR Electric and WMECo will not, in itself, result in any changes to the rates, prices, charges, or terms and conditions applicable to NSTAR's or WMECo's customers, nor to the Department's ability to review current or future rate changes (Exhs. DPU-20-2; AG-30-7, Att. at 13-20). As such, the Department finds the effect on rates to be a neutral factor in our Section 96 analysis of

the Proposed Merger. Therefore, the Department finds it unnecessary to defer its decision on the Proposed Merger.

iii. Costs and Resulting Net Savings

In reviewing a proposed merger, one of the factors that the Department considers is the resulting net savings, if any. The Department has recognized that transaction costs may accompany a merger or acquisition, and that these costs may be recovered in rates provided that they meet the public interest standard of Section 96 as part of the general reckoning of costs and benefits under this statute. D.T.E. 99-47, at 36; D.T.E. 99-19, at 37; D.T.E. 98-27, at 52-53. In reviewing estimated merger savings, the “Department’s review . . . must be based on whether the figures proposed by the [p]etitioners are reasonable estimates.” D.T.E. 99-47, at 47, 50. Projections of future events are not subject to the same standards of measurement and evaluation that the Department uses in a rate case; rather, they can be judged in terms of whether they are substantiated by past experience, and supported by logical reasoning founded on solid theory. D.T.E. 99-47, at 50.

Most of the operational savings associated with the combination of NSTAR Electric and WMECo into one entity have already been achieved through the Merger Settlement. Specifically, during the test year the Companies experienced a cost savings attributable to the 2012 consolidation of \$27.3 million for NSTAR and \$4.5 million for WMECo (Exh. ES-DPH-4, Sch. DPH-10, at 56). Net of the proposed amortization expense, the Companies anticipate an annual savings as a result of the consolidation of approximately \$25 million for NSTAR, and \$4 million for WMECo (see Exhs. ES-DPH-1, at 156;

ES-DPH-3 (East), Sch. DPH-24, at 3 (Rev. 3); ES-DPH-3 (West), Sch. DPH-24, at 3 (Rev. 3); ES-DPH-4, Sch. DPH-10, at 56).

Eversource anticipates that its shareholders will incur a one-time cost of approximately \$2 million to complete the Proposed Merger transaction, consisting of \$1 million in legal costs and \$1 million in vendor support costs associated with updates of financial reporting systems (Exh. DPU-20-8). The Companies expect modest additional savings from the Proposed Merger, arising from the consolidation of corporate accounts, reconciliations, audits, and regulatory filings (Exh. DPU-20-3; Tr. 5, at 1022-23). Specifically, the Companies expect ratepayers to see annual savings in the range of \$500,000 to \$1 million through increased administrative efficiency resulting from streamlining of corporate and regulatory processes, including reduced use of outside services, fees, and amortized rate case expense (Exh. DPU-20-8). Additionally, the Companies anticipate interest rate savings from an approximate 25 basis point reduction in WMECo's borrowing costs, saving up to \$750,000 annually (Exh. DPU-20-8).

Although the Companies' expected savings of \$500,000 to \$1.75 million are relatively modest, the Department recognizes that they are nonetheless tangible, greater than the expected costs, and would accrue annually to ratepayers, while the merger-related costs will be a one-time cost borne by shareholders (Exhs. DPU-20-8; DPU-20-9). The Department concludes that Eversource has made a fair and reasonable demonstration of the costs and savings that would result from the Proposed Merger, and that over time the Proposed Merger would result in net savings for ratepayers (Exhs. DPU-20-8; DPU-20-9; DPU-52-2).

Accordingly, the Department finds that, based on an analysis of the savings and costs related to the Proposed Merger, as presented by the Companies, there would be an overall net benefit to ratepayers from approval of the Proposed Merger.

iv. Long-term strategies that will assure a reliable, cost-effective energy delivery system

The third factor that we consider in our Section 96 factor analysis is long-term strategies to provide a reliable, cost-effective energy delivery system. The Proposed Merger is not expected to have any impact in relation to system reliability and long-term energy delivery infrastructure, as the operational processes that support these outcomes already are fully consolidated as a result of the Merger Settlement (Exh. DPU-20-3). However, we note that activities and commitments that advance clean energy development and address climate change are important components of this Section 96 factor as well. D.P.U. 10-170-B at 76-77. Thus, we consider the effect of the Proposed Merger on clean energy development and climate change mitigation in the Commonwealth.

In D.P.U. 10-170-B, the Department found that the consolidation of NSTAR Electric and WMECo under a single holding company would facilitate the energy efficiency, solar, and Electric Vehicle (“EV”) Pilot provisions of the Merger Settlement, and provide material benefits for the ratepayers of NSTAR Electric and WMECo in the form of energy efficiency, solar, and EV initiatives, as well as long-term renewables procurement, and public outreach concerning the Commonwealth’s climate goals. D.P.U. 10-170-B at 80-83, 85-87, 90-96. We find no evidence that the legal consolidation of NSTAR Electric and WMECo in the instant proceeding would weaken the anticipated benefits recognized from the Merger

Settlement or serve to frustrate the Commonwealth's clean energy development or climate change goals.²¹ Based on the above findings, the Department concludes that the Proposed Merger is consistent with the maintenance of a reliable, cost-effective energy delivery system.

v. Effects on Customer Service and Service Quality

As part of our Section 96 review, we next look at the potential impact of the Proposed Merger on quality of service, any anticipated interruptions of service, and any other factors that may adversely impact customer service. The Department recognizes the importance of maintaining service quality, particularly when the merger of entities and the resultant efforts to achieve cost savings can potentially lead to service quality degradation. D.P.U. 10-170-B at 73; Boston Gas Company/Essex Gas Company, D.P.U. 09-139, at 23 (2010).

The Companies demonstrated that changes in restoration practices and other measures following the merger of NSTAR and Northeast Utilities have already resulted in a reduction of almost 40 percent to WMECo's average duration of outages (Exh. ES-CAH-1, at 9). In addition, there has been a reduction of approximately 30 percent in WMECo's average frequency of outages (Exh. ES-CAH-1, at 9). The Companies fully anticipate that continued improvement will occur as system investment and grid modernization continue (Exh. ES-CAH-1, at 9). The Department is satisfied that the Proposed Merger would cause no detrimental changes to customers and would have no noticeable customer-facing effects

²¹ As discussed in detail in Section X below, Eversource makes proposals in this proceeding to enable investment in technologies such as electric storage, electric vehicles, and other initiatives to improve the resiliency of the distribution system and further the Commonwealth's clean-energy goals.

(Exh. DPU-20-5). In addition, no interruptions in service are anticipated in relation to the Proposed Merger (Exh. DPU-20-4).

The Companies do not offer specific improvements to customer service and service quality based solely on the legal consolidation of NSTAR Electric with WMECo. Nevertheless, the performance benchmarks included in Eversource's existing service quality plans provide strong incentives to ensure that its ratepayers will be protected from service degradation following the Proposed Merger. Service Quality Standards for Electric Distribution Companies and Local Gas Distribution Companies, D.P.U. 16-SQ-10 through D.P.U. 16-SQ-14 (2016). Furthermore, the Department finds that Eversource will have the opportunity to improve its service quality to its ratepayers through increased administrative efficiencies and the adoption of combined best practices post-merger (Exh. DPU-20-8). Therefore, in analyzing the Proposed Merger's effect on customer service and service quality, the Department finds that the Proposed Merger will not result in any adverse impact on customer service or the quality and consistency of service to ratepayers and will instead support the continued improvements in service quality recognized following the merger of NSTAR and Northeast Utilities.

vi. Financial Integrity of the Post-Acquisition Entity

Finally, the Department considers the financial integrity of the post-acquisition company as a factor in our Section 96 analysis of the Proposed Merger. Mergers and Acquisitions at 8-9. Eversource states that the Proposed Merger will have no negative impact on the financial integrity of the surviving company, NSTAR Electric

(Exh. DPU-20-11). A review of NSTAR Electric's current financial and operating data, as represented by its annual returns to the Department and filings with both FERC and the SEC, demonstrates that it is a financially viable company (Exhs. AG-1-2, Att. (a) (Supp. 1); AG-1-2 (Supp. 2); AG-1-2, Att. (a) (Supp. 3); AG-1-2, Att. (b) (Supp. 3)). The Companies do not expect to significantly change NSTAR Electric's capital structure as a result of the Proposed Merger (Exh. DPU-20-11). Additionally, the Companies do not expect the consolidation to have an impact on NSTAR Electric's credit rating or borrowing costs following the consolidation (Exh. DPU-20-11). Furthermore, NSTAR Electric intends to assume the debt obligations of WMECo (Exh. DPU-20-8). The lower borrowing costs of NSTAR Electric, applied to WMECo's operations, will improve the financial integrity of NSTAR Electric as the surviving operation (Exh. DPU-20-8).

Moreover, NSTAR Electric's post-merger financial position is likely to be enhanced by the ability to reduce costs through the savings described above. As such, the Department finds no reason to expect that the Proposed Merger would compromise the financial integrity of NSTAR Electric as the surviving company. Accordingly, for all of these reasons, the Department finds that the merger would have a beneficial effect on NSTAR Electric's financial integrity.

vii. Conclusion

As described in detail above, the Department finds that the Proposed Merger will provide net savings to ratepayers, long term strategies that will assure a reliable, cost-effective energy delivery system, potential further improvements in customer service and

service quality, and increased financial integrity of NSTAR Electric as the surviving entity. Accordingly, the Department finds that the Companies have satisfied the statutory requirement that the Proposed Merger is “consistent with the public interest,” by demonstrating that the benefits of the Proposed Merger outweigh the costs.

b. Financial Recordkeeping

As noted above, Eversource seeks to consolidate the financial recordkeeping of the Companies post-merger (Companies Brief at 159). The Attorney General requests that the Department require the Companies to retain separate financial accounting records and to file separate Annual Returns, if and until all rate classes are merged (Attorney General Reply Brief at 100-101).

Gas and electric companies engaged in the manufacture and sale or distribution of gas or electricity are required to keep their books and accounts in a form prescribed by the Department. G.L. c. 164, § 81; 220 CMR 50.00, 51.00, 52.00. The Department may require that a company maintain certain records and accounting practices. Fryer v. Department of Public Utilities, 373 N.E.2d 977, 374 Mass. 685 (1978). The Department has previously required merging companies that intend to maintain their existing rate structures to maintain separate financial records in order to allow for proper identification of costs between multiple service areas. Bay State Gas Company/Brockton-Taunton Gas Company, D.P.U. 18133, at 5 (1974).

In this instance, the Department finds that it is necessary for the consolidated company to maintain separate accounts for the former NSTAR Electric and WMECo entities

because these companies currently have separate rates, and may continue to maintain the same after this proceeding.²² Moreover, despite the operational integration of the Companies, the potential for degradation in service quality-related activities still exist. D.P.U. 09-139, at 24. Therefore, the Department directs the Companies to maintain separate financial records and service quality data. As to the form of the separate financial records, Eversource may consider direct assignment or allocation through the use of subaccounts, when appropriate.

We now turn to the Attorney General's request that the Companies be required to file separate Annual Returns for what will be the former NSTAR Electric and WMECo. Companies are required to furnish a return annually to the Department, in a form prescribed by it. G.L. c. 164, § 83. The Department has not previously required companies to maintain separate annual returns by legacy service territories as a condition of a merger. Moreover, the Attorney General's proposal for separate Annual Returns was first raised in her reply brief. Consequently, there is an insufficient evidentiary record to determine whether the post-merger consolidated NSTAR Electric would be able to separate its financial

²² The Department has observed that the failure to maintain separate accounts will, over time, eliminate rate differentials between separate service areas by virtue of the lack of reliable cost data. D.P.U. 18133, at 5. Rate consolidation, if such is to be permitted in the future, should be based on substantial evidence, and not through default. In this regard, the Department will address any such issues in its subsequent Order addressing rate design issues.

data to the degree necessary to file separate Annual Returns, as the Attorney General proposes.²³

As such, while the Department will require the Companies to keep separate financial records and service quality data for the legacy NSTAR Electric and WMECo, we decline to require the consolidated Companies to file separate Annual Returns. The Department will consider the consolidation of service quality reporting metrics in the context of the Companies' service quality filings.

D. Stock Transactions

1. Introduction

As of December 31, 2016, NSTAR Electric had 100 common shares outstanding with a par value of \$1.00 per share, and WMECo had 434,653 common shares outstanding with a par value of \$25 per share (Exhs. AG-1-2, Att. (a) at 150-151 (Supp. 3); AG-1-2, Att. (b) at 142-143 (Supp. 3)). In order to effect the Proposed Merger, the Companies propose to exchange all the common shares of WMECo for common shares of NSTAR Electric based on an exchange ratio of 0.00023007 shares of NSTAR Electric common stock for each share of WMECo common stock (Exh. AG-30-7, Att. at 50). Consequently, 434,653 aggregate common shares of WMECo will be converted into 100 shares of NSTAR Electric (see

²³ In the case of combination gas and electric utilities, the Department has not attempted to segregate capital structures between gas and electric operations. This is because the Department considers cash to be fungible, and thus has concluded that it is not appropriate or feasible to allocate the components of the utility's capital structure among various operating divisions. Fitchburg Gas and Electric Light Company, D.T.E. 02-24/25, at 225 (2002); Fitchburg Gas and Electric Light Company, D.P.U. 1214-D at 4-5 (1985). These same inherent difficulties would arise with efforts to generate separate Annual Returns by service area.

Exh. AG-30-7, Att. at 49). WMECo's exchanged stock certificates will be cancelled automatically and cease to have any rights with respect to the surviving company (Exh. AG-30-7, Att. at 51).

2. Standard of Review

To approve the issuance of stock, bonds, coupon notes, or other types of long-term indebtedness by a gas or electric company, the Department must determine that the proposed issuance meets two tests.²⁴ First, the Department must assess whether the proposed issuance is reasonably necessary for the purpose for which such issuance of securities has been authorized. G.L. c. 164, § 14; Fitchburg Gas and Electric Light Company v. Department of Public Utilities, 395 Mass. 836, 841-842 (1985) ("Fitchburg II"), citing Fitchburg Gas and Electric Light Company v. Department of Public Utilities, 394 Mass. 671, 678 (1985) ("Fitchburg I"). The Supreme Judicial Court has found that, for the purposes of G.L. c. 164, § 14, reasonably necessary means "reasonably necessary for the accomplishment of some purpose having to do with the obligations of the company to the public and its ability to carry out those obligations with the greatest possible efficiency." Fitchburg II at 842, citing Lowell Gas Light Company v. Department of Public Utilities, 319 Mass. 46, 52 (1946) ("Lowell Gas"). In cases where no issue has been raised about the reasonableness of management decisions regarding the requested financing, the Department limits its G.L. c. 164, § 14, review to a determination of reasonableness of the company's proposed use of the proceeds of a securities issuance. Colonial Gas Company,

²⁴ Long term refers to periods of more than one year from the date of issuance. G.L. c. 164, § 14.

D.P.U. 90-50, at 6-7 (1990); Canal Electric Company, et al., D.P.U. 84-152, at 20 (1985).

The burden of proving that an issuance is reasonably necessary rests with the company proposing the issuance, and the Department's authority to review a proposed issuance is not limited to a perfunctory review. Fitchburg I at 678; Fitchburg II at 842; Lowell Gas at 52.

Second, the Department must determine whether the company meets the net plant test. Milford Water Company, D.P.U. 91-257, at 5 (1992); Edgartown Water Company, D.P.U. 90-274, at 5-7 (1990); Barnstable Water Company, D.P.U. 90-273, at 6-8 (1990); Colonial Gas Company, D.P.U. 84-96, at 5-8 (1984).²⁵ Regarding the net plant test, a company is required to present evidence that its net utility plant is equal to or in excess of its total capitalization. Aquarion Water Company of Massachusetts, D.P.U. 11-55, at 12, 28-29 (2011); D.P.U. 90-50, at 4-5. For purposes of this test, net utility plant is derived from utility plant in service less accumulated depreciation and excluding the following: (1) contributions in aid of construction; (2) construction work in progress; and (3) goodwill. D.P.U. 11-55, at 12, 28-29; Southern Union Company, D.T.E. 01-32, at 10-11 (2001); D.P.U. 84-96, at 5, 7-8. The Department's definition of total capitalization is, for purposes

²⁵ The net plant test is derived from G.L. c. 164, § 16, which provides the Department with authority to protect against an impairment of capital. Childs v. Krey, 199 Mass. 352, 356 (1908). Thus, when the Department approves a securities issuance under G.L. c. 164, § 14, we require a demonstration that the fair structural value of the plant and land exceeds the company's outstanding stock and long-term debt. D.P.U. 84-96, at 5. When the value of such plant and land is less than the value of the company's outstanding stock and long-term debt, the Department may prescribe conditions and requirements to make good within a reasonable time the impairment of the capital stock. G.L. c. 164, § 16.

of this test, the sum of long-term debt, preferred stock, common stock, and premiums on common stock outstanding. D.P.U. 11-55, at 28-29; D.P.U. 84-96, at 5.²⁶

Where issues concerning the prudence of a company's capital financing have not been raised or adjudicated in a proceeding, the Department's decision does not represent a determination that any specific project is economically beneficial to the company or to its customers. Boston Gas Company, D.P.U. 95-66, at 7 (1995). Further, the Department's approval of a securities issuance in a G.L. c. 164, § 14, proceeding may not in any way be construed as a ruling on the appropriate ratemaking treatment to be accorded any costs associated with the proposed financing. D.P.U. 95-66, at 7.

3. Analysis and Findings

a. Introduction

The Companies will enter into an agreement and plan of merger upon receiving Department approval of the Proposed Merger, including the issuance of common stock as necessary to exchange with WMECo (Exhs. DPU-20-1, at 1; AG-30-7, Att. at 49-51). As noted above, Department approval is required for any stock issuance by a gas, electric, or water company. G.L. c. 164, § 14. In addition, G.L. c. 164, § 16 is implicated in any petition brought under G.L. c. 164, § 14, and G.L. c. 164, § 99 is implicated in any petition brought under Section 96. Therefore, the Department will examine the proposed stock issuance pursuant to G.L. c. 164, §§ 14, 16, and 99.

²⁶ For purposes of the net plant test, the Department excludes retained earnings from the calculation of total capitalization. D.P.U. 11-55, at 28 n.29; Southern Union Company, D.T.E. 04-36, at 9-10 (2004). In addition, premiums on common stock are treated as common stock. Western Massachusetts Electric Company, D.P.U. 09-50, at 16 (2010), citing D.T.E. 04-36, at 9 n.5.

b. Stock Issuance

The Proposed Merger requires the issuance of 100 common shares by NSTAR Electric as consideration in the transaction (Exh. AG-30-7, Att. at 49-51). The Companies represent that the purpose of the stock issuance by NSTAR Electric is to facilitate the merger of WMECo into NSTAR Electric (Exh. AG-30-7, Att. at 49-51). The Department has found that issuance of stock by an operating company for the purpose of exchanging for the stock of another operating company that is being acquired pursuant to Section 96 is a legitimate utility purpose as contemplated by G.L. c. 164, § 14. D.T.E. 06-40, at 22-23; D.T.E. 99-47, at 61; Brockton Edison Company/Fall River Electric Light Company, D.P.U. 19552, at 9. Therefore, the Department finds that the proposed stock issuance by NSTAR Electric is reasonably necessary to accomplish a legitimate purpose in meeting NSTAR Electric's service obligations in accordance with G.L. c. 164, § 14, and thus meets the first prong of the Department's two-prong standard.

With regard to the net plant test requirement of G.L. c. 164, § 16, as of December 31, 2016, NSTAR Electric had plant in service of \$7,796,064,193, with an accumulated depreciation reserve of \$ 2,256,001,075, for a net plant balance of \$5,440,063,118 (Exh. AG-1-2, Att. at 28 (Supp. 3)). NSTAR Electric's total capitalization for purposes of the net plant test on that same date was \$2,143,000,100, consisting of \$100 in common stock, \$43,000,000 in preferred stock, and \$2,100,000,000 in long-term debt (Exh. AG-1-2, Att. (a) at 32 (Supp. 3)). NSTAR Electric subsequently issued \$350,000,000 in long-term debt on May 6, 2017, and issued another \$350,000,000 on

October 5, 2017 (Exh. DPU-31-6). NSTAR Electric Company, D.P.U. 16-189, Compliance Filing (October 13, 2017). A portion of the October 5 issuance will be used to refinance \$400,000,000 in long-term debt that will mature on November 15, 2017 (Exhs. DPU-31-6; AG-1-2, Att. (a) at 154-155 (Supp. 3); AG-26). D.P.U. 16-189, Compliance Filing (October 13, 2017).

Additionally, as of December 31, 2016, WMECo had utility plant in service of \$1,935,531,756, along with accumulated depreciation of \$347,401,580, for an aggregate net plant of \$1,588,130,176 (Exh. AG-1-2, Att. (b) at 26 (Supp. 3)).²⁷ In turn, WMECo's total capitalization for purposes of the net plant test on that same date was \$579,771,476, consisting of \$10,866,325 in common stock, \$3,905,151 in premiums on common stock, and \$565,000,000 in long-term debt (Exh. AG-1-2, Att. (a) at 30 (Supp. 3)). NSTAR Electric intends to reclassify WMECo's exchanged common stock and premiums as additional paid-in capital, thus eliminating these balances from consideration in the net plant test (Exh. AG-30-7, Att. at 141). As such, for purposes of the net plant test, NSTAR Electric's post-merger net plant would be \$7,028,193,294, with a total capitalization of \$3,008,000,200,²⁸ resulting in an excess of net utility plant over outstanding capital of \$4,020,193,094. The Department finds that NSTAR Electric's current and post-merger plant investment is sufficient to support the proposed issuance of 100 shares of common stock.

²⁷ This figure excludes construction work in progress, Account 107.

²⁸ \$2,143,000,100 + 700,000,000 - \$400,000,000 + \$565,000,000 + \$100.

c. G.L. c. 164, § 99

General Laws chapter 164, § 99 (“Section 99”) is the operative statute governing increases in capital stock to effect an acquisition and it states:

The purchasing or consolidated company may, for the purposes authorized by [G.L. c. 164, §§ 96 and 97], increase its capital stock and issue bonds in the same manner and subject to the limitations provided in [G.L. c. 164, §§ 13, 14, 18, and 19]; and may, for the same purpose and subject to the same limitations and notwithstanding any special law applicable thereto, exchange its securities for those of the selling or merged company upon such terms as the [D]epartment approves; but the aggregate amount of the capital stock and the aggregate amount of the debt, respectively, of the consolidated companies shall not, by reason of such consolidation, be increased.

The Department has determined that, for purposes of Section 99, capital stock consists of common stock, preferred stock, and premiums on stock. D.P.U. 99-47, at 63-64; Boston Gas Company, D.P.U. 17138, at 7 (1971); Pittsfield Coal Gas Company, D.P.U. 10956 (1954).

The Companies must demonstrate that the aggregate amount of capital stock and debt for NSTAR Electric and WMECo will not increase as a result of the Proposed Merger. As noted above, NSTAR Electric’s capital stock as of the date of the Proposed Merger will consist of \$100 in common stock and \$43,000,000 in preferred stock (Exh. AG-1-2, Att. (a) at 32 (Supp. 3)). WMECo’s capital stock consists of \$10,866,325 in common stock and \$3,905,151 in premiums on common stock (Exh. AG-30-7, Att. at 148). Thus, the aggregate par and premiums of the Companies’ capital stock is \$57,771,576.

Using the stock exchange ratios proposed by the Companies, 100 shares of NSTAR Electric common stock would be issued in exchange for 434,653 shares of WMECo common

stock (see Exh. AG-30-7, Att. at 49). The Department has reviewed the proposed exchange ratios and post-merger capital stock balance, and finds that the aggregate amount of the Companies' capital stock will not increase as a result of the Proposed Merger. Moreover, because no new debt would be issued, the aggregate amount of the Companies' debt would not increase as a result of the Proposed Merger. Therefore, the Department finds that no further action is required under Section 99.

E. Confirmation of Franchises

1. Introduction

The Companies request that the Department confirm that NSTAR Electric, as the surviving corporation subsequent to the Proposed Merger, will retain all franchise rights and obligations that were previously held by WMECo and that further action, pursuant to G.L. c. 164, § 21, is not required to consummate the merger (Joint Petition at ¶ 28; Exhs. DPU-20-12; DPU-35-5). None of the parties commented on this issue.

2. Analysis and Findings

General Laws chapter 164, § 21, states: “[a] corporation subject to this chapter shall not, except as otherwise expressly provided, transfer its franchise, lease its works or contract with any person, association or corporation to carry on its works, without the authority of the general court” (emphasis added). Moreover, G.L. c. 164, § 98 states that “[t]he purchasing or consolidating company shall except as provided in [G.L. c. 164, § 97],²⁹ have and enjoy all the powers, rights, locations, licenses, privileges and franchises, and be subject to all the

²⁹ General Laws chapter 164, § 97 pertains to the acquisition of a water storage reservoir or hydroelectric plant by an electric company.

duties, liabilities and restrictions, of the company selling or merged as aforesaid, so far as they are applicable to the purchasing or consolidated company.”

The Department has determined that approval of corporate mergers pursuant to Section 96 obviates the need for separate legislative approval under G.L. c. 164, § 21 for transfer of franchise rights. New England Gas Company et al., D.P.U. 13-07-B at 11-18 (2014); D.T.E. 99-47, at 65-66; Haverhill Gas Company, D.P.U. 1301, at 4 (1984). The Department has stated that an action properly approved under Section 96 would not require separate authorization of the General Court because the General Court itself authorized the Department to approve such a transaction. D.P.U. 13-07-B at 11-12; D.P.U. 1301, at 5.

The various franchise rights held by WMECo have been acquired from time to time by WMECo and its predecessors in interest since their inception through various actions, including special legislative acts, Department orders, grants of location, easements, and rights of way (Exh. DPU-20-12; Tr. 1, at 111-113). See, e.g., St. 2008, c. 273; St. 1962, c. 731; St. 1952, c. 113; St. 1910, c. 580; St. 1900, c. 42; Western Massachusetts Electric Company/Huntington Electric Light Company, D.P.U. 16972, at 7-8 (1971); Huntington Electric Company/Strathmore Paper Company, D.P.U. 13534, at 4 (1961); Lee Electric Company, D.P.U. 4020 (1930).³⁰ The Companies have not requested that the Department investigate or verify the current validity of any franchise right (Tr. 1, at 114). Further, no issues have been raised as to the validity of WMECo’s franchise rights.

³⁰ The documentation supporting these franchise rights dates as far back as the late nineteenth century, and is maintained on a decentralized basis at WMECo’s various service centers (Tr. 1, at 113-114).

On the effective day of the merger, NSTAR Electric will have and enjoy its own existing powers, rights, locations, privileges, and franchises and will be subject to all the associated duties, liabilities, and restrictions. In addition, NSTAR Electric will have and enjoy the powers, rights, locations, privileges, and franchises of WMECo and will be subject to all the associated duties, liabilities, and restrictions of WMECo. The Department finds that approval of the Proposed Merger pursuant to Section 96 obviates the need in this case for legislative approval under G.L. c. 164, § 21. D.P.U. 13-07-B at 17-18; D.T.E. 99-47, at 65-66; D.P.U. 1301, at 4. Accordingly, the Department hereby ratifies and confirms that all the franchise rights and obligations currently held by WMECo shall continue with NSTAR Electric after the consummation of the merger.

VI. REVENUES

A. Test Year Revenue Adjustments

1. Introduction

Eversource reported total test year operating revenues of \$2,769,893,671 for NSTAR Electric and \$479,998,869 for WMECo (Exhs. ES-DPH-2 (East), Sch. DPH-5, at 1 (Rev. 3); ES-DPH-2 (West), Sch. DPH-5, at 1 (Rev. 3)). Eversource proposes adjustments to the Companies' test year operating revenues: (1) to remove costs recovered through ratemaking mechanisms that operate outside of base; (2) to normalize the booked test year amounts for ratemaking purposes; and, (3) to account for known and measurable changes in O&M expense levels occurring after the end of the test year and through the midpoint of the rate year (Exh. ES-EPH-1, at 21). The proposed adjustments reduce total operating revenues to \$854,286,489 for NSTAR Electric and \$136,621,525 for WMECo (Exhs. ES-DPH-2 (East),

Sch. DPH-5 (Rev. 3); ES-DPH-2 (West), Sch. DPH-5 (Rev. 3)). The proposed adjustments are set forth in further detail below.

2. Companies Proposed Adjustments

a. Reclassification Adjustment and Normalizing Adjustments

Eversource proposes to reclassify \$244,975 in special contract revenues from NSTAR Electric's Distribution Revenue category to its Other Revenue category (Exhs. ES-DPH-1, at 31; ES-DPH-2 (East), Sch. DPH-5, at 1 (Rev. 3)). Eversource states that this adjustment was made to recognize that special contract revenues are not part of the revenue requirement that is used to determine the revenue decoupling adjustments (Tr. 6, at 1184-1185). This adjustment has no net impact on total operating revenues (see Exh. ES-DPH-2 (East), Sch. DPH-5, at 1 (Rev. 3)).

Eversource also proposes normalization adjustments totaling \$1,918,235,114 for NSTAR Electric and \$343,813,492 for WMECo (Exhs. ES-DPH-2 (East), Sch. DPH-5 (Rev. 3); ES-DPH-2 (West), Sch. DPH-5 (Rev. 3); DPU-25-11; AG-19-9). These adjustments are intended to remove revenues that are reconciled and recovered outside of base distribution rates (e.g., through reconciling mechanisms) or to correct for discrepancies between calculated and booked revenues (Exhs. ES-DPH-1, at 31-32; AG-19-9, Att. at 1).

b. Pro Forma Adjustments

i. Introduction

Eversource proposes a number of pro forma adjustments totaling \$2,627,932 for NSTAR Electric and \$436,148 for WMECo (Exhs. ES-DPH-2 (East), Sch. DPH-5 (Rev. 3); ES-DPH-2 (West), Sch. DPH-5 (Rev. 3)). According to Eversource, these adjustments

account for purported known and measurable changes in the Companies' operating revenues. Each proposed adjustment is set forth separately below.

ii. NSTAR Electric's Rents from Electric Property

Eversource proposes to increase NSTAR Electric's revenues associated with its rents from electric property, which includes facilities leases and pole attachment revenues, by \$1,363,355 (Exhs. ES-DPH-1, at 33-35; ES-DPH-2 (East), Sch. DPH-5 (Rev. 3); ES-DPH-3 (East), WP DPH-5, at 2). This overall adjustment is the result of proposed adjustments to the following rental agreements.

The first adjustment is associated with NSTAR Electric's pole attachment agreement with RCN Corporation ("RCN"). Under this agreement, RCN is obligated to pay NSTAR Electric a fee for attaching certain equipment to poles, including attachments to poles jointly owned by NSTAR Electric and Verizon (Exh. DPU-38-7, Att.). During the test year, Eversource booked \$2,401,664 in revenues associated with the RCN agreement (Exh. ES-DPH-2 (East), WP DPH-5, at 2). According to the Companies, RCN notified Eversource that, starting January 1, 2016 (i.e., halfway through the test year), RCN entered into a pole attachment agreement with Verizon whereby RCN would pay Verizon half of the pole attachment revenues previously paid to Eversource (i.e., RCN would pay each pole owner the jointly owned rate for applicable pole attachments as opposed to the solely owned rate it had paid only to NSTAR Electric in 2015) (Exh. DPU-38-7; Tr. 15, at 3087). Eversource states that, going forward, NSTAR Electric's share of pole attachment revenues from RCN will be \$1,824,336 (Exhs. ES-DPH-1, at 33; ES-DPH-3 (East), WP DPH-5, at 2

(Rev. 3)). Accordingly, Eversource proposes to decrease its test year revenues by \$577,328 (Exhs. ES-DPH-1, at 33; ES-DPH-3 (East), WP DPH-5, at 2 (Rev. 3); Tr. 15, at 3087).

Second, Eversource anticipates rental revenues from NSTAR Gas for its share of the use of facilities in Plymouth, Somerville, and Hyde Park to decrease by \$61,007 (Exhs. ES-DPH-1, at 33-34; ES-DPH-3 (East), WP DPH-5, at 2 (Rev. 3)). According to Eversource, this revenue decrease for NSTAR Electric reflects the most updated costs to be charged to NSTAR Gas (Exh. ES-DPH-1, at 33-34).

Third, Eversource proposes to increase its rental revenues for NSTAR Electric by \$1,542,042 to reflect changes associated with its relocation of its New Bedford service center to a new facility in New Bedford (Exhs. ES-DPH-1, at 34; ES-LML-1, at 46; ES-DPH-3 (East), WP DPH-5, at 2 (Rev. 3); DPU-36-4, Att.).³¹ Eversource states that a portion of the new facility will be rented to NSTAR Gas, which accounts for the increase in rental revenues (Exh. ES-DPH-1, at 34).

Next, Eversource proposes to increase NSTAR Electric's rental revenues by \$82,424 to reflect lease revenues received from MembersPlus Credit Union and Herb Chambers Companies (Exhs. ES-DPH-1, at 34-35; ES-DPH-3 (East), WP DPH-5, at 2 (Rev. 3)). According to Eversource, this adjustment does not represent a change in test year levels; instead it is a normalizing adjustment to recognize these revenues in its account for Other Rent from Electric Property rather than as an offset to rent expense (Exhs. ES-DPH-1, at 35; ES-DPH-2 (East), Sch. DPH-18, at 2; ES-DPH-3 (East), WP DPH-5, at 2 (Rev. 3)).

³¹ The New Bedford service center project is addressed in Section VII.C below.

Finally, Eversource recently entered into a lease agreement with Beth Israel Hospital to rent a section of the Companies' facility in Westwood to the hospital (Exhs. DPU-8-3 & Atts. (Supp. 1)); Tr. 4, at 779-780; Tr. 6, at 1182-1184). Eversource states that this agreement will increase rental revenues by \$377,224 for NSTAR Electric (Exhs. DPU-8-3 & Att. (b) (Supp. 1); ES-DPH-3 (East), WP DPH-5, at 2 (Rev. 3); Tr. 4, at 779-780; Tr. 6, at 1182-1184).

iii. NSTAR Electric's Other Electric Revenues

Eversource proposes to increase NSTAR Electric's Other Electric Revenues by \$1,264,577 (Exhs. ES-DPH-3 (East), WP DPH-5, at 1 (Rev. 3); DPU-25-8, Att.). This adjustment comprises a proposed increase of \$1,713,654 to account for adjustments related to restoration and other fees, and a proposed decrease of \$449,077 associated with the expected cancellation of a transmission service agreement between NSTAR Electric and the Town of Belmont, Massachusetts Municipal Light Department ("Belmont Light") ("Belmont Service Agreement") (Exhs. ES-DPH-3 (East), WP DPH-5, at 1 (Rev. 3); DPU-25-6, at 1; DPU-25-8, Att.; DPU-25-9; AG-37-2).

With respect to fees, NSTAR Electric proposes increases in its returned check fee, account restoration fee (meter), and warrant fee (Exhs. ES-DPH-3 (East), WP DPH-5, at 1 (Rev. 3); DPU-25-8, Att.; DPU-25-9).³² Further, Eversource proposes revenue adjustments for three additional fees – an account restoration fee (pole), an account restoration fee

³² The warrant fee includes costs associated with preparation of paperwork, time at courthouses, police details, constables/sheriffs, locksmiths, and court fees (Exh. DPU-6-4, Att. (c)).

(manhole), and a sales tax abatement fee (Exhs. ES-DPH-3 (East), WP DPH-5, at 1 (Rev. 3); DPU-25-8, Att.; DPU-25-9).³³ Eversource's proposed fees are addressed in Section XVII.C below.

iv. WMECo's Restoration and Other Fees Revenues

Eversource proposes to increase WMECo's restoration and other fees revenues by \$436,148 to account for adjustments related to restoration and other fees (Exh. ES-DPH-3 (West), WP DPH-5 (Rev. 3); AG-19-41, Att.). Specifically, Eversource proposes increases to WMECo's return check fee, account restoration fee (meter), warrant fee, and account restoration fee (manhole), and an adjustment to reflect a sales tax abatement fee (Exhs. ES-DPH-3 (West), WP DPH-5 (Rev. 3); AG-19-41, Att.). Eversource also proposes an adjustment to WMECo's Other Electric Revenue to reflect a decrease associated with the account restoration fee (pole) (Exhs. ES-DPH-3 (West), WP DPH-5 (Rev. 3); AG-19-41, Att.).³⁴ Eversource's proposed fees are addressed in Section XVII.C below.

³³ The proposed increase of \$1,713,654 to account for adjustments related to restoration and other fees is broken down as follows: (1) return check fee – \$94,996; (2) account restoration fee (meter) – \$1,344,954; (3) warrant fee – \$138,804; (4) account restoration fee (pole) – \$11,954; (5) account restoration fee (manhole) – \$5,324; and (6) sales tax abatement fee – \$117,622 (Exhs. ES-DPH-3 (West), WP DPH-5, at 1 (Rev. 3); AG-19-41, Att.).

³⁴ The proposed increase of \$436,148 to account for adjustments related to restoration and other fees is broken down as follows: (1) return check fee – \$24,583; (2) account restoration fee (meter) – \$384,552; (3) warrant fee – \$7,919; (4) account restoration fee (manhole) – \$9,708; (5) sales tax abatement fee – \$11,086; and (6) account restoration fee (pole) – (\$1,700) (Exhs. ES-DPH-3 (East), WP DPH-5 (Rev. 3); DPU-25-8, Att.; DPU-25-9).

3. Positions of the Parties

a. Attorney General

The Attorney General argues that, consistent with Department precedent, the Companies' revenues should be adjusted to reflect the test year-end number of pole attachments multiplied by current pole attachment rates (Attorney General Brief at 199, citing Massachusetts Electric Company and Nantucket Electric Company, D.P.U. 09-39, at 121 (2009); Massachusetts Electric Company, D.P.U. 95-40, at 79 (1995); Boston Edison Company, D.P.U. 85-266-A/85-271-A, at 117 (1986); D.P.U. 1720, at 85). Using this method, the Attorney General calculates the amount of pole attachment test year-end revenues to be included in the cost of service as \$4,554,630 for NSTAR Electric and \$810,302 for WMECo (Attorney General Brief at 199-200, citing Exh. AG-51-17; RR-AG-26).

Further, as described in Section XVII.C below, the Attorney General challenges several of Eversource's proposed fee increases. The Attorney General does not, however, offer any specific adjustments to revenues related to these challenges.

Finally, the Attorney General argues that the Companies should not be allowed to make a pro forma adjustment to eliminate \$449,077 in revenues related to the Belmont Service Agreement (Attorney General Brief at 196; Attorney General Reply Brief at 50). According to the Attorney General, the proposed adjustment cannot be recognized as a known and measurable change because it has not occurred and the record does not support a finding that the contract will be terminated (Attorney General Brief at 196; Attorney General Reply Brief at 50-51). Further, the Attorney General contends that the Companies have failed to establish that termination of the Belmont Service Agreement is outside the normal

ebb and flow of revenue changes resulting from the addition and departure of customers (Attorney General Brief at 198).

b. Companies

The Companies argue that its proposed revenue adjustments are consistent with the Department's practices and should be accepted (Companies Brief at 172-175). With respect to pole attachments revenues, the Companies contend that the Attorney General's revenue adjustment calculations based on test year-end pole attachment counts and rates are erroneous because she transposed the rates assigned to jointly- and solely-owned poles, which inflated her calculation (Companies Brief at 507-508).³⁵ The Companies arguments concerning the reasonableness of the proposed increases to specific fees are summarized below in Section XVII.C.

Regarding the Belmont Service Agreement, the Companies argue that because Belmont Light completed the construction of a new substation and is taking steps to transfer its load to the new substation, it is "very unlikely" that Belmont Light will continue taking service under the Belmont Service Agreement (Companies Reply Brief at 144). Therefore, the Companies assert that the Department should allow the proposed adjustment to remove

³⁵ According to the Companies, the test year-end pole attachment revenue calculations using the correct (*i.e.*, non-transposed) rates for jointly and solely owned poles are \$2,994,480 for NSTAR Electric and \$439,623 for WMECo (Companies Brief at 507-508, citing Exhs. ES-DPH-3 (East), WP DPH-5, at 2; ES-DPH-2 (West), Sch. DPH-5, at 1; AG-51-17; AG-51-17 (Rev. 1); RR-AG-24). The Companies do not, however, propose to use these revenue calculations as the baseline for their proposed revenue adjustments.

revenues related to the Belmont Service Agreement (Companies Brief at 507; Companies Reply Brief at 144).

4. Analysis and Findings

a. Proposed Reclassification and Normalization Adjustments

The Department has reviewed the evidence supporting Eversource's proposed reclassification of NSTAR Electric's special contract revenues and the Companies' proposed normalization adjustments (Exhs. ES-DPH-1, at 31-32; ES-DPH-2 (East), Sch. DPH-5 (Rev. 3); ES-DPH-2 (West), Sch. DPH-5 (Rev. 3); AG-19-9 & Att.; DPU-25-11). We find that the aforementioned adjustments are consistent with Department practice and, therefore, are allowed.

b. Proposed Pro Forma Adjustments

i. NSTAR Electric's Rents from Electric Property

As noted above, Eversource proposes to increase NSTAR Electric's revenues associated with its rents from electric property by \$1,363,355 (Exhs. ES-DPH-1, at 33-35; ES-DPH-2 (East), Sch. DPH-5 (Rev. 3); ES-DPH-3 (East), WP DPH-5, at 2 (Rev. 3)).

The Department has reviewed the evidence supporting the proposed adjustments relating to NSTAR Gas' share of the Plymouth, Somerville and Hyde Park facilities leases; the relocation of the New Bedford service center; the Members Plus Credit Union and Herb Chambers lease; and Beth Israel Hospital's lease of space at the Companies' Westwood facility (Exhs. ES-DPH-1, at 33-35; ES-DPH-3 (East), WP DPH-5, at 2 (Rev. 3); DPU-8-3 & Atts. (Supp. 1); DPU-36-4, Att.; Tr. 4, at 779-780; Tr. 6, at 1182-1184). We find that the aforementioned adjustments are known and measurable. Therefore, the Department

allows the proposed adjustments to the Companies' revenues in the amount of \$1,940,683 related to the leases identified above.

With respect to pole attachments revenues, the Companies propose to decrease test year revenues by \$577,328 to reflect a change in pole attachment revenues from RCN (Exhs. ES-DPH-1, at 33; ES-DPH-3 (East), WP DPH-5, at 2 (Rev. 3)). Although the Attorney General did not address the specific adjustment related to RCN, she argues that, in order to conform to Department precedent, the Companies' test year pole attachment revenues should be adjusted upwards to reflect the test year-end number of pole attachments multiplied by the current pole attachment rates (Attorney General Brief at 199).

Like other revenues received by the Companies, pole attachment revenues are an offset to expenses and serve to reduce the revenue requirement that is used to design rates. In order to ensure that a representative level is used as an offset to expenses, the Department adjusts test year pole attachment revenues on the basis of the test year-end number of attachments, as well as the test year-end pole attachment rates. Fitchburg Gas and Electric Light Company, D.P.U. 11-01/D.P.U. 11-02, at 167-168 (2011); D.P.U. 09-39, at 121; D.P.U. 95-40, at 79; D.P.U. 85-266-A/85-271-A at 117; D.P.U. 1720, at 85.

Here, the Companies did not apply Department precedent (i.e., projected revenues based on actual test-year end number of attachments and attachment rates) when calculating the proposed level of pole attachment revenues to include as an offset in rates. Instead, the Companies propose to use test year pole attachment revenues as the baseline to apply a post-test year adjustment (Exhs. ES-DPH-1, at 33; ES-DPH-3 (East), WP DPH-5, at 2

(Rev. 3)). We find that the method proposed by the Companies is likely to understate the representative level of pole attachment revenues to include as an offset in rates.³⁶ Therefore, the Department declines to adopt the method proposed by the Companies, and will instead apply the Department's precedent to calculate the appropriate level of pole attachment revenues.

Applying Department precedent, the Attorney General offers a calculation of the representative level of test year-end pole attachment revenues to be included in cost of service (Attorney General Brief at 199-200, citing Exh. AG-51-17; RR-AG-26).³⁷ However, as noted by the Companies, the Attorney General incorrectly transposes the rates assigned to jointly- and solely-owned poles in her calculation (Exh. AG-51-17; RR-AG-24). While not proposing to use these revenue calculations as the baseline for their proposed revenue adjustments, but to demonstrate the error in the Attorney General's calculation, the Companies provide their own calculation of test year-end pole attachment revenues by multiplying the total number of attachments to jointly owned and solely owned poles by the respective rates for jointly and solely owned poles in each service territory (Companies Brief at 508-509, citing Exh. AG-51-17; RR-AG-26). Based upon the Companies' calculations,

³⁶ It is generally anticipated that the number of pole attachments (as well as pole attachment rates) will increase over time. See e.g., D.P.U. 11-01/D.P.U. 11-02, at 167-168; D.P.U. 09-39, at 120-121.

³⁷ Using this method, the Attorney General maintains that the test year-end pole attachment revenues are \$4,554,630 for NSTAR Electric and \$810,302 for WMECo (Attorney General Brief at 199-200, citing Exh. AG-51-17; RR-AG-26).

total test year revenues would exceed test year-end revenues by \$1,638,762.³⁸ The unexplained magnitude and direction of this difference between total test year revenues and test year-end revenues is significant, thereby causing the Department to question the reliability of the Companies' pole attachment data in this proceeding.

One possible explanation for the difference is that the Companies failed to account for revenues from antenna attachments in their test year-end calculation. Antenna attachments command a significantly higher rate than other types of attachments (*i.e.*, \$200 for solely owned poles and \$100 for jointly owned poles, as compared to \$10.00 and \$5.00, for solely owned poles and jointly owned poles, respectively for NSTAR Electric, and \$9.00 and \$4.50, for solely owned poles and jointly owned poles, respectively for WMECo) (Exh. AG-51-17). The Companies have not, however, identified the test year-end number of antenna attachments or otherwise broken down the data by attachment type.

Additionally, the Department has identified other discrepancies with the Companies pole attachment data that lead us to conclude that they cannot be used to reliably calculate test-year end pole attachment revenues consistent with Department precedent. For example, in Exhibit AG-51-17, the Companies report a total of 87,267 pole attachments in WMECo's service territory. However, in response to Record Request AG-26, the Companies report a

³⁸ Using this method, the Companies indicate that test year-end pole attachment revenues are \$2,994,480 for NSTAR Electric and \$439,623 for WMECo (Companies Brief at 508-509, citing Exhs. ES-DPH-3 (East), WP DPH-5, at 2; ES-DPH-2 (West), Sch. DPH-5, at 1; AG-51-17; RR-AG-24; RR-AG-26). As noted above, the Companies have not proposed to include these numbers in cost of service. By comparison, actual test year pole attachment revenues as reported by the Companies are \$4,632,577 for NSTAR Electric and \$440,288 for WMECo (or a difference of \$1,638,097 for NSTAR Electric and \$665 for WMECo) (RR-AG-24).

total of 92,587 pole attachments for WMECo (i.e., 87,480 attachments on jointly owned poles and 5,107 attachments on solely owned poles). Therefore, there is an unexplained variance of 5,320 pole attachments between the two data sets. Accordingly, based on the evidence available in this proceeding, the Department is not able to apply our standard precedent to calculate a reliable, representative test year-end level of pole attachment revenues.

The Companies have the burden to demonstrate that they have included a reliable, representative level of pole attachment revenues as an offset in rates. Because the Companies have not presented data sufficient to allow us to calculate year-end pole attachment revenues in a manner consistent with our long-standing precedent, we must apply an alternate method in this case to arrive at a representative level of pole attachment revenues.

The Department found above that the Companies' proposal to adjust test year pole attachment revenues is likely to understate the representative level of pole attachment revenues to include as an offset in rates.³⁹ Accordingly, the Department declines to adopt the Companies' proposal, including the pro forma adjustment of \$577,328. Rather, based on the evidence presented in this case, the Department finds that unadjusted test year pole

³⁹ The Companies proposed to adjust test year revenues by \$577,328 to account for an anticipated change in pole attachment revenues from RCN (Exh. ES-DPH-3 (East), WP DPH-5, at 2 (Rev. 3)). If the Companies had correctly applied Department precedent in this case, no adjustment to account for a change in RCN-related revenues would be required because the correct rates for all RCN attachments would already be reflected in the test-year end calculation. Because RCN adjusted the amount it paid NSTAR Electric for pole attachments starting January 1, 2016 (i.e., halfway through the test year), the change would have been reflected in an end-of-test year calculation of the number of pole attachments (by type) multiplied by the then-current pole attachment rates (Exh. DPU-38-7; Tr. 15, at 3087).

attachment revenues will provide a reasonable, representative level of pole attachment revenues to include as an offset in rates. Any concerns that our inability to apply Department precedent would underrepresent the pole attachment revenue offset are addressed by the use of unadjusted test year revenues, as we find it will produce the most reasonable, representative test year-end level of pole attachment revenues given the available evidence in this case. Accordingly, the Companies shall include the following amounts in revenues: \$4,632,577 for NSTAR Electric and \$440,288 for WMECo (RR-AG-24).

Our adoption of this method in the instant case is not intended to change Department precedent regarding pole attachment revenues. In all future rate proceedings, the Companies shall calculate test year-end pole attachment revenues based on the test year-end number of pole attachments by type and the then-current rates for each attachment type (e.g., antenna attachments). The Companies shall provide sufficient data to support the reasonableness and reliability of these calculations, including pole attachment numbers, attachment types, and attachment rates.

ii. NSTAR Electric's Other Electric Revenues

As noted above, Eversource proposes to increase NSTAR Electric's Other Electric Revenue by \$1,264,577 (Exhs. ES-DPH-3 (East), WP DPH-5, at 1 (Rev. 3); DPU-25-8, Att.). This adjustment comprises a proposed increase of \$1,713,654 to account for adjustments related to restoration and other fees, and a proposed decrease of \$449,077 associated with the expected cancellation of the Belmont Service Agreement (Exhs. ES-DPH-3 (East), WP DPH-5, at 1 (Rev. 3); DPU-25-9). The reasonableness of

NSTAR Electric's proposed fees is addressed in Section XVII.C below. Consistent with the Department's findings therein, NSTAR Electric's Other Electric Revenue shall be reduced by \$1,073,517.

Regarding the Belmont Service Agreement, the Attorney General urges the Department to deny the Companies' proposal to reduce revenues by \$449,077 to reflect the termination of the agreement (Attorney General Brief at 196-198; Attorney General Reply Brief at 50-51). Specifically, the Attorney General argues that Eversource did not establish that the termination of the Belmont Service Agreement is outside the normal ebb and flow of revenue changes resulting from the addition and departure of larger customers (Attorney General Brief at 196-198). Although the Companies maintain that the adjustment is known and measurable, they do not address arguments about ebb and flow (Companies Reply Brief at 144-145).

The Department seeks to include in rates the likely cost of providing the same level of service as was provided in the test year. Fitchburg Gas and Electric Light Company, D.T.E. 99-118, at 17; Boston Gas Company, D.P.U. 88-67 (Phase I) at 140. Therefore, the Department does not normally make adjustments for post-test year changes in revenues attributed to customer growth unless the change is significant and outside of the normal "ebb and flow" of customers. D.T.E. 03-40, at 27; Fitchburg Gas and Electric Light Company, D.T.E. 02-24/25, at 77 (2002); Massachusetts American Water Company, D.P.U. 88-172, at 7-8 (1989); Bay State Gas Company, D.P.U. 1122, at 46-49 (1982). The rationale for this policy is that revenue adjustments of this nature would also require a number of

corresponding adjustments to expense and could disrupt the relation of test year revenues to test year expenses. D.T.E. 03-40, at 27; New England Telephone and Telegraph Company, D.P.U. 86-33-G at 322-327 (1989). However, the addition or deletion of a customer or a change in a customer's consumption, either during or after the test year, that (1) represents a known and measurable increase or decrease to test year revenues, and (2) constitutes a significant change outside of the "ebb and flow" of customers, may warrant an adjustment. D.T.E. 03-40, at 28. A change can be significant in one set of circumstances and insignificant in another. In cases where a significant change is found to exist, the Department may include (or exclude) a representative level of sales corresponding to a proven change in the derivation of a utility's revenue requirement. D.T.E. 03-40, at 28; D.T.E. 02-24/25, at 80; D.T.E. 99-118, at 14-20; D.P.U. 88-172, at 7-9. In making the "ebb and flow" determination, the Department has consistently considered the effect on a company's total distribution operating revenues. See D.T.E. 02-24/25, at 80; D.T.E. 99 118, at 18. Total distribution revenues are the standard for comparison – not some subset such as special contracts. See, e.g., D.T.E. 02-24/25, at 80-81.

Here, NSTAR Electric's total test year distribution revenues are \$854,286,489 (Exh. ES-DPH-2 (East), Sch. DPH-5, at 1). The proposed \$449,077 reduction in revenues due to the termination of the Belmont Service Agreement represents a decrease of 0.05 percent in total distribution operating revenues. The Department finds that the impact of the loss of revenues from the termination of the Belmont Service Agreement is not significant and is within the normal ebb and flow of business. D.P.U. 03-40, at 27-31;

Dedham Water Company, D.P.U. 1217, at 7-9, 39 (1983). Accordingly, we deny the pro forma adjustment to NSTAR Electric's other operating revenues in the amount of \$449,077.⁴⁰

iii. WMECo's Restoration and Other Fees Revenues

As noted above, Eversource proposes to increase WMECo's restoration and other fees revenues by \$436,148 to account for adjustments related to restoration and other fees (Exh. ES-DPH-3 (West), WP DPH-5 (Rev. 3); AG-19-41, Att.). The reasonableness of WMECo's proposed fees is addressed in Section XVII.C below. Consistent with the findings contained therein, WMECo's Other Electric Revenue shall be reduced by \$358,726.

c. Other Adjustments

During the rate design track of this proceeding, Eversource proposed to discontinue the separate accounting methods currently used by NSTAR Electric and WMECo for net metering, and instead move to a single, uniform method (Exh. DPU-63-11). More specifically, Eversource seeks to modify the reporting currently applied by WMECo in its billing and accounting processes in order to be consistent with NSTAR Electric's method for recovering net metering credits through the net metering recovery surcharge ("NMRS") (Exh. DPU-63-11). Thus, for both NSTAR Electric and WMECo, the non-reconciling distribution portion of revenue displaced ("DDR") no longer would be recovered through the NMRS but, instead, would be recovered through the Companies' revenue decoupling

⁴⁰ Having found the proposed revenue adjustment is not significant, we need not address the Attorney General's argument that the proposed revenue adjustment was also not "known and measurable."

mechanism (Exh. DPU-63-11).⁴¹ Eversource states that it does not expect to incur any significant information technology-related costs in order to implement this change (Exh. DPU-63-12).

The Department finds that Eversource's proposal to implement a uniform accounting method for the recovery of net metering credits and DDR is reasonable and, therefore, is approved. As a result of this modification, WMECo's test year distribution revenues and energy sales will need to be lowered by \$464,646 and 13,780,890 kWh, respectively, to reflect a common accounting treatment for billed revenues (Exh. DPU-65-1). In addition, the revenue decoupling normalizing adjustment will need to be increased by \$464,646 to meet the target revenue of \$132,415,739 (Exh. DPU-65-1). Accordingly, the Department will reduce WMECo's test year distribution revenue by \$464,646 and increase the normalizing adjustment for revenue decoupling by \$464,646.

VII. RATE BASE

A. Introduction

NSTAR Electric's test year rate base was calculated as \$2,649,117,430 (Exh. ES-DPH-2-3 (East), Sch. DPH-27 (Rev. 4)).⁴² To this amount, NSTAR Electric proposes to add \$88,730,573 in adjustments for a total proposed rate base of \$2,737,848,003

⁴¹ Eversource's revenue decoupling proposal will be addressed in our subsequent Order addressing rate design issues.

⁴² Minor discrepancies in any of the amounts appearing in this section are due to rounding.

(Exh. ES-DPH-2-3 (East), Sch. DPH-27 (Rev. 4)).⁴³ NSTAR Electric's total proposed rate base consists of: (1) \$3,630,658,728 in net utility plant in service; (2) \$34,922,056 in materials and supplies; (3) \$60,537,693 in regulatory assets; and (4) \$37,582,185 in cash working capital, less (1) \$984,848,121 in accumulated deferred income taxes; and (2) \$41,004,538 in customer deposits and advances (Exh. ES-DPH-2-3 (East), Sch. DPH-27 (Rev. 4)).

WMECo's test year rate base was calculated as \$436,819,949 (Exh. ES-DPH-2-3 (West), Sch. DPH-27 (Rev. 3)). To this amount, WMECo proposes to add \$2,821,938 in adjustments for a total proposed rate base of \$439,641,887 (Exh. ES-DPH-2-3 (West), Sch. DPH-27 (Rev. 4)).⁴⁴ WMECo's total proposed rate base consists of (1) \$581,503,227 in net utility plant in service; (2) \$2,242,787 in materials and supplies; (3) \$19,209,890 in regulatory assets; and (4) \$7,641,476 in cash working capital, less (1) \$168,549,368 in accumulated deferred income taxes; and (2) \$2,406,125 in customer deposits and advances (Exh. ES-DPH-2-3 (West), Sch. DPH-27 (Rev. 4)).

⁴³ NSTAR Electric's pro forma adjustment includes an increase of \$105,536,686 in net utility plant less \$16,818,289 in accumulated deferred income taxes (Exh. ES-DPH-2-3 (East), Sch. DPH-27 (Rev. 3)).

⁴⁴ WMECo's pro forma adjustment includes an increase of \$3,488,926 in net utility plant less \$672,829 in accumulated deferred income taxes (Exh. ES-DPH-2-3 (West), Sch. DPH-27 (Rev. 3)).

B. Test Year Plant Additions

1. Introduction

From January 1, 2005 through June 30, 2016,⁴⁵ NSTAR Electric added \$2,622,881,608 to its net distribution plant in service (Exhs. ES-LML-2 (East) (Rev.); ES-CAH-1, at 17). NSTAR Electric's adjusted test year actual plant in service as of June 30, 2016 totaled \$5,177,571,546 (Exh. ES-DPH-2 (East), Sch. DPH-28 (Rev. 3)).

From January 1, 2010 through June 30, 2016,⁴⁶ WMECo added \$238,919,345 to its net distribution plant in service (Exh. ES-LML-2 (West)). WMECo's adjusted test year actual plant in service as of June 30, 2016 totaled \$829,598,715 (Exh. ES-DPH-2 (West), Sch. DPH-28 (Rev. 3)).

NSTAR Electric's 2016 actual plant in service amount includes \$58,901,659 of plant moved from construction work in progress ("CWIP")⁴⁷ to plant accounts during calendar year 2016 (Exhs. AG-1-2, Att. 7(j) at 118-119; AG-1-2, Att. (a) at 126-127 (Supp. 3)).

⁴⁵ NSTAR Electric's most recent test year ended on June 30, 2005 (Exh. ES-LML-1, at 4). Although the Company provided calendar year-end plant balances to align with financial reports that supported these balances, capital additions placed into service prior to June 30, 2005 are already included in NSTAR Electric's rate base (Exhs. ES-LML-1, at 22; ES-LML-2 (Rev.); Tr. 4, at 760-777).

⁴⁶ WMECo's most recent test year ended on December 31, 2009 (see Exh. ES-LML-1, at 4). See also D.P.U. 10-70, at 57.

⁴⁷ CWIP is a temporary holding account used to collect costs during the design and construction of a capital project. 220 CMR 51.01(1); 18 CFR Chapter 1, Part 101, Balance Sheet Chart of Accounts, Account 107 (Construction Work in Progress – Electric). For accounting purposes, CWIP is represented as an asset; under traditional ratemaking, CWIP is not included in rate base until the project is completed and in service. D.P.U. 11-43, at 34, n.35. Once a capital project is completed, the CWIP balance is transferred to the appropriate plant accounts.

NSTAR Electric's 2016 actual plant in service amount also includes a pro forma adjustment of \$30,733,095 related to post-test year plant additions moved from CWIP to plant accounts as part of its proposal to include these additions in the test year end rate base in this proceeding (Exh. AG-1-2, Att. (a) at 126-127 (Supp. 3)).⁴⁸ In sum, the 2016 plant in service amount includes a net increase of \$89,634,754 attributable to a net decrease of equal magnitude to 2016 CWIP balances (Exhs. AG-1-2, Att. 7(j) at 118-119; AG-1-2, Att. (a) at 126-127 (Supp. 3)).

2. Project Documentation

a. Introduction

Eversource's Project Authorization Policy ("PAP") governs the decision-making, evaluation, and approval of all capital and reimbursable project spending (Exh. ES-LML-1, at 7). The Companies' strategic plan ("Strategic Plan"), a component of the PAP, serves as the foundation for annual investment addressing infrastructure needs, system conditions, new customer growth, and other factors (Exh. ES-LML-1, at 8-10). Although the PAP and the Strategic Plan are currently enterprise-wide, NSTAR Electric and WMECo retained separate project-level capital authorization processes for much of the period between the Companies' last base rate proceedings and the end of the test year in this proceeding (Exh. ES-LML-1, at 7-8, 14-18). Specifically, WMECo's project authorization process was conducted through reviews by its Operating Company Review Committee ("OCRC"). We discuss NSTAR Electric's and WMECo's capital authorization processes and associated project documentation below.

⁴⁸ We address the post-test year plant additions separately below.

b. NSTAR Electric

NSTAR Electric's capital authorization process, governed by the PAP, sets initial documentation requirements based on project size (Exh. ES-LML-1, at 11-14). Specifically, projects that incur or are estimated to incur direct charges over \$100,000 require a purpose and necessity ("P&N") document (Exh. ES-LML-1, at 11-12). A P&N includes: (1) a project description and objectives; (2) a scope and justification; (3) a financial evaluation; (4) a risk assessment; (5) alternatives considered; (6) a technology assessment (for information system projects only); (7) a project schedule; (8) project milestones; and (9) an implementation plan (Exh. ES-LML-1, at 11-12). Additionally, projects whose direct costs exceed the initially authorized budgeted amount by predetermined amounts require a supplemental P&N explaining the changes that affect the cost and requesting supplemental authorization (Exh. ES-LML-1, at 13). In particular, a project requires a supplemental P&N if direct costs exceed the authorized budgeted amount by: (1) \$25,000 for projects more than \$50,000, but less than or equal to \$250,000; (2) \$50,000 for projects more than \$250,000, but less than or equal to \$500,000; (3) ten percent for projects greater than \$500,000; and (4) ten percent for any project with a variance greater than \$1.0 million (Exh. ES-LML-1, at 13).

In the instant proceeding, Eversource provided several listings of NSTAR Electric's capital additions along with supporting documentation (Exhs. ES-LML-1, at 36; ES-LML-2 (East) (Rev.); ES-LML-3 (East); ES-LML-3A (East); ES-LML-4 (East); ES-LML-5 (East)). Eversource also provided a summary of NSTAR Electric's distribution capital additions that

shows total capital additions by year (Exhs. ES-LML-1, at 34; ES-LML-2 (East)). Further, Eversource provided NSTAR Electric's plant in service summary sheets by year for January 1, 2005 through June 30, 2016 that reconcile to the respective FERC Form 1 along with supporting schedules (Exhs. ES-LML-1, at 34; ES-LML-3 (East); ES-LML-3A (East)). Additionally, Eversource provided a chronological list of all NSTAR Electric projects/work orders for specific projects with direct charges over \$100,000 and blanket programs, including original budgeted estimate, last revised pre-construction estimate, actual direct costs, percentage variance of pre-construction estimate compared to initial estimate, and percentage variance of actual direct costs compared to pre-construction estimate (Exhs. ES-LML-1, at 35; ES-LML-4 (East)).

For the purposes of documentation provision, NSTAR Electric classified capital additions as either distribution plant, general plant, or intangible plant (Exh. ES-LML-1, at 28). Each of these types of plant additions are further divided into the following five project types to reflect distinct documentation requirements: (1) specific projects with direct charges over \$100,000; (2) blanket programs; (3) blanket work orders with direct charges over \$50,000; (4) specific projects with direct charges under \$100,000; and (5) blanket work orders with direct charges under \$50,000 (Exh. ES-LML-1, at 28).

Eversource provided project documentation for NSTAR Electric's specific projects with direct charges over \$100,000, blanket programs, blanket work orders with direct charges over \$50,000, and specific projects with direct charges over \$50,000 and less than \$100,000 (Exhs. ES-LML-1, at 35-36; ES-LML-4 (East); ES-LML-5 (East)). Specifically,

the documentation for NSTAR Electric's specific projects with direct charges over \$100,000 includes capital authorization analyses, P&N documents, supplemental P&N documents where applicable, variance analyses, funding information, and closing reports (Exhs. ES-LML-1, at 36; ES-LML-5 (East)). The documentation for NSTAR Electric's blanket programs, blanket work orders with direct charges over \$50,000, and specific projects with direct charges over \$50,000 and less than \$100,000 includes closing reports and variance data where applicable (Exhs. ES-LML-1, at 35-36; ES-LML-4 (East); ES-LML-5 (East)).

Of note, NSTAR Electric's accounting data and project documentation for 2005-2013 differs in format, but not in content from that of 2014-2016 (Exh. ES-LML-1, at 22-23; see, e.g., Exh. ES-LML-5 (East), "15 NSTAR 2007 Box 1 of 3," "35 NSTAR 2015 Box 1 of 1"). Following the merger of Northeast Utilities and NSTAR, Eversource replaced the varied financial processes and systems previously in place across the individual operating companies (Exh. ES-LML-1, at 20-21). As part of the Financial Simplification and Standardization Project ("FSSP") project, Eversource implemented a single general ledger, a single budgeting tool, a centralized cost repository, and a new information technology platform (Exh. ES-LML-1, at 20-21). The new systems catalogue similar information as the legacy systems but present certain information differently (Exh. ES-LML-1, at 20-21).

In order to aid data conversion to the new systems, Eversource temporarily adjusted NSTAR Electric's authorization threshold for P&N documents. Specifically, NSTAR Electric, which normally requires a P&N for projects with direct costs over \$100,000,

switched to requiring a P&N for project with total costs over \$200,000 for calendar year 2014 (Exh. ES-LML-1, at 23-24).

c. WMECo

From the end of WMECo's last test year through 2016, WMECo's project-authorization process was conducted through reviews by its Operating Company Review Committee ("OCRC"), which consists of directors of the Engineering and Operation functions, managers of each operating area (Springfield, Hadley/Greenfield, and Pittsfield), Managers of Engineering, Substations, the Projects Group, Business Services and Facilities/Stores, Senior Engineering team members, and, occasionally, WMECo's Vice President and President (Exh. ES-LML-1, at 7, 14). The OCRC reviewed projects proposed by Engineering staff and provided initial project funding approval for all capital projects implemented in WMECo's service territory (Exh. ES-LML-1, at 14). The OCRC received project details in the form of project-need statements and revisions, visual presentations, and verbal discussion (Exh. ES-LML-1, at 17). The OCRC also monitored project progress, responded to changes in system needs, and adjusted the capital plan when necessary (Exh. ES-LML-1, at 14, 16-17). In 2016, WMECo transitioned its capital authorization process from the OCRC to the Eversource-wide process governed by the PAP (Exh. ES-LML-1, at 18). Though the Operations, Investment Planning, and Engineering personnel still continue to discuss and evaluate projects, WMECo's ultimate capital project authorization process is now conducted according to the PAP (Exh. ES-LML-1, at 18).

In the instant proceeding, Eversource provided for WMECo several listings of, along with supporting documentation for, the capital additions included in rate base as of June 30, 2016 (Exhs. ES-LML-1, at 37; ES-LML-2 (West); ES-LML-3 (West); ES-LML-3A (West); ES-LML-4 (West); ES-LML-5 (West)). Eversource also provided a summary of WMECo's distribution capital additions that shows total capital additions by year that fully reconcile to the respective FERC Form 1 (Exhs. ES-LML-1, at 37; ES-LML-2 (West); ES-LML-3 (West)). Further, Eversource provided WMECo's plant in service summary sheets by year for January 1, 2010 through June 30, 2016 along with supporting schedules (Exhs. ES-LML-1, at 38; ES-LML-3 (West); ES-LML-3A (West)). Additionally, Eversource provided a chronological list, along with supporting documentation, of all WMECo projects/work orders for specific and annual projects with total costs over \$100,000, including variance analyses for each capital addition to the revised amount for each addition (Exhs. ES-LML-1, at 39; ES-LML-4 (West); ES-LML-5 (West)).

For the purposes of documentation provision, WMECo also classified capital additions as either distribution plant, general plant, or intangible plant (Exh. ES-LML-1, at 28). Each of these types of plant additions are further divided into the following three project types to reflect distinct documentation requirements: (1) specific projects with total costs over \$100,000; (2) annual projects with total costs over \$100,000; and (3) projects with total costs under \$100,000 (Exh. ES-LML-1, at 28). Eversource provided documentation for WMECo's specific and annual projects with total costs over \$100,000 including capital authorization analyses, system planning project proposals, asset management project

proposals, asset management multi-year project estimates, and project closing reports (Exh. ES-LML-5 (West)). Eversource also submitted WMECo's project-need statements and revisions, as well as variance analysis documentation for any project with a final variance that exceeds ten percent (Exh. ES-LML-1, at 18).

As with NSTAR Electric, Eversource's implementation of the FSSP in 2014 caused WMECo's accounting data and project documentation for 2010-2013 to differ in format, but not in content from that of 2014-2016 (Exh. ES-LML-1, at 22-23). The Companies did not identify any interim changes to WMECo's project authorization thresholds similar to those made to NSTAR Electric's project authorization thresholds associated with the data conversion to the new systems (see Exh. ES-LML-1, at 23-24).

3. Positions of the Parties

a. Attorney General

The Attorney General contends that the Companies' test year level of capital additions is inflated and constitutes a "spending spree" (Attorney General Brief at 101). The Attorney General claims that the Companies spent an average of \$265 million per year on capital additions in the three years leading up to the test year and then spent \$404 million on capital additions in the test year (Attorney General Brief at 102-103, citing Exhs. AG-1-17; AG-1-17, Atts. (a) and (b)). According to the Attorney General, these costs contribute to a pro forma cost of service that is unrepresentative of, and greatly exceeds, the Companies' normal costs (Attorney General Brief at 101).

The Attorney General also disputes Eversource's position that a review and clean-up of its CWIP account caused the increase in test year capital additions for two reasons (Attorney General Reply Brief at 8-10). First, the Attorney General maintains that the Companies do not explain why such a review took place mainly during the test year (Attorney General Reply Brief at 8). The Attorney General adds that the 52 percent increase in test year capital additions as compared to the previous year shows that the Companies' efforts to update plant balances are tipped heavily toward the test year (Attorney General Reply Brief at 10, citing Companies Brief at 421). Second, the Attorney General argues that, despite the Companies' claim that its CWIP review and post-test year additions are the drivers of increased test year capital additions, test year spending in some capital accounts is anomalously high (Attorney General Reply Brief at 10). In particular, the Attorney General contends that the following accounts exhibit unusually high spending patterns during the two six-month periods that comprise the test year as compared to the two six-month periods immediately before and after (January through June of 2015 and July through December of 2016): (1) office furniture and equipment (Account 391); (2) transportation equipment (Account 392); (3) tools, shop, and garage equipment (Account 394); and (4) communication equipment (Account 397) (Attorney General Reply Brief at 10). The Attorney General argues that the spending patterns of these accounts demonstrate markedly high test year capital spending not attributable to the CWIP review or post-test year capital additions (Attorney General Reply Brief at 10).

b. DOER

DOER argues that the Companies' proposed test year is unrepresentative of its overall pattern of capital investments over time (DOER Brief at 14). In particular, DOER claims that NSTAR Electric's test year capital expenditures of \$363 million are a significant outlier in comparison to prior years' capital expenditures (DOER Brief at 14). In particular, DOER asserts that NSTAR Electric's test year capital expenditures are \$123 million, or 51 percent, greater than the twelve-year annual average from 2005 to 2016 (DOER Brief at 14-15).

DOER also contends that WMECo's test year capital expenditures of \$56 million are less anomalous than NSTAR Electric's, but still elevated when compared to WMECo's historic average capital expenditures (DOER Brief at 15-16). Specifically, DOER asserts that WMECo's test year capital expenditures are \$10 million, or 22 percent, greater than the eight-year annual average from 2009 to 2016 (DOER Brief at 16). DOER recommends that the Department take several steps to ensure that the high level of test year capital spending does not result in unjust and unreasonable rates for customers, including: (1) reviewing supporting documentation for test year capital projects; (2) reviewing pro forma adjustments for post-test year additions; and (3) considering the test year levels of capital spending when determining whether or a not a ratemaking mechanism designed to fund additional capital spending is warranted in this proceeding (DOER Brief at 17-18).

c. Companies

The Companies assert that they have properly supported the net plant in service through June 30, 2016 (Companies Brief at 267). Specifically, the Companies argue that they have demonstrated the prudent incurrence and used and useful status of the capital

additions proposed for inclusion in rate base by providing thousands of pages of documentation, including project cover sheets, approved amounts, actual costs, cost variance information, and closure papers (Companies Brief at 267, citing Exhs. ES-LML-1 through ES-LML-8). Additionally, the Companies claim that they provided information regarding the allocation, cost, and cost control of capital expenditures in direct testimony (Companies Brief at 267, citing Exh. ES-LML-1, at 33-42). Finally, the Companies argue that they provided additional information regarding project management cost control in oral testimony (Companies Brief at 267, citing Tr. 6, at 1208). The Companies thus maintain that the Department should include all capital additions through June 30, 2016, including those associated with specific projects, blanket projects, and blanket programs, in the rate base calculation (Companies Brief at 277-278).

Eversource contends that the increase in test year capital spending relative to previous years is not a result of the Companies' efforts to "inflate" test year capital additions (Companies Brief at 420, citing Attorney General Brief at 102-104). Rather, the Companies argue that a 2015 effort to clear CWIP balances on projects placed into service prior to the test year resulted in the increase in test year capital additions (Companies Brief at 420). Eversource adds that it further reduced the CWIP balance by the post-test year plant additions for a total net CWIP balance decrease, and concordant net plant in service increase, of \$89,634,754 (Companies Brief at 421, citing Exh. AG-1-2 & Att., part 7; AG-1-2, Att. (a) (Supp. 3)). The Companies thus argue that the Attorney General's allegations are unsupported and that the Department should reject them.

Moreover, Eversource asserts that the increase in particular plant accounts is attributable to several large projects being placed into service during the test year, rather than unusually high spending (Companies Reply Brief at 105). Specifically, the Companies assert that the Electric Gas Insulated Switchgear 2011 HW Child project, the NSTAR VoiceOver IP project, and the Companies' ongoing annual replacement of fleet vehicles, explain the account balance increases in accounts 391, 397, and 392, respectively (Companies Reply Brief at 105-106). As such, the Companies claim that the Attorney General's allegations that the Companies have gone on a "spending spree" is factually incorrect and inconsistent with record evidence (Companies Reply Brief at 106-107). Thus, Eversource asserts that the Department should find that it did not impermissibly inflate test year capital spending (Companies Brief at 423).

4. Analysis and Findings

a. Standard of Review

For costs to be included in rate base the expenditures must be prudently incurred and the resulting plant must be used and useful to ratepayers. Western Massachusetts Electric Company, D.P.U. 85-270, at 20 (1986). The prudence test determines whether cost recovery is allowed at all, while the used and useful analysis determines the portion of prudently incurred costs on which the utility is entitled to a return. D.P.U. 85-270, at 25-27.

A prudence review involves a determination of whether the utility's actions, based on all that the utility knew or should have known at that time, were reasonable and prudent in light of the extant circumstances. Such a determination may not properly be made on the basis of hindsight judgments, nor is it appropriate for the Department merely to substitute its

own judgment for the judgments made by the management of the utility. Attorney General v. Department of Public Utilities, 390 Mass. 208, 229-230 (1983). A prudence review must be based on how a reasonable company would have responded to the particular circumstances and whether the company's actions were in fact prudent in light of all circumstances that were known, or reasonably should have been known, at the time a decision was made. D.P.U. 93-60, at 24-25; D.P.U. 85-270, at 22-23; Boston Edison Company, D.P.U. 906, at 165 (1982). A review of the prudence of a company's actions is not dependent upon whether budget estimates later proved to be accurate but rather upon whether the assumptions made were reasonable, given the facts that were known or that should have been known at the time. Massachusetts-American Water Company, D.P.U. 95-118, at 39-40 (1996); D.P.U. 93-60, at 35; Fitchburg Gas and Electric Light Company, D.P.U. 84-145-A at 26 (1985).

The Department has cautioned utility companies that, as they bear the burden of demonstrating the propriety of additions to rate base, failure to provide clear and cohesive reviewable evidence on rate base additions increases the risk to the utility that the Department will disallow these expenditures. Boston Gas Company/Colonial Gas Company/Essex Gas Company, D.P.U. 10-55-B at 13-16 (2013); Bay State Gas Company, D.P.U. 09-30, at 144-145 (2009); Boston Gas Company, D.P.U. 96-50 (Phase I) at 21-24 (1996); D.P.U. 95-40, at 7-8; D.P.U. 93-60, at 25-26; The Berkshire Gas Company, D.P.U. 92-210, at 24 (1993). In addition, the Department has stated that:

In reviewing the investments in main extensions that were made without a cost benefit analysis, the [c]ompany has the burden of demonstrating the prudence

of each investment proposed for inclusion in rate base. The Department cannot rely on the unsupported testimony that each project was beneficial at the time the decision was made. The [c]ompany must provide reviewable documentation for investments it seeks to include in rate base.

D.P.U. 92-210, at 24.

b. Plant Additions

i. NSTAR Electric

As described above, NSTAR Electric follows a project authorization policy to manage its capital projects (Exh. ES-LML-1, at 7). In accordance with the authorization policy, projects that incur or are estimated to incur more than \$100,000 in direct costs require a P&N. NSTAR Electric explained that it temporarily increased the P&N threshold to \$200,000 in total costs for calendar year 2014 in order to aid data conversion to the new unified system (Exh. ES-LML-1, at 20-21). Further, projects whose direct costs exceed the authorized budgeted amount by predetermined thresholds require a supplemental P&N (Exh. ES-LML-1, at 12-13). During the course of a particular project or program, NSTAR Electric controls costs and maintains oversight at multiple levels (Exh. ES-LML-1, at 18-19). In addition to the use of supplemental P&N authorization, individual project managers review invoices and labor costs charged to projects on a monthly basis to ensure that the invoices, employee time, and all associated costs are properly charged to the projects (Exh. ES-LML-1, at 20). Additionally, senior management reviews the scope, size, design, and status of each current project on a monthly basis to ensure that the cost estimates remain accurate as well as to determine if projects should be altered or delayed based on the most recent system and cost information available (Exh. ES-LML-1, at 19). We find that NSTAR

Electric's project authorization and review policy and cost control measures are reasonable and appropriate.

No party challenged the prudence of the costs associated with or the in-service status of NSTAR Electric's capital projects proposed for inclusion in test year end rate base. Although the Attorney General argues that the level of capital additions in the test year constitutes a "spending spree," the Department is not persuaded that this is the case. An account-level review of the test year's capital additions reveals that several large projects, some spanning multiple years, placed into service during the test year contributed to the test year capital additions amount (Exhs. ES-LML-3A (East), Sch. LML-2015-A-2, lines 127-129, 1587-1609; ES-LML-3A (East), Sch. LML-2016-A-2, lines 51-53, 73-185; ES-LML-5 (East), "29 NSTAR 2011 Box 2 of 2," "038-35086"; ES-LML-5 (East), "33 NSTAR 2013 Box 2 of 2," "017-35103"; ES-LML-5 (East), "35 NSTAR 2015 Box 1 of 1," "035-05319"). Of the four accounts noted by the Attorney General, three accounts included large, multi-year projects. Specifically, a five-year technical systems upgrade was placed into service in December 2015, a three-year voice communication system consolidation project was placed into service in June 2016, and an annually recurring fleet vehicle replacement program was operating during the test year (Exhs. ES-LML-3A (East), Sch. LML-2015-A-2, lines 127-129, 1587-1609; ES-LML-3A (East), Sch. LML-2016-A-2, lines 51-53, 73-185; ES-LML-5 (East), "29 NSTAR 2011 Box 2 of 2," "038-35086"; ES-LML-5 (East), "33 NSTAR 2013 Box 2 of 2," "017-35103"; ES-LML-5 (East), "35 NSTAR 2015 Box 1 of 1," "035-05319"). The Department has found that decisions

regarding the level and types of capital investment to be made by a company rest, in large part, with company management. D.P.U. 85-266-A/85-271-A at 11; D.P.U. 09-30, at 145.

The Department also has recognized that distribution companies have full discretion to exercise judgement in maintaining the safety and reliability of their distribution system.

Boston Gas Company/Colonial Gas Company/Essex Gas Company, D.P.U. 10-55, at 134

(2010); D.P.U. 10-114, at 66. In pursuit of this goal, a company may, in a particular year, spend more or less on capital additions than any particular multi-year average of annual capital additions. There is no evidence that the higher level of capital expenditures incurred during the test year represents some form of “catch up” for under-investment in prior years, or that NSTAR Electric’s practice of closing completed construction to plant is deficient.

C.f. Bay State Gas Company, D.T.E. 05-27, at 103, n. 78 (2005) (prolonged delay in

booking completed construction out of CWIP can produce unnecessary litigation as to whether such plant is used and useful). Thus, we are not convinced that a particular level of capital spending in the test year or other years is the result of evidence of anything other than the year-to-year fluctuations inherent to any capital-intensive enterprise. Therefore, the

Department is not persuaded by the Attorney General’s and DOER’s argument that the increase in test year capital spending relative to previous years is a result of the Companies’ efforts to “inflate” test year capital additions. Accordingly, we conclude that no adjustment to rate base is necessary with respect to NSTAR Electric’s level of capital additions during the test year. As noted above, Eversource provided project documentation for the various categories of NSTAR Electric’s proposed plant additions. The Department has reviewed the

information provided on behalf of NSTAR Electric for the projects it proposes to include in rate base, and we find that the project costs were prudently incurred and the projects are used and useful in service to customers (Exhs. ES-LML-1; ES-LML-2 (East) (Rev.); ES-LML-3 (East); ES-LML-3A (East); ES-LML-4 (East); ES-LML-5 (East)). Accordingly, the Department allows the cost of these projects to be included in rate base.

ii. WMECo

As described above, WMECo followed a project-authorization process through reviews by the OCRC to manage its capital projects (Exh. ES-LML-1, at 7). The OCRC reviewed projects proposed by Engineering staff and provided initial approval and funding for these projects (Exh. ES-LML-1, at 14). The OCRC controlled costs by monitoring the progress of capital projects, comparing the capital spending to the financial targets established in the capital operating plan, and making necessary adjustments to maximize the value of these investments given a constrained budget (Exh. ES-LML-1, at 16-17). In addition to this monitoring process, WMECo controlled costs through monthly “Work Plan” meetings in which senior management reviewed the scope, size, design, and status of each approved project to determine if any alterations were necessary (Exh. ES-LML-1, at 19). If a change to a capital plan or budget was deemed necessary, project managers submitted their recommendations to senior management for review and approval, allowing management a high level of control over ongoing and planned projects (Exh. ES-LML-1, at 19). We find that WMECo’s project authorization and review policy and cost control measures are reasonable and appropriate.

No party challenged the prudent cost incurrence or in-service status of WMECo's capital projects proposed for inclusion in test year end rate base. Similar to our findings above, we are not persuaded that WMECo's increase in test year capital spending relative to previous years is a result of Eversource's efforts to inflate test year capital additions. We reiterate that distribution companies have full discretion to exercise judgement in the level and types of capital investment necessary to maintain the safety and reliability of their distribution system. D.P.U. 10-55, at 134; D.P.U. 10-114, at 66. Accordingly, we conclude that no adjustment to rate base is necessary with respect to WMECo's level of capital additions during the test year.

As noted above, Eversource provided project documentation for the various categories of WMECo's proposed plant additions. The Department has reviewed the information provided on behalf of WMECo for the projects it proposes to include in rate base and finds that the project costs were prudently incurred and the projects are used and useful in service to customers (Exhs. ES-LML-1; ES-LML-2 (West); ES-LML-3 (West); ES-LML-3A (West); ES-LML-4 (West); ES-LML-5 (West)). Accordingly, the Department allows the cost of these projects to be included in rate base.

C. Post-Test Year Capital Additions

1. Introduction

Eversource proposes to include four post-test year projects in rate base, of which three represent post-test year additions by NSTAR Electric and one represents a post-test year addition by WMECo (Exh. ES-LML-1, at 42-43). In particular, Eversource proposes to include the costs for a new substation on Electric Avenue in Boston ("Electric Avenue"), a

new substation on Seafood Way in Boston (“Seafood Way”), and a new service center in New Bedford (“New Bedford service center”) in NSTAR Electric’s rate base (Exh. ES-LML-1, at 43). Eversource also proposes to include the cost for its Montague substation improvement project (“Montague”) in WMECo’s rate base (Exh. ES-LML-1, at 45-46). These projects are further described below.

2. NSTAR Electric Projects

Eversource states that Electric Avenue is intended to support increased load growth, and, as such, is constructed to ultimately support 39 distribution circuits (Exh. ES-LML-1, at 43-44). According to Eversource, one distribution circuit was energized in November 2016, six additional distribution circuits are scheduled to be energized in 2017, and twelve are scheduled to be energized in 2018-2019 (Exh. ES-LML-1, at 44). The remaining circuits are reserved for future use (Exh. ES-LML-1, at 44).

Eversource states that Seafood Way is intended to provide back-up load relief for the existing K Street substation in South Boston (Exh. ES-LML-1, at 44). Eversource states that two distribution circuits are scheduled to be energized by February 2017, three additional distribution circuits are scheduled to be energized by the end of 2017, and a total of 12 distribution circuits are scheduled to be energized in 2018-2019 (Exh. ES-LML-1, at 45). The remaining circuits are reserved for future use (Exh. ES-LML-1, at 45).

Eversource states that the New Bedford service center relocates the existing electric and gas service center in New Bedford to a new facility at a nearby location in the same city (Exh. ES-LML-1, at 46). According to Eversource, the old facility is in need of extensive

repairs and must be vacated because of the poor environmental conditions (Exh. ES-LML-1, at 46-47). Eversource states that the cost of the new property was \$8.3 million, and additional costs must be incurred to complete renovation work, including costs associated with a new HVAC system, a new electrical system, mechanical and plumbing work, a complete fit-out for electric and gas operations, and site work (Exh. ES-LML-1, at 48-49).⁴⁹ Eversource received a temporary certificate of occupancy for this facility on August 25, 2017 (Exh. ES-14).

Eversource initially proposed to include \$31,800,000 in plant additions for the Electric Avenue project, \$44,500,000 in plant additions for the Seafood Way project, and \$24,000,000 in plant additions for the New Bedford project, for a total of \$100,300,000 in NSTAR Electric plant additions (Exh. ES-DPH-3 (East), WP DPH-28, at 1). During the course of the proceeding, Eversource updated the proposed plant additions to recognize their actual costs as of April 30, 2017 (Exhs. ES-DPH-2-3 (East), WP DPH-28, at 1 (Rev. 3)); ES-LML-8 (Supp. 2), at 1; Tr. 13, at 2767; Tr. 15, at 3086). Eversource now proposes to include in NSTAR Electric's rate base \$32,949,477 in plant additions for Electric Avenue, \$42,718,949 in plant additions for Seafood Way, and \$29,868,260 in plant additions for the New Bedford service center, for a total of \$105,536,686 in plant additions (Exh. ES-DPH-2-3 (East), WP DPH-28, at 1 (Rev. 3)). Eversource estimates that once the three NSTAR Electric projects are fully built-out, the total distribution-related costs of

⁴⁹ NSTAR Gas is expected to occupy 32 percent of the facility and is expected to contribute \$1,581,582 to NSTAR Electric annually as rent expense (Exhs. ES-DPH-1, at 34; ES-DPH-2 (East), WP DPH-5, at 2-3).

Electric Avenue, Seafood Way, and the New Bedford service center will be \$61 million, \$66 million, and \$30 million,⁵⁰ respectively (Exhs. ES-LML1, at 44-49; AG-24-5; AG-24-6).

3. WMECo Project

Eversource states that the Montague project, at WMECo's substation in the Town of Montague, is intended to replace nine oil circuit breakers for the eight feeders and bus tie, replace two vacuum breakers for two substation transformers, and refurbish the substation yard (Exh. ES-LML-1, at 46). Eversource planned to substantially complete the project by spring 2017 (Exh. ES-LML-1, at 46).

Eversource initially proposed to include \$5,400,000 in plant additions and \$325,049 in plant retirements, associated with the Montague substation improvement project ("Montague") (Exh. ES-DPH-3 (West), WP DPH-28, at 1). During the course of the proceeding, Eversource updated the proposed plant additions and plant retirements to recognize actual costs as of April 30, 2017 (Exhs. ES-DPH-2-3 (East), WP DPH-28, at 1 (Rev. 3); ES-LML-8 (Supp. 2), at 1; Tr. 13, at 2767; Tr. 15, at 3086). Eversource now proposes to include in WMECo's rate base \$3,813,975 in plant additions, less \$325,049 in plant retirements, associated with Montague (Exh. ES-DPH-2-3 (West), WP DPH-28, at 1 (Rev. 3)).

⁵⁰ The \$30 million estimate for the New Bedford service center includes the sale of the old service center, the purchase of the new property, and all renovations and upgrades (Exh. ES-LML-1, at 49).

4. Positions of the Parties

a. Attorney General

The Attorney General argues that Eversource's proposal to include in NSTAR Electric's rate base three post-test year plant additions and in WMECo's rate base one post-test year addition is inappropriate (Attorney General Brief at 105; Attorney General Reply Brief at 10). The Attorney General claims that none of the four projects proposed by the Companies meet the Department's standards for post-test year plant additions (Attorney General Brief at 108). Specifically, the Attorney General contends that Electric Avenue, Seafood Way, and the New Bedford service center represent only 0.61 percent, 0.86 percent, and 0.46 percent, respectively, of NSTAR Electric's actual test year-end plant in service (Attorney General Brief at 107, citing Tr. 13, at 2771-2772). Further, she contends that Montague represents only 0.61 percent of WMECo's test year-end plant in service (Attorney General Brief at 107, citing Tr. 13, at 2773). The Attorney General thus maintains that none of these four projects is significant enough in amount to meet the Department's standard for inclusion in test year end rate base (Attorney General Brief at 107-108, citing Bay State Gas Company, D.P.U. 13-75, at 106-107 (2014)).

Further, the Attorney General asserts that Eversource did not account for related post-test year changes to either of the Companies' rate bases that would serve to partially offset the inclusion of these projects in rate base (Attorney General Brief at 108). First, the Attorney General claims that Eversource made no post-test year adjustment to the Companies' accumulated depreciation, which is deducted from rate base and would partially offset the effects of the plant additions' increase to rate base (Attorney General Brief

at 105-106, citing Exh. AG-DJE-1, at 12-13). Second, the Attorney General claims that Eversource made no post-test year adjustment to the Companies' sales to reflect load growth that the substation projects are designed to support (Attorney General Brief at 106, 108, citing Exh. AG-DJE-1, at 12-13). Third, the Attorney General argues that Eversource made no post-test year adjustment to NSTAR Electric's proposed materials and supplies balance to annualize the effect of an approximately \$10 million transfer from the materials and supplies inventory to the Electric Avenue substation project (Attorney General Brief at 106-107, citing Exhs. ES-DPH-1, at 178; ES-DPH-3 (East), WP DPH-27; ES-LML-1, at 43-44; Tr. 13, at 2768-2770). Consequently, the Attorney General maintains that this \$10 million in materials and supplies has been counted twice in Eversource's proposal for NSTAR Electric's test year-end rate base (Attorney General Brief at 107).

Finally, the Attorney General argues that Eversource's attempts to analogize this situation to that experienced in NSTAR Gas' most recent base rate case in order to justify the inclusion of these post-test year additions is not supported by evidence (Attorney General Reply Brief at 10-11, citing D.P.U. 14-150, at 48). The Attorney General distinguishes this case from that in D.P.U. 14-150 on the basis that: (1) unlike the 24-month lag between the end of the test year and the rate year used in D.P.U. 14-150, Eversource has experienced a corresponding lag of only 18 months; (2) unlike Eversource, NSTAR Gas adjusted all rate base elements beyond the end of the test year, including all increases in accumulated depreciation and other offsets to its post-test year plant additions; and (3) unlike Eversource, NSTAR Gas adjusted test year sales to reflect load growth accompanying its post-test year

plant additions (Attorney General Reply Brief at 11, citing D.P.U. 14-150, at 48-49). Thus, the Attorney General asserts that the Companies' proposed treatment of post-test year plant additions is improper and one-sided in that it recognizes changes to rate base that increase its revenue requirement but not those that have an offsetting effect (Attorney General Reply Brief at 12).

Based on these considerations, the Attorney General recommends that the Department reject Eversource's proposal to include all four proposed post-test year additions (Attorney General Brief at 108). Accordingly, the Attorney General asserts that NSTAR Electric's rate base should be reduced by \$88,718,397, with its depreciation expense reduced by \$1,919,677, and that WMECo's rate base should be reduced by \$3,294,282, with its depreciation expense reduced by \$96,992 (Attorney General Brief at 108).

b. Cape Light Compact

The Cape Light Compact agrees with the Attorney General that the Department should reject Eversource's proposal to include in NSTAR Electric's rate base three post-test year plant additions and to include in WMECo's rate base one proposed post-test year addition (Cape Light Compact Brief at 79-80, citing Exh. AG-DJE-1, at 10-14). Thus, Cape Light Compact asserts that the proposed post-test year plant additions and related expenses should be eliminated from the Companies' revenue requirements (Cape Light Compact Brief at 80).

c. Companies

Eversource argues that the Department should approve its proposal to include three post-test year plant additions in NSTAR Electric's rate base, and one post-test year plant

addition in WMECo's rate base (Companies Brief at 425; Companies Reply Brief at 107).

The Companies present four arguments in support of their petition that the post-test year plant additions be included in rate base (Companies Brief at 426-430).

First, the Companies claim that the post-test year plant additions are significant under Department precedent (Companies Brief at 425, citing D.P.U. 13-75, at 109 and 112). In support of this argument, the Companies illustrate that NSTAR Electric's post-test year plant additions represent the following increases as percentages of test year-end rate base:

(1) Electric Avenue represents 1.2 percent of rate base ($\$32,949,477/\$2,734,402,771$);

(2) Seafood Way represents 1.5 percent of rate base ($\$42,718,949/\$2,734,402,771$); and

(3) the New Bedford service center represents 1.1 percent of rate base

($\$29,868,260/\$2,734,402,771$) (Companies Brief at 427, citing Exhs. ES-DPH-2 (East),

Sch. DPH-28; ES-DPH-3 (East), WP DPH-28). The Companies argue that, taken together,

the three NSTAR Electric post-test year plant additions represent 3.8 percent of rate base

(Companies Brief at 427). Eversource also illustrates that WMECo's proposed post-test year

project represents approximately 0.08 percent of that company's rate base

($\$3,813,975/\$440,871,528$) (Companies Brief at 427). The Companies therefore conclude

that the post-test year plant additions represent a significant amount of rate base under

Department precedent (Companies Brief at 426-427, citing D.P.U. 13-75, at 109, 112).

Second, Eversource asserts that each of the proposed post-test year capital additions meets the Department's known and measurable and in-service requirements for inclusion in rate base (Companies Brief at 425, citing D.P.U. 14-150, at 43-44; Dedham Water

Company, D.P.U. 84-32, at 17 (1984); D.P.U. 906, at 7-11). The Companies claim that they have provided documentation supporting the in-service status of each post-test year addition, as well as their known and measurable nature (Companies Brief at 425, citing Exhs. ES-CAH-1, at 13-16; ES-LML-1, at 42-49; ES-LML-8; ES-LML-8 (Supp. 1); ES-LML-8 (Supp. 2); ES-DPH-2 (East), Sch. DPH-28 (Rev. 2); ES-DPH-2 (East), WP DPH-28 (Rev. 2); ES-DPH-2 (West), Sch. DPH-28 (Rev. 2); ES-DPH-2 (West), WP DPH-28 (Rev. 2); AG-19-4; AG-19-37; AG-24-6).

Third, Eversource argues that “unique circumstances” similar to those present in NSTAR Gas’ last base rate case warrant the inclusion of the proposed projects in rate base (Companies Brief at 428, citing D.P.U. 14-150, at 45-50). The Companies note that in D.P.U. 14-150, NSTAR Gas experienced a 24-month lag between the end of the test year used in that case and the effective date of the rates approved in that order (Companies Brief at 428, citing D.P.U. 14-150, at 45-50). The Companies represent that the 18-month lag in the instant proceeding is similar to the circumstances facing NSTAR Gas (Companies Brief at 428). Thus, the Companies maintain that the Department should include the post-test year additions to rate base to mitigate the impact of the lag between the end of the test year and the effective date of the rates being approved in this order (Companies Brief at 429).

Finally, the Companies claim that in the event that the PBR and the accompanying five year stay-out provision are approved, disallowing the proposed projects and delaying cost recovery for five years would be “punitive” (Companies Brief at 430). Eversource adds that

such a result would cause the rates effective January 1, 2018 to misrepresent the Companies' actual cost structure (Companies Brief at 430).

Eversource also specifically addresses some of the arguments raised by the Attorney General in support of her recommendation to disallow the proposed post-test year plant additions (Companies Reply Brief at 107). First, the Companies claim that the Department should disregard the Attorney General's contention that the projects are not significant because her analysis of the additions' significance is flawed (Companies Brief at 427, citing Attorney General Brief at 107). The Companies maintain that the Attorney General, in executing the significance test, incorrectly used gross plant in service as the denominator, which yielded skewed results (Companies Brief at 427). Second, Eversource argues that the Department should reject the Attorney General's concerns regarding the Companies' failure to account for load growth, reasoning that any increase in sales will be in and addressed by the implementation of revenue decoupling in this proceeding (Companies Reply Brief at 107). Third, Eversource argues that should the Department find it appropriate to make any offsetting adjustments, the Companies have provided the necessary information to adjust rate base for the increase in accumulated depreciation associated with the post-test year plant additions (Companies Reply Brief at 107). The Companies thus affirm that they have demonstrated that the post-test year plant additions warrant inclusion in rate base and have been properly included as such in the instant proposal (Companies Reply Brief at 110-111).

5. Analysis and Findings

a. Introduction

The Department does not recognize post-test year additions or retirements to rate base, unless the utility demonstrates that the addition or retirement represents a significant investment that has a substantial effect on its rate base. Boston Gas Company, D.P.U. 96-50-C at 16-18, 20-21 (1997); D.P.U. 96-50 (Phase I) at 15-16; D.P.U. 95-118, at 56, 86; D.P.U. 85-270, at 141 n.21; Massachusetts-American Water Company, D.P.U. 1700, at 5-6 (1984). See also Southbridge Water Supply Company v. Department of Public Utilities, 368 Mass. 300 (1975). As a threshold requirement, a post-test year addition to plant must be known and measurable, as well as in service. D.P.U. 84-32, at 17; D.P.U. 906, at 7-11. The Department has historically judged the significance of an investment by comparing the size of the addition in relation to rate base and not based on the particular nature of the addition. Western Massachusetts Electric Company, D.P.U. 1300, at 14-15 (1983).

b. Proposed Post Test-Year Plant Additions

i. Significance of Proposed Plant Additions

Eversource claims that the subject post-test year plant additions are significant under Department precedent (Companies Brief at 425, citing D.P.U. 13-75, at 109, 112). Specifically, the Companies argue that, taken together, the three NSTAR Electric post-test year plant additions represent 3.8 percent of rate base and the one WMECo project represents

0.8 percent of rate base (Companies Brief at 427).⁵¹ According to the Companies, these post-test year plant additions meet the Department standard for significance (Companies Brief at 426-427, citing D.P.U. 13-75, at 109-112).

As an initial matter, the Department finds that Eversource's presentation of the three NSTAR Electric projects as one, aggregated project for purposes of executing the significance test is inconsistent with the Department's typical practice of evaluating individual post-test year projects for inclusion in rate base. D.P.U. 13-75, at 108-109; Oxford Water Company, D.P.U. 1699, at 4 (1984); D.P.U. 1700, at 5-6. Although the Department, on occasion, has combined individual plant additions for purposes of examining significance, we have done so based on a finding that the individual projects are integral to one another from an engineering or operational perspective. Aquarion Water Company of Massachusetts, D.P.U. 08-27, at 35 (2009); D.P.U. 95-118, at 56. Here, Eversource's proposed plant additions, while entirely within the scope of the Companies' ongoing efforts to provide safe and adequate service to their customers, have not been demonstrated to be so interrelated to one another that they warrant examination on a combined basis. Therefore, the Department

⁵¹ Eversource's briefs inadvertently present the rate base comparison calculation as 0.08 percent (Companies Brief at 427; Companies Reply Brief at 109). In addition to correcting the typographical error, the Department notes that Eversource's application of the significance test inappropriately uses gross plant additions as the numerator and proposed test year end rate base as the denominator, which is inconsistent with the Department's practice of using net plant as the numerator and unadjusted test year-end rate base as the denominator (Companies Brief at 427). D.P.U. 13-75, at 108-109; D.P.U. 1699, at 4; D.P.U. 1700, at 5-6. As such, the Department presents the correct application of the significance test which yields a conclusion that Montague represents 0.8 percent of WMECo's test year end rate base (\$3,488,926/\$436,819,949) (Exh. ES-DPH-2 (West), WP DPH-28, at 1 (Rev. 3)).

will evaluate the significance of each proposed post-test year addition on an individual basis. Further, although Eversource has petitioned in this proceeding to merge NSTAR Electric and WMECo into a single corporate entity, it is not proposing to consolidate the revenue requirement calculation at this time (Exh. ES-DPH-1, at 3). Accordingly, the Department will review each post-test year plant addition relative to each operating company's test year-end rate base.

Eversource's post-test year plant additions proposed for inclusion in NSTAR Electric's rate base, Electric Avenue, Seafood Way, and the New Bedford service center, total \$39,949,477, \$42,718,949, and \$29,868,260, respectively, as of April 30, 2017 (Exh. ES-DPH-2 (East), WP DPH-28, at 1 (Rev. 3)). The Department finds that, when compared to a test year-end rate base of \$2,649,117,430 (Exh. ES-DPH-2 (East), Sch. DPH-27 (Rev. 3)), the Electric Avenue project, the Seafood Way project, and the New Bedford service center project each represent significant additions to NSTAR Electric's test year-end rate base.⁵² Eversource's post-test year plant addition proposed for inclusion in WMECo's rate base, the Montague substation improvement project, represents \$3,488,926 in net plant additions (Exh. ES-DPH-2 (West), WP DPH-28, at 1 (Rev. 3)).⁵³ The Department finds that, when compared to a test year-end rate base of \$436,819,949, Montague does not

⁵² The Department notes that the Attorney General's application of the significance test uses plant in service as the denominator, which is inconsistent with the Department's typical practice of using test year-end rate base as the denominator (Attorney General Brief at 107, citing Tr. 13, at 2771-2773). D.P.U. 13-75, at 108-109; D.P.U. 1699, at 4; D.P.U. 1700, at 5-6.

⁵³ \$3,813,975 in plant additions - \$325,049 in plant retirements = \$3,488,926 in net plant additions (Exh. ES-DPH-2-3 (West), WP DPH-28, at 1 (Rev. 3)).

represent a significant addition to WMECo's test year-end rate base (Exh. ES-DPH-2 (West), Sch. DPH-27 (Rev. 3)). Therefore, the Department will only consider Electric Avenue, Seafood Way, and the New Bedford service center for further review – i.e., whether the costs associated with the projects are known and measurable and were prudently incurred, and whether the projects are in service and used and useful.

Before we turn to that analysis, we note that we are not persuaded by Eversource's arguments concerning the purported similarities between the instant case and the factual scenario in D.P.U. 14-150. As we found in D.P.U. 14-150, at 50, the circumstances presented there were unique, and we did not intend for that decision to mark a wholesale change in the standard of review for post-test year plant additions and the required showing of significance. Further, we find unconvincing the Companies' arguments with respect to the relevance of the PBR term to the proposed post-test year plant additions. D.P.U. 96-50 (Phase I) at 15. Instead, we find no reason in the instant case to depart from our historical evaluation of the significance of proposed post-test year rate base additions vis-à-vis a company's test year-end rate base.

Having determined that the three projects proposed for inclusion in NSTAR Electric's rate base represent significant additions, the Department next determines whether (1) the costs associated with the projects are known and measurable, (2) the costs were prudently incurred, and (3) the projects are in service and used and useful. The Department will evaluate Electric Avenue, Seafood Way, and the New Bedford service center in turn.

ii. Status of Electric Avenue Substation

Eversource has provided sufficient evidence to document the reported cost of the Electric Avenue project of \$32,949,477 (Exh. ES-LML-8, at 183, 323 (Supp. 2)). As such, we find that the costs incurred as of April 30, 2017, are known and measurable.

Next the Department considers whether the costs associated with Electric Avenue as of April 30, 2017 were prudently incurred. No parties have contested NSTAR Electric's decision to commence the Electric Avenue project or NSTAR Electric's management of the project. The Department finds that the Electric Avenue substation is necessary to support increased load requirements for portions of the City of Boston neighborhoods of Brighton, Allston, Longwood Avenue Medical and the Town of Watertown (Exhs. ES-CAH-1, at 13; ES-LML-1, at 43). Further, the record shows that Eversource provided documentation supporting the prudence of the costs associated with this project, including purpose and necessity documents, capital budget estimates, work orders, project cost sheets, variance explanations as of December 21, 2016, project authorization forms, and closing reports as of April 30, 2017 (Exhs. ES-LML-8, at 56-110 (Supp. 1); ES-LML-8, at 183-323 (Supp. 2); AG-19-3, Atts. (a), (b); Tr. 15, at 3086). Thus, the Department finds that the costs associated with Electric Avenue as of April 30, 2017, were prudently incurred.⁵⁴

Finally, the Department considers whether Electric Avenue is in service and used and useful to customers. The record indicates that Electric Avenue includes twelve 115-kilovolt

⁵⁴ We address the Attorney General's argument regarding the materials and supplies balance attributable to Electric Ave in Section VII.E below.

(“kV”) gas insulated switchgear breakers to interconnect to two transmission lines, three 15 kV, 62.5 megavolt-ampere (“MVA”) 115/14-kV distribution transformers, six sections of distribution switchgear and three 15 kV, 9.6 megavolt ampere reactive (“MVAR”) capacitor banks, a cutover of 19 existing distribution lines, and 39 distribution circuits

(Exh. ES-LML-1, at 43-44). Of these substation components, the record indicates that:

(1) transmission line 282-521 was energized and placed in service on December 6, 2016;

(2) all gas insulated switchgear breaker equipment⁵⁵ was in service as of December 21, 2016;

and (3) distribution line work will continue through 2018 (Exh. ES-LML-8, at 99-110

(Supp. 1)). In addition, Eversource represents that seven distribution circuits are scheduled

to be energized in 2017 (Exh. ES-LML-1, at 44). The remaining components of the

substation are still in progress, or are being held for future use as the substation is built to

provide for future load growth (Exh. ES-LML-1, at 43-44; ES-LML-8, at 99-110 (Supp. 1);

AG-24-6). Based on these considerations, we conclude that Electric Avenue was initially

placed into service in December of 2016, and remains in service today (Exhs. ES-LML-1,

at 44; ES-LML-8; ES-LML-8, at 99-110 (Supp. 1); AG-19-3, Atts. (a), (b); AG-19-4, Att.).

iii. Status of Seafood Way Substation

Eversource has provided sufficient evidence to document the reported cost of the Seafood Way project of \$42,718,949 (Exh. ES-LML-8, at 324, 468 (Supp. 2)). As such, we find that the costs incurred as of April 30, 2017, are known and measurable.

⁵⁵ Gas insulated switchgear breaker equipment is transmission plant and, accordingly, the costs associated with this equipment are not proposed for recovery in this proceeding (Exh. AG-34-5).

Next the Department considers whether the Seafood Way project costs as of April 30, 2017, were prudently incurred. No parties have contested NSTAR Electric's decision to commence the Seafood Way project or NSTAR Electric's management of the project. The Department finds that the Seafood Way substation is necessary to provide back-up relief for Eversource's existing substation in South Boston, used to serve the Seaport district of Boston, which has experienced significant load growth in recent years (Exhs. ES-CAH-1, at 14; ES-LML-1, at 44). Further, the record shows that Eversource provided documentation supporting the prudence of the costs associated with this project, including purpose and necessity documents, capital budget estimates, work orders, project cost sheets, variance explanations as of December 21, 2016, project authorization forms, and closing reports as of April 30, 2017 (Exhs. ES-LML-8, at 1-155 (Supp. 1); ES-LML-8, at 324-468 (Supp. 2); AG-19-3, Atts. (e), (f)). Thus, the Department finds that the costs associated with the Seafood Way project as of April 30, 2017, were prudently incurred.

Finally, the Department considers whether Seafood Way is in service and used and useful to customers. Seafood Way includes three gas insulated 115-kV breakers and twelve 115-kV gas insulated switchgear breakers to interconnect with two transmission lines, three 62.5 MVA 115/14-kV distribution transformers, four sections of distribution switchgear, four 1-5kV 9.6 MVAR capacitor banks, 17 existing distribution lines from the K Street substation, and 32 distribution circuits (Exh. ES-LML-1, at 45). Of these substation components, the record indicates that: (1) transmission line 385-516 was energized on December 6, 2016; and

(2) GIS⁵⁶ was energized on December 9, 2016 (Exh. ES-LML-8, at 44-45 (Supp. 1)). In addition, Eversource represents that five distribution circuits are scheduled to be energized in 2017 (Exh. ES-LML-1, at 45). The remaining components of the substation are still in progress, or are being held for future use as the substation is intended as a backup for the K Street substation and is built to meet future load growth (Exh. ES-LML-1, at 44-45; ES-LML-8, at 44-55 (Supp. 1); AG-24-5). Based on these considerations, we conclude that Seafood Way was placed into service in December 2016, and remains in service today (Exhs. ES-LML-1, at 45; ES-LML-8; ES-LML-8, at 44-55 (Supp. 1); AG-19-3, Atts. (e), (f); AG-19-4, Att.)

iv. Status of New Bedford Service Center

Eversource has provided sufficient evidence to document the reported cost of the New Bedford Service Center of \$29,868,260 (Exh. ES-LML-8, at 97 (Supp. 2)). The total amount of \$29,868,260 comprises \$18,856,557 in costs incurred through April 30, 2017 and \$11,011,703 in remaining committed costs incurred after April 30, 2017 (Exh. ES-LML-8, at 1 (Supp. 2); Tr. 4, at 802).⁵⁷ As such, we find that the costs of \$29,868,260 associated with the New Bedford service center are known and measurable.

Next the Department considers whether the costs associated with the New Bedford Service Center were prudently incurred. No parties have contested NSTAR Electric's

⁵⁶ GIS is transmission plant and, accordingly, the costs associated with this plant are not proposed for recovery in this proceeding (Exh. AG-34-7).

⁵⁷ These committed costs are costs under a fixed price contract associated with securing the service center's certificate of occupancy (Exh. ES-LML-8, at 1 (Supp. 2); Tr. 4, at 802).

decision to relocate the New Bedford service center or NSTAR Electric's management of the project. The Department finds that this project was necessary to replace the NSTAR Electric's current older facility and to provide an operations center for NSTAR Electric and NSTAR Gas (Exhs. ES-CAH-1, at 16; ES-LML-1, at 46-47). Further, we note that Eversource conducted a cost-benefit analysis of several alternatives before determining that relocating was the most cost effective option (Exhs. ES-LML-1, at 47; AG-19-5 & Att.). In addition, Eversource provided documentation supporting the prudence of the costs associated with this project, including project authorization forms, supplement request forms, project cost sheets, variance analyses as of December 12, 2016, and invoices (Exhs. ES-LML-8, at 111-131 (Supp. 1); ES-LML-8, at 76-182 (Supp. 2); AG-19-3, Atts. (c), (d); Tr. 15, at 3084-3085). Eversource's initial estimate of \$30 million included the sale of the old service center (Exh. ES-LML-1, at 49). Eversource's instant proposal to include \$29,868,260 in costs associated with the service center, however, does not include the sale of the old property (Exhs. AG-24-7; AG-43-3). Based on the above, the Department finds that the costs associated with the New Bedford service center were prudently incurred.

Finally, the Department considers whether the New Bedford Service Center is in service and used and useful to customers. Eversource submitted a 30-day temporary certificate of occupancy for the New Bedford service center project on August 25, 2017 (Exh. ES-14). The certificate states that the work authorized by the permit had been partially completed and approved by the City of New Bedford, Office of the Building Commissioner (Exh. ES-14). Further, it is noted that all City of New Bedford inspectors had made their

final inspections of the land and building and that the premises were safe to occupy (Exh. ES-14). Based on these considerations, the Department is satisfied that the New Bedford service center meets the standard for in service and used and useful (Exhs. ES-LML-8; AG-19-3, Atts. (c), (d); AG-19-4, Att.; AG-24-6; ES-14).

See D.P.U. 95-118, at 20, 56.

v. Conclusion

Having found that NSTAR Electric's arguments concerning the purported similarities between the instant case and the factual scenario in D.P.U. 14-150 were not persuasive, we need not address the Attorney General's arguments regarding the differences between the instant case and the factual scenario in D.P.U. 14-150. Further, because we determine that our decision in D.P.U. 14-150 is inapplicable in this case, we also decline to adopt the Attorney General's recommendation to adjust the Companies' test year sales to reflect load growth accompanying its post-test year plant additions. However, the Department finds it appropriate to adjust NSTAR Electric's rate base for accumulated depreciation, as agreed to by the Companies and discussed in further detail below. Finally, as noted below in Section VII.E, we decline to adopt the Attorney General's "double counting" argument with respect to the Electric Avenue project.

Based on the above considerations, we approve Eversource's proposal to include in NSTAR Electric's rate base the following expenditures as of April 30, 2017:

(1) \$32,949,477 associated with Electric Avenue; (2) \$42,718,949 associated with the Seafood Way project; and (3) \$29,868,260 associated with the New Bedford service center.

c. Accumulated Deferred Income Taxes and Accumulated Depreciation

Consistent with our inclusion of the three NSTAR Electric post-test year plant additions and exclusion of one WMECo post-year plant addition, we will make certain corresponding adjustments to Accumulated Deferred Income Taxes (“ADIT”) and accumulated depreciation, as detailed below.⁵⁸ Otherwise, the rates being approved here would misrepresent the Companies’ underlying cost structure.

Eversource proposes to include \$16,818,289 in ADIT for all three NSTAR Electric post-test year plant additions (Exh. ES-DPH-2 (East), Sch. DPH-30 (Rev. 3)). The proposed ADIT is not provided on a project-specific basis (Exh. ES-DPH-2 (East), Sch. DPH-30 (Rev. 3)). In this case, however, the Department has approved the inclusion of all three NSTAR Electric post-test year plant additions in test year-end rate base. Accordingly, the Department accepts Eversource’s proposal to increase NSTAR Electric’s test year-end reserve for deferred income taxes by a total of \$16,818,289 (Exh. ES-DPH-2 (East), Sch. DPH-30 (Rev. 3)).

Eversource also proposes to include \$672,829 in ADIT for WMECo’s post-test year plant addition (Exh. ES-DPH-2 (West), Sch. DPH-30 (Rev. 3)). For reasons discussed above, the Department has denied Eversource’s proposal to include the Montague substation improvement project in WMECo’s test year-end rate base. Accordingly, the Department

⁵⁸ The effects of the Department’s decision here on the Companies’ depreciation expense are addressed below in Section VIII.E of this Order.

denies Eversource's proposal to increase WMECo's test year-end reserve for deferred income taxes by a total of \$672,829.

In its reply brief, Eversource provides a recommended accumulated depreciation amount for each of the three NSTAR Electric post-test year plant additions (Companies Reply Brief at 110, 110, n. 34). Given that this recommended adjustment was made on brief and not during the evidentiary phase of the proceeding, the Department declines to accept it. Rather, in calculating the investment balance upon which to accumulate depreciation, the Department will use the plant addition amounts approved in this case. More specifically, the Department multiplies the annual depreciation rate by the plant addition amount approved in this case, adjusted for the number of days the plant addition has been in service as of the date rates go into effect (January 1, 2018). The Department adds the accumulated depreciation amounts for each plant account with a positive balance to arrive at a total accumulated depreciation amount for each addition.

For the Electric Avenue project, the \$32,949,477 addition comprises \$24,556,686 in Account 362, Station Equipment, and \$8,392,791 in Account 366, Underground Conduit (Exh. ES-DPH-2 (East), WP DPH-28 (Rev. 3)). NSTAR Electric's depreciation rates during this proceeding for Accounts 362 and 366 were 2.384 percent and 2.432 percent, respectively (Exh. AG-1-24, Att. (B)). Electric Avenue was energized from the transmission system on December 6, 2016, and so it will be in service for 390 days on January 1, 2018

(Exh. ES-LML-8, at 101 (Supp. 1)). Therefore, the Department increases NSTAR Electric's test year-end reserve for depreciation by \$843,622 for Electric Avenue.⁵⁹

For the Seafood Way project, the \$42,718,949 addition comprises \$33,983,164 in Account 362, Station Equipment, and \$8,735,785 in Account 366, Underground Conduit (Exh. ES-DPH-2 (East), WP DPH-28 (Rev. 3)). NSTAR Electric's depreciation rates during this proceeding for Accounts 362 and 366 were 2.384 percent and 2.432 percent, respectively (Exh. AG-1-24, Att. (B)). Seafood Way was energized from the transmission system on December 6, 2016, and so it will be in service for 390 days on January 1, 2018 (Exh. ES-LML-8, at 46 (Supp. 1)). Therefore, the Department increases NSTAR Electric's test year-end reserve for depreciation by \$1,092,655 for Seafood Way.⁶⁰

Eversource also provides a 2017 accumulated depreciation amount of \$430,642 for the New Bedford service center in its proposed post-test year adjustment to lease revenue in recognition of NSTAR Gas' use of the New Bedford service center (Exh. ES-DPH-2 (East), WP DPH-5 (Rev. 3)). Therefore, the Department increases NSTAR Electric's test year-end reserve for depreciation by \$430,642 for the New Bedford service center.

Finally, consistent with our decision to deny Eversource's proposal to include the Montague substation improvement project in WMECo's test year end rate base, we will make no adjustments to WMECo's test year-end reserve for depreciation for Montague.

⁵⁹ $\$24,556,686 * (.02384 * (390/365)) + \$8392791 * (.02432 * (390/365)) = \$843,622.$

⁶⁰ $\$33,983,164 * (.02384 * (390/365)) + \$8,735,785 * (.02432 * (390/365)) = \$1,092,655$

d. Conclusion

In accordance with the above findings, the Department denies Eversource's proposal to include in WMECo's test year-end rate base \$3,813,975 in post-test plant additions and \$325,049 in plant retirements associated with the Montague substation improvements. The Department approves Eversource's proposal to include in NSTAR Electric's test year-end rate base a total of \$105,536,686 in plant additions, comprising \$32,949,477 for Electric Avenue, \$42,718,949 for Seafood Way, and \$29,868,260 for the New Bedford service center (Exhs. ES-DPH-2 (East), Sch. DPH-28 (Rev. 3)); ES-DPH-2, (East), WP DPH-28 (Rev. 3)). Additionally, the Department approves Eversource's proposal to increase NSTAR Electric's test year-end reserve for deferred income taxes by a total of \$16,818,289. Finally, the Department increases Eversource's test year-end reserve for depreciation by a total of \$2,351,645, comprising \$843,622 for Electric Avenue, \$1,092,655 for Seafood Way, and \$430,642 for the New Bedford service center. The effect of these adjustments on the Companies' rate bases is provided in Schedule 4 for NSTAR Electric and Schedule 4 for WMECo below.

D. Cash Working Capital

1. Introduction

In their day-to-day operations, utilities require funds to pay for expenses incurred in the course of business, including O&M expenses. These funds are either generated internally by a company or through short-term borrowing. Department policy permits a company to be reimbursed for costs associated with the use of its funds or for the interest expense incurred on borrowing. D.P.U. 96-50 (Phase I) at 26, citing Western Massachusetts Electric

Company, D.P.U. 87-260, at 22-23 (1988). This reimbursement is accomplished by adding a cash working capital component to the rate base calculation.

Cash working capital costs have been determined through either the use of a lead-lag study or a conventional 45-day O&M expense allowance. D.T.E. 03-40, at 92. In the absence of a lead-lag study, the Department has previously relied on a 45-day convention as reasonably representative of O&M working capital requirements. D.T.E. 05-27, at 98; D.P.U. 88-67 (Phase I) at 35.⁶¹ The Department has expressed concern that the 45-day convention, first developed in the early part of the 20th century, may no longer provide a reliable measure of a utility's working capital requirements. D.T.E. 03-40, at 92, citing Fitchburg Gas and Electric Light Company, D.T.E. 98-51, at 15 (1998); D.P.U. 96-50 (Phase I) at 27. In recent years, lead-lag studies have resulted in savings for ratepayers by reducing the cash working capital requirement below the 45-day convention. D.P.U. 11-01/D.P.U. 11-02, at 163, citing D.P.U. 10-114, at 108; D.P.U. 10-70, at 78; D.P.U. 10-55, at 204-205; D.P.U. 09-39, at 114; D.P.U. 09-30, at 151-152; New England Gas Company, D.P.U. 08-35, at 38 (2009); D.T.E. 05-27, at 99-100. For these reasons, the Department requires all electric and gas companies serving more than 10,000 customers to conduct a fully developed and reliable O&M lead-lag study. D.P.U. 11-01/D.P.U. 11-02, at 164.

⁶¹ When a fully developed and reliable lead-lag study is not available, FERC applies a 45-day convention to determine the cash working capital allowance. Carolina Power and Light Company, 6 FERC ¶ 61,154, at 61,296 (1979). As a result, companies occasionally refer to the 45-day convention as the FERC convention. D.P.U. 11-01/D.P.U. 11-02, at 150 n.81.

2. Companies Proposal

In WMECo's last base rate case, the Department excluded basic service cash working capital from the cash working capital allowance recovered through base rates. D.P.U. 10-70, at 77-78.⁶² The Department calculated separate lead-lag factors for O&M expense and for basic service, and provided for the recovery of a basic service cash working capital allowance as a separate cost component through the Basic Service Costs Adjustment ("BSCA") factor.⁶³ D.P.U. 10-70, at 78, 367. Here, Eversource proposes to use the same method for NSTAR Electric as well and states that it removed the basic service cash working capital allowance from the total cash working capital included in rate base (Exh. ES-DPH-1, at 198-199).

Eversource conducted a lead-lag study to determine its cash working capital requirements for both O&M and basic service (Exhs. ES-DPH-1, at 194-195; ES-DPH-6). Each component uses revenue lag days and expense lead days to determine the cash working capital requirement (Exh. ES-DPH-1, at 195). Eversource conducted its lead-lag study using in-house personnel to update the net lag days associated with each component of its proposed cash working capital allowance (Exhs. ES-DPH-6; DPU-40-2).

⁶² Basic service cash working capital provides cash working capital for expenses paid by NSTAR Electric and WMECo on behalf of customers for wholesale electric power supply and renewable energy contracts (Exh. ES-DPH-1, at 198).

⁶³ Eversource's proposed Basic Service tariff, M.D.P.U. No. 516, includes revisions to provide for the recovery of a working capital allowance associated with basic service within its BSCA factor. Eversource states that it will update its BSCA filings based on the lead-lag factors approved in this proceeding (Exh. ES-DPH-1, at 198-199). Revisions to the Basic Service tariff are addressed in Section XVII.H below.

Eversource calculated a revenue lag to be used in both the O&M and basic service cash working capital net lag factors. The revenue lag consists of a “meter reading or service lag,” “collection lag,” and a “billing lag” (Exh. ES-DPH-1, at 196). The sum of the days associated with these three lag components is the total revenue lag experienced by Eversource (Exh. ES-DPH-1, at 196). Eversource calculated a meter reading or service lag of 15.21 days (Exhs. ES-DPH-1, at 196; ES-DPH-6, Sch. WC-2, at 1). This lag was derived by dividing the number of billing days in the test year by twelve months and then in half to arrive at the midpoint of the monthly service periods (Exhs. ES-DPH-1, at 196; ES-DPH-6, Sch. WC-2, at 1). The collection lag, which reflects the time delay between the mailing of customer bills and the receipt of the billing revenues from customers, totaled 30.82 days (Exhs. ES-DPH-1, at 196; ES-DPH-6, Sch. WC-2, at 1). The collection lag was obtained by dividing the average daily accounts receivable balance by the average daily revenue amount to arrive at the collection lag (Exhs. ES-DPH-1, at 197; ES-DPH-6, Sch. WC-2, at 1). Finally, Eversource applied a billing lag of one day, based on the fact that most of Eversource’s customers are billed the day after meters are read (Exhs. ES-DPH-1, at 197; ES-DPH-6, Sch. WC-2, at 1).⁶⁴ Based on the foregoing, Eversource calculated a total revenue lag of 47.03 days by adding the number of days associated with each of the three revenue lag components (Exhs. ES-DPH-1, at 198; ES-DPH-6, Sch. WC-2, at 1).

Eversource’s O&M cash working capital is comprised of O&M expense, payroll taxes, and property taxes (Exh. ES-DPH-1, at 199). Eversource pays these expenses to

⁶⁴ Eversource made no adjustment in the lead-lag study to account for customers for which additional time is required to process bills (Exh ES-DPH-1, at 197).

finance the activities conducted in service to customers before the Companies receive payment from customers for those services (Exh. ES-DPH-1, at 199-200). To calculate the O&M expense lead period, Eversource disaggregated its O&M expense into eight major cost categories: net payroll, regulatory commission expenses, corporate insurance, other O&M, property taxes, FICA & Medicare, federal unemployment tax, and state unemployment tax (Exhs. ES-DPH-1, at 201; ES-DPH-6, Sch. WC-4). Eversource reviewed test year payments and calculated the lead days for each category based on either all payments or a sampling of payments (Exh. ES-DPH-1, at 201). Once Eversource determined lead days for each category, it used the sum of the lead days weighted by dollars to arrive at an O&M expense lead of 13.73 days (Exh. ES-DPH-6, Sch. WC-4). Eversource then subtracted the expense lead of 13.73 days from the revenue lag of 47.03 days to produce a net O&M expense lag of 33.30 days (Exhs. ES-DPH-1, at 203; ES-DPH-6, Sch. WC-1). Eversource derived an O&M expense cash working capital factor of 9.12 percent by dividing the net lag days of 33.30 by 365 days (Exh. ES-DPH-6, Sch. WC-1 at 1). This factor, multiplied by the total costs applicable to cash working capital⁶⁵ of \$411,936,870 for NSTAR Electric, and \$83,757,914 for WMECo, produces a proposed cash working capital allowance of \$37,582,186 and \$7,641,475 for NSTAR Electric and WMECo, respectively (Exhs. ES-DPH-1, at 203-204; ES-DPH-2 (East), Sch. DPH-32 (Rev. 4); ES-DPH-2 (West), Sch. DPH-32 (Rev. 4)).

⁶⁵ These costs are comprised of total O&M expense, less uncollectible accounts, plus taxes other than income taxes (Exhs. ES-DPH-2 (East), Sch. DPH-32 (Rev. 4); ES-DPH-2 (West), Sch. DPH-32 (Rev. 4)).

Eversource determined the basic service net lag by comparing the revenue lag of 47.03 days to the expense lead associated with basic service (Exh. ES-DPH-6, Sch. WC-1). To determine the expense lead associated with basic service, Eversource identified all supplier invoices that were paid during the test year and calculated for each invoice the number of days from the midpoint of the related service period to the date the invoice was paid (Exhs. ES-DPH-1, at 199; ES-DPH-6, Sch. WC-3). Eversource then dollar weighted, totaled, and averaged the days to arrive at an overall weighted average basic service expense lead (Exhs. ES-DPH-1, at 199; ES-DPH-6, Sch. WC-3). Eversource's study produced an expense lead associated with basic service of 45.31 days (Exh. ES-DPH-6, Schs. WC-1, WC-3, at 2). When compared to the revenue lag of 47.03 days, the net lag for basic service is 1.72 days (Exhs. ES-DPH-1, at 199; ES-DPH-6, Sch. WC-1).

3. Positions of the Parties

On brief, Eversource summarizes its calculation of the basic service and other O&M cash working capital requirements and asserts that the Companies' calculations are consistent with Department precedent (Companies Brief at 169-171). No other party addressed Eversource's proposed cash working capital calculations.

4. Analysis and Findings

The purpose of conducting a cash working capital lead-lag study is to determine a company's "cash in-cash out" level of liquidity in order to provide the company an appropriate allowance for the use of its funds. D.P.U. 87-260, at 22-23. Such funds are either generated internally or through short-term borrowing. See D.P.U. 96-50 (Phase I) at 26. Department policy permits a company to be reimbursed for costs associated with the

use of its funds and for the interest expense incurred on borrowing. D.P.U. 96-50 (Phase I) at 26; D.P.U. 87-260, at 22. The Department requires all electric and gas companies serving more than 10,000 customers to conduct a fully developed and reliable O&M lead-lag study.

D.P.U. 11-01/D.P.U. 11-02, at 164. In the event that the lead-lag factor is not below 45 days, a company will face a high burden to justify the reliability of such a study and the reasonableness of the steps the company has taken to minimize all factors affecting cash working capital requirements within its control, such as the collections lag.

D.P.U. 11-01/D.P.U. 11-02, at 164.

The Department has reviewed the evidence in support of Eversource's lead-lag study and we conclude that Eversource properly calculated the total revenue lag of 47.03 days to be applied to both the O&M and basic service expense leads (Exhs. ES-DPH-1, at 196-197; ES-DPH-6, Sch. WC-2, at 1). Further, the Department finds that Eversource properly calculated the O&M expense lead of 13.73 days and the resulting net lag of 33.30 days (Exhs. ES-DPH-1, at 203; ES-DPH-6, Schs. WC-1, WC-4). Eversource's proposed O&M net lag factor of 33.30 days is lower than the Department's 45-day convention (Exhs. ES-DPH-1, at 204; ES-DPH-6, Sch. WC-1). Additionally, we find that Eversource's decision to perform a lead-lag study with in-house personnel was a cost-effective means to determine its cash working capital requirement (Exh. DPU-40-2). See Bay State Gas Company, D.P.U. 12-25, at 97 (2012). For these reasons, the Department accepts Eversource's lead-lag study and the resulting O&M cash working capital factor of 9.12 percent (33.30 days/365 days).

Application of the O&M cash working capital factor of 9.12 percent to the level of O&M and taxes other than income tax expense authorized by this Order produces a cash working capital allowance of \$34,945,015 for NSTAR Electric and \$7,188,554 for WMECo. The derivation of this cash working capital allowance is provided in Schedule 6 of this Order.

Further, the Department finds that Eversource properly calculated the expense lead for basic service of 45.31 days and the net lag for basic service of 1.72 days (Exhs. ES-DPH-1, at 199; ES-DPH-6, Schs. WC-1, WC-3, at 2). This results in a basic service net lag factor of 1.72 days for purposes of the cash working capital allowance in the BSCA.

E. Materials and Supplies

1. Introduction

The Department typically allows a company to include a representative level of its materials and supplies balance in rate base, which is determined using a 13-month average balance. Boston Edison Company, D.P.U. 19991, at 16 (1979); Housatonic Water Works Company, D.P.U. 86-235, at 3-4 (1987); High Wood Water Company, D.P.U. 1360, at 7-8 (1983); D.P.U. 1300, at 29. Eversource reports a balance of \$34,922,056 in materials and supplies for NSTAR Electric and a balance of \$2,242,787 in materials and supplies for WMECo, both based on a 13-month average of the respective account balances during the period of June 2015 through June 2016 (Exhs. ES-DPH-2 (East), WP DPH-27 (Rev. 3); ES-DPH-2 (West), WP DPH-27 (Rev. 3); ES-DPH-3 (East), WP DPH-27 (Rev. 3); ES-DPH-3 (West), WP DPH-27 (Rev. 3)).

2. Positions of the Parties

a. Attorney General

The Attorney General argues that the Electric Avenue substation project discussed above in Section VII.C includes approximately \$10 million in inventory that was delivered from the warehouse in Avon, Massachusetts, to the project site in August 2015 (Attorney General Brief at 106-107, citing Exh. AG-19-1; Tr. 8, at 2668-2770). She contends that no adjustment was made on the balance of materials and supplies included in NSTAR Electric's rate base to annualize the effect of this transfer of inventory (Attorney General Brief at 107, citing Tr. 8, at 2668-2770). Thus, according to the Attorney General, NSTAR Electric's proposed rate base includes a "partial double counting" of the \$10 million transferred from the materials and supplies inventory to the Electric Avenue substation project (Attorney General Brief at 107; Attorney General Reply Brief at 13). The Attorney General has not proposed any specific recommendation regarding any adjustments to Eversource's materials and supplies balance.

b. Companies

Eversource argues that it has calculated its materials and supplies balances included in rate base based on the 13-month average balances, consistent with Department precedent (Companies Brief at 169, 433). According to the Companies, the intent of relying on a 13-month average is to normalize from the balance included in rate base any abnormal month-to-month variability, or to avoid the reliance on a single data point that might skew the average balance (Companies Brief at 433). In this regard, Eversource contends that the Attorney General's argument is an attempt to "cherry pick" a large transaction in order to

reduce the materials and supplies balance included in rate base (Companies Brief at 434). However, Eversource contends that an adjustment to annualize the \$10 million is not necessary or appropriate as the transfer does not represent a “double-count” of costs (Companies Brief at 433). Rather, Eversource claims that it properly calculated the materials and supplies balances and it has properly included post-test year additions in rate base (Companies Brief at 433). Based on all of these considerations, Eversource asserts that the Department should approve the Companies’ proposed materials and supplies balances (Companies Brief at 434).

3. Analysis and Findings

Utilities keep on hand various materials and supplies for use in the course of normal operations. The Department’s long-standing practice has been to include a representative level of a company’s materials and supplies balance in rate base. D.P.U. 19991, at 16. The Department allows this adjustment to compensate a utility for the carrying cost associated with its inventory. Because of the month-to-month fluctuations in this account, a 13-month average balance is used. D.P.U. 86-235, at 3-4; D.P.U. 1300, at 29. The Department’s 13-month convention requires the use of monthly balances for the twelve months of the test year, plus the month prior to the first month of the test year. See D.P.U. 15-155, at 146; D.P.U. 10-114, at 101-102; D.P.U. 86-235, at 3-4.

The Department has reviewed Eversource’s schedules and the monthly balances provided in the record (Exhs. ES-DPH-2 (East), WP DPH-27 (Rev. 3); ES-DPH-2 (East), WP DPH-27 (Rev. 3); ES-DPH-3 (East), WP DPH-27 (Rev. 3); ES-DPH-3 (West),

WP DPH-27 (Rev. 3)). The record shows that Eversource calculated the materials and supplies balances for NSTAR Electric and WMECo using the 13-month average of the account balances from June 2015 (the month preceding the start of the test year) through June 2016 (the end of the test year) (Exhs. ES-DPH-3 (East), WP DPH-27 (Rev. 3); ES-DPH-3 (West), WP DPH-27 (Rev. 3)).⁶⁶ Thus, the Department concludes that Eversource properly calculated the average balance of materials and supplies consistent with Department precedent. D.P.U. 15-155, at 146; D.P.U. 10-114, at 101-102; D.P.U. 86-235, at 3-4; D.P.U. 1300, at 29.

As noted above, the Department recognizes that a company's materials and supplies account balance will fluctuate as inventory is moved in and out of the account. In recognition of those month-by-month fluctuations, the Department does not rely on a spot balance, but rather uses a 13-month average balance for ratemaking purposes. Moreover, the purpose of the 13-month balance convention is to set a representative level of materials and supplies, not to track the movements of specific inventory items or to reconcile them to a company's plant investment balance in rate base.

Based on our review of the materials and supplies balances for the relevant 13-month period for NSTAR Electric, we find that the average balance of \$34,922,056 is representative of the monthly activity in that account. Similarly, we find that the average balance of \$2,242,787 is representative of the monthly activity in WMECo's materials and supplies account. Because the Department's 13-month convention is meant to account for the

⁶⁶ The test year used by Eversource was the twelve-month period from July 1, 2015 through June 30, 2016 (Exhs. ES-CAH-1, at 8; ES-DPH-1, at 8).

movement of inventory in and out of this account, including that associated with construction projects, we reject the Attorney General's argument that there is "partial double counting" of the inventory transferred to the Electric Avenue substation.⁶⁷

Based on all of these considerations, the Department finds that no adjustments to Eversource's proposed materials and supplies balances are warranted. Accordingly, the Department allows in the Companies' respective rate base the materials and supplies balances of \$34,922,056 for NSTAR Electric and \$2,242,787 for WMECo.

VIII. OPERATIONS AND MAINTENANCE EXPENSES

A. Employee Compensation and Benefits

1. Introduction

When determining the reasonableness of a company's employee compensation expense, the Department reviews the company's overall employee compensation expense to ensure that its compensation decisions result in a minimization of unit-labor costs.

D.P.U. 10-55, at 234; D.P.U. 96-50 (Phase I) at 47; Cambridge Electric Light Company, D.P.U. 92-250, at 55 (1993). This approach recognizes that the different components of

⁶⁷ The Department acknowledges that it previously made a specific adjustment to materials and supplies in a prior base rate case to avoid double counting of certain inventory proposed for inclusion in rate base. Boston Edison Company, D.P.U. 160, at 12-13 (1980). However, at that time, the Department used an electric distribution company's year-end materials and supplies balance to establish a representative level for ratemaking purposes, rather than the 13-month average balance now in use. See D.P.U. 160, at 12-13; D.P.U. 160, Policy Statement of the Commission Concerning the Adoption of Year-End Rate Base (1980); see also D.P.U. 19991, at 16 (rejecting the 13-month average balance convention for electric distribution companies). As noted above, the use of the current 13-month average materials and supplies balance levelizes the month-to-month fluctuations, including those associated with large construction projects. Accordingly, we find that the adjustment in D.P.U. 160 is inapplicable in the instant case.

compensation (i.e., wages and benefits) are, to some extent, substitutes for each other and that different combinations of these components may be used to attract and retain employees.

D.P.U. 92-250, at 55. In addition, the Department requires a company to demonstrate that its total unit-labor cost is minimized in a manner supported by its overall business strategies.

D.P.U. 92-250, at 55.

A company is required to provide a comparative analysis of its compensation expenses to enable a determination of reasonableness by the Department. D.P.U. 96-50 (Phase I) at 47. The Department evaluates the per-employee compensation levels, both current and proposed, relative to the companies in the utility's service territory and utilities in the region that compete for similarly skilled employees. D.P.U. 96-50 (Phase I) at 47; D.P.U. 92-250, at 56; Bay State Gas Company, D.P.U. 92-111, at 103 (1992); Massachusetts Electric Company, D.P.U. 92-78, at 25-26 (1992).

2. Non-Union Wages

a. Introduction

During the test year, NSTAR Electric booked \$45,084,065 in payroll expense for non-union personnel, including base wages and overtime pay (Exh. ES-DPH-2 (East), Sch. DPH-13, at 2 (Rev. 3)). Eversource proposes to increase NSTAR Electric's non-union payroll expense by \$3,707,986 based on: (1) a non-union wage increase of three percent effective April 1, 2016; (2) a non-union wage increase of three percent effective April 1,

2017; and (3) a non-union wage increase of 2.75 percent effective April 1, 2018 (Exhs. ES-DPH-2 (East), Sch. DPH-13, at 2 (Rev. 3); ES-15,⁶⁸ at 2).

During the test year, WMECo booked \$12,488,174 in payroll expense for non-union personnel, including base wages and overtime pay (Exh. ES-DPH-2 (West), Sch. DPH-13, at 2 (Rev. 3)). Eversource proposes to increase WMECo's non-union payroll expense by \$1,027,103 based on: (1) a non-union wage increase of three percent effective April 1, 2016; (2) a non-union wage increase of three percent effective April 1, 2017; and (3) a non-union wage increase of 2.75 percent effective April 1, 2018 (Exhs. ES-DPH-2 (West), Sch. DPH-13, at 2 (Rev. 3); ES-15, at 2).

The Companies determined their non-union wage increases based on a comparative analysis of non-union base salaries and total compensation against median base salaries and total compensation in the energy/utility and general industry sectors in the Northeast, using studies performed by Towers Watson (Exhs. ES-SL-1, at 16; ES-SL-6; ES-SL-7; ES-SL-8). The Companies also analyzed whether their actual and proposed merit wage increases were in line with the market by surveying the actual and projected wage increases in the

⁶⁸ As noted below, Eversource provided a letter, dated August 24, 2017, which indicates its commitment to institute (1) a 2.0 percent payroll increase for non-exempt union employees of NSTAR Electric, effective June 2, 2018; and (2) a 2.75 percent payroll increase for the Companies' exempt and non-exempt non-union employees, effective on or before April 1, 2018. Eversource designated the letter as Exhibit ES-13. However, that exhibit designation was given to a different exhibit at the evidentiary hearings (Tr. 19, at 3656). Further, Eversource has provided an exhibit in this proceeding relative to the New Bedford service center, which it has marked as Exhibit ES-14 (see Section VII.C above). As such, the Department will designate the August 24, 2017, letter as Exhibit ES-15 and cite to it as such in the remainder of this Order.

energy/utility and general industry sectors (Exhs. ES-SL-1, at 16, 23; ES-SL-9). In addition, the Companies provided a historical comparison of non-union base wage increases to union base wage increases (Exhs. ES-SL-1, at 21; ES-SL-5).

b. Positions of the Parties

i. Attorney General

The Attorney General asserts that the Department should deny NSTAR Electric and WMECo's proposed non-union payroll expense in 2018 for two reasons (Attorney General Brief at 136). First, the Attorney General claims that the Companies have not demonstrated that the proposed increases of 2.75 percent are reasonable (Attorney General Brief at 137). The Attorney General states that the non-union salary studies included in the Companies' filing demonstrate that the Companies' non-union employees are already making more than two percent above industry averages for positions of similar responsibilities (Attorney General Brief at 137, citing Exhs. ES-SL-6; ES-SL-7; ES-SL-8). Second, the Attorney General argues that by not providing a management commitment letter for the 2018 payroll increases, the Companies have not provided evidence to support the proposed increases (Attorney General Brief at 137). The Attorney General contends that the Companies have not provided an affidavit, sworn testimony from senior management, or any other contractual or firm commitment to the wage increase (Attorney General Brief at 137). For these reasons, the Attorney General recommends that the Department deny the Companies' proposed 2018 non-union payroll increases (Attorney General Brief at 137).

ii. Companies

The Companies assert that the adjustments for non-union employees represent the actual percentage wage increases for the years 2016 and 2017 and thus are known and measurable (Companies Brief at 202). With respect to the 2018 compensation, Eversource claims that it establishes a base pay range for each job based on 90 percent to 110 percent of the median market rate derived in conjunction with Towers Watson, a global human resources consulting firm that assists the Companies in setting competitive salary ranges, variable pay levels, and evaluating and recommending changes to employee benefit plans (Companies Brief at 461, citing Exh. ES-SL-1, at 4-5). The Companies assert that this base pay range is consistent with standard compensation practices (Companies Brief at 461, citing Exh. ES-SL-1, at 5). Further, the Companies argue that they test the competitiveness of the non-union base salaries and total compensation levels against the external market on an ongoing basis, and they annually review non-union employee salary adjustments and total compensation, both current and projected, against external market trends for energy/utility companies and general industry to determine if they are reasonable (Companies Brief at 461-462, citing Exh. ES-SL-1, at 15). According to Eversource, these efforts demonstrate that the Companies' non-union salary adjustments are closely aligned with the relevant markets (Companies Brief at 462, citing Exhs. ES-SL-1, at 15-18; ES-SL-6 through ES-SL-9). Finally, Eversource notes that the Department has found that similar compensation data and analyses, including those used by NSTAR Gas in its last base rate proceeding, have demonstrated the reasonableness of non-union salary levels (Companies

Brief at 462, citing D.P.U. 14-150, at 143; D.P.U. 10-55, at 245; D.T.E. 05-27, at 109; D.T.E. 02-24/25, at 94).

Regarding the 2018 payroll increase to non-union employees, the Companies assert on brief that they will provide a management commitment letter by September or October of 2017, prior to the Order being issued in this proceeding (Companies Brief at 463, citing Exh. DPU-45-18; Tr. 15, at 3116). According to the Companies, in recent base rate proceedings, the Department has found acceptable the production of a management commitment letter prior to the issuance of the Order (Companies Brief at 463-464, citing D.P.U. 14-150, at 142-143; D.P.U. 13-75, at 146-147, 151-152).

Based on the above considerations, the Companies assert that they have demonstrated that the non-union salary levels, including the planned 2018 base wage increase, are reasonable and consistent with Department's precedent (Companies Brief at 462-463). As such, the Companies argue that the Attorney General's recommendations regarding the disallowance of these costs are without merit and should be rejected (Companies Brief at 464).

c. Analysis and Findings

The Department's well-established standard for post-test year non-union payroll adjustments requires a company to demonstrate that: (1) the non-union salary increase is scheduled to become effective no later than six months after the date of the Department's Order; (2) if the increase has not occurred, there is an express commitment by management to grant the increase; (3) there is a historical correlation between union and non-union raises;

and (4) the non-union increase is reasonable. D.P.U. 85-266-A/85-271-A at 107; D.P.U. 96-50 (Phase I) at 42; D.P.U. 95-40, at 21; Fitchburg Gas and Electric Light Company, D.P.U. 1270/1414, at 14 (1983).

Two of the Companies' proposed non-union wage increases occurred before the issuance of the Department's Order: on April 1, 2016 and April 1, 2017 (Exhs. ES-DPH-2 (East), Sch. DPH-13, at 2 (Rev. 3); ES-DPH-2 (West) at 2 (Rev. 3)). Additionally, on August 24, 2017, following the submission of briefs, the Companies provided a management commitment letter stating that a 2.75 percent payroll increase for non-union employees will take place on or before April 1, 2018 (Exh. ES-15, at 2). Based on this information, the Department finds that non-union salary increases are scheduled to become effective no later than six months after its Order, and there is a commitment by management to grant the increase that has not yet occurred.

In addition, Eversource provided a historical correlation of non-union and union wage increases, and demonstrated that it awarded non-union and union pay increases every year since 2006 (Exhs. ES-SL-1, at 13; ES-SL-5). Between 2006 and 2017, union wage increases were between 2.75 percent and 4.8 percent, and non-union wage increases were between 2.5 percent and 3.25 percent (Exh. ES-SL-5). Based on this information, the Department finds that a sufficient correlation exists between union and non-union wage increases. See Fitchburg Gas and Electric Light Company, D.P.U. 07-71, at 76 (2008); Essex County Gas Company, D.P.U. 85-59-A at 18 (1988).

With respect to the reasonableness of the non-union wage increases, the Companies annually review their current and projected salary levels against external energy companies and the general industry to determine if they are competitive to the market median (Exh. ES-SL-1, at 15). Specifically, Eversource compared its current and projected annual base salaries for non-union employees against median annual salaries for comparable positions in the Northeast by using survey data from a Towers Watson study (Exhs. ES-SL-1, at 15; ES-SL-6; ES-SL-7; ES-SL-8). This comparison showed that for NSTAR Electric, non-union total cash compensation is 2.3 percent above market median, WMECo's non-union total compensation is 1.1 percent below market median, and service company non-union total compensation is 2.4 percent above market median (Exhs. ES-SL-6; ES-SL-8). The results of this comparison demonstrates that NSTAR Electric's total cash compensation is 101.2 percent of the external market, WMECo's total cash compensation is 101.7 percent of the external market, and ESC's total cash compensation is 100.2 percent of the external market (Exhs. ES-SL-1, at 17-20; ES-SL-6; ES-SL-7; ES-SL-8). The Department finds that the Companies have demonstrated that their total proposed compensation is competitive with the market median and, therefore, reasonable (Exh. ES-SL-1, at 15).

Based on the above, the Department finds that Eversource has demonstrated:

(1) non-union salary increases are scheduled to become effective no later than six months after the Department's Order; (2) there is an express management commitment to grant a 2.75 percent non-union wage increase that is scheduled to occur after the date of this Order; (3) there is a historical correlation between union and non-union payroll increases;

and (4) the non-union wage increases are reasonable. Accordingly, we allow the Companies' adjusted non-union payroll expense.

3. Union Wages

a. Introduction

During the test year, NSTAR Electric booked \$74,441,305 in payroll expense for union personnel, including base wages and overtime pay (Exh. ES-DPH-2 (East), Sch. DPH-13, at 2 (Rev. 3)). Eversource proposes to increase NSTAR Electric's union payroll expense by \$5,363,174 based on: (1) a union wage increase of 2.75 percent effective June 2, 2016; (2) a union wage increase of 2.50 percent effective June 2, 2017; and (3) a union wage increase of two percent effective June 2, 2018 (Exhs. ES-DPH-2 (East), Sch. DPH-13, at 2 (Rev. 3); ES-15, at 1).

WMECo booked \$10,511,256 in payroll expense for union personnel, including base wages and overtime pay during the test year (Exh. ES-DPH-2 (West), Sch. DPH-13, at 2 (Rev. 3)). Eversource proposes to increase WMECo's union payroll expense by \$667,536 based on: (1) a union wage increase of 2.50 percent effective October 1, 2015; (2) a union wage increase of 2.50 percent effective October 1, 2016; (3) a union wage increase of three percent effective October 1, 2017; and (4) a post-test year adjustment of \$173,600 for the annualization of new hires needed to comply with a union settlement mandating a staffing level of 206 represented employees (Exhs. ES-DPH-1, at 65; ES-DPH-2 (West), Sch. DPH-13, at 2 (Rev. 3)).

b. Positions of the Parties

i. Attorney General

The Attorney General argues that WMECo's pro forma adjustment of \$173,600 to account for the annualization of new hires and maintain a mandated staffing level of 206 employees should be disallowed (Attorney General Brief at 109; Attorney General Reply Brief at 19). According to the Attorney General, the fluctuations in employee levels experienced by WMECo are not large enough to require an expense adjustment – i.e., they are not outside the normal ebb and flow of employee levels (Attorney General Brief at 109). The Attorney General underscores that the total WMECo employee complement was 298 in June 2016 and was down to 288 in December 2016 (Attorney General Brief at 109; Attorney General Reply Brief at 19). She contends that this fluctuation represents the normal ebb and flow of employee levels and, therefore, the Department should deny WMECo's adjustment to annualize the cost of having a 206-employee complement and reduce its pro forma O&M expense by \$173,600 (Attorney General Brief at 109; Attorney General Reply Brief at 19).

The Attorney General did not take issue with the Companies' proposed adjustments to payroll expense for union wage increases scheduled to occur in calendar years 2015, 2016, 2017, and 2018.

ii. Companies

The Companies assert that the Department should reject the Attorney General's argument that the change in the number of employees represents the normal ebb and flow in the workplace (Companies Brief at 434). The Companies explain that at the end of the test year, WMECo hired additional union employees to comply with a union arbitration

settlement that required WMECo to maintain a bargaining unit staffing level of 206 represented employees (Companies Brief at 202, citing Exh. ES-DPH-1, at 65). Thus, Eversource states that it made an adjustment to WMECo's payroll expense to annualize the cost of labor hires in the test year to reflect the annualized level of labor in the revenue requirement (Companies Brief at 202, citing Exh. ES-DPH-1, at 66). The Companies maintain that in calculating this adjustment, WMECo accounted for union employees who were hired in the test year to meet the employee commitment level as well as the employees who left WMECo during that period, and included only the incremental costs to annualize the new union hires made during the test year (Companies Brief at 435, citing Exhs. ES-DPH-1, at 65-67; ES-DPH-3, WP DPH-13, at 2 (West); Tr. 13, at 2781). Based on these considerations, the Companies assert that they properly reflected the costs associated with union staffing levels in the cost of service and that its union compensation adjustments are appropriate and should be approved by the Department (Companies Brief at 202, 435-436; Companies Reply Brief at 116).

c. Analysis and Findings

The Department's standard for post-test year union payroll adjustments requires that three conditions be met: (1) the proposed increase must take effect before the midpoint of the first twelve months after the date of the rate increase; (2) the proposed increase must be known and measurable (i.e., based on signed contracts between the union and the company); and (3) the proposed increase must be reasonable. D.P.U. 11-01/D.P.U. 11-02, at 174; D.P.U. 96-50 (Phase I) at 43; D.P.U. 95-40, at 20; D.P.U. 92-250, at 35.

The Companies' proposed union payroll adjustments appropriately include only those increases that have been granted before July 1, 2018, the midpoint of the first twelve months after the Department's Order in this proceeding (Exhs. ES-DPH-2 (East), Sch. DPH-13, at 2 (Rev. 3); ES-DPH-2 (West), Sch. DPH-13, at 2 (Rev. 3)). Additionally, the union payroll increases that occurred in 2016 and 2017 are based on signed collective bargaining agreements between the Companies and the respective unions (Exhs. DPU-45-08, Att.; DPU-45-12, Att.; DPU-45-14, Att.). Further, on August 24, 2017, Eversource provided a management commitment letter stating that a two percent payroll increase for union employees of NSTAR Electric will take effect on June 2, 2018 (Exh. ES-15, at 1). Thus, the Department finds that the proposed union wage increases are known and measurable.

Further, with respect to the reasonableness of the union wage increases, the Companies submitted a comparison of their average union wages with other employers in the Northeast (Exhs. ES-SL-1, at 9; ES-SL-2; ES-SL-3). The analysis provided demonstrates that hourly rates paid to the Companies' union employees are comparable to the median hourly rates other employers in the region pay for the selected union job titles (Exhs. ES-SL-2; ES-SL-3). Thus, we find that the Companies have demonstrated the reasonableness of the union wage increases.

Finally, Eversource proposes a normalizing adjustment to WMECo's union payroll O&M expense to account for union settlement obligations that mandate a staffing level of at least 206 employees by the end of 2016 (Exhs. ES-DPH-1, at 66 n.2; DPU-23-1, Att.; Tr. 13, at 2777-2783). The Companies included a pro forma adjustment for WMECo of

\$173,600 to reflect the costs associated with this new level of staffing in the cost of service (Exh. ES-DPH-2 (West), Sch. DPH-13, at 2 (Rev. 3)).

The Department notes that employee levels routinely fluctuate because of retirements, resignations, hirings, terminations, and other factors. D.P.U. 88-172, at 12; D.P.U. 1270/1414, at 16-17. The Companies made no explicit effort to demonstrate that the level of union employees was significant or outside the normal fluctuation of union employee levels. Nonetheless, the Department will analyze the impact of WMECo's union employee hires and departures during the test year on employee staffing levels as well as payroll expense levels to determine whether they constitute a significant change. The record shows that there were seven net full-time union employees who were hired during the test year, which constitutes 3.08 percent of the total WMECo union employee count of 227 employees in the last month of the test year (Exhs. ES-DPH-3, WP DPH-13, at 2 (West); AG-1-44, Att. at 3). The proposed pro forma adjustment of \$173,600 represents 1.34 percent of WMECo's union test year payroll expense (Exh. ES-DPH-2 (West), Sch. DPH-13, at 2 (Rev. 3)). The Department has previously found that similar fluctuations in the test year did not represent significant changes to test year employee levels or test year payroll expense. D.P.U. 15-155, at 160-162; Nantucket Electric Company, D.P.U. 88-161/168, at 67 (1989).

Further, the Department notes that WMECo maintained a level of 206 union employees or more during each month of the test year, with an average union employee count of 212 (Exh. AG-1-44, Att. at 3). Therefore, a level of payroll expense associated with at least 206 union employees is already represented in the proposed cost of service,

eliminating the need for an additional adjustment to annualize the payroll expense associated with maintaining a union employee level of 206. Based on the evidence provided above, the Department finds that the pro forma adjustment of \$173,600 associated with WMECo union hires does not constitute a significant change and, therefore, we do not allow the adjustment to be included in WMECo's cost of service. In addition, concordant adjustments to payroll tax expense will be made, as set forth below in Section VIII.C.

4. Incentive Compensation

a. Introduction

The Companies' incentive compensation represents the portion of wages and salaries paid to non-union employees of NSTAR Electric and WMECo, and it is paid in March for performance in the prior year (Exh. ES-DPH-1, at 72). During the test year, NSTAR Electric booked \$18,170,774 in incentive compensation for non-union personnel (Exh. ES-DPH-2 (East), Sch. DPH-14, at 2 (Rev. 3)). Eversource proposes to decrease NSTAR Electric's incentive compensation by \$3,148,685 (Exh. ES-DPH-2 (East), Sch. DPH-14, at 1 (Rev. 3)).

During the test year, WMECo booked \$3,177,908 in incentive compensation for non-union personnel (Exh. ES-DPH-2 (West), Sch. DPH-14, at 2 (Rev. 3)). Eversource proposes to decrease WMECo's incentive compensation by \$714,682 (Exh. ES-DPH-2 (West), Sch. DPH-14, at 1 (Rev. 3)).

The factors contributing to the lower amount of proposed rate year incentive compensation expense for both NSTAR Electric and WMECo are as follows: (1) the test year level of expense was normalized to remove out-of-period and non-recurring items;

(2) the incentive compensation amounts awarded during the test year were reduced to target levels; and (3) further reductions to test year levels were necessary because of changes in the executive management team (Exh. ES-DPH-1, at 70-71).

b. Positions of the Parties

i. Attorney General

The Attorney General argues that the Department should remove executive incentive compensation that is based on the attainment of financial goals from the Companies' cost of service because it is contrary to Department precedent and the Companies have not demonstrated a ratepayer benefit (Attorney General Brief at 118-119, citing D.P.U. 10-55, at 253-254; D.P.U. 11-01/D.P.U. 11-02, at 192-194; D.P.U. 08-35, at 97; Attorney General Reply Brief at 21). First, the Attorney General notes that incentive compensation for the Chief Executive Officer, James Judge, and the Chief Financial Officer, Philip Lembo, is based on the achievement of individual goals related to the overall corporate financial goals of earnings per share, dividend growth, and credit rating (Attorney General Brief at 119-120, citing Exh. DPU-45-21(e); Tr. 4, at 827). The Attorney General states that even the Companies acknowledge that they have made an error in requesting incentive compensation recovery for the Chief Executive Officer and Chief Financial Officer (Attorney General Reply Brief at 20). Thus, the Attorney General recommends the elimination of \$577,135 from the revenue requirement for incentive compensation tied to the Companies' Chief Executive Officer and Chief Financial Officer (Attorney General Brief at 120, citing RR-AG-4; RR-AG-4, Att. at 2).

Next, the Attorney General contends that the amount of incentive compensation attributable to the Companies' other three named executive officers, Messrs. Leon Olivier, Werner Schweiger, and Gregory Butler ("Named Executives") should be reduced by 70 percent. She bases this recommendation on the structure of the Companies' incentive compensation program for these individuals, which she contends is split 70 percent for financial performance and 30 percent on operational performance (Attorney General Brief at 120, citing Exh. DPU-45-21, Att. at 46). She argues that Eversource's financial goals are inherent in the Named Executives' positions, regardless of whether the Companies have written in operational goals for these executives (Attorney General Reply Brief at 21). In addition, the Attorney General asserts that each of the Named Executives is responsible for financial performance through the budget that each oversees (Attorney General Reply Brief at 20).

The Attorney General does not challenge the fact that these Named Executives have certain operational goals, rather, she emphasizes that through their positions, they have the means and obligation to meet the corporate financial goals, and the Companies have not met their burden to show otherwise (Attorney General Reply Brief at 21). Shareholders are the beneficiaries of increases to earnings, according to the Attorney General, and they should bear the cost of incentive compensation linked to earnings, not the Companies' ratepayers (Attorney General Brief at 121). Thus, the Attorney General recommends the additional elimination of \$295,592, or 70 percent of the Named Executives' incentive compensation that

is linked to the achievement of financial targets (Attorney General Brief at 121; Attorney General Reply Brief at 21).

ii. Companies

The Companies agree that goals that are directly tied to achieving financial targets, such as earnings per share, dividend growth, and credit rating, are not recoverable under Department precedent (Companies Brief at 443-444). The Companies do not challenge the Attorney General's recommendation to remove the Chief Executive Officer and Chief Financial Officer's portion of incentive compensation from the cost of service (Companies Brief at 444). The Companies do not, however, agree with the proposed adjustment calculated by the Attorney General (Companies Reply Brief at 117). Eversource argues that the Attorney General calculated the disallowance based on information provided in the Companies' response to Record Request AG-4, which only shows the reduction of the cash incentive to target for the test year and is inclusive of transmission and distribution amounts (Companies Reply Brief at 117). The Companies maintain that \$533,160 is the correct reduction to cost of service and that it is the amount actually incorporated in the revenue requirement in this proceeding (Companies Reply Brief at 116-117).

The Companies oppose the Attorney General's recommendation to remove 70 percent of the incentive compensation paid to the Named Executives, and claim that they do not have incentive compensation tied to achieving financial targets (Companies Brief at 444, citing Exh. DPU-45-21). The Companies assert that the goals of the Named Executives are tied to operational targets, such as safety, customer satisfaction, cost reductions, increasing

efficiencies, and complying with state and federal laws and regulations (Companies Brief at 444, citing Exh. DPU-45-21). These goals provide a direct benefit to ratepayers, according to the Companies, and therefore the Department should reject the Attorney General's recommendation (Companies Reply Brief at 119). Moreover, the Companies express that the Named Executives' careful management and adherence to operational budgets benefits customers in terms of lower rates (Companies Reply Brief at 119). Finally, the Companies argue that they use financial goals as the trigger for funding the incentive compensation plan in a given year (Companies Reply Brief at 117, citing Tr. 6, at 1156, 1163, 1166-1167). The Companies explain that the incentive compensation pool cannot be funded unless specific financial goals are met, and they maintain that this structure is consistent with Department precedent (Companies Reply Brief at 117-118, citing Tr. 6, at 1156, 1163, 1166-1167).

c. Analysis and Findings

The Department has traditionally allowed incentive compensation expenses to be included in a utility's cost of service if: (1) the expenses are reasonable in amount, and (2) the incentive plan is reasonably designed to encourage good employee performance. D.P.U. 07-71, at 82-83; Massachusetts Electric Company, D.P.U. 89-194/195, at 34 (1990). For an incentive plan to be reasonable in design, it must both encourage good employee performance and result in benefits to ratepayers. D.P.U. 93-60, at 99.

First, the Department must determine whether the costs associated with Eversource's incentive compensation program are reasonable in amount. The Companies normalized the

test year level of expense to remove out-of-period and non-recurring items for both NSTAR Electric and WMECo (Exhs. ES-DPH-1, at 41, 44, 72; ES-DPH-2, Sch. DPH-14, at 2 (East); ES-DPH-2, Sch. DPH-14, at 2 (West)). Further, since the Companies awarded incentive compensation payouts above the target level during the test year, they reduced the revenue requirement to include only the amount of incentive compensation at target levels (Exhs. ES-DPH-1, at 72; ES-DPH-2, Sch. DPH-14, at 2 (East); ES-DPH-2, Sch. DPH-14, at 2 (West); DPU-45-32). Finally, Eversource adjusted the test year levels of incentive compensation to reflect changes in the executive management team to ensure that the representative amount of incentive compensation for the current executive team is reflected in the revenue requirement (Exhs. ES-DPH-1, at 72-73; ES-DPH-2, Sch. DPH-14, at 2 (East); ES-DPH-2, Sch. DPH-14, at 2 (West); DPU-45-32). Based on our review of this evidence, the Department finds that Eversource has demonstrated that its incentive compensation costs are reasonable in amount. See D.P.U. 10-70, at 103; D.P.U. 09-39, at 140.

Second, the Department must determine whether the Companies' incentive compensation plan is reasonable in design. The record shows that Eversource's incentive compensation program for both its union and non-union employees is based on the individual performance of the employee or targeted goals for safety, reliability, customer and community responsiveness, and costs control, as well as the performance of the business unit in which employees work (Exhs. ES-SL-1, at 24; DPU-23-9). Specifically, incentive compensation is awarded when business unit objectives are reached, which establishes an incentive pool (Exhs. ES-SL-1, at 24; DPU-45-20, AG-19-18). An individual employee's

compensation is then tied to a variable pay component that is dependent on his or her job scope level (Exhs. ES-SL-1, at 24-25; DPU-58-13; AG-19-17). Payment to the employee is based on the employee's individual performance against pre-determined goals relating to his or her position, as evaluated by his or her supervisor (Exhs. ES-SL-1, at 26; DPU-45-23; DPU-58-13, AG-19-18). Further, Eversource ensures that its employees are committed to meeting customer needs by establishing performance goals that are based on providing safe and reliable services at reasonable costs to customers (Exhs. ES-SL-1, at 26; DPU-45-23).

A portion of Eversource's incentive plan is tied to meeting financial performance objectives (Exh. DPU-45-21, at 3). The Department has previously articulated its expectations on the use of financial targets in incentive compensation plans and the burden to justify recovery of such costs in rates. D.P.U. 15-80/D.P.U. 15-81, at 115-116; Fitchburg Gas and Electric Light Company, D.P.U. 13-90, at 82-83 (2014); D.P.U. 11-01/D.P.U. 11-02, at 192-193; D.P.U. 10-70, at 105-106; D.P.U. 10-55, at 253-254. Specifically, where a company seeks to include financial goals as a component of incentive compensation design, the Department expects to see the attainment of such goals as a threshold component, with job performance standards designed to encourage good employee performance (e.g., safety, reliability, customer satisfaction goals) used as the basis for determining individual incentive compensation awards. D.P.U. 14-150, at 147; D.P.U. 13-90, at 82-83; D.P.U. 11-01/D.P.U. 11-02, at 192-193; D.P.U. 10-70, at 105-106; D.P.U. 10-55, at 253-254. A company that nonetheless wishes to maintain financial metrics as a component of the formula used to determine individual incentive

compensation must be prepared to demonstrate direct ratepayer benefit from the attainment of these goals or risk disallowance of the related incentive compensation costs. D.P.U. 13-90, at 83; D.P.U. 11-01/D.P.U. 11-02, at 193; D.P.U. 10-70, at 106; D.P.U. 10-55, at 253-254.

The incentive compensation paid to the Companies' Chief Executive Officer and Chief Financial Officer is directly tied to meeting financial metrics, such as earnings per share, dividend growth, and credit rating (Exh. DPU-45-21, at 3). The Companies recognize that incentive compensation for their Chief Executive Officer and Chief Financial Officer should be removed from the cost of service because their individual incentive compensation goals are directly tied to achieving financial targets (Companies Brief at 443-444, citing Exh. DPU-45-21, at 3; Companies Reply Brief at 116). The Attorney General calculates the incentive compensation for the Chief Executive Officer and Chief Financial Officer to be \$577,135 (Attorney General Brief at 120, citing RR-AG-4, Att. at 2; Attorney General Reply Brief at 20). The Companies contend that the correct amount attributable to these executives is \$533,160 and assert that the Attorney General relies on the wrong record request to calculate her figure (Companies Reply Brief at 117). The Companies, however, do not provide a derivation of the \$533,160 figure (Companies Reply Brief at 117).

In calculating the correct disallowance, the Department relies on the information contained in the Companies' response to Record Request DPU-18, in which the Companies present incentive compensation included in the cost of service and the estimated payroll tax expense. We find the total incentive compensation associated with the Chief Executive

Office and the Chief Financial Officer and subject to disallowance to be \$460,042 (\$108,807 + \$351,235) for NSTAR Electric and \$85,221 (\$20,156 + \$65,065) for WMECo (RR-DPU-18). Accordingly, the Department will remove these amounts from the Companies' respective revenue requirement. In recognition of these incentive compensation adjustments, concordant adjustments to payroll tax expense will be made, as set forth below in Section VIII.C.

The Attorney General also contends that the Department should reduce the Companies' requested recovery of incentive compensation paid to the Companies' Named Executives because, she claims, 70 percent of their incentive compensation is based on the Companies' overall financial performance (Attorney General Brief at 120). Eversource utilizes financial goals, specifically earnings per share, as the trigger for funding the incentive compensation plan in a given year (Exh. AG-19-18; AG-19-19, at 1; Tr. 6, at 1156, 1163, 1166-1167). However, we find that only the Chief Executive Officer and the Chief Financial Officer are awarded incentive compensation based on the achievement of the overall corporate financial goals, such as earnings per share, dividend growth, and/or credit rating (Exh. DPU-45-21, at 3; Tr. 6, at 1155-1156). We are persuaded that the Named Executives' incentive compensation is tied to the achievement of operational targets, such as fostering a safety culture, implementing process improvements that drive improved customer satisfaction, increasing efficiencies and reducing costs, implementation of advanced cybersecurity protocols and plans, ensuring compliance with state and federal mandates, laws and regulations, and meeting the Commonwealth's energy and environmental policy goals

(Exh. DPU-45-21, at 4-5; Tr. 6, at 1156). We conclude that these goals are directly aligned with the interests of ratepayers. D.P.U. 14-150, at 147; D.P.U. 10-70, at 104. Further, while the Named Executives may have some departmental financial goals, such as budgeting (see Exh. DPU-45-21, at 4-5; Tr. 6, at 1158), the Named Executives' incentive compensation is not based on the achievement of the Companies' overall corporate financial goals, such as earnings per share, dividend growth, and/or credit rating (Exh. DPU-45-21, at 3; Tr. 6, at 1155-1156). Based on these considerations, we conclude that the incentive compensation paid to the Named Executives is consistent with Department precedent and, therefore, we decline to adopt the Attorney General's recommendations. For all of the foregoing reasons, we find that Eversource's incentive compensation plan is reasonable in design.

5. Employee Benefits

a. Introduction

Eversource booked \$19,870,555 in test year employee benefits expense for NSTAR Electric (Exh. ES-DPH-2, Sch. DPH-11, at 2 (East)).⁶⁹ Eversource proposes to increase NSTAR Electric's employee benefits expense by \$2,652,549, comprising the following adjustments: (1) an increase of \$2,498,028 for health care expense (i.e., medical/prescription, vision, and dental) based on a 7.2 percent working rate;⁷⁰ (2) an increase of \$323,914 in 401(k) savings plan costs by applying to the test year level of

⁶⁹ The test year amounts of employee benefits booked by Eversource to NSTAR Electric and WMECo represent amounts booked solely to O&M expense and do not represent any capitalized amounts (see Exhs. AG-1-50 & Atts.; AG-51-5 & Atts.).

⁷⁰ A "working rate" represents the per-employee expected claims levels for the following year and is provided by the Companies' benefits consultants and external vendor partners, Cigna and Express Scripts (Exhs. ES-DPH-1, at 58; DPU-45-34).

expense a payroll percentage adjustment of 7.589 percent; and (3) a decrease of \$169,393 to reflect the allocation of a representative amount of basic service administrative costs in the basic service adder (Exhs. ES-DPH-1, at 57-59; ES-DPH-2 (East), Sch. DPH-11, at 2 (Rev. 3)).

Eversource booked \$3,047,400 in test year employee benefits expense for WMECo (Exh. ES-DPH-2, Sch. DPH-11, at 2 (West)). Eversource proposes to increase WMECo's employee benefits expense by \$412,040, comprising the following adjustments: (1) an increase of \$465,944 for health care expense (i.e., medical/prescription, vision, and dental) based on a 7.2 percent working rate; (2) an increase of \$24,483 in 401(k) savings plan costs by applying to the test year level of expense a payroll percentage adjustment amount of 7.313 percent; and (3) a decrease of \$78,387 to reflect the allocation of a representative amount of basic service administrative costs in the basic service adder (Exhs. ES-DPH-1, at 57-59; ES-DPH-2 (West), Sch. DPH-11, at 2 (Rev. 3)).

b. Positions of the Parties

i. Attorney General

The Attorney General argues that because the Companies self-insure, their medical costs are not based on contractual increases, but on working rates that Eversource develops (Attorney General Brief at 122). In this regard, the Attorney General claims that in order to derive the working rate, the Companies used a "health care growth rate"⁷¹ of 9.5 percent, which she claims does not represent the actual increase in the Companies' employee medical

⁷¹ While the Attorney General refers to the "health care growth rate," it appears from her arguments and references in her briefs that she is referring to the annual medical and prescription trend rate, as it appears in Exhibit DPU-45-31, Attachment (b).

costs, is beyond any credible growth rate observed in the market, is not known and measurable, and is unsupported by any record evidence (Attorney General Brief at 122-123, citing Exh. DPU-45-31; Attorney General Reply Brief at 21, citing Exh. DPU-45-31, Att. (b)).

More specifically, the Attorney General claims that the Companies do not incur higher health care costs at the 9.5 percent growth rate through a fixed premium; rather, they only pay actual costs (Attorney General Reply Brief at 22). Further, the Attorney General adds that the Companies incur no penalty if the health care growth rate forecast is over-inflated, so if the 9.5 percent health care growth rate is higher than actual costs, the benefits will flow to shareholders (Attorney General Reply Brief at 22). Additionally, the Attorney General argues that the Companies' management "made up" the growth rate, and that there is no independent study or survey supporting the 9.5 percent growth rate for health care costs (Attorney General Reply Brief at 22).

Based on these arguments, the Attorney General contends that the Companies have calculated adjustments to their test year medical expenses based on inflated estimates of health care growth rates (Attorney General Brief at 122).⁷² Thus, the Attorney General asserts that if the Department allows an increase to the Companies' health care expense, it

⁷² In further support of her arguments, the Attorney General claims that the Companies' actuarial reports for retiree benefit costs forecast a growth rate of 6.25 percent, while general inflation in the economy has been around two percent (Attorney General Brief at 124, citing Exhs. AG-JRW-1, at 82; AG-JRW-14, at 6; ES-RBH-1, at 35; Tr. 6, at 1113-1115; Attorney General Reply Brief at 22). The Attorney General also claims that the Society of Actuaries' model is forecasting a 5.5 percent growth rate for 2018 for health care costs (Attorney General Reply Brief at 22).

should do so based on “more reasonable health care trends” (Attorney General Brief at 124). In this regard, the Attorney General claims that a more reasonable health care growth rate of 6.5 percent (rather than 9.5 percent) should be used (Attorney General Brief at 124, citing RR-AG-8; Attorney General Reply Brief at 21-22). She states that using this health care growth rate to derive the working rate would result in an increase of medical costs of \$1,668,140 for NSTAR Electric and an increase of \$329,237 for WMECo (Attorney General Brief at 124, citing RR-AG-8).

ii. Companies

The Companies argue that the Attorney General mischaracterizes the Department’s precedent on the use of working rates (Companies Brief at 445; Companies Reply Brief at 124). According to the Companies, their working rate calculation conforms to Department requirements as they developed their working rates in a similar manner to the working rates approved by the Department in D.P.U. 15-155 (Companies Brief at 447; Companies Reply Brief at 119). Specifically, the Companies note that they designed their working rates with the support of consultants that employed an underwriting process to make projections for the upcoming year (Companies Brief at 447, citing Exh. ES-MPS-1, at 10). Further, the Companies claim that their consultants estimated total plan expenses and benefit payments, and reviewed Eversource’s own claims as well as national trend data in order to determine work rate trends (Companies Brief at 447). Eversource asserts that the working rates used to calculate the adjustment are correlated to NSTAR Electric’s and WMECo’s experience,

rather than that of a broad-based pool of insured entities (Companies Brief at 197; Companies Reply Brief at 119).

Next, Eversource disputes the Attorney General's representation that the Companies used an annual health care growth rate of 9.5 percent (Companies Brief at 448; Companies Reply Brief at 119). Rather, the Companies contend that the 9.5 percentage rate is actually the annual medical and prescription drug growth rate and just one component of the overall projected percentage increase in health care costs, which the Companies assert is 7.2 percent (Companies Brief at 448, citing Exh. DPU-45-31, Att. (b); Companies Reply Brief at 119, citing Attorney General Brief at 21-23). Moreover, the Companies disagree with the Attorney General's purported health care growth rate of 6.5 percent and claim (1) that the Attorney General "cherry picked" the Companies' working rates calculation, and (2) that the Attorney General's recommended value is out of line with the history and expected future of healthcare costs for Eversource employee health plans (Companies Brief at 449, citing Exh. DPU-45-31, Att. (b); RR-AG-8; Companies Reply Brief at 122-124). The Companies reiterate that actual claims experience in combination with actuarial assumptions were used to develop their working rate for the 2017 plan year, and, therefore, the Department should disregard the Attorney General's recommendation (Companies Brief at 448; Companies Reply Brief at 124). Further, Eversource states that since it is self-insured, it is in the Companies' interest to develop accurate and reasonable working rates in order to include the appropriate medical expense in rates (Companies Reply Brief at 123).

Based on these considerations, Eversource asserts that the Department should accept the Companies' proposed medical cost adjustments (Companies Brief at 449; Companies Reply Brief at 124).

c. Analysis and Findings

i. Health Care Expenses

To be included in rates, health care expenses, such as medical, dental, and vision, must be reasonable. The Berkshire Gas Company, D.T.E. 01-56, at 60-61 (2002); D.P.U. 92-78, at 29-30; Nantucket Electric Company, D.P.U. 91-106/91-138, at 53 (1991). Further, companies must demonstrate that they have acted to contain their health care costs in a reasonable, effective manner. D.T.E. 01-56, at 60; D.P.U. 96-50 (Phase I) at 46; D.P.U. 92-78, at 29; D.P.U. 91-106/91-138, at 53. Finally, any post-test year adjustments to health care expense must be known and measurable. D.T.E. 01-56, at 60; D.P.U. 96-50 (Phase I) at 46; North Attleboro Gas Company, D.P.U. 86-86, at 8 (1986).

As an initial matter, the Department finds that Eversource's health care expenses are reasonable and that the Companies have taken reasonable and effective measures to contain these costs (Exh. ES-MPS-1, at 8-10). For example, Eversource is self-insured (Exh. ES-MPS-1, at 10). Further, the Companies introduced a "High Deductible Health Plan" design that encourages consumerism; consolidated medical carriers and streamlined options; negotiated an agreement with its pharmacy manager that resulted in discounts for prescription drugs, lower fees, and larger rebates; employs a number of utilization-management programs such as Step Therapy programs, which encourages the use of lower-cost generic medications; uses quantity-limit programs that utilize the U.S. Food

and Drug Administration guidelines regarding dosage limits; is involved in prior-authorization programs that require clinical evidence before filling certain higher-cost and higher-risk medications; uses mail order for maintenance drugs to generate savings associated with the elimination of dispensing fees; and targets intervention on use of brand-name medications when generics are available (Exh. ES-MPS-1, at 9).

Eversource also employs pricing strategies that encourage employees to consider lower-cost health-plan options and also encourage the evaluation of alternate health-plan coverage available to employed family members (Exh. ES-MPS-1, at 13). Additionally, the Companies introduced three new plan designs for non-union employees, and negotiated the implementation of the same health plan offerings for its unions (Exh. ES-MPS-1, at 13). Under its employee-contribution model, Eversource applies strategies that encourage employees to consider lower-cost health plan options and encourage the use of alternate coverage for family members (Exh. ES-MPS-1, at 13). The Companies' non-union employees pay a lower percentage of their own premium cost and a higher percentage of premiums for dependents, and they bear the cost of buying a higher level of coverage (Exh. ES-MPS-1, at 13). Further, the Companies periodically benchmark their health care benefit programs against the programs of other employers (Exh. ES-MPS-1, at 5). Finally, Eversource offers wellness programs to help manage and improve employee health, which in turn helps to moderate health costs over time (Exh. ES-MPS-1, at 4, 14-15).

Turning to the specifics of Eversource's proposed health care expense, the Companies maintain that they have relied on the most recent working rates to develop the appropriate

adjustments to test year costs to reflect the increases that are expected through July 2018 (Companies Brief at 196; Companies Reply Brief at 119). The Department has previously denied recovery of pro forma health care expenses based on working rates derived from actuarial estimates encompassing a broad-based pool of insured parties.

D.P.U. 15-80/D.P.U. 15-81, at 137; D.P.U. 13-90, at 94. In the instant case, however, Eversource's working rate is derived using Eversource-specific data such as medical and prescription drug claims expense, enrollment figures, plan design details, administration costs, and fees (Exhs. ES-DPH-1, at 57; ES-MPS-1, at 12; ES-MPS-2; DPU-45-31; DPU-45-34; Tr. 6, at 1117-1130). The Companies' external benefits consultants developed the working rate using actuarial principles; the rate is based on the Companies' actual insurance claims and cost trends experienced during the two years prior to the test year (Exh. ES-MPS-1, at 11). Therefore, we conclude that Eversource's proposed working rates are sufficiently correlated to NSTAR Electric's and WMECo's experience, rather than that of a broad-based pool of insured entities, to warrant their use in determining the Companies' health care expense in this proceeding. See D.P.U. 15-155, at 176-177.⁷³

Having found that Eversource's working rates are acceptable and consistent with Department precedent, we accept the Companies' working rates of 7.2 percent and decline to

⁷³ The Department recognizes that disallowing Eversource's post-test year adjustments on the basis of working rates could provide a disincentive for companies to implement aggressive cost control measures, such as switching to self-insurance, when such measures otherwise would be deemed cost-effective. D.P.U. 15-155, at 177; D.P.U. 95-40, at 26; D.P.U. 92-210, at 22. However, we reiterate that working rates must be correlated to the petitioner's experience, rather than that of a broad-based pool of insured entities.

adopt the Attorney General's recommendations. In this regard, we note that the Attorney General's recommended health care growth rate of 6.5 percent, which she claims would produce a working rate of 2.4 percent (see Tr. 6, at 1129-1130; RR-AG-8), does not sufficiently correlate to the Companies' experience with health care costs for active employees.⁷⁴ Based on these findings, the Department accepts the Companies' proposed adjustments to test year health care expenses.

ii. 401(k) Savings Plan Costs

As noted above, Eversource proposes to increase NSTAR Electric's 401(k) savings plan costs by \$323,914, which represents a proposed 7.589 percent salary increase for union and non-union employees (Exhs. ES-DPH-1, at 57-59; ES-DPH-2 (East), Sch. DPH-11, at 2 (Rev. 3)). Similarly, Eversource proposes to increase WMECo's 401(k) savings plan costs by \$24,483, which represents a proposed 7.313 percent salary increase for union and non-union employees (Exhs. ES-DPH-1, at 57-59; ES-DPH-2 (West), Sch. DPH-11, at 2 (Rev. 3)). The Department has found that employee contributions to utility-sponsored savings plans are voluntary and, thus, subject to fluctuation. D.P.U. 13-90, at 102-104; Commonwealth Electric Company/Cambridge Electric Light Company, D.P.U. 89-114/90-331/91-80 (Phase One) at 66-67 (1991); Commonwealth Electric Company, D.P.U. 88-135/151, at 68 (1989). In the absence of a demonstration that the

⁷⁴ We also are not persuaded by the Attorney General's reliance on the Society of Actuaries' forecast of a 5.5 percent growth rate, which she presented for the first time on brief (Attorney General Reply Brief at 22). Unlike the Companies' derivation of working rates, the Society of Actuaries' forecast is based on inflation, real income per capita, and excess medical cost growth, not data specific to the Companies (see <https://www.soa.org/research-reports/2016/research-hlthcare-trends/>).

post-test year participation levels are more representative of future participation than the total employee contributions made during the test year, the Department declines to permit any adjustment above the expense booked during the test year. D.P.U. 92-250, at 48; D.P.U. 89-114/90-331/91-80 (Phase One) at 66-67; D.P.U. 88-135/151, at 68.

Here, the Companies' proposed increases are based on the assumption that the increase in savings plan contributions will be consistent with the overall increases in salaries (Exh. ES-DPH-1, at 58-59). Thus, the Companies' proposed increases are based on percentage increases to union and non-union salaries regardless of whether an employee participates in or makes contributions to the 401(k) savings plan. In addition, the Companies have not demonstrated that the post-test year participation levels are more representative of future participation than those contributions made during the test year. Thus, the Department disallows the Companies' proposed increases associated with 401(k) savings plan costs. D.P.U. 92-250, at 48; D.P.U. 89-114/90-331/91-80 (Phase One) at 66-67; D.P.U. 88-135/151, at 68; see also D.P.U. 14-150, at 152-153. Accordingly, the Department reduces NSTAR Electric's proposed cost of service by \$323,914 and reduces WMECo's proposed cost of service by \$24,483.

B. Service Company Charges

1. Introduction

Beginning with the April 10, 2012 effective date of the merger of Northeast Utilities and NSTAR (see Section V.A above) and through December 31, 2013, Northeast Utilities Service Company ("NUSCO") and NSTAR Electric & Gas Service Company ("NE&G") operated as a single service company organization despite being separate legal entities

(Exh. ES-DPH-1, at 26). Effective January 1, 2014, NE&G was legally merged into NUSCO, with NUSCO as the surviving entity (Exh. ES-DPH-1, at 26). Effective February 2, 2015, Northeast Utilities and all of its subsidiaries began doing business as Eversource Energy, and NUSCO was renamed ESC (Eversource Service Company) (Exh. ES-DPH-1, at 26).

ESC provides administrative, corporate, and management services to NSTAR Electric, WMECo, and other operating subsidiaries of Eversource Energy (Exh. ES-DPH-1, at 26). The Companies incur expenses from ESC in two ways: (1) through direct charges, which are billed to the Companies for costs incurred and work performed by ESC personnel; and (2) through common costs, which are allocated among the respective subsidiaries that receive services provided by ESC based on allocation factors (Exh. ES-DPH-1, at 27).⁷⁵ All ESC charges are billed to NSTAR Electric and WMECo in conformance with service agreements, which specify the services that are provided to the Companies (Exh. ES-DPH-1, at 27). ESC provides services to NSTAR Electric and WMECo in numerous functional areas such as accounting, communications, conservation and load management services, construction, customer relations, demand side management, energy supply, engineering, facilities, finance and business planning, human resources, information technology, legal, rates and regulation, and taxes (Exh. AG-1-26, Atts. (a), (b)).

⁷⁵ ESC uses an internal document called the Cost Charging and Allocation Manual to determine the allocation of costs among its operating subsidiaries. When costs cannot be charged directly because they benefit more than one business segment, the allocators are used. The cost allocation method is intended to ensure the accurate charging of service company costs to its affiliates (Exh. AG-1-28, Att. (d)).

Eversource included ESC charges in the corresponding expense categories in the test year (e.g., salary and wages) (Exhs. ES-DPH-2 (East), Schs. DPH-11, DPH-13 (Rev. 3); ES-DPH-2 (West), Schs. DPH-11, DPH-13 (Rev. 3)). Additionally, Eversource included various ESC charges in the normalizing or known and measurable adjustments to the cost of service in the appropriate expense categories. For example, salaries of ESC employees are included in the Companies' proposed adjustment to payroll expense (Exhs. ES-DPH-2 (East), Sch. DPH-13 (Rev. 3); ES-DPH-2 (West), Sch. DPH-13 (Rev. 3)).

ESC's charges include an equity rate of return component, which is intended to provide for a return on ESC's assets that are used for the benefit of its affiliates (Exh. AG-1-25; Tr. 15, at 3065; RR-AG-21). During the test year, NSTAR Electric booked \$32,133,446 in charges from ESC, of which \$1,988,563 was related to ESC's equity rate of return component (Exh. AG-1-25, Att. (a)). During the test year, WMECo booked \$6,653,794 in charges from ESC, of which \$414,549 was related to ESC's equity rate of return component (Exh. AG-1-25, Att. (b)).

2. Positions of the Parties

a. Attorney General

The Attorney General identifies two issues related to service company charges. First, the Attorney General explains that ESC charges related to general service company overhead are applied with the ESC labor costs to the accounts in which the labor costs are charged (Attorney General Brief at 111). The overhead charges include a return on equity on ESC assets, among others (Attorney General Brief at 111). The Attorney General calculates that during the test year, ESC charges for the return on equity component of total service

company overhead were \$1,988,563 for NSTAR Electric and \$414,549 for WMECo (Attorney General Brief at 111, citing Exhs. AG-DR-1, at 4; AG-1-25, Atts. (a), (b)). The Attorney General argues that the return on equity that ratepayers pay on ESC assets should be limited to the return on equity found to be fair and reasonable by the Department in this proceeding (Attorney General Brief at 111-112, citing Exh. AG-DR-1, at 5). Thus, the Attorney General calculates reductions to ESC overhead costs included in the test year to be \$307,754 for NSTAR Electric and \$31,307 for WMECo based on her recommended return on equity of 8.875 percent (Attorney General Brief at 112, citing Exhs. AG-DR-1, at 5; AG-DR-2, Sch. 2).

Second, the Attorney General proposes that test year charges from ESC should be reduced for the impacts of Eversource's proposed acquisition of Macquarie Utilities, Inc. ("Macquarie"), then pending before the Department in docket Eversource Energy/Macquarie Utilities, Inc. Acquisition, D.P.U. 17-115 (Attorney General Brief at 112-113).⁷⁶ According to the Attorney General, mergers and acquisitions of utility companies typically result in significant cost savings for the post-merger and post-acquisition companies by merging the

⁷⁶ On June 29, 2017, Eversource and Macquarie filed a petition with the Department seeking approval, pursuant to G.L. c. 165, § 2, and G.L. c. 164, § 96, of a change of control of Macquarie, which is a holding company of Aquarion Water Company of Massachusetts ("AWC-MA") and its subsidiaries in Connecticut and New Hampshire. The petition seeks approval of a transaction whereby Eversource will acquire Macquarie, including AWC-MA and its subsidiaries, for approximately \$1.675 billion, comprised of approximately \$880 million in cash and an estimated \$795 million of assumed Macquarie debt (see Exh. AG-1-2, Att. (a) at 2, 5-7 (Supp. 4)). The Department approved the acquisition on November 28, 2017. Eversource Energy/Macquarie Utilities, Inc. Acquisition, D.P.U. 17-115 (November 28, 2017).

service company functions and thus reducing the allocation of service company costs to the operating companies (Attorney General Brief at 113; Attorney General Reply Brief at 27). In support of her position, the Attorney General cites multiple examples of mergers and acquisitions that resulted in cost savings, such as the merger between Northeast Utilities and NSTAR; the merger and acquisition involving Boston Edison Company and Commonwealth Energy; the Northeast Utilities and Yankee Gas merger; and Northeast Utilities' acquisition of Public Service Company of New Hampshire (Attorney General Brief at 113-114). The Attorney General claims that the acquisition of Macquarie should result in the consolidation of functions between Eversource and Macquarie's subsidiaries Aquarion Water Company of Massachusetts, Aquarion Water Company of New Hampshire and Aquarion Water Company of Connecticut (hereinafter collectively as "Aquarion"), which would reduce the costs to be allocated to NSTAR Electric and WMECo post-acquisition (Attorney General Brief at 113-114).

The Attorney General recommends using the Companies' C05 allocation factor as a reasonable means of reducing indirect costs allocated to NSTAR Electric and WMECo as a result of the acquisition, as this factor includes plant, revenues, and expense, and it is based on a 50/50 split of allocation codes C04 and B10 (Attorney General Brief at 115). The Attorney General calculates the impacts of the inclusion of Aquarion in the calculation of the C05 allocation factor and computes an estimated 5.31 percent reduction in costs charged to NSTAR Electric, or a \$6,285,012 reduction in test year O&M expenses (Attorney General Brief at 117; Attorney General Reply Brief at 27). Similarly, she produces a 5.52 percent

reduction in costs charged to WMECo, or a \$1,054,299 reduction in test year O&M expenses (Attorney General Brief at 117; Attorney General Reply Brief at 27). The Attorney General emphasizes that, contrary to the Companies' interpretation, her recommended adjustments are not based on a reduction of costs incurred by ESC, but rather are based on the impact of including Aquarion in the allocation factors utilized by the service company (Attorney General Reply Brief at 28). The Attorney General recommends that the Department reduce the Companies' pro forma cost of service to reflect these cost reductions from Eversource's purported consolidation with Aquarion (Attorney General Brief at 117).

b. Companies

The Companies contend that in calculating a proposed reduction of ESC overhead costs, the Attorney General incorrectly applies the Companies' most recently authorized rates of return of 10.5 percent for NSTAR Electric and 9.6 percent for WMECo (Companies Brief at 438, citing Exh. AG-DR-2, Sch. 2). The Companies submit that the return on equity used by ESC during the test year was 9.71 percent from July 2015 to December 2015 and 9.78 percent from January 2016 to June 2016 (Companies Brief at 438). According to the Companies, ESC's rate of return is determined annually by calculating the average authorized return for each regulated entity, weighted based on Eversource's C09 allocator, which considers Gross Plant Assets and Net Income (Companies Brief at 438, citing RR-AG-21). The Companies maintain that the Department should disregard the Attorney General's recommended return on equity of 8.875 percent and should instead approve Eversource's

suggested return on equity of 10.5 percent, which the Companies claim would set the most appropriate basis for reducing ESC overhead costs (Companies Brief at 439).

Turning to Eversource's recently approved acquisition of Macquarie, the Companies agree with the Attorney General that although there were significant savings associated with the Northeast Utilities/NSTAR merger as well as others, they claim that savings in those mergers cannot be used as a measure for potential savings related to the Macquarie acquisition because Eversource does not have plans to integrate Aquarion functions with the existing Eversource organization (Companies Brief at 442; Companies Reply Brief at 126, citing D.P.U. 17-115, Exh. DPU-1-20)). Eversource explains that as a result, the operational savings will be more limited than those achieved in the Northeast Utilities/NSTAR merger (Companies Brief at 442, citing D.P.U. 17-115, Exh. ES-AQ-1, at 17). Instead, Eversource proposes that it will directly bill Macquarie for any services provided such as cash management, tax compliance, executive management, and legal (Companies Reply Brief at 126).

3. Analysis and Findings

a. Introduction

The Department permits rate recovery of payments to affiliates where these payments are: (1) for services that specifically benefit the regulated utility and that do not duplicate services already provided by the utility; (2) made at a competitive and reasonable price; and (3) allocated to the utility by a method that is both cost-effective in application and nondiscriminatory for those services specifically rendered to the utility by the affiliate and for general services that may be allocated by the affiliate to all operating affiliates.

D.P.U. 15-155, at 270-271; D.P.U. 13-75, at 184; D.P.U. 12-25, at 231 ;

D.P.U. 89-114/90-331/91-80 (Phase I) at 79-80; Hingham Water Company, D.P.U. 88-170, at 21-22 (1989); AT&T Communications of New England, Inc., D.P.U. 85-137, at 51-52 (1985). In addition, 220 CMR 12.04(3) provides that an affiliated company may sell, lease, or otherwise transfer an asset to a distribution company, and may also provide services to a distribution company, provided that the price charged to the distribution company is no greater than the market value of the asset or service provided.

b. Services

In determining whether the services rendered by an affiliate specifically benefit a regulated utility and do not duplicate services already provided by the utility, it is necessary to examine whether there is any overlap between the services rendered by an affiliate and the operating company's functions. D.P.U. 13-75, at 184; D.P.U. 08-27, at 80-81; D.P.U. 1699, at 11-12. The services provided to the Companies by ESC employees include administrative, technical, and professional services within numerous functional groups, including: accounting, auditing, conservation and load management, construction, demand side management, energy supply, engineering, environmental, facilities, finance and business planning, human resources, information technology, insurance, legal, procurement, rates and regulation, taxes, and many other various functions (Exhs. ES-DPH-1, at 26; AG-1-26, Atts. (a), (b)). The Companies require these types of services on a continuing basis for the proper operation of their business and the delivery of electric service to their customers. Therefore, these services specifically benefit NSTAR Electric and WMECo in providing

service to their customers, and the services provided by ESC are not duplicative of services already provided by the Companies' personnel.

c. Price

Next, the Department evaluates whether ESC charges to NSTAR Electric and WMECo are competitive and reasonable. In prior cases, when determining whether services were charged at a competitive and reasonable price, the Department accepted a review of employer compensation structures compared to the market because service company charges tend to be primarily labor-related. D.P.U. 15-155, at 272; D.P.U. 13-75, at 186; D.P.U. 12-25, at 233; D.P.U. 09-39, at 260. The record shows that compensation of ESC employees is competitive compared to the market median (Exhs. ES-SL-1, at 15; ES-SL-8). The Companies provided evidence of the competitiveness and reasonableness of ESC costs by comparing ESC base salaries and total cash compensation against median base salaries and total cash compensation in the energy/utility and general industry sectors in the Northeast using a Towers Watson study (Exh. ES-SL-8). In particular, the cost comparisons show that ESC employees' base salary is approximately 100.4 percent of the external market and that total cash compensation is approximately 100.2 percent of the external market (Exhs. ES-SL-1, at 20; ES-SL-8). The defined competitive market range is between 90 and 110 percent of the market median (Exh. ES-SL-1, at 20). Thus, Eversource's analysis demonstrates that the services provided by ESC are closely aligned with third-party rates observed in the market (Exh. ES-SL-8). Based on the foregoing, the Department finds that

the Companies have adequately demonstrated that ESC services provided to NSTAR Electric and WMECo were charged at a competitive and reasonable price.

The Attorney General proposes that overhead costs charged by ESC during the test year should be reduced to reflect the return on equity approved by the Department in this proceeding (Attorney General Brief at 111). The Attorney General calculates reductions to ESC overhead costs included in the test year of \$307,754 for NSTAR Electric and \$31,307 for WMECo based on the 8.875 percent return on equity recommended by the Attorney General (Attorney General Brief at 112, citing Exhs. AG-DR-1, at 5; AG-DR-2, Sch. 2).

The Companies did not challenge the Attorney General's recommendation as it pertains to using the return on equity set in this proceeding, however, they indicate that the return on equity used by ESC during the test year was 9.71 percent from July 2015 to December 2015 and 9.78 percent from January 2016 to June 2016, not 10.5 percent for NSTAR Electric and 9.6 percent for WMECo, as cited by the Attorney General (Companies Brief at 438). Further, the Companies argue that the appropriate return on equity to use to set the basis for any reduction in ESC overhead costs should be 10.5 percent (Companies Brief at 438-439).

The Department agrees that the return on equity on ESC overhead costs should be based on the return on equity found to be just and reasonable in this proceeding. Aquarion Water Company of Massachusetts, D.P.U. 11-43, at 145 (2012); D.P.U. 08-27, at 82. As set forth in Section XVI.E below, the Department has concluded that a return on equity of

10.0 percent is appropriate for the Companies. Therefore, the Department will use a return of equity of 10.0 percent to determine ESC's overhead costs.

Next, we find that the Attorney General's recommended calculation of the ESC overhead costs adjustment (Exh. AG-DR-2, Sch. 2) inappropriately overlooks the fact that the ESC's equity rate of return component is derived from multiple entities (RR-AG-21). Therefore, we decline to adopt the Attorney General's recommendations. Similarly, we are not persuaded by the Companies' use of a C09 allocator to determine ESC's annual equity rate of return component (RR-AG-21). In particular, we note that the record shows that the C09 allocator relies on data from WMECo, CL&P, and Yankee Gas Services Company (Exhs. AG-1-28, Att. (d) at 7; AG-1-92, Att. at 1). We find that the absence of NSTAR Electric data as part of the allocator calls into question the validity of the use of the C09 allocator to apportion ESC's equity rate of return component. Therefore, the Department concludes that it is appropriate to use a different allocator.

The Department has examined the allocators used in the Cost Charging and Allocation Manual. Given the scope of services provided by ESC and its role in the operations of Eversource's affiliates, including NSTAR Electric and WMECo, the Department considers it appropriate to select an allocator that covers a broad range of affiliates. Based on this consideration, the Department finds that the C11 allocator covers a wide range of Eversource affiliates, and includes the allocation factors for both NSTAR Electric and WMECo (Exh. AG-26-23, Att. at 1). As such, we conclude that using the C11 allocator to apportion ESC's return on equity is reasonable and appropriate.

Using the C11 allocator and the return on equity approved by the Department in this proceeding, ESC's equity rate of return component can be calculated as follows. First, the Department notes that during the first half of the test year (i.e., July 2015 through December 2015), ESC charged NSTAR Electric and WMECo \$486,590 and \$99,511, respectively, in equity rate of return components (Exh. AG-1-25, Atts.). During the second half of the test year (i.e., January 2016 through June 2016), ESC charged NSTAR Electric and WMECo \$1,501,973 and \$315,038, respectively, in equity return components (Exh. AG-1-25, Atts). Thus, ESC's total equity rate of return component during this period was \$2,403,112 (Exh. AG-1-25, Atts.). ESC used an equity rate of return component during the split test year of 9.71 percent from July 2015 to December 2015, and 9.78 percent from January 2016 to June 2016 (RR-AG-21). These returns, weighted by ESC's equity rate of return components during these periods, produce a weighted return on equity for ESC of 9.76 percent.⁷⁷

Because the C11 allocator would represent a weighted average of allowed returns on equity, it is necessary to develop a composite return on equity component for the Companies' other affiliates used in the C11 allocator. Using ESC's weighted return on equity of 9.76 percent as calculated above, as well as the allocation factors provided in Exhibit AG-26-23, NSTAR Electric's currently allowed return on equity of 10.5 percent, and WMECo's currently allowed return on equity of 9.6 percent, the return on equity for the

⁷⁷
$$\frac{((\$486,590 + \$99,511) \times 9.71 \text{ percent}) + (\$1,501,973 + \$315,038) \times 9.78}{\$2,403,112} = 9.76 \text{ percent}.$$

other entities in the C11 allocator can be mathematically derived as 9.35 percent.⁷⁸ With this data, and using the 10.0 percent return on equity being granted to the Companies, ESC's test year weighted average return on equity can be mathematically calculated as 9.60 percent.⁷⁹

Finally, the Department multiplies the return on equity component included in ESC's overhead charges (\$1,988,563 for NSTAR Electric and \$414,549 for WMECo) by the percentage change in ESC's equity component of 0.16 percent ($9.76 - 9.60 = 0.16$) to calculate the appropriate reduction to overhead costs charged by ESC during the test year (Exhs. AG-1-25, Atts. (a), (b)). Based on these calculations, we find that NSTAR Electric's proposed ESC charges should be reduced by \$3,778 and WMECo's proposed ESC charges should be reduced by \$662. Accordingly, the Department reduces NSTAR Electric's proposed cost of service by \$3,778 and reduces WMECo's proposed cost of service by \$662.

d. Allocation

Finally, we evaluate the method of allocating costs from ESC to NSTAR Electric and WMECo. When allocating costs among affiliates, it is preferable that costs associated with a specific utility are directly assigned to that utility. In the absence of a clear relationship between the cost and the affiliate, or when costs cannot be directly assigned, these costs preferably should be allocated using cost-causative allocation factors to the extent such allocation factors can be applied, with general allocation factors used to allocate any

⁷⁸ $(9.76 \text{ percent} - (34.67 \text{ percent} \times 10.5 \text{ percent}) - (4.41 \text{ percent} \times 9.60 \text{ percent}) / (1.00 - 0.03467 - 0.0441)) = 9.35 \text{ percent.}$

⁷⁹ $(10.0 \text{ percent} \times 34.67 \text{ percent}) + (10.0 \text{ percent} \times 4.41 \text{ percent}) + (9.35 \text{ percent} \times 60.92 \text{ percent}) = 9.60 \text{ percent.}$

remaining costs. D.P.U. 15-155, at 274; D.P.U. 13-75, at 188;

D.P.U. 11-01/D.P.U. 11-02, at 318-321; D.P.U. 10-114, at 271-274.

ESC provides services to NSTAR Electric and WMECo pursuant to service agreements, and ESC costs are charged based on the method of allocation set forth in the service agreements (Exhs. ES-DPH-1, at 27; AG-1-26, Atts. (a), (b)). ESC charges are made directly to the Companies and, when direct assignment is not possible, through allocation factors (Exh. AG-1-26, Atts. (a), (b)). ESC expenses are directly charged to the appropriate business segment whenever possible for costs incurred in carrying out activities or conducting business for that entity (Exh. AG-1-28). When more general costs are incurred to serve the operating companies that cannot be directly assigned, such costs are allocated among the operating companies based on an allocation method (Exh. AG-1-28). The allocations are designed to be proxies for cost causation within a particular function (Exh. AG-1-28).⁸⁰ Allocations are made only after it is determined that it is not practical or reasonably possible to perform a direct assignment of the costs (Exh. AG-1-28).

To ensure accuracy of the allocations, ESC is required to maintain a system for accumulating all costs by direct charges as much as possible (Exh. AG-1-26, Atts. (a) at 7, (b) at 7). Additionally, the Companies require ESC employees to charge their time and expenses appropriately and to keep time records that identify hours worked, account numbers charged, departments, and other code designations that ensure proper charging of ESC costs (Exh. AG-1-26, Atts. (a) at 7, (b) at 7). Finally, ESC accounting records are required to

⁸⁰ For example, the Human Resources function uses an allocator based on labor charged to each company (Exh. AG-1-28).

specify the nature of the services performed in detail so that charges may be determined and correctly accounted for by the operating company under its Uniform System of Accounts (Exh. AG-1-26, Atts. (a) at 7, (b) at 7). The Department has reviewed the method of allocation for ESC's charges, and finds that it is cost-effective in application and nondiscriminatory.

The Attorney General recommends that the Department reduce the overall level of costs allocated to the Companies to account for potential savings associated with Eversource's acquisition of Macquarie (Attorney General Brief at 117; Attorney General Reply Brief at 27). Proposed changes to test year revenues, expenses, and rate base require a finding that the adjustment constitutes a "known and measurable" change to test year cost of service. See Eastern Edison Company, D.P.U. 1580, at 13-17, 19 (1984); D.P.U. 84-32, at 17; Massachusetts Electric Company, D.P.U. 136, at 3 (1980); Chatham Water Company, D.P.U. 19992, at 2 (1980); D.P.U. 18204, at 4; New England Telephone & Telegraph Company, D.P.U. 18210, at 2-3 (1975); Boston Gas Company, D.P.U. 18264, at 2-4 (1975). It is also well-recognized that cost savings arising from merger activities may be considered by the Department, to the extent that such savings can be quantified under a known and measurable standard. Plymouth Water Company, D.P.U. 14-120, at 108-112 (2015); Massachusetts Electric Company/Nantucket Electric Company, D.P.U. 09-39, at 275 (2009); Bay State Gas Company/Unitil Corporation, D.P.U. 08-43-A at 45 (2008).

While the Department has approved Eversource's proposal to acquire Macquarie, Eversource does not plan to integrate Aquarion's operations with the existing Eversource

organization following the transaction, and thus does not anticipate allocating any centralized services costs to Aquarion's operations. Eversource Energy/Macquarie Utilities, Inc. Acquisition, D.P.U. 17-115, at 66 (November 28, 2017). To the extent that Eversource implements any changes to Aquarion's operations or integrates functions between the two entities, those changes will take place over time and as Eversource becomes familiar with Aquarion's water operations. D.P.U. 17-115, at 66-67. As a result, any future allocation of costs are speculative at this time. Accordingly, the Department declines to accept the Attorney General's recommended adjustments to account for any savings associated with Eversource's proposed acquisition of Macquarie.

e. Conclusion

Based on the foregoing analysis, the Department has adjusted the Companies' charges from ESC in recognition of the return on equity being approved in this proceeding. Accordingly, the Department reduces NSTAR Electric's proposed cost of service by \$3,778 and reduces WMECo's proposed cost of service by \$662.

C. Payroll Taxes

1. Introduction

During the test year, NSTAR Electric booked \$9,689,692 in adjusted payroll taxes (Exh. ES-DPH-2 (East), Sch. DPH-26 (Rev. 3)). NSTAR Electric proposes to increase payroll tax expense by \$594,616 to recognize the additional payroll taxes associated with its pro forma Federal Insurance Contribution Act ("FICA") and Medicare expense (Exh. ES-DPH-2 (East), Sch. DPH-26 (Rev. 3)).

During the test year, WMECo booked \$1,652,894 in adjusted payroll taxes (Exh. ES-DPH-2 (West), Sch. DPH-26 (Rev. 3)). WMECo proposes to increase its payroll tax expense by \$112,550 to recognize additional payroll taxes associated with its pro forma FICA and Medicare expense (Exh. ES-DPH-2 (West), Sch. DPH-26 (Rev. 3)).

2. Positions of the Parties

a. Attorney General

The Attorney General argues that the Department should reject Eversource's proposal to include incentive compensation in its cost of service for the Chief Executive Officer, James Judge; the Chief Financial Officer, Philip Lembo; and the Named Executives (Attorney General Brief at 120-121). The Attorney General recommends corresponding associated payroll tax expense reductions (Attorney General Brief at 122).

b. Companies

The Companies state that they calculated the change in FICA payroll tax related to the various labor and incentive compensation adjustments, and have made applicable adjustments to payroll taxes as a result (Companies Brief at 249, citing Exh. ES-DPH-1, at 173). The Companies claim that the FICA taxable wage limit will continue to increase in the rate year since it has increased in all but three years since 1982 at a compound growth rate of four percent (Companies Brief at 250, citing RR-DPU-41; Tr. 15, at 3018-3021). The Companies assert that the FICA taxable wage cap percentage increase is commensurate with the payroll increase percentage used as the basis for the payroll tax adjustment, and thus, the Department should approve the Companies' calculation of payroll taxes (Companies Brief at 250).

Finally, addressing the Attorney General's arguments, the Companies concede that incentive compensation and accompanying payroll taxes associated with James Judge and Philip Lembo should be removed from the cost of service (Companies Brief at 444). However, as discussed above in Section VIII.A.4 above the Companies argue that the incentive compensation (and, therefore, accompanying payroll taxes) associated with the Named Executives are appropriate for inclusion in the cost of service.

3. Analysis and Findings

The Department has examined the record related to the Companies' payroll tax calculations (e.g., Exhs. ES-DPH-2 (East), Sch. DPH-26 (Rev. 3); ES-DPH-2 (West), Sch. DPH-26 (Rev. 3)). The record shows that the FICA taxable wage limit will increase by two percent for the rate year (RR-DPU-41 & Att. (Supp.)). Nonetheless, we find that revisions to the Companies' proposed payroll tax calculations are necessary.

First, as set forth above in Section VIII.A.4 above, the Department has excluded from NSTAR Electric's cost of service \$460,042 in incentive compensation for the Chief Executive Officer and Chief Financial Officer. The level of estimated payroll tax proposed in the cost of service related to these adjustments for these two employees is \$27,485 ($\$5,785 + 21,700 = \$27,485$) (RR-DPU-18, Att.). Therefore, the Department reduces NSTAR Electric's proposed cost of service by \$27,485.

Likewise, the Department has excluded from WMECo's cost of service \$85,221 in incentive compensation for the Chief Executive Officer and Chief Financial Officer. The level of estimated payroll tax proposed in the cost of service related to these adjustments for

these two employees is \$5,092 ($\$1,072 + \$4,020 = \$5,092$) (RR-DPU-18, Att.). Therefore, the Department reduces WMECo's proposed cost of service by \$5,092.

Second, as set forth in greater detail in Section VIII.A.3 above, the Department has excluded from WMECo's cost of service \$173,600 based on the elimination of the Companies' proposed adjustment to the annualization of union hires. To determine a representative level of payroll taxes, the Department divides total test year payroll tax expense by total test year payroll expense and finds that WMECo's overall payroll tax rate is 7.19 percent ($\$1,652,894 / \$22,999,340 = 0.0719$) (Exhs. ES-DPH-2 (West), Schs. DPH-13, at 2, DPH-26 (Rev. 3)). Accordingly, the Department further reduces WMECo's proposed cost of service by \$12,482 ($\$173,600 * 0.0719 = \$12,482$) to account for the reduction in payroll taxes related to the elimination of WMECo's proposed adjustment to union hires.

Combining the effects of the Department's revisions to payroll tax expense, the total reduction to NSTAR Electric's pro forma payroll tax expense is \$27,485. Likewise, the total reduction to WMECo's pro forma payroll tax expense is \$17,574.⁸¹

D. Uncollectible Expense

1. Introduction

During the test year, NSTAR Electric and WMECo booked \$15,073,652 and \$5,163,634 respectively in bad debt expense (uncollectible expense) related to its total operations (Exhs. ES-DPH-2 (East), Sch. DPH-8; ES-DPH-2 (West), Sch. DPH-8 (Rev. 3)).

⁸¹ For purposes of presentation, the Department records these adjustments on the FICA line of Schedules 7.

NSTAR Electric proposes to decrease its distribution-related bad debt expense by \$3,573,684 over the test year level based on the application of a bad debt ratio of 0.7084 percent (Exhs. ES-DPH-2 (East), Sch. DPH-8, at 2 (Rev. 3); ES-DPH-3 (East), WP DPH-8, at 1 (Rev. 3)). WMECo proposes to decrease its distribution-related bad debt expense by \$2,063,199 over the test year level based on the application of a bad debt ratio of 1.2435 percent (Exhs. ES-DPH-2 (West), Sch. DPH-8, at 2 (Rev. 3); ES-DPH-3 (West), WP DPH-8, at 1 (Rev. 3)).

NSTAR Electric calculated its distribution-related bad debt ratio by dividing its total delivery service net write-offs for the twelve-month periods ending on June 30, 2014,⁸² June 30, 2015, and June 30, 2016, of \$11,307,976,⁸³ by its average retail revenues for that same period of \$1,596,307,390 (Exh. ES-DPH-3 (East), WP DPH-8, at 1 (Rev. 3)).⁸⁴ This calculation results in a bad debt ratio of 0.7084 percent (Exh. ES-DPH-3 (East), WP DPH-8, at 1 (Rev. 3)). NSTAR Electric then multiplied the bad debt ratio of 0.7084 percent by test year retail revenues of \$1,623,411,077 to arrive at a bad debt expense of \$11,499,968

⁸² Eversource states that the Companies' net write-offs are comprised of the actual customer accounts written off for non-payment minus recoveries related to previously written-off account balances (see Exh. ES-DPH-1, at 48-49). Eversource states that the resulting net write-off ratio is intended to represent the portion of the Companies' respective non-basic service billed revenues that they will ultimately be unable to collect from their customers (see Exh. ES-DPH-1, at 49).

⁸³ NSTAR Electric's net write-offs do not include write-offs associated with the arrearage management program, prior judgments, or basic service (Exhs. AG-22-3; ES-DPH-3 (East), WP DPH-8, at 2 (Rev. 3)).

⁸⁴ NSTAR Electric's retail revenues do not include revenues associated with basic service (Exh. ES-DPH-2 (East), WP DPH-8, at 2 (Rev. 3)).

(Exh. ES-DPH-2 (East), Sch. DPH-8, at 2 (Rev. 3)). The resulting bad debt expense represents a decrease of \$3,573,684 when compared to NSTAR Electric's test year level of expense of \$15,073,652 (Exh. ES-DPH-2 (East), Sch. DPH-8, at 2 (Rev. 3)).

NSTAR Electric also calculated a bad debt expense associated with the proposed revenue increase. NSTAR Electric multiplied the bad debt ratio of 0.7084 percent by its proposed revenue increase of \$56,098,325 to arrive at a proposed bad debt adjustment of \$397,391 (Exh. ES-DPH-2 (East), Sch. DPH-3 (Rev. 4)).

WMECo calculated its distribution-related bad debt ratio by dividing its total delivery service net write-offs for the twelve-month periods ending on June 30, 2014, June 30, 2015, and June 30, 2016, of \$3,095,807,⁸⁵ by its average retail revenues for that same period of \$248,968,008 (Exh. ES-DPH-3 (West), WP DPH-8, at 1(Rev. 3)).⁸⁶ This calculation results in a bad debt ratio of 1.2435 percent (Exh. ES-DPH-3 (West), WP DPH-8, at 1 (Rev. 3)). WMECo then multiplied the bad debt ratio of 1.2435 percent by test year retail revenues of \$249,340,158 to arrive at a bad debt expense of \$3,100,435 (Exh. ES-DPH-2 (West), Sch. DPH-8, at 2 (Rev. 3)). The resulting bad debt expense represents a decrease of \$2,063,199 when compared to the Company's test year level of expense of \$5,163,634 (Exh. ES-DPH-2 (West), Sch. DPH-8, at 2 (Rev. 3)).

⁸⁵ WMECo's net write-offs do not include write-offs associated with the arrearage management programs, year round hardships, or basic service (Exhs. AG-22-1; ES-DPH-3 (West), WP DPH-8, at 2 (Rev. 3)).

⁸⁶ WMECo's retail revenues do not include revenues associated with basic service (Exh. ES-DPH-3 (West), WP DPH-8, at 2 (Rev. 3)).

WMECo also calculated a bad debt expense associated with the proposed revenue increase. WMECo multiplied the bad debt ratio of 1.2435 percent by its proposed revenue increase of \$34,676,801 to arrive at a proposed bad debt adjustment of \$431,191 (Exh. ES-DPH-2 (West), Sch. DPH-3 (Rev. 4)).

2. Positions of the Parties

Eversource argues that it has met the Department's standard for the inclusion of a representative level of bad debt expense in the Companies' respective cost of service (Companies Brief at 188). Thus, Eversource asserts that the Department should approve the Companies' respective proposed bad debt expense (Companies Brief at 188). No other parties address the Companies' bad debt calculations.

3. Analysis and Findings

The Department permits companies to include for ratemaking purposes a representative level of bad debt in their cost of service. D.P.U. 09-39, at 164; D.P.U. 96-50 (Phase I) at 70-71; D.P.U. 89-114/90-331/91-80 (Phase I) at 137-140. The Department has found that the use of the most recent three years of data available is appropriate in the calculation of bad debt expense. D.P.U. 96-50 (Phase I) at 71. A company's bad debt ratio is derived by dividing the three-year delivery service net write-offs by the delivery service billed revenues for the same period. Western Massachusetts Electric Company, D.P.U. 84-25, at 113-114 (1984); D.P.U. 1720, at 27; Massachusetts American Water Company, D.P.U. 1700, at 22 (1984). This bad debt ratio is then multiplied by test year delivery service billed revenues, adjusted for any distribution revenues increase or decrease

that is approved in the current rate case. See D.P.U. 07-71, at 106-109; D.P.U. 96-50 (Phase I) at 71.

The Department has reviewed Eversource's bad debt calculations and the materials supporting these calculations (Exhs. ES-DPH-1, at 48-50; ES-DPH-2 (East), Sch. DPH-8; ES-DPH-2 (East), Sch. DPH-3 (Rev. 3); ES-DPH-3 (East), WP DPH-8 (Rev. 3); ES-DPH-2 (West), Sch. DPH-8 (Rev. 3); ES-DPH-2 (West), Sch. DPH-3 (Rev. 3); ES-DPH-3 (West), WP DPH-8 (Rev. 3)). The Department concludes that the method used by Eversource to calculate its uncollectible expense adjustments is consistent with Department precedent. D.P.U. 09-39, at 164; D.P.U. 07-71, at 106-109; D.P.U. 96-50 (Phase I) at 70-71; D.P.U. 89-114/90-331/91 80 (Phase I) at 137-140. Therefore, the Department approves the application of NSTAR Electric's delivery service related bad debt ratio of 0.7084, applied to test year delivery service revenues (Exh. ES-DPH-2 (East), Sch. DPH-8, at 2 (Rev. 3)). Further, the Department approves the application of WMECo's delivery service related bad debt ratio of 1.2435 percent, applied to test year delivery service revenues (Exh. ES-DPH-2 (West), Sch. DPH-8, at 2 (Rev. 3)).

As set forth above, NSTAR Electric's application of the 0.7084 percent bad debt ratio to the test year normalized delivery service revenues of \$1,623,411,077, produces a bad debt expense of \$11,499,968 (Exh. ES-DPH-2 (East), Sch. DPH-8, at 2 (Rev. 3)). During the test year, the Company booked \$15,073,652 in distribution-related bad debt expense (Exh. ES-DPH-2 (East), Sch. DPH-8 (Rev. 3)). Accordingly, the Department approves

NSTAR Electric's proposed decrease to its test year cost of service in the amount of \$3,573,684.

Further, as set forth above, NSTAR Electric calculated a bad debt expense of \$397,391 associated with its proposed revenue increase (Exh. ES-DPH-2 (East), Sch. DPH-3 (Rev. 4)). Applying the same 0.7084 percent bad debt ratio set forth above to the distribution revenue increase approved in this case of \$12,244,581 results in a bad debt expense in the amount of \$86,739. Accordingly, the Department reduces NSTAR Electric's proposed cost of service by \$310,652.

WMECo's application of the 1.2435 percent bad debt ratio to the test year normalized delivery service revenues of \$249,340,158 produces a bad debt expense of \$3,100,435 (Exh. ES-DPH-2 (West), Sch. DPH-8, at 2 (Rev. 3)). During the test year, WMECo booked \$5,163,634 in distribution-related bad debt expense (Exh. ES-DPH-2 (West), Sch. DPH-8 (Rev. 3)). Accordingly, the Department approves WMECo's proposed decrease to its test year cost of service in the amount of \$2,063,199.

Further, WMECo calculated a bad debt expense of \$431,191 associated with its proposed revenue increase (Exh. ES-DPH-2 (West), Sch. DPH-3 (Rev. 4)). Applying the same 1.2435 percent bad debt ratio set forth above to the distribution revenue increase approved in this case of \$24,785,725 results in a bad debt expense in the amount of \$308,200. Accordingly, the Department reduces WMECo's proposed cost of service by \$122,990.

E. Depreciation Expense

1. Introduction

During the test year, NSTAR Electric booked \$153,841,701 in depreciation and amortization expense, and WMECo booked \$25,799,702 in depreciation and amortization expense (Exhs. ES-DPH-1, at 135; ES-DPH-2 (East), Sch. DPH-23 (Rev. 3); ES-DPH-2 (West), Sch. DPH-23 (Rev. 3)). Eversource proposes to reduce the test year depreciation and amortization expense by \$1,614,549 for NSTAR Electric⁸⁷ and to increase the test year depreciation and amortization expense by \$4,432,822 for WMECo,⁸⁸ based on the application of proposed accrual rates to their pro forma plants in service (Exhs. DPH-1, at 135; DPH-2 (East), Sch. DPH-23 (Rev. 3); DPH-2 (West), Sch. DPH-23 (Rev. 3)). The proposed pro forma distribution and amortization expense is \$152,227,152 for NSTAR Electric and \$30,232,524 for WMECo (Exhs. DPH-1, at 135; DPH-2 (East), Sch. DPH-23 (Rev. 3); DPH-2 (West), Sch. DPH-23 (Rev. 3)).

The Companies' proposed accrual rates are the result of two depreciation studies, conducted separately for NSTAR and WMECo, establishing annual depreciation accrual rates by account as of June 30, 2016 for all electric plant (Exh. ES-JJS-1, at 2). In addition, based on the results of the individual depreciation studies, the Companies have provided

⁸⁷ Eversource states that the proposed decrease for NSTAR Electric is primarily driven by longer service lives, and longer amortization periods for intangible assets than what are reflected in the current rates (Exhs. ES-DPH-1, at 136; ES-JJS-4, at 4).

⁸⁸ Eversource states that the proposed increase for WMECo results primarily from the use of higher net salvage values (Exhs. ES-DPH-1, at 136; ES-JJS-1, at 4-5).

weighted accrual rates, to be employed by the consolidated entity (Exhs. ES-DPH-1, at 135; ES-JJS-1, at 3).

The Attorney General sponsored a witness, providing an alternative set of depreciation accrual rates (Exhs. AG-WWD-1 through AG-WWD-17). The accrual rates the Attorney General proposed rely on the life analysis the Companies provided, as well as the dispersions and percent reserves (Exh. AG-WWD-1, at 32). The only adjustment to the Companies' accrual rate calculation that the Attorney General recommends is to reduce the Companies' proposed net salvage factors (Exh. AG-WWD-1, at 32).

2. Companies' Depreciation Studies

Eversource prepared depreciation studies for NSTAR Electric and WMECo, calculating annual depreciation accrual rates by account for all electric plant as of June 30, 2016 (Exhs. JJS-1, at 2; ES-JJS-2; ES-JJS-3). The Companies' studies employ the straight line remaining life method of depreciation,⁸⁹ using the average service life procedure (Exh. ES-JJS-1, at 7).⁹⁰ The annual depreciation rates seek to distribute the unrecovered cost

⁸⁹ The straight line remaining life method of depreciation allocates the original cost of the property, less accumulated depreciation, less future net salvage, in equal amounts to each year of remaining service life (Exh. ES-JJS-1, at 13).

⁹⁰ The average service life procedure defines the group or account for which the remaining life annual accrual is determined. Under this procedure, the annual accrual rate is determined for the entire group or account based on its average remaining life and the rate is then applied to the surviving balance of the group's cost. The average remaining life of the group is calculated by first dividing the future book accruals (original cost less allocated book reserve less future net salvage) by the average remaining life for each vintage. The average remaining life for each vintage is derived from the area under the survivor curve between the attained age of the vintage and the maximum age. The sum of the future book accruals is then divided by the

of fixed capital assets over the estimated remaining useful life of each unit, or group of assets, in a systematic and rational manner (Exh. ES-JJS-1, at 7). The Companies have also provided weighted accrual rates for future use by the consolidated entity (Exhs. ES-DPH-1, at 135; ES-JJS-1, at 3).

The two-step process of preparing the Companies' depreciation studies began with estimating the service life and net salvage values for each depreciable group of assets (Exh. ES-JJS-1, at 7). Eversource used the retirement rate method on the service life data to determine the average rates of retirement the Companies experienced during the time period covered by the studies (Exh. ES-JJS-1, at 8).⁹¹ Eversource then plotted the average retirement rates to create original survivor curves for each property group, representing the average survivor patterns that several vintage groups experienced (Exh. ES-JJS-1, at 9). Next, the Companies compared the original survivor curves to a standard set of Iowa-type survivor curves ("Iowa curve") to smooth and extrapolate the data (Exh. ES-JJS-1, at 9).⁹²

sum of the annual accruals to determine the average remaining life of the entire group for use in calculating the annual depreciation accrual rate (Exh. ES-JJS-1, at 13-14).

⁹¹ The retirement rate method is an actuarial method of developing survivor curves based on the average rate of retirement (Exh. ES-JJS-1, at 8).

⁹² Iowa-type survivor curves are a widely used group of generalized survivor curves that contain the range of survivor characteristics usually experienced by utilities and other industrial companies (Exh. ES-JJS-1, at 9). The Iowa curves were initially developed at the Iowa State College Engineering Experiment Station during the 1920s and 1930s; 18 curves were initially published in 1935, and four additional survivor curves were identified in 1957. D.P.U. 12-25, at 274 n.170.

Each study determines the average service life of the plant account, using the Iowa curve with the closest fit (Exh. ES-JJS-1, at 9).

The Companies estimated life expectancies for significant facilities, with anticipated concurrent retirements of the entire facility, using the life span technique (Exh. ES-JJS-1, at 10).⁹³ The Companies used interim survivor curves to describe the rate of retirement for non-structural elements of the facility, and probable retirement dates provided the rate of final retirement for each year of installation of the facility (Exh. ES-JJS-1, at 10). The Companies' estimates of the probable retirement dates and life spans for each facility were based upon consideration of the age, use, size, construction, management outlook, and the typical life spans experienced and used by other electric utilities for similar facilities (Exh. ES-JJS-1, at 11).

According to the Companies, net salvage value is the salvage value received for the asset upon retirement, less the cost of retiring the asset (Exh. ES-JJS-1, at 12). When the cost to retire the asset exceeds the salvage value, the result is a negative net salvage value (Exh. JJS-1, at 12). The net salvage factors the Companies proposed are based on a combination of statistical analyses and informed judgment (Exh. ES-JJS-1, at 13). The statistical analyses considered the cost of removal and gross salvage ratios to the associated retirements during a 24-year period for NSTAR Electric, and during a 17-year period for WMECo, along with data trends measured using three-year moving averages and the most

⁹³ Under the life span technique, a property unit's final retirement date is estimated, and the estimated survivor curves applied to each vintage of interim replacements are truncated at the ages coinciding with the estimated final retirement date (Exh. ES-JJS-1, at 10).

recent five-year indications (Exh. ES-JJS-1, at 13). The Companies supplemented statistical data with information from management and operating personnel about practices and plans as well as the estimates used by other electric utilities, and analyzed the information to obtain reach informed judgments about average service lives and net salvage characteristics (Exh. ES-JJS-1, at 8). Based on the estimated service life and net salvage values, the Companies calculated the composite remaining lives and annual depreciation accrual rates, using the straight line remaining life method (Exh. ES-JJS-1, at 8, 13).⁹⁴

For certain general plant accounts, Eversource relied on amortization accounting (Exh. ES-JJS-1, at 14). Eversource explains that amortization accounting is used for accounts with a large number of units, but small asset values, where the use of depreciation accounting would be difficult because of the need to conduct periodic inventories to properly account for plant in service (Exh. ES-JJS-1, at 14).⁹⁵ Under amortization accounting, each plant account or group of assets added in each vintage year is assigned an anticipated life during which the asset is expected to remain in service, and then removed from a company's books at the end of that period (Exh. ES-JJS-1, at 14). Consequently, plant that is retired before the end of the amortization period nonetheless remains on a company's books until the

⁹⁴ The straight line remaining life method of depreciation allocates the original cost of the property, less accumulated depreciation, less future net salvage, in equal amounts to each year of remaining service life (Exh. ES-JJS-1, at 13).

⁹⁵ NSTAR Electric uses amortization accounting for Accounts 391.10, 391.20, 393.00, 394.00, 395.00, 397.00 and 398.00; and WMECo uses amortization accounting for Accounts 391.10, 391.20, 393.00, 394.00, 397.00, 397.10, 397.30 and 398.00 (Exhs. ES-JJS-1, at 15; ES-JJS-2, at 45, 50-51; ES-JJS-3, at 45, 50-52). These accounts represent less than two percent of NSTAR Electric's depreciable plant and less than four percent of WMECo's depreciable plant (Exh. ES-JJS-1, at 15).

end of the amortization period, while plant that remains in service as of the end of the amortization period is retired for plant accounting purposes but is not necessarily removed from actual service (Exh. ES-JJS-1, at 14).

In the process of conducting the depreciation studies, the Companies identified deficiencies in the general plant amortization reserves for NSTAR Electric and WMECo (Exhs. ES-JJS-1, at 15; ES-JJS-2, at 50-51; ES-JJS-3, at 50-51). In order to adjust the amortization reserves and achieve more stable accrual rates for these accounts in the future, the Companies first identified, for each account, the reserve balance that would have existed had the proposed amortization rate been used for all assets in that account, as well as the unrecovered difference (Exhs. ES-JJS-2, at 50-51; ES-JJS-3, at 50-51). The Companies then calculated an aggregate unrecovered difference of \$643,489 for NSTAR Electric and \$2,376,406 for WMECo (Exhs. ES-JJS-2, at 50-51; ES-JJS-3, at 50-51). Eversource proposes to collect this unrecovered difference over a five-year period, resulting in an annual amortization of \$128,698 for NSTAR Electric and \$475,881 for WMECo (Exhs. ES-JJS-1, at 15, 17; ES-JJS-2, at 51; ES-JJS-3, at 51; ES-DPH-3 (East), WP DPH-23 (Rev. 3); ES-DPH-3 (West). WP DPH-23 (Rev. 3)).

The Companies applied the depreciation and amortization accrual rates to the account balances of depreciable plant, including the post-test year plant additions, to determine depreciation and amortization expense for each utility plant account

(Exh. ES-DPH-1, at 13).⁹⁶ The result is a proposed depreciation and amortization expense for NSTAR Electric of \$152,227,152 and a proposed depreciation and amortization expense for WMECo of \$30,232,524 (Exhs. DPH-1, at 135; DPH-2 (East), Sch. DPH-23 (Rev. 3); DPH-2 (West), Sch. DPH-23 (Rev. 3)).

3. Attorney General's Depreciation Analysis

The Attorney General retained a depreciation witness who sponsored testimony and offered modified depreciation accrual rates (Exhs. AG-WWD-1 through AG-WWD-17). The Attorney General did not contest Eversource's proposed life analyses, but challenged the net salvage factors the Companies used as excessive (Exh. AG-WWD-1, at 10).

The Attorney General first notes that based on Eversource's actual salvage experience, the Companies have been accruing net salvage values that are 2.9 times the actual net salvage costs incurred, with Account 366 (underground conduit) accruing salvage at a rate ten times in excess of actual salvage (Exh. AG-WWD-1, at 10-16). Furthermore, the Attorney General states that the Companies' percent reserve (i.e., book depreciation reserve divided by book plant in service) has grown from 28.2 percent to 31.8 percent since the Companies' previous depreciation studies, and there has been a corresponding increase in the depreciation reserve of 81 percent versus the increase of 61 percent in plant in service (Exh. AG-WWD-1,

⁹⁶ NSTAR Electric's proposed depreciable plant includes the post-test year additions of \$42,718,949 for the Seafood Way substation, \$32,949,477 for the Electric Avenue substation, and \$29,868,260 for the New Bedford service center (Exhs. ES-DPH-1, at 137, 178; ES-DPH-3 (East), WP DPH-28 (Rev. 3)). WMECo's proposed depreciable plant includes the post-test year addition of \$3,488,926 for the Montague substation (Exhs. ES-DPH-1, at 137, 179; ES-DPH-3 (West), WP DPH-28 (Rev. 3)). Eversource's post-test year plant additions are addressed in Section VII.C above.

at 19-23). The Attorney General also compared the theoretical depreciation reserve to the actual depreciation reserve,⁹⁷ and states that the actual book depreciation reserve is slightly higher than the theoretical depreciation reserve (Exh. AG-WWD-1, at 23-24). Finally, the Attorney General states that Eversource's depreciation studies give greater weight to net salvage as a percentage of retirement, and thereby factor future inflation into the development of the Companies' proposed salvage factors (Exh. AG-WWD-1, at 36-42).⁹⁸

Based on her analysis of the salvage data, the Attorney General determined that different salvage factors are warranted for a number of NSTAR Electric's and WMECo's plant accounts (Exh. AG-WWD-1, at 27-28, 31).⁹⁹ Using Eversource's life analyses and her proposed salvage factors, the Attorney General produced her own proposed depreciation accrual rates (Exhs. AG-WWD-1, at 32; AG-WWD-3, at 1-6). Based on the Companies' depreciable plant balances as of the end of the test year, the Attorney General proposed a

⁹⁷ The theoretical depreciation reserve assumes that the timing of future retirements and net salvage are exactly in conformance with the results predicted by the selected survivor curve. D.P.U. 10-114, at 129 n.57.

⁹⁸ The Attorney General states that the concept of net salvage as a percentage of retirement was developed decades ago, when companies experienced positive salvage values (Exh. AG-WWD-1, at 40-41). She states that the Companies' use of net salvage as a percentage of retirement results in the net cost of removal being determined using the lower value of future dollars, but the collection of those costs in the more-valuable current dollars (Exh. AG-WWD-1, at 41-42).

⁹⁹ The Attorney General proposed the use of different salvage factors for NSTAR Electric plant accounts 366, 367, 369.1, 369.2, and 373 and for WMECo plant accounts 362, 364, 365, 366, 367, 369.1, 369.2, 370, and 371 (Exh. AG-WWD-1, at 31).

decrease in depreciation expense of \$6,539,020 for NSTAR Electric, and a decrease in depreciation expense of \$2,972,154 for WMECo (Exh. AG-WWD-1, at 33).

4. Positions of the Parties

a. Attorney General

The Attorney General argues that the Companies' proposed depreciation accrual rates are excessive, and proposes an alternate set of depreciation accrual rates (Attorney General Brief at 154; Attorney General Reply Brief at 62). Alternatively, she argues that, at a minimum, the Department should employ the principal of gradualism by limiting any change in the net salvage value accrual rates to be no more than 20 percent of the existing net salvage accrual rate (Attorney General Brief at 154; Attorney General Reply Brief at 62). The Attorney General has not challenged any aspect of Eversource's depreciation accrual rate calculations, other than the Companies' selection of net salvage values.

First, the Attorney General argues that the net salvage rates Eversource used in its depreciation studies overstate the actual net salvage costs experienced by 2.9 times (Attorney General Brief at 156, citing Exh. AG-WWD-1, at 15; Attorney General Reply Brief at 51). She notes that the net salvage factors the Companies proposed would amount to an annual cost to ratepayers of \$42,726,188, compared to the \$14,755,633 average experienced between 2013 and 2015 (Attorney General Brief at 156, citing Exh. AG-WWD-1, at 10; Attorney General Reply Brief at 57, citing Exh. AG-WWD-1, at 4). The Attorney General notes that in a recent Connecticut Public Utilities Regulatory Authority ("CPUC")

decision,¹⁰⁰ the CPUC limited net salvage values to 1.2 times the values actually incurred (Attorney General Reply Brief at 57, citing Exh. AG-WWD-1, at 26). The Attorney General argues that her proposal would move the Companies' depreciation accrual rates to be more in line with the Companies' experience (Attorney General Reply Brief at 57, citing Exh. AG-WWD-1, at 28).

Further, the Attorney General cites the percent book reserve and its importance in the determination of depreciation expense calculations (Attorney General Brief at 154, citing RR-DPU-26, at 64-65).¹⁰¹ She notes that the Companies' percent book reserve has been growing, and claims that when the depreciation accruals are significantly higher than the actual incurred net salvage and the actual retirements, the depreciation reserve will grow rapidly (Attorney General Brief at 155, citing Exh. AG-WWD-1, at 19). The Attorney General observes that the percent reserve grew 3.6 percentage points, from 28.2 to 31.8 percent (i.e., 12.8 percent) from the time of the Companies' prior depreciation studies (Attorney General Brief at 155, citing Exh. AG-WWD-1, at 19). She argues that during that period, depreciation accruals have been \$19.2 million per year higher than necessary to maintain a constant percent reserve, and that the Companies have not disputed this growth (Attorney General Brief at 155, citing Exhs. AG-WWD-1, at 19; AG-WWD-5; AG-WWD-13; Attorney General Reply Brief at 52). Additionally, the Attorney General argues that the book depreciation reserve is currently above its theoretically correct level

¹⁰⁰ United Illuminating Company, No. 16-06-04, at 46 (2016).

¹⁰¹ The percent reserve is calculated by dividing the book depreciation reserve by the book cost of gross plant.

(Attorney General Brief at 155, citing Exhs. AG-WWD-1, at 23–24; AG-WWD-7). She argues that the depreciation rates the Companies proposed would continue to increase the percent reserve by \$11.2 million per year, further demonstrating that the proposed depreciation accrual rates are excessive (Attorney General Brief at 155, citing Exhs. AG-WWD-1, at 20; AG-WWD-5; ES-JJS-1, at 4; Attorney General Reply Brief at 52).

The Attorney General notes that the Companies fail to explain why the growth in the percent reserve is necessary, but instead dismiss the growth as “irrelevant” (Attorney General Reply Brief at 52, citing Company Brief at 546). She argues that the percent reserve is not irrelevant, but rather provides a gauge, demonstrating in this case that the Companies’ depreciation accruals collect an excessive amount of depreciation expense (Attorney General Reply Brief at 52). The Attorney General points out that the National Association of Regulatory Utility Commissioners’ (“NARUC”) Depreciation Practices Manual states that “if further analysis confirms a material imbalance, one should make immediate depreciation accrual adjustments” (Attorney General Reply Brief at 53, citing RR-DPU-26, at 187-194). The Attorney General argues that her proposal would maintain the depreciation reserve at or near its theoretically correct level (Attorney General Reply Brief at 54).

Next, the Attorney General argues that the Companies have incorrectly included future inflation in the calculation of the net salvage values (Attorney General Brief at 158, citing Exhs. AG-WWD-1, at 36; ES-JJS-1, at 13; Attorney General Reply Brief at 54, citing Exh. AG-WWD-1, at 34–40). She notes that the first step in performing a salvage analysis

is to convert the observed dollars to constant dollars, which she maintains the Companies have failed to do (Attorney General Brief at 158, citing Exh. AG-WWD-Surrebuttal-2). She argues that because the ratio of salvage to retirements the Companies used includes both current dollars and future dollars, the salvage values incorporate inflation (Attorney General Brief at 158). In addition, the Attorney General argues that the Companies have given more weight to the ratio, unconverted to constant dollars, than they have to the dollar value of experienced net salvage, thereby overstating the values by the time value of money (Attorney General Brief at 158). She asserts that the Companies' analysis produced misleading results by relying on a ratio that includes the impact of inflation that occurs between the time the investment goes into service and the time it is retired (Attorney General Brief at 158; Attorney General Reply Brief at 55). Additionally, she claims that the Companies have conceded that future inflation had an impact on the net salvage values (Attorney General Reply Brief at 54, citing Companies Brief at 545). The Attorney General argues that using a constant dollar analysis would result in a significantly lower negative percent net salvage value (Attorney General Brief at 159, citing Tr. 9, at 1771-1773; Attorney General Reply Brief at 54). Using FERC Account 364 to illustrate her argument, the Attorney General calculates that a constant dollar analysis would yield a negative 37 percent net salvage value, rather than the negative 60 percent calculated in the Companies' depreciation studies (Attorney General Brief at 159; Attorney General Reply Brief at 54, citing Exh. AG-WWD-1, pp. 34-40; Tr. 9, at 1771-73).

The Attorney General further argues that the Companies' calculation of net salvage using current dollars does not result in a cost-based rate and violates NARUC's Public Utility Depreciation Practices Manual, which clearly states that future inflated costs should not be used (Attorney General Brief at 159-160, citing RR-DPU-26, Att. at 21-22). Further, the Attorney General claims that the Companies have mischaracterized her argument, which is not that future customers should bear the cost of retirement, rather that customers should pay only the cost of retirement and not an artificially inflated one (Attorney General Reply Brief at 55).

The Attorney General argues that the Companies' proposed net salvage values would also result in intertemporal subsidization of future ratepayers who would potentially benefit from a smaller rate base and lower returns (Attorney General Brief at 160; Attorney General Reply Brief at 57).¹⁰² She also notes that the proposed net salvage factors are significantly more negative than those currently approved by the Department, representing an increase from negative 35 percent to negative 60 percent and adding \$2,526,650 to the Companies' depreciation expense (Attorney General Brief at 157, citing Exh. AG-WWD-1, at 17). The Attorney General points out that the Companies' proposed net salvage factors are inconsistent with other similarly situated utility companies (Attorney General Brief at 157, citing Exh. AG-6-17).

The Attorney General argues that the Companies' proposal would in effect transfer the burden of raising capital from shareholders to ratepayers, to the detriment of ratepayers

¹⁰² Intertemporal subsidization is the incidence of ratepayers bearing the cost of benefits that accrue to previous or future customers.

(Attorney General Reply Brief at 61, citing Exh. ES-JJS-Rebuttal at 48). She argues that because the effect of higher depreciation accruals on rate base does not affect distribution rates until a subsequent rate case, ratepayers will not receive a return on the depreciation expense they have been charged, resulting in an interest free loan to the Companies (Attorney General Reply Brief at 61, citing Tr. 9, at 1791-1796). Further, she argues that the Companies' position about future net rate base being lower is based on the assumption that the current rate-base regulation will continue unchanged for decades into the future (Attorney General Reply Brief at 61, citing Tr. 9, at 1791-1796). She contends that ratepayers would be better off paying off credit card debt than paying more in depreciation expense (Attorney General Brief at 160; Attorney General Reply Brief at 61).

The Attorney General notes that other jurisdictions have adopted the net salvage approach she is recommending (Attorney General Brief at 161; Attorney General Reply Brief at 56, citing Exh. AG-WWD-1, at 28). She argues that her proposal would charge ratepayers 2.2 times the actual net salvage experienced, rather than the 2.9 times actual net salvage that the Companies' proposal would produce (Attorney General Brief at 162; Attorney General Reply Brief at 57). The Attorney General claims that adopting her proposed method would be a gradual improvement, taking into consideration the interest of ratepayers as well as those of the Company's shareholders (Attorney General Brief at 163; Attorney General Reply Brief at 57).

The Attorney General notes that Eversource has proposed net salvage values that are more negative than current values for 13 of 23 accounts, many being significantly more

negative (Attorney General Reply Brief at 62, citing Exh. AG-WWD-1, at 35).¹⁰³ Thus, she recommends that, barring the approval of her proposed depreciation accrual rates, the Department employ gradualism, limiting any change in the net salvage value accrual rates to 20 percent of the existing net salvage accrual rate, to dampen the impact of rate increases from other aspects of this base rate proceeding (Attorney General Brief at 164; Attorney General Reply Brief at 62). She notes that the Department considered gradualism when evaluating the reasonableness of a company's proposed net salvage factors (Attorney General Reply Brief at 62, citing Fitchburg Gas and Electric Light Company, D.P.U. 15-80/15-81, at 217-18).

b. Cape Light Compact

The Cape Light Compact supports the use of the Attorney General's proposed depreciation accrual rates (Cape Light Compact Brief at 82, 83). The Cape Light Compact contends that the Attorney General has provided ample rationale to support her proposal (Cape Light Compact Brief at 82).

c. Companies

Eversource argues that the Attorney General's proposal is a radical departure from both nationally accepted regulatory policy and Department precedent, and would result in intergenerational inequity (Companies Brief at 542). The Companies maintain that the cost of net salvage must be allocated over the period of time that an asset will be in service, so that the future costs of net salvage are charged to the customers receiving the benefit

¹⁰³ Of the remaining ten accounts, the Companies proposed less negative net salvage values for six accounts, and no change for four accounts (Attorney General Reply Brief at 62, citing Exh. AG-WWD-1, at 28).

(Companies Brief at 542, citing Exh. ES-JJS-Rebuttal-1, at 6-7, 16, 21, 34). The Companies argue that the Attorney General’s proposal establishes net salvage rates based on an approximation of recent net salvage costs, which is akin to treating salvage costs as an operating expense (Companies Brief at 453; Companies Reply Brief at 163). Additionally, Eversource argues that future removal costs are likely to be higher than current removal costs because retirements will likely be higher in the future (Companies Brief at 544, citing Exh. ES-JJS-Rebuttal-1, at 36-37, 40). The Companies contend that the Attorney General’s excessive focus on current net salvage costs would give rise to significant under-recoveries of salvage costs, and result in deferring these costs to future customers who will not have received the benefits of these assets (Companies Brief at 544, citing Exh. ES-JJS-Rebuttal-1, at 36; Companies Reply Brief at 163).

The Companies note that the Attorney General made a similar argument in Bay State Gas Company’s (“Bay State Gas”) 2012 base rate proceeding, in which she recommended that the Department reduce the net salvage component of depreciation expense for Bay State (Companies Brief at 547, citing D.P.U. 12-25, at 278, 309; Companies Reply Brief at 163, citing D.P.U. 12-25, at 278, 283). Eversource maintains that while the Attorney General criticized Bay State Gas’ net salvage, as including inflated future cost of removal, Bay State Gas responded that the costs of annual retirements in the future will exceed current levels of retirements, and that its approach would result in intergenerational equity (Companies Brief at 547, citing D.P.U. 12-25, at 282, 297). Eversource states that in the end, the Department rejected the Attorney General’s arguments on net salvage, and contends that the Department

should reject the Attorney General's proposal in this proceeding as well (Companies Brief at 547, citing D.P.U. 12-25, at 309-312; Companies Reply Brief at 163).

The Companies also contend that the Attorney General has not sufficiently supported her claim that her net salvage approach has been adopted in multiple jurisdictions, as she cites only to Connecticut and Maine as the other jurisdictions that have adopted the approach (Companies Reply Brief at 160-161). Moreover, Eversource argues that the Attorney General's proposal in the instant docket is actually inconsistent with the approaches adopted by both Connecticut and Maine (Companies Reply Brief at 161). The Companies point out that while the Attorney General proposes net salvage rates based on multiplying the three-year average net salvage rate by 2.2, Connecticut adopted a net salvage method of multiplying a company's three-year average of the net salvage cost by a factor of 1.2, and Maine relied on a three-year average net salvage factor with no multiplication factor (Companies Reply Brief at 160-161, citing Exh. AG-WWD-Surrebuttal-1, at 31; Tr. 9, at 1717-1719).

The Companies contest the Attorney General's argument that they have incorporated future inflation into their net salvage factors (Companies Brief at 544-545). The Companies contend that their proposed depreciation rates are based on the nominal costs for both the original and the net salvage costs, and that neither is adjusted for inflation (Companies Brief at 545, citing Exh. ES-JJS-Rebuttal-1, at 46; Companies Reply Brief at 164). They argue that to the extent that there is any future inflation included in their net salvage analysis, the inclusion has only a minimal impact on the results, and maintain that the Attorney General

implicitly incorporates inflation by using a multiple of current net salvage costs (Companies Brief at 545, citing Exh. ES-JJS-Rebuttal-1, at 44-45; Companies Reply Brief at 163). The Companies argue that their approach assures that the future cost to remove an asset will be recovered from current customers over the service life of the asset (Companies Brief at 545; Companies Reply Brief at 163). Additionally, the Companies challenge the amount of inflation that is actually included. Using NSTAR Electric's Account 364 for illustrative purposes, Eversource points out that while the average age of retirements in this account is 20.7 years, the average age of assets in the account is 18.0 years, thus concluding that there are only 2.7 years of inflation included (Companies Brief at 545, citing Exh. ES-JJS-Rebuttal-1, at 45; Companies Reply Brief at 163, citing Exh. ES-JJS-Rebuttal-1, at 44-45).

The Companies argue that the estimated net salvage values used in their studies are based primarily on company-specific information, not on data from other electric utilities, and that industry data are only used as a guide (Companies Brief at 545). They assert that net salvage rates are often higher for companies in or near large metropolitan areas, where removal costs are greater, which limits the relevance of a comparison to industry averages (Companies Brief at 546). The Companies further note that other distribution firms use net salvage values that are more negative, and claim that the net salvage values used in their own depreciation studies were well within the industry range (Companies Brief at 546, citing Exhs. ES-JJS-Rebuttal-1, at 53; AG-6-17, Att.).

The Companies dismiss as irrelevant the Attorney General's argument regarding the increase in the book reserve, and do not consider the increase to be a basis upon which to reject their proposal (Companies Brief at 546). The Companies argue that the book reserve percentage increases over time as assets depreciate, and that such increases do not indicate in any way that the Companies' depreciation rates are too high (Companies Brief at 546, citing Exh. ES-JJS-Rebuttal-1, at 51; Companies Reply Brief at 165).

The Companies argue that while the Attorney General's proposal may produce a reduction in customer rates in the short-term, through lower depreciation accrual rates, it will result in higher costs to customers over the long term (Companies Brief at 547; Companies Reply Brief at 164). Eversource contends that reducing depreciation rates would reduce the level of accumulated depreciation over time and, consequently, produce a larger rate base in the future, thus requiring customers to pay a larger return on rate base (Companies Brief at 547; Companies Reply Brief at 164, 165). The Companies note that the Attorney General's witness acknowledged the increase in future rate base would result with her proposed accrual rates (Companies Brief at 547, citing Tr. 9, at 1791, 1795).

The Companies oppose the Attorney General's alternative proposal to limit increases in net salvage factors to twenty percent, stating that their proposed net salvage factors overall are not significantly higher than a twenty percent increase (Companies Brief at 548, citing Exhs. ES-JJS-Rebuttal-1, at 45; AG-6-21(a); ES-JJS-2, at 154, 158; ES-JJS-3, at 128-129; Companies Reply Brief at 165-166). The Companies note that there are number of large plant accounts for which they have proposed a net salvage rate that is either less negative or

unchanged,¹⁰⁴ as well as several accounts where their proposed net salvage rates are less negative than the historical net salvage analysis indicated (Companies Brief at 548, citing Exhs. ES-JJS-Rebuttal-1, at 45; AG-6-21(b) Att.; ES-JJS-3, at 128; Companies Reply Brief at 166).¹⁰⁵ Eversource claims, therefore, that it has already adopted a conservative approach and that the Attorney General's recommendation is unnecessary (Companies Brief at 548, citing Exh. ES-JJS-Rebuttal-1, at 45; D.P.U. 15-80/D.P.U. 15-81, at 217-218; Companies Reply Brief at 166). Eversource argues that, on a consolidated basis, the proposal represents a reduction in test year depreciation expense of approximately \$8.4 million (Companies Brief at 550; citing Exhs. ES-JJS-1, at 17; ES-JJS-5; Companies Reply Brief at 166).

Based on these considerations, the Companies argue that the Attorney General's recommendation would overturn the Department's ratemaking precedents on depreciation and will harm intergenerational equity (Companies Brief at 550). Thus, they assert that the Department should reject the Attorney General's depreciation rates and associated recommendations in this proceeding and instead adopt the Companies' depreciation proposal (Companies Brief at 550).

¹⁰⁴ NSTAR Electric Account 365 (Overhead Conductor and Devices), NSTAR Electric Account 367 (Underground Conductors and Devices), NSTAR Electric Account 368 (Line Transformers), and NSTAR Electric Account 369.1 (Services – Overhead) (Exh. AG-6-21(a), Att.).

¹⁰⁵ WMECo Account 364 (Poles, Towers and Fixtures), WMECo Account 365 (Overhead Conductors and Devices), NSTAR Account 364 (Poles, Towers and Fixtures), and NSTAR Account 366 (Underground Conduit) (Exh. AG-6-21(a), Att.; AG-6-21(b), Att.).

5. Standard of Review

Depreciation expense allows a company to recover its capital investments in a timely and equitable fashion over the service lives of the investments. D.T.E. 98-51, at 75; D.P.U. 96-50 (Phase I) at 104; Milford Water Company, D.P.U. 84-135, at 23 (1985); Boston Edison Company, D.P.U. 1350, at 97 (1983). Depreciation studies rely not only on statistical analysis but also on the judgment and expertise of the preparer. The Department has held that when a witness reaches a conclusion about a depreciation study that is at variance with that witness' engineering and statistical analysis, the Department will not accept such a conclusion absent sufficient justification on the record for such a departure. D.P.U. 92-250, at 64; The Berkshire Gas Company, D.P.U. 905, at 13-15 (1982); Massachusetts Electric Company, D.P.U. 200, at 21 (1980).

The Department recognizes that the determination of depreciation accrual rates requires both statistical analysis and the application of the preparer's judgment and expertise. D.T.E. 02-24/25, at 132; D.P.U. 92-250, at 64. Because depreciation studies rely by their nature on examining historic performance to assess future events, a degree of subjectivity is inevitable.¹⁰⁶ Nevertheless, the product of a depreciation study consists of specific accrual rates to be applied to specific account balances associated with depreciable property. A mere assertion that judgment and experience warrant a particular conclusion does not constitute

¹⁰⁶ This is especially relevant in the calculation of net salvage factors where the cost to demolish or retire facilities cannot be established with certainty until the actual event occurs. D.P.U. 92-250, at 66; D.P.U. 1720, at 44; D.P.U. 1350, at 109-110.

evidence. See Eastern Edison Company, D.P.U. 243, at 16-17 (1980); D.P.U. 200, at 20-21; Lowell Gas Company, D.P.U. 19037/19037-A at 23 (1977).

It thus follows that the reviewer of a depreciation study must be able to determine, preferably through the direct filing, and at least in the form of comprehensive responses to well-prepared discovery, the reasons why the preparer of the study chose one particular life-span curve or salvage value over another. The Department will continue to look to the expert witness for interpretation of statistical analyses but will consider other expert testimony and evidence that challenges the preparer's interpretation and expects sufficient justification on the record for any variances resulting from the engineering and statistical analyses. D.P.U. 89-114/90-331/91-80 (Phase One) at 54-55. To the extent a depreciation study provides a clear and comprehensive explanation of the factors that went into the selection of accrual rates, such an approach will facilitate Department and intervenor review.

6. Analysis and Findings

a. Life Analyses

The Department has reviewed Eversource's depreciation studies and supporting workpapers, and finds that the Companies have properly supported their proposed service lives and survivor curves (Exhs. ES-JJS-1; ES-JJS-2; ES-JJS-3; AG-6-2, Atts. (a) through (f); AG-6-3(a); AG-6-2(b)). Therefore, the Department accepts the Companies' proposed life and survivor curves.

b. Net Salvage Factors

The selection of salvage factors is more subjective than the determination of service lives and survivor curves. This subjectivity occurs because salvage values are theoretically

intended to represent the future cost of retirements, which cannot be known with certainty until the actual retirement occurs. D.P.U. 92-250, at 66; D.P.U. 1350, at 109. Despite this lack of certainty, the determination of net salvage factors is critical to any depreciation study. If the negative net salvage cost (i.e., cost of removal is greater than anticipated salvage value) is overestimated, the depreciation reserve is inflated by the over-accrual of depreciation, and thus will understate a company's rate base in future rate case proceedings. Conversely, if net positive salvage costs (where salvage value is greater than removal costs) are overestimated, capital recovery is deferred, and both the utility and ratepayers face increased risk. D.P.U. 1350, at 107. Consequently, it is necessary to exercised reasoned judgment in the determination of salvage values.

In the instant filing, the Attorney General has challenged, with the support of the Cape Light Compact, Eversource's proposed net salvage factors (Attorney General Brief at 155; Attorney General Reply Brief at 51; Cape Light Compact Brief at 82). Specifically, the Attorney General argues that the Companies fail to account for inflation in their calculation of the proposed net salvage values (Attorney General Brief at 155; Attorney General Reply Brief at 51). The Companies counter-argue that the traditional depreciation approach was followed, and that to the extent any inflation is included in the calculation, the effect is minimal (Companies Brief at 542, 545).

The Companies' book percent reserve has grown from 28.2 percent at the time of the prior depreciation studies to 31.8 percent in the June 30, 2016 (Exh. AG-WWD-1,

at 19-20).¹⁰⁷ Book percent reserve measures the portion of depreciated plant that has already been recovered from past ratepayers (RR-DPU-26, Att. at 64-65). One approach to calculating the depreciation accrual rate is to use percentages as follows,

$$\text{depreciation accrual rate} = \frac{100 - u - c'}{E}$$

where u is the percent reserve, c' is the percent future net salvage, and E is estimated average remaining life (RR-DPU-26, Att. at 64-65). Therefore, the book percent reserve directly affects the depreciation accrual rate, and acts as an auto-corrective mechanism (RR-DPU-26, Att. at 65). Because depreciation accruals are credited to the depreciation reserve account, to the extent that the accrual rates are too high, the depreciation reserve will grow, as well as the book percent reserve, assuming all other factors being equal. That growth will in turn yield lower depreciation accrual rates in future calculations (RR-DPU-26, Att. at 64-65). Therefore, the Companies' assertion that the percent reserve is irrelevant is incorrect. Nevertheless, the growth in percent reserve informs us only that prior period depreciation accrual rates were too high, and does not in itself indicate whether the currently proposed depreciation accrual rates are also excessive.¹⁰⁸ Consequently, this finding does not represent the end of our analysis.

¹⁰⁷ The book percent reserve is calculated as the book depreciation reserve divided by the book plant in service (RR-DPU-26, Att. at 65).

¹⁰⁸ In the case of small companies where capital additions have been minimal, the percent reserve will increase over time, and may reach 100 percent. Harbor Electric Energy Company, D.P.U. 15-157, at 115-116 & n.42 (2016) (percent reserve of 100 percent); South Egremont Water Company, D.P.U. 95-119/122, at 12 (1996) (percent

The Companies' average annual net salvage cost between 2013 and 2015 was \$14,755,633, while the Companies' estimated net salvage costs over this same period of \$42,726,188 (Exh. AG-WWD-1, at 10). Eversource defends its salvage estimates, maintaining that future removal costs are likely to be higher than current removal costs because retirements will likely be higher in the future (Companies Brief at 156; Companies Reply Brief at 54). Labor costs are a significant component of the cost of removal, and while they may increase over time, so do placement labor costs, and a higher removal cost related to a higher value of plant retired may result in essentially no change in the percentage cost of removal (RR-DPU-26, Att. at 160-161).¹⁰⁹ Unless expectations of life or inflation change, the salvage ratio should be constant (Exh. AG-WWD-Surrebuttal-2, at 5). The Companies have not provided any evidence that they anticipate a change in inflation, but they state that average service lives have increased for many accounts (Exh. JJS-1, at 4). The effect of longer average service lives, however, would be to decrease the salvage ratio, rather than to increase it (Exh. AG-WWD-Surrebuttal-2, at 4-5).¹¹⁰ Furthermore, if labor costs and/or the

reserve of 93 percent) Granville Centre Water Company, D.P.U. 89-241, at 2 (1990) (percent reserve of 79 percent).

¹⁰⁹ Cost of removal is essentially labor, although transportation, costs of disposing of wastes, repaying costs, and other items are also includable (RR-DPU-26, Att. at 34).

¹¹⁰ The salvage ratio is a function of age and inflation and can be modeled using the equation $\left(\frac{V}{B}\right) x (1 + p)^A$ where V is the salvage value, B is the installation cost, p is past inflation and A is the years since installation¹¹⁰ (Exh. AG-WWD-Surrebuttal-2, at 4-5). Then the future salvage of the replacement is $Vx(1 + f)^L$ where f is the future inflation rate and L is the life of the replacement (Exh. AG-WWD-Surrebuttal-2, at 4). The future salvage ratio then, is $\frac{Vx(1+f)^L}{Bx(1+p)^K}$ and if

number of items to be removed are increasing, it becomes economical in many cases to invest in special tools that may actually result in an overall decrease in removal cost per item removed (RR-DPU-26, Att. at 160-161). The factors that cause future costs of removal to differ from the past, such as changes in labor costs and removal techniques, are difficult to predict with accuracy over the considerably long periods of time between the placement of plant and its retirement (RR-DPU-26, Att. at 161).

The Attorney General argues that the salvage values are too high because Eversource fails to convert the salvage ratio to constant dollars, thereby ignoring the time value of money (Attorney General Brief at 158). The Companies counter that the Attorney General only considers inflation in the net salvage values, but not the initial installation costs (Companies Brief at 545; Companies Reply Brief at 163). Additionally, the Companies contend that to the extent that any inflation is included, it is only for the difference between the average age of the assets and the average age of retirements (Companies Brief at 545; Companies Reply Brief at 163). Salvage ratios are a function of inflation (Exhs. AG-WWD-Surrebuttal-2, at 5; ES-1, at 7). The numerator is measured in dollars at the time of retirement, while the denominator is measured in dollars at the time of installation (Exh. AG-WWD-1, at 37). A first step in salvage analysis is to convert the observed dollars to constant dollars, which removes inflation from the ratio so that the salvage schedules can be analyzed (Exhs. AG-WWD-Surrebuttal-2, at 8; ES-1, at 5). The Companies argue that the

the past inflation rate is equal to the future inflation rate, and the life of the original equals that of the replacement, then the salvage ratio will be V/B , unchanged from the original (Exh. AG-WWD-Surrebuttal-2, at 4). That is, the ratio of net salvage cost to retirement costs will be unchanged after L years.

Attorney General selectively applies the concept of inflation by adjusting only the net salvage and ignoring the initial installation costs (Companies Brief at 545; Companies Reply Brief at 163). The Department disagrees. The Companies earn a return on the net plant at the weighted cost of capital. D.T.E. 03-40, at 321; Assabet Water Company, D.P.U. 95-92, at 31 (1996); D.P.U. 1580, at 13 (see Schedules 4 below). The weighted cost of capital consists of equity and debt. Debt earns a nominal interest rate which is the real interest rate, plus expected inflation. Equity earns a return, which can be calculated as the cost of debt, plus a risk premium. Therefore, the inflation is embedded in the Companies' return on investment. Additionally, the Companies argue that any inflation for net salvage is only for the period represented by the difference between the average age of the plant and the average age of retirement (Companies Brief at 545; Companies Reply Brief at 163). The Companies use NSTAR Electric's Account 364 to demonstrate that an inflation is nominal,¹¹¹ citing to 2.7 years of inflation for that particular account (Companies Brief at 545; Companies Reply Brief at 163). However, that would belie the argument that the net salvage costs are expected to be 1.7 times the current costs experienced for that particular account.¹¹²

The effect of including a future cost of removal without discounting it for the time value of money is to give the Companies the equivalent of an interest free loan. The Companies begin collecting the cost of removal when the plant is installed, which it should, as the ratepayers that benefit from the plant should be the ratepayers who pay for the plant to

¹¹¹ NSTAR Electric's Account 364 is associated with Poles, Towers and Fixtures.

¹¹² The three-year average net salvage amount for NSTAR Account 364 is \$2,762,226, while Eversource proposes to include \$4,800,217 in the calculation of depreciation expense (Exh. AG-WWD-1, at 15, Table 1).

avoid intergenerational subsidization. By including an inflated net salvage value, however, the ratepayers pay for a cost that the Companies will not incur for some time into the future. See D.T.E. 98-51, at 76; D.P.U. 1350, at 107. During that time period, Eversource has the use of those depreciation funds. Assuming that Eversource invests in itself, the Companies would realize the benefit of something akin to the allowed rate of return. However, in the future when the Companies file a petition seeking new base distribution rates, the inflated depreciation rates will have the effect of increasing the Companies' accumulated depreciation. This in turn reduces the net plant on which the Companies will earn a return going forward, by the difference in the inflation for the period since the most recent base rate case. Therefore, the money "borrowed" from ratepayers will effectively be given back, compounding for the period of time between rate case filings. In turn, assuming that Eversource files rate cases once every five years, the new depreciation rates in the subsequent base rate case filing would then repeat the process, effectively resulting in a series of short term, interest free loans of five-, four-, three-, two- and one-year durations, repeated indefinitely. Additionally, a PBR mechanism, that increases the entire rate base annually, would exacerbate the situation. Because rate-base includes the depreciation expense, which is composed, in part, of the estimated net salvage values, each year the amount that ratepayers are charged for net salvage would be inflated by the PBR factor, which would increase the over-collection.

The Companies argue that lower depreciation rates would result in a larger rate base in future rate cases, against which ratepayers would pay a return (Companies Reply Brief

at 164). While this is true, the additional future cost to ratepayers would only be the product of the weighted cost of capital and the reduction in depreciation accruals. The savings to ratepayers would be $(1-WCC)$ multiplied by the reduction in depreciation accruals. Therefore, the argument is unpersuasive and, because rates are based on uninflated net salvage values, irrelevant to our analysis here.

The Companies also argue that the Attorney General would prefer to treat net salvage costs as the equivalent of an operating expense rather than to allocate the costs over the time in which assets serve customers (Companies Reply Brief at 163). The NARUC Depreciation Manual reports that many jurisdictions have chosen to treat salvage costs as operating expenses, in part because the difficulty in accurately estimating gross salvage values and the future costs of removal has generated considerable controversy (RR-DPU-26, Att. at 157). Additionally, the NARUC Depreciation Manual cites the trend towards negative salvage values as an incentive for some jurisdictions to treat the costs as operating expenses (RR-DPU-26, Att. at 157). Notwithstanding NARUC's evaluation of depreciation practices, however, the Department has long recognized the incorporation of net salvage in a company's depreciation accrual rates, as embodied in the remaining life method. D.P.U. 12-25, at 307; D.P.U. 1350, at 97-98; Bay State Gas Company, D.P.U. 19497, at 16-17 (1978); Boston Gas Company, D.P.U. 19470, at 48 (1978). Our findings with respect to Eversource's net salvage analysis do not signal the Department's intention to require the expensing of salvage costs, but rather the Department's recognition that the Companies have overstated their salvage estimates.

Based on the foregoing considerations, the Department finds that Eversource's proposed net salvage factors overstate the Companies' salvage costs and produce excessive depreciation accrual rates. As a partial remedy, the Attorney General has proposed the use of different salvage factors for five NSTAR Electric plant accounts and nine WMECo plant accounts (Exh. AG-WWD-1, at 31). The Department has examined both Eversource's and the Attorney General's proposed net salvage factors, including the assumptions behind the selection of each net salvage factor. Based on our examination, the Department finds that the Attorney General's proposed salvage factors for NSTAR Electric's accounts 366, 367, 369.1, 369.2, and 373, as well as her proposed accrual rates for WMECo's accounts 362, 364, 365, 366, 367, 369.1, 369.2, 370, and 371 strike a reasonable balance between historic net salvage trends, more recent net salvage trends, and the Companies' anticipated future net salvage costs, while maintaining the theoretical depreciation reserve. Therefore, the Department will use the Attorney General's proposed net salvage rates in determining Eversource's depreciation accrual rates.

c. Amortization Reserve Deficiency Adjustment

As noted above, Eversource proposes a five-year amortization of what it considers to be \$643,489 in under-accruals in NSTAR Electric's general plant accounts and \$2,376,406 in under-accruals in WMECo's general plant accounts (Exhs. ES-JJS-2, at 50-51; ES-JJS-3, at 50-51). An accrual rate must be sufficient to permit a company to recover its original capital investment over the productive life of the asset, while avoiding placing the financial burden solely on current or future customers. D.T.E. 98-51, at 76. Where the Department

determines that under-accruals have developed because of neglectful practices of management, ratepayers should not bear the financial burden of such negligence.

D.P.U. 19470, at 49-50; Wannacomet Water Company, D.P.U. 13525 (1962).

The Companies' over- and under-accruals in general plant accounts occurred because of the inevitable variances among the vintage balance, theoretical reserve, and book reserve that occur with amortization accounting (Exh. DPU-11-11). There is no evidence that the over- and under-accruals in these accounts are the result of any imprudent actions on the part of NSTAR Electric or WMECo. Accordingly, the Department finds that the Companies have correctly calculated the under-accruals associated with their general plant accounts. In reaching this conclusion, the Department finds that the Companies' proposed amortization rates for Accounts 391 through 398 are reasonable and supported by the evidence (Exhs. ES-JJS-2, at 45-46, 50-51; ES-JJS-3, at 45-46, 50-51).

The Department has examined the Companies' proposed method to eliminate their amortization under-accruals. Eversource proposes the use of a five-year amortization period, reasoning that this particular amortization period is the most commonly used amortization period, correlates with the shortest amortization period for each of the accounts, and is generally close to the period by which the Companies would prepare their next depreciation studies (Exh. DPU-11-11). For NSTAR Electric, the remaining lives of general plant assets booked to Accounts 391.1, 391.2, 393, 394, 395, 397, and 398 range from 3.5 years for Account 391.2 to 24.0 years for Account 393, with a dollar-weighted overall average of 7.8 years (see Exh. NSTAR-JJS-2, at 50-51). Most of NSTAR Electric's over- and

under-accruals are associated with Accounts 391.1, 391.2, and 397, of which Accounts 391.1 and 397 and have remaining lives of approximately ten years (Exh. NSTAR-JJS-2, at 50-51). For WMECo, the remaining lives of general plant assets booked to Accounts 391.1, 391.2, 393, 394, 395, 397 (GPS), 397 (Other), and 398 range from 3.2 years for Account 391.1 to 24.7 years for Account 397 (GPS), with a dollar-weighted overall average of 8.0 years (see Exh. NSTAR-JJS-3, at 50-51). Most of WMECo's under-accruals are associated with Account 397, which has a remaining life of 6.7 years (Exh. NSTAR-JJS-3, at 50-51).

Based on this information, the Department finds that using a five-year amortization results in excessive charges to ratepayers. Based on our examination of the remaining life of the assets and accounts most significantly affected by the over- and under-accruals, the Department finds an amortization period of eight years strikes a reasonable balance between the need to eliminate the overall under-accruals and the need for intergenerational equity among current and future customers. Accordingly, the Department will apply an eight-year amortization to NSTAR Electric's under-accrual of \$643,489, which produces an annual amortization of \$80,436 for its general plant under-accruals. The Department will apply an eight-year amortization to WMECo's under-accrual of \$2,376,406, which produces an annual amortization of \$297,051 for its general plant under-accruals.

d. Conclusion

In order to calculate the Company's annual depreciation expense based on the revised accrual rates, the Department has applied the accrual rates approved by this Order to the Company's depreciable plant balances included in rate base. As discussed in Section VII.C

above, the Department has allowed the inclusion of NSTAR Electric's proposed post-test year plant additions, but has excluded \$3,335,790 in post-test year additions associated with WMECo's Montague substation upgrades. Finally, the Department has reduced NSTAR Electric's amortization reserve deficiency adjustment from the proposed \$128,698 to \$80,436, and has reduced WMECo's amortization reserve deficiency adjustment from the proposed \$475,881 to \$297,051. Based on this analysis, the Department finds that NSTAR Electric's annual depreciation and amortization expense is \$145,626,751, and that WMECo's annual depreciation and amortization expense is \$29,984,446. Accordingly, NSTAR Electric's proposed depreciation expense is reduced by \$6,600,402, and WMECo's proposed depreciation expense is reduced by \$3,248,078.

F. Lease Expense

1. Introduction

During the test year, NSTAR Electric and WMECo booked \$3,660,277 and \$749,592, respectively, in lease expense associated with various facilities (Exhs. ES-DPH-2 (East), Sch. DPH-18 (Rev. 3); ES-DPH-2 (West), Sch. DPH-18 (Rev. 3)). The test year lease expense includes rent and facility expenses allocated to NSTAR Electric and WMECo associated with Eversource's use of property located at 56 Prospect Street in Hartford, Connecticut ("56 Prospect Street") (Exhs. AG-26-13, Atts. (a) at 2, (b); AG-26-22, Atts. (a), (b); AG-31-15; AG-50-12; Tr. 4, at 829-833). Specifically, the Companies' respective test year costs of service include \$110,453 and \$18,300 associated with rent expense and \$89,397 and \$8,867 associated with facility expense related to 56 Prospect Street (Exhs. AG-26-13, Atts. (a) at 2, (b); AG-26-22, Atts. (a), (b); AG-31-15; AG-50-12).

Eversource proposes a net increase of \$620,331 in NSTAR Electric's test year lease expense pertaining to the following adjustments: (1) an increase of \$348,979 associated with a lease for the Waltham Service Center executed in August 2016; (2) an increase of \$377,297 associated with an increase in the net plant value of Eversource's facility in Southborough, along with an increase in the occupancy rate of that facility from 25 percent to 32 percent; and (3) a decrease of \$105,945 associated with an intercompany rent general ESC overhead rate ("GSCOH") offset (Exh. ES-DPH-2 (East), Sch. DPH-18 (Rev. 3)). These adjustments result in a pro forma test year lease expense of \$4,280,608 for NSTAR Electric (Exh. ES-DPH-2 (East), Sch. DPH-18 (Rev. 3)).

Eversource proposes a net increase of \$13,819 in WMECo's test year lease expense pertaining to the following adjustments: (1) an increase of \$12,795 associated with scheduled increases in several leases between WMECo and various communications companies; (2) an increase of \$1,342 associated with scheduled increases in lease payments beginning in September 2016 for Eversource's satellite facility in Lee; and (3) a decrease of \$317 associated with an intercompany rent GSCOH offset (Exh. ES-DPH-2 (West), Sch. DPH-18 (Rev. 3)). These adjustments result in a pro forma test year lease expense of \$763,412 for WMECo (Exh. ES-DPH-2 (West), Sch. DPH-18 (Rev. 3)).

2. Positions of the Parties

a. Attorney General

The Attorney General does not challenge the Companies' proposed pro forma adjustments to lease expense. However, the Attorney General argues that the Companies have inappropriately included in their test year costs of service the aforementioned expenses

associated with 56 Prospect Street (Attorney General Brief at 134, citing Exhs. ES-DPH-2 (East), Sch. 18, at 2 (Rev. 2); ES-DPH-2 (West), Sch. 18, at 2 (Rev. 2); AG-50-12; Tr. 4, at 829-833; Attorney General Reply Brief at 28). According to the Attorney General, the Companies have failed to provide persuasive evidence that 56 Prospect Street is necessary for providing electric distribution service to Massachusetts ratepayers, or that the facility benefits such ratepayers (Attorney General Brief at 134; Attorney General Reply Brief at 29). Further, the Attorney General notes that the Companies already have a Massachusetts headquarters consisting of 25,676 square feet of space in the Prudential Center Tower in Boston, as well as significant additional office space in Westwood and New Bedford (Attorney General Brief at 134, citing Exhs. ES-DPH-2 (East), Sch. DPH-18, at 2 (Rev. 2); ES-DPH-2 (West), Sch. DPH-18, at 2 (Rev. 2); AG-26-13 & Atts.; AG-50-15). Finally, the Attorney General contends that the Connecticut Public Utility Regulatory Authority (“PURA”) denied the Companies’ affiliate, Connecticut Light & Power Company (“CL&P”), recovery of costs associated with leasing 56 Prospect Street on the basis that those costs were superfluous and unnecessary (Attorney General Brief at 135; Attorney General Reply Brief at 28). Accordingly, the Attorney General asserts that the Department should disallow the rent and facility expenses associated with 56 Prospect Street (Attorney General Brief at 136; Attorney General Reply Brief at 30).

b. Companies

As an initial matter, the Companies challenge the Attorney General’s reliance on PURA’s decision concerning 56 Prospect Street (Companies Brief at 458). According to the

Companies, PURA did not find that 56 Prospect Street was unnecessary, but instead disallowed the costs associated with the facility because Northeast Utilities made the explicit decision to purchase the property rather than expand the utility's prior location in Berlin, Connecticut (Companies Brief at 458, citing Exh. AG-15, at 39-40).

Further, Eversource argues that, regardless of the PURA decision, the Companies have demonstrated in this proceeding that Massachusetts customers directly benefit from the lease of 56 Prospect Street (Companies Brief at 458-459). For example, Eversource notes that senior staff meetings and presentations related to the Massachusetts distribution functions are conducted at that facility (Companies Brief at 458-459, citing Exh. ES-DPH-1, at 1; Tr. 4, at 833).

In addition, Eversource contends that only costs related to the Companies' distribution functions are included in their respective revenue requirements, and that such costs are properly allocated to the Companies based on the square footage of floor space occupied by each business unit (Companies Brief at 459). As such, the Companies claim that lease expenses associated with 56 Prospect Street are reasonable in nature and, therefore, appropriate for recovery (Companies Brief at 459-460, citing D.P.U. 15-155, at 298; D.P.U. 89-114/90-331/91-80 (Phase I) at 96; Companies Reply Brief at 128).

Finally, the Companies assert that the remaining pro forma adjustments to their lease expenses reflect known and measurable changes in rent expense through July 1, 2018, and are reasonable in nature (Companies Brief at 220-221). Therefore, Eversource asserts that

the Department should approve the Companies' proposed pro forma adjustments (Companies Brief at 221).

3. Analysis and Findings

a. Introduction

A company's lease expense represents an allowable cost qualified for inclusion in its overall cost of service. D.T.E. 03-40, at 171; D.P.U. 88-161/168, at 123-125. The standard for inclusion of lease expense is one of reasonableness.

D.P.U. 89-114/90-331/91-80 (Phase One) at 96. Known and measurable increases in rental expense based on executed lease agreements with unaffiliated landlords are recognized in cost of service as are operating costs (e.g., maintenance, property taxes) that the lessee agrees to cover as part of the agreement. D.P.U. 95-118, at 42 n.24; D.P.U. 88-67 (Phase I) at 95-97. When facility leases have been entered into with affiliated companies, the Department will limit the return component to the weighted cost of capital applicable to the petitioning company, and limit depreciation expense to the amount generated by the petitioning company's own accrual rates. D.P.U. 10-55, at 266-267; D.P.U. 08-27, at 84.

b. Companies' Test Year Lease Expense Associated with 56 Prospect Street Lease

As noted above, the Companies' respective test year costs of service include \$110,453 and \$18,300 associated with rent expense, and \$89,370 and \$8,867 associated with facility expense related to 56 Prospect Street (Exhs. AG-26-13, Atts. (a) at 2, (b); AG-26-22, Atts. (a), (b); AG-31-15; AG-50-12). Eversource argues that Massachusetts customers directly benefit from the lease of 56 Prospect Street and, therefore, it is appropriate to

include a portion of the lease expenses associated with that property in the Companies' costs of service (Companies Brief at 458-459). We disagree.

The record shows that, at most, one Eversource employee who otherwise exclusively focuses on Massachusetts operations sometimes travels to 56 Prospect Street for "senior team presentations and other meetings" (Tr. 4, at 435). The Companies have failed to provide any persuasive evidence regarding the nature, frequency, or duration of the meetings, why Massachusetts personnel were invited, or the extent to which Massachusetts operations were even discussed.¹¹³ Based on the record, we simply cannot discern any benefits to Massachusetts ratepayers associated with Eversource's share of the lease expenses related to 56 Prospect Street. As such, the Department finds that the Companies have failed to sustain their burden of demonstrating that these lease expenses are reasonable. See, e.g., Aquarion Water Company of Massachusetts, D.P.U. 08-27, at 32 (2009); Bay State Gas Company, D.P.U. 05-27, at 93-96 (2005); Phelps v. Hartwell, 1 Mass. 71, 73 (1804). Accordingly, the Department will reduce NSTAR Electric's proposed cost of service by \$199,850,¹¹⁴ and will also reduce WMECo's proposed cost of service by \$27,167.¹¹⁵

¹¹³ On brief, the Companies note that one of their witnesses in the instant case has his primary office at 56 Prospect Street, and, therefore given his "significant involvement in this case and as the Project Director for any future NSTAR Electric and WMEC[o] [electric vehicle] and [s]torage programs ... the Compan[ies'] distribution customers are deriving a direct benefit from the 56 Prospect Street facility" (Companies Brief at 458-459). The Companies' arguments on brief are not evidence and, therefore, cannot be relied upon in reaching our decision.

¹¹⁴ \$110,453 in rent expense + \$89,397 in facility expense.

¹¹⁵ \$18,300 in rent expense + \$8,867 in facility expense.

c. Eversource's Proposed Adjustments to NSTAR Electric's Test Year Lease Expense

As noted above, Eversource proposes a net increase of \$620,331 in NSTAR Electric's test year lease expense pertaining to three adjustments: (1) an increase of \$348,979 associated with a lease for the Waltham Service Center executed in August 2016; (2) an increase of \$377,297 associated with an increase in the net plant value of Eversource's facility in Southborough, along with an increase in the occupancy rate of that facility from 25 percent to 32 percent; and (3) a decrease of \$105,945 associated with a GSCOH offset (Exh. ES-DPH-2 (East), Sch. DPH-18 (Rev. 3)).

Regarding the rental expense for the Waltham Service Center, the record shows that NSTAR Electric entered into written lease agreement with an unaffiliated party for this facility, and that NSTAR Electric presently occupies space at this location pursuant to the terms and conditions of the executed lease agreement (Exhs. ES-DPH-1, at 92-93; DPU-3-1; AG-1-64, Att. (c)). The Department has reviewed the terms and conditions of the executed lease agreements and related documents, as well as the explanations for the pro forma adjustment, and we find that NSTAR Electric's total lease expense and operating costs are appropriately documented and, as such, represent a known and measurable change to NSTAR Electric's test year cost of service (Exhs. ES-DPH-1, at 92-93; DPU-3-3; AG-1-64, Att. (c)). Accordingly, the Department allows the proposed increase of \$348,979 to NSTAR Electric's proposed cost of service.

Turning to the lease expense associated with NSTAR Electric's use of the Southborough facility, the Department finds that Eversource incorrectly calculated both the

test year expense and the pro forma expense. The Southborough facility is a shared facility owned by NSTAR Gas (Exhs. ES-DPH-1, at 93; DPU-3-2; DPU-3-4; DPU-32-13; DPU-32-15). NSTAR Gas allocates a portion of its revenue requirement to NSTAR Electric as intercompany rent based on the square footage of the facility occupied by NSTAR Electric (Exhs. ES-DPH-1, at 93; DPU-3-2; DPU-3-4). In addition, there is no lease agreement associated with NSTAR Electric's use of the Southborough facility (Exh. DPU-3-2). Eversource booked to NSTAR Electric a test year lease expense of \$513,428, and Eversource proposes an adjustment of \$377,297, which results in a pro forma test year lease expense of \$890,725 associated with the Southborough facility (Exhs. ES-DPH-2 (East), Sch. DPH-18, at 2 (Rev. 1); DPU-32-17, Att.).¹¹⁶ Eversource states that the proposed adjustment is due to NSTAR Electric's increased occupancy of the facility from 25 percent to 32 percent, as well as an increase in the net plant value of the Southborough facility (Exhs. ES-DPH-1, at 93; DPU-3-4; DPU-32-13). Further, a portion of the lease expense purportedly recognizes a depreciation expense rate of 2.13 percent and a carrying charge rate of 11.16 percent, which represents the pre-tax rate of return approved for NSTAR Gas in D.P.U. 14-150 (Exhs. DPU-3-4; DPU-32-15; DPU-32-15, Att.; DPU-32-17).

¹¹⁶ In the initial filing, Eversource reported that NSTAR Electric's test year rent expense for the Southborough facility was \$513,428, and Eversource proposed an adjustment of \$71,462 (Exhs. ES-DPH-1, at 93; ES-DPH-2, Sch. DPH-18, at 2 (East)). Eversource subsequently revised these amounts to reflect an increase in net plant balance as of December 31, 2016, as well as a correction to the calculation of depreciation expense (Exhs. ES-DPH-2 (East), Sch. DPH-18, at 2 (Rev. 1); DPU-3-4; DPU-32-17).

Eversource asserts that it is appropriate to use NSTAR Gas' approved cost of capital and depreciation rate to determine intercompany rent allocated to NSTAR Electric for use of the Southborough facility because NSTAR Gas is the owner of the facility (Exhs. DPU-32-15; DPU-32-17). The Department has found, however, that where a petitioning company pays depreciation expense and/or a return component on a facility owned by an affiliate, customers of the petitioning company are forced to subsidize the operations of the affiliate. D.P.U. 10-55, at 266-267; D.P.U. 08-27, at 84. As such, the Department has limited the return component to the weighted cost of capital applicable to the petitioning company, and limited the depreciation expense to the amount generated by the petitioning company's own accrual rates. D.P.U. 10-55, at 266-267; D.P.U. 08-27, at 84. Therefore, the Department finds that application of NSTAR Gas' 11.16 percent weighted cost of capital and 2.13 percent depreciation rate to determine NSTAR Electric's allocated share of the Southborough facility understates the required lease expense. D.P.U. 10-55, at 266-267; D.P.U. 08-27, at 84.

To derive appropriate test year lease expense for ratemaking purposes, the Department will apply the pre-tax weighted cost of capital of 10.90 percent and depreciation rate of 3.90 percent being approved in this Order. This produces a pro forma annual lease expense for the Southborough facility of \$936,074. Accordingly, the Department will increase NSTAR Electric's proposed cost of service by \$45,354.¹¹⁷

¹¹⁷ \$936,079 - \$890,725 - \$45,354.

Finally, Eversource proposes a decrease in NSTAR Electric's test year lease expense of \$105,945 associated with a GSCOH offset (Exhs. ES-DPH-1, at 92; ES-DPH-2 (East), Sch. DPH-18 (Rev. 3)). The GSCOH is an ESC overhead rate, which is an adder to labor and charged to the account in which the associated labor is charged (Exh. ES-DPH-1, at 37, 94). The Department has reviewed this adjustment and we find that it represents a known and measurable change to NSTAR Electric's test year lease expense (Exh. ES-DPH-2 (East), Sch. DPH-18 (Rev. 3)). Accordingly, we allow the proposed decrease of \$105,945 to NSTAR Electric's proposed cost of service.

d. Eversource's Proposed Adjustments to WMECo's Test Year Lease Expense

As noted above, Eversource proposes a net increase of \$13,819 in WMECo's test year lease expense pertaining to three adjustments: (1) an increase of \$12,795 associated with scheduled increases in several leases between WMECo and various communications companies; (2) an increase of \$1,342 associated with scheduled increases in lease payments beginning in September 2016 for Eversource's satellite facility in Lee; and (3) a decrease of \$317 associated with an intercompany rent GSCOH offset (Exh. ES-DPH-2 (West), Sch. DPH-18 (Rev. 3)).

Regarding WMECo's communications leases, the record shows that they are subject to written agreements with unaffiliated parties, and that WMECo uses these services to listen to conversations between workers and dispatchers across a whole district area, as well as to enhance system reliability and reduce outage times (Exhs. ES-DPH-1, at 93; DPU-3-5; AG-1-64, Att. (k)). The Department has reviewed the terms and conditions of these executed

lease agreements and related documents, as well as the explanations for the pro forma adjustments, and we find that WMECo's total lease expense and operating costs are appropriately documented and, as such, represent a known and measurable change to WMECo's test year cost of service (Exhs. ES-DPH-1, at 93; DPU-3-5; AG-1-64, Att. (k)). Accordingly, the Department allows the proposed increase of \$12,795 to WMECo's proposed cost of service.

Similarly, with respect to the Lee satellite facility, the record shows that WMECo entered into written lease agreement with an unaffiliated party for this facility, and that WMECo presently occupies space at this location pursuant to the terms and conditions of the executed lease agreement (Exhs. ES-DPH-1, at 93; DPU-3-7; AG-1-64, Att. (i)). The Department has reviewed the terms and conditions of the executed lease agreements and related documents, as well as the explanations for the pro forma adjustment, and we find that WMECo's total lease expense and operating costs are appropriately documented and, as such, represent a known and measurable change to NSTAR Electric's test year cost of service (Exhs. ES-DPH-1, at 93; DPU-3-7; AG-1-64, Att. (i)). Accordingly, the Department allows the proposed increase of \$1,342 to WMECo's proposed cost of service.

Finally, Eversource proposes a decrease in WMECo's test year lease expense of \$317 associated with a GSCOH offset (Exhs. ES-DPH-1, at 92; ES-DPH-2 (West), Sch. DPH-18 (Rev. 3)). The Department has reviewed this adjustment and we find that it represents a known and measurable change to WMECo's test year lease expense (Exh. ES-DPH-2 (West),

Sch. DPH-18 (Rev. 3)). Accordingly, we allow the proposed decrease of \$317 to WMECo's proposed cost of service.

G. Information System Expense

1. Introduction

Eversource proposes to include the costs associated with its Supply Chain Project as a post-test year adjustment to information systems expense (Exhs. ES-DPH-1, at 96; ES-DPH-2, Sch. DPH-19 (Rev. 3); DPU-9-11; DPU-45-57; AG-43-2; AG-54-4; Tr. 6, at 1192). Eversource explains that the Supply Chain Project will consolidate and standardize all supply chain activities across each Eversource Energy operating company to eliminate redundancy, leverage industry-best practices, and introduce modern technology to sourcing, contracting, and materials management-related activities (Exh. ES-DPH-1, at 94). Eversource states that it will need to deploy Ariba, Maximo, and Oracle Accounts Payable software tools in order to achieve these objectives (Exh. ES-DPH-1, at 94). Once the project is completed, Eversource states that there may be cost savings as soon as the first year of implementation due to process efficiencies and reduced labor (Exhs. ES-LML-8, at 145 (Supp. 1)); DPU-9-5; Tr. 6, at 1209-1210). Eversource originally estimated a project in-service date for the Supply Chain Project of February 17, 2017, but the Companies subsequently amended the in-service date to July 3, 2017 (Exhs. ES-LML-8, at 145 (Supp. 1); AG-19-22; AG-42-1; AG-42-2; AG-42-3; AG-50-18; Tr. 6, at 1190; Tr. 9, at 1827; Tr. 15, at 3054, 3059).

Eversource explains that the Supply Chain Project comprises three main components:

(1) Supply Chain software; (2) eSourcing/Portal software; and (3) System Integrator

(Exh. AG-42-8; AG-42-9). Because the Supply Chain Project makes use of several external software tools, as well as externally contracted labor, Eversource states that it issued RFPs to multiple qualified sources to facilitate a competitive bidding process (Exhs. ES-DPH-1, at 94-95; AG-42-8; AG-42-9; AG-42-12; AG-50-19). Specifically, Eversource issued RFPs to three bidders on April 10, 2015, for the Supply Chain software and eSourcing software (Exh. AG-42-8). Eversource ultimately executed an agreement with IBM on July 31, 2015 for the Maximo software solution and with SAP on September 21, 2015, for the Ariba solution (Exh. AG-42-8). Further, Eversource issued RFPs to six bidders on April 17, 2015, for the System Integrator, and ultimately executed an agreement with Infosys on October 19, 2015 (Exh. AG-42-8).

Eversource proposes to treat the Supply Chain Project as a capital asset on ESC's books, and to recover the costs associated with this project, including depreciation, property taxes, and a return component, through a post-test year adjustment to expense to be reflected in NSTAR Electric's and WMECo's revenue requirements (Exhs. ES-DPH-1, at 96; DPU-9-10; DPU-9-11). Eversource proposes to allocate the costs associated with the Supply Chain Project using its budgeted service company labor allocator and to charge the associated expenses to each operating company using GSCOH, the general ESC overhead rate, which Eversource describes as an adder to labor to be charged to the account to which the associated labor is charged (Exhs. ES-DPH-1, at 96-98; ES-DPH-4, Sch. DPH-8, at 1-2; DPU-9-3; DPU-45-52; DPU-45-53; AG-1-92; AG-1-92, Att. at 5; AG-42-10; AG-42-11). Eversource states that while there are general service contracts between ESC and its

affiliates, including NSTAR Electric and WMECo, there is not a specific service agreement for the Supply Chain Project (Exh. DPU-9-9; AG-1-26, Atts. (a), (b)).

During the test year, NSTAR Electric and WMECo booked \$6,100,492 and \$1,397,941, respectively, in information systems expense unrelated to the Supply Chain Project (Exhs. ES-DPH-2 (East), Sch. DPH-19 (Rev. 3); ES-DPH-2 (West), Sch. DPH-19 (Rev. 3); DPU-45-57; Tr. 9, at 1827). Eversource requests a pro forma adjustment to test year information systems expense of \$1,248,167 and \$237,936 for NSTAR Electric and WMECo, respectively, to reflect project costs of \$36,420,160 associated with the Supply Chain Project incurred through April 30, 2017 (Exhs. ES-DPH-2 (East), Sch. DPH-19 (Rev. 3); ES-DPH-2 (West), Sch. DPH-19 (Rev. 3); AG-42-1; AG-43-2; Tr. 6, at 1216; Tr. 9, at 1830). Eversource states that although it anticipates the total project capital costs to be \$41.2 million, it plans on deferring additional cost recovery until its next base rate proceeding because the project is expected to be placed into service after the close of the evidentiary record in this proceeding (Exh. AG-42-5; AG-43-2; Tr. 6, at 1189-1190; Tr. 15, at 3059).

2. Position of the Parties

a. Attorney General

The Attorney General recommends that the Department disallow the costs associated with the Supply Chain Project (Attorney General Brief at 126). The Attorney General provides three distinct arguments to support this recommendation, each of which she asserts provides an independent basis for rejection from NSTAR Electric's and WMECo's revenue requirements (Attorney General Brief at 126).

First, the Attorney General argues that the Supply Chain Project is a post-test year plant addition at the service company level and did not go into service prior to the end of hearings in this case (Attorney General Brief at 127). The Attorney General notes that Eversource initially estimated an in-service date of February 2017, but subsequently updated its estimate to July 3, 2017 (Attorney General Brief at 127, citing Exhs. DPU-9-7; DPU-9-7, Att. at 5; AG-42-1). Further, because Eversource still will be testing the platform after July 3, 2017, the Attorney General claims that the Supply Chain Project cannot be considered in service, and instead should be classified as construction work in progress (Attorney General Brief at 127, citing Tr. 15, at 3054-3055, 3064).

Second, the Attorney General contends that the costs associated with the Supply Chain Project are not known or measurable and thus do not meet the Department's standard for adjustments to test year cost of service (Attorney General Brief at 127-128). The Attorney General asserts that, although actual project expenditures included for recovery may be known as of April 30, 2017, the amount that will be charged to NSTAR Electric and WMECo is not known or measurable (Attorney General Brief at 128). To support this assertion, the Attorney General notes that ESC proposes to allocate costs associated with the Supply Chain Project to its affiliates using a budgeted labor allocator, which the Attorney General claims is not the actual labor allocator that ultimately will be used to assign costs to the Companies (Attorney General Brief at 128, citing Exh. ES-DPH-4, Sch. DPH-8 (Rev. 1)). The Attorney General argues that as a result, the actual level of costs Eversource will

allocate to NSTAR Electric and WMECo for the Supply Chain Project are unknown (Attorney General Brief at 128-129).

Third, the Attorney General argues that the Department should reject the post-test year adjustment to expense associated with the Supply Chain Project because it fails to recognize any of the associated, offsetting savings and benefits (Attorney General Brief at 129, citing Exh. ES-LML-8 (Supp. 1) at 141-151). In particular, the Attorney General asserts that the Companies estimate that efficiencies and reductions to materials will result in \$5.4 million in direct annual recurring savings and \$2.8 million in one-time savings, as well as potential indirect savings, at the service company level (Attorney General Brief at 129, citing Exh. ES-LML-8, at 141-151 (Supp. 1)). The Attorney General argues that the anticipated cost savings and benefits contributed to Eversource's decision to go forward with the project, and, as such, should not be treated as potential or conceptual savings, but rather real savings to be reflected in the net costs of this project (Attorney General Brief at 129-130, citing Tr. 6, at 1212-1213; Tr. 15, at 3054-3058; Attorney General Reply Brief at 16). Thus, the Attorney General characterizes the Companies' proposed adjustments as one-sided, and argues that if cost savings were considered in conjunction with a more reasonable rate of return, the Supply Chain Project would have a net negative impact Eversource's overall revenue requirement (Attorney General Brief at 130, citing Exh. AG-DR-1, at 8). Therefore, the Attorney General recommends that the Department reject the Companies' pro forma adjustments to increase NSTAR Electric's and WMECo's information systems expense (Attorney General Brief at 130).

Alternatively, the Attorney General argues that if the Department allows the Companies' proposed post-test year adjustment to expense, the Department should make two modifications to the proposed increases (Attorney General Brief at 131-132). First, the Attorney General contends that Eversource's use of NSTAR Electric's and WMECo's proposed consolidated capital structure and cost rates is inappropriate and overstates the revenue requirement to be allocated to NSTAR Electric and WMECo (Attorney General Brief at 131, citing Exh. ES-DPH-4, Sch. DPH-8 (Rev. 1) at 8). According to the Attorney General, if the Department approves the Companies' proposed adjustments to information systems expense, it should recalculate the adjustments using ESC's capital structure and cost of debt rate, and the return on equity approved in this case using the cost of debt information contained in Exhibit AG-26-2, as is consistent with prior Department findings (Attorney General Brief at 132, citing Exh. AG-26-2; Tr. 9, at 1833-1834; D.P.U. 15-155, at 303).

Second, the Attorney General contends that the allocation rate used to apportion Supply Chain Project costs to NSTAR and WMECo is overstated because it does not reflect Eversource's pending acquisition of the Aquarion Water Company (Attorney General Brief at 126). Specifically, the Attorney General notes that the Supply Chain Project is intended to benefit all Eversource Energy operating companies, including Aquarion Water Company (Attorney General Brief at 131). The Attorney General argues that a failure to reduce the costs to be allocated to NSTAR Electric and WMECo due to Eversource's recent acquisition of Aquarion Water Company would not be fair or reasonable to ratepayers, and, therefore,

she recommends reducing the allocation rate used to apportion the Supply Chain Project costs to NSTAR Electric and WMECo (Attorney General Brief at 131).

b. Companies

Eversource argues that the Department should approve its proposed post-test year adjustment to information systems expense to reflect known and measurable Supply Chain Project costs incurred through April 30, 2017 (Companies Brief at 222-223, 452, citing Exhs. DPH-1, at 94; DPU-9-7; DPU-45-57; AG-19-22; AG-42-1; AG-43-2). Eversource additionally claims that the project was placed in service on July 3, 2017 (Companies Brief at 221-223, citing Tr. 6, at 1190). Eversource contends that it has appropriately calculated the Supply Chain Project expense adjustment, and requests the Department's approval to incorporate this adjustment to the revenue requirements of NSTAR Electric and WMECo (Companies Brief at 223).

Eversource also argues that the Department should reject the Attorney General's recommendation to disallow the costs associated with the Supply Chain Project, and provides several responses to the Attorney General's assertions (Companies Brief at 450). First, Eversource asserts that the Attorney General mischaracterizes the in-service date of the Supply Chain Project (Companies Brief at 450). Eversource claims that it transitioned to the new supply chain system from June 30, 2017, to July 3, 2017, at which point the supply chain software solution was deployed and, as it was fully operational, used to support the procure-to-pay process (Companies Brief at 451, citing Tr. 15, at 3055). Eversource contends that this process is typical for new information system projects and platforms, and

states that the Department has previously approved recovery of post-test year information system platforms with similar testing procedures (Companies Brief at 451, citing D.P.U. 13-75, at 1, 110, 117). Further, the Companies claim that the Attorney General has not provided evidence that the Supply Chain Project is not in service and providing a benefit to the Companies' customers (Companies Brief at 451). In addition, the Companies contend that there is no Department standard requiring capital projects that result in post-test year expense adjustments to be in service (Companies Reply Brief at 112).

Second, Eversource asserts that the Attorney General's allegation that the Supply Chain Project costs are not known and measurable is without merit (Companies Brief at 452). Eversource claims that it is only seeking recovery of costs through April 30, 2017, resulting in a revenue requirement of \$1,248,167 for NSTAR Electric and \$237,936 for WMECo (Companies Brief at 452, citing Exhs. ES-LML-8 (Supp. 2); ES-DPH-2 (East), Sch. DPH-19 (Rev. 2); ES-DPH-2 (West), Sch. DPU-19 (Rev. 2)). Eversource further asserts that the allocated costs, as developed using the GSCOH allocator, are known and measurable (Companies Brief at 452). In addition, Eversource claims that the labor allocator used to allocate the costs associated with the Supply Chain Project to the operating companies is the actual rate ESC uses to assign costs for the period it incurs the costs (Companies Reply Brief at 112).

Third, Eversource argues that the Attorney General's recommendation to reduce the Companies' proposed revenue requirement due to potential savings does not meet the Department's known and measurable standard, and therefore should be rejected (Companies

Brief at 454). Eversource notes that it identified and calculated potential savings associated with the Supply Chain Project on an Eversource-wide basis (Companies Brief at 453, citing Exh. ES-LML-8 (Supp. 2), at 8). In addition, Eversource notes that these savings are based on a 60 percent realization probability and can only be considered preliminary and, therefore, are speculative (Companies Brief at 453, citing Exh. ES-LML-8 (Supp. 2), at 8). Eversource claims that the Department has previously rejected proposed adjustments for savings achieved by information system projects when the record showed that the savings did not meet the Department's known and measurable standard (Companies Brief at 453-454, citing D.P.U. 15-155, at 307-308; D.T.E. 03-40, at 11; D.T.E. 02-24/25, at 76; D.P.U. 95-118, at 130-131; D.P.U. 92-111, at 142; D.P.U. 92-78, at 50-51).

Next, Eversource argues that the Attorney General's recommendation to adjust the post-test year information system expense associated with the Supply Chain Project to reflect ESC's capital structure and actual cost of debt provided in Exhibit AG-26-2 should be rejected (Companies Brief at 455). Eversource claims that the cost of debt provided in this exhibit, which provides the actual capitalization for ESC as of December 31, 2016, includes both short-term and long-term debt (Companies Brief at 455). Further, Eversource claims that its actual capitalization reflects the fact that it is structured to provide shared services, and, therefore, the cost of debt and capital structure for ESC fluctuates significantly from month to month based on intercompany charges (Companies Reply Brief at 115).¹¹⁸

¹¹⁸ On brief, Eversource recreates its capitalization to reflect only the inclusion of long-term debt (Companies Brief at 455-456).

In any event, Eversource claims that neither its actual capitalization as of December 31, 2016, which reflects approximately 40 percent equity, nor its capitalization as of December 31, 2016, exclusive of short-term debt, which results in approximately 82 percent equity, is appropriate for ratemaking purposes (Companies Brief at 457). Rather, Eversource argues that both the capital structure and return on equity approved in this case for the Companies should be used for the computation of NSTAR Electric's and WMECo's revenue requirements associated with the Supply Chain Project (Companies Brief at 457).

Finally, Eversource argues that the Attorney General's recommendation to disallow the Supply Chain Project expense adjustment on grounds that the Companies have not reflected the Aquarion Water Company acquisition is without merit and should be rejected (Companies Brief at 454). Eversource notes that any adjustment to reduce ESC charges is premature and not known and measurable (Companies Brief at 440).

3. Analysis and Findings

As noted above, Eversource seeks to treat the Supply Chain Project as a post-test year adjustment to the Companies' information systems expense (Exhs. ES-DPH-1, at 94, 96; AG-43-2; Tr. 9, at 1830). Rates are designed to allow for recovery of a representative level of a company's revenues and expenses based on a historic test year adjusted for known and measurable changes. D.T.E. 02-24/25, at 161; D.P.U. 92-250, at 106. The selection of the test year is largely a matter of a distribution company's choice, subject to Department review and approval. See D.P.U. 07-50-A at 51; D.P.U. 1720, Interlocutory Order at 7-11 (January 17, 1984).

In the instant case, the Companies did not incur any Supply Chain Project-related costs in the test year (Exh. DPU-45-57; see also ES-DPH-2 (East), Sch. DPH-19 (Rev. 3); ES-DPH-2 (West), Sch. DPH-19 (Rev. 3)). In fact, according to Eversource the costs were not allocated to the Companies until July 3, 2017, the date upon which Eversource claims that the Supply Chain Project was placed in service, and more than a year after the end of the test year (Exh. DPU-45-57; Tr. 9, at 1827; Tr. 15, at 3055, 3058-3059, 3064). Nevertheless, the Companies seek a post-test year adjustment to their costs of service in order to reflect a level of costs that will be incurred in the rate year (Exh. ES-DPH-1, at 96).

Proposed changes to test year revenues, expense, and rate base require a finding that the adjustment constitutes a “known and measurable” change to test year cost of service. See D.P.U. 1580, at 13-17, 19; D.P.U. 84-32, at 17; D.P.U. 136, at 3; D.P.U. 19992, at 2; D.P.U. 18204, at 4; D.P.U. 18210, at 2-3; D.P.U. 18264, at 2-4. A “known” change means that the adjustment must have actually taken place, or that the change will occur based on the record evidence. A “measurable” change means that the amount of the required adjustment must be quantifiable on the record evidence. D.T.E. 98-51, at 62.

In the instant case, Eversource calculated a gross investment base of \$36,420,160 based on ESC’s actual spending through April 30, 2017 (Exh. ES-LML-8, at 2 (Supp. 2); Tr. 9, at 1830). Eversource calculated an estimated revenue requirement associated with the Supply Chain Project based on the weighted average cost of capital, capital structure, and depreciation expense that it requested in this case (Exh. ES-DPH-1, at 96-97; Tr. 9, at 1830-1831). As noted above, Eversource then used a budgeted service company allocator

to derive the amount of costs it seeks to assign to NSTAR Electric and WMECo (Exh. ES-DPH-1, at 97).

Although Eversource claims that costs were allocated to the Companies following the Supply Chain Project's in service date of July 3, 2017, Eversource has failed to adequately support this representation with sufficient record evidence. In particular, the record contains no billing statements, invoices, or other related documentation to substantiate the actual allocation of costs to the Companies in the amounts claimed by the Eversource. Therefore, the Department cannot determine whether Eversource's proposed adjustments to test year information systems expense represent the level of expense to be incurred by the Companies during the rate year.¹¹⁹

Based on these considerations, the Department is not persuaded that Eversource's proposed adjustments to the Companies' information systems expense represent known and measurable changes to the Companies' costs of service. Therefore, the Department declines to accept Eversource's proposed adjustment. Accordingly, we reduce NSTAR Electric's

¹¹⁹ The Department acknowledges the Attorney General's arguments regarding Eversource's acquisition of Macquarie, a holding company of Aquarion Water Company of Massachusetts and its subsidiaries in Connecticut and New Hampshire. As noted above in Section VIII.B.3, while the Department has approved Eversource's proposal to acquire Macquarie, Eversource does not plan to integrate Aquarion's operations with the existing Eversource organization following the transaction, and thus does not anticipate allocating any centralized services costs to Aquarion's operations. D.P.U. 17-115, at 66 (November 28, 2017). To the extent that Eversource implements any changes to Aquarion's operations or integrates functions between the two entities, those changes will take place over time and as Eversource becomes familiar with Aquarion's water operations. D.P.U. 17-115, at 66-67. As a result, any future allocation of costs is speculative at this time.

proposed test year cost of service by \$1,248,167 and reduce WMECo's proposed test year cost of service by \$237,936.

H. GIS Verification Adjustment

1. Introduction

Eversource proposes to include the costs associated with NSTAR Electric's Geographic Information System ("GIS") Verification Project ("GIS Project") as a post-test year adjustment to expense (Exhs. ES-DPH-1, at 103; ES-DPH-2, Sch. DPH-20 (Rev. 3); DPU-22-10; AG-42-14). Eversource explains that its current GIS requires an upgrade in order to, among other things, support any level of grid modernization (Exh. ES-DPH-1, at 98). According to Eversource, the existing GIS was developed using historical paper records mapping the overhead distribution system as it was constructed (Exh. ES-DPH-1, at 98-99). Eversource states that these historical records were created based on system needs and requirements at the time the records were created and, by design, did not capture the level of specificity as to customer connections and other information now necessary to move forward with technological innovation (Exh. ES-DPH-1, at 99). Thus, Eversource states that an upgrade to the data stored in GIS is necessary in order to enable the proposed grid modernization base commitment (see Section X.B below), to enable other non-modernization requirements of the system, and to best utilize the utility's new Outage Management System ("OMS") (Exh. ES-DPH-1, at 99).

Eversource states that the GIS Project involves a comprehensive survey of the system, data collection, and data assembly into a format that can be uploaded into the existing GIS system (Exh. ES-DPH-1, at 99, 103). Thus, on October 20, 2016, Eversource issued a RFP

to four outside contractors and sought cost estimates for completion of this work (Exhs. ES-DPH-1, at 100, 103; DPU-22-14). Eversource received responses from three of the bid recipients (Exhs. ES-DPH-1, at 100, 103; DPU-22-14). On April 27, 2017, Eversource executed a fixed-price contract with Davey Resource Group for a final total cost of \$5,956,381 for work to be completed in 2018 (Exhs. ES-DPH-2 (East), Sch. DPH-20 (Rev. 3); AG-19-26; AG-42-17, Att. (c), at 1, 39; Tr. 13, at 2776-2777).

Eversource proposes to treat the GIS Project as a one-time, non-recurring expense, to be amortized over five years (Exhs. ES-DPH-1, at 103; DPU-22-15; AG-42-20). As such, Eversource proposes to include in NSTAR Electric's cost of service an annual amortization expense of \$1,191,276 (Exhs. ES-DPH-2 (East), Sch. DPH-20 (Rev. 3)).

2. Positions of the Parties

a. Attorney General

The Attorney General recommends that the Department disallow the costs associated with the GIS Project (Attorney General Brief at 146). The Attorney General argues that this non-recurring expense does not meet the Department's standards for pro forma post-test year adjustments to cost of service (Attorney General Brief at 146). Specifically, the Attorney General contends that the actual costs associated with the proposed adjustment are not known and measurable (Attorney General Brief at 146). To support this assertion, the Attorney General claims that the actual cost of the GIS Project was not known at the time of Eversource's initial filing (Attorney General Brief at 146, citing Exh. AG-19-26). Further, the Attorney General claims that Eversource still was in the technical review stage of the

project during the discovery period of this proceeding (Attorney General Brief at 146-147, citing Exhs. ES-DPH-1, at 103; AG-19-26).

The Attorney General submits that while Eversource did eventually introduce into the record a contract for the GIS Project, the Companies have acknowledged that the contract is subject to regulatory approval (Attorney General Brief at 147, citing Exhs. AG-42-17, Att. (c); AG-50-23; Tr. 13, at 2777). Further, the Attorney General argues that a contract entered into after the test year and before the record closes still does not meet the known and measurable standard, as contracts can be adjusted and conditions of the contract may not be met (Attorney General Reply Brief at 32, citing D.P.U. 15-155, at 277-278 n.199). In this regard, the Attorney General contends that costs associated with the GIS Project are likely to change over time as the work will not be completed until 2018, which is anywhere from one and a half to two and a half years after the end of the test year (Attorney General Brief at 147, citing Tr. 13, at 2776-2777).

In addition, the Attorney General argues that an annual expense of \$1,191,276 is not outside the normal ebb and flow of changes in expenses over time for a company the size of NSTAR Electric (Attorney General Brief at 147, citing Dedham Water Company, D.P.U. 1217, at 7-9 (1983); Bay State Gas Company, D.P.U. 1122, at 46-49 (1982)).

Finally, the Attorney General asserts that the GIS Project costs only represent approximately 0.04 percent of total Company revenues, and therefore this adjustment does not comply with the Department's standards for a post-test year expense (Attorney General Reply Brief at 34).

For all of the above reasons, the Attorney General cautions against allowing the proposed pro forma adjustment and setting a standard for cost recovery “more akin to a future test[year]” (Attorney General Reply Brief at 32). Thus, she asserts that Eversource’s proposal must be rejected and NSTAR Electric’s proposed cost of service reduced by \$1,191,276 (Attorney General Brief at 147; Attorney General Reply Brief at 34).

b. Cape Light Compact

Cape Light Compact supports the Attorney General’s recommendation to reduce NSTAR Electric’s proposed cost of service by eliminating the adjustment associated with the GIS Project (Cape Light Compact Brief at 79). Cape Light Compact agrees with the Attorney General’s assertion that the costs associated with the GIS Project are not known, and the associated annual expense is not outside the normal ebb and flow of changes in expense over time for a company the size of NSTAR Electric (Cape Light Compact Brief at 79, citing Exh. AG-DJE-1, at 7-8).

c. Companies

According to Eversource, the GIS Project is important for customer satisfaction because it will assist NSTAR Electric in: (1) achieving the capability to quickly identify and respond to customer outages; (2) implementing automated communication with customers affected by outages; and (3) managing the distribution system from both a capacity and voltage perspective (Companies Brief at 224, citing Exh. ES-DPH-1, at 99). Further, Eversource asserts that it has received the lowest possible cost for completing this project through the RFP process (Companies Brief at 224, citing Exh. ES-DPH-1, at 99). In addition, Eversource contends that the executed contract presents a fixed price, which is

known and measurable, and contains a scope of work and monthly milestone schedule (Companies Brief at 467, citing Exh. AG-42-17, Att. (c); Tr. 13, at 2777). Specifically, Eversource claims that the terms of the executed contract demonstrates that the total project cost is \$5.95 million, while the annual expense is \$1.19 million (Companies Brief at 467, citing Exh. ES-DPH-2 (East), Sch. DPH-20).

In response to the Attorney General's argument that the contract is subject to regulatory approval, Eversource contends that the only approval that is necessary is that of the Department in this proceeding (Companies Brief at 467, citing Exh. ES-DPH-1, at 103). In addition, in response to the Attorney General and Cape Light Compact's argument that the expense is within the ebb and flow of NSTAR Electric's expenditures, Eversource contends that the ratemaking process is intended to develop a representative level of revenue requirement to be collected from customers and, absent exigent circumstances, it is not intended to track and recover costs on a dollar for dollar basis (Companies Brief at 468, citing D.P.U. 14-150, at 45-46; D.P.U. 13-75, at 106; D.P.U. 10-70, at 174; D.P.U. 07-50-A at 51). Further, Eversource asserts that neither the Attorney General nor the Cape Light Compact have provided support or analysis for the assertion that the annual GIS expense is not significant, and, therefore, their argument that the project costs are within the normal ebb and flow of expense does not have merit (Companies Brief at 512).

Finally, Eversource argues that the GIS Project is significant in both nature and expenditure (Companies Reply Brief at 130). In particular, Eversource contends that the GIS Project is critical to the Companies' grid modernization base commitment investments,

including advanced load flow and distribution management system investments, which benefit customers and advance the Commonwealth's energy and environmental policies (Companies Reply Brief at 130, citing Exhs. ES-GMBC-2, at 26; AG-42-15). In addition, Eversource asserts that the approximately \$6 million GIS Project cost is a significant investment for NSTAR Electric and therefore merits the Department's approval (Companies Reply Brief at 130).

3. Analysis and Findings

As noted above, Eversource seeks to treat the GIS Project as a one-time, non-recurring expense, to be amortized over five years (Exhs. ES-DPH-1, at 103; DPU-22-15; AG-42-20; Companies Brief at 467-468, 512; Companies Reply Brief at 130). The Attorney General and Cape Light Compact argue that recovery of this particular expense is inappropriate because, among other reasons, Eversource has failed to demonstrate that the costs are known and measurable or extraordinary (Attorney General Brief at 146-147; Attorney General Reply Brief at 34; Cape Light Compact Brief at 79). In this instance, we need not reach the merits of these arguments.

The purpose of the GIS Project is primarily to enable Eversource's proposed grid modernization investments (see, e.g., Exhs. ES-DPH-1, at 99; ES-GMBC-2, at 19, 21, 26, 64; AG-42-15; AG-50-21; NECEC-4-4; Tr. 7, at 1228-1233; Tr. 8, at 1625-1626, 1632-1633, 1649-1650. While we acknowledge that the GIS Project will be used for some important non-grid modernization requirements on the system, such as the OMS and Customer Interface System (Exhs. ES-DPH-1, at 99; AG-42-16, at 2-3; AG-50-22), we

conclude that the GIS Project is so inextricably linked to grid modernization efforts, that the costs associated with the project are more suitable for review as a proposed grid modernization investment. The Companies' proposed grid modernization investments are discussed in Section X.B below.

As noted above, Eversource proposes to include in NSTAR Electric's cost of service an annual amortization expense of \$1,191,276 associated with the costs of the GIS Project (Exhs. ES-DPH-2 (East), Sch. DPH-20 (Rev. 3)). Based on our findings above, costs associated with the GIS Project will not be recovered in base distribution rates. Accordingly, the Department reduces NSTAR Electric's proposed cost of service by \$1,191,276.

I. Insurance Expense

1. Introduction

The Companies propose increases to test year insurance expense of \$158,407 for NSTAR Electric and \$22,675 for WMECo associated with insurance policy distributions (Exh. ES-DPH-1, at 42, 45). More specifically, in March 2016, Eversource Energy received a check in the amount of \$456,242 from one of its excess general liability insurance carriers, Energy Insurance Mutual ("EIM"), for its portion of a distribution of policyholders' surplus to EIM member companies (Exhs. AG-1-61, Att. (c) at 1; AG-19-13, Att. (o)). Of this amount, \$158,407 (34.72 percent of the total surplus) was allocated to NSTAR Electric and \$22,675 (4.97 percent of the total surplus) was allocated to WMECo (Exhs. AG-DR-1, at 12; AG-19-13, Att. (o)). The Companies considered these distributions to be non-recurring, and, therefore, removed the distributions from their respective test year costs of service through normalization adjustments (Exhs. ES-DPH-1, at 38; ES-DPH-2 (East), Sch. DPH-12, at 2

(Rev. 3); ES-DPH-2 (West), Sch. DPH 12, at 2 (Rev. 3). These adjustments result in corresponding increases in both test year insurance expense and the level of insurance expense being sought for recovery in this proceeding (Exhs. ES-DPH-2 (East), Sch. DPH-12, at 2 (Rev. 3); ES-DPH-2 (West), Sch. DPH-12, at 2 (Rev. 3)).

2. Positions of the Parties

a. Attorney General

The Attorney General argues that the EIM insurance distributions allocated to the Companies are not non-recurring events, and, therefore, the distributions should remain as offsets to test year cost of service and reduce the Companies' proposed rate year insurance expense (Attorney General Brief at 109-111). In particular, the Attorney General notes that EIM has consistently made policy surplus distributions to NSTAR Electric and WMECo in each of the last four years between 2013 and 2016 (Attorney General Brief at 110-111, citing Exh. AG-1-61, Atts. (f), (g); Attorney General Reply Brief at 24-25). Further, she suggests that future policy surplus distributions are likely as EIM experienced substantial growth in its presently existing policy holder surplus from \$890 million to \$972 million as of March 2016 (Attorney General Brief at 111, citing Exh. AG-19-13, Att. (o)).

In addition, the Attorney General contends that because the Companies' cost of service includes costs associated with its most recent policies provided by EIM, the cost of service also should include surplus payments (Attorney General Reply Brief at 25). Additionally, the Attorney General argues that even if Eversource chooses not to retain EIM going forward, the change in insurance carrier would be in order to obtain "the best available coverage at the best available rate," so it is unclear how the Companies would be harmed by

changing insurers under those circumstances (Attorney General Reply Brief at 26, citing Companies Brief at 437). Rather, according to the Attorney General, any such cost reductions achieved by the Companies after this case would be retained by the Companies until a future rate case, in which case the adjusted test year would be based on the expense associated with the most recent premiums for the actual policies in place, including the EIM policies (Attorney General Reply Brief at 26).

Based on these considerations, the Attorney General asserts that the surplus payments received during the test year should be considered in setting the Companies' revenue requirement (Attorney General Brief at 111; Attorney General Reply Brief at 26). Consequently, the Attorney General recommends that the Department reduce NSTAR Electric's proposed cost of service by \$158,407 and reduce WMECo's proposed cost of service by \$22,675 (Attorney General Brief at 111; Attorney General Reply Brief at 26).

b. Companies

Eversource argues that the Department should reject the Attorney General's recommendation and accept the Companies' proposal to remove EIM's policy surplus distribution from the revenue requirement (Companies Brief at 436). In support of their position, the Companies contend that the EIM surplus distribution is not a recurring event and any potential future disbursement is not known and measurable (Companies Brief at 436; Companies Reply Brief at 125). The Companies note that for the years 2009 through 2012, EIM did not pay out surpluses (Companies Brief at 436, citing Exhs. DPU-23-17; AG-1-61, Atts. (f), (g)). Further, the Companies argue that there is no guarantee or commitment by

EIM to make future surplus distributions (Companies Brief at 436-437, citing Exh. AG-19-13, Att. (o); Companies Reply Brief at 124). Consequently, the Companies argue that the fact that EIM has paid out surpluses in the past cannot be used as a foundation for including these surplus payments going forward absent any type of commitment from EIM (Companies Brief at 437).¹²⁰

Additionally, the Companies note that they may not retain EIM as their insurance carrier going forward (Companies Brief at 437). The Companies explain that ESC has specific policies and processes in place to manage insurance costs, and annually evaluates all insurance programs and policies with the aid of insurance brokers in order to secure the best available coverage at the best available rate (Companies Brief at 437, citing Exh. ES-DPH-1, at 61).¹²¹ Eversource maintains that, given ESC and the Companies' focus on managing insurance costs, there is the potential that this annual review process could result in a determination to seek coverage from an insurance carrier other than EIM (Companies Brief at 437-438). The Companies state that under the Attorney General's proposal, if it is later

¹²⁰ The Companies note that while the Attorney General objects to the inclusion of rate year salary increases for non-union employees in the revenue requirement absent a letter of commitment from Eversource management (see Section VIII.A.2 above), she seeks a reduction to test year insurance expense absent a third-party commitment to disburse insurance surpluses in the future (Companies Brief at 437 n.51, citing Attorney General Brief at 137).

¹²¹ Regarding this evaluation, the Companies state that approximately three to four months prior to the renewal date of its insurance program, the Companies' insurance team holds a strategy meeting with Eversource's insurance broker to discuss: (1) the current coverage in place; (2) opportunities for improvement in coverage and upcoming renewal requirements; and (3) strategies for presenting the Companies' risk mitigation requirements to the market in order to optimize the coverage Eversource has in place (Companies Brief at 437, citing Exh. ES-DPH-1, at 62).

determined that EIM will no longer be used as an insurance carrier, the effect of those disbursements would still be embedded in the cost of service, even though the Companies would no longer be eligible to receive surplus distributions (Companies Brief at 438). The Companies argue that to avoid this inequitable result, the Department should disregard the Attorney General's recommendations (Companies Brief at 438).

3. Analysis and Findings

Rates are designed to allow for recovery of a representative level of a company's revenues and expenses based on a historic test year adjusted for known and measurable changes. D.P.U. 10-55, at 276; D.P.U. 09-30, at 218; D.T.E. 02-24/25, at 161; D.P.U. 92-250, at 106. The Department finds that the Companies undertook proper measures to control property and liability insurance expense, and that the test year insurance costs were reasonable (Exh. ES-DPH-3, WP DPH-12 (East); Exh. ES-DPH-3, WP DPH-12 (West)).

The record shows, however, that EIM made policy surplus distributions during the test year and for each of the last four consecutive years (Exh. AG-1-61, Atts. (f), (g)). Given this recent history of payments, we are not persuaded by the Companies' argument that the policy surplus distributions are non-recurring and not known and measurable.¹²² Rather, the Department finds that EIM's policy surplus distributions are analogous to those made by Nuclear Electric Insurance Limited ("NEIL"). See D.P.U. 87-260, at 26-36. As a

¹²² While we acknowledge that the Companies may, at some point in the future, decide that continued coverage under EIM is no longer compatible with their business needs, much the same can be said for every one of Eversource's insurance carriers.

mutual non-profit carrier, NEIL makes policyholder distributions to recognize a return of a portion of the policy's surplus. The Department has required participants to credit policyholder distributions and other adjustments to customers in a manner approved by the Department. New England Power Company/Montaup Electric Company, D.P.U. 1251, at 10 (1983); Western Massachusetts Electric Company, D.P.U. 990-A at 10 (1982); D.P.U. 990, at 4 (1981); Boston Edison Company, D.P.U. 376-A at 2 (1981); D.P.U. 376, at 15-16 (1980); Western Massachusetts Electric Company, D.P.U. 147-B at 2-3 (1981). The Department has historically treated such credits as an offset against the current NEIL premium for ratemaking purposes because "policyholder distribution is a known and measurable change that should be included as an offset to the Company's current NEIL premiums."¹²³ D.P.U. 87-260, at 38-39. Consistent with the treatment of NEIL surplus distributions in prior cases, the Department finds that it is appropriate to adjust the Companies' cost of service to recognize the refund of the insurance proceeds from EIM.¹²⁴

Based on the above considerations, the Department will adjust the Companies' cost of service. Accordingly, the Department reduces NSTAR Electric's proposed cost of service by

¹²³ This ratemaking treatment is similar in concept to patronage refunds associated with CoBank, a lending institution that focuses on water systems, where the refunds serve to reduce the effective cost of the loan. Whitinsville Water Company, D.P.U. 08-33, at 14 (2008).

¹²⁴ Contrary to Eversource's claim, the Attorney General's argument on EIM distributions is not inconsistent with her argument on rate year non-union salary increases (see n.120 above). EIM policy distributions are governed solely by EIM, and are wholly outside a company's control. In contrast, a company's decision to grant rate year non-union salary increases is entirely within that company's control, so a letter of commitment might be appropriately required.

\$158,407, and reduces WMECo's proposed cost of service by \$22,675 (Exhs. ES-DPH-1, at 42, 45; ES-DPH-2 (East), Sch. 6, at 4 (Rev. 3); ES-DPH-2 (West), Sch. 6, at 4 (Rev. 3)).

J. Property Tax Expense

1. Introduction

The Department's policy is to base the level of property taxes in the revenue requirement on the most recent property tax bills received from communities in which a company has property. D.P.U. 15-80/D.P.U. 15-81, at 166; D.P.U. 12-25, at 330; D.P.U. 08-35, at 150; D.P.U. 96-50 (Phase I) at 108-109; Colonial Gas Company, D.P.U. 84-94, at 19 (1984). In D.P.U. 15-155, at 214-215, however, the Department stated that it would consider alternative ratemaking proposals to address property tax expense.

In this proceeding, the Companies propose to adopt a new method for determining property tax expense (Exh. ES-DPH-1, at 162). The proposed method focuses on personal property tax and varies based on which valuation method a municipality uses. For municipalities that use the "reproduction cost new less depreciation" ("RCNLD") method¹²⁵ for assessing the value of personal property, the Companies propose to continue to use the most recent tax bills to determine property tax expense (Exh. ES-DPH-1, at 167). For

¹²⁵ The RCNLD valuation method applies a cost-inflationary factor to age the property in question, with a 20 percent floor on the value of the asset. See Boston Gas Company v. The Board of Assessors of Boston, Docket Nos. F275055, F275056, at Appellate Tax Board 2009-1232 (December 16, 2009).

municipalities that use the “new book value” (“NBV”) valuation method¹²⁶ for personal property, the Companies propose to use the most recent Form of Lists (“FOLs”),¹²⁷ as well as the most recent tax bills, to determine property tax expense (Exh. ES-DPH-1, at 166). Specifically, the Companies propose to use the value of the personal property identified in the most recent FOLs, along with the real property assessment, mill rate, Community Preservation Act (“CPA”) charge, and water/sewer charge from the most recent tax bills, to determine property tax expense in communities that use the NBV valuation method (Exh. ES-DPH-1, at 166).

During the test year, NSTAR Electric booked \$87,288,884 and WMECo booked \$14,965,006 in property tax expense (Exhs. ES-DPH-2 (East), Sch. DPH-25, at 1 (Rev. 3); ES-DPH-2 (West), Sch. DPH-25, at 1 (Rev. 3)). Using the most recent FOLs for the NBV communities and the most recent tax bills for the RCNLD communities, the Companies propose to increase these amounts by \$3,043,683 for NSTAR Electric and \$2,477,473 for WMECo (Exhs. ES-DPH-2 (East), Sch. DPH-25, at 1 (Rev. 3); ES-DPH-2 (West), Sch. DPH-25, at 1 (Rev. 3)).

¹²⁶ Under the NBV valuation method, personal property valuations are determined by using the net book value of a company’s personal property (Exh. ES-DPH-1, at 163).

¹²⁷ A FOL is a municipality-specific report that identifies the net book value of a taxpayer’s assets in a specific community (Exh. ES-DPH-1, at 164-165). In the first quarter of each calendar year, Eversource produces and submits a FOL to each municipality in which the Companies own property (Exh. ES-DPH-1, at 164). The FOL reports the net book value of the assets owned by the Companies in each municipality as of the end of the most recent calendar year (Exh. ES-DPH-1, at 164-165).

2. Positions of the Parties

a. Attorney General

The Attorney General asserts that property tax expense must be based on verifiable and non-controversial evidence (Attorney General Brief at 188-189, citing D.P.U. 12-25, at 329-330). By contrast, the Attorney General argues that the Companies' proposal is unduly complicated and speculative (Attorney General Brief at 188-189).

The Attorney General maintains that the Companies' proposal is similar to a property tax proposal rejected by the Department in D.P.U. 15-155 (Attorney General Brief at 188-189, citing D.P.U. 15-155, at 213-214). Specifically, the Attorney General contends that, in D.P.U. 15-155, at 213-214, the Department rejected as speculative a company's attempt to calculate rate year property tax expense by applying current mill rates to the most recent valuations (Attorney General Brief at 189-190). The Attorney General argues that the Companies' proposed use of potential, future personal property tax valuations in the instant case is similarly speculative and must be rejected (Attorney General Brief at 189-190). Further, the Attorney General contends that the Companies' proposal would allow Eversource to over collect property taxes as it is based on potential, future valuations, while its actual property tax expense is based on lower, past valuations (Attorney General Brief at 189).

b. Companies

The Companies maintain that in D.P.U. 15-155, at 215, the Department invited alternate proposals to address property tax expense (Companies Brief at 495). The Companies argue that their proposal is distinct from the proposal rejected by the Department

in D.P.U. 15-155 because it relies on known and measurable information, not speculation (Companies Brief at 495-497).

According to the Companies, their proposed method is appropriate because, by using the most recent FOLs, the proposal incorporates the most current property tax information available (Companies Brief at 495). That is, the Companies argue that their proposal uses FOLs to compute property tax in exactly the same manner as the NBV communities, specifically using the appropriate municipal tax rate and updating for known and measurable (and documented) personal property valuations (Companies Brief at 495-496, citing Exhs. ES-DPH-1, at 167-173, ES-DPH-7 (East and West); DPU-39-5). Accordingly, the Companies maintain that their proposed use of the latest FOLs to determine property taxes will produce a highly reliable, known and measurable determination of the rate year property tax expense (Companies Brief at 495-497).

3. Analysis and Findings

Historically, the Department has set property tax expense based on the most recent property tax bills that a company has received. D.P.U. 15-80/D.P.U. 15-81, at 166; D.P.U. 12-25, at 330; D.P.U. 08-35, at 150; D.P.U. 96-50 (Phase I) at 108-109; D.P.U. 84-94, at 19. Because they are considered verifiable, non-controversial evidence, the Department holds the record open in a proceeding to receive a utility's most current, post-test year tax bills. D.P.U. 88-67 (Phase I) at 165-166; D.P.U. 84-94, at 19.

For communities that use the RCNLD valuation method, the Companies propose to continue to use the most recent tax bills to determine property tax expense (Exh. ES-DPH-1,

at 167). We find that the Companies' proposal is consistent with Department precedent and results in a known and measurable change to test year property tax expense (Exhs. ES-DPH-7 (East) (Rev. 3); ES-DPH-7 (West) (Rev. 3)).¹²⁸ See D.P.U. 15-155, at 213-214; 320 n.237.

Communities that use the NBV valuation method rely on FOLs to determine personal property valuations (Exhs. ES-DPH-1, at 168-172; DPU-39-11). In support of the reasonableness of their proposal to use FOLs to calculate property tax expense in NBV communities, the Companies calculated past property taxes using this method and FOLs from prior years, and compared the results to the actual corresponding tax bills for those years (Exhs. ES-DPH-1, at 168-172; DPU-39-11). After review, the Department finds that use of the most recent FOLs in conjunction with information contained in the most recent tax bills (i.e., real property assessment, mill rate, CPA charge, and water/sewer charge), produces a non-speculative, reliable measure of the Companies' rate year tax expense and satisfies the Department's known and measurable standard. See D.P.U. 12-86, at 243-245; D.P.U. 95-118, at 148. Accordingly, the Department approves the Companies' proposed method to calculate property tax expense for communities that use the NBV valuation method and finds that use of the method in the instant case results in a known and measurable change

¹²⁸ As discussed below in Section XII, Eversource has pending challenges at the Massachusetts Appellate Tax Board concerning communities' use of the RCNLD valuation method and has withheld a portion of the tax assessments pending the outcome of these appeals. The Department has found that when a company has an active appeal related to an abatement request, the most recent tax bill remains the basis for determining property tax expense. D.P.U. 15-155, at 325-326.

to test year property tax expense (Exhs. ES-DPH-7 (East) (Rev. 3); ES-DPH-7 (West) (Rev. 3)).

During the test year, NSTAR Electric booked \$87,288,884 and WMECo booked \$14,965,006 in property tax expense (Exhs. ES-DPH-2 (East), Sch. DPH-25, at 1 (Rev. 3); ES-DPH-2 (West), Sch. DPH-25, at 1 (Rev. 3)). Based on the methods approved above, the Department approves an adjustment to test year property tax expense of \$3,043,683 for NSTAR Electric and \$2,477,473 for WMECo, resulting in a final property tax expense of \$90,332,567 for NSTAR Electric and \$17,442,479 for WMECo (Exhs. ES-DPH-2 (East), Sch. DPH-25, at 1 (Rev. 3); ES-DPH-2 (West), Sch. DPH-25, at 1 (Rev. 3)).

K. Rate Case Expense

1. Introduction

Initially, the Companies estimated that they would incur \$2,359,880 in rate case expense for NSTAR Electric and \$1,556,395 in rate case expense for WMECo, for a total rate case expense of \$3,916,275 (Exhs. ES-DPH-2 (East), Sch. DPH-16; ES-DPH-2 (West), Sch. DPH-16). Based on their final invoices and projected costs to complete the compliance filing, the Companies propose a final rate case expense of \$3,126,793 for NSTAR and \$1,741,529 for WMECo for a total rate case expense of \$4,868,322 (Exhs. ES-DPH-2 (East), Sch. DPH-16 (Rev. 4); ES-DPH-2 (West), Sch. DPH-16 (Rev. 4); AG-4-14, Atts. (a), (b) (Supp. 5)). The Companies' proposed rate case expenses include costs related to legal representation, miscellaneous expenses associated with preparing the rate case (e.g., fees, production costs, and temporary employees), and expert consulting services related to:

(1) the PBR proposal; (2) allocated cost of service; (3) marginal cost of service; (4) depreciation; and (5) cost of capital (Exh. AG-4-10, Atts. (a), (b)).

The Companies propose to normalize the rate case expense over five years (Exhs. ES-DPH-1, at 87; ES-DPH-2 (East), Sch. DPH-16 (Rev. 4); ES-DPH-2 (West), Sch. DPH-16 (Rev. 4)). Normalizing the Companies' proposed rate case expense of \$3,126,793 for NSTAR Electric over five years produces an annual expense of \$625,359 (Exh. ES-DPH-2 (East), Sch. DPH-16 (Rev. 4)). Normalizing the Companies' proposed rate case expense of \$1,741,529 for WMECo over five years produces an annual expense of \$348,306 (Exh. ES-DPH-2 (West), Sch. DPH-16 (Rev. 4)).

2. Positions of the Parties

a. Attorney General

i. Introduction

The Attorney General asserts that the Companies have not met their burden to justify full recovery of their rate case expense in this proceeding (Attorney General Brief at 147). Specifically, the Attorney General argues that the Companies should not recover expenses associated with their revised rate design proposal as these expenses were not reasonable and were incurred due to the Companies' imprudence (Attorney General Brief at 148). The Attorney General also submits that the Companies should be limited in their recovery of expenses associated with their PBR consultant and allocated cost of service consultants, on the grounds that the Companies did not select the lowest qualified bidders to perform those studies (Attorney General Brief at 148). Finally, the Attorney General contends that the Companies should not recover expenses associated with work performed by temporary

employees, as she claims that temporary employees were unnecessary given the size of the Companies' full-time workforce and that temporary employees worked on matters beyond this rate case (Attorney General Brief at 148). Each of these arguments is discussed in further detail below.

ii. Rate Design

The Attorney General submits that the Companies should not recover rate case expense associated with the Companies' revised rate design on the grounds that these costs were not reasonable, appropriate, or prudently incurred under the circumstances (Attorney General Brief at 147; Attorney General Reply Brief at 38). In support of her argument, the Attorney General notes that the Companies filed a significantly revised rate design in the middle of this proceeding (Attorney General Brief at 148-149). The Attorney General also maintains that the revised rate design necessitated a new discovery period and additional evidentiary hearings, which she states will cause the Companies and their consultant to incur additional expenses (Attorney General Brief at 149).

The Attorney General attributes these additional expenses to the Companies' own imprudence as the Companies were solely responsible for the development and direction of their rate design (Attorney General Brief at 149-150). In support, the Attorney General asserts that the Companies' revised rate design is an implicit admission that the Companies' initial rate design was unreasonable (Attorney General Reply Brief at 39).

The Attorney General similarly argues that the Companies' decision to file a revised rate design constitutes a failure to contain rate case expense (Attorney General Brief

at 149-150). She asserts that the flaws of the rate design were evident to the public, and therefore the unreasonableness of the initial rate design should have been obvious to the Companies and their consultant (Attorney General Reply Brief at 38). Further, the Attorney General contends that the public hearings were held early enough in the proceeding to give the Companies notice of the inadequacy of their initial rate design with sufficient time to file a revised rate design without triggering a second rate design proceeding (Attorney General Reply Brief at 39).

Finally, the Attorney General asserts that allowing Eversource to recover expenses associated with the revised rate design will set a negative precedent, as the Companies will benefit by recovering costs incurred due to their own imprudence in developing a flawed rate design and their unreasonable delay in filing the revised rate design (Attorney General Brief at 149-150; Attorney General Reply Brief at 38, 40). The Attorney General recommends that the Companies should be responsible for all expenses associated with the revised rate design (Attorney General Brief at 150).

iii. Competitive Bidding Process

The Attorney General contends that the Companies' expenses associated with their PBR consultant and allocated cost of service consultant are excessive (Attorney General Brief at 150). In support, the Attorney General points out that the Companies did not select the lowest bidders to perform these studies (Attorney General Brief at 150). She argues that the lowest bidders had substantial regulatory experience and expert familiarity in their respective fields and asserts that the Companies failed to provide adequate justification for their

selection of higher cost consultants (Attorney General Brief at 151; Attorney General Reply Brief at 40).

The Attorney General additionally argues that the Companies' consultants failed to adequately control costs (Attorney General Reply Brief at 41). In support, the Attorney General maintains that the Companies' consultants had exceeded the budgets in their initial bids even before accounting for their work on evidentiary hearings or on briefs (Attorney General Reply Brief at 41). As a result, the Attorney General recommends that the Companies' recovery of costs associated with their PBR consultant and allocated cost of service consultant should be limited to the budgets proposed by the lowest bidders for those respective studies (Attorney General Brief at 151).

iv. Temporary Employees

Finally, the Attorney General argues that the Companies should not recover expenses associated with their temporary employees, as those costs were not reasonable or incurred exclusively in support of the Companies' rate case (Attorney General Brief at 151-152). As an initial matter, the Attorney General notes that prior petitioners have used very limited, if any, assistance from temporary employees in support of rate cases (Attorney General Brief at 152, citing D.P.U. 15-155, at 228-29; D.P.U. 14-150, at 219-20; D.P.U. 10-55, at 313; D.P.U. 09-39, at 278-79). Moreover, the Attorney General maintains that the Companies have between eleven and 13 full-time employees in their rates and revenue requirements department (Attorney General Brief at 152). She argues that these staffing levels were capable of supporting the Companies' rate case without the need for temporary employees

(Attorney General Brief at 152). For these reasons, the Attorney General argues that the Companies should not recover these expenses (Attorney General Brief at 152).

Additionally, the Attorney General argues that the Companies failed to demonstrate that their temporary employees worked exclusively on the Companies' rate case (Attorney General Brief at 152; Attorney General Reply Brief at 41). In support, the Attorney General asserts that during discovery, the Companies specifically identified seven temporary employees who worked on the Companies' rate case, and described the responsibilities of each temporary employee (Attorney General Brief at 153). The Attorney General notes that the Companies included an eighth temporary employee on invoices provided in support of their rate case expense, but failed to identify this individual during discovery and failed to describe this individual's responsibilities (Attorney General Brief at 153). She argues that this discrepancy demonstrates that the Companies failed to properly document work performed by their temporary employees and calls into question whether the temporary employees worked on matters beyond this rate case (Attorney General Brief at 153). Based on the foregoing, the Attorney General argues that the Companies should not recover expenses associated with their temporary employees (Attorney General Brief at 153).

b. Companies

i. Introduction

Eversource contends that it has met its burden to justify full recovery of rate case expense by demonstrating that the Companies' expenses were reasonably and prudently incurred (Companies Brief at 212, 216). In particular, the Companies state that they followed the Department's requirements by engaging in a competitive request for proposal

("RFP") process for each of its outside service providers (Companies Brief at 212). Further, the Companies state that they evaluated the qualifications, experience and capabilities of each responsive bidder (Companies Brief at 212). The Companies maintain that they selected qualified consultants who provided the necessary services at a reasonable cost as determined by their evaluations of each bidder (Companies Brief at 212, 216). Finally, the Companies assert that the Department should reject the Attorney General's arguments regarding rate design-related expenses, the competitive solicitation process and temporary employees (Companies Brief at 470-479; Companies Reply Brief at 139-141). These arguments are addressed in further detail below.

ii. Rate Design

The Companies assert that they acted prudently, in good faith and consistent with Department precedent in developing their initial rate design proposal. Specifically, the Companies argue that the proposal was designed to further the Department's goals of achieving efficiency and simplicity, while ensuring continuity and fairness between rate classes and corporate earnings stability (Companies Brief at 469, citing D.P.U. 15-155, at 455; D.P.U. 15-80/D.P.U. 15-81, at 294; D.P.U. 13-75, at 330; D.P.U. 12-25, at 444; D.P.U. 10-114, at 341; D.P.U. 09-39, at 401; Companies Reply Brief at 139). The Companies further contend that it was reasonable and prudent to develop a revised rate design proposal in response to concerns raised by the Department, intervenors and the public, and that such a revised approach was consistent with the obligation to provide safe and reliable service at a reasonable cost (Companies Brief at 469-472; Report to the Legislature

Re: Maintenance and Repair Standards for Distribution Systems of Investor-Owned Gas and Electric Distribution Companies, D.P.U. 08-78, at 4 (2009); Incentive Regulation, D.P.U. 94-158, at 3 (1995); Companies Reply Brief at 139).¹²⁹ In this regard, Eversource argues that the prudence of the costs related to their revised rate design should be evaluated based on how a reasonable company would have responded to the particular circumstances and whether the Companies' actions were prudent in light of all circumstances that were known or reasonably should have been known (Companies Brief at 471-472, citing D.P.U. 15-155, at 110; D.P.U. 15-80/15-81, at 72-73; D.P.U. 14-150, at 42; D.P.U. 93-60, at 24-25; D.P.U. 85-270, at 22-23; D.P.U. 906, at 165). Applied in this instance, the Companies assert that the decision to develop the revised rate design was reasonable based on what the Companies reasonably knew at the time of development and in light of the extant circumstances (Companies Brief at 471-472; Companies Reply Brief at 139). Accordingly, the Companies argue that the costs were prudently incurred and should be allowed for recovery (Companies Brief at 471-472; Companies Reply Brief at 139).

iii. Competitive Bidding Process

Eversource concedes that its PBR consultant and allocated cost of service consultant were not the lowest bidders; however Eversource argues that it adequately justified its

¹²⁹ Eversource argues that it developed the revised rate design to address specific concerns regarding the initial rate design and its associated bill impacts (Companies Brief at 470). The Companies note that customers raised these concerns over the course of ten public hearings and through written public comments (Companies Brief at 470). The Companies also contend that, based on the subject matter of some information requests posed to the Companies, the Department and intervenors appeared to share these concerns (Companies Brief at 470).

selection of consultants (Companies Brief at 474; Companies Reply Brief at 140-141). In support, the Companies state that the primary objective in the selection process was to select consultants who would provide high-quality services, at a reasonable price, and in a cost-effective manner (Companies Brief at 473, citing Exh. AG-4-6). Regarding the PBR consultant, Eversource states that it evaluated each bidder using specific criteria¹³⁰ and selected a consultant who, in the Companies' judgment, combined a reasonable cost for the study with a high level of expertise and experience (Companies Brief at 473-474, citing Exh. DPU-21-3). Similarly, regarding the allocated cost of service study, Eversource asserts that it evaluated each bidder using specific criteria,¹³¹ and selected a consultant who, in the Companies' judgment, provided a high level of technical proficiency at a reasonable cost (Companies Brief at 473, citing Exh. DPU-21-3). Thus, according to the Companies, they

¹³⁰ The Companies maintain that they evaluated each bidder based on: (1) overall capability, including corporate experience with similar issues and familiarity with NSTAR Electric, WMECo, and Department precedent; (2) project team capabilities, including qualifications of the proposed staff in the subject matter; (3) technical approaches, including the response to the request for proposal process; (4) proposal quality; (5) pricing, including the proposed price for the work and proposed unit rates, including markup; and (6) commercial review, including commercial impediments and conflicts of interest (Companies Brief at 473-474, citing Exhs. ES-DPH-1, at 85; AG-4-6, Att. (e)).

¹³¹ The Companies maintain that they evaluated each bidder based on criteria that were similar to that used to evaluate the PBR consultant: (1) corporate capability, including experience with similar issues, and familiarity with the Companies and the Department; (2) project team capabilities, including qualifications of proposed staff; (3) technical approaches, including proposed innovative approaches and the response to the request for proposals; (4) proposal quality; (5) pricing, including the proposed price for the work and proposed unit rates, including markup; and (6) commercial review, including commercial impediments and conflicts of interest (Companies Brief at 473, citing Exh. ES-DPH-1, at 85).

selected consultants who struck a proper balance between cost considerations, levels of expertise, and technical knowledge necessary to support their rate case (Companies Brief at 474).

In addition to the competitive bidding process, the Companies state that they took affirmative steps to control their rate case expense by, inter alia, carefully scrutinizing invoices and selecting consultants who provided discounted, blended hourly fees and not-to-exceed price caps on services (Companies Brief at 475, citing Exhs. DPU-21-16; AG-4-9; Companies Reply Brief at 141). As a result of these cost control measures, the Companies maintain that they identified billing errors which reduced their rate case expense by approximately \$10,000 (Companies Reply Brief at 141, citing Exh. AG-4-10, Atts. (d), (e) (Supp. 1); (a), (b) (Supp. 3); (a), (b) (Supp. 4)). The Companies also maintain that these cost control measures resulted in a credit of \$245,000 for services after a consultant exceeded a price cap (Companies Reply Brief at 141, citing Exh. AG-4-10, Atts. (d), (e) (Supp. 1); (a), (b) (Supp. 3); (a), (b) (Supp. 4)).

Based on these considerations, the Companies argue that they adequately justified selecting consultants who were not the lowest responsive bidders, and that they successfully contained their rate case expense by using cost control mechanisms (Companies Brief at 474; Companies Reply Brief at 141). For these reasons, the Companies assert that the Department should reject the Attorney General's recommendations (Companies Brief at 475).

iv. Temporary Employees

The Companies argue that their use of temporary employees was reasonable and appropriate given the complexity and scope of this proceeding (Companies Brief at 475). As an initial matter, the Companies state that the full-time employees in their rates and revenue requirements division are responsible for supporting all of the Companies' regulatory filings before the Department, not just this rate case (Companies Brief at 475-76, citing Exh. AG-47-4, Atts. (a) through (n)). According to the Companies, these responsibilities include developing testimony and analyses to support regulatory filings, as well as preparing responses to information requests issued in Department adjudications (Companies Brief at 476, citing Exh. AG-47-4, Atts. (a) through (n)).

Regarding the rate case, the Companies assert that the amount of work required to support the Companies' filing necessitated using temporary employees (Companies Brief at 476). In support, the Companies note that the filing required "project documentation" covering a twelve-year period for NSTAR Electric and a seven-year period for WMECo (Companies Brief at 476). Collectively, the Companies assert that this work included compiling, summarizing, and producing documents for approximately 3,200 projects and lasted 18 months (Companies Brief at 476). The Companies argue that they did not have adequate staffing levels for this effort, given the responsibilities of the full-time employees in their rates and revenue requirements division in other proceedings (Companies Brief at 476).

In light of these circumstances, the Companies argue that their decision to use temporary employees was reasonable and appropriate (Companies Brief at 476-477).

Eversource also contends that it has demonstrated that the temporary employees worked solely in support the Companies' rate case (Companies Brief at 478, citing Exhs. AG-47-3; AG-47-5). Therefore, the Companies assert that they should recover the costs associated with their temporary employees as part of their rate case expense (Companies Brief at 479).

v. Normalization

The Companies propose to normalize their rate case expense over five years (Exhs. ES-DPH-1, at 87; ES-DPH-2 (East), Sch. DPH-16 (Rev. 3); ES-DPH-2 (West), Sch. DPH-16 (Rev. 3)).¹³² The Companies assert that this normalization period is consistent with Department precedent (Companies Brief at 217, citing D.P.U. 15-155, at 244).

In support, the Companies note that the Department has historically determined the proper normalization period for rate case expense by calculating the average length of time between a company's last four rate cases (Companies Brief at 216-217). Using this method, the Companies maintain that eight years is the average period between the last four rate cases for both NSTAR and WMECo (Companies Brief at 216-217, citing Exhs. ES-DPH-4, Sch. DPH-6 (East); ES-DPH-4, Sch. DPH-6 (West)).¹³³ However, according to Eversource,

¹³² Neither the Attorney General nor any other party commented on the Companies' proposed normalization period.

¹³³ The Companies calculated 9,043 days between the last four rate cases for NSTAR Electric (Boston Edison Company, D.P.U. 92-92 (1992); D.P.U. 92-250; D.T.E. 05-85; D.P.U. 17-05), which averages 8.26 years between rate cases, rounded to 8 years (Exh. ES-DPH-4, Sch. DPH-6 (East)). The Companies calculated 9,167 days between the last four rate cases for WMECo (Western Massachusetts Electric Company, D.P.U. 91-290 (1992); Western Massachusetts Electric Company, D.T.E. 06-55 (2006); D.P.U. 10-70; D.P.U. 17-05), which averages 8.37 years, also rounded to eight years (Exh. ES-DPH-4, Sch. DPH-6 (West)).

the Department found in D.P.U. 15-155, at 244, that the Section 94 requirement for electric distribution companies to file rate cases every five years effectively caps the normalization period at five years (Companies Brief at 217). Therefore, the Companies contend that in instances where a normalization period calculated pursuant to Department precedent results in a period greater than five years, the Department instead will impose a five-year normalization period (Companies Brief at 217, citing D.P.U. 15-155, at 244).

3. Analysis and Findings

a. Introduction

The Department allows recovery for rate case expense based on two important considerations. First, the Department permits recovery of rate case expense that has actually been incurred and, thus, is considered known and measurable. D.P.U. 10-114, at 219-220; D.P.U. 07-71, at 99; D.T.E. 05-27, at 157; D.T.E. 98-51, at 61-62. Second, such expenses must be reasonable, appropriate, and prudently incurred. D.P.U. 10-114, at 220; D.P.U. 09-30, at 227; D.P.U. 95-118, at 115-119.

The overall level of rate case expense among utilities has been, and remains, a matter of concern for the Department. D.P.U. 10-114, at 220; D.P.U. 07-71, at 99; D.T.E. 03-40, at 147; D.T.E. 02-24/25, at 192; D.P.U. 93-60, at 145. Rate case expense, like any other expenditure, is an area in which companies must seek to contain costs. D.P.U. 10-114, at 220; D.P.U. 07-71, at 99; D.T.E. 03-40, at 147-148; D.T.E. 02-24/25, at 192; D.P.U. 96-50 (Phase I) at 79. All companies are on notice that the risk of non-recovery of rate case expenses looms should they fail to sustain their burden to demonstrate cost containment associated with their selection and retention of outside service providers.

D.P.U. 10-114, at 220; D.P.U. 09-39, at 289-293; D.P.U. 09-30, at 238-239; D.T.E. 03-40, at 152-154. Further, the Department has found that rate case expenses will not be allowed in cost of service where such expenses are disproportionate to the relief being sought.

D.P.U. 10-114, at 220; D.P.U. 10-55, at 323; see also Barnstable Water Company,

D.P.U. 93-223-B at 16-17 (1994).

b. Competitive Bidding Process

i. Introduction

The Department has consistently emphasized the importance of competitive bidding for outside services in a petitioner's overall strategy to contain rate case expense. See, e.g., D.P.U. 10-114, at 221; D.P.U. 09-30, at 227; D.T.E. 05-27, at 158-59; D.T.E. 03-40, at 148; D.T.E. 02-24/25, at 192. If a petitioner elects to secure outsider services for rate case expense, it must engage in a competitive bidding process for these services.

D.P.U. 10-114, at 221; D.P.U. 09-30, at 227; D.P.U. 07-71, at 99-100, 101; D.T.E. 03-40, at 153. In all but the most unusual of circumstances, it is reasonable to expect that a company can comply with a competitive bidding requirement. D.P.U. 10-55, at 342. The Department fully expects that competitive bidding for outside rate case services, including legal services, will be the norm. D.P.U. 10-55, at 342.

The requirement of having to submit a competitive bid in a structured and organized process serves several important purposes. First, the competitive bidding and qualification process provides an essential, objective benchmark for the reasonableness of the cost of the services sought. D.P.U. 10-114, at 221; D.P.U. 09-30, at 228-229; D.P.U. 07-71, at 101; D.T.E. 03-40, at 152. Second, it keeps even a consultant with a stellar past performance

from taking the relationship with a company for granted. D.P.U. 10-114, at 221; D.P.U. 07-71, at 101; D.T.E. 03-40, at 152. Finally, a competitive solicitation process serves as a means of cost containment for a company. D.T.E. 03-40, at 152-153.

The competitive bidding process must be structured and objective, and based on a request for proposal (“RFP”) process that is fair, open, and transparent. D.P.U. 10-114, at 221, 224; D.P.U. 09-30, at 227-228; D.P.U. 07-71, at 99-100; D.T.E. 03-40, at 153. The timing of the RFP process should be appropriate to allow for a suitable field of potential service providers to provide complete bids, and provide the company with sufficient time to evaluate the bids. D.P.U. 10-114, at 221; D.P.U. 10-55, at 342-343. Further, the RFP issued to solicit service providers must clearly identify the scope of work to be performed and the criteria for evaluation. D.P.U. 10-114, at 221-222; D.P.U. 10-55, at 343.

The Department does not seek to substitute its judgment for that of a petitioner in determining which service provider may be best suited to serve the petitioner’s interests, and obtaining competitive bids does not mean that a company must necessarily retain the services of the lowest bidder regardless of its qualifications. D.P.U. 10-114, at 222; D.T.E. 03-40, at 153. The need to contain rate case expense, however, should be accorded a high priority in the review of bids received for case work. D.P.U. 10-114, at 222; D.T.E. 03-40, at 153. In seeking recovery of rate case expenses, companies must provide an adequate justification and showing, with contemporaneous documentation, that their choice of outside services is both reasonable and cost-effective. D.P.U. 10-114, at 222; D.T.E. 03-40, at 153.

ii. Companies' Request for Proposal Process

The Companies issued RFPs to retain outside consultants associated with their:

(1) depreciation analysis; (2) cost of capital analysis; (3) marginal cost of service analysis; (4) allocated cost of service analysis; (5) legal services; and (6) PBR proposal

(Exhs. DPU-21-1; DPU-21-6; AG-4-2). As noted above, the Companies bear the burden of demonstrating that their selections of outside consultants and legal service provider are both reasonable and cost-effective. D.P.U. 10-55, at 343; D.P.U. 09-30, at 230-231;

D.T.E. 03-40, at 153.

The Companies initially considered the capabilities of internal staff, including technical expertise, resources, and access to data, prior to soliciting outside consultants (Exh. DPU-21-5). We find that the Companies' decision to retain consultants, rather than using internal staff, to perform these tasks was reasonable given the complexity of the issues and the overall scope of this rate case.

As noted above, as part of their efforts to retain outside consultants, the Companies drafted RFPs for each outside service provider and distributed the RFPs to potential bidders via email and electronic sourcing systems (Exhs. AG-4-3; AG-4-4, at 1). The record demonstrates that each RFP set forth the scope of work to be performed and listed the criteria required for qualification (Exh. AG-4-2, Atts.). The RFPs also outlined the evaluation criteria that Eversource would apply to bidders, such as cost, strength of proposal, familiarity with the Companies' operation, industry experience, approach, depth of understanding, and familiarity with Department precedent (Exh. AG-4-2, Atts). Regarding

price, the RFPs required bidders to include a not-to-exceed price cap for certain phases of the rate case and encouraged responsive bidders to propose alternative fee structures (Exh. AG-4-2, Att. (a) at 3; Att. (b) at 5; Att. (c) at 4; Att. (d) at 5; Att. (e) at 3-4; Att. (f) at 8). The Companies created internal review committees for each RFP to evaluate responsive bids, and in certain instances conducted interviews with responsive bidders (Exhs. ES-DPH-1, at 81-82; AG-4-6).

The Companies issued the RFP for the depreciation analysis to four potential bidders and received three responsive bids (Exhs. DPU-21-1, at 2-3; AG-4-4, at 1-2; AG-4-5, at 1 & Atts. (a) through (c)). The Companies issued the RFP for the cost of capital analysis to five potential bidders and received four responsive bids (Exhs. DPU-21-1, at 3; AG-4-4, at 2-3; AG-4-5, at 1 & Atts. (d) through (g)). Regarding the marginal cost analysis, the Companies issued the RFP to four potential bidders and received one responsive bid (Exhs. DPU-21-1, at 3; AG-4-4, at 3; AG-4-5, at 1 & Att. (h)). Further, the Companies issued the RFP for the allocated cost of service analysis to six potential bidders and received three responsive bids (Exhs. DPU-21-1, at 4; AG-4-4, at 3-4; AG-4-5, at 1-2 & Atts. (i) through (k)). The Companies issued the RFP for the PBR analysis to seven potential bidders and received six responsive bids (Exhs. DPU-21-1, at 5-6; AG-4-4, at 5-6; AG-4-5, at 2 & Atts. (l) through (q)). Finally, the Companies issued the RFP for legal services to five potential bidders and received four responsive bids (Exhs. DPU-21-1, at 4-5; AG-4-4, at 4-5; AG-4-5, at 2 & Atts. (r) through (u)).

The Department has reviewed the bids associated with the six categories of rate case expense for which Eversource conducted a competitive solicitation, as well as the scoring and evaluation material submitted by the Companies and other evidence regarding the selection process, and we have considered the related arguments of the parties (Exhs. DPU-21-1; AG-4-4; AG-4-5 & Atts.; AG-4-6 & Atts.). The Department is satisfied that the selection process was appropriate and that the Companies scored and evaluated the bidders in a reasonable and equitable manner. Further, we find that Eversource gave appropriate weight to the billing structures of the various bidders and any differences among them, considered other important price factors, such as price caps and other cost-containment features, and, also considered important non-price factors, including familiarity with Department precedent and, where relevant, the Companies' operations (Exhs. ES-DHP-1, at 85; AG-4-5 & Atts.; AG-4-6 & Atts.).

Based on these considerations, the Department concludes that the Companies conducted a fair, open, and transparent RFP process to generate bids from outside consultants and that the RFPs clearly identified the scope of work to be performed and the criteria by which the Companies would evaluate responsive bidders. The Department further finds that the Companies' RFP process was adequately structured to allow the Companies to determine the capabilities, approach, and pricing offered by each responsive bidder.

iii. Retention of Specific Consultants

(A) PBR and Allocated Cost of Service Consultants

The Attorney General challenges the Companies' selection of consultants for the PBR consultant and the allocated cost of service consultant on the grounds that the Companies did

not select the lowest bidders (Attorney General Brief at 150-151; Attorney General Reply Brief at 40). The Companies concede that they did not select the lowest cost bidder for these studies, but contend that their selections were adequately justified (Companies Brief at 472-475; Companies Reply Brief at 141).

The Department does not require a company to choose the lowest bidder, provided that the company adequately justifies its decision to do so. See D.P.U. 15-155, at 238-239; D.P.U. 10-114, at 222; D.T.E. 03-40, at 153. While the Department will not substitute its judgment for that of a petitioner in determining which consultant may be best suited to serve the petitioner's interests, the petitioner must demonstrate that its choice is both reasonable and cost-effective. See D.P.U. 10-55, at 342-343.

Regarding the selection of the PBR consultant, the record demonstrates that the Companies interviewed key personnel from responsive bidders (Exh. ES-DPH-1, at 5). The Companies also provided the scoring sheets used in their evaluation of each responsive bidder as contemporaneous documentation of their decision making process (Exh. AG-4-6, Att. (e)). Given the complexity of the PBR issue, we are not persuaded by the Attorney General's suggestion that cost estimates should have been the sole driving factor behind the Companies' decision. Rather, based on our review of the evidence, we find that the Companies appropriately considered non-price factors in selecting their consultant, such as each bidder's level of expertise and overall capabilities (Exh. AG-4-6, Att. (e) at 1-2). Further, we find that the overall costs associated with the PBR consultant are not unreasonable or disproportionate to the overall scope of the work provided (Exhs. AG-4-2, Att. (f); AG-4-10,

Atts. (a), (b), (c) (Supps.)). Based on these considerations, we find that the Companies provided sufficient justification for not selecting the lowest bidder as their PBR consultant, and that the selection of such consultant was reasonable. Moreover, we find that the Companies took appropriate steps to control the costs associated with their PBR consultant, including a not-to-exceed lump sum component for specific portions of this rate case (Exhs. AG-4-5, Att. (n) at 28; AG-4-9). Accordingly, the Department concludes that Eversource's choice of PBR consultant was both reasonable and cost-effective.

Regarding the selection of the allocated cost of service consultant, the Companies interviewed the three responsive bidders (Exh. ES-DPH-1, at 85). The Companies also submitted the scoring sheet used in their evaluation of each responsive bidder as contemporaneous documentation of their decision making process (Exh. AG-4-6, Att. (c)). Our review of the evaluation shows that the Companies reasonably eliminated one bidder based on a lack of experience and eliminated the other bidder based on an unproven technical approach and lack of experience (Exh. AG-4-6, Att. (c) at 2). Further, we find that the costs related to the allocated cost of service consultant are not unreasonable or disproportionate to the overall scope of work provided (Exhs. AG-4-2, Att. (d); AG-4-10, Atts. (a), (b), (d) (Supps.)).

Based on these considerations, we find that the Companies provided sufficient justification for not selecting the lowest bidder as their allocated cost of service consultant, and that the selection of such consultant was reasonable. Moreover, we find that the Companies took appropriate steps to control the costs associated with the allocated cost of

service consultant, including a not-to-exceed lump sum component for specific portions of this rate case (Exhs. AG-4-5, Att. (i) at 36; AG-4-9). Accordingly, the Department concludes that Eversource's choice of allocated cost of service consultant was both reasonable and cost-effective.

(B) Remaining Consultants

Although the Attorney General does not challenge Eversource's retention of depreciation consultant, cost of capital consultant, marginal cost of service consultant, or outside legal services, the Companies bear the burden of demonstrating that their selections were both reasonable and cost-effective. D.P.U. 15-155, at 237-238; D.P.U. 10-55, at 343; D.P.U. 09-30, at 230-231; D.T.E. 03-40, at 153. The record demonstrates that the Companies analyzed responsive bids for each of these outside service categories based on pricing, experience, expertise, and overall capability (Exh. AG-4-6, Atts. (a), (b), (g)).¹³⁴ The Companies also submitted scoring sheets for each of these outside service categories as contemporaneous documentation of their decision-making process (Exh. AG-4-6, Atts.).

Based on our review of the bids and the bid evaluation process, we find that Eversource gave proper consideration to price factors, such as cost containment features and price caps, and find that the overall costs associated with its depreciation consultant, cost of

¹³⁴ The Department has previously determined that a company may reasonably select the only responsive bidder to an RFP, provided the competitive solicitation process adequately established an objective benchmark for evaluating the consultant. See D.P.U. 10-114, at 230-231. In this case, the Department finds that the Companies' RFP process established an adequate benchmark for the capabilities, approach, and pricing for the marginal cost analysis, and that the Companies' selection of an outside consultant was reasonable and appropriate.

capital consultant, marginal cost of service consultant and attorneys are not unreasonable or disproportionate to the overall scope of work provided (Exhs. AG-4-2, Atts. (a), (b), (c), (e); AG-4-10, Atts. (a), (b), (e), (f), (g), (h) (Supps.)). Further, we find that Eversource gave proper consideration to non-price factors, such as corporate capability and familiarity with Department ratemaking precedent, and selected consultants who had an understanding of the tasks for which they were requested to bid and who it determined would provide the best combination of cost, expertise, and quality of service (Exhs. AG-4-5, Atts. (c), (e), (h), (i), (n), (u); AG-4-6, Atts.). Accordingly, the Department concludes that Eversource's choice of depreciation consultant, cost of capital consultant, marginal cost of service consultant, and legal services was both reasonable and cost-effective.

c. Various Rate Case Expenses

i. Introduction

The Department has directed companies to provide all invoices for outside rate case services that detail the number of hours billed, the billing rate, and the specific nature of the services performed. D.P.U. 10-114, at 235-236; D.T.E. 03-40, at 157; D.T.E. 02-24/25, at 193-194. These expenses must be reasonable, appropriate, and prudently incurred. D.P.U. 10-114, at 220; D.P.U. 09-30, at 227; D.P.U. 95-118, at 115-119.

ii. Rate Design

The Attorney General argues that costs associated with the Companies' revised rate design were not reasonably incurred, and argues the Department should limit the Companies' recovery to those costs incurred with the Companies' initial rate design. (Attorney General Brief at 147-150; Attorney General Reply Brief at 38-39). The Companies counter that it

was reasonable and prudent to develop a revised rate design proposal in response to concerns raised by the Department, intervenors and the public (Companies Brief at 469-472).

The Department has included consultant expenses as part of a petitioner's litigation expenses and we have declined to link recovery of these expenses to particular outcomes, as this would constitute an unwarranted intrusion into management affairs. D.P.U. 95-118, at 120. Further, we have recognized that imposing the Department's judgment concerning a company's actions during adjudication would have the undesirable effect of chilling management's exercise of its responsibility to vigorously pursue legal rights and remedies in accordance with management's own good faith judgment. See D.P.U. 11-43, at 176; D.P.U. 89-114/90-331/91-80 (Phase One), at 42; Boston Gas Company, D.P.U. 1100, at 107 (1982). As such, the Department typically is reluctant to interfere with management judgment unless shown to be frivolous or in bad faith. D.P.U. 11-43, at 176; D.P.U. 1100, at 103, 106-107, citing Fitchburg Gas and Electric Light Company, D.P.U. 19084, at 41 (1977). However, the Department has long held that a company's rate case expenses must be prudently incurred. D.P.U. 10-114, at 220; D.P.U. 09-30, at 227; D.P.U. 95-118, at 115-119.

In the instant proceeding, the Department finds that the Companies' decision to submit a revised rate design proposal was not frivolous or in bad faith. Rather, we are satisfied that the Companies revised the initial filing in response to meaningful concerns regarding bill impacts and related issues raised by the intervenors and the public throughout the discovery and public hearing phases of this proceeding (see, e.g., Exh. ES-RDP-Rebuttal-1, at 1-2).

Under the circumstances, we find that the Companies' decision to revise the rate design in response to these concerns was prudent and in good faith, and we decline to adopt the Attorney General's recommendation. Furthermore, given the scope of this proceeding and the complex rate design issues involved, we are not persuaded by the Attorney General's argument that the costs were unreasonable (Exh. AG-4-10, Att. (c) (Supps.)).

Nonetheless, the Department acknowledges the Attorney General's concerns about the level of rate case expense. As such, the Department expects that all companies filing base rate proceedings will exercise prudent judgement in submitting initial proposals, so as to avoid subsequent significant modifications that delay or extend the proceedings and/or increase rate case expense. The Department will continue to closely scrutinize the propriety of any such modifications and will deny rate case expense in instances where a petitioner acts in bad faith or imprudently.

iii. Temporary Employees

The Companies seek to recover \$551,407 in rate case expense related to work performed by temporary employees in the preparation and support of this rate case, with 85 percent of this expense allocated to NSTAR Electric and 15 percent of this expense allocated to WMECo (Exhs. ES-DPH-3 (East), Sch. 16; ES-DPH-3 (West), Sch. 16; DPU-21-20; AG-4-22; AG-47-3). The Attorney General argues that the Companies should not recover expenses associated with their temporary employees, as those costs were not reasonable or incurred exclusively in support of the Companies' rate case (Attorney General Brief at 151-152). We disagree.

The staffing level of the Companies' rate and revenue requirements division ranged between eleven and 13 employees during the preparation of this rate case (Exhs. AG-47-5; AG-47-6). The Department recognizes that these employees are responsible for supporting all of the Companies' regulatory filings before the Department, including preparation of the Companies' filings, developing testimony and analyses in support those filings, and responding to information requests (Exh. AG-47-7, Atts. (a) through (n)).

Preparation of the Companies' filing began in 2015 and required a substantial amount of work, including the documentation of 3,200 projects, covering a twelve-year period for NSTAR Electric and a seven-year period for WMECo (Exhs. AG-47-3; AG-47-5). Given the level and duration of the work needed to prepare the rate case and the overall responsibilities of the Companies' rate and revenue requirements division, the Companies have demonstrated that it was reasonable to retain additional staffing to prepare the rate case. In addition, with the exception discussed below, the Department finds that the costs were reasonable and sufficiently documented.

The Companies identified seven temporary employees who provided support for the rate case (Exhs. DPU-21-20; AG-47-3; AG-47-4). The Companies produced the seven temporary employees' resumes and qualifications and identified the specific responsibilities, scope of work, and costs for each of these employees (Exhs. AG-47-3; AG-47-5). However, the documents provided by the Companies to support recovery of rate case expense related to temporary employees also included cost information associated with an eighth, previously unidentified, temporary employee (Exh. AG-4-10, Att. (i) (Supps. 2-5)). The Companies

concede that they failed to identify the eighth temporary employee in their discovery responses and further failed to detail the work performed by this individual (Companies Brief at 478 n. 56). As a result, neither the Department nor the intervenors had the opportunity to investigate the scope of work of this temporary employee or the costs associated with this worker. D.P.U. 09-39, at 293-294.

For the reasons discussed above, the Department finds that the Companies have failed to demonstrate that the costs for the eighth temporary employee were reasonable or prudently incurred, and therefore, we will disallow recovery of these costs. The Department calculates the costs for this eighth temporary employee to be \$170,894 (Exh. AG-4-10, Att. (i) Supps.)). Based on the Companies' 85/15 percent cost allocation ratio for temporary employees, NSTAR Electric's proposed rate case expense shall be reduced by \$145,260, and WMECo's proposed rate case expense shall be reduced by \$25,634 (Exh. AG-4-22).

iv. Remaining Expenses

As noted above, the Department has found that the Companies' selection of PBR consultant, allocated cost of service consultant, depreciation consultant, cost of capital consultant, marginal cost of service consultant, and attorneys were reasonable and cost-effective. The Department has reviewed the invoices provided by the Companies that support these costs, and finds that such invoices are properly itemized and the costs are reasonable and prudently incurred (Exh. AG-4-10 & Atts. & Supps.). Accordingly, the Department approves the recovery as rate case expense of all costs associated with these consultants.

d. Fees for Rate Case Completion

In their proposed rate case expense, the Companies have included: \$35,000 as a compliance phase flat fee for legal services; \$200,000 as a compliance fee for their allocated cost of service study;¹³⁵ and \$3,000 as a compliance fee regarding the marginal cost of service study (Exhs. AG-4-10, Atts. (a) & (b) (Supp. 5)). These amounts are included in the proposed final rate case expense amount of \$4,697,428 (Exh. AG-4-10, Atts. (a) & (b) (Supp. 5)). The Department's long-standing precedent allows only known and measureable changes to test year expenses to be included as adjustments to cost of service.

D.P.U. 10-114, at 237; D.T.E. 03-40, at 161; D.T.E. 02-24/25, at 195; D.T.E. 98-51, at 61-62. Proposed adjustments based on projects or estimates are not known and measureable, and recovery of those expenses is not allowed. D.P.U. 10-114, at 237;

¹³⁵ According to the Companies, the compliance filing for the allocated cost of service study includes: (1) revision of the allocated cost of service study with a new labor allocator; (2) pre-mitigation rate design and bill impact analyses; (3) preparation of pre-mitigation summaries and mitigation strategies; (4) preparation of mitigation bill impact files; (5) mitigation of rate design and bill impacts; and (6) preparation of all supporting exhibits (Exh. AG-4-10, Att. (d) at 19 (Supp. 5)). Further, Eversource states that if the Department directs the Companies to revise test year billing determinants for net-metering customers, the compliance filing will require revisions of billing determinants for 200 WMECo customers in ten class combinations (Exh. AG-4-10, Att. (d) at 19 (Supp. 5)). To comply with any such directive, the Companies state that the compliance filing will include revisions for: (1) billing determinant mapping files; (2) bill-impact files; (3) cost of service models for rate classes; and (4) consolidation mitigation (Exh. AG-4-10, Att. (d) at 19 (Supp. 5)). Finally, Eversource expects to perform the following tasks during the compliance phase: (1) new calculation of net-metering billing determinant with modifications to billing database and test year mapping; (2) modification of pre-mitigation bill impact files for net-metering customers; (3) revision of allocated cost of service accounting for change net-metering billing determinants; and (4) modification of mitigation bill impact files for net-metering customers. (Exh. AG-4-10, Att. (d) at 19-20 (Supp. 5)).

D.T.E. 03-40, at 161-162; D.T.E. 02-24/25, at 196; D.T.E. 01-56, at 75. The Department does not preclude recovery of fixed fees for completion of compliance filing work in a rate case but the reasonableness of the fixed fees must be supported by sufficient evidence.

D.P.U. 10-114, at 237; D.T.E. 03-40, at 162; D.T.E. 02-24/25, at 196.

Given an adequate showing of the reasonableness of fixed contracts for services to complete a case after the records closes and briefs are filed, a company may qualify to recover such expenses. D.P.U. 10-114, at 237; D.T.E. 03-40, at 162; D.T.E. 02-24/25, at 196. Documented and itemized proof is a prerequisite for recovery. D.P.U. 10-114, at 237; D.T.E. 03-40, at 162; D.T.E. 02-24/25, at 196. Assuming that the fixed fee agreement is properly supported, the fact that the consultants and the company have agreed to complete the service for a fixed fee gives the Department a level of confidence in the reasonableness of the level of effort and consequent expenditure to carry the case through to a compliance filing. D.P.U. 10-114, at 237; D.P.U. 10-55, at 338.

The Department has reviewed the Companies' basis for their proposed fixed fee and has determined that this fixed fee is reasonable and supported by sufficient evidence (Exhs. AG-4-10, Atts. (a) & (b) (Supp. 5)). Accordingly, we allow the Companies to recover these costs as part of their rate case expense.

e. Normalization of Rate Case Expense

The Companies propose to normalize the rate case expense over five years, which they claim is consistent with Department precedent (Companies Brief at 217, citing

D.P.U. 15-155, at 244). No other party commented on the Companies' proposed normalization period.

The proper method to calculate a rate case expense adjustment is to determine the rate case expense, normalize the experience of an appropriate period, and then compare it to the test year level to determine the adjustment. D.P.U. 10-55, at 338-339; D.T.E. 05-27, at 163; D.T.E. 03-40, at 163; D.T.E. 02-24/25, at 197; D.T.E. 98-51, at 62; D.P.U. 95-40, at 58. The Department's practice is to normalize rate case expense so that a representative annual amount is included in the cost of service. D.P.U. 10-55, at 339; D.T.E. 05-27, at 163; D.T.E. 03-40, at 163; D.T.E. 02-24/25, at 191; D.T.E. 01-56, at 77; D.T.E. 98-51, at 53; D.P.U. 96-50 (Phase I), at 77; D.P.U. 1490, at 33. Normalization is not intended to ensure dollar-for-dollar recovery of a particular expense; rather it is intended to include the cost of service as a representative annual level of rate case expense. D.P.U. 10-55, at 339; D.T.E. 05-27, at 163; D.T.E. 03-40, at 163-164; D.T.E. 02-24/25, at 191; D.P.U. 96-50 (Phase I) at 77.

In determining the period for normalization for rate case expense, the Department typically looks to the average intervals between the filing dates of a company's last four rate cases. D.P.U. 15-155, at 243; D.P.U. 10-55, at 339; D.P.U. 1490, at 33-34. Applying this method here, the normalization period for NSTAR Electric would be eight years, and the normalization period for WMECo would also be eight years (Exhs. ES-DPH-4, Sch. DPH-6 (East) at 2; ES-DPH-4, Sch. DPH-6 (West), at 2; AG-4-23).

In D.P.U. 15-155, at 244, the Department stated that the requirement in Section 94 for electric distribution companies to file rate cases every five years effectively caps the normalization period at five years. Therefore, in instances where a normalization period calculated pursuant to Department precedent results in a period greater than five years, the Department stated that we would, instead, use a five-year normalization period.

D.P.U. 15-155, at 244.

Issues raised in the instant case, however, lead us to refine our findings in D.P.U. 15-155. As the Companies correctly note, Section 94 requires the filing of rate schedules (as compared to “rate cases”) no less than every five years, but does not specify that the schedules must be designed to allow for an increase in base rates (Exh. DPU-47-1, at 2). Accordingly, we will not treat the Section 94 requirement to file rate schedules no less than every five years as a de facto five-year cap on the normalization period. Instead, we will consider the filing requirements of Section 94, together with specific facts of the case, to establish a normalization period that is an appropriate basis for determining a representative annual level of rate case expense to include in cost of service.

The issue of rate case normalization period is particularly relevant where companies may seek to adopt PBR plans that have terms longer than five years, as Eversource initially proposed in the instant proceeding (Exh. DPU-24-1).¹³⁶ The Department has previously looked to the term of the PBR for guidance in establishing appropriate rate case expense normalization periods. D.P.U. 09-30, at 241; D.P.U. 07-71, at 105; D.T.E. 05-27,

¹³⁶ The Companies noted during discovery that their proposed PBR mechanism was “designed to remain in place over the long-term” (Exh. DPU-24-1).

at 163-164; D.T.E. 03-40, at 163; D.T.E. 01-56, at 77; D.P.U. 96-50 (Phase I) at 78-79. In prior instances, the Department has normalized rate case expense over the term of a PBR, finding that a PBR prevents a company from filing rate cases for a predetermined period. See, e.g., D.P.U. 96-50 (Phase I) at 78-79. As such, we determined that the PBR term provided a more representative basis in establishing a normalization period for rate case expense. D.P.U. 96-50 (Phase I) at 78-79.

As discussed below in Section IX, the Department has approved a PBR for Eversource with a five-year term and a stay-out provision that prevents the Companies from filing a base rate case at any time during those five years. Based on the facts of this case, the Department concludes that a five-year normalization period is an appropriate basis for determining a representative amount of the Companies' rate case expense. NSTAR Electric's and WMECo's rate case expense adjustments are set forth below.

f. Requirement to Control Rate Case Expense

The Department recognizes the extraordinary nature of a base rate proceeding and the associated investment of resources that is required for a petitioner to litigate its case before the Department. This notwithstanding, we again emphasize the Department's concern with the amount of rate case expense associated with rate proceedings and the need for petitioners to control these costs. D.P.U. 14-150, at 224; D.P.U. 11-01/D.P.U. 11-02, at 270; D.P.U. 10-55, at 341; D.P.U. 09-39, at 286; D.P.U. 09-30, at 227; D.P.U. 08-35, at 129; D.P.U. 07-71, at 99; D.T.E. 03-40, at 147; D.T.E. 02-24/25, at 192; D.P.U. 93-60, at 145. Although we no longer require a company to file a specific proposal for shareholders to bear

a portion of rate case expense, the Department's ability to disallow a company's recovery of rate case expense for failure to adhere to our strict requirements concerning competitive bidding, or for failure to pursue other reasonable cost-containment measures, or for failure to properly itemize rate case expense invoices, provides a sufficient incentive for companies to control rate case expense. D.P.U. 15-155, at 245.

Before exercising discretion to disallow recovery of rate case expense, the Department will closely scrutinize company's the RFP process to ensure that it is rigorous and demonstrates that the selected outside consultants are reasonable and costs and cost-effective. D.P.U. 15-155, at 245; D.P.U. 14-150, at 224; D.P.U. 14-120, at 86-87; D.P.U. 11-01/D.P.U. 11-02, at 270; D.P.U. 10-55, at 343. We expect that cost containment provisions to be included in rate case expense and companies to be aggressive in their cost control measures. D.P.U. 15-155, at 245; D.P.U. 14-150, at 226-227; D.P.U. 13-90, at 177-178. We will exercise our discretion to disallow recovery of rate case expense where a company fails to adhere to Department precedent and in instances where the amount of overall rate case expense appears to be excessive or disproportionate to the work performed. See D.P.U. 15-155, at 246; D.P.U. 14-150, at 224; D.P.U. 14-120, at 86-87; D.P.U. 11-01/D.P.U. 11-02, at 270; D.P.U. 10-55, at 343.

As noted above, base rate cases are extraordinary in nature. This particular base rate proceeding, however, was more resource intensive than any recent case before the Department. Eversource filed this proceeding on behalf of two electric distribution companies, and the case involved the investigation of a number of complex issues, including

the Companies' request for corporate consolidation, their PBR and grid modernization base commitment proposals, and their request for rate design consolidation and alignment. There were 14 full party intervenors in this case and seven limited intervenors. The Department conducted 13 public hearings and 19 days of evidentiary hearings. The Companies responded to 242 sets of information requests and 111 record requests issued by various intervenors and the Department. Further, the Companies were required to respond to a number of different arguments raised by the parties on brief. Given these considerations, it stands to reason that the overall level of rate case expense would be higher than what other utilities have incurred in recent base rate proceedings. Nevertheless, we find that Eversource complied with the Department's cost-control mandates in this case, both in terms of competitive bidding and other measures, such as not-to-exceed price caps on portions of each consultant's work, discounted consultant rates, and blended rates, in that these measures reduced the Companies' overall rate case expense (Exhs. AG-4-5, Att. (c) at 6, 16, 17, Att. (e) at 10-11; Att. (h) at 8, 22-23; Att. (i) at 12, 39-44; Att. (n) at 28; Att. (u), at 2-5; AG-4-9; AG-4-10, Atts. (a) & (b) (Supp. 3) & (Supp. 4), Atts. (d) & (e) (Supp.1)). We reach our conclusion based on the specific facts of this case and fully expect companies in future cases to demonstrate that they have taken aggressive measures to control their rate case expenses. Failure to do so will result in the disallowance of all or a portion of rate case expense.

4. Conclusion

The Companies propose a rate case expense of \$3,126,793 for NSTAR Electric and a proposed rate case expense of \$1,741,529 for WMECo, for a total rate case expense of \$4,868,322 (Exhs. ES-DPH-2 (East), Sch. DPH-16 (Rev. 4); ES-DPH-2 (West), Sch. DPH-16 (Rev. 4); AG-4-10, Atts. (a) & (b) (Supp. 5)). The Companies propose to normalize the rate case expense over five years, resulting in an annual expense of \$625,359 for NSTAR Electric and an annual expense of \$348,306 for WMECo (Exhs. ES-DPH-1, at 87; ES-DPH-2 (East), Sch. DPH-16 (Rev. 4); ES-DPH-2 (West), Sch. DPH-16 (Rev. 4)).

As noted above, the Department has reduced NSTAR Electric's proposed rate case expense by \$145,260 for an allowable rate case expense of \$2,981,533. Further, we have reduced WMECo's proposed rate case expense by \$25,634, for an allowable rate case expense of \$1,715,895. The Department also has concluded that the Companies' allowed rate case expense should be normalized over five years. Based on these findings, the Department determines the Companies' correct level of normalized rate case expense is \$596,307 for NSTAR Electric and \$343,179 for WMECo. Accordingly, the Department reduces NSTAR Electric's proposed cost of service by \$29,052 (\$625,359 - \$596,307) and reduces WMECo's proposed cost of service by \$5,127 (\$348,306 - \$343,179).

L. Amortization of Goodwill

1. Introduction

Eversource has \$398,707,477 in remaining acquisition premiums associated with the BEC Energy and Commonwealth Energy System ("ComEnergy") merger ("BEC/ComEnergy

Merger”),¹³⁷ which it amortizes annually in the amount of \$17,590,044 (Exh. ES-DPH-2 (East), Sch. DPH-24, at 1 (Rev. 3)). During the test year, NSTAR Electric booked \$17,590,044 in goodwill amortization (Exh. ES-DPH-3 (East), WP DPH-24, at 4 (Rev. 3)). NSTAR Electric proposes to use its test year amortization expense to determine the revenue requirement in this proceeding (Exhs. ES-DPH-2 (East), Sch. DPH-24, at 1, 4 (Rev. 3); ES-DPH-3 (East), WP DPH-24, at 1 (Rev. 3)).

2. Background

In 1999, the Department approved a rate plan for Boston Edison Company, Cambridge Electric Light Company, Commonwealth Electric Company, and Commonwealth Gas Company (together, “NSTAR Companies”) filed in conjunction with the BEC/ComEnergy Merger. D.T.E. 99-19, at 1. The Department also approved the recovery of an acquisition premium along with a 40-year amortization recovery period.

See D.T.E. 99-19, at 59.

The Department issued its Order approving the BEC/ComEnergy Merger in July 1999. On November 23, 1999, the NSTAR Companies reported to the Department that the acquisition premium as of September 1, 1999, totaled \$477,945,697 (Exh. ES-DPH-4, Sch. DPH-9, at 8). After allocating a portion of the acquisition premium to ComEnergy’s unregulated affiliates, the NSTAR Companies allocated the remaining acquisition premium among the regulated affiliates of both BEC Energy and ComEnergy (Exh. DPU-14-1(e) at 8

¹³⁷ Where a utility is purchased at a price above its depreciated original cost, the acquisition premium is the difference between that price and that cost and is recorded as goodwill on the balance sheet. D.P.U. 14-150, at 228 n.134.

(Supp.)). In its allocation process, the NSTAR Companies first increased the value of ComEnergy's unregulated affiliates by \$11,881,441, to represent their aggregate fair market values net of tax effects as of August 31, 1999 (i.e., immediately prior to the BEC/ComEnergy Merger), as required by generally accepted accounting principles (Exh. ES-DPH-4, Sch. DPH-9, at 13, 15-18). See also D.T.E. 99-19, at 86-87. The \$11,881,441 basis adjustment, as well as \$8,676,000 in merger costs, were added to ComEnergy's preliminary common equity balance as of the date of the BEC/ComEnergy Merger (i.e., \$439,947,850) to produce a revised common equity balance for ComEnergy as of September 1, 1999, of \$460,507,291 (Exh. ES-DPH-4, Sch. DPH-9, at 8). The NSTAR Companies then subtracted the revised common equity balance of \$460,507,291 from the \$938,452,988 in total consideration paid for ComEnergy to produce an acquisition premium of \$477,945,697 (Exh. ES-DPH-4, Sch. DPH-9, at 8).¹³⁸ This amount was allocated among the NSTAR Companies based on an equal weighting of the number of customers and distribution revenues, which produced an allocation of \$386,874,268 (or 80.97 percent) in acquisition premiums to NSTAR's electric distribution affiliates (see Exh. ES-DPH-4, Sch. DPH-9, at 5, 9).

As part of the year-end close in 1999, the NSTAR Companies reconciled and finalized the goodwill calculation to recognize ComEnergy's actual common equity balance as of the date of the BEC/ComEnergy Merger, as well as \$5,992,297 in loss contingencies

¹³⁸ This calculation ensured that \$11,881,411 of the total acquisition premium would be attributed to ComEnergy's unregulated operations, and not its regulated companies.

representing change-in-control payments to certain ComEnergy executives (Exhs. ES-DPH-4, Sch. DPH-9, at 13, 20; DPU-34-2, Att. A). The revised goodwill balance of \$490,023,538 was reallocated among the NSTAR Companies, producing an allocation of \$420,710,605 (or 85.86 percent) to the NSTAR Companies' electric distribution affiliates (Exhs. ES-DPH-3 (East), WP DPH-24, at 4 (Rev. 3); ES-DPH-4, Sch. DPH-9, at 14).

In 2014, the first litigated rate case for the NSTAR Companies after the BEC/ComEnergy Merger, the Department approved a rate increase for NSTAR Gas but questioned the calculation of the basis adjustment to the acquisition premium as applied to each of ComEnergy's unregulated affiliates. D.P.U. 14-150, at 232.¹³⁹ The Department did not adjust the calculation, but rather, put NSTAR Gas (and, by inference, Eversource) on notice that the calculation would be a subject of inquiry in NSTAR Gas' next base rate proceeding. D.P.U. 14-50, at 232. In addition, the Department excluded \$5,992,297 in loss contingencies from the calculation of the acquisition premium attributable to NSTAR Gas. D.P.U. 14-150, at 232-234. NSTAR Gas filed a motion for reconsideration of the Department's decision, and that motion is still pending. D.P.U. 14-150, NSTAR Gas' Motion for Reconsideration and Clarification at 4-13 (November 19, 2015).¹⁴⁰ However, because the basis adjustment and loss contingency issues raised in D.P.U. 14-150 also affect

¹³⁹ See D.P.U. 14-150, at 228-230 for a full procedural background.

¹⁴⁰ On the same date, NSTAR Gas filed a separate Motion to Reopen Evidentiary Record to provide documentation related to the goodwill computation.

NSTAR Electric's share of the acquisition premium, the Department finds it appropriate to address our concerns raised in D.P.U. 14-150 in the current proceeding.

3. Companies Proposal

Eversource reports that as of December 31, 2016, it will have recovered \$182,283,534 in goodwill amortization, leaving a remaining recoverable balance of \$238,427,071 (Exh. ES-DPH-3 (East), WP DPH-24, at 4 (Rev. 3)). Eversource adds to this balance deferred income taxes of \$95,847,683 and a tax gross-up of \$64,432,723,¹⁴¹ to produce a total goodwill regulatory asset of \$398,707,477 (Exh. ES-DPH-3 (East), WP DPH-24, at 4 (Rev. 3); Tr. 5, at 1023).

Eversource states that the remaining amortization amount of \$398,707,477, amortized over the remaining 272 months of the 40-year (or 480-month) amortization period approved in D.T.E. 99-19, results in an annual amortization of \$17,590,044 (Exh. ES-DPH-3 (East), WP DPH-24, at 4 (Rev. 3)). During the test year, NSTAR Electric booked \$17,590,044 in goodwill amortization (Exh. ES-DPH-3 (East), WP DPH-24, at 4 (Rev. 3)). Therefore, NSTAR Electric proposes to use its test year amortization expense to determine the revenue requirement in this proceeding (Exhs. ES-DPH-3 (East), WP DPH-24, at 1 (Rev. 3); ES-DPH-2 (East), Sch. DPH-24, at 1, 4 (Rev. 3)).

¹⁴¹ The goodwill amortization is not deductible for federal or Massachusetts income tax purposes. D.P.U. 14-150, at 230 n.137. Therefore, Eversource included a tax gross-up to recognize the appropriate tax treatment of the goodwill amortization and to ensure that NSTAR Electric is able to collect the income tax liability created as a result of the increase in billed revenue necessary to recover the acquisition premium (Exh. ES-DPH-3 (East), WP DPH-24, at 4 (Rev. 3)).

4. Positions of the Parties

Eversource states that the Department approved the actual acquisition premium of \$490,023,438, of which approximately \$420.7 million was allocated to NSTAR Electric (Companies Brief at 233, citing Exh. ES-DPH-1, at 140-141). Eversource raises two issues regarding the Department's treatment of the acquisition premium in NSTAR Gas' most recent rate case, D.P.U. 14-150. First, Eversource notes that the Department questioned some of the assumptions used by the NSTAR Companies to calculate the basis adjustment used to attribute a portion of the acquisition premium to unregulated affiliates (Companies Brief at 233-234, citing D.P.U. 14-150, at 232). The Companies assert that the Department specifically questioned the NSTAR Companies' decision not to write up the assets of ComEnergy Steam Company ("ComEnergy Steam") (Companies Brief at 233-234, citing D.P.U. 14-150, at 232). Eversource maintains that the absence of ComEnergy Steam from the list of unregulated affiliates provided in D.P.U. 14-150, Exh. AG-6-25(c),¹⁴² did not mean that ComEnergy Steam had no market value, but rather that no adjustment to ComEnergy Steam's book value was warranted (Companies Brief at 234-235, citing Exhs. ES-DPH-1, at 142; ES-DPH-4, Sch. 9, at 8). As such, Eversource contends that it appropriately documented the necessary basis adjustments in D.T.E. 99-19 (Companies Brief at 235).

Second, Eversource argues that the Department erred in excluding the \$5,992,297 in loss contingencies when calculating the amount of the acquisition premium in D.P.U. 14-150,

¹⁴² The documents provided in Exhibit AG-6-25(c) of D.P.U. 14-150 were entered into the record of this proceeding as Exhibit ES-DPH-4, Schedule DPH-9.

because these loss contingencies represent costs associated with employment contracts that ComEnergy had in place with three of its officers prior to the BEC/ComEnergy Merger (Companies Brief at 235-236). Eversource maintains that these employment contracts were pre-existing arrangements that were part of the business acquired by NSTAR, and that the payments made under their change-in-control provisions were triggered by the BEC/ComEnergy Merger (Companies Brief at 235). Eversource argues that inclusion of these change-in-control provisions in the goodwill calculation is consistent with the accounting standards that governed the BEC/ComEnergy Merger at that time, Accounting Principles Board Opinion No. 16, Business Combinations (“APB 16”), issued in August 1970, and Statement of Financial Accounting Standards No. 38, “Accounting for Pre-Acquisition Contingencies of Purchased Enterprises” (“SFAS 38”), issued in September 1980 (Companies Brief at 235, citing Exh. ES-DPH-1, at 144).

Based on these considerations, Eversource contends that it has appropriately calculated the acquisition premium and amortization, including the required gross-up for income taxes, and therefore the Department should approve the proposed amortization (Companies Brief at 236).

No other party commented on the Companies’ proposed adjustment in this proceeding. Nonetheless, the Department acknowledges the Attorney General’s arguments raised in D.P.U. 14-150 regarding the loss contingencies. D.P.U. 14-150, Attorney General’s Opposition to the Company’s Motion to Reopen the Evidentiary Record and its Motion for Reconsideration and Clarification at 6-8 (December 11, 2015).

5. Analysis and Findings

Eversource seeks to amortize \$398,707,477 in remaining acquisition premiums associated with the BEC/ComEnergy Merger, over 272 months, for an annual amortization expense of \$17,590,044 (Exh. ES-DPH-2 (East), Sch. DPH-24, at 1 (Rev. 3)). The Department has reviewed Eversource's calculation of the acquisition premium associated with the BEC/ComEnergy Merger and accepts Eversource's proposed amortization expense (Exh. ES-DPH-4, Sch. DPH-9). First, the Department finds that, in determining the basis adjustment to be applied to their nonregulated affiliates, the NSTAR Companies appropriately determined the fair market value of each of ComEnergy's nine unregulated affiliates. Of the nine unregulated affiliates, the values of five affiliates were written up to their fair market value, the value of one affiliate was reduced, and the value of one affiliate was written off entirely (Exh. ES-DPH-4, Sch. DPH-9, at 16-18).¹⁴³ The values of Hopkinton LNG and ComEnergy Steam were found to have no change in book value, based on various contracts in effect at that time, and the NSTAR Companies determined that the fair market value of these affiliates was represented by their book value (Exh. ES-DPH-4, Sch. DPH-9, at 18). Based on our review, the Department is now satisfied that the NSTAR Companies appropriately calculated the basis adjustment applied to ComEnergy's unregulated affiliates and we no longer have the concern that we raised in D.P.U. 14-150, at 232.

¹⁴³ In the case of Advanced Energy Systems ("AES"), the tangible assets as represented by the MATEP Generating Facility were written up, and long-term debt was restated from \$112.5 million to \$105.008 million because the market rate for AES' debt was higher at that time than its actual rate (Exhs. ES-DPH-4, Sch. DPH-9, at 17; DPU-14-2; DPU-34-1; Tr. 5, at 1025).

Next, we turn to the inclusion of \$5,992,297 in loss contingencies represented by change-in-control payments in the calculation of the acquisition premium. This amount represents anticipated payments to certain ComEnergy employees whose positions would be expected to be affected by a change-in-control of a company, such as would result in a merger or acquisition (Exh. ES-DPH-1, at 143). Change-in-control payment provisions are often found in employment contracts of key employees, and are distinguishable from severance packages that may be offered to employees in a post-merger or post-acquisition setting (Exh. ES-DPH-1, at 143; Tr. 5, at 1029).¹⁴⁴ At the time of the BEC/ComEnergy Merger, the NSTAR Companies estimated that three ComEnergy employees would qualify for change-in-control payments; however, based on the actual number of employees identified with change-of-control agreements and the timing of their exercise of these provisions, the total change-in-control payments ultimately paid out to ComEnergy employees was higher than the \$5,992,297 estimate reported earlier by the NSTAR Companies (Exhs. DPU-14-3, Atts. (a), (b), (c); DPU-34-2, Att. (a) at 1; Tr. 5, at 1028-1029). The provisions of APB 16 and SFAS 38, which governed the transaction at that time, provide that these change-in-control payments be included in the goodwill computation (Exh. ES-DPH-1, at 144).

Given that the change in-control payments were made to certain former ComEnergy personnel under provisions of employment contracts that were triggered by the

¹⁴⁴ By way of comparison, 638 employees of the NSTAR Companies elected to take separation packages under a Voluntary Separation Program intended to reduce staffing redundancies in the post-acquisition NSTAR system (RR-DPU-40).

BEC/ComEnergy Merger, the Department finds that these change-in-control payments were appropriately part of the purchase price of ComEnergy. The Department further finds that the \$5,992,297 in change-in-control payments was less than the total change-in-control payments ultimately paid out to ComEnergy employees, and thus represents a conservative measure of the actual change-in-control payments made as part of the BEC/ComEnergy Merger (Exhs. DPU-14-3, Atts. (a), (b), (c); DPU-34-2, Att. (a) at 1; Tr. 5, at 1028-1029). Accordingly, the Department approves the inclusion of \$5,992,297 in the calculation of the acquisition premium.¹⁴⁵

The inclusion of these change-in-control payments in the calculation of goodwill produces a total goodwill balance of \$490,023,518, of which \$420,710,605 is allocated to NSTAR Electric (Exh. ES-DPH-2 (East), Sch. DPH-24, at 4 (Rev. 3)). Based on the current amortization rate, the unamortized goodwill attributable to NSTAR Electric will be \$238,427,071 as of the end of 2016 (Exh. ES-DPH-2 (East), Sch. DPH-24, at 4 (Rev. 3)). With the inclusion of an additional \$95,847,683 in deferred income taxes and an additional \$64,432,473 in associated income taxes, NSTAR Electric's unamortized goodwill and associated income taxes will be \$398,707,477 as of the end of 2016 (Exh. ES-DPH-2 (East), Sch. DPH-24, at 4 (Rev. 3)).

The \$398,707,477, divided by the remaining amortization period of 272 months as of the effective date of the rates being authorized by this Order, produces an annual

¹⁴⁵ The Department will address the inclusion of the loss contingencies in the calculation of NSTAR Gas' acquisition premium in its Order on NSTAR Gas' motion for reconsideration.

amortization expense of \$17,590,044 (Exh. ES-DPH-2 (East), Sch. DPH-24, at 4 (Rev. 3)). Eversource proposed an amortization expense of \$17,590,044 (Exh. ES-DPH-2 (East), Sch. DPH-24, at 4 (Rev. 3)). Therefore, the Department accepts Eversource's proposed amortization expense.

M. D.P.U. 10-170 Merger Costs and Savings

1. Introduction

Pursuant to the Merger Settlement in D.P.U. 10-170 (see Section V.A above) Eversource seeks to recover \$26.2 million and \$4.4 million in merger-related costs for NSTAR Electric and WMECo, respectively, over a ten-year period (Exhs. ES-DPH-3 (East), WP DPH-24, at 3 (Rev. 3); ES-DPH-3 (West), WP DPH-24, at 3 (Rev. 3)). The Companies assert that their merger-related savings for the ten-year amortization period will exceed their total merger-related costs (Exh. ES-DPH-1, at 156-157).

The Merger Settlement allows for the amortization of merger-related costs in the Companies' next rate case filing (Merger Settlement at Art. II (13), (14)). Further, pursuant to the Merger Settlement, Eversource was required to file interim reports on merger integration efforts, as well as a final merger integration report 60 days prior to the filing of the first base rate proceeding following the base rate freeze period provided for as part of the Merger Settlement (Merger Settlement at Art. II (15)). The Companies filed the interim reports, and provided a final merger integration report ("2016 Merger Report") on November 15, 2016 (Exhs. ES-DPH-1, at 153; ES-DPH-4, Sch. DPH-10).

2. Reported Merger-Related Savings and Costs

According to the 2016 Merger Report, the accrued enterprise-wide savings related to the merger through December 31, 2015, amounted to \$268.2 million, of which \$68.8 million was attributable to NSTAR Electric and \$11.4 million to WMECo (Exh. ES-DPH-4, Sch. DPH-10, at 55). During the test year, Eversource experienced \$106.2 million in merger savings, of which \$27.3 million was attributable to NSTAR Electric and \$4.5 million was attributable to WMECo (Exh. ES-DPH-4, Sch. DPH-10, at 56). In total, Eversource forecasts enterprise-wide savings from 2012 through 2022 of \$1,158 million, of which \$300.4 million would be attributable to NSTAR Electric and \$49.9 million would be attributable to WMECo (see Exhs. ES-DPH-1, at 153; ES-DPH-4, Sch. DPH-10, at 54).

On an enterprise-wide basis, Eversource reports that it has incurred \$125.9 million in merger-related costs, excluding executive retention and separation payments, through September 30, 2016 (Exh. ES-DPH-4, Sch. DPH-10, at 51, 52). Of these costs, \$26.2 million (20.8 percent) was allocated to NSTAR, and \$4.4 million (3.51 percent) was allocated to WMECo (Exhs. ES-DPH-1, at 156; ES-DPH-4, Sch. DPH-10, at 54). The Companies report that there were no merger-related costs after December 31, 2015, and state that no additional incremental merger-related costs are anticipated (Exh. ES-DPH-4, Sch. DPH-10, at 51).¹⁴⁶ As such, the Companies anticipate a net savings of \$274.2 million

¹⁴⁶ As part of D.P.U. 10-170, the petitioners included a net benefits test, in which merger-related transaction and integration costs were estimated to total approximately \$164 million. D.P.U. 10-170-B at 57. The actual total merger related costs incurred through the end of 2015 were \$125,953,911, or 77 percent of the initial estimate (Exhs. ES-DPH-4, Sch. DPH-10, at 52; AG-26-4 (Rev.) at 1). The Companies used

for NSTAR Electric and \$45.5 million for WMECo, during the ten-year period following the merger (see Exhs. ES-DPH-1, at 153-155; ES-DPH-4, Sch. DPU-10, at 54).¹⁴⁷

The Companies propose to amortize merger-related costs over a ten-year period (Exh. ES-DPH-1, at 156). Thus, the Companies propose an annual amortization amount of \$2,621,089 for NSTAR Electric and \$442,096 for WMECo (Exhs. ES-DPH-1, at 156; ES-DPH-3 (East), WP DPH-24, at 3 (Rev. 3); ES-DPH-3 (West), WP DPH-24, at 3 (Rev. 3)).

3. Positions of the Parties

a. Attorney General

The Attorney General did not address the Companies' merger-related costs on brief. Nonetheless, during the proceeding, she stated that \$642,920 in costs should be excluded from the calculation of Eversource's merger costs to achieve because these costs are not related to the D.P.U. 10-170 merger (see generally Exhs. AG-DR-1, at 13-16; AG-DR-SR1). Specifically, the Attorney General states that the Department should exclude: (1) \$138,946 in costs associated with a cancelled strategic management project that had previously been recorded by Northeast Utilities as construction work in progress; (2) \$305,651 in costs associated with a 2011 audit of Northeast Utilities' financial statements; and (3) \$198,323 in

a gross plant allocator to attribute 20.81 percent, or \$26,210,885, of the costs to NSTAR and 3.51 percent, or \$4,420,961, of the costs to WMECo (Exhs. ES-DPH-3 (East), WP DPH-24, at 3 (Rev. 3); ES-DPH-3 (West), WP DPH-24, at 3 (Rev. 3); AG-26-7, Att.).

¹⁴⁷ As reported by Eversource, total net savings enterprise-wide are \$1,032.4 million, net of \$125.9 million in costs. Total net savings for NSTAR Electric are \$274.2 million, net of \$26.2 million in costs. Total net savings for WMECo are \$45.5 million, net of \$4.4 million in costs.

reclassification expenses (Exhs. AG-DR-SR1, at 3, 7-9, citing Exh. ES-DPH-Rebuttal-1, at 4, ES-DPH-Rebuttal-2, at 1, 6, 7, AG-26-4, Att.; AG-DR-Surrebuttal-1). The Attorney General notes that excluding the aforementioned costs results in a \$13,379 reduction to NSTAR Electric's amortization expense and a \$2,257 reduction to WMECo amortization expense (Exhs. AG-DR-SR1, at 9; AG-DR-Surrebuttal-1).

b. Companies

The Companies argue that they have demonstrated that merger-related savings equal or exceed merger-related costs and, therefore, the Companies are entitled to recover their merger-related costs (Companies Brief at 240). Eversource contends that the net merger-related benefits, as currently forecast, are expected to exceed those initially developed for the net benefits analysis performed for D.P.U. 10-170 (Companies Brief at 237).

The Companies also point out that Eversource has already paid out \$46 million of the expected savings to customers as part of the Merger Settlement upon the merger closing, specifically, a \$15 million credit to NSTAR Electric's ratepayers and a \$3 million credit to WMECo's ratepayers (Companies Brief at 237-238). The Companies further argue that their proposal to amortize the merger-related costs over ten years is consistent with the Merger Settlement and the amortization period approved by the Department for NSTAR Gas in D.P.U. 14-150 (Companies Brief at 239; Companies Reply Brief, App. C at 22).

4. Analysis and Findings

Consistent with Department precedent, the Merger Settlement authorizes the Companies, subject to Department review and approval, to recover merger-related costs upon a showing that merger-related savings equal or exceed those costs (Merger Settlement

at Art. II (14)). See also D.P.U. 14-150, at 130-131; D.P.U. 10-170-B at 59. The Merger Settlement provides that the Companies shall, for ratemaking purposes, amortize merger-related transaction and integration costs over a ten-year period (Merger Settlement at Art. II (13)).

The Companies propose to recover \$26.2 million in merger-related costs for NSTAR Electric, and \$4.4 million for WMECo, over a ten-year period, or approximately \$2.6 million and \$0.4 million annually (Exhs. ES-DPH-3 (East), WP DPH-24, at 3 (Rev. 3); ES-DPH-3 (West), WP DPH-24, at 3 (Rev. 3)). The Companies argue that they have demonstrated that merger-related savings for the ten-year amortization period will exceed the total of merger-related costs (Companies Brief at 240).

Of the approximately \$30.6 million in merger-related costs, the Attorney General contests \$642,920 in expenses, consisting of \$503,974 in costs from Northeast Utilities' auditor and \$138,946 in consulting costs (Exh. AG-DR-S1, at 3-4, 7-9). The Department has examined the supporting documentation relative to these expenditures (Exhs. ES-DPH-Rebuttal-2, at 1-14; AG-26-4, at 23). The \$503,974 in auditing costs consist of an invoice for \$305,651 associated with Northeast Utilities' 2011 audit, and a journal entry of \$198,323 reported to be associated with merger-related auditing services (Exh. ES-DPH-Rebuttal-2, at 1, 7). The \$305,651 invoice consists of \$290,000 in auditing fees plus \$20,116 in expenses, less \$14,486 in expenses allocated to NSTAR Electric, with the net expense of \$295,630 grossed up for income taxes to \$305,651 (Exh. DPH-Rebuttal-2, at 1). It is unclear from the evidence provided by the Companies whether the \$290,000 in

fees is associated solely with the merger, or whether this represents WMECo's own audit expense. Therefore, based on the descriptions provided by Eversource, the Department is not persuaded that the \$305,651 invoice is associated solely with the merger. As to the \$198,323 journal entry, while it appears that some of the supporting documentation was not provided, the Department is satisfied that this expenditure was related to the merger.

The remaining \$138,946 in contested expenses consist of consulting costs associated with a strategic management program that had been cancelled and written off by WMECo's parent company in 2012 (Exh. ES-DPH-Rebuttal-2, at 6). In the absence of further evidence as to the nature of this program, the Department is not persuaded that the underlying costs are appropriately associated with the merger. Therefore, the Department removes the \$138,946 in consulting costs from the overall level of recoverable merger costs.

Based on the foregoing analysis, the Department has excluded a total of \$444,597 in costs from the recoverable level of merger costs. Because Eversource had proposed a total merger cost of \$125,953,317 (Exhs. ES-DPH-3 (East), WP DPH-24, at 3 (Rev. 3); ES-DPH-3 (West), WP DPH-24, at 3 (Rev. 3)), the Department finds that the level of recoverable merger costs is \$125,508,720. Of this amount, 20.81 percent, or \$26,118,365, is allocable to NSTAR Electric, and 3.51 percent, or \$4,405,356, is allocable to WMECo.

The Department finds that the Companies' allocated share of merger-related costs is approximately \$30,523,721 (see Exhs. ES-DPH-3 (East), WP DPH-24, at 3 (Rev. 3); ES-DPH-3 (West), WP DPH-24, at 3 (Rev. 3); AG-26-7 (Att.)). Accordingly, in order to

recover these costs, the Companies must show merger-related savings in excess of \$30.5 million.

The Department has examined Eversource's calculations and assumptions and finds that the Companies have demonstrated that their merger-related savings exceed their merger-related costs (Exhs. ES-DPH-4, Sch. 10; AG-26-4 through AG-26-14 & Atts.; AG-29-1 through AG-29-27 & Atts.). The Companies calculated that their net savings, over the ten-year period following the merger, are expected to be \$274.2 million for NSTAR Electric and \$45.5 million for WMECo (see Exhs. ES-DPH-1, at 153; ES-DPH-4, Sch. DPU-10, at 54).¹⁴⁸ For NSTAR Electric, the annualized savings over the ten-year amortization period were calculated as \$27.3 million, compared to an amortized annual cost of \$2.6 million, resulting in an annual net benefit of \$24.7 million (Exhs. ES-DPH-1, at 155; ES-DPH-4, Sch. DPH-10, at 56). For WMECo, the annualized savings was calculated to be \$4.5 million, compared to an amortized annual cost of \$0.4 million, resulting in an annual net benefit of \$4.1 million ((Exhs. ES-DPH-1, at 155; ES-DPH-4, Sch. DPH-10, at 56). Even with the above disallowances, the Department finds that the Companies have demonstrated that their merger-related savings will exceed their merger-related costs. Therefore, consistent with the terms of the Merger Settlement, the Department finds that the Companies are eligible to recover \$30,523,721 in merger-related costs over a ten-year period (see Merger Settlement at Art. II (13)). See also D.P.U. 14-150, at 130-131; D.P.U. 10-170-B, at 59. Based on the recoverable level of merger-related costs and the

¹⁴⁸ No party contested the savings calculations contained in the 2016 Merger Report.

ten-year amortization period established under the terms of the Merger Settlement, NSTAR Electric's annual amortization is \$2,611,837, and WMECo's annual amortization is \$440,536.

NSTAR Electric had proposed an amortization expense of \$2,621,089, and WMECo had proposed an amortization expense of \$442,096 (Exhs. ES-DPH-3 (East), WP DPH-24, at 3 (Rev. 3); ES-DPH-3 (West), WP DPH-24, at 3 (Rev. 3)). Accordingly, the Department reduces NSTAR Electric's proposed cost of service by \$9,252, and reduces WMECo's proposed cost of service by \$1,560 (see Exhs. ES-DPH-1, at 156; ES-DPH-3 (East), WP DPH-24, at 3 (Rev. 3); ES-DPH-3 (West), WP DPH-24, at 3 (Rev. 3)).

N. Amortization of Hardship Accounts

1. Introduction

Hardship protected accounts are residential accounts that are protected from shut-off by the utility for nonpayment. 220 CMR 25.03, 25.05. To qualify for protected status from service termination, customers must demonstrate that they have a financial hardship and meet certain other requirements, such as a household member suffering from a serious illness or residing with a child under twelve months of age. See 220 CMR 25.03(1), 25.03(3), 25.05(3).¹⁴⁹ All qualified accounts are protected from shut-off for nonpayment year round,

¹⁴⁹ An account qualifies for protected status where the customer certifies that the customer has a financial hardship, and: (1) a person residing in the household is seriously ill; (2) a child under the age of twelve months resides in the household; (3) the customer takes heating service between the period November 15th and March 15th, and the service has not been shut off for nonpayment prior to November 15th; or (4) all adults residing in the household are age 65 or older and a minor resides in the household. 220 CMR 25.03. Customers who are unable to pay an overdue bill and meet the income eligibility requirements for the Federal

except for heating customers with a financial hardship. These heating accounts are protected from shut-off for nonpayment only during the winter moratorium period (i.e., November 15th through March 15th). 220 CMR 25.03(1)(a)(3), 25.03(1)(b).

The Companies state that because hardship protected accounts cannot be disconnected, the accounts remain active and continue to receive service despite slow or non-payment of amounts due (Exh. ES-DPH-1, at 149). Further, the Companies note that as the accounts stay active, they do not become part of the write-off calculation to be included for recovery from customers (Exh. ES-DPH-1, at 149).

According to Eversource, NSTAR Electric's total active protected hardships accounts receivable balance overdue for payment more than 360 days was \$19,162,406 as of June 30, 2016, the end of the test year (Exh. ES-DPH-3 (East), WP DPH-24, at 2 (Rev. 3)). The Companies propose to amortize the \$19,162,406 hardship balance over a five-year period, which results in an annual amortization expense of \$3,832,481 (Exhs. ES-DPH-2 (East), Sch. DPH-24 (Rev. 3); ES-DPH-3 (East), WP DPH-24, at 1 (Rev. 3)).

Additionally, the Companies state that WMECo's total active protected hardships accounts receivable balance overdue 360 days was \$4,337,928 as of June 30, 2016 (Exh. ES-DPH-3 (West), WP DPH-24, at 2 (Rev. 3)). The Companies propose to amortize the \$4,337,928 hardship balance over a five-year period, which results in an annual amortization expense of \$867,586 (Exhs. ES-DPH-2 (West), Sch. DPH-24 (Rev. 3); ES-DPH-3 (West), WP DPH-24, at 1 (Rev. 3)).

Low-Income Home Energy Assistance Program are deemed to have a financial hardship. 220 CMR 25.01(2).

2. Positions of the Parties

Eversource argues that its proposed treatment of hardship balances is consistent with Department precedent, in particular the treatment afforded to WMECo in its last base rate proceeding (Companies Brief at 191-192, citing D.P.U. 10-70, at 214-216). Therefore, the Companies assert that the Department should approve the proposed amortizations (Companies Brief at 192). No other party commented on the proposed amortization of the balance of hardship protected accounts.

3. Analysis and Findings

Under current ratemaking practice, there is no cost of service mechanism for the Company to recover the balance of protected hardship accounts receivable. See D.P.U. 15-155, at 249; D.P.U. 14-150, at 236; D.P.U. 10-70, at 210-211, n.12. Unlike expenses that may be deferred for recovery in a subsequent rate case, the balance of protected hardship accounts receivable cannot be recovered in rates unless the asset is deemed impaired and written off. D.P.U. 15-155, at 249; D.P.U. 14-150, at 236; D.P.U. 10-70, at 210-211, n.12. Because a utility's hardship protected accounts remain active, the utility cannot write off the unpaid balance and, therefore, cannot recover the amounts as bad debt expense. D.P.U. 15-155, at 249-250; D.P.U. 14-150, at 235-236; D.P.U. 15-80/D.P.U. 15-81, at 169; D.P.U. 13-90, at 159; D.P.U. 10-70, at 213. Generally accepted accounting principles require that, without probable recovery of outstanding balances, a company must recognize an impairment loss through a charge to its

income statement and establish a reserve account on its balance sheet for the impaired asset.

D.P.U. 15-155, at 250; D.P.U. 10-70, at 214-215.¹⁵⁰

To provide for the probability of recovery and to avoid an impairment loss, the Department has permitted utilities to collect through distribution rates an amortized amount of significant protected hardship account receivables balances that are over 360 days past due. D.P.U. 15-155, at 249-250; D.P.U. 14-150, at 236; D.P.U. 15-80/D.P.U. 15-81, at 171; D.P.U. 14-150, at 236; D.P.U. 13-90, at 166; D.P.U. 10-70, at 219. Where such ratemaking treatment has been allowed, the Department requires companies to provide, in subsequent rate cases, information regarding collection efforts relative to outstanding hardship account balances recovered through Department-approved amortizations as well as the average annual amount of payments made by customers against these hardship account balances. D.P.U. 15-155, at 252.

WMECo was permitted to amortize and recover its outstanding hardship account balances over 360 days past due in D.P.U. 10-70. Consistent with the Department's directives in D.P.U. 10-70, at 220, the Department finds that WMECo has tracked the costs included in the balance of hardship protected accounts allowed for recovery and removed them from the bad debt expense (Exh. ES-DPH-2, Schs. DPH-6, at 4, DPH-8, at 2 (West)). Further, we find that, consistent with the Department's directives in D.P.U. 15-155, at 252, WMECo has provided information regarding its collection efforts relative to outstanding hardship account balances recovered through amortization since its last base rate case, as well

¹⁵⁰ See Statement of Financial Accounting Standards No. 144.

as the average annual amount of payments made by customers against these hardship account balances (Exh. DPU-28-11). The Department has reviewed WMECo's collection efforts, and we find them to be reasonable (Exh. DPU-28-11). In addition, consistent with D.P.U. 15-155, at 252, and D.P.U. 10-70, at 221, WMECo has credited through the Residential Assistance Adjustment Factor ("RAAF") payments made by customers toward the hardship balances since its last rate case and through the test year in this case (Exhs. ES-DPH-1, at 149; AG-51-10 & Att.).

Although NSTAR Electric has not previously sought to amortize and recover outstanding hardship balances, it has separately tracked hardship balances since the Department's decision in D.P.U. 14-150 in order to remove these costs from bad debt expense (Exhs. ES-DPH-1, at 39; ES-DPH-2, Schs. DPH-6, at 4, DPH-8, at 2 (East); DPU-28-4; DPU-28-5; DPU-28-12, at 1; AG-19-13 & Att. (g)).¹⁵¹ Further, NSTAR Electric has provided information regarding its collection efforts relative to outstanding hardship account balances and customer payments toward those balances since the end of 2015 (Exh. DPU-28-12, at 2). The Department has reviewed NSTAR Electric's collection efforts, and we find them to be reasonable (Exh. DPU-28-12, at 2).

Eversource has demonstrated that both NSTAR Electric and WMECo have significant protected hardship account receivables balances that are over 360 days past due (Exhs. ES-DPH-1, at 146-150; ES-DPH-2 (East), Sch. DPH-24 (Rev. 3); ES-DPH-3 (East),

¹⁵¹ NSTAR Electric notes that it began tracking hardship account balances and customer payments toward the balances after the Department's decision in D.P.U. 14-150 (Exhs. DPU-28-5; DPU-28-12, at 1).

WP DPH-24, at 1-2 (Rev. 3); ES-DPH-2 (West), Sch. DPH-24 (Rev. 3); ES-DPH-3 (West), WP DPH-24, at 1-2 (Rev. 3); DPU-28-7, Att.). To provide for the probability of recovery of these amounts in order to avoid an impairment loss, the Department will allow NSTAR Electric to recover its test year balance of protected hardship accounts receivable in the amount of \$19,162,406, and WMECo to recover its test year balance of protected hardship accounts receivable in the amount of \$4,337,928 (Exhs. ES-DPH-1, at 147; ES-DPH-3 (East), WP DPH-24, at 2 (Rev. 3); ES-DPH-3 (West), WP DPH-24, at 2 (Rev. 3)).

As noted above, the Companies proposed to amortize recovery of these balances over five years (Exhs. ES-DPH-1, at 147; ES-DPH-3 (East), WP DPH-24, at 1 (Rev. 3); Exh. ES-DPH-3 (West), WP DPH-24, at 1 (Rev. 3)). Amortization periods are determined based on a case-by-case review of the evidence and underlying evidence. Aquarion Water Company of Massachusetts, D.P.U. 08-27, at 99 (2009); D.P.U. 93-223-B at 14; D.P.U. 84-145-A at 54. In this case, we consider the size of the balance to be recovered, the underlying facts giving rise to the accumulation of the balance, and the impact of recovery on ratepayers. Based on these considerations and the record in this case, the Department finds that five years is an appropriate amortization period. Amortizing \$19,162,406 over five years produces an annual expense of \$3,832,481 for NSTAR Electric (Exh. ES-DPH-3 (East), WP DPH-24, at 1 (Rev. 3)). Amortizing \$4,337,928 over five years produces an annual expense of \$867,586 for WMECo (Exh. ES-DPH-3 (East), WP DPH-24, at 1 (Rev. 3)).

Going forward, Eversource shall continue to track the costs included in the balance of the Companies' hardship accounts allowed for recovery so that these costs are properly removed from bad debt expense. D.P.U. 10-70, at 221. Further, in its next rate case, Eversource shall provide information regarding the Companies' collection efforts relative to outstanding hardship account balances recovered through amortization since the end of the test year in this case. D.P.U. 15-155, at 252. In addition, WMECo shall credit through its RAAF any payments made by customers towards the outstanding hardship account balances recovered through the amortizations approved in the instant case. D.P.U. 15-155, at 252; D.P.U. 10-70, at 221. Finally, beginning on January 1, 2018, NSTAR Electric shall credit through its RAAF any payments made by customers towards the outstanding hardship account balances recovered through the amortizations approved in the instant case. D.P.U. 15-155, at 252; D.P.U. 10-70, at 221.¹⁵²

O. Regulatory Assessments

1. Introduction

Eversource included in its base distribution cost of service the test year amount of regulatory assessments, adjusted to remove transmission-related expenses and out-of-period adjustments, as follows: (1) \$7,389,986 for NSTAR Electric;¹⁵³ and (2) \$1,267,327 for

¹⁵² NSTAR Electric shall modify its Residential Assistance Adjustment Clause tariff accordingly.

¹⁵³ This amount is comprised of the following three invoices received by NSTAR Electric during the test year: (1) the Attorney General's assessment of \$841,804; (2) the Department's general assessment \$4,321,231; and (3) the Department's Energy Trust Fund assessment of \$2,226,951 (Exh. ES-DPH-2 (East), Sch. DPH-17 (Rev. 3)).

WMECo¹⁵⁴ (Exhs. ES-DPH-2 (East), Sch. DPH-17 (Rev. 3); ES-DPH-2 (West), Sch. DPH-17 (Rev. 3)). Eversource proposes to reduce NSTAR Electric's adjusted test year amount of regulatory assessments by \$2,409,292 and to reduce WMECo's adjusted test year amount of regulatory assessments by \$413,176, and it proposes to allocate these amounts from base distribution to basic service (see Exhs. ES-DPH-1, at 90-91; ES-DPH-2 (East), Sch. DPH-17 (Rev. 3); ES-DPH-2 (West), Sch. DPH-17 (Rev. 3)). Eversource determined the amount of regulatory assessments to assign to basic service based on the percentage of 2015 basic service revenues that are in 2015 total intrastate operating revenues, which calculates as 32.6 percent, and rounded up to 33 percent (Exhs. ES-DPH-1, at 91; ES-DPH-2 (East), Sch. DPH-17 (Rev. 3); ES-DPH-2 (West), Sch. DPH-17 (Rev. 3)).¹⁵⁵ Eversource also proposes that, for rates effective January 1, 2018, it will update the amount of regulatory assessments assigned to basic service based on the 2017 basic service revenues and 2017 intrastate operating revenues, as these amounts are expected to be known and measurable by the close of the record in this case (Exh. ES-DPH-1, at 91).¹⁵⁶

¹⁵⁴ This amount is comprised of the following three invoices received by WMECo during the test year: (1) the Attorney General's assessment of \$144,363; (2) the Department's general assessment of \$741,059; and (3) the Department's Energy Trust Fund assessment of \$381,905 (Exh. ES-DPH-2 (West), Sch. DPH-7 (Rev. 3)).

¹⁵⁵ Eversource states that 2015 total intrastate operating revenues represent the most recent full year available (Exh. ES-DPH-1, at 91).

¹⁵⁶ Eversource notes that regulatory assessments levied by the Department are annually allocated to each electric and gas company based on each company's proportionate share of total intrastate operating revenues, which include distribution revenues, and revenues from various reconciling rate mechanisms (Exh. ES-DPH-1, at 90).

2. Positions of the Parties

a. Attorney General

The Attorney General argues that Eversource's proposal should be rejected, as it is neither fair nor consistent with cost causation principles (Attorney General Brief at 144). Specifically, she contends that singling out basic service customers for a rate increase based on the revenues they generate rather than the cost of serving their rate classes is arbitrary and unfair (Attorney General Brief at 144). The Attorney General claims that Eversource provided no evidence that 33 percent of the Attorney General's work or the Department's work, as represented by these assessments, is devoted to basic service matters (Attorney General Brief at 144). Moreover, she contends that Eversource's proposal "falsely assume[s]" that customers on competitive supply require absolutely no Department resources, when, she claims, those customers require significantly more resources than basic service customers (Attorney General Brief at 144-145).¹⁵⁷ For these reasons, the Attorney General

¹⁵⁷ For instance, the Attorney General argues that the Department licenses all competitive supply companies in the Commonwealth and plays a significant role in their oversight (Attorney General Brief at 145, citing G.L. c. 164, §§ 1F, 102C(b); 220 CMR 11.05, 11.07; Interim Guidelines for Competitive Supply Investigations and Proceedings, D.P.U. 16-156-A (July 6, 2017). Further, she contends that the Department gathers data and maintains a website to compile the competitive supplier offers to retail customers, which she claims requires significant resources (Attorney General Brief at 144, citing Energy Switch Massachusetts, <http://www.energyswitchma.gov>). In addition, the Attorney General notes that the Department receives complaints regarding competitive suppliers from town officials and customer complaints through its consumer division, and she claims that these complaints requires significant Department resources (Attorney General Brief at 145, citing Initiatives to Improve the Retail Electric Competitive Supply Market, D.P.U. 14-140, Vote and Order Opening Investigation, at 3, 12 (December 11, 2014). Finally, she states that the Department adjudicates an increasing number of dockets concerning municipal aggregation plans (Attorney General Brief at 145, citing Town of Easton, D.P.U. 17-109 (June 30,

asserts that Eversource's proposal should be rejected, and that the Department should order the Companies to continue to allocate all regulatory assessment costs to all base distribution customers and to recover the costs through base distribution rates from all customers, using the general allocators that the Department "normally uses" (Attorney General Brief at 145-146).

b. Companies

Eversource argues that the Attorney General's contention that the Companies' proposal is unfair and inconsistent with cost causation principles is flawed (Companies Brief at 465). According to Eversource, the Attorney General fails to support with evidence or analysis her claims regarding the level of resources devoted by the Department to basic service (Companies Brief at 465). Similarly, Eversource contends that the Attorney General fails to rebut the Companies' calculations that support its allocation proposal (Companies Brief at 465, citing Exhs. ES-DPH-1, at 90-91; ES-DPH-2 (East), Sch. DPH-17 (Rev. 3); ES-DPH-2 (West), Sch. DPH-17 (Rev. 3). Eversource asserts that as a result of the Attorney General's failure to provide any support for her assertions, the Department should disregard her recommendation (Companies Brief at 466). Finally, Eversource states that competitive suppliers should be paying regulatory assessments in light of the resources expended by the Department on these suppliers and their customers (Companies Brief at 466, citing Exh. DPU-33-8). However, the Companies note that there currently exists no

2017); City of Marlborough, D.P.U. 17-47 (April 20, 2017); Town of Billerica, D.P.U. 17-44 (April 20, 2017).

opportunity to charge such assessments to competitive suppliers (Companies Brief at 466, citing G.L. c. 24A, § 3).

3. Analysis and Findings

In general, a company's share of assessments made by the Department and other agencies is recognized as a component of its cost of service. D.P.U. 12-86, at 154-155; D.P.U. 85-137, at 83-85; South Egremont Water Company, D.P.U. 95-119/95-122, at 18 (1996); Westport Harbor Aqueduct Company, D.P.U. 93-142, at 6 (1993); Boston Edison Company, D.P.U. 160, at 48-49 (1980). The amount of assessments included in a company's cost of service must be known and measurable. D.P.U. 85-137, at 84-85; D.P.U. 95-119/95-122, at 18; D.P.U. 160, at 49.

Eversource included three regulatory assessments in its test-year amount. First, an annual assessment is made by the Commonwealth's Office of Consumer Affairs and Business Regulation on behalf of the Attorney General that is levied against each electric, water, gas, telephone, and telegraph company based on each company's proportionate share of total intrastate operating revenues. G.L. c. 24A, § 3. Second, the Department makes an annual general assessment against electric and gas companies under its jurisdictional control for the operation and general administration of the Department. G.L. c. 25, § 18. The general assessment is allocated based on each electric company's and gas company's proportionate share of total intrastate operating revenues. G.L. c. 25, § 18. Third, the Department makes an annual assessment to electric companies under its jurisdictional control that is credited to the Department's Energy Trust Fund and provides the Department with additional operating

funds for the regulation of electric companies. G.L. c. 25, § 18. The Energy Trust Fund assessment is allocated based on each electric company's proportionate share of total intrastate operating revenues. G.L. c. 25, § 18.¹⁵⁸ As an initial matter, we find that Eversource has properly calculated the Companies' adjusted test year amounts associated with these regulatory assessments, including removing amounts associated with transmission and accounting for out-of-period adjustments (Exhs. ES-DPH-1, at 90; ES-DPH-4 (East), Sch. DPH-17 (Rev. 3); ES-DPH-4 (West), Sch. DPH-17 (Rev. 3)).

Next, we address Eversource's proposal to decrease the Companies' adjusted test year amounts to reallocate 33 percent of the adjusted test year regulatory assessment amounts to basic service. The Department has found that basic service rates should include all costs of providing basic service to allow competitive suppliers a fair and reasonable opportunity to compete for basic service customers. See Provision of Default Service, D.T.E. 02-40-B at 14 (2003). These costs include all supplier-related wholesale costs, procurement-related wholesale costs, and direct retail costs, including bad debt. D.T.E. 02-40-B at 17.¹⁵⁹

¹⁵⁸ The Department also makes an annual assessment to electric companies under its jurisdictional control for the costs associated with the Department's employees involved in the investigations of the preparation for and responses to storm and other emergency events by electric companies. Storm Trust Fund Assessment, D.P.U. 16-ASMT-3 (2016). Pursuant to G.L. c. 25, § 18, no electric company may list any Storm Trust Fund assessment as a recoverable expense in any rate proceeding before the Department. The Companies have appropriately removed the Storm Trust Fund assessment from their test year costs of service (Exhs. ES-DPH-2 (East), Sch. DPH-6 (Rev. 3) at 4; ES-DPH-2 (West), Sch. DPH-6 (Rev. 3) at 4).

¹⁵⁹ The Department has distinguished direct retail costs from indirect retail costs, which are associated with services and activities that a distribution company provides to all of its customers alike (i.e., basic service and competitive supply). D.T.E. 02-40-B

Eversource has offered no evidence to demonstrate that regulatory assessments represent costs that should be specifically allocated to basic service. Moreover, even assuming that such costs were appropriate for specific allocation to basic service, Eversource has presented no evidence to establish a cost-based allocation of regulatory assessments to basic service. Rather, Eversource seeks to increase basic service rates based solely on a percentage of the Companies' total intrastate operating revenues related to basic service in 2015 (Exhs. ES-DPH-1, at 91; ES-DPH-2 (East), Sch. DPH-17 (Rev. 3); ES-DPH-2 (West), Sch. DPH-17 (Rev. 3)). While the statutory assessments are levied against jurisdictional electric and gas companies based on each company's proportionate share of intrastate revenues, we find that Eversource has offered no record evidence to justify why it is appropriate, or even necessary, to use intrastate operating revenues as a means to allocate regulatory assessments to basic service, particularly if the resulting allocations are not reflective of the costs of providing regulatory services to these customers.

Based on the above considerations, the Department declines to approve Eversource's proposal to allocate 33 percent of the adjusted test year amounts of regulatory assessments to basic service and, thus, remove \$2,409,292 and \$413,176 from the proposed costs of service of NSTAR Electric and WMECo, respectively. In light of this finding, the Department will retain all of the Companies' regulatory assessment expense in distribution rates. The effect

at 17. The Department has determined that these services and activities are distribution-related, rather than basic service-related and, as such, should not be included in the calculation of basic service prices. D.T.E. 02-40-B at 17-18.

of this retention is provided in Schedule 2 of this Order for NSTAR Electric and WMECo, respectively.

P. Normalization of WMECo's Property Tax Deductions

1. Introduction

WMECo seeks to change the method it uses to account for property tax deductions from a flow-through method to a normalization method (Exhs. AG-19-55; AG-37-14). As of the end of the test year, WMECo states that it had an ADIT balance of \$487,388,588, of which \$11,134,250 is associated with property tax deductions (Exhs. ES-DPH-2 (West), Sch. 30 (Rev. 3); AG-37-14; RR-AG-15; RR-DPU-44). Eversource proposes to book the \$11,134,250 in ADIT associated with property tax deductions as a regulatory asset¹⁶⁰ and to amortize the asset over five years (Exh. ES-DPH-2 (West), Sch. DPH-33, at 8 (Rev. 3)). As a result, WMECo proposes to increase its test year income tax expense associated with property tax accounting by \$2,226,850 (Exh. ES-DPH-2 (West), Sch. DPH-33, at 8 (Rev. 3)).

When expenses or revenues recognized for income tax purposes differ from expenses or revenues recognized for ratemaking purposes, it is necessary for a company to account for these timing differences so that the total amount of expenses or revenues recognized for

¹⁶⁰ A regulatory asset is created when a regulatory agency, such as the Department, allows a company to record a cost for recovery in the future. Massachusetts Electric Company and Nantucket Electric Company, D.P.U. 10-54, at 318 n.235 (2010); NSTAR Electric Company, D.T.E. 03-47-A at 3 n.2 (2003); Western Massachusetts Electric Company, D.P.U. 94-8-CC (Phase I) at 11 n.13 (1994). The existence of a regulatory asset provides reasonable assurance of recovery of revenue at least equal to that cost within a reasonable, finite period. D.T.E. 03-47-A at 22; D.P.U. 94-8-CC (Phase I) at 11 n.13.

income tax purposes is equal to the total amount of expenses or revenues recognized for ratemaking purposes. D.T.E. 99-118, at 33; Essex County Gas Company, D.P.U. 87-59, at 27 (1987); 18 C.F.R. § 35.24(d)(2).

WMECo states that it experiences timing differences when it accelerates property tax deductions taken on its tax return in the current year by deducting up to eight and one-half months of those property tax payments made in the following year (RR-AG-15; RR-DPU-44). WMECo states that it currently uses flow-through accounting to address these temporary timing differences (Exh. AG-1-88). Under flow-through accounting, the timing differences produce tax savings for current customers that must be repaid by future customers (RR-DPU-43).

WMECo proposes to change the method it uses to account for property tax deductions from a flow-through method to a normalization method. Under the normalization method, a company calculates its income tax component as if the amounts of timing difference transactions recognized in each period for ratemaking purposes were also recognized in the same amounts, in the same periods, for income tax purposes. 18 C.F.R. § 35.24(d)(1). Normalization results in deferred income tax expense that is included in cost of service, with a corresponding increase in ADIT which is deducted from rate base. Oxford Water Company, D.P.U. 1219, at 2 (1982). Eversource states that WMECo currently uses normalization accounting for all book/tax differences except for the equity portion of AFUDC and property tax expense (Exhs. AG-1-88; AG-19-55; AG-37-14; Tr. 13, at 3128-3129;

Tr. 15, at 3130-3131).¹⁶¹ Eversource further states that the proposed increase in WMECo's property tax expense in the instant case will be mitigated by an equally offsetting accounting entry of Statement of Financial Accounting Standards Number 109 ("FAS 109") ADIT,¹⁶² which will reduce WMECo's rate base in future rate proceedings through the amortization of the regulatory asset (Exh. ES-DPH-2 (West), Sch. DPH-33, at 8 (Rev. 3); RR-DPU-45; Tr. 9, at 1837-1838; Tr. 15, at 3133)).

2. Positions of the Parties

a. Attorney General

The Attorney General argues that Eversource has failed to provide any evidence or cite to any Department precedent to support its proposed adjustment to property tax expense (Attorney General Brief at 186). According to the Attorney General, there is no mention of the proposed change in accounting treatment in the Companies' initial filing (Attorney General Brief at 186-187). The Attorney General maintains that the Companies are seeking to retroactively address a problem that never existed and does not exist now (Attorney General Brief at 187). Accordingly, the Attorney General argues that WMECo's proposed property tax expense adjustment should be denied (Attorney General Brief at 186).

The Attorney General also argues that there is no evidence that WMECo used flow-through accounting for property taxes in its previous rate case (Attorney General Brief

¹⁶¹ NSTAR Electric uses normalization accounting for all book/tax differences, including the equity portion of AFUDC and property tax expense (Exh. AG-1-88).

¹⁶² FAS 109 establishes financial accounting and reporting standards for the effects of income taxes, including the recognition and treatment of deferred taxes.

at 187, citing Exh. AG-37-14;¹⁶³ Tr. 13, at 2790; Attorney General Reply Brief at 36). In support of her position, the Attorney General maintains that WMECo did not flow-through any property tax deductions in its previous rate case, D.P.U. 10-70 (Attorney General Brief at 187, citing Tr. 13, at 2790). Further, the Attorney General argues that WMECo has failed to substantiate its claim that ADIT should be considered a regulatory asset or that recovery of such amounts from ratepayers is appropriate (Attorney General Reply Brief at 34-35). The Attorney General claims that, although the Companies make general reference on brief to a FAS 109-related “regulatory asset” and “deferred income taxes,” Eversource has offered no evidence as to their actual existence or the amount related to property taxes (Attorney General Reply Brief at 35-36).

b. Companies

Eversource argues that the Department has full discretion to determine whether the use of normalization accounting is appropriate (Companies Brief at 491, citing RR-DPU-43). Eversource contends that it is appropriate for WMECo to change the method it uses to account for property tax deductions from a flow-through method to a normalization method because: (1) WMECo’s property taxes are the last remaining flow-through item for WMECo, NSTAR Electric, and NSTAR Gas; (2) normalization provides for inter-generational equity in ratemaking, versus flow-through accounting that benefits current ratepayers at the expense of later generations of ratepayers; (3) without a consolidated accounting treatment, the Companies will be forced to apply a complex treatment involving

¹⁶³ The Attorney General’s brief inadvertently refers to Exhibit AG-34-17.

estimates and allocations to maintain both accounting methods post-merger; and (4) the change from flow-through to normalization will result in a decrease to WMECo's rate base in the next base distribution rate proceeding (Companies Brief at 491, citing RR-DPU-43).

Eversource asserts that the Attorney General's arguments opposing its proposal are misleading and are based on a fundamental misunderstanding of the nature of the proposed adjustment and tax accounting (Companies Brief at 491; Companies Reply Brief at 131).

With respect to the current accounting method used by WMECo, the Companies argue that the Attorney General fails to recognize that a flow-through of zero dollars in any given year (as occurred in the test year used in D.P.U. 10-70) does not mean that a company is not using flow-through accounting (Company Brief at 492; Companies Reply Brief at 133).

Instead, the Companies argue that a flow-through of zero dollars in a given year only shows that the regulatory asset account and the corresponding ADIT account experienced no timing differences in that particular year (Company Brief at 492; Companies Reply Brief at 133).

Finally, Eversource contends that its proposal to implement normalized accounting for WMECo's property taxes, with the corresponding creation of a regulatory asset, is consistent with fundamental accounting rules and practices (Companies Reply Brief at 132, citing Exhs. ES-DPH-2, Sch. DPH-33, at 4 (West); ES-DPH-4, Sch. DPH-4 at 1 (West); AG-37-14; RR-AG-15; RR-DPU-44). The Companies maintain that under FAS 109, all book/tax differences must produce ADIT that is recorded on the balance sheet (Companies Brief at 491, citing RR-DPU-43; Companies Reply Brief at 132; citing D.T.E. 05-27, at 227). According to Eversource, accounting rules have required for decades that a FAS

109 regulatory asset be established for all flow-through items and that a failure to create such an asset would be a fundamental accounting error that would bar the Companies from issuing audited financial statements (Companies Reply Brief at 132).

3. Analysis and Findings

As described above, WMECo proposes to change the method it uses to account for property tax deductions from the flow-through method to the normalization method and to recover the remaining flow-through ADIT balance from ratepayers through the creation of a regulatory asset and an adjustment to test year property tax expense (Exhs. AG-1-88; AG-19-55; AG-37-14; Tr. 13, at 3128-3129; Tr. 15, at 3130-3131).¹⁶⁴ WMECo represents that it currently uses the flow-through accounting method for recording property tax deductions (Exhs. DPU-59-36; AG-1-88; AG-37-14; RR-AG-15). The Attorney General argues that the Companies have not shown that WMECo currently uses flow-through accounting and, therefore, have not shown that any ratemaking treatment of ADIT related to a change in accounting treatment is warranted (Attorney General Brief at 187, citing Exh. AG-37-14; Tr. 13, at 2790; Attorney General Reply Brief at 36).

Because any property tax deductions would be flowed through on an annual basis as the difference, either positive or negative, in the property tax deduction from one year to the next, that absence of a property tax deferral entry in the test year used in WMECo's previous

¹⁶⁴ Eversource's direct case on this issue consists of a single entry in its income tax calculations, with no narrative explanation (Exh. ES-DPH-2, Sch. DPH-33, at 8). By its own admission, Eversource did not go to "great length" to discuss the adjustments it was seeking in that entry (Tr. 13, at 2787). In the future, we expect companies seeking approval of proposals that have ratepayer impacts to present their requests in a more transparent manner.

rate case does not demonstrate one way or the other whether WMECo uses the flow-through method. The Department finds credible, however, WMECo's testimony that it currently uses the flow-through accounting method for recording property tax deductions and that the resulting timing differences have created deferred income taxes (Exhs. AG-1-88; AG-37-14; Tr. 13, at 2787-2789). As required under FAS 109, WMECo's accelerated deductions give rise to deferred income taxes (RR-AG-15; RR-DPU-45). As of the end of the test year, the Department finds that WMECo had a cumulative flow-through balance of \$11,134,250 related to these timing differences for property tax deductions (Exh. AG-37-14; RR-AG-15; RR-DPU-44).

Utility companies have used normalization accounting for many years. See, e.g., Oxford Water Company, D.P.U. 1219, Interim Order at 1-2 (1982); Western Massachusetts Electric Company, D.P.U. 10779, at 2-3 (1954); Boston Edison Company, D.P.U. 10774, at 3-5 (1953). As described above, normalization accounting is designed to match the timing of recognition of income tax benefits or costs with the timing of recognition of the corresponding book expense or revenue. The normalization of temporary timing differences ensures that current and future ratepayers equitably share the tax benefits of property tax deductions. See Boston Edison Company, D.P.U. 18515, at 50-51 (1976); Boston Edison Company, D.P.U. 17795 at 4-5 (1974). The Department finds that WMECo's proposed use of normalization accounting for property tax differences is reasonable as it will avoid the need to use estimates and allocations to maintain two different accounting methods post-merger (Exh. DPU-59-36; RR-DPU-44). In addition, WMECo's use of normalization

accounting will enable WMECo, NSTAR Electric, and NSTAR Gas to use a consolidated accounting method (Exh. DPU-59-36). For these reasons, the Department will permit WMECo to employ the normalization accounting method for property tax deductions.

As noted above, WMECo had a cumulative flow-through balance of \$11,134,250 in ADIT related to timing differences for property tax deductions as of the end of the test year (Exh. AG-37-14; RR-AG-15; RR-DPU-44). Eversource has requested recovery of this amount through the creation of a regulatory asset. Consistent with our findings above approving WMECo's change in accounting treatment, the Department will permit WMECo to create a regulatory asset in the amount of \$11,134,250 and to recover these amounts from ratepayers as an adjustment to its test year income tax expense associated with property tax accounting. Because the regulatory asset will be amortized over a period of time, WMECo's ADIT balance will increase correspondingly, thereby reducing WMECo's rate base (Tr. 15, at 3132-3133).

With respect to the Companies' proposed amortization period, the Department considers the size of the balance to be recovered, the underlying facts giving rise to the accumulation of the balance, and the impact of recovery on ratepayers. D.P.U. 08-27, at 99; D.P.U. 93-223-B at 14; D.P.U. 84-145-A at 54. Based on these considerations and the record in this case, the Department finds that five years is an appropriate amortization period for WMECo's FAS 109 regulatory asset.¹⁶⁵ Amortizing \$11,134,250 over five years produces an annual expense of \$2,226,850 for WMECo. Based on the foregoing analysis,

¹⁶⁵ The Department has previously found that a five-year amortization period for non-plant-related ADIT is reasonable. D.P.U. 15-155, at 258.

the Department approves Eversource's proposed adjustment to WMECo's income tax expense related to property taxes in the amount of \$2,226,850.

Q. Pension and Post-Retirement Benefits Other than Pension Expense

1. Introduction

The Companies propose to consolidate their current pension adjustment mechanisms ("PAMs") in this proceeding (RR-DPU-51, Att. (a) at 108-111 (proposed M.D.P.U. No. 522)). As part of this proposal, Eversource proposes to collect all pension/post-retirement benefits other than pension ("PBOP") costs through the PAM (Exh. DPU-14-6).

NSTAR Electric's current PAM was approved by the Department in D.T.E. 03-47-A, and established separate, fully reconcilable, annual adjustment factors for NSTAR Electric (and NSTAR Gas) to recover the portion of the pension/PBOP costs not collected in base rates (Exh. DPU-14-6). Eversource states that NSTAR Electric currently has \$31,490,920 of pension/PBOP costs embedded in base distribution rates (Exhs. ES-DPH-1, at 186; ES-DPH-5 (Rev. 1)).¹⁶⁶ Meanwhile, WMECo's PAM, which was approved by the Department in Western Massachusetts Electric Company, D.T.E. 06-55 (2006), already recovers all of its pension/PBOP costs.

¹⁶⁶ Eversource states that the \$31,490,920 in pension/PBOP costs represents the base amount of approximately \$32,609,000 of pension/PBOP costs initially included in base rates in D.T.E. 03-47, adjusted for changes due to NSTAR Electric's Simplified Incentive Plan ("SIP") and a final SIP adjustment factor of 109.47 percent, less the amount allocated to transmission based on the wages and salaries allocator of 11.79 percent (Exhs. ES-DPH-1, at 187-188; ES-DPH-3 (East), WP DPH-28, at 2 (Rev. 3)).

The Companies propose to collect all pension/PBOP expenses through the PAM for both NSTAR Electric and WMECo (Exh. DPU-14-6). Accordingly, Eversource proposes to transfer the pension/PBOP costs from NSTAR Electric's base distribution rates and collect these costs through the PAM (Exhs. ES-DPH-1, at 186-187; ES-DPH-2 (East), Sch. DPH-11, at 2 (Rev. 3); ES-DPH-2 (East), Sch. DPH-11, at 2 (Rev. 3); DPU-14-5 & Atts.; DPU-14-6; DPU-14-7). Thus, going forward, the amounts recovered through the PAM no longer will be reduced by an amount in base rates (Exh. DPU-14-6). No party commented on Eversource's proposal.

2. Analysis and Findings

The Department finds that the transfer of NSTAR Electric's pension/PBOP costs from base distribution rates to its PAM is consistent with the treatment approved for NSTAR Gas in D.P.U. 14-150, at 155. Therefore, the Department approves Eversource's proposal. At this time, the Department will not address any other provisions of the proposed tariff, M.D.P.U. No. 522. Instead, we will address any further issues in our subsequent Order addressing rate design issues.

R. Environmental Remediation Costs

1. Introduction

During the test year, NSTAR Electric booked \$1,923,688 in environmental costs, and WMECo booked \$281,618 in environmental costs (Exhs. AG-1-59, Atts. (a), (b)). A portion of these costs were associated with the remediation of former manufacturing gas plant ("MGP") sites that were owned and operated by its corporate predecessors (Exh. AG-1-2, Att. (a) at 21 (Supp. 1)). MGP plants produced gas from coal and other petroleum

processes, which resulted in byproducts that may pose risks to human health and the environment (Exh. AG-1-2, Att. (a) at 21 (Supp. 1)). See also *Manufactured Gas Plants*, D.P.U. 89-161, at 18-24 (1990).

In WMECo's previous rate case, the Department addressed environmental remediation costs at several MGP sites, including one owned by the former Easthampton Gas Company ("Easthampton Gas") and two sites owned by Amherst Gas Company ("Amherst Gas"). D.P.U. 10-70, at 176-185. In order to clarify WMECo's status as a potential liable party for these MGP sites, the Department directed WMECo to provide as part of its next Section 94 rate filing an explanation of its relationship to Amherst Gas and Easthampton Gas.¹⁶⁷ D.P.U. 10-70, at 182 n.91. No party commented on this issue.

2. Analysis and Findings

In order to promote expeditious remediation of contaminated sites, both the federal government and the Commonwealth of Massachusetts imposes joint and several liability, without regard to fault, for investigations and cleanup of any such site on any person who (1) generated, transported, or disposed of hazardous materials there, (2) owned or operated any such facility where the hazardous material was generated, stored, or disposed, or (3) simply owned the land (Exh. AG-1-2, Att. at 21 (Supp. 1)). See also D.P.U. 89-161,

¹⁶⁷ Amherst Gas sold its electric operations to Western Counties Electric Company ("Western Counties"), another corporate predecessor of WMECo, in 1930, and discontinued gas operations in 1934. D.P.U. 10-70, at 182 n.91. Easthampton Gas sold its electric operations to Western Counties in 1930, and sold its remaining gas operations to Northampton Gas Light Company in 1935. D.P.U. 10-70, at 182 n.91. In view of WMECo's indirect association with the gas operations of these companies, the Department determined that further clarification was warranted.

at 6-9. Eversource reports that it has partial or full ownership responsibilities at hazardous waste sites, including those of former MGP facilities, and thus retains liabilities for environmental remediation costs at these locations (Exh. AG-1-2, Att. (a) at 21 (Supp. 1)). Thus, although WMECo failed to comply with the directives of D.P.U. 10-70, we are satisfied that WMECo never acquired an ownership interest in the gas operations of Amherst Gas or Easthampton Gas. Rather, the Department finds that the joint and several liability provisions of federal and state environmental laws places environmental remediation responsibilities associated with former MGP sites on WMECo.

S. Inflation Allowance

1. Introduction

Eversource proposes an inflation allowance of \$2,832,290 for NSTAR Electric and \$868,686 for WMECo (Exhs. ES-DPH-3 (East), WP DPH-22, at 1 (Rev. 3); ES-DPH-3 (West), WP DPH-22, at 1 (Rev. 3)).¹⁶⁸ To arrive at these proposed adjustments, Eversource first calculated a proposed inflation factor of 4.527 percent using the most recent forecast of the gross domestic product implicit price deflator (“GDPIPD”) (as sourced from the Bureau of Economic Analysis of Moody’s Analytics) from the midpoint of the test year to the

¹⁶⁸ In its initial filing, Eversource proposed an inflation allowance of \$3,070,102 for NSTAR Electric and \$942,355 for WMECo (Exhs. ES-DPH-1, at 134; ES-DPH-3 (East), WP DPH-22, at 1; ES-DPH-3 (West), WP DPH-22, at 1). Eversource subsequently revised its proposed inflation allowances based on updated expense reporting.

midpoint of the rate year (Exhs. ES-DPH-1, at 134; ES-DPH-3 (East), WP DPH-22, at 1 (Rev. 3); ES-DPH-3 (West), WP DPH-22, at 149-62 (Rev. 3)).¹⁶⁹

Next, Eversource took NSTAR Electric's adjusted test year O&M expense of \$273,888,542, and subtracted \$211,324,149, which represents adjusted test year expenses associated with the various O&M expense categories for which Eversource seeks separate adjustments (Exhs. ES-DPH-1, at 134; ES-DPH-3 (East), WP DPH-22, at 1 (Rev. 3)).¹⁷⁰

Finally, Eversource multiplied the 4.527 percent inflation factor by \$62,564,393 in adjusted test year residual O&M expenses to arrive at a proposed inflation allowance of \$2,832,290 for NSTAR Electric (Exhs. ES-DPH-3 (East), WP DPH-22, at 1 (Rev. 3)).

Similarly, Eversource took WMECo's adjusted test year O&M expense of \$59,758,644, and subtracted \$40,569,643, which represents adjusted test year O&M expenses associated with the various categories for which Eversource seeks separate adjustments

¹⁶⁹ In its initial filing, Eversource calculated a proposed inflation factor of 4.870 percent using the change in GDPIPD from the midpoint of the test year to the midpoint of the rate year (Exhs. ES-DPH-1, at 133; ES-DPH-3 (East), WP DPH-22, at 1; ES-DPH-3 (West), WP DPH-22, at 1). Eversource subsequently updated its proposed inflation factor during the course of the proceedings.

¹⁷⁰ Eversource seeks separate adjustments for the following NSTAR Electric expense categories: (1) postage expense; (2) uncollectible expense; (3) fee free payment processing; (4) dues and memberships; (5) employee benefits costs; (6) insurance expense and injuries and damages; (7) payroll expense; (8) variable compensation; (9) vegetation expense annualization; (10) vegetation management resiliency tree work pilot; (11) rate case expense; (12) regulatory assessments; (13) lease expense; (14) information systems expense adjustment; (15) amortization of GIS costs; (16) storm cost adjustment; and (17) storm fund adjustment (Exh. ES-DPH-3 (East), WP DPH-22, at 1 (Rev. 3)).

(Exhs. ES-DPH-1, at 134; ES-DPH-3 (West), WP DPH-22, at 1 (Rev. 3)).¹⁷¹ Eversource then multiplied the 4.527 percent inflation factor by \$19,189,000 in adjusted test year residual O&M expenses to arrive at a proposed inflation allowance of \$868,686 for WMECo (Exh. ES-DPH-3 (West), WP DPH-22, at 1 (Rev. 3)).

2. Positions of the Parties

Eversource argues that its method of calculating an inflation allowance, including the use of GDPIPD, is consistent with Department precedent (Companies Brief at 225-226, citing D.P.U. 15-155, at 314; D.P.U. 15-80/81, at 188; D.P.U. 14-150, at 248; D.P.U. 13-75, at 251; D.P.U. 08-35, at 154-155; D.T.E. 02-24/25, at 184; D.P.U. 95-40, at 64; D.P.U. 92-250, at 97-98). Accordingly, Eversource asserts that the Department should approve its proposed inflation allowance adjustments to NSTAR Electric's and WMECo's costs of service (Companies Brief at 226). No other party commented on Eversource's proposed inflation allowances.

3. Analysis and Findings

The inflation allowance recognizes that known and inflationary pressures tend to affect a company's expenses in a manner that can be measured reasonably. D.T.E. 02-24/25, at 184; D.T.E. 01-56, at 71; D.T.E. 98-51, at 100-101; D.P.U. 96-50 (Phase I) at 112-113;

¹⁷¹ Eversource seeks separate adjustments for the following WMECo expense categories: (1) postage expense; (2) uncollectible expense; (3) fee free payment processing; (4) dues and memberships; (5) employee benefits costs; (6) insurance expense and injuries and damages; (7) payroll expense; (8) variable compensation; (9) vegetation management resiliency tree work pilot; (10) rate case expense; (11) regulatory assessments; (12) lease expense; (13) information systems expense adjustment; (14) storm cost adjustment; and (15) storm fund adjustment (Exh. ES-DPH-3 (West), WP DPH-22, at 1 (Rev. 3)).

D.P.U. 95-40, at 64. The inflation allowance is intended to adjust certain O&M expenses for inflation where the expenses are heterogeneous in nature and include no single expense large enough to warrant specific focus and effort in adjusting. D.P.U. 1720, at 19-21; Commonwealth Electric Company, D.P.U. 956, at 40 (1982). The Department permits utilities to increase their test year residual O&M expense by an independently published price index from the midpoint of the test year to the midpoint of the rate year. D.P.U. 15-155, at 314-315; D.P.U. 08-35, at 154-155; D.T.E. 02-24/25, at 184; D.P.U. 95-40, at 64; D.P.U. 92-250, at 97-98. In order for the Department to allow a utility to recover an inflation adjustment, the utility must demonstrate that it has implemented cost-containment measures. D.P.U. 09-30, at 285; D.P.U. 08-35, at 154; D.T.E. 02-24/25, at 184; D.T.E. 01-56, at 71-72.

In the instant case, Eversource has demonstrated a number of cost-containment measures it has taken throughout the course of regular operations including the use of competitive solicitation processes for vendors and targeted programs designed to reduce healthcare expenses (Exhs. ES-MPS-1, at 8-11; DPU-13-20; DPU-21-20; DPU-45-27; AG-1-52). In addition, the Companies have demonstrated that they have taken reasonable measures to control property and liability insurance expense (Exh. ES-DPH-1, at 61-62). Eversource also has provided system-wide examples of cost reductions achieved through the merger approved in D.P.U. 10-170-B, including measures that reduced the residual O&M expenses that are subject to the proposed inflation allowance (Exhs. ES-DPH-4, Sch. 10; DPU-13-20). Based on these considerations, the Department finds that Eversource

demonstrated that it has implemented cost-containment measures sufficient to qualify it for an inflation allowance.

Eversource calculated its proposed inflation factor from the midpoint of the test year to the midpoint of the rate year, using the most recent GDPIPD as an inflation measure (Exh. ES-DPH-1, at 134). This calculation method and use of GDPIPD are consistent with Department precedent. D.P.U.15-155, at 315; D.P.U. 08-35, at 154-155; D.T.E. 02-24/25, at 184; D.P.U. 95-40, at 64; D.P.U. 92-250, at 97-98. Therefore, the Department concludes that Eversource has properly calculated an inflation factor of 4.527 percent (Exh. ES-DPH-3 (East), WP DPH-22, at 1, lines 49-62 (Rev. 3); ES-DPH-3 (West), WP DPH-22, at 1, lines 49-62 (Rev. 3)).

If an O&M expense has been adjusted or disallowed for ratemaking purposes such that the adjusted expense is representative of costs to be incurred in the year following new rates, the expense also is removed in its entirety from the inflation allowance. D.P.U. 09-39, at 322; D.T.E. 05-27, at 204; D.T.E. 02-24/25, at 184-185; Blackstone Gas Company, D.T.E. 01-50, at 19 (2001); D.P.U. 88-67 (Phase I) at 141; Commonwealth Gas Company, D.P.U. 87-122, at 82 (1987). Eversource has proposed adjustments to 17 expense categories for NSTAR Electric and 15 expense categories for WMECo (see nn.170, 171 above). The Department finds that Eversource has correctly excluded the O&M categories for which it seeks separate adjustments from the calculation of the inflation allowances. In addition, the Department has adjusted the Companies' expenses related to service company charges and

insurance policy distribution (see Sections VIII.B.3 and VIII.I.3 above). The effect of the Department's adjustments are shown below in Tables 1 and 2.

Based on the above, the Department finds that an inflation allowance adjustment equal to the most recent forecast of GDIPD for the period proposed by the Companies, applied to NSTAR Electric's and WMECo's approved levels of residual O&M expense, is appropriate. As shown in Table 1, below, the approved inflation allowance for NSTAR Electric is \$2,824,948 (Exh. ES-DPH-3 (East), WP DPH-22, at 1 (Rev. 3)). As shown in Table 2, below, the approved inflation allowance for WMECo is \$867,630 (Exh. ES-DPH-3 (West), WP DPH-22, at 1 (Rev. 3)).

Table 1:

Test Year O&M Expense Per Books:	\$273,888,542
Less Normalizing Adjustments:	
Postage Expense	\$4,352,322
Uncollectibles Expense	\$15,073,652
Fee Free Payment Processing	-
Dues and Memberships	\$784,558
Employee Benefits Costs	\$19,870,555
Insurance Expense And Injuries and Damages	\$7,289,021
Payroll Expense	\$119,525,370
Variable Compensation	\$18,170,774
Vegetation Expense Annualization	\$5,283,642
Vegetation Management Resiliency Tree Work Pilot	-
Rate Case Expense	-
Regulatory Assessments	\$6,713,485
Lease Expense	\$3,660,277
Information Systems Expense Adjustment	\$6,100,492
Amortization of GIS Costs	-
Storm Cost Adjustment	-
Storm Fund Adjustment	\$4,500,000
Total Company O&M Adjustments:	\$211,324,149
Subtotal (Adjusted per Books Less Company Adjustments)	\$62,564,393
Less DPU Excluded Expenses	
Eversource Service Company Charges	\$3,778
Insurance Policy Distribution	\$158,407
Total Excluded Test Year Expenses	\$162,185
Residual O&M Expense	\$62,402,208
Inflation Factor from Midpoint of Test Year to Midpoint of Rate Year:	4.527%
Inflation Allowance:	\$2,824,948

Table 2:

Test Year O&M Expense Per Books:	\$59,758,644
Less Company Adjusted Items:	
Postage Expense	\$956,609
Uncollectibles Expense	\$5,163,634
Fee Free Payment Processing	-
Dues and Memberships	\$124,820
Employee Benefits Costs	\$3,047,400
Insurance Expense And Injuries and Damages	\$1,630,157
Payroll Expense	\$23,173,030
Variable Compensation	\$3,177,908
Vegetation Management Resiliency Tree Work Pilot	-
Rate Case Expense	-
Regulatory Assessments	\$1,148,553
Lease Expense	\$749,592
Information Systems Expense Adjustment	\$1,397,941
Storm Cost Adjustment	-
Storm Fund Adjustment	-
Total Company O&M Adjustments:	\$40,569,643
Subtotal (Adjusted per Books Less Company Adjustments)	\$19,189,000
Less DPU Excluded Expenses	
Eversource Service Company Charges	\$662
Insurance Policy Distribution	\$22,675
Total Excluded Test Year Expenses	\$23,337
Residual O&M Expense	\$19,165,663
Inflation Factor from Midpoint of Test Year to Midpoint of Rate Year:	4.527%
Inflation Allowance:	\$867,630

IX. PERFORMANCE-BASED RATEMAKING MECHANISM

A. Introduction

Eversource proposes to implement what it calls a “Grid-Wise Performance Plan,” which has two components (Exh. ES-GWPP-1, at 9). First, the Companies propose to implement a PBR mechanism that would adjust base rates annually in accordance with a revenue cap formula (Exh. ES-GWPP-1, at 9). Second, the Companies propose to spend \$400 million in incremental grid modernization-related capital investment over the next five years, commencing January 1, 2018 (Exh. ES-GWPP-1, at 9-10). The Companies’ PBR proposal is addressed below. The Companies’ proposed grid modernization investments are addressed in Section X.B below.

B. Companies PBR Proposal

1. Introduction

Eversource’s proposed PBR uses a revenue cap formula to adjust distribution rates annually (Exh. ES-PBRM-1, at 5). Eversource states that it designed the proposed PBR to work in tandem with its proposed revenue decoupling mechanism (Exh. ES-PBRM-1, at 6). The PBR would adjust the base revenue requirement approved in this proceeding, which serves as the target revenue for the revenue decoupling mechanism, according to the following formula:

$$PBRAF_T = (GDPPI_{T-1} - X - CD) + [(Z + GMP)_T / \text{Base Revenue}_{T-1}], \text{ where}$$

PBRA_F_T is the adjustment to the annual revenue target;

GDPPI_{T-1} is a price inflation index;

X is a productivity offset;

CD is a consumer dividend;

Z is an adjustment for exogenous costs (positive or negative);

GMP is an adjustment for additional incremental grid modernization investments; and

Base Revenue is the base distribution revenue requirement.

(Exhs. ES-PBRM-1, at 44; RR-DPU-51, Att. (a) at 329-334 (proposed M.D.P.U. No. 532)).

In addition, Eversource proposes to adopt an earnings sharing mechanism that would provide a credit to customers if earnings exceed the ROE approved in this proceeding by more than 200 basis points (Exhs. ES-GWPP-1, at 65; ES-PBRM-1, at 44). Each element of the Companies' proposed revenue cap formula and PBR mechanism are described in more detail below.

2. Formula Elements

a. Productivity Offset

Eversource proposes a productivity offset ("X factor") to be calculated as:

$$X = (\% \Delta TFP_I - \% \Delta TFP_E) + (\% \Delta W_E - \% \Delta W_I), \text{ where}$$

$\% \Delta TFP_I$ is the percentage change in electric distribution industry total factor productivity growth;

$\% \Delta TFP_E$ is the percentage change in economy wide total factor productivity growth;

$\% \Delta W_E$ is the percentage change in economy wide input price growth; and

$\% \Delta W_I$ is the percentage change in electric distribution industry input price growth.

(Exh. ES-PBRM-1, at 34-35, 40).

The X factor consists of the differential in expected productivity growth between the electric distribution industry and the overall economy, and the differential in expected input

price growth between the overall economy and the electric distribution industry (Exhs. ES-GWPP-1, at 46; ES-PBRM-1, at 34). To determine the proposed X factor, Eversource conducted a productivity study of U.S. electric distribution total factor productivity (“TFP”) and input price growth over the period 2001 to 2015 (Exhs. ES-PBRM-1, at 46; ES-PBRM-2). Eversource used two different samples for its productivity study: (1) a sample of 67 electric distribution companies intended to represent the overall U.S. electric distribution industry (“nationwide LDCs”); and (2) a sample of 17 electric distribution companies intended to represent the distribution industry in the Northeast U.S. (“regional LDCs”) (Exh. ES-PBRM-1, at 46). For economy wide TFP and input price growth the Companies used official U.S. government sources (Exh. ES-PBRM-1, at 46).¹⁷²

TFP is defined as the ratio of total output to total input (Exh. ES-PBRM-1, at 30). Total output consists of all the services produced by the relevant unit of production (e.g., a firm or an industry) (Exh. ES-PBRM-1, at 30). Total input includes all resources used by the unit of production in providing those services (Exh. ES-PBRM-1, at 30). Eversource used number of customers as the sole productivity study output measure (Exh. ES-PBRM-1, at 68). For the input measure, Eversource constructed a quantity index of total input for each firm and each year based on individual labor, materials, and capital quantity indices (Exh. ES-PBRM-1, at 69-72).

¹⁷² The sources used by the Companies were FERC Form 1, Bureau of Labor Statistics Employment Cost Index and Consumer Price Index for all Urban Consumers, and the Bureau of Economic Analysis Gross Domestic Product Price Index and Federal Reserve Economic Data (Exh. ES-PBRM-1, at 69-72).

The results of the Companies' study indicate that, for the period 2001-2015, the average growth in productivity for the regional LDCs was equal to -0.41 percent, while the average productivity growth for the nationwide LDCs was equal to -0.46 percent (Exh. ES-PBRM-1, at 47-48). For the same period, the average input price growth for regional LDCs was equal to 4.10 percent, while the average input price growth for the nationwide LDCs was equal to 4.13 percent (Exh. ES-PBRM-1, at 47-48, 75-76). Eversource's productivity study indicates that the economy-wide average productivity growth during the 2001 to 2015 period was 0.92 percent, and the average input price growth was 2.95 percent (Exh. ES-PBRM-1, at 50).

Eversource calculated its proposed productivity offset using the productivity and input price growth indices for the nationwide LDCs rather than the regional LDCs (Exh. ES-PBRM-1, at 61). Inputting the results of the productivity study into the productivity formula, Eversource calculated a proposed productivity offset equal to -2.64 percent (RR-DPU-8).¹⁷³

b. Inflation Index and Floor

Eversource proposes to base the price inflation index included in the revenue cap formula on the Gross Domestic Product Price Index ("GDP-PI") as measured by the U.S.

¹⁷³ Eversource initially calculated a proposed productivity offset equal to -2.56 percent (Exhs. ES-GWPP-1, at 46; ES-PBRM-1, at 52, 61). During the course of the proceeding, the Companies corrected an error in the productivity study, resulting in an updated proposed productivity factor of -2.64 percent (RR-DPU-8).

Commerce Department (Exh. ES-GWPP-1, at 47).¹⁷⁴ Under the Companies' proposal, the inflation index would be calculated as the percentage change between the current year's GDP-PI and the prior year's GDP-PI (Exh. ES-GWPP-1, at 47). For each year, the GDP-PI would be calculated as the average of the most recent four quarterly measures of GDP-PI as of the second quarter of the year (Exh. ES-GWPP-1, at 47).¹⁷⁵ Additionally, Eversource proposes to include an inflation floor of one percent for the revenue cap formula (Exh. ES-GWPP-1, at 12, 47-48).

c. Consumer Dividend

Eversource proposes to implement a consumer dividend of 25 basis points, or 0.25 percent, when inflation exceeds two percent (Exhs. ES-GWPP-1, at 54; ES-PBRM-1, at 8, 60, 66-67). The Companies state that a consumer dividend is often included in first generation PBR plans to capture the increased productivity growth associated with the transition from cost of service ratemaking to incentive regulation (Exhs. ES-GWPP-1, at 49-50; ES-PBRM-1, at 54).

¹⁷⁴ The GDP-PI is a measure of the U.S. economy-wide inflation in the prices of final goods and services (Exhs. ES-PBRM-1, at 31-32, 34).

¹⁷⁵ This information is published each September in the Survey of Current Business, a publication of the U.S. Commerce Department, Bureau of Economic Analysis. (Exh. ES-GWPP-1, at 47).

d. Grid Modernization Stretch Factor

Eversource states that its proposed commitment to spend \$400 million in incremental grid modernization investments over five years represents an implicit stretch factor,¹⁷⁶ equal to approximately 1.08 percent (Exhs. ES-GWPP-1, at 53-56; ES-PBRM-1, at 54, 60). The Companies calculated an average annual revenue requirement associated with the grid modernization base commitment spending to arrive at a 1.08 percent implicit stretch factor (Exh. ES-GWPP-1, at 54).

e. Grid Modernization Plan Factor

As part of the proposed PBR formula, Eversource proposes to include an adjustment for incremental grid modernization investments outside of the grid modernization base commitment (“GMP factor”) (Exhs. ES-GWPP-1, at 12, 18, 69; ES-PBRM-1, at 8). The Companies propose that the GMP factor will be set to zero unless and until the Department authorizes or requires grid modernization investment above the \$400 million commitment proposed in this proceeding (Exhs. ES-GWPP-1, at 12, 18, 69; ES-PBRM-1, at 8). During the first five years of the PBR plan, should the Department, in this proceeding or in Grid Modernization, D.P.U. 15-122, authorize or require spending above this amount, the Companies propose to recover the associated revenue requirement through the GMP factor (Exhs. ES-GWPP-1, at 12, 18, 69; ES-PBRM-1, at 8).

¹⁷⁶ Eversource states that, while not an explicit part of the PBR formula, the grid modernization base commitment is an implicit stretch factor within the proposed PBR framework because the Companies will essentially absorb the revenue requirement associated with \$400 million of grid modernization investment until the next base rate case (Exhs. ES-GWPP-1, at 53-56; ES-PBRM-1, at 5, 7-8).

f. Exogenous Cost Factor

The Companies propose to recover exogenous costs, which they define as positive or negative changes that are beyond the Companies' control and not reflected in either the GDP-PI or otherwise, in the PBR formula ("Z factor") (Exhs. ES-GWPP-1, at 12, 60; ES-PBRM-1, at 8, 44). The Companies propose to calculate the exogenous cost factor as a percentage of the previous year's base revenues. The factor would be zero unless an exogenous cost event occurs (Exhs. ES-GWPP-1, at 12, 60-62; ES-PBRM-1, at 44).

Eversource proposes that the following criteria must be met for exogenous cost recovery: (1) that the cost change is beyond Eversource's control; (2) that the change arises from a change in accounting requirements or regulatory, judicial, or legislative directives or enactments; (3) that the change is unique to the electric distribution industry as opposed to the general economy; and (4) that the change meets a threshold of "significance" for qualification (Exh. ES-GWPP-1, at 60-61).¹⁷⁷ Eversource proposes that the significance threshold for exogenous costs be set at \$5 million for calendar year 2018 for NSTAR Electric and WMECo combined and, thereafter, be subject to annual adjustments based on changes in GDP-PI, as measured by the U.S. Commerce Department (Exh. ES-GWPP-1, at 62).

¹⁷⁷ Eversource requests that the Department find that costs related to two potential future events will be eligible for exogenous cost recovery where the significance threshold is met: (1) costs related to incremental property taxes that arise from additional communities in the Companies' service area converting to the RCNLD valuation method; and (2) costs related to a FERC decision to modify the Companies' transmission tariffs in light of the consolidation of NSTAR Electric and WMECo into a single entity (Exh. ES-GWPP-1, at 63-64).

g. Earnings Sharing Mechanism

As part of the PBR, the Companies propose to adopt an asymmetrical earnings sharing mechanism (“ESM”) with a deadband of 200 basis points (Exhs. ES-GWPP-1, at 12, 65-66; ES-PBRM-1, at 8). The proposed earnings sharing mechanism would trigger a sharing of earnings with customers on a 75/25 basis (i.e., 75 percent to shareholders, 25 percent to ratepayers) if and when the actual distribution ROE exceeds 200 basis points above the ROE authorized in this proceeding (Exh. ES-GWPP-1, at 65).¹⁷⁸ If and when the actual ROE exceeds 300 basis points above the ROE authorized in this proceeding, Eversource proposes to share earnings with customers on a 50/50 basis (Exh. ES-GWPP-1, at 65). For any year in which the ROE is above the deadband, the Companies propose that the percentage of earnings that is to be shared with customers be credited to customers in the succeeding year and that the impact of this prior year adjustment be excluded from the calculation of any subsequent year’s sharing (Exh. ES-GWPP-1, at 66). The Companies acknowledge that any earnings sharing adjustment would be subject to a full investigation in an adjudicatory proceeding (Exh. ES-GWPP-1, at 67).

¹⁷⁸

The Companies propose that distribution ROE be calculated using distribution earnings available for common equity and the capital structure approved by the Department in this proceeding (Exh. ES-GWPP-1, at 67). The Companies propose that the calculation exclude incentive payments such as energy efficiency incentives, transition-incentive mitigation, and long-term contract remuneration. Additionally, the Companies propose that the calculation exclude any service-quality penalties as well as any amounts recognized in the current period resulting from regulatory or court settlements related to prior periods (Exh. ES-GWPP-1, at 67).

h. PBR Term

In the Companies' initial filing, the Companies did not specify a term for the PBR (Exhs. ES-GWPP-1, at 55; ES-PBRM-1, at 45, 54). During the course of the proceeding, Eversource proposed a five-year PBR term with an accompanying rate case moratorium, provided that Eversource may file for rate relief if the actual ROE falls more than 200 basis points below the ROE approved in this case (Exh. AG-33-8; Tr. 2, at 421-422).

i. Metrics

As described in Section X.B below, Eversource proposed a series of metrics to be used to monitor and evaluate the Companies' progress towards its grid modernization base commitment goals (Exh. ES-GMBC-1, at 132). The Companies did not, however, propose any separate metrics to track its performance under the PBR.

C. Positions of the Parties

1. Attorney General

The Attorney General argues that the Department should reject the proposed PBR. The Attorney General claims: (1) the PBR will not result in just and reasonable rates; (2) the PBR fails to meet the Department's requirements for implementing incentive-based ratemaking; and (3) that there are significant issues with multiple elements of the PBR (Attorney General Brief at 12-17, 20-21, 24-34; Attorney General Reply Brief at 77, 85-91).¹⁷⁹

¹⁷⁹ TEC and WMIG explicitly adopted the Attorney General's arguments regarding the PBR (TEC and WMIG Reply Brief at 5-8). In addition to the Attorney General's arguments, TEC and WMIG claim that the PBR will not be understood by consumers

First, the Attorney General claims that the proposed PBR will impose unnecessary rate increases and, therefore, will not result in just and reasonable rates. Accordingly, the Attorney General argues that the Department must reject the PBR (Attorney General Reply Brief at 77). More specifically, the Attorney General argues that the proposed PBR is not incentive regulation but a cost recovery mechanism that guarantees Eversource \$188 million in rate increases in the first four years (Attorney General Reply Brief at 77, 85). The Attorney General contends that the PBR will raise rates by 4.4 percent in 2019, 4.9 percent in 2020, 4.9 percent in 2021, and another 4.6 percent in 2022 (Attorney General Reply Brief at 77, citing Exh. DPU-40-8, Att.). The Attorney General claims that there is no need for these annual PBR rate increases because the Companies can and have earned appropriate returns under cost-of-service ratemaking (Attorney General Reply Brief at 5). In particular, the Attorney General argues that the Companies earned the highest returns on common equity in Massachusetts during 2013 and 2016 (Attorney General Brief at 2-3; Attorney General Reply Brief at 5).

In addition, the Attorney General argues that the Companies have numerous reconciling mechanisms and incentive programs in place that allow them to successfully operate in the changing dynamics of the electric utility market (Attorney General Reply Brief at 5). For example, the Attorney General maintains that, over the past four years, the Companies have received over \$16 million a year in energy efficiency incentives (Attorney General Reply Brief at 5). Further, the Attorney General asserts that, with revenue

and lacks the simplicity that the Department seeks when setting rate structures (TEC and WMIG Reply Brief at 6-8).

decoupling, other Massachusetts utilities have earned revenues sufficient to allow for long gaps between rate cases (Attorney General Reply Brief at 6).

Second, the Attorney General argues that the Companies have not met the Department's criteria for implementing for incentive-based ratemaking (Attorney General Brief at 10). Specifically, the Attorney General maintains that the proposed PBR focuses excessively on cost recovery, is not designed to achieve specific, measurable results, and will not lead to administrative cost efficiencies (Attorney General Brief at 10-12, 20, citing D.P.U. 96-50 (Phase I) at 242). The Attorney General asserts that the PBR, in conflict with Department precedent, is nearly exclusively focused on cost recovery (Attorney General Brief at 12, citing D.P.U. 96-50 (Phase I) at 242). The Attorney General posits that the Companies have presented the PBR proposal as a substitute for a cost recovery mechanism that addresses all of the Companies' capital spending (Attorney General Brief at 12-14; Attorney General Reply Brief at 85). The Attorney General argues that the Companies' admission that the proposed PBR is meant to replace a cost recovery mechanism shows that the PBR is excessively focused on cost recovery (Attorney General Brief at 12-13).

The Attorney General contends further that the proposed PBR lacks the specific, measurable metrics that Department precedent requires (Attorney General Brief at 12-14, citing D.P.U. 96-50 (Phase I) at 242). The Attorney General maintains that the Companies have not identified any targeted metrics to measure the PBR's success (Attorney General Brief at 14). While the Companies have presented general goals regarding advancing clean energy, cost efficiency, service quality, and grid modernization, the Attorney General

maintains that these goals are inadequate because they lack the performance targets or measures needed to evaluate the Companies' efforts (Attorney General Brief at 14-17).

In addition, the Attorney General argues that, although the Companies contend that the PBR will reduce regulatory costs, the Companies could not identify a single administrative filing that the PBR would eliminate (Attorney General Brief at 17, citing Tr. 3, at 539-540). Instead, the Attorney General claims that the PBR will increase the administrative burden through an annual PBR compliance filing (Attorney General Brief at 17, citing Tr. 3, at 531).

Third, the Attorney General argues that there are significant issues with multiple elements of the proposed PBR. With regard to the proposed earnings sharing mechanism, the Attorney General argues that the deadband is too large and the Companies will retain the majority of profits until the highest earnings levels (Attorney General Brief at 32). The Attorney General further argues that the earnings sharing mechanism's regressive structure, which gives the Companies a lower percentage of profits as earnings increase, will not benefit ratepayers (Attorney General Brief at 33). Because the Companies will share a lower percentage of profits as earnings increase, the Attorney General maintains that the Companies will have no incentive to take the risks required to attain the highest earnings levels (Attorney General Brief at 33). If the Department approves a PBR, the Attorney General recommends that the earnings sharing mechanism be modified so that the Companies' share of earnings starts lower and increases as both earnings and the Companies' risk increase (Attorney General Brief at 33).

With regard to the proposed term of the PBR, the Attorney General argues that the Department should bar the Companies from filing a rate case during the five-year term (Attorney General Reply Brief at 90-91). The Attorney General argues that if, as the Companies suggest, they can file a rate case whenever they choose, ratepayers would receive no benefit from the PBR (Attorney General Brief at 33-34; Attorney General Reply Brief at 90-91).

With regard to the X factor, the Attorney General argues that the Companies use a flawed TFP study to calculate the X factor (Attorney General Brief at 24-32). The Attorney General claims that the resulting X factor is too low and unprecedented (Attorney General Brief at 20-21, 24-26). In critiquing the Companies' TFP study, the Attorney General argues that the Companies' study should include not just capital costs and O&M expense, but also other labor and materials accounts, such as customer accounts, sales, and a portion of administrative and general expense (Attorney General Brief at 28, citing Exh. AG/DED-1, at 50, 53-54). Because the Companies did not consider these factors, the Attorney General argues that their analysis excludes major productivity improvements from technological advances (Attorney General Brief at 28-29, citing Exh. AG/DED-1, at 50, 55; Tr. 8, at 1523-1524).

The Attorney General also argues that the Companies' TFP study excludes certain peer utilities, preventing an accurate determination of the Companies' productivity (Attorney General Brief at 30). Further, the Attorney General claims that the Companies give

additional, unjustified weight to larger utilities, despite the fact that the TFP study already scales these utilities for size (Attorney General Brief at 30).

In addition, the Attorney General contends that, contrary to Department precedent, the Companies' TFP analysis relies solely on the number of customers, without accounting for peak demand (Attorney General Brief at 31, citing D.P.U. 96-50 (Phase I) at 277). The Attorney General asserts that using number of customers alone is inappropriate because it is not the sole driver of costs (Attorney General Brief at 31, citing AG/DED-1, at 59, 62-63; Tr. 3, at 494-496). Further, the Attorney General insists that the Companies' use of customer numbers as an output measure is inappropriate because the Companies provide distribution services, not customers (Attorney General Brief at 31, citing Exh. AG/DED-1, at 62-63).

Finally, the Attorney General claims that the Companies use an improper method to calculate their capital quantity index (Attorney General Brief at 31). The Attorney General asserts that because the Companies do not consider general plant or employ the more widely used geometric decay method, their analysis does not consider gradual depreciation, overstates capital inputs, and produces an inaccurately high degree of utility inefficiency (Attorney General Brief at 31, citing Exh. AG/DED-1, at 63-64). For all these reasons, the Attorney General maintains that the Companies' TFP analysis is limited and cannot be used to accurately determine Eversource's total productivity (Attorney General Brief at 28-31).

The Attorney General also argues that the negative X factor proposed by the Companies will guarantee unnecessary rate increases (Attorney General Brief at 20-21). In

particular, the Attorney General maintains that the proposed X factor will raise rates by more than 2.5 percent above inflation each year (Attorney General Brief at 20-21). According to the Attorney General, if approved by the Department, it would be the first negative (and by far the lowest) X factor used in North America (Attorney General Brief at 24-25). The Attorney General argues that the Companies have not shown that, over the past 15 years, negative productivity growth is common in the electric distribution industry (Attorney General Reply Brief at 86). Therefore, the Attorney General argues that a negative X factor, as proposed by the Companies, is unsupported by the record and should be rejected (Attorney General Brief at 20-21, 24-32; Attorney General Reply Brief at 86-90). If the Department implements a PBR for the Companies, which the Attorney General argues it should not, the Attorney General asserts that her analysis should be used to determine the X factor (Attorney General Brief at 32).

2. Acadia Center

Acadia Center argues that the Department should deny the proposed PBR and, instead, approve a capital cost recovery mechanism for the Companies (Acadia Center Brief at 13-14). Acadia Center asserts that the design of the proposed PBR is unprecedented and that every intervenor that addressed the issue has urged the Department to reject the proposed PBR (Acadia Center Brief at 13; Acadia Center Reply Brief at 2). Acadia Center also claims the proposed PBR is poorly designed and will not benefit ratepayers (Acadia Center Brief at 13). According to Acadia Center, the proposed PBR lacks the incentives or performance metrics needed to ensure that ratepayers will benefit (Acadia Center Brief at 13; Acadia

Center Reply Brief at 3-4). Instead, Acadia argues that the PBR's X factor, combined with an unjustified inflation floor, will guarantee annual rate increases without any requirement that ratepayers receive benefits (Acadia Center Brief at 13). Alternately, Acadia Center argues that a capital cost recovery mechanism will retain important ratepayer protections and Department oversight (Acadia Center Brief at 13-14).

3. Cape Light Compact

Cape Light Compact argues that the Companies have not satisfied Department precedent regarding PBRs (Cape Light Compact Brief at 45, citing D.P.U. 94-158, at 54, 57, 64-66). First, Cape Light Compact claims that the Companies have not shown that the proposed PBR is more likely to achieve the Department's ratemaking goals than cost of service regulation (Cape Light Compact Brief at 45). Cape Light Compact argues that the PBR will increase rates each year at a pace well above inflation (Cape Light Compact Brief at 46). Cape Light Compact also claims that these additional rate increases come without demonstrated benefits to customers (Cape Light Compact Brief at 45). According to Cape Light Compact, the proposed PBR puts the risk for capital projects on ratepayers, while the Companies receive most of the financial returns (Cape Light Compact Brief at 45). While the Companies expect certain efficiency gains, Cape Light Compact maintains that the proposed PBR does not deliver corresponding benefits to ratepayers (Cape Light Compact Brief at 46-47). Cape Light Compact also maintains that the Companies' assertion that the PBR is needed to make up for negative sales growth is not credible (Cape Light Compact Brief at 47). Further, Cape Light Compact argues that the Companies' sales have fallen

since 2005 and, as the Companies accept, revenue decoupling is designed to address this concern (Cape Light Compact Brief at 47, citing Exh. ES-GWPP-1, at 22-23).

Second, Cape Light Compact challenges the Companies' proposed X factor (Cape Light Compact Brief at 53). In particular, Cape Light Compact argues that the Companies' calculations cannot be relied upon because their TFP study is not sufficiently robust (Cape Light Compact Brief at 53-54). Cape Light Compact claims small changes to the analysis or sample produce drastic changes (Cape Light Compact Brief at 53-54). This volatility, according to Cape Light Compact, shows that the X factor is not reliable (Cape Light Compact Brief at 53-54). In addition, Cape Light Compact alleges that the reliability of the Companies' expert witness is in question because he has changed his analysis since he testified before another utility regulator in 2016 (Cape Light Compact Brief at 54, citing Exh. CLC-PLC-1, at 15 n.9).

If the Department accepts the proposed X factor, Cape Light Compact argues that it will lock in efficiency levels that have fallen and allow the Companies to keep the value from future efficiency improvements (Cape Light Compact Brief at 53). Cape Light Compact maintains that the Companies' improving efficiencies demonstrate that the rate increases from the proposed PBR are inappropriate (Cape Light Compact Brief at 53-55).

Third, Cape Light Compact argues that the proposed PBR should not have an inflation floor (Cape Light Compact Brief at 55). Cape Light Compact claims that this asymmetric proposal is unprecedented and puts additional inflationary risk on ratepayers (Cape Light Compact Brief at 55, citing Exhs. AG-DED-1, at 45; AG-28-5, Att. (a); Tr. 3, at 544

et seq.). Cape Light Compact posits that the proposed inflation floor is unfair to ratepayers and should be rejected because it protects the Companies with guaranteed revenues when inflation is low but provides no protection to ratepayers when inflation is high (Cape Light Compact Brief at 55-56).

Fourth, Cape Light Compact argues that the proposed PBR lacks needed performance metrics (Cape Light Compact Brief at 56, citing Exh. CLC-PLC-1, at 18). Specifically, Cape Light Compact claims that the PBR lacks specific metrics that will affect the Companies' revenues and, instead, only includes metrics that track spending without any link to performance (Cape Light Compact Brief at 56-57). Cape Light Compact argues that actual incentive mechanisms are needed to ensure progress towards the Companies' goals and benefits from the PBR (Cape Light Compact Brief at 57). Cape Light Compact further suggests that the Department should also establish performance metrics and penalties related to how well the Companies work with public agencies on issues such as equipment aesthetics, pole safety, the coordination of public-way construction, communication regarding service reliability and restoration, and land-use planning (Cape Light Compact Brief at 58-59).

Fifth, Cape Light Compact argues that the earnings sharing mechanism unfairly benefits the Companies (Cape Light Compact Brief at 59). Specifically, Cape Light Compact claims that the earnings sharing mechanism allows the Companies to retain all earnings in the proposed deadband and the majority of the earnings above the deadband (Cape Light Compact Brief at 59). Because the Companies will receive a smaller percentage of earnings at the highest levels of the earnings sharing mechanism, Cape Light Compact argues that the

earnings sharing mechanism gives the Companies little incentive to innovate and achieve efficiencies that benefit ratepayers (Cape Light Compact Brief at 58). Cape Light Compact urges the Department to adopt an earnings sharing mechanism that gives the majority of initial earnings to ratepayers and increases the Companies' percentage as earnings and the Companies' risk increases (Cape Light Compact Brief at 59).

Sixth, Cape Light Compact argues that the Department should adopt a five-year term for the PBR (Cape Light Compact Brief at 60). Cape Light Compact claims that this measure is necessary to maximize the Companies' incentives to be efficient and protect ratepayers (Cape Light Compact Brief at 60). To the extent the Department determines it is permitted by Section 94, Cape Light Compact maintains that the Department should review the Companies' rate schedules after five years and then extend the PBR term by an additional two years (Cape Light Compact Brief at 60-61).

4. CLF

CLF argues that the Department should reject the proposed PBR because it is not in the public interest (CLF Brief at 13-14). CLF claims that the proposed PBR is deeply flawed and will result in unreasonable rate increases without providing any incentive for the Companies to make efficient investments that serve the public interest (CLF Brief at 13-14). According to CLF, any argument that the annual rate increases are needed to address negative sales growth fails because the Companies have had negative sales growth since 2005, without a corresponding loss in revenues (CLF Brief at 18).

CLF makes three specific critiques of the proposed PBR formula (CLF Brief at 17). First, CLF argues that the deadband in the earnings sharing mechanism is too large and the sharing percentages skew towards the Companies (CLF Brief at 17). According to CLF, the earnings sharing mechanism gives the Companies a disproportionate share of the benefit, discouraging them from taking risks for the ratepayers' benefit (CLF Brief at 17).

Second, CLF argues that the Companies have not justified an inflation floor of one percent (CLF Brief at 17). CLF argues the inflation floor and lack of an inflation ceiling provide asymmetric benefits that favor the Companies (CLF Brief at 17).

Third, CLF argues that the proposed X factor is too low (CLF Brief at 17). CLF claims that it will increase rates faster than necessary, resulting in a windfall for the Companies (CLF Brief at 17).

5. DOER

DOER asserts that, although the PBR does not require the Companies to make any investments in the distribution system or grid modernization, the PBR will allow the Companies to collect an additional \$507 million in revenues over five years (DOER Brief at 18). According to DOER, because the Companies would receive these additional revenues regardless of their actions, the Companies will have an incentive to keep hundreds of millions of dollars and not invest in the distribution system (DOER Brief at 19). DOER argues that, without explicit incentives or investment requirements, the PBR lacks the necessary regulatory oversight (DOER Brief at 19-20). In contrast, DOER maintains that while a capital tracker does not require investment, it would at least tie revenues to actual

investment, provide incentives to the Companies, and be less costly than the PBR (DOER Brief at 20-21; DOER Reply Brief at 7-9). For these reasons, DOER asserts that the Department should reject the PBR and implement a capital tracker to address the Companies' capital investments (DOER Brief at 21-22; DOER Reply Brief at 7-9).

Should the Department wish to implement incentive-based ratemaking, instead of a capital tracker, DOER argues that the Department should make two changes to the Companies' proposed PBR. First, DOER asserts that the annual PBR increase should only be a percentage of the base rates that the Department sets in this proceeding and not compound previous annual PBR increases (DOER Reply Brief at 10-12).

Second, DOER argues that the proposed PBR should be streamlined by eliminating the exogenous cost factor and the earnings sharing mechanism (DOER Reply Brief at 13). DOER claims that both of these variables could result in contested proceedings each year and add to the administrative burden (DOER Reply Brief at 13). According to DOER, eliminating the exogenous cost factor and earnings sharing mechanism would increase the PBR's efficiency (DOER Reply Brief at 13).

6. Sunrun and EFCA

Sunrun and EFCA argue that the Companies have failed to show that the proposed PBR will result in just and reasonable rates (Sunrun and EFCA Brief at 5). Sunrun and EFCA also maintain that the Companies have not shown that the PBR is more likely than current regulation to advance the goals of safe, reliable, and least cost energy service (Sunrun and EFCA Brief at 5, citing D.P.U. 96-50 (Phase I) at 241-242).

Sunrun and EFCA argue that the proposed PBR will put ratepayers at risk because it lacks performance metrics as required by Department precedent (Sunrun and EFCA Brief at 5, citing D.P.U. 96-50 (Phase I) at 241-242). Further, Sunrun and EFCA argue that ratepayers will be left without legitimate protection from questionable projects the Companies may undertake because the Companies claim that cost recovery could be withheld only if the Companies fundamentally neglect their obligations (Sunrun and EFCA Brief at 12).

Finally, Sunrun and EFCA dispute the Companies' claim that the proposed PBR will save \$70 million by eliminating the need for capital cost recovery mechanisms (Sunrun and EFCA Brief at 5, citing Exhs. ES-PBRM-1, at 65; DPU-40-8; Tr. 2, at 421-423). According to Sunrun and EFCA, it is not plausible that the Companies will need capital cost recovery mechanisms because the Companies have not filed a rate case in years and have still earned a reasonable return (Sunrun and EFCA Brief at 5).

7. UMass

UMass argues that the Department should reject the PBR and, instead, approve a capital cost recovery mechanism for the Companies (UMass Brief at 3). UMass claims that the Companies have not demonstrated that a capital cost recovery mechanism is inadequate or, alternately, why a PBR is necessary to achieve the Companies' goals (UMass Brief at 3). UMass asserts that the Companies have admitted that, without the PBR, they have started grid modernization, provided top-tier service quality, implemented cost reductions, and made tremendous progress with productivity (UMass Brief at 10-11, citing Exh. ES-CAH-1, at 6;

Tr. 1, at 6, 66-68, 351-356, 391). UMass argues that these achievements demonstrate that a PBR is not necessary (UMass Brief at 3, 11).

Moreover, UMass argues that the proposed PBR is inappropriate because it places additional and unnecessary risk on ratepayers (UMass Brief at 4). Under a capital cost recovery mechanism, UMass argues that the Companies would have to fund their capital investments and then seek recovery by showing the prudence of those investments (UMass Brief at 4). UMass contends that this scenario forces the Companies to bear the initial risk of capital investments (UMass Brief at 4). Under the PBR, however, UMass argues that the Companies would receive upfront funding for capital projects and they would keep that funding regardless of a project's prudence (UMass Brief at 4). Therefore, UMass argues that the PBR attempts to shift the financial burden of an imprudent capital project from the Companies to ratepayers (UMass Brief at 4). While UMass maintains that future capital investment is necessary, it argues that the risk of the investments should fall on the Companies and not ratepayers (UMass Brief at 4-5).

8. Vote Solar

Vote Solar argues that Department should reject the proposed PBR because it lacks the performance metrics that are required by Department precedent for ratepayer protection (Vote Solar Brief at 12-13, citing Incentive Regulation, D.P.U. 94-158, at 34 (1995)). Vote Solar argues that the existing service quality metrics do not relieve the Companies of their obligation to adopt separate performance metrics related to the PBR (Vote Solar Reply Brief

at 6). According to Vote Solar, without the required metrics, the Companies have not met their burden to demonstrate that the PBR is in the public interest (Vote Solar Brief at 12-13).

With respect to the proposed X factor, Vote Solar argues that Eversource accepts that total output consists of all services that the Companies produce and, therefore, the Companies' reliance on customer count as the TFP study's output results in a skewed X factor (Vote Solar Brief at 6-7, citing Tr. 3, at 493-494, 497-489). Vote Solar asserts that while customer count is a convenient output choice, it underestimates the Companies' outputs and decreases the X factor because customer count is not a key driver of costs (Vote Solar Brief at 6-7). In addition, Vote Solar argues that Companies' X factor calculation is very volatile (Vote Solar Brief at 9-10). Vote Solar contends that the Companies' analysis shows significant year-to-year variation in productivity and the Companies have not shown that their selective averaging of data has addressed this volatility and produced a reliable X factor (Vote Solar Brief at 9-10, citing Exhs. VS-RB-Surrebuttal-1, at 10-11; AG/DED-1, at 64). Because the Companies' TFP study is not robust enough to be reliable, Vote Solar argues that the Department should not adopt the Companies' proposed X factor (Vote Solar Brief at 9-10).

If the Department implements a PBR, Vote Solar claims that its own analysis eliminates the volatility from the Companies' analysis (Vote Solar Brief at 12-13). Rather than using a TFP study, Vote Solar calculates an annual allowed revenue growth by using the average annual revenue growth from the utilities in the Companies' TFP study (Vote Solar Brief at 13, citing Exhs. VS-RB-1, at 33; DPU-VS-1-7). Vote Solar asserts that those

utilities had average annual revenue growth of 2.33 percent and, therefore, a reasonable X factor is an amount that when subtracted from inflation equals 2.33 percent (Vote Solar Brief at 15).

9. Companies

The Companies argue that the Department should approve its PBR, as proposed, as it will result in just and reasonable rates (Companies Reply Brief at 31-32). According to Eversource, its proposed PBR formula replicates the average cost trend for the electric distribution industry and no party has refuted its justification for the PBR (Companies Reply Brief at 31-32). Further, Eversource argues that no party has offered a viable alternative to the PBR as proposed (Companies Reply Brief at 31-32).

The Companies claim that the intervenors fail to address or misconstrue the revenue challenges that the Companies face (Companies Brief at 298-300, 306). For example, the Companies assert that, contrary to the intervenors' claims, revenue decoupling does not make the Companies whole for lost sales (Companies Brief at 298). According to the Companies, revenue decoupling only protects against a decline in sales to levels below test year sales (Companies Brief at 298). By contrast, the Companies contend that revenue decoupling does not restore lost sales growth (Companies Brief at 298-300, 306). The Companies argue that, in the past, growth in sales is what has allowed utilities to function without annual rate increases (Companies Brief at 300). Now, with declining sales and costs that grow faster than inflation, the Companies assert that annual PBR rate adjustments are essential (Companies Brief at 298-300).

Further, the Companies argue that, in recent years, they have been able to operate without annual rate increases only because of exceptional circumstances (Companies Brief at 303-308). For example, through mergers and non-merger-related efficiencies, the Companies claim to have had over \$600 million in savings opportunities from 1999 through 2009 (Companies Brief at 304). The Companies maintain, however, that these types of savings opportunities are no longer available (Companies Brief at 304-305).¹⁸⁰ Even with these additional revenue sources, the Companies maintain that NSTAR Electric's actual ROE was only 9.44 percent in 2016, as compared to an authorized ROE of 10.5 percent and WMECo's actual ROE was only 5.6 percent, as compared to an authorized ROE of 9.6 percent (Companies Brief at 308).

According to the Companies, the proposed PBR and a capital cost recovery mechanism would each result in annual rate adjustments that would have a similar impact on ratepayers (Companies Brief at 297). Eversource argues, however, that a capital cost recovery mechanism would require the Companies to file at least one rate case during the next five years (Companies Brief at 297, 314-316, citing Exhs. DPU-19-3; DPU-40-8).

In addition, the Companies claim that the intervenors have overstated the financial impact of the PBR (Companies Brief at 314-316). Specifically, the Companies highlight

¹⁸⁰ Eversource maintains that, from 2006 through 2012, NSTAR Electric was eligible for annual inflation-based adjustments under a rate settlement approved by the Department in D.T.E. 05-85 and, while some adjustments continued through 2012, these revenue opportunities are now gone (Companies Brief at 305). In addition, the Companies maintain that approximately \$50 million in annual lost base revenues for NSTAR Electric will end when it adopts revenue decoupling in this proceeding (Companies Brief at 307).

DOER's mistaken claim that the PBR would result in \$500 million in rate increases (Companies Brief at 315, citing DOER Brief at 4 n.15). The Companies assert that the \$500 million cited by DOER are the five-year aggregate revenues under the PBR, not the sum of the annual rate increases (Companies Brief at 315). Further, the Companies argue that this revenue amount is roughly equivalent to the \$498 million in revenues that would be collected if DOER's suggested capital cost recovery mechanism were approved (Companies Brief at 315, citing Exh. DPU-40-8). In addition, the Companies contend the Attorney General's claim that the PBR will result in annual adjustments of \$188 million over five years is also overstated (Companies Brief at 315, citing Attorney General Brief at 21).

The Companies also claim that ratepayers will be protected under the PBR because the explicit and implicit stretch factors will require the Companies to perform better than the average utility (Companies Brief at 320). Specifically, Eversource maintains that, because the PBR operates under a revenue cap, the Companies will absorb the additional costs of new customers and these costs will act as an implicit stretch factor (Companies Brief at 36). Further, the Companies assert that, under the PBR, Eversource will continue to be a top-tier performer on service quality and electric reliability (Companies Brief at 321).

The Companies argue that the proposed PBR provides a more efficient regulatory approach than a capital cost recovery mechanism (Companies Brief at 332). Because the Companies have committed to a five-year stay-out period under the PBR, Eversource argues that the PBR will reduce administrative burden and rate case expense (Companies Brief at 317-318). With a decreased administrative burden, the Companies claim that the PBR will

create an environment with a greater focus on cost savings (Companies Brief at 334). By contrast, the Companies assert that a capital cost recovery mechanism imposes a far greater and more costly administrative burden than a PBR (Companies Brief at 332, citing D.P.U. 15-155, at 40). The Companies contend that the annual PBR rate adjustment filings will be much less complex and require substantially fewer resources than capital cost recovery filings (Companies Brief at 332).

Next, the Companies claim that they correctly calculated the proposed X factor (Companies Brief at 337-343, 347-360, 365-371). Eversource disputes the intervenors' claim that the proposed X factor is unlike any other X factor adopted in North America (Companies Brief at 337). The Companies assert that the jurisdictions that have adopted a higher X factor also have adopted capital cost recovery mechanisms or used higher industry inflation levels and, therefore, these factors are comparable to the Companies' all-inclusive PBR (Companies Brief at 337).¹⁸¹

¹⁸¹ For example, the Companies maintain that the Alberta Utilities Commission essentially implemented a negative X factor in 2016 because it approved a capital cost recovery mechanism on top of the X factor, and used industry inflation indices, instead of the lower economy wide inflation measure that the Companies employ (Companies Brief at 337, citing Tr. 3, at 499-500, 511; RR-DPU-7, at 7). In addition, the Companies argue that the British Columbia Public Utilities Commission, in effect, set a negative X factor, because the 0.93 percent X factor it allowed had only a 0.1 percent stretch factor and included a capital cost recovery mechanism that allowed rate changes from six to eight percent each year (Companies Brief at 337, citing Tr. 3, at 499-500, 511; RR-DPU-7, at 7). The Companies assert that, while the Ontario Energy Board set its X factor at zero, it used the higher industry inflation indices and allowed two supplemental capital cost recovery mechanisms (Companies Brief at 338, citing Report of the Ontario Energy Board (OEB), Renewed Regulatory Framework for Electricity Distributors: A Performance-Based Approach at 18 (Oct. 18, 2012)). Finally, the Companies argue that the California Public Utilities

Further, Companies argue that the calculation of an X factor must consider the type of inflation used (Companies Brief at 349). Here, the Companies determined inflation based on the general economy, which they claim is appropriate because there are no widely reported measures of industry-specific inflation (Companies Brief at 348-350). Because they did not use a higher, industry-specific measure of inflation, the Companies argue that their proposed X factor appropriately includes adjustments to the industry input price growth and the industry specific TFP growth (Companies Brief at 349).

In addition, the Companies argue that customer count is the appropriate output to use to determine TFP growth (Companies Brief at 352-353, citing Exh. ES-PBRM-Reubuttal-1, at 29-31). For revenue-per-customer caps, the Companies claim that the output should reflect elements associated with revenue generation (Companies Brief at 353). Because rates essentially are determined by limits on the increase in revenue per customer over time, the Companies assert that customer count is the proper output (Companies Brief at 353). In fact, the Companies claim that using customer count as the output produces a more positive X factor than using kWh sales (i.e., -2.64 with customer number vs. -4.04 with kWh sales) (Companies Brief at 352, citing RR-DPU-7).

The Companies maintain that the alternative methods to calculate the X factor, as presented by intervenors, are flawed (Companies Brief at 353). For example, the Companies argue that Vote Solar's proposal to use historical revenue growth to calculate the X factor is

Commission authorized Southern California Edison Corporation and Pacific Gas & Electric Company to implement annual adjustments in 2016 and 2017 that are similar in percentage terms to the adjustments the Companies seek under the PBR (Companies Brief at 338-339).

faulty because it does not take commodity revenues into account (Companies Brief at 353).

Further, the Companies contend that historical revenue growth has never been used as a PBR output (Companies Brief at 353). Additionally, Eversource disputes Vote Solar's argument that the Companies' TFP study is not significantly robust (Companies Reply Brief at 43-44).

While Vote Solar claims that the TFP study is too volatile, the Companies argue that the uncontested evidence shows that the TFP study results in an X factor that falls within a 95 percent confidence interval (Companies Reply Brief at 44, citing Tr. 3, at 506-507).

Further, the Companies argue that the time period of the TFP study (i.e., 2001 to 2015) is appropriate because earlier data are not reliable (Companies Reply Brief at 45-47, citing Tr. 3, at 647-648; RR-DPU-7). In earlier periods, the Companies claim that there was a direct correlation between electric usage and economic growth (Companies Reply Brief at 45-47, citing Tr. 3, at 647-648; RR-DPU-7). According to the Companies, however, post-2000 data show that energy efficiency efforts and other conservation measures have created a very wide divergence between electric usage and economic growth (Companies Reply Brief at 45-46, citing Tr. 3, at 647-648). Therefore, the Companies claim that pre-2001 data are unreliable to establish forward-looking rates (Companies Reply Brief at 45-47).

Moreover, the Companies argue that substantial evidence supports the adoption of the PBR, as proposed (Companies Brief at 343). According to the Companies, the Attorney General's PBR witness has no experience determining an X factor and this lack of experience was evident in the significant corrections he made to his calculations (Companies Brief

at 343, citing Exh. Sch. DED-4).¹⁸² Further, the Companies criticize the sample size in the Attorney General's TFP study (Companies Brief at 355). The Companies argue that the Attorney General's witness, without justification, truncated the number of companies in Eversource's study (Companies Brief at 355). The Companies claim that removing such data from their study is a substantial flaw that undermines the Attorney General's entire analysis of the X factor (Companies Brief at 355). In addition, the Companies argue that the Department should give no weight to the Attorney General's claim that the Companies should have included Maine utilities in their study (Companies Brief at 355; Companies Reply Brief at 48). Eversource contends that the Attorney General presented no evidence to show that Maine utilities are peers to the Companies (Companies Brief at 355; Companies Reply Brief at 48).

The Companies also argue that the Attorney General's witness used an improper method (i.e., the geometric decay method) for determining capital input quantity (Companies Brief at 355-356; Companies Reply Brief at 49). The Companies claim that the Attorney General's witness did not have the data needed to properly use the geometric decay method, asserting that essential data were missing for more than 20 percent of the sample companies (Companies Brief at 356). Further, the Companies contend that the Attorney General's witness did not explain why excluding 20 percent of the companies from his sample did not compromise the analysis of capital input quantity (Companies Brief at 356).

¹⁸² The Companies argue that, after correcting mistakes, the Attorney General's witness changed his calculation of the X factor from 0.73 percent to -1.36 percent (Companies Brief at 343).

Separately, Eversource disputes the Attorney General's argument that the method used by the Companies to determine capital input quantity (i.e., the one hoss shay method) does not account for the gradual depreciation of capital and leaves capital stock undepreciated until it is retired (Companies Brief at 368). According to Eversource, the Bureau of Labor Statistics ("BLS"), which is the federal agency that develops multi-factor productivity studies, uses a method that is similar to the method used by the Companies (Companies Brief at 368-370; Companies Reply Brief at 49). Additionally, the Companies dispute the Attorney General's claim that the Companies' expert has used the geometric decay method in previous testimony and studies (Companies Brief at 370, citing Exh. AG-10; Tr. 3, at 556, 564-565). Instead, the Companies assert that its witness used the one hoss shay method to determine capital input quantity in the cited study and testimony (Companies Brief at 370, citing Exhs. AG-6; AG-8; AG-10; Tr. 3, at 556, 563-575).

Additionally, Eversource disputes the Attorney General's claims regarding sample weighting in the Companies' TFP study (Companies Brief at 357). The Companies assert that they appropriately weighted the study companies by the number of customers each serves, which they maintain is consistent with their use of customer growth as the study's output measure (Companies Brief at 357-358). According to the Companies, using a simple average of the peer company's group average, as suggested by the Attorney General, would incorrectly give the same weight to small and large utilities even though small utilities are unlikely to be representative of the customer growth experienced by larger utilities like Eversource (Companies Brief at 358). The Companies further contend that using a simple

average inappropriately would give the ten smallest utilities in the study the same weight as the ten largest utilities, when the ten largest utilities serve over 18 times more customers (Companies Brief at 358-359). Therefore, the Companies argue that their use of sample weighting is correct (Companies Brief at 358-359).

Next, the Companies dispute the Attorney General's contention that a productivity analysis should include customer accounts, customer sales, and a portion of administrative and general expenses (Companies Brief at 359-360; Companies Reply Brief at 49). The Companies claim that these expenses include non-distribution costs; however, there is no dispute that a TFP study should include only distribution expenses (Companies Brief at 359; Companies Reply Brief at 49). By using these expenses, the Companies argue that the Attorney General's witness has "contaminated" his productivity analysis with non-distribution cost elements (Companies Brief at 360; Companies Reply Brief at 49).

The Companies argue that Attorney General's witness further distorted his productivity analysis by attributing 100 percent of general plant to distribution services (Companies Brief at 365-66, citing Exh. ES-PBRM-Rebuttal-1, at 44-45). The Companies claim that when the Attorney General's witness tried to correct this error, he again applied a higher percentage of general plant than intended to distribution services (Companies Brief at 366-367, citing Tr. 13, at 2694). Therefore, the Companies argue that the Attorney General's productivity analysis is not reliable (Companies Brief at 366-367).

The Companies dispute the Attorney General's claim that there is no record evidence showing negative productivity growth in the electric distribution industry over the last

15 years (Companies Reply Brief at 42-43). The Companies maintain that the Attorney General attempted to support her position by using the BLS utilities sector data (Companies Reply Brief at 42-43, citing Attorney General Reply Brief at 86). Eversource asserts, however, that the electric distribution industry and the utilities sector are distinct (Companies Reply Brief at 43). According to the Companies, the BLS utilities sector includes data for many industries such as natural gas, steam, water, sewage removal, electric generation, and electric transmission and, therefore, that data are not representative of the electric distribution industry (Companies Reply Brief at 43, citing Tr. 3, at 506-507). Conversely, the Companies argue that their TFP study presents the only reliable data regarding productivity growth in the electric distribution industry (Companies Reply Brief at 43).

Further, the Companies argue that there is no merit in the intervenors' critiques of the other elements of the PBR. For example, the Companies argue that the PBR is not excessively focused on cost recovery (Companies Brief at 322). Instead, Eversource argues that Department precedent fully intended incentive ratemaking to act as a substitute for cost of service ratemaking, which is, according to the Attorney General's own witness, a form of cost recovery (Companies Brief at 322, citing D.P.U. 94-158, at 42-43; Exh. ES-9).

The Companies also argue that an inflation floor of one percent is required to ensure the Companies have the necessary revenue support to implement required capital investments (Companies Brief at 34). Further, the Companies assert that the proposed consumer dividend of 25 basis points when inflation is greater than two percent is appropriate and shows the

Companies' commitment to give customers a tangible benefit in the PBR (Companies Brief at 36).

The Companies do not agree with DOER's position that the annual PBR rate adjustments only should be a percentage of the base rates set in this proceeding (Companies Reply Brief at 54). According to the Companies, the costs that drive the need for a PBR are cumulative and, therefore, the annual adjustments should be cumulative, as well (Companies Reply Brief at 54).

In addition, the Companies dismiss the Attorney General's and Cape Light Compact's arguments regarding extending the length of the stay-out period (Companies Brief at 372-373). The Companies assert that they have committed to a five-year stay-out period (Companies Brief at 372-373). The Companies argue that extending the stay-out period beyond five years is inappropriate because, in the past, stay-out periods in excess of five years have been problematic (Companies Brief at 372-373).

In addition, the Companies claim that the earnings sharing mechanism's current structure should not be changed, as suggested by the Attorney General and Cape Light Compact, because the mechanism will provide the correct incentives during the stay-out period (Companies Brief at 372-373). The Companies argue that their proposed deadband is narrower and more favorable to ratepayers than other earnings sharing mechanisms that the Department has approved (Companies Brief at 38, citing D.P.U. 96-50 (Phase I) at 326; D.T.E. 03-40, at 500; D.P.U. 05-27, at 405). Further, the Companies argue that DOER's recommendation to eliminate the earnings sharing mechanism and exogenous cost factor is

inappropriate because they are both basic and essential elements of the PBR (Companies Reply Brief at 55).

In response to intervenors' arguments regarding performance metrics to protect ratepayers during the term of the PBR, the Companies maintain that they will continue to be subject to the existing service qualities metrics with specific, measurable results (Companies Brief at 324-325). The Companies claim that the existing service quality metrics and the potential for service quality penalties address concerns regarding a lack of transparency under the PBR and ensure that there will be Department oversight throughout the PBR term (Companies Brief Reply at 42). Further, the Companies argue that the stretch factors within the PBR operate as measurable achievement indicators (Companies Brief at 325).

In sum, the Companies argue that their proposed PBR formula replicates the average cost trend for the electric distribution industry and will produce just and reasonable rates (Companies Reply Brief at 31-32). Eversource maintains the proposed PBR will provide the necessary revenues to address declining sales, while eliminating the significant administrative burden that would result from a capital cost recovery mechanism (Companies Brief at 297-300, 314-16, 332, 334). Further, the Companies assert that both the explicit and implicit stretch factors in the PBR will protect ratepayers and ensure that Companies perform at a high level (Companies Brief at 320). For these reasons, the Companies argue that the Department should approve the PBR as proposed (Companies Brief at 320).

D. Analysis and Findings

1. Introduction

In the sections below, we review our ratemaking authority and reaffirm that, pursuant to Section 94, the Department may implement PBR as an adjustment to cost of service/rate of return regulation. Further, we discuss the factors the Department has used to review incentive regulation proposals. Finally, we review the Companies' PBR, as proposed, to determine whether it is in the public interest and will result in just and reasonable rates.

2. Department Ratemaking Authority

Pursuant to Section 94, the Legislature has granted the Department extensive ratemaking authority over electric and local gas distribution companies. The Supreme Judicial Court has consistently found that the Department's authority to design and set rates is broad and substantial. E.g., Boston Real Estate Board v. Department of Public Utilities, 334 Mass. 477, 485 (1956). Because Section 94 authorizes the Department to regulate the rates, prices, and charges that electric and local gas distribution companies may collect, this authority includes the power to implement revenue adjustment mechanisms such as a PBR. See Boston Gas Company v. Department of Telecommunications and Energy, 436 Mass. 233, 234-235 (2002).

The Department is not compelled to use any particular method to establish rates, provided that the end result is not confiscatory (i.e., deprives a distribution company of the opportunity to realize a fair and reasonable return on its investment). Boston Edison Company v. Department of Public Utilities, 375 Mass. 1, 19 (1978). The Supreme Judicial Court has held that a basic principle of ratemaking is that "the [D]epartment is free to select

or reject a particular method as long as its choice does not have a confiscatory effect or is not otherwise illegal.” American Hoechst Corporation v. Department of Public Utilities, 379 Mass. 408, 413 (1980), citing Massachusetts Electric Company v. Department of Public Utilities, 376 Mass. 294, 302 (1978).

In addition, G.L. c. 164, § 76 grants the Department broad supervision over electric and local gas distribution companies. Under G.L. c. 164, § 76, the Department has the authority to establish reasonable rules and regulations consistent with c. 164, as needed, to carry out its administration. D.P.U. 07 -50-B at 26-27. See also Cambridge Electric Light Company v. Department of Public Utilities, 363 Mass. 474, 494-496 (1973).

Although the Department traditionally has relied on cost of service/rate of return regulation to establish just and reasonable rates, there are many variations and adjustments in the specific application of this model to individual utilities as circumstances differed across companies and across time. D.P.U. 07-50, at 8. Over the years, many electric and local gas distribution companies subject to the Department’s jurisdiction have operated under PBR or PBR-like plans. See e.g., D.T.E. 05-85; D.T.E. 05-27; D.T.E. 03-40; D.T.E. 01-56; D.T.E. 01-50; D.T.E. 99-47, at 4-14.

Consistent with the discussion above, the Department reaffirms that we may implement PBR as an adjustment to cost of service/rate of return regulation under the broad ratemaking authority granted to us by the Legislature under Section 94.¹⁸³ The standards by

¹⁸³ In addition, pursuant to G.L. c. 164, § 1(E), the Department is authorized to promulgate rules and regulations to establish and require performance based rates for gas and electric distribution companies.

which the Department will review the Companies' specific PBR proposal are addressed below.

3. Evaluation Criteria for PBR

The Department must approach the setting of rates and charges in a manner that (1) meets our statutory obligation under Section 94 to ensure rates that are just and reasonable, not unjustly discriminatory, or unduly preferential, and (2) is consistent with long-standing ratemaking principles including fairness, equity, and continuity. D.P.U. 07-50, at 10-11. Further, the Department must establish rates in a manner that balances a number of these key principles to reflect and address the practical circumstances attendant to any individual company's rate case. D.P.U. 07-50-A at 28. The Department has implemented PBRs or PBR-like mechanisms when it has found that such regulatory methods would better satisfy our public policy goals and statutory obligations. See e.g., D.P.U. 96-50 (Phase I) at 261; D.P.U. 94-158, at 42-43; NYNEX Price Cap, D.P.U. 94-50, at 139 (1995).

As part of our generic investigation of incentive ratemaking in D.P.U. 94-158, the Department examined the criteria by which PBR proposals for electric and local gas distribution companies would be evaluated. D.P.U. 94-158, at 52-66. The Department found that, because incentive regulation acts as an alternative to traditional cost of service regulation, incentive proposals would be subject to the standard of review established by Section 94 which requires that rates be just and reasonable. D.P.U. 94-158, at 52. Further, the Department determined that a petitioner seeking approval of an incentive regulation proposal like PBR is required to demonstrate that its approach is more likely than current

regulation to advance the Department's traditional goals of safe, reliable, and least-cost energy service and to promote the objectives of economic efficiency, cost control, lower rates, and reduced administrative burden in regulation. D.P.U. 94-158, at 57. Finally, the Department stated that well-designed incentive mechanisms should provide utilities with greater incentives to reduce costs than currently exist under traditional cost of service regulation and should result in benefits to customers that are greater than would be present under current regulation. D.P.U. 94-158, at 57.

In addition to these criteria, the Department established a number of additional factors it would weigh in evaluating incentive proposals. D.P.U. 94-158, at 57. These factors provide that a well-designed incentive proposal should: (1) comply with Department regulations, unless accompanied by a request for a specific waiver; (2) be designed to serve as a vehicle to a more competitive environment and to improve the provision of monopoly services; (3) not result in reductions of safety, service reliability, or existing standards of customer service; (4) not focus excessively on cost recovery issues; (5) focus on comprehensive results; (6) be designed to achieve specific, measurable results; and (7) provide a more efficient regulatory approach, thus reducing regulatory and administrative costs. D.P.U. 94-158, at 58-64. The Department discusses these criteria and factors in the context of our evaluation of Eversource's PBR proposal in the subsections below.

4. Rationale for PBR

There is a fundamental evolution taking place in the way electricity is produced and consumed in Massachusetts. This evolution has been driven, in large part, by a number of

legislative and administration policy initiatives designed to address climate change and foster a clean energy economy through the promotion of energy efficiency, demand response, and distributed energy resources, and the procurement of long-term contracts for renewable energy. An Act Relative To Green Communities, St. 2008, c. 169 (“Green Communities Act”); An Act Establishing the Global Warming Solutions Act, St. 2008, c. 298 (“Global Warming Solutions Act”); An Act Relative to Competitively Priced Electricity in the Commonwealth, St. 2012, c. 209, § 36 (“Green Communities Act Expansion”); Global Warming Solutions Act, § 83; Green Communities Expansion Act, § 83A; Establishing an Integrated Climate Change Strategy for the Commonwealth, Executive Order No. 569, Office of the Governor, Commonwealth of Massachusetts (September 16, 2016). To varying degrees, this evolution is changing the operating environment for electric distribution companies in Massachusetts.

As described above, the Companies propose to implement PBR that would adjust rates annually in accordance with a revenue cap formula (Exh. ES-GWPP-1, at 9). The Companies maintain that, given specific changes that have taken place as a result of the Commonwealth’s aggressive efforts to achieve clean energy goals, they no longer can operate effectively under cost of service regulation (Exh. ES-GWPP-1, at 19-25; Companies Brief at 298-300, 306). No longer able to retain sales growth revenues between rate cases after decoupling, the Companies maintain that PBR is essential for them to offset the effects of increasing operating and capital costs (Exh. ES GWPP-1, at 20; Tr. 2, at 413-415; Companies Brief at 298-300). And, unlike a capital cost recovery mechanism, Eversource

maintains that the proposed PBR is designed to provide it with strong incentives to control costs (Exh. ES-GWPP-1, at 11; DPU-19-2; DPU-19-3; DPU-19-10; DPU-19-22; DPU-24-18; DPU-44-2; AG-18-3; AG-18-4; AG-33-4; VS-1-1; Tr. 8, at 1518; Companies Brief at 16, 29, 318-319, 323, 332, 336).

Conversely, a number of intervenors argue that the Companies' proposed PBR is not in the public interest and should be rejected in its entirety (Attorney General Reply Brief at 77; Acadia Center Brief at 13-14; Cape Light Compact Brief at 45, 61-62; CLF Brief at 13-14; DOER Brief at 21-22, Sunrun and EFCA Brief at 5; UMass Brief at 3; Vote Solar Brief at 12-13). The Attorney General argues that Eversource's proposed PBR is excessively focused on cost recovery in contravention of D.P.U. 94-158, at 58-64 (Attorney General Brief at 10-12, 20). In addition, intervenors claim that Eversource has operated very effectively in recent years and can continue to operate effectively under cost of service regulation (Attorney General Reply Brief at 5; Acadia Center Brief at 13-14; CLF Brief at 18; DOER Brief at 20-21, Sunrun and EFCA Brief at 5-7; UMass Brief at 3, 10-11; Vote Solar Brief at 12-13). Further, in lieu of PBR, intervenors maintain that a capital cost recovery mechanism would adequately address the challenges the Companies face as a result of the changing dynamics in the electric distribution industry (Attorney General Reply Brief at 38-39; Acadia Center Brief at 13-14; Acadia Center Reply Brief at 13; CLF Brief at 15; DOER Brief at 20-24; DOER Reply Brief at 7-9; NECEC Brief at 19-20, 23; Sunrun and EFCA Brief at 24; TEC and WMIG Brief at 8; UMass Brief at 3).

For the reasons discussed below, the Department finds that the Companies have demonstrated that they require an alternative to traditional cost of service/rate of return ratemaking. Further, the Department finds that, based on the evidence presented in this case, the Companies have demonstrated that PBR, as compared to a capital cost recovery mechanism, will provide them with greater incentives to reduce costs and will result in benefits to customers that are greater than would be present under current regulation.

Stakeholder efforts to pursue the Commonwealth's clean energy goals have been remarkably successful. For example, Massachusetts has earned the number one ranking for the seventh consecutive year in the American Council for an Energy-Efficient Economy's State Energy Efficiency Scorecard.¹⁸⁴ Eversource has demonstrated that a primary effect of the Commonwealth's clean energy efforts has been a decline in its levels of kWh sales (Exhs. ES-GWPP-1, at 23-24; Attachment DPU-19-3, at 3, 10; AG-18-15; SREF-1-4). Between 1995 and 2005, the Companies experienced average annual sales growth of 2.25 percent (Exhs. DPU-47-1; AG-18-15; SREF-1-4). From 2006 to 2016, however, the Companies experienced an average annual decline in sales of 0.44 percent (Exhs. Attachment DPU-19-3, at 3, 10; DPU-47-1; AG-18-15; SREF-1-4).

At the same time as its sales are declining, Eversource has shown that its distribution system is growing and that its capital and operating costs are increasing in ways that it has not experienced in the past (Exhs. ES-GWPP-1, at 19-22, 41, 74-75; DPU-47-1). Factors driving Eversource's increasing costs include: (1) system reliability improvements;

¹⁸⁴ See www.mass.gov/eea/pr-2017/massachusetts-named-most-energy-efficient-state.html.

(2) system resiliency improvements to address the effects of climate change; (3) distribution system changes to allow for two-way power flows; (4) cyber-security needs; and (5) mitigation of environmental impacts related to distribution infrastructure (Exh. ES-GWPP-1, at 19-20, 41-42, 74-75).

Between rate cases, electric distribution companies, such as Eversource, have traditionally relied on revenues from sales growth to fund capital investments that are intended to ensure safe and reliable service (Exh. DPU-19-19; Tr. 2, at 464-466). See, e.g., D.P.U. 15-155, at 22-23, 40; D.P.U. 13-90, at 35; D.P.U. 10-70, at 47. While revenue decoupling protects existing sales revenues,¹⁸⁵ it does not address the loss of sales growth revenues between rate cases, which Eversource has historically relied upon (Exh. DPU-19-19; Tr. 2, at 464-468).

In response to decoupling, the Department has allowed companies to adopt various capital cost recovery mechanisms in cases where a company has adequately demonstrated its need to recover incremental costs associated with capital expenditure programs between base distribution rate cases. D.P.U. 15-155, at 40, 51-54; D.P.U. 15-80 at 50; D.P.U. 10-55, at 121-122, 132-133; D.P.U. 09-39, at 79-80, 82; D.P.U. 09-30, at 133-134. Despite intervenors' assertions to the contrary, we find that Eversource has demonstrated that

¹⁸⁵ In 2008, the Department implemented revenue decoupling in order to remove the disincentive for local gas and electric distribution companies to invest in measures, such as energy efficiency, that reduced sales. D.P.U. 07-50-A at 4. The Department found that revenue decoupling: (1) aligns the financial interests of the companies with policy objectives regarding the efficient deployment of demand resources; and (2) ensures that the companies are not harmed by decreases in sales associated with any increased use of demand resources. D.P.U. 07-50-A at 31-32, 48-50.

declining sales, combined with lost sales growth has resulted in negative revenue impacts for the Companies (Exhs. ES-GWPP-1, at 11, 23-24; 40-41; DPU-19-3; DPU-24-4; AG-18-3; AG-21-7; Tr. 1, at 71-72).

For the reasons discussed above, we find that Eversource has demonstrated that a change is warranted in this case with respect to the Department's historical ratemaking approach (Exhs. DPU-19-2; DPU-19-9; DPU-19-10; DPU-19-19; DPU-24-18; DPU-24-23; DPU-44-2; DPU-47-1; AG-18-15, Att.; AG-28-6; Tr. 1, at 17-19; Tr. 4, at 789-792). The approach we adopt must address lost sales growth and allow Eversource to best meet its public service obligations in terms of providing safe, reliable, least-cost service to customers and ensure that the Commonwealth's clean energy goals are met. D.P.U. 94-158, at 57.

The Attorney General maintains that the Companies' PBR proposal is overly focused on cost recovery and, therefore, should be rejected (Attorney General Brief at 10-12, 20, citing D.P.U. 94-158). A PBR, like all ratemaking mechanisms, must have a certain focus on cost recovery. Here, the Department finds that a main focus of the proposed PBR is to allow the Companies to effectively meet their public service obligation and, therefore, is not overly focused on cost recovery.

As noted above, several intervenors suggest that a capital cost recovery mechanism may be an appropriate substitute for PBR in this case¹⁸⁶ (Attorney General Reply Brief at 38-39; Acadia Center Brief at 13-14; Acadia Center Reply Brief at 13; CLF Brief at 15;

¹⁸⁶ As discussed in Section X.B.3 below, the Department has determined that it is in the public interest to remove the grid modernization base commitment investments from the PBR. Accordingly, the capital cost recovery mechanism we address here would be designed to recover capital investment costs unrelated to grid modernization.

DOER Brief at 20-24; DOER Reply Brief at 7-9; NECEC Brief at 19-20, 23; Sunrun and EFCA Brief at 24; TEC and WMIG Brief at 8; UMass Brief at 3). For the reasons discussed below, the Department finds that Eversource has demonstrated that a capital cost recovery mechanism would not be superior to PBR based on the facts and circumstances of this case.

With a capital cost recovery mechanism, the Companies have shown that they would file at least one (and possibly two) base rate cases over the next five years (Tr. 1, at 79-80; Tr. 2, at 368, 422, 424, 432, 448-449; Tr. 3, at 485-486). By comparison, the Companies have committed to refrain from filing a base rate case during the five-year term of the PBR (see Section IX.5.g below) (Exh. AG-33-8; Tr. 2, at 421-422). In addition, review of capital cost recovery mechanism filings can result in significant administrative burden and expense as compared to review of annual PBR filings, which should be less complex and require fewer resources. See, e.g., D.P.U. 15-155, at 36, 60, 86-89, 136. Accordingly, the Department finds that PBR will reduce administrative burden. Further, we find that PBR will reduce the potential for multiple rate cases where all distribution costs are updated (with the attendant rate case expense) (Tr. 3, at 634).

In addition, the Department finds that Eversource has demonstrated that PBR is superior to a capital cost recovery mechanism in terms of its ability to satisfy the Department's public policy goals and statutory obligations. Rather than directing its focus on specific capital investments, PBR will provide the Companies with greater incentives to be efficient and allow them to focus on developing innovative solutions in furtherance of the

Commonwealth's clean energy goals¹⁸⁷ (Exhs. ES-GWPP-1, at 9-10; DPU-19-2; Attachment DPU-19-3; DPU-19-10; DPU-19-9; DPU-19-22; DPU-24-18; DPU-44-2; AG-18-3; AG-18-4; AG-33-4; VS-1-1; Tr. 8, at 1518).

Finally, we are not persuaded by the Attorney General and DOER's arguments that the revenue stream generated by the PBR would be significantly higher than that of a capital cost recovery mechanism (Exhs. Attachment DPU-19-3, at 8-11; DPU-40-8; DPU-24-23; Tr. 2, at 422, 424). Instead, the Department finds that, after factoring in the number of likely base rate increases over a five-year period, a capital cost recovery mechanism and PBR would generate comparable revenue streams (Exhs. Attachment DPU-19-3, at 8-11; DPU-24-23; DPU-40-8; DPU-44-5; Tr. 2, at 422, 424).

Based on the findings above, the Department has determined that Eversource has demonstrated that PBR is more likely than current regulation to advance the Department's goals of safe, reliable, and least-cost energy service, while also promoting the objectives of economic efficiency, cost control, lower rates, and reduced administrative burden in regulation. D.P.U. 94-158, at 57. In addition, the Department has determined that PBR will provide the Companies with greater incentives to reduce costs and should result in benefits to customers that are greater than would be present under current regulation. D.P.U. 94-158, at 57. Finally, the Department has determined that PBR will allow the Companies to focus on cost saving and innovation, which will enable initiatives designed to address climate

¹⁸⁷ As discussed in Section IX.D.h below, the Department intends to develop a number of PBR-specific metrics to measure the Companies' performance and the full range of benefits that will accrue under the PBR.

change and foster a clean energy economy, in furtherance of the Commonwealth's clean energy goals. Below, the Department addresses the PBR formula elements and whether the proposed formula, as a whole, appropriately balances ratepayer and shareholder risk and will result in just and reasonable rates.

5. PBR Formula Elements

a. Productivity Offset

i. Introduction

In the context of a PBR, a productivity offset, or X factor, is the difference between the differential in expected productivity growth between the electric-distribution industry and the overall economy and the differential in expected input price growth between the overall economy and the electric distribution industry (Exhs. ES-GWPP-1, at 46). In combination with the inflation factor, the X factor is designed to represent the expected unit cost performance of an average performing company in the industry (Exhs. ES-GWPP-1, at 46; ES-PBRM-1, at 45). As described above, Eversource calculated a proposed productivity offset in the instant case equal to -2.64 percent (RR-DPU-8). Although she does not argue on brief that the Department should adopt it, the Attorney General's witness calculates a productivity offset of -1.36 percent for her nationwide LDC sample and -0.95 percent for her regional LDC sample (Exh. AG/DED-Surrebuttal-1, Sch. DED-Surrebuttal-1, at 1).

The Attorney General maintains that the Companies' proposed X factor is lower than any X factor approved to date for a North American energy utility (Attorney General Brief at 24-27). Further, the Attorney General argues that Eversource's proposed productivity offset is unsupported by reliable measures of U.S. utility productivity growth (Attorney

General Brief at 24-27). The Companies counter that, while other jurisdictions may have approved X factors that are higher, these jurisdictions have also adopted capital cost recovery mechanisms or used industry inflation levels that, when taken into consideration, make the Companies' proposed X factor comparable (Companies Brief at 337). Further, regarding the measures of utility productivity cited by the Attorney General, Eversource argues that BLS data are not strictly limited to the electric distribution industry and, therefore, are not a useful measure of the Companies' productivity (Companies Reply Brief at 43).

The Attorney General notes that no other jurisdiction in North America has approved a negative X factor to date (Exh. AG/DED-1, at 47-48; Tr. 3, at 583-585). This fact does not, however, preclude the possibility of an X factor that is negative. In fact, other jurisdictions have acknowledged that an X factor may be positive or negative (Exh. VS-1-13, Att. (a) at 48). Whether an X factor is positive or negative is determined solely by the relationship between outputs and inputs in a given industry, and there is no reason to dismiss the possibility that the electric distribution industry may be in a period exhibiting changes that result in decreasing output given a similar or increasing level of inputs (see Exh. ES-PBRM-1, at 47). For these reasons, the Department cannot find that the proposed X factor is unreasonable merely because it is negative or lower than any productivity offset approved to date. Rather, in the sections below, the Department reviews the Companies' TFP study to determine whether it was conducted in a reasonable manner using appropriate assumptions.

ii. TFP Study Parameters

To determine the proposed X factor, Eversource conducted a productivity study of U.S. electric distribution TFP and input price growth over the period 2001 to 2015 (Exhs. ES-PBRM-1, at 46; ES-PBRM-2). Eversource considered two different samples for its TFP study: (1) a sample of 67 nationwide LDCs intended to represent the overall U.S. electric distribution industry; and (2) a sample of 17 regional LDCs intended to represent the distribution industry in the Northeast U.S. (Exh. ES-PBRM-1, at 46). As described below, Eversource ultimately used the nationwide sample for its TFP study (Exh. ES-PBRM-1, at 61).

The Attorney General contends that both the nationwide and regional LDC samples selected by the Companies exclude certain relevant peer utilities and, therefore, result in a flawed analysis with questionable reliance on a peer average that does not represent the Companies' own productivity or that of comparable peers (Attorney General Brief at 30). Eversource counters that the utilities cited by the Attorney General are not relevant peer utilities to the Companies (Companies Brief at 355; Companies Reply Brief at 48). Eversource further maintains that the nationwide LDC sample has been used in other TFP studies and is robust because it represents 75 percent of electric distribution customers in the country (Exh. ES-PBRM-1, at 68; Tr. 3, at 562-563, 635; Tr. 8, at 1483-1485).

Because it represents a significant portion (i.e., 75 percent) of electric distribution customers in the country and is sufficiently robust, the Department is persuaded that the Companies' sample of 67 nationwide utilities is reasonably representative of the U.S.

distribution industry and is a reliable basis to establish TFP (Exh. ES-PBRM-1, at 61; Tr. 8, at 1483-1485). With regard to the regional LDC sample, the Companies selected 17 out of 43 available investor owned utilities to represent the electric distribution industry in the northeast United States, which represents 40 percent of investor owned LDCs in the region (Exhs. ES-PBRM-1, at 46, 77; DPU-40-4, Att.). The regional LDC sample contains seven Eversource and National Grid operating companies, which raises some concerns about sample endogeneity (Exh. DPU-24-16).

Eversource calculated industry TFP over the period 2001 to 2015 (Exhs. ES-PBRM-1, at 47-51, 61). Vote Solar argues that this 15-year time period is too short, resulting in a TFP study that is not robust (Vote Solar Brief at 10). The Companies maintain that significant changes in the electric distribution industry render earlier data unreliable and, therefore, data from 2001 to 2015 are most indicative of future productivity expectations (Exh. ES-PBRM-1, at 62; Tr. 3, at 508-509, 642-646).

As Eversource acknowledges, longer time periods generally are better indicators of future expectations and use of a full data set will ensure robust, reliable results (Tr. 3, at 642-646). The Department is persuaded, however, that, in the instant case, the benefit of using more recent data from 2001 to 2015 to incorporate non-trivial industry changes (as discussed in greater detail below) outweighs possible sacrifices to the study's robustness inherent with the use of a shorter time period.

iii. TFP Study Execution/Components; Input Price and Productivity Differentials

Eversource's proposed X factor includes two components: (1) an input price differential, which calculates the average annual difference in input price growth between the overall economy and the electric distribution industry from 2001 to 2015; and (2) a productivity differential, which calculates the average annual difference in productivity growth between the electric distribution industry and the overall economy from 2001 to 2015 (Exh. ES-PBRM-1, at 27, n. 25). The input price and productivity differentials are intended to reflect the average annual difference in productivity and input price growth between the electric distribution industry and the overall economy from 2001 to 2015. Considered jointly, these differentials are meant to reflect the average annual increase in industry unit costs (Exhs. ES-GWPP-1, at 46; ES-PBRM-1, at 28).¹⁸⁸

The sum of the differentials serves as a proxy for the growth in per unit costs that a particular company should have experienced from 2001 to 2015, if it were an average performing company (Exhs. ES-GWPP-1, at 46; ES-PBRM-1, at 28, 46). A company that achieved lower-than-average growth in unit costs during this period would have the opportunity to earn additional profits (Exh. ES-PBRM-1, at 46). Conversely, a company whose growth in unit costs exceeded the average might realize lower-than-anticipated profits (Exh. ES-PBRM-1, at 46).

¹⁸⁸ For companies operating in a competitive market, the prices charged for a product or service are determined by the prices of the inputs used to produce the product or service, adjusted for any productivity gains exhibited in combining those inputs to produce the product or service (Exh. ES-PBRM-1, at 28).

The Department must first determine whether it is more appropriate to base Eversource's historic input price and productivity growth differentials on the historic productivity and input price growth indices of either regional or nationwide LDCs. With respect to input price growth, Eversource's TFP study indicates that, between 2001 and 2015, regional LDCs experienced an average annual input price growth rate of 4.10 percent, while nationwide LDC input prices grew at an average annual rate of 4.13 percent (Exh. ES-PBRM-1, at 47-48). With respect to productivity growth, Eversource's TFP study indicates that, between 2001 and 2015, regional LDCs experienced an average annual productivity growth of -0.41 percent, while nationwide LDCs experienced an average annual productivity growth of -0.46 percent (Exh. ES-PBRM-1, at 47-48). Given the small difference between the regional and nationwide growth rates in each instance and the substantial presence of Eversource and National Grid operating companies in the regional sample which could result in sample endogeneity, we find that use of nationwide LDC input price growth and nationwide LDC productivity growth will maintain a high degree of statistical reliability and preserve the function of the input price and productivity growth rates as true industry-wide averages (Exhs. ES-PBRM-1, at 30, n.30; DPU-24-16).

Next, the Department addresses the appropriate output measure to use in the calculation of average annual productivity growth. As described above, Eversource calculated annual productivity growth using TFP, which is defined as the ratio of total output to total input (Exh. ES-PBRM-1, at 30; Tr. 3, at 487-489). Annual gains or losses in productivity are measured as the percentage change in TFP, which is calculated as the

percentage change in total output less the percentage change in total input (Exh. ES-PBRM-1, at 30-31).

Traditionally, the Department has approved TFP studies that use both customer count and a measure of sales (*i.e.*, kWh sales) as output measures. See D.P.U. 96-50 (Phase I) at 275-278; D.T.E. 03-40, at 476. Eversource used number of customers as the sole output measure for its TFP study (Exh. ES-PBRM-1, at 30; Tr. 3, at 491). Several intervenors maintain that the Companies' use of number of customers as the sole output measure is problematic because total output consists of all of the products and services produced by the relevant firm or industry (Attorney General Brief at 31; Vote Solar Brief at 6-7).

The Department has previously expressed concern with the use of number of customers as the sole indicator of LDC output growth. D.P.U. 07-50-A at 48-49; D.P.U. 96-50 (Phase I) at 275-276.¹⁸⁹ As Eversource recognizes, while the number of customers is a driver of the costs needed to operate gas or electric distribution systems, it does not capture all of the reasons for changes in costs associated with providing distribution services (Exh. ES-PBRM-1, at 49; Tr. 3, at 495). D.P.U. 07-50-A at 48-49. For example, a distribution company may make capital expenditures to replace existing assets and the magnitude of capital replacement required has little or no correlation with levels of customer

¹⁸⁹ Certain economists have concluded that number of customers is an appropriate output measure in determining the productivity offset for a revenue-per-customer PBR, because the number of customers directly affects a utility company's revenues (Exhs. ES-PBRM-1, at 36-38; ES-PBRM-Rebuttal-1, at 31 n.44; Tr. 3, at 626-631; RR-DPU-6, Att. at 129-130). The Companies have not, however, proposed a revenue-per-customer PBR. Instead, the Companies propose a revenue cap PBR where the annual revenues resulting from any PBR adjustments are unrelated to changes in the number of customers (Exhs. ES-PBRM-1, at 39-40).

growth (Exh. ES-PBRM-1, at 49; Tr. 3, at 494-495, 633-634). D.P.U. 07-50-A at 48-49. Instead, these capital expenditures are influenced by factors such as the age of the assets, changes in technology, past patterns of customer growth and increases in the load to serve (Exh. ES-PBRM-1, at 49; D.P.U. 07-50-A at 48-49).

Because of significant changes in the electric distribution utility industry, use of kWh sales as an alternate output measure may also be flawed. In particular, successful energy efficiency programs have led to decreased energy consumption, which has resulted in decreased kWh sales for electric distribution utilities (Exh. ES-GWPP-1, at 21-26; Tr. 1, at 32, 71; Tr. 5, at 986; Tr. 8, at 1474, 1538). D.P.U. 07-50-A at 3, 6. In addition, the introduction of a growing amount of distributed energy resources into the distribution system decreases kWh sales (Exh. ES-GWPP-1, at 22, 25-26). In this current environment, electric distribution utilities may exhibit kWh sales data that are unrelated to distribution system investments or other customer service inputs (see Tr. 3, at 494-495, 633-634).

Given the discussion above, the Department concludes that both output measures used in traditional TFP studies (i.e., kWh sales and customer count) present challenges. The record does not contain the data necessary to allow us to consider a non-traditional output measure. In these circumstances, the Department finds that Eversource has demonstrated that customer count is a reasonably reliable TFP output measure as it is less affected than kWh sales by the industry changes discussed above (Exh. ES-GWPP-1, at 21-26; Tr. 1, at 32, 71; Tr. 5, at 986; Tr. 8, at 1474, 1538). D.P.U. 07-50-A at 3, 6. Going forward, any distribution company conducting a TFP study should consider and present data regarding

alternative or non-traditional output measures that are designed to capture all of the products and services it provides.

The Attorney General raises several other issues with respect to the execution of Eversource's TFP study. First, the Attorney General argues that the Companies' inputs should include not only labor and materials costs booked to distribution O&M expense but also an allocated portion of labor and materials costs associated with customer accounts, sales, administrative and general expenses, and general plant (Attorney General Brief at 28-30). The Companies counter that these accounts should not be included because they contain non-distribution expenses (Companies Brief at 359-360; Companies Reply Brief at 49). As the adjustments affect the distribution revenue requirement, the Department finds that it is not appropriate to include any non-distribution cost elements in the input index.

The Attorney General also argues that Eversource used an improper method to calculate the capital quantity index; specifically it used the one hoss shay method rather than the geometric decay method (Attorney General Brief at 31).¹⁹⁰ The Attorney General contends that a geometric decay method is more appropriate here because it considers gradual depreciation of capital, whereas the one hoss shay method does not (Attorney General Brief at 31). Alternately, the Companies maintain that the one hoss shay method is consistent with the method that the BLS uses to develop multifactor productivity studies (Companies Brief at 368-370; Companies Reply Brief at 49). Further, the Companies claim that the Attorney

¹⁹⁰ The one hoss shay method assumes that the flow of services received for capital is constant at full productive efficiency up until its retirement, whereas the geometric decay method assumes that the productivity of an asset decreases at a constant percentage rate (Tr. 3, at 554-555, 569).

General's calculation of the capital quantity index using the geometric decay method is unreliable because she excluded data from more than 20 percent of the sample companies (Companies Brief at 356, 370-371).

While the gradual depreciation of capital assets is necessary for accounting and cost recovery purposes, a capital asset's contribution to a company's productivity remains relatively constant until it is retired (Tr. 3, at 554-558). As Eversource correctly notes, the BLS relies on a method similar to the one hoss shay method for its multifactor productivity studies (Exh. ES-PBRM-1, at 69; Tr. 3, at 554-558). For these reasons, the Department finds that Eversource's use of the one hoss shay method to calculate the capital quantity index is appropriate.

Finally, the Attorney General raises concerns about the method used by Eversource to calculate the industry productivity growth rate (Attorney General Brief at 30). Once Eversource determined the quantity of output and the quantities and total prices of total input for each firm and each year, it used these data to calculate the industry productivity growth rate (Exh. ES-PBRM-1, at 73; ES-PBRM-2). In calculating the industry average annual productivity growth, Eversource weighted each company's TFP by its relative number of customers (Exh. ES-PBRM-1, at 73). The Attorney General argues that weighting the companies by their relative number of customers is inappropriate because the TFP estimates are already scaled for size given that productivity is a relative measure comparing a utility's inputs to its outputs (Attorney General Brief at 30). Even if such weighting is found to have a legitimate basis, the Attorney General asserts that Eversource's actual adjustment is both

limited and selective (Attorney General Brief at 30). Specifically, the Attorney General claims that there are a number of differences between utilities that could affect the productivity estimates (e.g., regulatory environment, geography, service territory characteristics) and that only adjusting for size without adjusting for all other possible factors results in a weighted average that is selective and arbitrary (Attorney General Brief at 30-31). Eversource maintains that weighting for size is necessary given that the output measure is number of customers (Companies Brief at 358). Without such weighting, the Companies contend that the ten largest firms (which serve 45.3 percent of the customers in the study) have the same weight as the ten smallest firms (which serve 2.5 percent of the customers in the study) (Companies Brief at 358-359). Because the output measure is number of customers, the Department finds that weighting to account for utility size may result in more representative industry-average TFP data. Accordingly, the Department concludes that the Companies' weighting of TFP estimates is appropriate.

Based on the findings above, the Department has determined that that Eversource's input price differential of -1.29 percent and productivity growth differential of -1.35 percent were determined in a reasonable manner.

iv. Conclusion

In the sections above, the Department has determined that the Companies' TFP study was conducted in a reasonable manner using appropriate data and assumptions. Accordingly, the Department has determined that the resulting input price differential of -1.29 percent and productivity growth differential of -1.35 percent were determined in a reasonable manner.

Accordingly, the Department will use these inputs to calculate an appropriate productivity offset for the Companies.

Eversource maintains that the proposed X factor of -2.64 percent would allow it to absorb the \$400 million grid modernization base commitment investment (Companies Brief at 36, 403). The average annual revenue requirement associated with the \$400 million base commitment investment is represented by an implicit stretch factor of 1.08 percent (Exhs. ES-GWPP-1, at 54; ES-PBRM-1, at 60; AG-21-2, Att. at 1; Tr. 2, at 240-242; Tr. 8, at 1553-1559, 1595-1597; Companies Brief at 403). To the extent that the Department determines it is appropriate to remove the grid modernization base commitment from the PBR, the Companies maintain that they would not object to making the 1.08 percent explicit and removing it from the X factor (Exhs. ES-GWPP-1, at 54; ES-PBRM-1, at 60; AG-21-2, Att. at 1; Tr. 2, at 240-242; Tr. 8, at 1553-1559, 1595-1597; Companies Brief at 403).

For reasons discussed in Section X.B.3 below, the Department has determined that it is in the public interest to remove the proposed grid modernization base commitment investments from the PBR. Accordingly, the Department will reduce Eversource's proposed X factor by 1.08 percent, representing the estimated revenue requirement associated with the \$400 million grid modernization base commitment investment (Exhs. ES-GWPP-1, at 54; ES-PBRM-1, at 60; AG-21-2, Att. at 1; Tr. 2, at 240-242; Tr. 8, at 1553-1559, 1595-1597; Companies Brief at 403). Accordingly, the Department approves an X factor of -1.56 percent.

b. Inflation Index and Floor

In D.P.U. 94-50, at 141, the Department found that the GDP-PI is the most accurate and relevant measure of output price changes for the bundle of goods and services whose TFP growth is measured by the BLS. In addition, the Department found that GDP-PI is: (1) readily available; (2) more stable than other inflation measures; and (3) maintained on a timely basis. D.P.U. 94-50, at 141. In the instant proceeding, no party disputes that the GDP-PI is an appropriate measure for inflation in a revenue cap PBR formula. Accordingly, the Department approves the Companies' use of GDP-PI as an inflation index in the PBR formula.

As described above, Eversource proposes to include an inflation floor of one percent in the revenue cap formula, meaning that if inflation drops below one percent, the Companies would fix the inflation component of the PBR formula at one percent (Exh. ES-GWPP-1, at 12, 47-48). The Attorney General, Cape Light Compact, and CLF argue that the proposed inflation floor is unprecedented and unjustified (Attorney General Brief at 21; Cape Light Compact Brief at 55-56; CLF Brief at 17). The Companies concede that there are no other examples of incentive regulation plans that include a floor on inflation (Tr. 3, at 544). Eversource's primary justification for its proposed inflation floor stems from its commitment to spend \$400 million over five years on grid modernization investments (Exhs. ES-GWPP-1, at 47-48; DPU-24-6; DPU-44-4; DPU-44-5, AG-28-6; Tr. 2, at 314). However, as discussed in Section X.B.3 below, the Department has determined that it is in the public interest to address the grid modernization base commitment investments outside of the PBR.

Based on the foregoing, the Department finds that the Companies have not demonstrated that an inflation floor is a necessary or reasonable component of its PBR formula. Accordingly, the inflation component of the PBR formula shall strictly reflect GDP-PI, as outlined above.

c. Consumer Dividend

The consumer dividend is intended to reflect expected future gains in productivity due to the move from cost of service regulation to incentive regulation. D.P.U. 96-50 (Phase I) at 165-166, 280. As a deduction to the PBR adjustment, the consumer dividend is designed to allow ratepayers to share in these aforementioned gains (Exh. ES-GWPP-1, at 56). In the instant proceeding, Eversource proposes to apply a consumer dividend of 25 basis points (or 0.25 percent) when inflation exceeds two percent (Exhs. ES-GWPP-1, at 54; ES-PBRM-1, at 8, 60, 66-67). No party addressed this particular component of the Companies' PBR proposal on brief.

The Companies acknowledge that the determination of a consumer dividend is largely subjective and that there is a lack of quantitative, empirical basis for establishing its magnitude (Exhs. ES-GWPP-1, at 55; ES-PBRM-1, at 55; DPU-19-21). Although the Department has previously approved consumer dividends greater than 25 basis points, we recognize that Eversource's recent ratemaking history includes a series of rate freezes for both NSTAR Electric and WMECo (Merger Settlement at Art. II (3)). D.P.U. 96-50 (Phase I) at 281; D.P.U. 05-85 Settlement, at Art. II. Accordingly, it is reasonable to expect that Eversource's future gains in productivity may be somewhat lower than would be

expected in a move from pure cost of service regulation to PBR (Exhs. ES-GWPP-1, at 56-57; DPU-19-21).

The Companies submit that the consumer dividend represents an explicit, tangible customer benefit in the PBR (Exhs. ES-GWPP-1, at 49, 56; ES-PBRM-1, at 66-67). We agree. Accordingly, in order to ensure that an appropriate share of the benefits of future gains in productivity will accrue to ratepayers, the Companies shall include in the PBR formula a consumer dividend of 25 basis points (or .25 percent) when inflation exceeds two percent.

d. Grid Modernization Plan Factor

Eversource proposes to include a GMP factor in its PBR formula. The GMP factor would be used to recover approved: (1) investments in grid modernization above the \$400 million base commitment proposed in this proceeding; and (2) incremental grid modernization investments proposed in D.P.U. 15-122 (Exhs. ES-GWPP-1, at 12, 18, 69; ES-PBRM-1, at 8; DPU-24-8). As discussed in Section X.B.3 below, the Department has determined that the Companies' grid modernization plan investments will be addressed outside of the proposed PBR mechanism. Accordingly, the Companies shall remove the proposed GMP factor from the PBR formula.

e. Exogenous Cost Factor

In D.P.U. 94-158, at 62, the Department recognized there may be exogenous costs, both positive and negative, that are beyond the control of a company and, because the company is subject to a stay-out provision, may be appropriate to recover (or return) through the PBR. The Department has defined exogenous costs as positive or negative cost changes

actually beyond the Company's control and not reflected in the GDP-PI. D.P.U. 94-50, at 172-173. These include, but are not limited to, incremental costs resulting from: (1) changes in tax laws that uniquely affect the relevant industry; (2) accounting changes unique to the relevant industry; and (3) regulatory, judicial, or legislative changes uniquely affecting the industry. D.P.U. 96-50 (Phase I) at 291; D.P.U. 94-50, at 173. The Department has cautioned against expansion of these categories to a broader range. D.P.U. 96-50 (Phase I) at 290-291; D.P.U. 94-158, at 61-62.

In the instant proceeding, Eversource proposes to adopt a definition of exogenous costs that is consistent with the definition adopted by the Department in D.P.U. 94-50. Accordingly, the Department finds that the Companies' proposed definition of exogenous costs is appropriate.

In order to avoid costly regulatory process over minimal dollars, the Department has found that exogenous cost recovery must be subject to a significance threshold that is noncumulative (i.e., exogenous costs cannot be lumped together into a single total for purposes of determining whether the threshold has been met). D.T.E. 01-56, at 22-23; D.T.E. 99-19, at 26; D.P.U. 96-50 (Phase I) at 292-293; D.P.U. 94-50, at 173. The significance threshold is determined based on a percentage of the company's total operating revenues, taking into account the term of the PBR insofar as the effects that inflation will have on the threshold in the later years of the PBR. D.T.E. 01-56, at 11-14; D.P.U. 98-128, at 57.

Eversource has proposed an exogenous cost significance threshold of \$5 million for the combined entity of NSTAR Electric and WMECo for calendar year 2018, subject to annual adjustments thereafter based on changes in GDP-PI (Exh. ES-GWPP-1, at 62).

Although the Department must consider the facts and circumstances of each case, in several prior cases, the Department has found that an exogenous cost significance threshold was reasonable where it was equal to a multiple of 0.001253 times a company's total operating revenues. D.T.E. 05-27, at 396; D.T.E. 03-40, at 491; D.T.E. 01-56, at 22-26;

D.P.U. 98-128, at 53-56.¹⁹¹

On a consolidated basis, Eversource's total test year operating revenues were \$3,249,892,540 (see Exhs. ES-DPH-2 (East), Sch. DPH-5, at 1 (Rev. 3); ES-DPH-2 (West), Sch. DPH-5, at 1 (Rev. 3)).^{192,193} Consistent with our prior precedent and the facts of this case, the Department finds that \$5 million is a reasonable exogenous cost significance threshold for the Companies that have total operating revenues of \$3,249,892,540 and that are implementing a multi-year PBR plan of the overall design approved herein.

¹⁹¹ In support of its proposal, the Companies maintain that the Department recently approved an exogenous cost significance threshold of 0.003212 times a company's total annual distribution revenues (Exh. ES-GWPP-1, at 61, citing D.P.U. 12-25). Although Bay State Gas Company proposed to adopt a significance threshold based on the above calculation, the Department declined to adopt the expense adjustment factor at issue and, therefore, did not address the reasonableness of the proposed exogenous cost significance threshold in that case. D.P.U. 12-25, at 331-334.

¹⁹² NSTAR Electric's and WMECo's total operating revenues for the test year were \$2,769,893,671 and \$479,998,869, respectively (Exhs. ES-DPH-2 (East), Sch. DPH-5, at 1 (Rev. 3); ES-DPH-2 (West), Sch. DPH-5, at 1 (Rev. 3)).

¹⁹³ Multiplying Eversource's consolidated operating revenues of \$3,249,892,540 by a factor of 0.001253 equals \$4,072,115.

In addition, the Companies have proposed that the exogenous cost significance threshold be subject to annual adjustments based on changes in GDP-PI as measured by the U.S. Commerce Department (Exh. ES-GWPP-1, at 62). The Department is satisfied that this proposal appropriately takes into account the effects that inflation will have on the threshold in the later years of the PBR. D.T.E. 01-56, at 11-14; D.P.U. 98-128, at 57. Accordingly, we set the Companies' threshold for exogenous cost recovery at \$5 million for each individual event in calendar year 2018, subject to annual adjustments thereafter based on changes in GDP-PI as measured by the U.S. Commerce Department. Based on the foregoing analysis, the Department approves the Companies' proposed exogenous cost factor as a component of the PBR formula.

Exogenous cost recovery requires that a company provide supporting documentation and rationale to the Department for a determination as to the appropriateness of the proposed exogenous cost. D.T.E. 99-19, at 25; D.P.U. 98-128, at 55; D.T.E. 98-31, at 17-18. Additionally, any company seeking recovery of an exogenous cost bears the burden of demonstrating the propriety of the exogenous cost and that the proposed exogenous cost change has not been incorporated into the GDP-PI. D.P.U. 96-50 (Phase I) at 292-293; D.P.U. 94-50, at 171. For these reasons, the Department will not prejudge the qualification of any future events as exogenous costs (e.g., an adverse ruling on a municipal property tax issue and any future transmission formula rate changes mandated by FERC). Instead, at the time it seeks exogenous cost recovery, Eversource must demonstrate that the event meets both the definition and threshold for exogenous costs approved herein.

f. Earnings Sharing Mechanism

The Department has found that earnings sharing mechanisms may be integral components of incentive regulation plans. D.P.U. 94-50, at 197, n. 116. Specifically, the Department has found that earnings sharing mechanisms provide an important backstop to the uncertainty associated with setting the productivity factor. D.P.U. 96-50 (Phase I) at 325; D.P.U. 94-50, at 197.

The Companies propose to implement an asymmetrical earnings sharing mechanism with a deadband of 200 basis points (Exhs. ES-GWPP-1, at 12, 65-66; ES-PBRM-1, at 8). Under the Companies' proposal, earnings would be shared with ratepayers on a 75/25 basis (i.e., 75 percent to shareholders, 25 percent to ratepayers) if and when the calculated distribution ROE exceeds the ROE authorized in this proceeding by 200 basis points (Exh. ES-GWPP-1, at 65). If and when the calculated ROE exceeds the ROE authorized in this case by more than 300 basis points, Eversource proposes to share earnings with ratepayers on a 50/50 basis (Exh. ES-GWPP-1, at 65). For any year in which the ROE is above the deadband, the Companies propose to credit the percentage of earnings to be shared to customers in the succeeding year and exclude the impact of this adjustment in calculating any earnings sharing for the subsequent year (Exh. ES-GWPP-1, at 66).

The Attorney General argues that the proposed earnings sharing deadband of 200 basis points is too large and could result in outcomes where ratepayers see little to no benefits from the PBR (Attorney General Brief at 32). In addition, the Attorney General and Cape Light Compact argue that the design of the Companies' proposed earnings sharing

mechanism gives too much upside earnings potential to the Companies and too little potential benefit for customers (Attorney General Brief at 32-33; Cape Light Compact Brief at 59).

An earnings sharing mechanism offers an important protection for ratepayers in the event that expenses increase at a rate much lower than the revenue increases generated by the PBR (Tr. 2, at 435-436; Tr. 3 at 643). See D.P.U. 10-70, at 8 n.3; D.P.U. 05-27, at 404-405. For this reason, the Department finds that there is a significant benefit to implementing an earnings sharing mechanism as part of the PBR adopted in this case. However, as discussed below, the Department finds that certain modifications to the Companies' proposed earnings sharing mechanism are necessary in order to appropriately balance the risks to shareholders and ratepayers under the PBR.

As noted above, the Companies propose to adopt a deadband of 200 basis points (Exhs. ES-GWPP-1, at 12, 65-66; ES-PBRM-1, at 8). The Department has previously approved earnings sharing mechanisms with deadbands of 200 basis points or greater. D.T.E. 05-27, at 405; D.T.E. 03-40, at 500; D.P.U. 96-50 (Phase I) at 326. Here, with the changes to the tiered structure and earnings percentages discussed below, the Department finds that a 200-basis point deadband is both consistent with Department treatment of such mechanisms in the past and is reasonable to apply in this instance.

The Department finds that a 200-basis point deadband will provide the Companies with a strong incentive to pursue savings. However, in order to appropriately balance shareholder and ratepayer risk under the PBR as designed, the Department finds that the benefits of any earnings above the deadband must inure largely to ratepayers. Accordingly,

we find that a mechanism that shares earnings with ratepayers on a 75/25 basis above the 200-basis point deadband (i.e., 75 percent to ratepayers and 25 percent to shareholders) is appropriate in this case. This ratio will provide the Companies both adequate incentives to pursue savings and also protect ratepayers from an unforeseen financial windfall for the Companies as a result of the implementation of the PBR.

Finally, the Department declines to adopt a tiered structure as proposed by the Companies. As the Companies' witness acknowledged, a tiered sharing structure can create perverse cost containment incentives at the margin that can encourage misreporting or changes in spending (Tr. 8, at 1515). The Department finds that a non-tiered earnings sharing mechanism will resolve any concerns regarding incentives at the margin and achieve the goals of simplicity and administrative efficiency.

In conclusion, the Department finds that the Companies' PBR shall include an earnings sharing mechanism that sets a 200 basis points deadband above the Companies' authorized ROE. If the Companies' earned distribution ROE falls within or below the deadband, there will be no sharing. If the Companies' earned distribution ROE exceeds the deadband, shareholders and ratepayers will share earnings 25 percent and 75 percent, respectively.

g. PBR Term

Eversource's initial PBR proposal did not provide for an explicit term or stay-out provision (see Exhs. ES-GWPP-1; ES-PBRM-1). Instead, the Companies maintained that the PBR was designed to operate for "the long term" (Exhs. DPU-24-1; DPU-47-1; AG-33-8;

Tr. 2, at 421). During the course of the proceeding, Eversource proposed to adopt a PBR five-year term and associated stay-out provision where the Companies would have the ability to file for rate relief if the actual ROE falls more than 200 basis points below the ROE approved in this proceeding (Exh. AG-33-8; Tr. 1, at 421-422).

Intervenors argue that the Department should bar the Companies from filing a rate case during the five-year term (Attorney General Reply Brief at 90-91; Cape Light Compact Brief at 60). They argue that if the Companies are allowed to file a rate case during the five-year term, then ratepayers would receive little benefit or protection from the PBR (Attorney General Brief at 33-34; Attorney General Reply Brief at 90-91; Cape Light Compact Brief at 60).

The Department has found that a well-designed PBR should be of sufficient duration to give the plan enough time to achieve its goals and to provide utilities with the appropriate economic incentives and certainty to follow through with medium- and long-term strategic business decisions. D.P.U. 96-50 (Phase I) at 320; D.P.U. 94-158, at 66; D.P.U. 94-50, at 272. The Companies acknowledge that a stay-out provision is one of the ways to ensure strong incentives for cost containment (Exhs. DPU-24-1; DPU-47-1; AG-33-8; Tr. 2, at 421). In addition, the Department has stated that one benefit of incentive regulation is a reduction in regulatory and administrative costs. D.P.U. 96-50 (Phase I) at 320; D.P.U. 94-158, at 64.

Previous PBR plans approved by the Department have had terms of five years or longer. See, e.g., D.T.E. 01-56, at 10; D.P.U. 96-50 (Phase I) at 320. In the instant case,

the Department finds that a five-year term will give the plan enough time to achieve its goals and will provide the Companies with the appropriate economic incentives for cost containment and long-term planning. Further, we find that a five-year term will establish an appropriate interval over which to review the Companies performance over the initial term of the PBR.¹⁹⁴

As noted above, a stay-out provision provides an important benefit to ratepayers as it will ensure that there are strong incentives for cost containment under the PBR. Accordingly, the Department will adopt a stay-out provision in conjunction with the five-year term. The Department declines to adopt Eversource's proposal to allow an explicit off-ramp where the Companies earned ROE is more than 200 basis points below the ROE approved in this case. The Department finds that such provision would not be in the public interest as it would undermine the intent of a defined PBR term and would not provide the proper incentives for cost containment and long-term planning, and would not ensure a reduction of regulatory and administrative costs.

Although we do not approve an explicit off-ramp provision, the Department notes that extraordinary economic circumstances have always been a recognized basis for any gas or electric company to petition the Department for changes in tariffed rates. D.T.E. 03-40, at 497 n.263, citing D.T.E. 98-128, at 56; D.T.E. 98-31, at 18. This review is consistent

¹⁹⁴ Section 94 provides that electric distribution companies shall file rate schedules no less than every five years. The Companies maintain that Section 94 does not specify that such schedules must be designed to allow for an increase in base rates and, therefore, the Department may allow a PBR with a term of longer than five years (Exh. DPU-47-1, at 2).

with G.L. c. 164, § 93 and Section 94 and with the general requirement that rates must be just and reasonable. D.T.E. 03-40, at 497 n.263. Statute, of course, governs and, where need be, supersedes any regulatory arrangement prescribed by the Department.

D.T.E. 98-27, at 14-21. Nonetheless, the Department fully expects that the Companies will not file a base rate case during the term of the PBR and that any rate relief sought under Section 94 would be of last resort. Should the Companies seek to change base rates before the end of the PBR term, that action would be a significant consideration in that Section 94 proceeding and would likely have a negative effect on the Companies' resulting ROE, based on the Department's standard for establishing ROE.

For the reasons discussed above, the Department finds that the Companies' PBR shall operate for a five-year term starting January 1, 2018. Additionally, absent a showing of extraordinary economic circumstances, the Companies shall not file a proceeding under Section 94 that seeks to change base rates prior to the end of the PBR term.

h. Metrics

As discussed above, the Companies have demonstrated that the electric distribution industry is rapidly changing and that PBR is the appropriate ratemaking model to allow them to adapt to this change. The Department must find, however, that the PBR we approve in this proceeding will result in just and reasonable rates. G.L. c. 164, § 94; D.P.U. 96-50 (Phase I) at 242; D.P.U. 94-158, at 52-66. One factor that the Department considers in reaching this determination is the extent to which the PBR is designed to advance policy and other Department objectives to ensure that ratepayer benefits will result. D.P.U. 96-50

(Phase I) at 242. In this regard, the Department has determined that a PBR (1) should be designed to achieve specific, measurable results, and (2) should identify, where appropriate, measurable performance indicators and targets that are not unduly subject to miscalculation or manipulation. D.P.U. 94-158, at 63-64. The Department has further found that broader performance indicators are preferred, and should be tied to the stated goals of a program and consistent with the Department's regulatory goals. D.P.U. 94-158, at 63-64. Finally, the Department has determined that a well-designed PBR should present a timetable for program implementation and specific milestones for program tracking and evaluation. D.P.U. 94-158, at 64-65.

Here, intervenors argue that the Companies' proposed PBR lacks specific, measurable metrics to measure the success of the PBR (Attorney General Brief at 14; Cape Light Compact Brief at 56-57; Sunrun and EFCA Brief at 9; Vote Solar Brief at 12-13). Eversource maintains that PBR-specific metrics are not necessary because the Department's existing service quality metrics, with the related potential for penalties, will continue to apply to the Companies during the term of the PBR (Companies Brief at 325-326). In addition, the Companies argue that specific PBR-related metrics are not necessary because the increased efficiency that will result from the PBR is a measurable achievement that is already contained within the PBR formula in the form of the consumer dividend (Companies Brief at 324-325; Companies Reply Brief at 40-42).

Eversource's proposed metrics solely relate to spending for the grid modernization base commitment and do not contain any measurable performance indicators or targets to

assess the Companies' performance or the benefits achieved under the PBR (Exhs. ES-GMBC-1, at 132; ES-GMBC-3; AG-18-26; DPU-41-7; Tr. 12, at 2387-2388). As discussed in Section X.B.3 below, the Department has determined that it is in the public interest to remove the grid modernization investments from the PBR and the Department will address the establishment of appropriate metrics designed to advance the Department's grid modernization objectives as part of our forthcoming Order in D.P.U. 15-122.

As recognized by the Companies, the Department's service quality metrics (and associated penalties) will remain in place during the term of the PBR.¹⁹⁵ The Department will continue to rely on these rigorous service quality metrics to gauge whether sufficient investment is occurring on the Companies' distribution system to maintain the reliability of electric service to customers. See, e.g., Revised Service Quality Guidelines, D.P.U. 12-120-D (2015). The service quality metrics and consumer dividend do not, however, capture the full range of benefits that the Companies maintain, and that the Department expects will accrue from implementation of the PBR.

The Companies argue the PBR is designed to operate as a mechanism for maintaining alignment between costs and revenues so that they can continue to operate their system in support of the Commonwealth's clean energy goals, including the provision of safe, reliable and resilient electric service with a minimal environmental impact (Companies Reply Brief at 12). The Department found above that PBR should result in benefits to ratepayers

¹⁹⁵ The Department notes that the maximum service quality penalty that can be assessed against the Companies grows as the Companies' annual revenues for distribution and transmission operations increase. G.L. c. 164, § 1I.

because, among other reasons, it will allow Eversource the flexibility to focus on cost saving and innovation to meet the Commonwealth's clean energy goals. In exchange for this flexibility, the Department finds that it is appropriate to establish PBR-specific metrics to measure the Companies' performance and gauge the extent to which these critical policy benefits accrue.

Eversource had demonstrated that its costs are increasing due to several changes in the electric distribution industry including: (1) the need to rebuild the distribution system to allow for reliable two-way power flows; (2) the need to improve system resiliency to withstand climate-change impacts; (3) the emergence of a greater need for cybersecurity; (4) an increased need to minimize environmental effects from distribution infrastructure; (5) incorporating the emergence of digital technology and consumer engagement in energy consumption; and (6) recruiting and retaining a non-traditionally skilled workforce (Exh. DPU-19-3, Att.). Through the adoption of the PBR, the Department recognizes Eversource requires the degree of flexibility to adapt to these changes.

Accordingly, in order to measure the full range of benefits that will accrue under the PBR, the Department finds that it is appropriate to establish a set of broad performance metrics in the following three categories that are tied to the goals of the PBR and consistent with the Department's regulatory objectives: (1) improvements to customer service/engagement; (2) reductions in system peak; and (3) strategic planning for climate adaptation.

The Department acknowledges that the evidentiary record in this case is not sufficient

to establish final performance metrics and benchmarks at this time. In this Order, the Department will establish the categories in which the metrics will be developed. After input from the Companies and intervenors, the Department will adopt final metrics and benchmarks in a compliance phase of this proceeding.¹⁹⁶

The metrics that the Department establishes in this proceeding will be used for reporting purposes and to determine whether the PBR is working as designed and providing benefits to ratepayers. Going forward, the Department intends to consider whether it may be appropriate to establish incentives or otherwise tie earnings under the PBR to performance metric outcomes.

First, the Companies shall develop metrics and appropriate benchmarks to measure improvement in the level of customer satisfaction and customer engagement. The Department has often recognized the importance of customer satisfaction and its direct alignment with ratepayer interests. See D.P.U. 12-120-D at 56; D.P.U. 12-25 at 161; D.P.U. 10-55, at 253-254; D.P.U. 12-120; D.P.U. 04-116-C at 16-17. Under the PBR, the Companies will have the ability to focus their customer engagement to adjust to the changing energy market. As the Companies note, customers are becoming more active participants in how they get their power and manage their electricity consumption (Exh. DPU-19-3, Att.). For example, the Companies must change to adapt to customers that are more reliant on mobile applications and devices (see Exh. DPU-19-13).

¹⁹⁶ As discussed further below, the Companies will be required to submit a compliance filing containing proposed metrics and benchmarks consistent with the categories and design criteria established in this Order. The Department will investigate the proposed metrics in a compliance phase of this proceeding.

When developing the proposed customer satisfaction/engagement metrics, the Companies must consider customers both who are producers and consumers of electricity. In addition, the Companies shall establish a baseline associated with those metrics in order to measure improvements over the term of the PBR.¹⁹⁷ Regarding customer satisfaction, the metrics should be designed to account for factors outside of the Companies' control, such as commodity prices or weather. To control for these types of outside variables, the Department finds that it is appropriate for a third party to benchmark the Companies' performance relative to their utility peers.

Second, the Companies shall develop a metric and appropriate benchmark to measure reductions in peak system demand. System peak demand is the primary driving force in the cost of electric supply and the need for new generation, transmission, and distribution investments.¹⁹⁸ D.P.U. 12-76-B at 10-12. Customers benefit from reductions in sales and peak demand through lower capacity and commodity prices (*i.e.*, lower bills). See e.g.,

¹⁹⁷ Examples of ways the Companies may seek to improve customer satisfaction/engagement include, but are not limited to: (1) investments in technologies such as billing and tracking systems to improve customer access to information; (2) improved mobile device and digital communication support; and (3) improvements in distributed energy resource interconnections (Exh. DPU-19-13). Further, notwithstanding the findings of this Order, the Companies may consider in these efforts to improve customer satisfaction for inclusion within the context of the PBR, including, but not limited to various payment program options, dispute resolutions, and opportunities for community engagement.

¹⁹⁸ According to the State of Charge Report, during 2013 to 2015 the top one percent of most expensive hours accounted for eight percent of customers' annual spending on electricity. The top ten percent of hours during these years, on average, accounted for 40 percent of annual electricity spending (Exh. ES-GMBC-6, at 5-6).

Three-Year Plans Order, D.P.U. 15-160 through D.P.U. 15-169 at 93 (2016); Order on Bill Impacts, D.P.U. 08-50-D at 11 (2012).

In designing the system peak demand metric, the Companies must create a structure that is weather normalized and appropriately anchored in measureable parameters that are within the Companies' control. The Companies should set baseline reductions during peak event conditions, rather than a year-to-year reduction.¹⁹⁹ In addition to weather normalizing, the target should recognize the historical trends in system peak demand and account for year-to-year variances over the five-year term of the PBR.²⁰⁰ There are many additional functions within the Companies' control that affect peak demand (e.g., theft, line loss, upgrading standard technology, employing time of use rates, demand response, energy efficiency, energy storage, Volt/VAR optimization). The Companies should consider all aspects of their business (e.g., traditional capital investment, grid modernization investment, energy efficiency, behind the meter generation) to set a single overarching demand target. However, the Companies should identify a separate benchmark to allow for identification of the portion of the overall demand target that is enabled by investments under the PBR.

Finally, the Companies shall develop metrics and appropriate benchmarks to measure progress towards climate adaptation and greenhouse gas reductions. The Global Warming

¹⁹⁹ Peak events, which are often weather dependent, are not comparable on a year-to-year basis (see Tr. 1, at 138-139).

²⁰⁰ The Department notes that despite a record hot summer in New England in 2016, the Companies' system peak demand in 2016 was six percent less than the peak experienced ten years earlier in 2006 (i.e., 4,958 MW in 2006 as compared to 4,653 MW in 2016) (Exh. DPU-19-3, Attachment DPU-19-3, at 3).

Solutions Act mandates the following reductions in greenhouse gas emissions: (1) ten to 25 percent from 1990 levels by 2020; and (2) at least 80 percent of 1990 levels by 2050. G.L. c. 21N, § 4(a). The Department must consider reasonably foreseeable climate change impacts, including additional greenhouse gas emissions, when considering and issuing administrative approvals or decisions. G.L. c. 30, § 6I. Further, Governor Baker's Executive Order 569 requires each agency to develop a climate adaptation plan to assess the potential risk to critical infrastructure assets from natural disasters and climate change. On both bases, the Companies are obligated to make progress towards climate adaptation and greenhouse gas reductions. Accordingly, the Department finds that establishment of metrics to measure progress towards climate adaptation and greenhouse gas reductions is reasonable and appropriate.

The Companies are responsible for providing a safe and reliable electric system. In order to develop the climate adaptation metric, the Companies must conduct their own climate adaptation study to identify those areas under the Companies' control that are most vulnerable to climate change and could jeopardize system reliability. The Department finds that requiring the Companies to develop a climate adaptation plan is within the Companies' control, in line with current emergency response planning, and in the public interest. Further, we find that this process will help guide future infrastructure investments and advance the Commonwealth's clean energy goals. Therefore, the Department directs the Companies to develop a climate adaptation plan for their assets, including an assessment of the potential risk to these assets from climate change (e.g., risks to the underground system

from sea level rise, emergency response plans for severe weather, etc.).

As part of the climate adaptation plan, the Companies shall assess the estimated carbon emissions from their existing assets. After the completion of the plan, the Companies shall propose a greenhouse gas reduction target. The proposed target shall be based solely on assets under the control of the Companies.

Within 90 days of the date of this Order, the Companies shall, consistent with above the directives, submit: (1) proposed customer satisfaction/engagement metrics and benchmarks, including a third party benchmark to measure the level of customer satisfaction/engagement over the term of the PBR; (2) a proposed system peak demand reduction metric and benchmark to measure reductions of demand during peak events from current levels; and (3) a proposed climate adaptation plan designed to inventory and address the Companies' at risk assets and the emissions from those assets. The results of the climate adaption plan will be used to develop future metrics and benchmarks to measure the Companies' progress towards climate adaptation and greenhouse gas reductions.

E. Conclusion

In the sections above, the Department has reviewed the Companies' proposed PBR and has found that it is more likely than current regulation to advance the Department's traditional goals of safe, reliable, and least-cost service and to promote the objectives of economic efficiency, cost control, lower rates, and reduced administrative burden in regulation. In addition, the Department has found that the proposed PBR will provide Eversource with greater incentives to reduce costs than currently exist and should result in

benefits to customers that are greater than would be present under current regulation.

Further, the Department has found that the proposed PBR better satisfies our public policy goals and statutory obligations, including promotion of the Commonwealth's clean energy goals and mandates.

With the modifications to the PBR formula required herein, the Department finds that the PBR appropriately balances ratepayer and shareholder risk and will result in just and reasonable rates pursuant to G.L. c. 164, § 94. Accordingly, the Department approves Eversource's proposed PBR, subject to the modifications required herein.

Eversource shall submit an annual PBR compliance filing, including all information and supporting schedules necessary for the Department to review the proposed PBR adjustment for the subsequent rate year. Such information shall include the results and supporting calculations of the PBR adjustment factor formula, descriptions and accounting of any exogenous events, and an earnings sharing credit calculation for the year two years prior to the rate adjustment. In addition, Eversource shall file revised summary rate tables reflecting the impact of applying the base rate changes provided in the PBR compliance filing. Eversource is directed to submit its annual PBR compliance filing on or before September 15th each year, commencing in 2018 and continuing for the five-year term of the PBR. Consistent with our findings in Section IX.D.5.g above, the PBR shall continue in

effect for a total of five consecutive years starting January 1, 2018, with the last adjustment taking effect on January 1, 2022.²⁰¹

X. GRID MODERNIZATION PROPOSAL

A. Introduction

The Department seeks to encourage electric distribution companies to adopt grid modernization technologies and practices that will enhance the reliability of electricity service, reduce costs of operating the electric grid, mitigate price increases and volatility for customers, and empower customers to adopt new electricity technologies and better manage their electricity use. Modernization of the Electric Grid, D.P.U. 12-76-A at 1 (2013). The Department has defined grid modernization as functions that fall within four broad objectives: (1) reducing the effects of outages; (2) optimizing demand, which includes reducing system and customer costs; (3) integrating distributed resources; and (4) improving workforce and asset management. Modernization of the Electric Grid, D.P.U. 12-76-B at 9 (2014).

The Department directed each electric distribution company to submit a ten-year grid modernization plan designed to make measurable progress towards each of these four objectives as well as a short term investment plan addressing the specific initiatives that they expect to undertake in the first five years of the plan. D.P.U. 12-76-B at 15-16; Modernization of the Electric Grid, D.P.U. 12-76-C (2014). The Companies filed their grid modernization plan, including a short-term investment plan, on August 19, 2015. The Department docketed the Companies' grid modernization plan filing as D.P.U. 15-122.

²⁰¹ Because the earning sharing adjustment lags the PBR adjustment by one year, the last earning sharing adjustment would take effect on January 1, 2024.

The Companies also included \$400 million in investments in grid modernization technologies as part of their PBR proposal in the instant case. Specifically, the Companies commit to absorb the revenue requirement associated with \$400 million of grid modernization investments (“grid modernization base commitment”) through the PBR until their next base rate case (Exhs. ES-GWPP-1, at 9-10; ES-GMBC-1, at 10, 22, 51-52 (Table ES-GMBC-2)). These base commitment investments include certain investments proposed as part of the grid modernization plan in D.P.U. 15-122, as well as additional investments in expanded automation and customer tools for distributed energy resource integration, an electric storage pilot, and electric vehicle make-ready infrastructure (Exhs. ES-GWPP-1, at 17-18; ES-GMBC-1, at 14-15).

On February 3, 2017, the Companies filed a revised grid modernization plan in D.P.U. 15-122 to remove from consideration in that docket any grid modernization investments also proposed in the instant proceeding.²⁰² The Companies refer to the remaining investments in D.P.U. 15-122 as their “incremental grid modernization plan.” Together, the grid modernization base commitment investments (as presented in D.P.U. 17-05) and the incremental grid modernization plan investments (as presented in the revised plan in D.P.U. 15-122) encompass the entirety of the Companies’ grid modernization plan. The Department addresses the Companies’ grid modernization base commitment proposal in D.P.U. 17-05 in the sections below.

²⁰² The Department determined that review of the grid modernization base commitment in the instant case was reasonable and would not adversely impact resolution of the grid modernization docket in D.P.U. 15-122. D.P.U. 17-05, Interlocutory Order at 11 (February 23, 2017).

B. Grid Modernization Base Commitment

1. Companies Proposal

Eversource proposes a total five-year spending target of \$400 million for grid modernization investments in two broad categories: (1) distribution network systems operations; and (2) customer engagement and enablement (Exhs. ES-GMBC-1, at 52; ES-GMBC-2, at 9-10). The Companies state that the investments in these two categories are foundational investments needed to implement other aspects of grid modernization (Exh. ES-GMBC-1, at 13).

The Companies propose to undertake four initiatives in the distribution network systems operations category: (1) a distribution network systems operator initiative, which includes investments of \$44 million in distribution management systems (“DMS”), advanced system load flow, and Volt/VAR optimization; (2) an automation initiative, which includes investments of \$84 million in automated feeder reconfiguration, urban underground automation, and adaptive protection; (3) a foundation technology for DMS and automation initiative, which consists of investments of \$111 million in foundational technology for DMS and automation including advanced sensing technology, remove fault indicators, and communications network; and (4) an energy storage initiative, which includes investments of \$100 million for research and demonstrations (Exhs. ES-GMBC-1, at 52; ES-GMBC-2, at 9-10).²⁰³ The Companies propose to undertake two initiatives in the customer engagement and enablement category: (1) a distributed energy resource integration initiative which

²⁰³ The Companies’ energy storage proposal is addressed in Section X.C below.

includes investments of \$15 million for customer tools; and (2) an electric vehicle research and demonstration projects initiative which includes investments of \$45 million for development of electric vehicle charging infrastructure and vehicle conversions (Exh. ES-GMBC-2, at 9-10).²⁰⁴

The Companies do not propose to recover their grid modernization base commitment investments through a separate short term capital cost recovery mechanism as described in D.P.U. 12-76-B at 22-25. Rather, they propose to absorb the revenue requirement associated with the \$400 million in grid modernization base commitment investment through their proposed PBR, until their next base rate case (Exh. ES-GWPP-1, at 9, 14, 53-54). As described in Section IX.B.d above, the Companies state that the commitment to spend \$400 million in incremental grid modernization investments over five years represents an implicit deduction from the annual revenues collected through the proposed PBR mechanism, or an implicit stretch factor of 1.08 percent on an average annual basis (Exh. ES-GWPP-1, at 14, 53-54).²⁰⁵ The Companies state that if they are unable to meet the \$400 million spending commitment, they will “return” the unspent dollars to ratepayers through a mechanism to be established in their next base rate proceeding (Tr. 2, at 270-273, 301-302).

The Companies request that the Department: (1) pre-approve the proposed grid modernization base commitment categories as reasonable and appropriate and, therefore, any

²⁰⁴ The Companies’ electric vehicle proposal is addressed in Section X.D, below.

²⁰⁵ The Companies calculated the stretch factor based on the total revenue requirement associated with the grid modernization base commitment investment over the five-year term, equal to approximately \$160 million (Exh. AG-21-2, Att. at 1).

investments in these categories would be eligible for inclusion in rate base in the Companies' next base rate proceeding;²⁰⁶ and (2) find that the overall proposed spending target and amounts allocated to each of the investment categories are reasonable (Exh. ES-GMBC-1, at 20-21). The Companies propose that investment could shift between categories as they gain experience in implementing their grid modernization plan, with any modifications subject to Department review and approval (Exh. ES-GMBC-1, at 20-21; Tr. 2, at 270-273, 301-302).

The Companies propose to track 14 metrics for the six grid modernization initiatives (Exhs. ES-GMBC-1, at 11, 132-135; ES-GMBC-3; DPU-41-7 (Supp.)). The 14 metrics include company-specific implementation metrics and customer benefit sub-metrics (Exh. ES-GMBC-3).²⁰⁷ The Companies state that the proposed metrics are not tied to specific grid modernization outcomes. Instead, the Companies state that the proposed metrics will track progress milestones, spending parameters, and other indicators to monitor and evaluate progress on the grid modernization base commitment (Exhs. ES-GMBC-1, at 132, 134-135; ES-GWPP-1, at 13; ES-CAH-1, at 13, 18). During the course of the investigation, intervenors identified several additional performance metrics for consideration, including statewide metrics (see, e.g., Exhs. ME-1, at 71; DPU-41-7 (Supp.); RR-AC-2, Att.);

²⁰⁶ The Companies do not request that the Department pre-approve specific investments (Exh. ES-GMBC-1, at 20). The Companies acknowledge that all grid modernization base commitment investments would remain subject to a prudence review in the Companies' next rate case (Exh. ES-GMBC-1, at 20, citing D.P.U. 12-76-B at 22-25).

²⁰⁷ Within the 14 proposed metrics, there are 35 distinct implementation and customer benefit sub-metrics (Exh. ES-GMBC-3; RR-DPU-2, Att.).

RR-CLF-2, Att.).²⁰⁸ The Department also sought comment on several additional metrics (Exh. DPU-41-7 (Supp.); RR-DPU-2, Att.).²⁰⁹

The Companies propose to submit information to the Department on its grid modernization base commitment in their annual PBR compliance filing (Exh. ES-GMBC-1, at 21). The Companies state that this annual grid modernization base commitment report will include information on program expenditures in relation to authorized budget amounts, the Companies' progress in developing the anticipated investments and other performance data in conformance with the metrics approved by the Department in this proceeding to demonstrate that the Companies are meeting its commitments (Exh. ES-GMBC-1, at 21-22).

Finally, the Companies propose to implement a grid modernization stakeholder process to present and discuss the Companies' performance on implementing the grid modernization base commitment (Exh. ES-GWPP-1, at 19; RR-DPU-24). The Companies propose to conduct an annual stakeholder meeting in the second quarter of each year (RR-DPU-24).²¹⁰ After the stakeholder meeting, the Companies propose to refine the draft grid modernization base commitment report and circulate the revised draft to stakeholders for comment (RR-DPU-24). The Companies propose to compile comments from stakeholders

²⁰⁸ Intervenor proposed a total of 60 additional metrics (RR-AC-2, Att.; RR-CLF-2, Att.).

²⁰⁹ Record Request DPU-2 contains a comprehensive list of all metrics proposed in this proceeding.

²¹⁰ At the annual stakeholder meeting, Eversource proposes to present stakeholders with the prior year's performance results, the outlook for the next year, and a preliminary draft of the annual grid modernization base commitment report (RR-DPU-24).

and, to the extent feasible, incorporate input from stakeholders in each final annual grid modernization base commitment report to be filed with the Department with the PBR compliance filing (RR-DPU-24).

2. Positions of the Parties

a. Intervenors

i. Inclusion of Base Commitment in PBR

The Attorney General, Cape Light Compact, CLF, DOER, and UMass maintain that under the PBR, there are no assurances that the Companies will make the proposed grid modernization base commitment investments or that they will invest in initiatives that are cost effective or beneficial to ratepayers (Attorney General Reply Brief at 92; Cape Light Compact Brief at 50-51; CLF Brief at 16, 27-28; DOER Brief at 18-20; UMass Brief at 9). The Attorney General argues that pre-approval of the grid modernization base commitment investments may allow the Companies to collect revenues through the PBR without making the proposed investments if the business case analysis for the investments is not successful (Attorney General Reply Brief at 92). Further, NECEC asserts that there are no financial consequences to the Companies if they fail to make the grid modernization investments (NECEC Brief at 22).

UMass argues that, under the PBR, ratepayers bear more of the upfront risk of grid modernization investments than shareholders (UMass Brief at 4-5). The Attorney General and CLF assert that the PBR provides no connection between cost recovery and performance as the grid modernization base commitment is not tied to any quantitative improvements in

service reliability, resiliency, energy efficiency, environmental benefits, or resource diversity (Attorney General Brief at 4, 38-39; CLF Brief at 22).

Several intervenors urge the Department to require the Companies to recover eligible costs associated with the grid modernization base commitment through a capital cost tracker as set forth in D.P.U. 12-76-B (Acadia Center Brief at 13-14; Choice Energy Brief at 25-27; CLF Brief at 51; DOER Brief at 20-24; NECEC Brief at 19-26; RESA Brief at 35-38). Acadia Center, Choice Energy, CLF, DOER, NECEC, and RESA argue that a capital cost tracker will provide the Companies with timely recovery of grid modernization costs, while retaining important ratepayer protections and Department oversight (Acadia Center Brief at 13-14; Choice Energy Brief at 25-27; CLF Brief at 51; DOER Brief at 20-24; NECEC Brief at 19-26; RESA Brief at 35-38). Additionally, DOER asserts that a capital cost tracker is superior to a PBR because it: (1) provides better incentives for the Companies to control costs; (2) provides additional transparency and accountability; (3) is less expensive; and (4) ties cost recovery directly to investments made (DOER Brief at 20-24). DOER recommends that any pre-authorized recovery of grid modernization costs through a capital cost tracker should be limited to some period of less than five years so that cost estimates remain current (DOER Brief at 24-26). Further, DOER maintains that, in determining the appropriate time period for pre-approval, the Department should strike an appropriate balance between creating administrative efficiencies and ensuring the most cost-effective investment outcomes (DOER Brief at 24-26).

In order to implement a grid modernization capital cost tracker, NECEC supports an approach that converts the implicit grid modernization stretch factor to an explicit stretch factor and removes it from the PBR (NECEC Brief at 24-26, citing Tr. 2, at 263-269; Tr. 8, at 1552-1563; Tr. 10, at 1966-1984, 2058-2063). NECEC asserts this method would allow the Companies to separate recovery of their grid modernization investments from the PBR without affecting their ability to collect sufficient revenues under the PBR (NECEC Brief at 24-26, citing Tr. 2, at 263-269; Tr. 8, at 1552-1563; Tr. 10, at 1966-1984, 2058-2063). NECEC further maintains that this method would provide appropriate opportunities for stakeholder involvement and Department oversight (NECEC Brief at 24-26). Finally, NECEC argues that the Department should convert the Companies' spending commitment targets into spending caps to provide flexibility for changing circumstances and to reduce the Companies' incentive to make investments based on ratemaking treatment rather than need (NECEC Brief at 24-26, citing Tr. 2, at 263-269; Tr. 8, at 1552-1563; Tr. 10, at 1966-1984, 2058-2063).

ii. D.P.U. 12-76 Requirements

Several intervenors assert that the Companies' grid modernization base commitment proposal does not comply with various directives in D.P.U. 12-76 (Attorney General Brief at 36-38; Acadia Center Brief at 14-16; Cape Light Compact Brief at 21; CLF Brief at 13, 19-23; NECEC Brief at 36-37; Sunrun and EFCA Brief at 8; UMass Brief at 7-10). The Attorney General argues that Eversource's grid modernization base commitment proposal does not qualify for targeted cost recovery under D.P.U. 12-76-B because it does not include

a plan to fully deploy advance metering functionality (Attorney General Brief at 36-38).

Additionally, Cape Light Compact maintains that the Companies' proposal is deficient because it is not grounded in customer engagement, customer markets, or the full range of distributed energy resources beyond distributed generation as required by D.P.U. 12-76-B (Cape Light Compact Brief at 19).

iii. Business Case Analysis

Numerous intervenors argue that the grid modernization base commitment investments are not eligible for pre-approval or targeted cost recovery because the Companies did not provide a supporting business case analysis as required by D.P.U. 12-76-C (Attorney General Brief at 5-6, 36-39; Acadia Center Brief at 16; AIM Brief at 3; Cape Light Compact Brief at 23-24; CLF Brief at 21; DOER Brief at 28; RESA Brief at 30; Sunrun and EFCA Brief at 4-6, 9-11; TEC and WMIG Brief at 11-15; UMass Brief at 10). Without a business case analysis, Cape Light Compact and DOER assert that the Department and stakeholders cannot perform an appropriate assessment of the effects of the grid modernization base commitment on ratepayers (Cape Light Compact Brief at 15; DOER Brief at 28-31).

According to Acadia Center, the lack of detail on costs and benefits prevents the Department and stakeholders from adequately reviewing the proposed grid modernization cost categories (Acadia Center Brief at 16). Cape Light Compact asserts that the grid modernization base commitment budgets are based solely on internal top-down allocations rather than vendor quotes or costs from similar projects or studies (Cape Light Compact Brief at 16). As a consequence, Cape Light Compact maintains that the Companies have not

shown that the grid modernization base commitment investments are reasonable or a good value for ratepayers (Cape Light Compact Brief at 16). UMass maintains that the Companies have presented scant evidence of when customers will experience benefits or whether such benefits are sufficient to warrant the grid modernization base commitment investments (UMass Brief at 9-10). NECEC asserts that the Companies failed to perform a benefit cost analysis for the proposed grid modernization investments that would reduce the risk and uncertainty to customers (NECEC Brief at 21). Acadia Center argues that the Companies fail to provide any evidence that specific benefits (i.e., increased reliability, increased levels of distributed energy resource installation, reduced greenhouse gas emissions) would accrue from the proposed grid modernization base commitment investments (Acadia Center Brief at 15).

CLF and Sunrun and EFCA contend that the Companies do not adequately define the proposed grid modernization base commitment expenditures, show how they arrived at the proposed expenditures, or provide support that the proposed cost categories and total expenditures within the cost categories are correct (CLF Brief at 22; Sunrun and EFCA Brief at 10). Further, CLF and Sunrun and EFCA maintain that the Companies have not provided adequate information about costs and benefits to allow them the flexibility to shift spending between investment categories (CLF Brief at 27-28; Sunrun and EFCA Brief at 10).

Acadia Center, NECEC, Sunrun and EFCA, and UMass argue that, without a showing that benefits will accrue to ratepayers through the proposed investments, the Department should not pre-approve the grid modernization base commitment (Acadia Center

Brief at 15; NECEC Brief at 21; Sunrun and EFCA Brief at 6; UMass Brief at 9-10).

Finally, Cape Light Compact and NECEC assert that the Department should not pre-approve the Companies' proposed grid modernization investments as the base commitment does not constitute a ten-year plan for progress toward the Department's grid modernization objectives or provide information on how these investments will support a roadmap to a modern electric grid (Cape Light Compact Brief at 21-23; NECEC Brief at 38).

iv. Business as Usual

Several intervenors characterize the Companies' proposed grid modernization base commitment investments as business as usual expenditures that are necessary to provide safe and reliable service, but are not transformative and do not constitute grid modernization as provided in D.P.U. 12-76-B (Attorney General Brief at 39-40; Cape Light Compact Brief at 52; CLF Brief at 23; Sunrun and EFCA Brief at 10). CLF maintains that the Companies' characterization of the grid modernization base commitment investments as foundational suggests that they are business as usual investments rather than transformative investments as described in D.P.U. 12-76-B (CLF Brief at 22-23). Similarly, UMass contends that the grid modernization base commitment investments are necessary capital projects that should be undertaken as good utility practice without the need for a PBR (UMass Brief at 12).

Likewise, Cape Light Compact maintains that Eversource should not be allowed to spend grid modernization base commitment dollars on investments that are core to the Companies' utility functions (e.g., automated billing system upgrades, remote fault circuit indicators, urban underground system automation) given such investments already should

have been made or will become obsolete once advanced metering functionality is deployed (Cape Light Compact Brief at 16-18). Further, Sunrun and EFCA maintain that the Companies admit they lack any basis for distinguishing grid modernization base commitment investments from (1) investments they would make anyway in the normal course of business; or (2) investments they would charge to interconnecting customers as system modifications through the interconnection process (Sunrun and EFCA Brief at 10, citing Tr. 15, at 3148-3149; RR-SREF-2).

v. Metrics

Various parties argue that the Companies' proposed grid modernization base commitment performance metrics are inadequate (Attorney General Brief at 55-56; Cape Light Compact Brief at 13, 19, 22-23; CLF Brief at 16-17; DOER Brief at 35-36; NECEC Brief at 14, 35-36). The Attorney General, CLF, and NECEC maintain that the proposed performance metrics are not designed to measure progress towards achievement of the Department's grid modernization objectives (Attorney General Brief at 55-56; CLF Brief at 16-17; NECEC Brief at 14, 35-36). Similarly, Cape Light Compact and DOER argue that the Companies failed to provide a description of the process used to develop the proposed metrics, the common definitions and formulas employed, and an explanation of how each metric relates to grid modernization objectives as required by D.P.U. 12-76-B (Cape Light Compact Brief at 13, 19, 22-23; DOER Brief at 35-36).

Acadia Center, Cape Light Compact, NECEC, and RESA claim that the Companies inappropriately excluded metrics that measure outcomes that may not be within the

Companies' direct control (Acadia Center Brief at 20, 22; Acadia Center Reply Brief at 7; Cape Light Compact Reply Brief at 13; NECEC Brief at 22, n.10; RESA Brief at 36).

Regardless of whether the Department sets targets or performance incentives associated with such metrics, Acadia Center and Cape Light Compact contend that tracking metrics that measure outcomes outside of the Companies control will allow evaluation of grid modernization progress and provide insight on future optimization of the electric system (Acadia Brief at 22; Acadia Reply Brief at 7-8; Cape Light Compact Reply Brief at 13). Finally, Acadia Center and DOER argue that Eversource's proposal fails to include broad, outcome-based statewide metrics as required by D.P.U. 12-76-B (Acadia Center Brief at 3, 6, 19-23; DOER Brief at 35-36).

With respect to the incentive regulation evaluation criteria established in D.P.U. 94-158 and D.P.U. 96-50 (Phase I), the Attorney General and Vote Solar assert that the Companies' proposed metrics fail to: (1) incorporate well-defined, measurable indicators; (2) include clear objectives, consistently applied incentives, and an equitable sharing of potential risks and benefits between customers and shareholders; and (3) outline how performance will be tracked and evaluated over time by company management and other interested parties (Attorney General Brief at 11-12; Vote Solar Brief at 12-14; Vote Solar Reply Brief at 5-8). In addition, the Attorney General, Cape Light Compact, NECEC, and Sunrun and EFCA assert that the Companies' proposed metrics are not designed to achieve specific, measurable results or to identify, where appropriate, measurable performance indicators and targets as required by D.P.U. 96-50 (Phase I) at 242-243 (Attorney General

Brief at 10, 12, 14-17; Cape Light Compact Brief at 56-59; NECEC Brief at 14; Sunrun and EFCA Brief at 8).

Additionally, Cape Light Compact maintains that the Companies' proposal is deficient because it fails to include metrics that provide financial penalties where performance is not met (Cape Light Compact Brief at 19). Cape Light Compact and Vote Solar also argue that the Companies' proposed performance metrics are too narrow in scope and are not tied to incentives that are large enough to drive improvements to meet the Department's criteria for evaluating PBR proposals (Cape Light Compact Brief at 56; Vote Solar Brief at 13).

vi. Stakeholder Process

The Attorney General and several other intervenors recommend improvements to the proposed stakeholder process in areas such as stakeholder identification and notification, advance access to written materials, timing of and response to written stakeholder comments, and the frequency and timing of stakeholder meetings (Attorney General Brief at 60; Acadia Center Brief at 19; CLF Brief at 53; NECEC Brief at 36). The Attorney General also maintains that the Department should hold a public hearing and establish a comment period for the Companies' annual grid modernization base commitment report (Attorney General Brief at 61).

Additionally, AIM recommends that the Department adopt a formal stakeholder process, similar to the process employed by the Energy Efficiency Advisory Council, which, according to AIM, would create transparency in how the Companies spend ratepayer money on grid modernization and also allow grid modernization projects to be considered in a wider

context (AIM Brief at 3-4). Finally, TEC and WMIG recommend that the Companies create a separate working group for C&I customers (TEC and WMIG Brief at 9-11).

b. Companies

i. Inclusion of Base Commitment in PBR

The Companies maintain that the Department should approve the foundational investment component of their grid modernization base commitment proposal without alteration (Companies Reply Brief at 68). The Companies argue that the Department is not precluded from approving a grid modernization plan that does not include advanced metering functionality (Companies Reply Brief at 64-67). Further, the Companies argue that substantial benefits will result from keeping the grid modernization base commitment proposal as a component of the PBR with the applicable procedural timeline (Companies Reply Brief at 63). Finally, the Companies maintain that the grid modernization objectives identified by the Department in D.P.U. 12-76 can be accomplished, in part, by the base commitment proposal (Companies Reply Brief at 64-65).

The Companies assert that, while the proposed PBR will create the most incentives for control of grid modernization base commitment costs, they are not opposed to recovery of these costs through a capital cost tracker (Companies Brief at 402-403). The Companies maintain that recovery of the grid modernization base commitment investments through a capital cost tracker outside of base rates is financially equivalent to the removal of a 1.08 percent explicit stretch factor from the PBR (Tr. 8, at 1555-1561). Finally, the Companies assert that the Department should not establish a preauthorization timeframe of less than five years, as suggested by DOER, because the grid modernization base

commitment provides sufficient transparency and oversight, as well as protections against cost estimates becoming out of date (Companies Brief at 402-403).

ii. D.P.U. 12-76 Requirements

The Companies argue that their proposal meets the grid modernization objectives outlined in D.P.U. 12-76 (Companies Brief at 374-376). In particular, the Companies contend that their grid modernization base commitment proposal facilitates the incremental grid modernization plan investments proposed in D.P.U. 15-122 and lays the foundation for future grid modernization investments (Companies Brief at 374-376). Further, the Companies claim that their proposal is consistent with D.P.U. 12-76-B in that it acknowledges that advanced metering functionality may not be justified in the short term, instead requiring a longer-term investment plan (Companies Brief at 374-376). In addition, the Companies argue that their proposal removes the risk of overcommitting to a single end-state investment path if the market shifts course (Companies Brief at 377-378).

The Companies maintain that the various intervenor arguments regarding the lack of an overarching grid modernization strategy, the failure to value distributed generation as a resource, and the risk of future obsolescence of grid modernization base commitment investments, are attempts to distract the Department from the substance of the Companies' proposal and to expand the grid modernization path set forth by the Department (Companies Brief at 395). Eversource also maintains that its grid modernization base commitment proposal is in line with the Department's vision for grid modernization (Companies Brief at 395). Further, the Companies contend that the Department has the authority to approve

grid modernization proposals in addition to the grid modernization plan proposals mandated in D.P.U. 12-76-B (Companies Brief at 380). Finally, with respect to suggestions that the Companies should revise and refile their grid modernization proposal, the Companies argue that this would not change their determination as to the appropriate investments for their distribution system, the appropriate methods to measure the implementation of these investments, or the Companies' position on advanced metering functionality (Companies Reply Brief at 68).

iii. Business Case Analysis

Responding to arguments concerning the lack of a comprehensive business case analysis, the Companies argue that they have presented an analysis similar to the business case analysis required by D.P.U. 12-76 or have committed to perform additional analysis where required (Companies Brief at 378-379, citing Tr. 7, at 1383; Exhs. ES-GMBC-2; AG-18-6). The Companies argue that its grid modernization base commitment proposal includes a plan to evaluate all of its components using a business case analysis or provides the details of any analysis that has already been performed (Companies Brief at 378-379, citing Exhs. DPU-30-17; DPU-49-1; DPU-49-2; DPU-49-3; DPU-49-4; DPU-57-7; AG-32-3; AG-23-15; Tr. 7, at 1325, 1327-1328).

iv. Business as Usual

The Companies maintain that the grid modernization base commitment proposal includes foundational investments to facilitate their incremental grid modernization proposal in D.P.U. 15-122 and lays the foundation for future grid modernization (Companies Brief at 377). Further, the Companies contend that these foundational investments are not business

as usual as they are incremental (i.e., either new types of technology or an increased level of investment relative to current investment practices) and will accelerate the Companies' progress in achieving the Department's grid modernization objectives in D.P.U. 12-76-B (Companies Brief at 377-378).

v. Metrics

The Companies maintain that their proposed metrics are not designed to secure specific outcomes or to achieve an envisioned end state, but to provide information and insight into the Companies' grid modernization activities and to monitor and evaluate the Companies progress towards its base commitment goals (Companies Brief at 103-105). The Companies assert that the proposed metrics are calibrated to provide transparency and clarity regarding their progress on execution of the grid modernization base commitment and to gauge the direct impact to customers of the grid modernization base commitment investments (Companies Brief at 103).

Further, the Companies argue that their proposed metrics are appropriate for measuring progress with respect to the grid modernization base commitment (Companies Brief at 105). The Companies maintain that they used appropriate design criteria to develop the proposed metrics (i.e., whether the metric is objectively measurable, whether the metric contains a starting point or baseline from which the Companies will be able to measure progress, and whether the metric is within the Companies' control and related to the grid modernization base commitment) (Companies Brief at 105, 326-327; Tr. 10, at 2094). In addition, the Companies assert that 14 additional metrics proposed by the intervenors also

meet these design criteria and, therefore, merit Department consideration (Companies Brief at 106, 326, citing Exh. DPU-41-7 (Supp.)).²¹¹

The Companies argue that, contrary to the intervenors' contentions, it is not appropriate to adopt metrics that pertain to the grid modernization objectives outlined in D.P.U. 12-76 (Companies Brief at 327-330, 407, 410, 417 418; Companies Reply Brief at 82, 91-92). Specifically, the Companies maintain that the Department's directives on metrics in D.P.U. 12-76-B apply to a grid modernization model that includes targeted cost recovery of a short term investment plan; whereas, in the present proceeding, the Companies developed the metrics to measure performance under a PBR (Companies Reply Brief at 91-92). The Companies contend that their failure to meet the grid modernization base commitment could serve as a basis for the Department to terminate the PBR and, therefore, the Companies argue that measuring performance using metrics outside of the Companies control would have consequences that were not considered in D.P.U. 12-76 (Companies Reply Brief at 92).

Finally, the Companies argue that an important goal of the PBR is to provide the Companies with the resources they need to undertake the foundational investments necessary to enable the Department's grid modernization objectives (Companies Brief at 326). The Companies contend that, consistent with Department precedent regarding incentive regulation, their proposed grid modernization performance metrics are appropriately designed to measure

²¹¹ The Companies maintain that three of the ten metrics proposed by Acadia Center and four of the six metrics proposed by CLF are appropriate to track for informational purposes (Companies Brief at 390, citing RR-CLF-2; RR-AC-2).

the achievement of this goal (Companies Brief at 323-324, 326, citing D.P.U. 94-158). The Companies assert that the proposed metrics provide measurable performance indicators and targets to evaluate progress on the grid modernization base commitment and goals of the PBR (Companies Brief at 105, 331, citing Exh. ES-GMBC-1, at 134).

vi. Stakeholder Process

The Companies do not oppose adoption of the Attorney General's recommendations to create a more robust stakeholder process, but state that amendments to the stakeholder process are not a basis for rejecting the grid modernization base commitment proposal (Companies Brief at 394). In addition, the Companies maintain that the level of coordination needed to develop the statewide three-year energy efficiency plans is not the same as the level of coordination needed for the grid modernization base commitment and, therefore, they oppose the creation of a stakeholder process modeled after the Energy Efficiency Advisory Council (Companies Brief at 414-415).

3. Analysis and Findings

The Department's review of the Companies' proposed grid modernization investments, including the base commitment proposal in the instant case, is guided by the grid modernization objectives outlined in D.P.U. 12-76. These objectives include: (1) reducing the effects of outages; (2) optimizing demand, which includes reducing system and customer costs; (3) integrating distributed resources; and (4) improving workforce and asset management. D.P.U. 12-76-B at 9. Progress toward meeting these objectives will enable customers to realize the benefits of grid modernization and advance policy goals and

statutory mandates regarding energy efficiency, renewable energy resources, demand response, electricity storage, microgrids, and electric vehicles. D.P.U. 12-76-B at 9.

In the instant proceeding, the Companies maintain that the investments proposed as part of the grid modernization base commitment will serve as foundational, first-step initiatives to enable the long-term achievement of the Department's grid modernization objectives (Exhs. ES-GMBC-1, at 17; DPU-42-1). The Companies state that the proposed base commitment investments are intended to be consistent with the Department's grid modernization objectives, with a particular emphasis on technologies and investments that achieve multiple grid modernization objectives (Exh. ES-GMBC-1, at 47-48).

In addressing cost recovery of grid modernization investments, the Department seeks to align an electric distribution company's investment priorities with the interests and needs of its customers. D.P.U. 12-76-A at 27. To achieve these results, the Department identified a capital cost tracker as the appropriate mechanism through which the electric distribution companies would recover eligible grid modernization costs. D.P.U. 12-76-B at 22-23. The Department concluded that a capital cost tracker would reduce a company's risk associated with grid modernization investments, while avoiding the significant disadvantages of a future-test-year ratemaking approach. D.P.U. 12-76-B at 22-23.

As described above, the Companies cost recovery proposal for the grid modernization base commitment investments is different from the mechanism envisioned in D.P.U. 12-76. Instead of a capital cost tracker, the Companies propose to spend \$400 million in incremental grid modernization capital investments over five years and to absorb the revenue requirement

associated with these investments through the PBR until their next rate case (Exh. ES-GWPP-1, at 9-14).

Intervenors expressed various concerns with the inclusion of the grid modernization base commitment in the PBR. For example, the Attorney General, Cape Light Compact, CLF, DOER, NECEC, and UMass maintained that there are no assurances that the Companies will make the proposed investments and no financial penalties if they do not (Attorney General Reply Brief at 92; Cape Light Compact Brief at 50-51; CLF Brief at 16, 27-28; DOER Brief at 18-20; NECEC Brief at 22; UMass Brief at 9). Further, UMass contends that, even if the Companies refund to ratepayers any unspent portion of the \$400 million commitment, ratepayers bear greater upfront risks than shareholders by including these investments in the PBR (UMass Brief at 4-5). Acadia Center, CLF, DOER, and NECEC assert that a capital cost tracker is more appropriate than the PBR to recover any approved grid modernization spending (Acadia Center Brief at 13-14; CLF Brief at 51; DOER Brief at 20-24; NECEC Brief at 19-26). Acadia Center, Choice Energy, CLF, DOER, NECEC, and RESA argue that a capital cost tracker approach would allow cost recovery for eligible grid modernization investments in a manner that also provides appropriate opportunities for stakeholder involvement and Department oversight (Acadia Center Brief at 13-14; Choice Energy Brief at 25-27; CLF Brief at 51; DOER Brief at 20-24; NECEC Brief at 19-26; RESA Brief at 35-38). As part of implementing this approach, NECEC maintains that the Department should convert the Companies' spending commitment targets into spending caps, asserting that this would provide flexibility to address changing

circumstances and would reduce the Companies' incentive to make investments based on ratemaking treatment instead of need (NECEC Brief at 24-26).

The Companies maintain that there is sufficient evidence to support inclusion of their grid modernization base commitment in the PBR (Companies Brief at 373, 403).

Nonetheless, the Companies do not oppose recovery of their grid modernization investments through a capital cost tracker and the associated adjustments to the X factor needed to remove the grid modernization investments from the PBR (Companies Brief at 403; RR-DPU-3; Tr. 2, at 252-268).

For the reasons discussed below, the Department finds that it is not in the public interest to include the grid modernization base commitment investments as part of the PBR. Instead, we will address the substance of the Companies' proposed grid modernization investments, including cost recovery, as part of our forthcoming Order in the Companies' grid modernization proceeding, D.P.U. 15-122.²¹² As discussed in Section IX.D.5.a above, the Department has made an appropriate adjustment to the Companies' PBR formula to remove the stretch factor associated with the proposed \$400 million base commitment investment.

At the outset, the Department appreciates Eversource's commitment to address the significant changes that will increase the amount of distributed energy resources on its distribution system and its proposed grid modernization base commitment under the PBR as

²¹² Notwithstanding our findings here regarding removal of the grid modernization base commitment investments from the PBR, the Department addresses the Companies' storage and electric vehicle proposals in the Sections X.C and X.D below.

means to address these changes (Exh. ES-GMBC-Rebuttal at 5). Eversource's proposal acknowledges that modernization of the electric grid is a complex and long-term endeavor. The Companies state that their grid modernization base commitment proposal is not designed to achieve an end-state vision of the modern electric grid but is merely a first-step grid modernization enablement plan (Exh. ES-GMBC-1, at 132). The Companies recognize that additional learning is required to ensure optimal solutions for grid modernization (Exhs. ES-GMBC-1, at 46-47; NECEC-4-1).

As several intervenors note, there is significant uncertainty regarding implementation of the Companies' grid modernization base commitment (Attorney General Brief at 4; Attorney General Reply Brief at 92; Cape Light Compact Brief at 15, 50-51; CLF Brief at 16, 27-28; DOER Brief at 18-20, 28-31; UMass Brief at 9). In particular, there is uncertainty surrounding the projected costs and anticipated benefits of many of the proposed grid modernization investment (Exhs. DPU-43-6; DPU-43-7; DPU-43-10; AG-18-19; AG-18-20; AG-32-2; Tr. 2, at 377). The Department agrees with the Companies that a certain amount of uncertainty is inherent when planning for future deployments of technology (Companies Brief at 383).²¹³ Given this uncertainty, however, it is essential that the

²¹³ In D.P.U. 12-76, the Department anticipated some uncertainty with regard to costs, savings, and benefits for planned grid modernization investments. In particular, we acknowledged that electric distribution companies and stakeholders may have difficulty in evaluating unquantifiable benefits across companies. D.P.U. 12-76-C at 25. Further, the Department recognized uncertainty in estimating quantifiable benefit variables as well. D.P.U. 12-76-C at 22. To address this uncertainty, the Department directed the electric distribution companies to present costs and benefits at a level of granularity that strikes an appropriate balance between enabling review of

Department establish a robust regulatory review and stakeholder process for the grid modernization investments. Such process will ensure that the investments will be implemented in a manner that achieves measurable, cost-effective progress towards our grid modernization objectives and will provide the necessary confidence that the investments will result in benefits to customers that justify the costs.

Eversource proposes to address the uncertainty in its proposal, through a project screening and stakeholder process, with periodic reporting to the Department (Companies Brief at 378-379; Exhs. ES-GMBC-Rebuttal at 22; DPU-60-8). Through the project screening and stakeholder processes, the Companies maintain that they will not invest in any project until the costs and benefits are better understood (Exhs. ES-GMBC-1, at 87; DPU-29-1). The intervenors maintain that the process proposed by the Companies does not provide sufficient assurances that benefits to ratepayers will accrue (Attorney General Brief at 4, 38-39; Attorney General Reply Brief at 92; Cape Light Compact Brief at 50-51; CLF Brief at 16, 22, 27-28; DOER Brief at 18-20; UMass Brief at 9). As discussed further below, the Department finds that removing the grid modernization investments from the PBR will facilitate the necessary Department oversight and stakeholder input regarding the grid modernization investments (Tr. 2, at 252, 370-371; RR-DPU-3).

With the inclusion of grid modernization investments in the PBR, the Companies' primary focus would be on a commitment to undertake capital investments to meet a pre-determined \$400 million spending target. However well intentioned, the Department

the proposed investments while reflecting the relatively high-level nature of the plans and the uncertainty inherent in planning estimates. D.P.U. 12-76-C at 38.

finds that the Companies' commitment to a pre-determined amount of grid modernization spending over the next five years is misplaced. Instead of a commitment to spend, the Companies must focus on a commitment to achieve the greatest benefit from their grid modernization investments (see Tr. 2, at 328). The Department finds that this shift in focus can be best achieved by removing the grid modernization base commitment from the PBR.

The Attorney General and CLF opine that because the Companies' grid modernization base commitment is included in the PBR, there are no ties between the investment and any quantitative improvements in service reliability, resiliency, energy efficiency, environmental benefits or resource diversity (Attorney General Brief at 4, 38-39; CLF Brief at 22).

Eversource accepts that its proposed metrics are primarily designed to measure performance under the PBR (Companies Reply Brief at 91-92). Nonetheless, the Companies maintain that they have proposed to adopt a number of metrics that are designed to provide information regarding their grid modernization investment activities and measure progress towards their grid modernization base commitment goals (Exhs. ES-CAH-1, at 7; ES-GWPP-1, at 19; ES-GMBC-1, at 132, 135; ES-GMBC-2, at 74; ES-GMBC-3, at 1-6).

The Department finds that more robust metrics are needed to adequately measure the Companies' progress toward achieving the Department's grid modernization objectives.²¹⁴

²¹⁴ In D.P.U. 12-76-B at 30-34, the Department directed the electric distribution companies to include as part of their grid modernization plans, proposed metrics to measure progress towards achieving the Department's four grid modernization objectives. The Department directed the distribution companies to propose two types of company-specific metrics: (1) infrastructure metrics that track the implementation of grid modernization technologies and systems; and (2) performance metrics that measure progress towards the objectives of grid modernization. D.P.U. 12-76-B

By removing the grid modernization base commitment from the PBR, the Department will be able to comprehensively address grid modernization performance metrics for all distribution companies in a consistent manner.

Finally, we find that by removing the Companies' proposed grid modernization base commitment investments from the proposed PBR and reviewing the same in the context of the D.P.U. 15-122 proceeding affords the Department the ability to address all of the Companies' proposed grid modernization investments together (i.e., the proposed base commitment investments in D.P.U. 17-05 together with the remaining investments in D.P.U. 15-122). On that basis, the Department will be better able to assess issues that affect grid modernization as a whole. For instance, investments which are arguably business as usual are relevant to the definition of what constitutes grid modernization for cost recovery purposes and these issues are more appropriately considered in the context of a review of the Companies' complete grid modernization plan. In addition, the Department will be better able to address how the Companies' complete grid modernization plan complies with the Department's grid modernization objectives, including the Companies' approach to achieving advanced metering functionality.

at 30. In addition, the Department directed the distribution companies to jointly propose statewide metrics and identified 15 specific statewide metrics for the distribution companies to consider adopting as part of their grid modernization plans. D.P.U. 12-76-B at 30-32. Although the Companies maintain that they are willing to adopt certain of the statewide metrics, the Companies proposed metrics do not include any of the joint statewide performance metrics developed pursuant to D.P.U. 12-76-B (Exh. ES-GMBC-3; RR-DPU-2, Att.).

Therefore, with the exception of the energy storage and electric vehicle proposals addressed below, the Department declines to make any findings in this case regarding pre-approval of the proposed budgets or investments included in the grid modernization base commitment. Rather, for the reasons stated above, the Department will address these issues in our forthcoming Order in D.P.U. 15-122.²¹⁵

In the future, as we gain experience with grid modernization, it may be appropriate to include grid modernization investments together with other capital investments in a PBR. However, given our expectations that grid modernization will evolve substantially over the next five years, the Department finds that a more robust review of grid modernization investments than can be afforded by including these investments in the PBR is necessary in the short term. Accordingly, based on the above, the Department finds that it is in the public interest to address the Companies' proposed grid modernization base commitment investments outside of the PBR.

Consistent with this finding, the Department will address the structure of the grid modernization regulatory review process in the context of our review of the proposed grid modernization investments in our forthcoming Order in D.P.U. 15-122. In that Order, the Department intends to establish an appropriate cost recovery mechanism for eligible grid modernization investments that, to the extent practicable, will be consistent for all electric distribution companies. In addition, the Department intends to establish a uniform grid

²¹⁵ In reaching these findings, the Department will rely on the relevant portion of the record in the instant case as well as the evidentiary record in the Companies' grid modernization proceeding, D.P.U. 15-122.

modernization stakeholder process for all electric distribution companies. Finally, the Department will address more robust grid modernization performance metrics. In all, the Department finds that this process will ensure that the Companies' investments will be aligned with the Department's grid modernization objectives and will provide benefits to customers.

C. Energy Storage Demonstration Program

1. Companies Proposal

a. Introduction

The Companies propose to invest \$100 million over five years on an energy storage demonstration program to investigate the ability of energy storage facilities: (1) to provide distribution reliability; and (2) to address power quality and voltage stability issues arising from the deployment of intermittent distributed energy resources on their distribution system (Exh. ES-GMBC-1, at 70-74). The Companies have identified four projects in the following locations: Martha's Vineyard, Wellfleet, New Bedford and Pittsfield (Exh. ES-GMBC-1, at 71-72). Eversource anticipates that the four projects under consideration will exhaust the entire \$100 million budget; however, if costs decline, Eversource proposes to identify additional projects to meet its total grid modernization base commitment (Exh. ES-GMBC-1, at 90).

The Companies state that final determination of what projects will be undertaken will be based on a three-phase feasibility analysis that will be conducted for each potential location (Exhs. ES-GMBC-1, at 87; DPU-29-1). In the initial phase of the feasibility analyses, the Companies state that they will: (1) further define the system challenges faced

by each location; (2) create a conceptual system design; and (3) refine preliminary estimates of each project's costs and benefits (Exh. DPU-29-1). In the second phase of the feasibility analyses, the Companies state that they will complete a more detailed engineering evaluation to: (1) better define system needs and identify the storage systems that would meet these needs; and (2) further refine each project's costs and benefits (Exh. DPU-29-1). Finally, in the third phase of the feasibility analyses, the Companies state that they will create a detailed cost and schedule analyses that will form the basis for the decisions to proceed (Exh. DPU-29-1). For projects that proceed beyond the third phase of analysis, the Companies state that they will (1) finalize engineering designs, cost estimates, and schedules, and (2) pursue the permits and approvals necessary to site and complete the projects (Exh. DPU-29-1).

Eversource states that it will meet with stakeholders annually as part of the proposed stakeholder process described above, to discuss the Companies' progress in identifying the energy storage projects that they expect to deploy (Exh. DPU-30-17, at 1, RR-DPU-24 & Att.). The Companies state that they will provide sufficient information to allow stakeholders to understand the Companies' decision-making process in this regard (Exh. DPU-30-17, at 1, RR-DPU-24 & Att.). In addition, the Companies state that they will notify the Department of the projects selected for deployment as part of the annual grid modernization base commitment report filings (Exhs. ES-GMBC-1, at 89, DPU-30-17, at 1-2).

The Companies state that for each project that is implemented, they will complete a project development evaluation within twelve months of the project's commercial operation

date (Exh. ES-GMBC-1, at 85).²¹⁶ Finally, the Companies state that they will complete a project operations evaluation within 24 months after completion of the project (Exhs. ES-GMBC-1, at 85-86; ES-GMBC-7).²¹⁷

b. Proposed Projects

i. Martha's Vineyard

Martha's Vineyard currently is served by four undersea distribution cables and five 2.5 megawatt ("MW") emergency diesel generators (Exh. ES-GMBC-1, at 78). The Companies propose a two-phase approach to deploy energy storage on the island in order to investigate how this technology can be used to: (1) avoid the need to upgrade or add undersea cables; (2) replace diesel generators; and (3) integrate additional distributed energy resources (Exh. ES-GMBC-1, at 79-80). The Companies state that the cost estimates for the Martha's Vineyard location were developed by a consultant who designed the preliminary system specifications based on a power-flow study of the distribution system in the area (Exh. ES-GMBC-1, at 80-81).

During the first phase of the demonstration project, the Companies propose to deploy, at an estimated cost of \$10 million to \$15 million, a 5.0 MW storage facility to test the ability of this technology to replace two of the five emergency diesel generators (Exhs. ES-GMBC-1, at 80; ES-GMBC-7, at 2). The Companies expect that deployment of

²¹⁶ The Companies state that the project development evaluation will review the siting and permitting process, the engineering and design process, the commercial strategies employed, the construction process, and the operational turnover process (Exh. ES-GMBC-1, at 85).

²¹⁷ The Companies state that the project operations evaluation will be used to determine whether each project fulfilled its intended functions (Exh. ES-GMBC-1, at 85-86).

the phase one facility will occur in late 2018 or early 2019 (Exh. ES-GMBC-1, at 80).

During the second phase of the demonstration project, the Companies propose to deploy, at an estimated cost of \$20 million to \$30 million, a 10 MW storage facility to test the ability of this technology to: (1) replace the remaining three emergency diesel generators; and (2) further defer the need to upgrade the existing undersea cables or construct additional cables (Exhs. ES-GMBC-1, at 80; ES-GMBC-7, at 3). The Companies expect that deployment of the phase two facility will occur in 2022 (Exh. ES-GMBC-1, at 80)

ii. Wellfleet

The Wellfleet substation serves customers located on outer Cape Cod (Exh. ES-GMBC-1, at 81). Currently, a single 115 kV line and a backup 23 kV line from the Orleans substation serve the Wellfleet substation (Exh. ES-GMBC-1, at 81). The Companies state that in scenarios where they lose use of the 115 kV line, the 23 kV backup line has insufficient capacity to fully meet demand without exceeding the specified load flow limit and subjecting customers to unacceptably low voltage (Exh. ES-GMBC-1, at 81).

Based on an analysis provided by a third-party consultant, the Companies propose to deploy, at an estimated cost of \$35 million to \$45 million, a 12 MW energy storage facility at the Wellfleet substation to test how this technology can be used to provide capacity when the Companies lose use of the 115 kV line (Exh. ES-GMBC-1, at 81-82).²¹⁸ The Companies expect that deployment of this facility will occur in 2020 or 2021 (Exh. ES-GMBC-1, at 82).

²¹⁸ The Companies state that the consultant who designed the preliminary system specifications, developed the costs estimates based on a power-flow study of the distribution system in the area (Exh ES-GMBC-1, at 82).

iii. New Bedford

The Companies state that the Business Drive substation in New Bedford currently is experiencing power quality issues (e.g., intermittent short outages, transient voltage dip, and surge conditions) that affect certain C&I customers served by the substation (Exh. ES-GMBC-1, at 82). Based on a preliminary evaluation, the Companies are considering deploying, at an estimated cost of \$10 million to \$15 million, a 6.0 MW energy storage facility at this New Bedford substation to test how this technology can be used to address the identified power quality issues (Exh. ES-GMBC-1, at 82-83). The Companies state that this project is in the early stages of development and that they expect to have further developed cost estimates upon completion of a detailed analysis of the project by a third-party consultant (Exh. ES-GMBC-1, at 83).

iv. Pittsfield

The Companies state that the Partridge Road substation in Pittsfield has a large amount of distributed energy resources connected to its circuits that cause momentary fluctuations in voltage (Exh. ES-GMBC-1, at 83-84). Based on their preliminary evaluation, the Companies are considering deployment, at an estimated cost of \$10 million to \$15 million, of a 6.0 MW energy storage facility at the Partridge Road substation to test how this technology can be used to address the identified power quality issues and better integrate distributed energy resources (Exh. ES-GMBC-1, at 83-84). Like the New Bedford project, the Companies state that this project is in the early stages of development and that they expect to have further developed cost estimates upon completion of a detailed analysis of the project by a third-party consultant (Exh. ES-GMBC-1, at 83-84).

2. Positions of the Parties

a. Intervenors

A number of intervenors recommend that the Department either reject or significantly modify the Companies' energy storage proposal (Attorney General Brief at 40-43; Attorney General Reply Brief at 92-94; Acadia Center Brief at 14-18; Cape Light Compact Brief at 24-39; Cape Light Compact Reply Brief at 6-7; Choice Energy Brief at 25-27; CLF Brief at 49-51; DOER Brief at 32-33; DOER Reply Brief at 17-18; NECEC Brief at 26; NECEC Reply Brief at 5-8; Sunrun and EFCA Brief at 15-16; Sunrun and EFCA Reply Brief at 6-7; RESA Brief at 35-38; RESA Reply Brief at 8-9; TEC and WMIG Brief at 18-19). The Attorney General, Acadia Center, Cape Light Compact, CLF, and DOER maintain that the Companies did not provide sufficient information for the Department to determine whether the proposed storage projects will benefit ratepayers and are in the public interest (Attorney General Brief at 41-42 Attorney General Reply Brief at 92-94; Acadia Center Brief at 15-16; Cape Light Compact Brief at 35-38; Cape Light Compact Reply Brief at 6-7; CLF Brief at 50-51; DOER Brief at 32-33; DOER Reply Brief at 17-18;). The Attorney General argues that, while the Companies commit to providing detailed cost estimates before proceeding with each storage project, Eversource makes no comparable commitment to provide detailed project benefits (Attorney General Brief at 41-42; Attorney General Reply Brief at 92-94). In addition, the Attorney General maintains that the Companies' likely share of the statewide energy storage targets to be established by DOER is approximately \$200 million and 350 MW (Attorney General Brief at 42). The Attorney General asserts that it is not reasonable for the Companies to spend half of that amount on demonstration projects for only

30 to 40 MW of storage, with no assurance of customer benefit or operational success (Attorney General Brief at 41; Attorney General Reply Brief at 92-94).

Cape Light Compact, Choice Energy, and RESA argue that Eversource's storage proposal is contrary to state and federal laws and policies (Cape Light Compact Brief at 25-31; Cape Light Compact Reply Brief at 6-7; Choice Energy Brief at 25-27; Choice Energy Reply Brief at 10-12; RESA Brief at 36-38; RESA Reply Brief at 8-9). In particular, Cape Light Compact asserts that the proposal is contrary to the provisions of G.L. c. 164, Acts of 1997 ("Restructuring Act") related to the exercise of vertical market power by distribution companies (Cape Light Compact Brief at 25-27; Cape Light Compact Reply Brief at 6-7). Specifically, Cape Light Compact argues that, because Eversource would control both the energy provided by the storage facilities and the delivery of that energy to customers, the project would vertically integrate energy resources with the distribution system, in contravention of the Restructuring Act (Cape Light Compact Brief at 25-28; Cape Light Compact Reply Brief at 6-7). Further, Cape Light Compact argues that Eversource could use its position as a monopoly distribution service provider to gain advantage over competitive entities (e.g., it could use one of the proposed energy storage sites to favor the Companies' own solar projects) (Cape Light Compact Brief at 29-31, 33-34; Cape Light Compact Reply Brief at 6-7). RESA argues that the Companies' proposal is not a plan to integrate distributed energy resources; instead it is a plan to develop a market resource (RESA Brief at 35-36; RESA Reply Brief at 8-9).

Cape Light Compact and RESA also assert that the proposal is in direct conflict with evolving federal energy market policy geared at facilitating the participation of storage and other distributed energy resources in the wholesale electricity markets (Cape Light Compact Brief at 25-26; Cape Light Compact Reply Brief at 6-7; RESA Brief at 36-37; RESA Reply Brief at 8-9).²¹⁹ Cape Light Compact and RESA contend that the Companies seek to participate in the wholesale markets in direct competition with third-party providers, in a manner that exceeds the services lawfully provided by a distribution company (Cape Light Compact Brief at 26-27; Cape Light Compact Reply Brief at 6-7; RESA Brief at 37; RESA Reply Brief at 8-9).

Cape Light Compact, NECEC, and RESA argue that the energy storage proposal is deficient because it excludes or does not facilitate participation by third-party-owned energy storage, which could provide distribution reliability functions (Cape Light Compact Brief at 28-31; Cape Light Compact Reply Brief at 6-7; NECEC Brief at 26-33; NECEC Reply Brief at 5-8; RESA Brief at 35-38; RESA Reply Brief at 8-9). Further, RESA asserts that, in D.P.U. 12-76- at 33, the Department found that distributed energy resources such as storage would be developed by third parties and not distribution companies (RESA Brief at 36; RESA Reply Brief at 8-9). In addition, Cape Light Compact and NECEC contend that the proposal would not remove existing barriers to customer investment in storage systems or to third-party investment in aggregated, customer-sited storage solutions (Cape Light

²¹⁹ Cape Light Compact and RESA cite a notice of proposed rulemaking issued by FERC: Electric Storage Participation in Markets Operated by Regional Transmission Organizations and Independent System Operators, Notice of Proposed Rulemaking, 157 FERC ¶ 61,121 (November 17, 2016) (“FERC NOPR”).

Compact Brief at 28-31; Cape Light Compact Reply Brief at 6-7; NECEC Brief at 26-31; NECEC Reply Brief at 5-8). NECEC recommends that the Department require the Companies to file a revised proposal that incorporates customer and third-party owner of energy storage assets (NECEC Brief at 26; NECEC Reply Brief at 5-8).

NECEC further argues that the Companies' energy storage proposal is not designed to demonstrate the relative costs and benefits of different business models and uses for energy storage and, therefore, the Companies are missing an important opportunity to test approaches that could unlock future energy storage development in the Commonwealth (NECEC Brief at 26-30; NECEC Reply Brief at 5-8). Accordingly, NECEC asserts that the Department should direct the Companies to refocus their energy storage proposal in order to test diverse business models that support energy storage development rather than deploying utility-owned storage assets, including third-party ownership of energy storage assets (NECEC Brief at 26-27; NECEC Reply Brief at 5-8).

Acadia Center argues that, to ensure progress towards grid modernization and a clean energy future, the Department should permit the Companies' to implement only one of the four proposed storage projects and add a second project that would use a competitive solicitation to procure clean resources (Acadia Center Brief at 17-18). CLF argues that, given the importance of energy storage to the achievement of the Commonwealth's energy and climate goals, the Department should direct the Companies to file a stand-alone, comprehensive energy storage integration plan (CLF Brief at 49-51). DOER maintains that, while it conceptually supports the inclusion of energy storage in the Companies' grid

modernization plan, the Department should require the Companies to submit a compliance filing that includes a comprehensive analysis of the costs and benefits of the proposed storage projects (DOER Brief at 31-33; DOER Reply Brief at 18). Sunrun and EFCA argue that the Department should direct the Companies to implement the proposed storage program but should not pre-approve recovery of costs until the Companies provide cost-effectiveness and business cases analyses (Sunrun and EFCA Brief at 15-16; Sunrun and EFCA Reply Brief at 6-7). TEC and WMIG argue that the Companies' have not shown that the proposed energy storage investments are prudent or beneficial to ratepayers, or minimize the risk of stranded costs (TEC and WMIG Brief at 18-20).

b. Companies

The Companies argue that their energy storage proposal will help foster the market for energy storage in Massachusetts, while enabling the Companies to obtain real-time operating data that will be critical in evaluating future energy storage deployments (Companies Brief at 77-78). The Companies maintain that energy storage provides an opportunity to fundamentally change the way they plan for and deliver electricity to customers (Companies Brief at 83). The Companies assert that their proposal will result in standard protocols to evaluate the installation of energy storage systems in locations that are challenged to integrate additional distributed energy resources or facing transmission or distribution upgrades (Companies Brief at 78). Accordingly, the Companies maintain that their proposal meets the Department's grid modernization objectives of integrating distributed energy resources and improving workforce and asset management (Companies Brief at 77).

The Companies argue that they selected the potential storage project locations in order to demonstrate the ability of energy storage to: (1) offset new upgrades to their distribution system; (2) eliminate the use of aging diesel generators that produce greenhouse gas emissions; and (3) address intermittency and smooth voltage from distributed energy resource installations (Companies Brief at 381-382). The Companies further maintain that the proposed projects are designed to be implemented in two phases in order to prioritize the projects with the longest critical path schedules and allow the Companies to incorporate the lessons learned from the initial projects into the analyses of the second phase projects (Companies Brief at 384-385).

In response to arguments that additional analysis is required before Department approval, the Companies assert that their proposed three-phase feasibility analysis process will: (1) refine the design and cost estimates associated with the projects; and (2) identify and evaluate both quantifiable benefits (e.g., avoided transmission or distribution costs) and difficult to quantify benefits (e.g., benefits related to integration of distributed energy resources or enhancement of local power quality reliability) (Companies Brief at 379-382; Companies Reply Brief at 76). The Companies maintain that this feasibility analysis will ensure that the necessary information to assess the cost effectiveness or business case for each project is available prior to construction (Companies Reply Brief at 77-78). Further, the Companies contend that the projects will not move forward until the level of detail on costs and benefits is sufficient for their internal review process and that the Department will retain oversight of program expenditures, including pre- and post-construction cost variances

(Companies Brief at 384; Companies Reply Brief at 76). The Companies assert that benefits associated with grid modernization are difficult to measure and that lack of data concerning these new technologies should not be grounds for rejecting the proposal (Companies Brief at 383, 404).

In response to the arguments regarding conflict with state and federal laws and policies, the Companies assert that their proposed energy storage demonstration program is not designed to act as a generation asset. Instead, the Companies maintain that the proposed energy storage projects are designed, among other things, to integrate distributed energy resources in locations where such integration is becoming cost prohibitive (Companies Brief at 396; Companies Reply Brief at 81). In addition, the Companies argue that Section 9 of an Act to Promote Energy Diversity, Acts of 2016, c. 188 (“Energy Diversity Act”) explicitly excludes “an energy storage system procured by a distribution company for support in delivering energy services to end users” from the definition of “generation facility” (Companies Reply Brief at 80).

Finally, the Companies assert that any arguments that they are attempting to use energy storage to the disadvantage of other market participants, are without merit (Companies Brief at 396; Companies Reply Brief at 81). The Companies maintain that their proposal will not preclude third-party energy storage opportunities (Companies Brief at 395-396). Instead, the Companies argue that their proposal to explore utility-owned storage in the instant case, together with their proposal to explore non-utility-owned storage as part of their demand reduction demonstration project in D.P.U. 16-178, will allow Eversource to compare these

models when considering the future use of energy storage on its distribution system (Companies Brief at 395-396; Companies Reply Brief at 79). The Companies contend that their proposal to test utility-owned storage first, and then to use this experience to evaluate commercial models later, is appropriate for technology at this early stage of development (Companies Reply Brief at 79).

3. Analysis and Findings

a. Introduction

Eversource states that its proposed energy storage demonstration program is intended to foster the market for energy storage in the Commonwealth by enabling the Companies to (1) obtain real-time data on the operation of energy storage facilities, and (2) develop a model for the deployment of such facilities in the future (Exh. ES-GMBC-1, at 70). The Companies propose to implement the demonstration program in two stages (Companies Brief at 384-385). The first stage includes: (1) phase one of the Martha's Vineyard project, in which the Companies propose to deploy an energy storage facility in late 2018 or early 2019; and (2) the Wellfleet project, in which the Companies propose to deploy an energy storage facility in late 2020 or 2021 (Exh. ES-GMBC-1, at 78-82). The second stage of the demonstration program includes: (1) phase two of the Martha's Vineyard project, in which the Companies expect to deploy an energy storage facility in 2022; (2) the New Bedford project; and (3) the Pittsfield project. The Companies did not specify proposed deployment dates for either the New Bedford project or the Pittsfield project (Exh. ES-GMBC-1, at 82-84). The Companies maintain that they designed the demonstration program to be

implemented in stages in order to allow them to incorporate lessons learned from the first stage projects into the analysis of the second stage projects (Companies Brief at 384-385).

The Companies request that the Department pre-authorize the entire proposed energy storage demonstration program as reasonable and appropriate and, therefore, any investments in energy storage under the program would be eligible for inclusion in rate base in the Companies' next base rate proceeding (Exh. ES-GMBC-1, at 20).²²⁰ In addition, the Companies request that the Department find that the proposed \$100 million budget for the energy storage demonstration program is reasonable (Exh. ES-GMBC-1, at 20).

Intervenors raise several concerns about the proposed energy storage demonstration program. In particular, the Attorney General, Acadia Center, Cape Light Compact, Choice Energy, CLF, DOER, NECEC, RESA, and TEC and WMIG argue that the Companies have provided insufficient information regarding the costs and likely benefits of the proposed demonstration projects to determine whether they are in the public interest (Attorney General Brief at 40-43; Attorney General Reply Brief at 92-94; Acadia Center Brief at 14-18; Cape Light Compact Brief at 24-39; Cape Light Compact Reply Brief at 6-7; Choice Energy Brief at 25-27; CLF Brief at 49-51; DOER Brief at 32-33; DOER Reply Brief at 17-18; NECEC Brief at 26; NECEC Reply Brief at 5-8; RESA Brief at 35-38; RESA Reply Brief at 8-9; TEC and WMIG Brief at 18-19). In addition, Acadia Center, Cape Light Compact, CLF,

²²⁰ The Companies state, however, that they are not requesting that the Department pre-authorize the specific energy storage projects identified in their filing (Exh. ES-GMBC-1, at 20). Instead, the Companies request that the Department find that the Companies' decision to invest in the energy storage demonstration program is reasonable (Exh. ES-GMBC-1, at 20).

Choice Energy, NECEC and RESA argue that the Companies proposal is contrary to state and federal laws and policies, the Department's grid modernization directives, or the Commonwealth's energy and climate goals (Acadia Center Brief at 17-18; Cape Light Compact Brief at 25-31; Cape Light Compact Reply Brief at 6-7; CLF Brief at 49-51; Choice Energy Brief at 26-27; NECEC Brief at 26-27; NECEC Reply Brief at 5-8; RESA Brief at 35-38; RESA Reply Brief at 8-9).

In NSTAR Electric Company and Western Massachusetts Electric Company, D.P.U. 16-178 (2017),²²¹ the Department summarized the factors it considers when evaluating a proposed demonstration project. In evaluating the Companies' proposed energy storage demonstration program, the Department will consider the following criteria: (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. See D.P.U. 16-178, at 16.

b. Consistency with Applicable Laws, Policies, and Precedent

Cape Light Compact, Choice Energy, and RESA assert that Eversource's proposed energy storage demonstration program is in contravention to state and federal laws and policies related to distribution company ownership of energy storage facilities and the potential for the exercise of vertical market power (Cape Light Compact Brief at 25-31; Cape

²²¹ In D.P.U. 16-178, at 42-43, the Department approved, as part of the three-year energy efficiency plans, Eversource's proposal to implement demand reduction demonstration offerings for large C&I customers in four areas: (1) battery storage; (2) thermal storage; (3) software and controls; and (4) active demand response.

Light Compact Reply Brief at 6-7; Choice Energy Brief at 26-27; RESA Brief at 35-38; RESA Reply Brief at 8-9). With respect to state law, Section 8 of the Energy Diversity Act permits utility-owned energy storage provided that the energy storage system will “(i) reduce the emission of greenhouse gases; (ii) reduce demand for peak electrical generation; (iii) defer or substitute for an investment in generation, transmission, or distribution assets; or (iv) improve the reliable operation of the electrical transmission or distribution grid.”²²² Further, Section 9 of the Energy Diversity Act amended the definition of “generation facility” contained in G.L. c. 164 § 1 to exclude “energy storage system procured by a distribution company for support in delivering energy services to end users.” Because the primary objectives of the Companies’ proposed demonstration program are to test how energy storage facilities can (1) serve as non-wires alternatives to providing distribution reliability, and (2) address power quality issues arising from the deployment of intermittent distributed energy resources, the Department finds that the program meets the legal requirements of the Energy Diversity Act regarding distribution company ownership of energy storage assets.

With respect to state energy policy objectives, in 2015, the Commonwealth instituted an Energy Storage Initiative, the objective of which is to establish an energy storage market structure to leverage the potential benefits of energy storage at the wholesale, local distribution, and customer levels (Exh. ES-GMBC-6, at 4). The State of Charge Report, which DOER issued as part of the Energy Storage Initiative, identifies several potential

²²² Among other things, the Energy Diversity Act promotes the use of energy storage in the Commonwealth.

applications for energy storage facilities.²²³ Two of these applications relate to the potential for such facilities to (1) serve as a non-wires alternative to investments in transmission and distribution infrastructure, and (2) address power quality and reverse power flow issues that arise from the increased deployment of distributed energy resources (Exh. ES-GMBC-6, at 84, 90). Accordingly, the Department finds that the proposed energy storage demonstration program, with its specified objectives, is consistent with the energy policy objectives of the Commonwealth.

The Department notes that federal policies regarding energy storage are currently under review, including policies regarding the participation of energy storage in organized wholesale electricity markets, which is the subject of Electric Storage Participation in Markets Operated by Regional Transmission Organizations and Independent System Operators, Notice of Proposed Rulemaking, 157 FERC ¶ 61,121 (November 17, 2016) (“FERC NOPR”). The Department recognizes that the Companies likely will participate in, and receive revenues from, the wholesale markets through the operation of any deployed energy storage resources, although the Companies state that participation in the wholesale markets is not the objective of the proposed program (Exh. DPU-29-13; Tr. 8 at 1677). The Department will continue to monitor the development of federal policies regarding energy storage, including the FERC NOPR; however, we find that nothing raised by the intervenors leads us to conclude that the proposed energy storage demonstration program is in

²²³ DOER issued the State of Charge report on September 16, 2016. The full title of the report is “State of Charge: Massachusetts Energy Storage Initiative Study” (Exh. ES-GMBC-6).

contravention of any federal laws or policies related to distribution company ownership of energy storage.

Finally, in D.P.U. 12-76-B at 9, the Department stated that distribution companies could propose research, development and deployment efforts that test the ability of emerging technologies to meet the Department's grid modernization objectives. The Department finds that the proposed energy storage demonstration program is consistent with the grid modernization objectives of integrating distributed resources and improving asset management.

c. Size, Scope and Scale

i. Introduction

The Department requires distribution companies to fully support proposed pilot programs or demonstration offerings with detailed program descriptions to allow the Department and stakeholders to evaluate the reasonableness of the size, scope, and scale of the proposals in relation to the benefits to be achieved. D.P.U. 16-178, at 30; Fitchburg Gas and Electric Light Company, D.P.U. 16-184, at 11 (2017). In the absence of cost-effectiveness screenings, the Department requires detailed program descriptions and appropriate analyses to support the potential of the proposals to deliver net benefits in the future. D.P.U. 16-178, at 30; D.P.U. 16-184, at 11.

In the instant proceeding, several intervenors assert that the Companies failed to provide sufficient detail regarding program costs and benefits for the Department to determine whether the Companies' proposed energy storage demonstration program is reasonable and in the best interest of ratepayers (Attorney General Brief at 41-42; Attorney

General Reply Brief at 92-94; Acadia Center Brief at 15-16; CLF Brief at 51; DOER Brief at 32-33; DOER Reply Brief at 17-18; TEC and WMIG Brief at 18-19). In consideration of these arguments, the Department addresses the reasonableness of the size, scope and scale of each of the proposed projects below.

ii. Stage One Projects

(A) Martha's Vineyard (Phase One)

In phase one of the Martha's Vineyard project, the Companies propose to deploy, in late 2018 or early 2019, a 5.0 MW energy storage facility to test the ability of such a facility to replace two of the five diesel generators that currently serve the island, at an estimated cost of \$10 million to \$15 million (Exh. ES-GMBC-1, at 80; Exh. ES-GMBC-7, at 2). For the phase one Martha's Vineyard project, the Companies provided a detailed conceptual design report that includes: (1) a description of the electrical system that serves the island; (2) a summary of the historic performance of the undersea cables and diesel generators that serve the island; (3) a modeling of the future electrical loading on the island; (4) an analysis of the project's technical feasibility; (5) a proposed deployment approach and schedule; (6) estimated project costs; and (7) an analysis of the anticipated benefits associated with the deferral of investments in additional undersea cables and the retirement of diesel generators (Exh. AG-32-3. Att. (b) (confidential)). Cost estimates for Martha's Vineyard were based on prices provided by external consultants from analysis of industry costs for projects of this size (Exh. AG-23-13)

As noted above, the intervenors maintain that the Companies have not provided sufficient information regarding the costs and likely benefits of the proposed demonstration

projects (Attorney General Brief at 41-42; Attorney General Reply Brief at 92-94; Acadia Center Brief at 15-16; CLF Brief at 51; DOER Brief at 32-33; DOER Reply Brief at 17-18; TEC and WMIG Brief at 18-19). After review, the Department finds that the Companies have provided a sufficiently detailed description of phase one of the proposed Martha's Vineyard project, including cost estimates and analysis, to support the likely potential of this project to deliver net benefits in the future (Exhs. AG-23-13; AG-32-3, Att. (b) (confidential)).²²⁴

Further, the Department finds that the Companies have demonstrated that phase one of the proposed Martha's Vineyard project will likely generate benefits in the following areas: (1) benefits related to the retirement of diesel generators (and associated greenhouse gas emissions); (2) data and insight into the costs of integrating distributed energy resources before and after deployment of storage; (3) reliability through improved voltage regulation; (4) contingency planning; and (5) peak load reduction (Exhs. ES-GMBC-1, at 79-80; ES-GMBC-2, at 56-57; ES-GMBC-7, at 2; AG-32-3, Att. (b)). In addition, the Companies have identified Martha's Vineyard as a location where they have potential capacity needs in accordance with established reliability criteria and, therefore, have shown that phase one of the proposed Martha's Vineyard project could serve as non-wires alternative to defer upgrades to, or avoid construction of, an additional undersea cable (Exhs. DPU-29-12; AG-32-4; SREF-1-20). For these reasons, the Department finds that the Companies have

²²⁴ The Companies state that the initial feasibility analysis for Martha's Vineyard phase one will be complete in the fourth quarter 2017 (Exh. DPU-30-17).

demonstrated that phase one of the Martha's Vineyard project is reasonable in size, scope, and scale in relation to the likely benefits to be achieved.²²⁵

(B) Wellfleet

For the Wellfleet project, the Companies propose to deploy a 12.0 MW energy storage facility to test its ability to provide capacity when the Companies lose use of the 115 kV line that serves the Wellfleet substation. The Companies propose to deploy this facility in late 2020 or 2021, at an estimated cost of \$35 million to \$40 million (Exh. ES-GMBC-1, at 81-82). The Companies provided a conceptual design report for the Wellfleet project that includes: (1) a description of the electrical system in the area served by the Wellfleet substation; (2) a summary of the historic performance of the electric system that serves the area; (3) a modeling of the future electrical loading in the area; (4) an analysis of the project's technical feasibility; (5) a proposed deployment approach and schedule; (6) estimated costs; and (7) an analysis of the anticipated benefits associated with the deferral of investments in additional transmission and distribution infrastructure (Exh. AG-32-3, Att. (c) (confidential)). Similar to the Martha's Vineyard phase one project, the primary objective of the proposed Wellfleet project is to demonstrate how utility owned and operated energy

²²⁵ The Department notes that the conceptual design report is first phase of a three-phase feasibility analysis (Exhs. ES-GMBC-1, at 87; DPU-29-1, at 3-4). The later phases of this analysis will include engineering evaluations that will form the basis for the Companies' decision of whether to proceed with the project (Exh. DPU-29-1, at 3-4; AG-9-7). It should go without saying that if the later phases of this feasibility analysis do not support the prudence of the project the Companies should refrain from further implementation.

storage can be deployed to defer or avoid the need to upgrade existing transmission and distribution facilities (Exh. ES-GMBC-1, at 81).²²⁶

The Department finds that the Companies have provided a sufficiently detailed description of the Wellfleet project, including cost estimates and analysis, to support the likely potential of this project to deliver net benefits in the future (Exhs. AG-23-13; AG-32-3, Att. (c) (confidential)). In particular, the Department finds that the Companies have demonstrated that the Wellfleet project will likely generate benefits in the following areas: (1) data and insight into the costs of integrating distributed energy resources before and after deployment of storage; (2) reliability through improved voltage regulation; and (3) contingency planning (Exhs. ES-GMBC-1, at 81; ES-GMBC-2, at 57-58; ES-GMBC-7, at 3; AG-32-3, Att. (c) (confidential)). Further, like Martha's Vineyard, the Companies have identified Wellfleet as a location where they have potential capacity needs in accordance with established reliability criteria and, therefore, have shown that the Wellfleet project could serve as an alternative to the siting of an additional transmission line (Exhs. DPU-29-12; SREF-1-20).²²⁷ For these reasons, the Department finds that the Companies have

²²⁶ The Companies state their initial feasibility analysis for Wellfleet will be complete in the fourth quarter 2017 (Exh. DPU-30-17).

²²⁷ The Companies notes that this location is in or near environmentally sensitive areas that would make siting, permitting, and constructing a traditional project challenging (Exh. SREF-1-20).

demonstrated that the Wellfleet project is reasonable in size, scope, and scale in relation to the likely benefits to be achieved.²²⁸

iii. Stage Two Projects

The Companies propose to implement the New Bedford and Pittsfield projects, and phase two of the Martha's Vineyard project, in the second stage of the demonstration program (Companies Brief at 384). The Companies state that they designed the proposed energy storage demonstration program in this manner in order to allow them to incorporate lessons learned from the initial projects into the analyses of the second phase of projects (Companies Brief at 384-385).

The Companies' analysis of the costs and potential benefits of the New Bedford and Pittsfield demonstration projects consists of a vendor presentation that includes: (1) current distributed generation capacity and penetration at these sites; (2) a high-level analysis of current and future reverse powerflow; and (3) a brief overview and analysis of possible mitigation of reverse powerflow achieved by energy storage (Exh. AG-32-3, Att. (a) (confidential)). Because these projects are in the earliest phases of development, the cost estimates for these projects are based only on the estimated costs of the Martha's Vineyard phase one and Wellfleet projects (Exh. AG-23-13).

²²⁸ Like phase one of the Martha's Vineyard project, the Department notes that the conceptual design report is first phase of a three-phase feasibility analysis for Wellfleet (Exhs. ES-GMBC-1, at 87; DPU-29-1, at 3-4). Should the later phases of this feasibility analysis not support the prudence of the project the Companies should refrain from further implementation.

The Department finds that the information provided by the Companies regarding costs and likely benefits of the New Bedford and Pittsfield projects is not sufficient to analyze the size, scope, and scale. While these projects may ultimately be appropriate for implementation, they need to be further along in the development process before the Department can make such an assessment.²²⁹

With respect to phase two of the Martha's Vineyard project, the Companies plan to install a second, larger energy-storage system capable of providing 10 MW of power and 64 MWh of energy. The Companies estimate that the phase two project could be deployed in 2022, at an estimated cost of \$20 million to \$30 million (Exh. ES-GMBC-1, at 80).

The second phase of the proposed Martha's Vineyard project will target the same opportunities and customer benefits as the phase one project, but on a larger scale (Exhs. ES-GMBC-2, at 56-57; AG-23-13). Accordingly, the success or failure of the phase one project will determine whether it is reasonable to invest in phase two. For this reason, the Department is unable to assess the reasonableness of the size scope and scale of the phase two Martha's Vineyard project until the Companies have implemented and evaluated phase one of the project.

²²⁹ The Companies maintain that the New Bedford and Pittsfield sites were selected based on opportunities to bring benefits to customers through enhanced power quality and integration of additional intermittent renewable resources in areas with existing distributed energy resources (Exh. ES-GMBC-1, at 72). The phase one demonstration projects discussed above will provide similar information that should be used by the Companies in their phase two project selection process (Exhs. SREF-1-19; SREF-1-20).

iv. Third-Party Participation

Cape Light Compact, NECEC, and RESA argue that the Companies' energy storage proposal is deficient because it does not include participation by third-party owned energy storage (Cape Light Compact Brief at 25-31; Cape Light Compact Reply Brief at 6-7; NECEC Brief at 26; NECEC Reply Brief at 5-8; RESA Brief at 35-38; RESA Reply Brief at 8-9). The Companies respond that their proposal does not preclude third-party energy storage opportunities and that will they explore non-utility owned storage as part of the demand reduction demonstration project in D.P.U. 16-178 (Companies Brief at 395-396; Companies Reply Brief at 79).

In its State of Charge Report, DOER indicates that it will establish specific targets for utility ownership of energy storage (Exh. ES-GMBC-6, at 104). As part of the State of Charge Report, DOER analyzed several business models to evaluate how the economics of energy storage may vary by asset ownership, market involvement, and location (Exh. ES-GMBC-6, at 18-20). These models include energy storage systems that are (1) owned and operated by the electric distribution companies, (2) owned and operated by third party merchants, and (3) located behind customer meters (Exh. ES-GMBC-6, at 18-20). The State of Charge Report provides that, when the distribution company can dispatch these behind-the-meter systems, the systems can be used to address renewable integration and distribution upgrade deferral (Exh. ES-GMBC-6, at 168).

As noted by Eversource, the Department has recently approved demonstration projects incorporating third-party ownership of storage in D.P.U. 16-178, at 42-44.²³⁰ However, we find that there may be additional benefits to evaluating how utility owned storage and third-party owned storage could work in tandem. As discussed in Section X.B.3 above, the Department intends to establish a grid modernization stakeholder process in D.P.U. 15-122. As part of this process, the Companies and stakeholders should consider the full range of energy storage business models for demonstration project design.

d. Evaluation Plan & Performance Metrics

For any proposed demonstration program, the Department requires that a company present a detailed evaluation plan for gathering and analyzing data in a timely manner to inform the development and/or refinement of broad-scale programs and/or initiatives. D.P.U. 16-178, at 35. Eversource proposes to complete a project-specific development evaluation within twelve months of each project's commercial operations date that will consider "customary performance indicators for infrastructure construction projects," including the cost and schedule performance of the project (Exh. ES-GMBC-7, at 1). This evaluation will assess the following areas of the project development process to identify the maturity of the process and highlight areas for future improvements in the process: (1) siting and permitting; (2) engineering and design; (3) commercial strategies; (4) construction; and (5) operational turnovers (Exhs. ES-GMBC-3, at 4; ES-GMBC-7, at 2). Finally, the

²³⁰ Eversource's demand reduction demonstration program will test the ability of large C&I customers to use storage technology to reduce their usage during peak load hours. D.P.U. 16-178, at 31-33.

Companies propose to conduct a project-specific operations evaluation, to be completed within 24 months of the completion of each project, that will: (1) report the basic operational performance information related to the project; and (2) assess the extent to which the project's performance met or exceeded the specified use cases (*i.e.*, the hypotheses the project was intended to test) (Exhs. ES-GMBC-3, at 4; ES-GMBC-7, at 1-2). Based on our review, the Department finds that the Companies have presented a reasonable evaluation plan for the phase one Martha's Vineyard project and the Wellfleet project.²³¹

Finally, with respect to performance metrics for the energy storage demonstration program, the Companies propose to adopt certain metrics that measure the progress of their projects and evaluations (Exh. ES-GMBC-3, at 4). As discussed in Section X.B.3 above, the Department will discuss the sufficiency of these metrics as part of our forthcoming Order in D.P.U. 15-122.

e. Bill Impacts

The Department examines the bill impacts that customers would experience as a result of the proposed storage demonstration project to assess the reasonableness of the associated costs. The Companies have submitted a bill impact analysis allowing the Department to analyze increases to all Eversource customer rate classes (Exh. LI-1-3 & Att. (a); RR-DPU-50, Att. (e) at Exhibit ES-RDP-2 (ALT1), Schedule RDP-9 (East) & (West); RR-DPU-50, Att. (f) at Exhibit ES-RDP-3 (ALT1), Schedule RDP-3 (East) & (West); RR-DPU-50, Att. (j) at Exhibit ES-RDP-7 (ALT1), Schedule RDP-5). After review, the

²³¹ The Department anticipates that this evaluation plan may evolve somewhat over time based on feedback from stakeholders.

Department finds that, on balance, the bill impacts resulting from the phase one Martha's Vineyard project and the Wellfleet project are reasonable and the potential benefits of these proposed storage demonstration projects justify the costs to customers.

f. Conclusion

In the sections above, the Department has found that the Companies' proposed energy storage pilot program is consistent with applicable laws, policies and precedent. In addition, the Department has found that the phase one Martha's Vineyard project and the Wellfleet project are reasonable in size, scope, and scale in relation to the likely benefits to be achieved. The Department has found that the evaluation plan for these two demonstration projects is reasonable. Finally, the Department has found that the bill impacts resulting from the phase one Martha's Vineyard and Wellfleet energy storage demonstration projects are reasonable. Accordingly, the Department approves a budget not to exceed \$15 million for phase one of the Martha's Vineyard project and a budget not to exceed \$40 million for the Wellfleet project. (Exh. ES-GMBC-1, at 80, 82). As discussed in Section X.B.3 above, the Department will establish a cost recovery mechanism for eligible grid modernization investments, including energy storage demonstration projects, in our forthcoming Order in D.P.U. 15-122.

Because our approval here is based on a determination of the size, scope, and scale of the specific projects in relation to the likely benefits to be achieved, the Companies cannot allocate any unspent funds to other efforts. At the time the Companies seek final cost recovery of any energy storage demonstration program costs for the Martha's Vineyard phase

one and Wellfleet projects, they bear the burden of demonstrating the appropriateness and prudence of all spending or be subject to disallowance of such costs.

Finally, given their early stage of development, the Department has found that the information provided by the Companies regarding costs and likely benefits of the New Bedford, Pittsfield, and phase two Martha's Vineyard projects is not sufficient to analyze the size, scope, and scale of these projects. Accordingly, the Department is unable to review these projects at this time.

D. Electric Vehicle Proposal

1. Companies Proposal

The Companies propose to spend \$45 million on an electric vehicle ("EV") infrastructure program as part of their proposed grid modernization investments (Exh. ES-GMBC-1, at 114). The proposed EV infrastructure program includes two primary components: (1) increased investment in long dwell-time EV charging make-ready infrastructure in public and workplace settings and at multi-unit dwellings ("MUDs"); and (2) increased market education and outreach targeting potential car buyers in the Companies' service territories (Exhs. ES-GMBC-1, at 90-113; ES-GMBC-2, at 70-72).²³² The Companies also seek the flexibility to use an unspecified portion of the proposed EV infrastructure program funds to electrify their bucket trucks with electric power take off

²³² The Companies' proposed \$45 million budget, which is included as part of the \$400 million grid modernization base commitment, does not include costs related to O&M and marketing (Exh. ES-GMBC-3, at 114, Table ES-GMBC-3, EV Program Cost).

technology (“ePTO”) if potential site hosts are slow to respond to the Companies’ marketing efforts (Exhs. ES-GMB-1, at 114, 125-126; ES-GMBC-2, at 72).

The Companies divide the proposed EV infrastructure program into two phases: Phase I will extend from January 1, 2018 through December 31, 2019; and Phase II will extend from January 1, 2020 through December 31, 2022 (Exh. AG-23-9). Over the course of five years, the Companies plan to support the deployment of up to 72 direct charging (“DC”) fast charging ports at 36 charging sites,²³³ and up to 3,955 Level II charging ports at 452 charging sites,²³⁴ throughout the Companies’ service territories (Exh. DPU-55-20).²³⁵

The Companies plan to support the deployment of EV charging ports by installing electrical equipment and components necessary to connect EV chargers to the Companies’ distribution system (Exh. ES-GMBC-1, at 91, 116-117). The Companies propose to install the “Eversource-side Infrastructure”, and to contract with third-party electrical contractors to install behind the meter “Participant-side Infrastructure” (Exhs. ES-GMBC-1 at 91, 116-119; ES-GMBC-2, at 70). Specifically, the EV infrastructure that the Companies are proposing to install and own includes the following: (1) distribution primary lateral service feed; (2) necessary transformer and transformer pad; (3) new service meter; (4) new service panel;

²³³ DC fast chargers use direct current and are the fastest method for charging an EV (Exh. ES-GMBC-1, at 97).

²³⁴ Level II chargers rely on a 240-volt connection and are capable of fully charging most existing EVs in approximately eight hours or less depending on battery capacity (Exh. ES-GMBC-1, at 97).

²³⁵ The Companies revised their charging port and site estimates several times throughout the proceeding (Exhs. ES-GMBC-2, at 71; ES-GMBC-3, at 6; AG-23-15). The amounts listed are the latest estimate given by the Companies.

and (5) associated conduit and conductor necessary to connect each piece of equipment (Exh. ES-GMBC-1, at 91). The Companies do not propose to spend any EV program funds on EV chargers (Exh. ES-GMBC-1, at 90-91, 116).

The Companies plan to target multi-unit dwellings, including apartment complexes, places of employment and other long-dwell-time locations such as universities and hospitals, and public parking spaces for installation of Level II charging stations and high travel density locations for DC fast chargers (Exh. ES-GMBC-1, at 107-109, 120-121). The Companies also propose to deploy up to ten percent of the EV charging infrastructure in environmental justice (“EJ”) communities and to provide rebates for the cost of the EV chargers located in these communities (Exh. ES-GMBC-1, at 111-112).²³⁶ The Companies propose a two-part evaluation plan to be applied to the two phases of the proposed program (Exh. ES-GMBC-1, at 127-129).

During the first two years of the EV program, the Companies will focus and conduct evaluations on the acceleration of EV adoption in Massachusetts by developing the marketing, customer education, and outreach strategies, and validating the process for deployment of electric vehicles (Exh. ES-GMBC-1, at 127; see also Exh. DOER-3-11). During the next

²³⁶ Generally, EJ communities are defined in terms of demographic and socioeconomic characteristics, with certain environmental policy implementation practices aimed at these communities because of race/ethnicity- class-based environmental inequities. The Companies propose to select EJ communities that meet two of the following three criteria established by the Massachusetts Executive Office of Energy and Environmental Affairs: (1) 25 percent or more of the population in the communities must earn 65 percent or less than the Massachusetts median household income; (2) 25 percent or more of the population in the communities must identify as a race other than white; and (3) 25 percent of households lack a person over the age of 14 who speaks only English or speaks English very well (Exh. ES-GMBC-1, at 111).

three years the Companies expect to evaluate the make-ready infrastructure to be established for installation and use of the charging stations (Exh. ES-GMBC-1, at 128). Specifically, the Companies will collect data regarding EV driver enrollment, rates by site and charger type, price of kWh and use of kWh by price, charging load profiles, and load impacts (Exh. ES-GMBC-1, at 128-129). The Companies also propose six performance metrics to evaluate the implementation and customer benefits of the proposed EV infrastructure program (Exh. ES-GMBC-3, at 6).²³⁷

The Companies' proposed marketing plan includes two components: (1) site host recruitment; and (2) customer education (Tr. 7, at 1448-1449). The Companies indicate that the two primary outreach channels for recruiting site hosts for this program will be through existing account executives and through EV infrastructure providers (Exh. ES-GMBC-1, at 121).

2. Standard of Review

On August 4, 2014, the Department issued an Order on its jurisdiction over EV charging and electric distribution company involvement in EV charging. Electric Vehicles, D.P.U. 13-182-A (2014). In its Order, the Department determined that charging

²³⁷ The proposed performance metrics include: (1) total number of "make ready" sites developed (i.e., 130 in Phase I and 375 in Phase II); (2) ten percent capital invested in DC fast charging sites; (3) ten percent capital invested in EJ communities; (4) annually report utilization of EV charging stations separately for Level II chargers and DC fast chargers (measured in annual kWh per port); (5) annually report the percentage of Eversource residential customers within the range of an Eversource "make ready" site constructed as part of the grid modernization base commitment (i.e., report percentage within 20-mile range and within 40-mile range); and (6) annually collect and report available data on plug-in EV adoption and CO₂ emissions reductions (Exh. ES-GMBC-3, at 6).

infrastructure is defined as Electric Vehicle Supply Equipment (“EVSE”). EVSE is the charging station and the connector or cord that supplies the electricity to the EV. The Department has determined that EVSE is not a distribution facility within the meaning of G.L. c. 164. D.P.U. 13-182-A at 6. Therefore, the ownership or operation of EVSE does not transform an entity that otherwise is not a distribution company into a distribution company. D.P.U. 13-182-A at 6. The Department also determined that an EVSE owner/operator is selling a service and not electricity within the meaning of G.L. c. 164, and that the provision of EV charging service is not within the Department’s jurisdiction under G.L. c. 164. D.P.U. 13-182-A at 9.

In relation to electric distribution company involvement in electric vehicle charging, the Department determined that it would not allow recovery of costs for distribution company ownership or operation of EVSE for new investments going forward, with a few exceptions. First, distribution companies are allowed to recover the cost of EVSE ownership and operation for their own vehicle fleet charging and employee vehicle charging. D.P.U. 13-182-A at 13. Second, the Department determined that it may grant cost recovery for distribution company EVSE ownership and operation in response to a company proposal. For Department approval and allowance of cost recovery, any such 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. D.P.U. 13-182-A at 13.

Further, the Department allows and encourages investment in, and cost recovery for, research, development, and deployment efforts (“RD&D”) related to EVs, EVSE, and EV charging as part of a distribution company’s RD&D proposal in its grid modernization plan, or as a separate, approved pilot. D.P.U. 13-182-A at 13, citing Modernization of the Electric Grid, D.P.U. 12-76-B at 27-30 (2014). The Department will apply this three-part standard to any cost recovery proposal related to EVs, EVSE, and EV charging, including RD&D investments.

3. Compliance with D.P.U. 13-182-A

The Companies maintain that the proposed EV infrastructure program will help accelerate EV charging infrastructure development within their service territories, encourage EV purchases, and contribute to greenhouse gas emissions reduction in the Commonwealth (Exh. ES-GMBC-2, at 66-69; Companies Brief at 97-100, citing e.g., Exh. ES-GMBC-1, at 94-95). Several intervenors generally support the proposed EV infrastructure program as it will help meet the Commonwealth’s goal contained in the Global Warming Solutions Act (“GWSA”)²³⁸ and support the campaign of the Executive Office of Energy and Environmental Affairs (“EEA”) to encourage zero emissions vehicles (“ZEVs”) via a commitment for 300,000 ZEVs registered in Massachusetts by 2025 (Charge Point Brief at 6; CLF Brief at 38-40; Mass. Energy and the Sierra Club Brief at 11-12). The Department finds that the Companies’ proposal to invest in “make-ready infrastructure” will lower the investment barriers to ownership of EVSE (Exh. ES-GMBC-1, at 95). Further, the

²³⁸ An Act Establishing the Global Warming Solutions Act. St. 2008, c. 298.

anticipated expansion of the network of charging stations as a result of the Companies' EV infrastructure proposal will assist the Commonwealth in meeting its GWSA goals by encouraging EV purchases (Exh. ES-GMBC-1, at 92). Therefore, the Department finds that the Companies' proposed EV infrastructure program is in the public interest.

Second, the Companies propose to proactively recruit site hosts in order to promote and accelerate the construction of EV charging sites (Exh. ES-GMBC-2, at 68). A few intervenors contend that the Companies' proposal will help lower the technical and financial barriers to the installation of EV chargers, as the construction of EV charging sites is more costly and more technically challenging than the installation of EV chargers themselves (Charge Point Brief at 7; CLF Brief at 35-37; Mass. Energy and the Sierra Club Brief at 10-11). Further, Mass. Energy and the Sierra Club assert that the proposed program is likely to: (1) improve the efficiency, reliability, and flexibility of the grid, including the ability to integrate renewable resources; (2) provide equitable deployment of services; and (3) stimulate innovation and competition in EV service providers (Mass. Energy and the Sierra Club Brief at 11-12).

The Department finds that the Companies' proactive approach of recruiting site hosts and reducing the cost of infrastructure for investors likely will help facilitate the construction of EV charging sites (Exh. ES-GMBC-2, at 68). Further, the Department finds that the Companies' proposed EV infrastructure program meets a need regarding the advancement of EVs in the Commonwealth that is not likely to be met by the competitive EV charging market.

Finally, the Companies propose to construct interconnection infrastructure up to the point of the EV chargers (Exh. ES-GMBC-1, at 91). A few intervenors contend that the proposed EV infrastructure program will significantly lower cost barriers for site hosts without limiting the site hosts' ability to choose EV charger vendors (Charge Point Brief at 7-8; CLF Brief at 37-38; Mass. Energy and the Sierra Club Brief at 11). The Department finds that the Companies do not propose to participate in the competitive EV charger market (Exh. ES-GMBC-1, at 91). The Department further finds that the Companies' proposed EV infrastructure program likely will help to boost the market size for the competitive EV charger suppliers as the proposal is designed to achieve an economy of scale (Exh. AG-GLB-1, at 64, lines 1-5). As such, the Department determines that the Companies' proposed EV infrastructure program does not hinder the development of the competitive EV charging market. Therefore, the Department finds that the Companies' EV charging proposal meets the three criteria set forth in D.P.U. 13-182-A. Although the Companies' proposal meets the standards set forth in D.P.U. 13-182-A, there are specific components of the proposal that merit further examination.

4. Additional Issues for Examination

a. Introduction

The intervenors have raised a number of issues regarding the Companies' proposed EV infrastructure program. First, several intervenors assert that the Department should conduct a separate statewide investigation into certain specific issues related to distribution company involvement in EV charging (Attorney General Brief at 44-54; Attorney General Reply Brief at 95-100; Charge Point Brief at 10-11; Charge Point Reply Brief at 6-7; DOER

Brief at 34-35; DOER Reply Brief at 16-17; Mass. Energy and the Sierra Club Reply Brief at 7). Further, intervenors raise issues relating to: (1) program evaluation and metrics; (2) behind-the-meter infrastructure; (3) program modifications and additions, such as time of use (“TOU”) rate design, demand response issues, and site host issues; (4) electrification of the Companies’ bucket trucks; (5) criteria relating to EJ communities; and (6) communities taking competitive electricity supply (Attorney General Brief at 48-52; Attorney General Reply Brief at 98-99; Acadia Center Brief at 18; Cape Light Compact Brief at 40, 43; Cape Light Compact Reply Brief at 8; Charge Point Brief at 8-14; Charge Point Reply Brief at 2-4; CLF Brief at 40-46, 47-48; DOER Reply Brief at 17; Mass. Energy and the Sierra Club Brief at 12-22; Mass. Energy and the Sierra Club Reply Brief at 5-6, 8-15). In addition, the Department finds it appropriate to address the issues of marketing and education. Finally, in order to assess the reasonableness of the associated costs of the proposed EV infrastructure program in relation to the benefits to be achieved, the Department will consider bill impacts.

b. Separate and Statewide Process

i. Positions of the Parties

(A) Intervenors

The Attorney General suggests that the Department open a separate proceeding to develop a statewide plan on utility involvement in EV charging infrastructure in order to address such issues as the scope of utility involvement, the appropriate number of utility supported EV chargers, utility ownership of infrastructure upgrades behind the meter, cost recovery, and evaluation metrics (Attorney General Brief at 44-54). The Attorney General

maintains that D.P.U. 13-182-A and G.L. c. 25A, § 16 (“the ZEV Act”)²³⁹ do not address these issues or provide any direction as to what should be included in a proposal for a utility-supported EV infrastructure program (Attorney General Brief at 47; Attorney General Reply Brief at 95-96). The Attorney General recommends that the Department require the Companies to establish joint working group meetings with National Grid to allow stakeholder input on common issues, or that the Department open a separate docket for this purpose (Attorney General Brief at 53-54; Attorney General Reply Brief at 100).²⁴⁰

Charge Point maintains that the Department should not delay the proposed EV infrastructure program, but should address rate design issues separately (Charge Point Brief at 10-11; Charge Point Reply Brief at 6-7). Charge Point recommends that the Department retain oversight of the proposed EV infrastructure program and allow for more rigorous stakeholder review in a formal setting in place of a separate proceeding (Charge Point Brief at 10-13; Charge Point Reply Brief at 5-7). According to Charge Point, the market-driven approach in the Companies’ proposal for site host selection means that a site host’s business proposition will determine site selection; therefore, there is no need to coordinate EV charging locations, except for DC fast charging stations (Charge Point Reply Brief at 6). CLF similarly argues that the Companies should provide more details on site host selection criteria, and should coordinate with other companies and stakeholders (CLF Brief at 43).

²³⁹ An Act Promoting Zero Emission Vehicle Adoption, St. 2016, c 448.

²⁴⁰ National Grid’s electric vehicle market development program is under review by the Department in D.P.U. 17-13.

DOER agrees with the Attorney General that statewide coordination is necessary for issues like TOU EV charging rate design (DOER Brief at 34-35; DOER Reply Brief at 16-17). DOER is concerned that if the utility companies do not coordinate EV charging sites, they may not locate sites efficiently (DOER Brief at 35). Finally, Mass. Energy and the Sierra Club support the Attorney General's suggestion to open a separate docket for EV rate design issues, but cautions against delaying the implementation of the Companies' proposed EV infrastructure program (Mass. Energy and the Sierra Club Reply Brief at 7).

(B) Companies

The Companies argue that D.P.U. 13-182-A and the ZEV Act already have addressed concerns regarding utility participation in the EV charging market, and delaying the implementation of the Companies' EV program by opening a new proceeding would not help achieve the state's goal in EV deployment (Companies Brief at 386-387; Companies Reply Brief at 69, 73-74, 96). The Companies also maintain that the joint working group and mid-point program evaluation suggested by the intervenors are unnecessary since the Companies have proposed annual stakeholder meetings and are already in routine contact with National Grid on EVs (Companies Brief at 389, 413-414).

ii. Analysis and Findings

In D.P.U. 13-182-A, the Department has addressed the role of distribution companies in the EV charging market. Simply stated, a distribution company may own EV infrastructure only if its proposal is in the public interest, meets a need regarding the advancement of EVs in the Commonwealth that is not likely to be met by the competitive EV charging market, and does not hinder the development of the competitive EV charging

market. D.P.U. 13-182-A at 13. Further, a distribution company may design and propose its own EV programs, including an RD&D proposal in its grid modernization plan or as a separate, approved pilot, as long as the proposals meet the three criteria set forth above.

D.P.U. 13-182-A at 13. In this proceeding, the Department will not prescribe further elements beyond the current scope of the Companies' proposed EV program because of the nascent stage of the EV charging market in the Commonwealth. Further, as discussed above, the Department anticipates addressing issues that require a broad statewide consideration as part of our forthcoming Order in the grid modernization proceedings in D.P.U. 15-122. Therefore, the Department declines to adopt the Attorney General's recommendation to open a new proceeding to address these issues.

Several intervenors suggest that the Department require the Companies to coordinate with other distribution companies and with state and regional programs on EV infrastructure program design, EV rate design issues and EV demand response (Attorney General Brief at 53-54; Attorney General Reply Brief at 100; Charge Point Brief at 12-13; Charge Point Reply Brief at 5; CLF Brief at 43; DOER Reply Brief at 16). The Department encourages the Companies to coordinate with other distribution companies as well as with state and regional EV initiatives, in order to make the best use of available resources to advance EV charging infrastructure development in the Commonwealth.

Further, as described in Section X.B.3, above, the Department intends to establish a uniform grid modernization stakeholder process in our forthcoming Order in D.P.U. 15-122. However the Companies' EV infrastructure proposal was not introduced in D.P.U. 15-122.

Rather, the proposal was first presented as a component of the grid modernization base commitment included in this filing. Therefore, to the extent a formal stakeholder process is necessary for EVs the Department will establish a process separate from the grid modernization stakeholder process. In the meantime, however, the Department endorses the Companies' proposed stakeholder process and, rather than delaying EV infrastructure program implementation by opening a formal stakeholder proceeding, the Department directs the Companies to include the EV charging coordination issues in their annual stakeholder meetings. The Department also directs the Companies to coordinate with stakeholders on the selection of site locations, especially DC fast charging sites, and site host selection criteria (see Exh. ME-1-3, Att.).

c. Evaluation Plan and Performance Metrics

i. Positions of the Parties

(A) Intervenors

The Attorney General argues that the six proposed EV program performance metrics are not sufficient, and suggests that the Department include all of the performance metrics recommended by the intervenors (Attorney General Brief at 57-58, citing Exh. DPU-41-7 & Att. (Supp.)). The Attorney General also recommends conducting a formal mid-point program evaluation at the end of the third year (Attorney General Brief at 53). Mass. Energy and the Sierra Club suggest that the Department formalize data reporting on EV programs with a set of required data items (Mass. Energy and the Sierra Club Brief at 23; Mass. Energy and the Sierra Club Reply Brief at 15-16).

(B) Companies

The Companies agree to formalize data reporting as suggested by the intervenors (Companies Brief at 413; Companies Reply Brief at 74). The Companies are amenable to including metrics suggested by the intervenors, but maintain that these metrics need to be objectively measurable, contain a starting point or baseline from which the Companies will be able to measure progress, and measure performance that is within the Companies' control (Companies Reply Brief at 91).

ii. Analysis and Findings

As identified above, the Companies have developed a two-part evaluation plan that is specific to the EV program (Exh. ES-GMBC-1, at 127). The Department recognizes the value of the information that the Companies propose to provide through the development and operations evaluation described above. A systematic collection and analysis of information to document the impact of the EV program in terms of costs and benefits is necessary to improve the effectiveness of the investment.

Due to the as of yet untested nature of the Companies' EV infrastructure program, Eversource has proposed a robust two-part evaluation plan. The first phase will focus on providing information on potential for site host deployment, while the second phase will focus on evaluating data from actual deployments (Exh. ES-GMBC-1, at 127-129). The Department finds that the Companies' proposed data collection practices and the two-phased evaluation plan are reasonable. The Department will solicit stakeholder input on the results of the Companies' evaluations in order to review the recommendations and data of the evaluated projects and whether adjustments need to be made going forward. The Department

directs the Companies to solicit such input at future EV stakeholder meetings and collect and submit any comments from stakeholders to the Department.

d. Behind-the-Meter Infrastructure

i. Positions of the Parties

(A) Attorney General

The Attorney General argues that the Department should maintain the traditional boundary in asset ownership between utility companies and customers, and that owning behind-the-meter assets is not a requirement for utility companies to support EV charging (Attorney General Brief at 48-50). The Attorney General further contends that the Companies have not provided enough evidence to show that behind-the-meter asset ownership is necessary, and that utility ownership models relating to EV infrastructure should be consistent among utility companies in Massachusetts (Attorney General Reply Brief at 98-99).

(B) Companies

The Companies argue that not allowing utility companies to own behind-the-meter infrastructure would put the EV charging market back to the status quo where the competitive market is unwilling to invest in EV charging stations due to the lack of EV purchases, and drivers are unwilling to purchase EVs due to the lack of charging stations (Companies Brief at 387-388, Companies Reply Brief at 72-73). The Companies further contend that its EV proposal should be evaluated on its merits pursuant to the standard of review set forth in D.P.U. 13-182-A, and that this standard does not require matching proposals from all electric distribution companies (Companies Reply Brief at 73).

ii. Analysis and Findings

The demarcation point between a distribution company's system and a customer's wiring system is known as the service point. The service point is "the point of connection between the facilities of the serving utility and the premises wiring." National Electrical Code, Art. 100 (Definitions). Based on this definition, it is reasonable to expect that the meter typically could be considered the demarcation between the supply/utility side and the load/customer side of the typical electric service set-up.²⁴¹

Under the Companies' proposed EV infrastructure program, Eversource would invest in infrastructure beyond the meter up to the charging station, specifically for the service panel and the associated conduit and conductor necessary to connect each piece of equipment (Exh. ES-GMBC-1, at 91; Tr. 1, at 202). The Department does not prescribe the service point, but instead relies on the engineering judgment of the utility. For example, under prior circumstances, gas and electric companies have provided tariffed water heating service where the company owned the water heater located on the customer's premises. See, e.g., Eastern

²⁴¹ In a typical electric service set-up, the service point line of demarcation actually is further on the supply side than the meter. For overhead service, the service point is at the point of attachment of the utility's service at the premises. The customer is responsible for the wiring from this point of attachment to the meter and beyond the meter on the load side (NSTAR Electric Information and Requirements for Electric Service, Art. 409, Sketch 7, available at https://www.eversource.com/Content/docs/default-source/pdfs/ema-information_requirements_for_electric_service.pdf?sfvrsn=2; Tr. 1, at 201). For underground service, the point of attachment would be a terminal box, handhole, or padmount transformer, depending on the configuration, located on the customer's premises. The customer is responsible for the wiring from this point of attachment to the meter and beyond the meter on the load side (NSTAR Electric Information and Requirements for Electric Service, Arts. 415 and 417, Sketch 8; Tr. 1, at 201). For both overhead and underground service connections, the utility owns the meter.

Edison Company, D.P.U. 92-148, at 37-38 (1992) (water heating service is part of rate H-2); Boston Edison Company, D.P.U. 85-266-A/D.P.U. 85-271-A at 239-240 (1986 (rate R-6 governs residential water heating service). Also, Account 371, “installations on customers’ premises,” expressly provides for recording the cost of equipment installed on the customer-side of the meter when the utility incurs such costs and when the utility retains title to and assumes full responsibility for maintenance and replacement of such property. 220 CMR 51.01(1), Uniform System of Accounts For Electric Companies; 18 CFR, Part 101, Uniform System of Accounts Prescribed For Public Utilities and licensees Subject to the Provisions of the Federal power Act, Account 371.

The Companies’ proposed EV infrastructure program is intended to lower the investment barrier faced by customers regarding infrastructure needed for ownership of charging stations (Exh. ES-GMBC-1, at 91-95). The Department finds that, based on the current status of EV charging station deployment, lowering the investment barrier is an apparent necessity. Considering the demonstrative nature of the Companies’ EV proposal, the Department finds that the Companies’ proposal to own the infrastructure behind the meter, excluding the EV charger, is reasonable.

e. Program Modifications and Additions

i. Introduction

A number of intervenors express general support for the Companies’ EV proposal and assert that it meets the three criteria set forth in D.P.U. 13-182-A, but suggest some modifications and additions including TOU rate design, demand response, MUDs and

workplace charging, site host pricing disclosure, and Level I charging²⁴² (Acadia Center Brief at 18; Charge Point Brief at 6-7; CLF Brief at 33-34; Mass. Energy and the Sierra Club Brief at 12; Mass. Energy and the Sierra Club Reply Brief at 5-6; NECEC Brief at 34).²⁴³

ii. TOU Rate Design and Demand Response

(A) Positions of the Parties

(1) Intervenors

A few intervenors argue that the Companies' proposal should include TOU and other rate design incentives to encourage efficient charging behavior and demand response (Acadia Center Brief at 18; Cape Light Compact Brief at 40; Charge Point Brief at 8-9; CLF Brief at 40-42; Mass. Energy and the Sierra Club Brief at 15-16). Further, Charge Point suggests that the Companies should require site hosts to install EV chargers with smart or connected technologies to avoid additional utility meter investments (Charge Point Brief at 8-9). DOER suggests a phased approach where the Companies would collect data and information for TOU rate design during Phase I, and implement the TOU rates during Phase II (DOER Reply Brief at 17). Mass. Energy and the Sierra Club argue that the Companies have failed to utilize experience gained in their EV Pilot with smart charging to inform their proposed EV program (Mass. Energy and the Sierra Club Brief at 15-16).

²⁴² Level I charging involves plugging the EV into a typical 110-volt household outlet and may require nearly a full day or more to fully charge existing EVs, depending on battery capacity (Exh. ES-GMBC-1, at 97).

²⁴³ TEC and WMIG urge the Department to reject the Companies' proposal for lack of a cost benefit analysis as required by D.P.U. 12-76-B (TEC/WMIG Brief at 18-19). The Department's analysis here focuses on compliance with the criteria set forth in D.P.U. 13-182-A and not D.P.U. 12-76-B.

Some intervenors assert that the Department should require the Companies to exclude demand charges or propose alternatives to demand charges (CLF Brief at 40-42; Mass. Energy and the Sierra Club Brief at 14; Mass. Energy and the Sierra Club Reply Brief at 8-13). Charge Point also suggests that the Companies develop a residential charging program with a TOU component, and a pilot for DC fast charging with an alternative to demand charges (Charge Point Brief at 13-14).

(2) Companies

The Companies maintain that it is premature to deploy TOU rate design in their proposed EV program because the Companies currently do not have the ability to process real time data from TOU and demand response (Companies Brief at 399, citing Tr. 7, at 1429; Companies Reply Brief at 96). In addition, the Companies contend that EV charging could create a secondary peak if the standard TOU rate design is applied, and therefore a different TOU rate is needed for EV charging, which requires collection of charging data after the EV charging infrastructure is built (Companies Brief at 399-400; Companies Reply Brief at 96-97).

The Companies claim that they allow site hosts the flexibility to select the EV chargers that best suit their needs, level of sophistication, and objectives, rather than requiring smart chargers, striking a balance between costs and benefits for ratepayers (Companies Brief at 400). The Companies further argue that EV demand response may not provide system benefits to the Companies' ratepayers at this time, and investment in EV demand response is premature (Companies Brief at 400-401). The Companies also note that

EV drivers at public charging stations are not in a position to shop around because their primary objective at these charging stations is to recharge the vehicle and complete their travel (Companies Brief at 401). Further, the Companies argue that load management issues at these sites could create dissatisfaction among EV drivers and discourage further EV adoption (Companies Brief at 401). The Companies believe that the additional costs associated with the design and administration of demand response would reduce the funding available to build EV charging infrastructure and decrease the number of sites that the Companies are able to facilitate in EJ communities (Companies Brief at 401-402).

The Companies argue that Charge Point's proposed residential EV infrastructure program and tariff pilot for DC fast charging are beyond the scope of this proceeding, but the Companies are willing to discuss these issues at the proposed stakeholder meetings (Companies Brief at 409; Companies Reply Brief at 94).

(B) Analysis and Findings

Effective rate design for EV charging and the integration of demand response with EV charging will promote efficient charging behavior and can assist in securing the majority of the societal benefits related to EV infrastructure deployment. The Department recognizes that the Companies need time to collect data and information from the site hosts before they are able to design and implement effective rate design and EV demand response programs. The initial goal of the Companies' proposed EV infrastructure program is to recruit site hosts and build infrastructure to support EV charging sites (Exh. ES-GMBC-2, at 70-71). Without site hosts, the Companies will not be able to collect data or develop effective rate design and

EV demand response programs (Exh. ME-1-9, Atts. (a), (b)). The Department directs the Companies, as they select site hosts, to collect EV charging data that they can use to develop TOU rates and a potential EV demand response pilot program (Exh. ES-GMBC-1, at 127-129).

The Department anticipates that the Companies will work closely with stakeholders during this process of data collection, information gathering, rate design, and EV demand response program design. Specifically, the Department finds that data collection is essential in the development of EV charging TOU rates, alternative demand charges, and potential demand response pilot programs. See Order Adopting Policy Framework for Time Varying Rates, D.P.U. 14-04-C at 7-8 (2014).

In addition, the Companies should make investments in a manner that does not lead to stranded costs. D.P.U. 15-122, Exh. AG-3-8(a), Att. To that end, the Companies shall consider service meters capable of two-way communications with the Companies' grid system when installing a new service meter on newly constructed EV charging sites, in order to avoid stranded costs (Exh. ES-GMBC-Rebuttal at 32). D.P.U. 15-122, Exh. AG-3-8(a), Att.

Charge Point suggests that the Department direct the Companies to require smart chargers (Charge Point Initial Brief at 8-9). The Department will not require the Companies to determine the type of EV chargers that the site hosts may install, so as to avoid interfering with the competitive EV charger market. However, given the importance of future EV rate design and EV demand response programs, the Companies shall establish terms of agreements with site hosts regarding the Companies' collection of interval charging data.

The data collected will be necessary for the Companies' analysis of potential EV charging TOU rates and EV demand response pilot program design. The EV chargers chosen by site hosts should have the capability of transmitting interval charging data to the Companies (Exhs. ES-GMBC-1, at 128-129; ES-GMBC-Rebuttal at 32).

Charge Point also recommends that the Companies consider a residential EV demand response program (Charge Point Brief at 13). The Department's review in this proceeding is limited to the Companies' proposal. The Department declines to expand the scope of this proceeding to include residential EV charging; however, the Companies could use their stakeholder process to consider developing separate EV infrastructure programs that will bring further value to ratepayers in the future.

iii. Site Host Issues

(A) Positions of Parties

(1) Intervenors

Charge Point maintains that the Department has no jurisdiction over site hosts' charging terms and pricing, but agrees that site hosts should disclose their pricing plan (Charge Point Reply Brief at 2-3). CLF argues that some sites may accept Level I charging better than Level II and therefore the Companies' proposal should include EV infrastructure investments for Level I charging (CLF Brief at 44). Charge Point, however, agrees with the Companies decision to exclude Level I charging because of its long charging time and inability to enable smart charging (Charge Point Reply Brief at 4).

Mass. Energy and the Sierra Club state that the Companies' proposal appropriately targets site host locations such as MUDs and workplaces with long dwell time and frequent

visitors (Mass. Energy and the Sierra Club Brief at 12). However, Mass. Energy and the Sierra Club suggest that the Department require the Companies to put a cap on the number of sites that drivers do not regularly visit, in order to ensure that the majority of the Companies' investments are made in locations that will enable regular access to EV charging sites to encourage EV ownership (Mass. Energy and the Sierra Club Brief at 18-20; Mass. Energy and the Sierra Club Reply Brief at 13-14). Mass. Energy and the Sierra Club further suggest that since the funding for the EV infrastructure ultimately comes from ratepayers, the Department should require site hosts to disclose their pricing plan to ensure that Department-approved distribution rates, especially demand charges, are not directly passed through to EV drivers (Mass. Energy and the Sierra Club Brief at 14).

(2) Companies

The Companies maintain that their study does not identify Level I charging as a barrier to EV adoption and therefore it is more appropriate to focus on Level II charging and DC fast charging outside single family homes (Companies Brief at 402). The Companies recognize that sites like MUDs and workplaces are important to EV adoption, but argue that they should not impose a cap, nor limit on the type of site hosts, because the Companies require the flexibility to foster sufficient program participation (Companies Brief at 413).

(B) Analysis and Findings

The Companies propose to target site hosts at locations with long-dwell time parking patterns that match the speed of charging with the existing parking patterns. These locations include public parking areas, MUDs, and workplaces (Exh. ES-GMBC-2, at 71). The Department finds that MUDs and workplaces are important EV charging locations because

they provide EV owners with regular access to EV charging, and, therefore, encourage EV purchases (Exh. CP-MKW-4, at 4-5). Mass. Energy and the Sierra Club suggest that the Department cap the Companies' investment in infrastructure at sites that EV drivers do not regularly visit (Mass. Energy and the Sierra Club Brief at 18-19; Mass. Energy and the Sierra Club Reply Brief at 13-14). The Department declines to adopt this suggestion because we find that imposing such a cap would be arbitrary and could hinder the development of the EV charging market at this initial phase.

In consideration of the public interest, the Companies' proposed EV infrastructure program must demonstrate benefits for all ratepayers. The success of the proposed EV infrastructure program is based on the Companies' ability to obtain site hosts, and therefore, the Department will not restrict EV charging locations. However, the Department finds that it is in the public interest for the Companies to select site locations that are publicly accessible, and, therefore, the Companies shall give priority to those site hosts who serve the public at large. The Department directs the Companies to prioritize the selection of Level II EV charging sites in the following order: (1) public parking areas such as garages, parks, stadiums, beaches, airports, train stations, hotels, hospitals, clinics, dining, entertainment and shopping venues; (2) workplaces and MUDs parking areas that the public can access, including offices, colleges, universities, and government properties; and (3) workplaces and MUDs parking areas.

iv. Bucket Truck Electrification(A) Positions of Parties(1) Intervenors

The Attorney General argues that the Companies' proposal does not include any transparent threshold or criteria for making the decision to electrify the Companies' bucket trucks, and that the absence of a cap on spending in bucket truck electrification could lead to insufficient spending in public EV charging infrastructure (Attorney General Brief at 51-52; Attorney General Reply Brief at 99). Several intervenors do not support EV program funding for the Companies' bucket truck electrification, contending that the proposed cost recovery mechanism is inappropriate (Acadia Center Brief at 18; Cape Light Compact Brief at 40; CLF Brief at 47-48; Mass. Energy and the Sierra Club Brief at 22). They argue that bucket truck electrification is a part of the Companies' normal O&M, and using EV program funds to recover those costs would serve as a disincentive for the Companies to vigorously recruit site hosts (Acadia Center Brief at 18; Cape Light Compact Brief at 40; CLF Brief at 47-48; Mass. Energy and the Sierra Club Brief at 22).

(2) Companies

The Companies claim that D.P.U. 13-182-A permits cost recovery for bucket truck electrification, but they are not opposed to treating these investments as traditional capital investments (Companies Brief at 388; Companies Reply Brief at 74). The Companies maintain that they have proposed performance metrics and a process to solicit stakeholder input before investing in bucket truck electrification, although the decision would ultimately be the Companies' (Companies Brief at 388; Companies Reply Brief at 75). The Companies

contend that electrifying five bucket trucks per year over five years as part of the EV infrastructure program is not unreasonable and helps meet the Companies' spending commitment as a function of the PBRM stretch factor (Companies Brief at 388-389; Companies Reply Brief at 75-76).

(B) Analysis and Findings

The Department has held that distribution companies may recover the cost of EVSE ownership and operation for their own vehicle fleet charging and employee vehicle charging. D.P.U. 13-182-A at 13. In this context, "vehicle fleet charging and employee vehicle charging" has no other meaning than the charging of "electric vehicles." Further, vehicle charging, not the vehicles themselves, fall within this category. The Department finds that the best use of the proposed EV infrastructure program funds is in the advancement of the deployment of EV charging stations, and not in the electrification of the Companies' bucket trucks. The Companies may undertake this type of investment through their traditional capital additions process, apart from the proposed EV infrastructure program.

v. EJ Communities and Communities on Competitive Supply

(A) Positions of Parties

(1) Intervenors

Acadia Center suggests that the Companies pair charging stations in EJ communities with efforts to make EVs affordable for residents of those communities, such as dedicated state programs supporting low income residents' purchase of EVs (Acadia Center Brief at 18, citing Exh. AC-ML-1, at 41). Mass. Energy and the Sierra Club disagree, and argue that

the Department should not require the Companies to support EV purchases (Mass. Energy and the Sierra Club Reply Brief at 5-6).

Further, Mass. Energy and the Sierra Club, along with CLF, argue that the Companies' proposal to require two of the three state EJ community criteria as the basis for site selection is not reasonable, and will limit the number of EJ communities that participate in the proposed program and exclude almost all EJ communities in Western Massachusetts (CLF Brief at 45-46; Mass. Energy and the Sierra Club Brief at 20-21; Mass. Energy and the Sierra Club Reply Brief at 15). They also suggest that the Companies' proposal should set a minimum investment level in EJ communities instead of the proposed maximum of ten percent (CLF Brief at 45; Mass. Energy and the Sierra Club Brief at 20-21).

Cape Light Compact argues that the Department should ensure that the Companies do not make EV program participation contingent upon enrollment in basic service, and ensure that the Companies do not discriminate against communities on competitive supply and municipal aggregation (Cape Light Compact Brief at 43; Cape Light Compact Reply Brief at 8).

(2) Companies

The Companies argue that, based on the EEA map regarding EJ communities, many communities in Eastern Massachusetts meet only one criterion, which could skew the site selection leading to inequitable deployment (Companies Brief at 398-399; Companies Reply Brief at 74). The Companies suggest that they could require one EJ community criterion in Western Massachusetts, and still require two EJ community criteria in Eastern Massachusetts,

and they clarify that ten percent is their target for installations in the EJ communities, not a cap (Companies Brief at 398-399; Companies Reply Brief at 74).

(B) Analysis and Findings

The Department finds the Companies' proposed adjustment to the EJ community selection criteria reasonable, and directs the Companies to apply one EJ community criterion in Western Massachusetts and two EJ community criteria in Eastern Massachusetts. Further, the Department finds that the Companies have provided sufficient clarification that the ten percent deployment is their target in the EJ communities, not a cap (Companies Brief at 398-399; Companies Reply Brief at 74). The Department directs the Companies to update the stakeholders regularly on their progress in EJ community EV charging site host recruitment through the annual stakeholder meetings.

Given the existence of other state and regional programs targeting EV purchases, including a pilot program currently being planned by DOER, the Department is not persuaded that additional directives are necessary at this time to support low income residents' purchase of EVs.²⁴⁴ Therefore, the Department declines to adopt Acadia Center's suggestion. Further, the Department finds that the Companies do not include enrollment in basic service as a requirement for site host selection (Exh. ES-GMBC-1, at 119-121). Therefore, the Department declines to adopt Cape Light Compact's suggestion.

²⁴⁴ The Department does not exclude investments in EVs made under a separate statutory requirement (e.g., G.L. c. 25, § 19(c), 21(a)).

f. Marketing and Education

As discussed above, the primary goal of the Companies' proposed EV infrastructure program is to recruit site hosts and to build the infrastructure necessary for site hosts to install EV chargers. Accordingly, the Department finds that the proposal for site host recruitment is reasonable in order to achieve this goal.

With the exception of costs related to site host recruitment, the Companies' proposed \$45 million budget does not include costs related to O&M or customer education and marketing, which, in total, the Companies estimate will cost approximately \$10 million dollars (Exhs. ES-GMBC-3, at 114, Table ES-GMBC-3, EV Program Cost; AG-23-15; LI-1-5, Att.). With respect to customer education marketing, the Companies indicate that they are seeking to develop broad awareness about the benefits of EVs and will target potential EV drivers in the Companies' service territory (Exh. ES-GMBC-1 at 124). The Companies submit that, while not directly addressed by D.P.U. 13-182 or the ZEV Act, the proposed customer education and marketing plan is in the public interest (Exhs. DPU-27-1; DPU-55-2).

The Companies have acknowledged that there is potential overlap between their proposed customer education marketing plan and the existing state-wide EV customer education initiatives (Exh. ES-GMBC-1, at 101; Tr. 7, at 1446). In addition, the Companies have provided few details to support the reasonableness of any proposed spending on customer education and marketing to potential EV drivers (see Exh. ES-GMBC-1 at 123-124; Tr. 7 at 1448-1449). For these reasons, the Department finds that the Companies' proposed

customer education marketing plan is not appropriate for inclusion as part of the proposed EV infrastructure program.

g. Budget and Bill Impacts

The Companies propose to spend \$45 million on the EV infrastructure program as part of their proposed grid modernization base commitment investments (Exhs. ES-GMBC-1, at 114; ES-GMBC-2, at 66; AG-23-15, Att.). In the sections above, the Department has found that the Companies proposed EV program is in the public interest, will advance EV policy in the Commonwealth that is not likely to be met by the competitive EV market, and does not hinder the development of the competitive EV charging market. Accordingly, the Department finds that the Companies have demonstrated that the proposed distribution infrastructure, beyond the meter infrastructure, and other capitalized costs associated with the EV infrastructure program and totaling \$45 million are reasonable in relation to the likely benefits to be achieved.

In order to assess the reasonableness of the associated costs to customers, the Department must examine the bill impacts that customers would experience as a result of the proposed EV infrastructure program. The Companies have submitted a bill impact analysis allowing the Department to analyze increases to all Eversource customer rate classes (RR-DPU-50, Att. (e) at Exhibit ES-RDP-2 (ALT1), Sch. RDP-9 (East) & (West); RR-DPU-50, Att. (f) at Exhibit ES-RDP-3 (ALT1), Schedule RDP-3 (East) & (West); RR-DPU-50, Att. (j) at Exhibit ES-RDP-7 (ALT1), Schedule RDP-5). The Department specifically reviewed the impacts based on the capitalization of the \$45 million proposed

budget for the EV infrastructure program (Exhs. ES-GMBC-2, at 66; AG-23-15; LI-1-5, Att. (a); LI-1-15). After review, the Department finds that, on balance, the bill impacts resulting from the EV infrastructure proposals are reasonable and, the potential benefits of the proposed EV infrastructure program, discussed above, justify the cost to customers.

Based on the above, the Department approves a budget of \$45 million dollars for the proposed EV program. The Companies may not allocate any unspent funds to other efforts (e.g., energy storage). At the time the Companies seek final cost recovery for any EV program expenditures, the Companies bear the burden of demonstrating the appropriateness and prudence of all spending or will be subject to disallowance of such costs. As discussed in Section X.B.3 above, the Department will establish a cost recovery mechanism for eligible grid modernization investments, including EV infrastructure program, in our forthcoming Order in D.P.U. 15-122.

5. Conclusion

The Department finds the Companies proposed EV infrastructure program meets the standards laid out in D.P.U. 13-182-A as it: (1) is in the public interest; (2) meets a need regarding the advancement of EVs in the Commonwealth that is not likely to be met by the competitive EV market; and (3) does not hinder the development of the competitive EV charging market. Further, the Department finds that the Companies have demonstrated that their proposed expenditures of \$45 million on the EV infrastructure program are reasonable in relation to the likely benefits to be achieved. In addition, the Department has reviewed the

associated bill impacts from the EV infrastructure program and finds them to be reasonable and in light of the potential benefits of the proposed EV infrastructure program.

Based on the above, the Department approves the proposed EV infrastructure program budget, with an associated budget not to exceed \$45 million. The Department finds that the Companies' proposed customer education marketing plan is not appropriate for inclusion in the proposed EV infrastructure program.

So as not to delay program implementation, the Department declines to open a separate proceeding to address specific issues related to distribution company involvement in EV charging at this time. Rather, the Department encourages the Companies to coordinate the EV infrastructure program with other distribution companies and state and regional EV initiatives, and include issues such as rate design and demand response in the stakeholder meetings. The Department directs the Companies to collect EV charging data, as site hosts are selected, that can be used to develop TOU rates and a potential EV demand response pilot program. The Department will not restrict EV charging locations, but directs the Companies to give priority to site locations that are publicly accessible, and to apply one EJ community criterion in Western Massachusetts and two EJ community criteria in Eastern Massachusetts when selecting EJ community charging sites.

Finally, the Companies' EV infrastructure program is intended to increase the availability of charging stations in order to lower the barriers to EV ownership. The Department finds the Companies proposed investment in infrastructure to be a reasonable means of achieving this goal. Investments to electrify the Companies' fleet or their bucket

trucks may be made, where prudent, through the Companies' capital additions process, not through the EV infrastructure program.

E. Conclusion

The Department has determined that grid modernization is vital for maintaining and improving the reliability of the electric system and offers potential savings to customers.

D.P.U. 12-76 at 1-2. The Department remains committed to ensuring that our electric distribution companies implement appropriate grid modernization technologies and practices to enhance reliability, reduce costs, empower customers to better manage usage, and support a cleaner, more efficient electric system. D.P.U. 12-76 at 5-6.

In the sections above, the Department approves the first stage of the Companies' energy storage demonstration program. These investments should not only enable the market for energy storage in Massachusetts but also provide data that will be critical in evaluating future energy storage deployments as part of Massachusetts' clean energy future. The Department also approves the Companies' electric vehicle demonstration program. These infrastructure investments will help accelerate electric vehicle charging infrastructure development in Massachusetts, encourage electric vehicle purchases, and contribute to greenhouse gas emissions reductions in the Commonwealth. Finally, for the reasons discussed above, the Department has determined that it is in the public interest to remove the Companies' proposed grid modernization base commitment investments from the PBR and, instead, address these proposals in a comprehensive manner in our forthcoming Order in D.P.U. 15-122.

As a final matter, we note that on October 6, 2017, the Companies, TEC, WMIG, and AIM submitted to the Department for approval a Joint Stipulation Agreement (“Joint Stipulation”) they entered into in order to resolve certain issues related to momentary outages (Joint Stipulation at 4). The Joint Stipulation outlines the structure for a C&I working group to address momentary outages experienced by certain, very large C&I customers (Joint Stipulation at 1-4).

The Attorney General, UMass, and Cape Light Compact submitted comments in response to the Joint Stipulation. UMass supports approval of the Joint Stipulation because momentary outages have been a continuing problem for UMass (UMass Comments at 1-2). Conversely, the Attorney General maintains that the Joint Stipulation raises issues of transparency, costs, and impact on non-C&I customers (Attorney General Comments at 2).²⁴⁵ Cape Light Compact urges the Department not to approve the Joint Stipulation because it is inconsistent with the public interest as it: (1) directs funds contributed by all ratepayers to specific circuits that benefit only certain customers; and (2) establishes a private forum for one customer group to the exclusion of other stakeholders (Cape Light Compact Comments at 2-4).

The Joint Stipulation provides that “[s]hould the Department reject the [grid modernization base commitment], in whole or in part, the [Companies’] obligations under this Joint Stipulation shall be null and void” (Joint Stipulation at 1). Given the timing of the filing of the Joint Stipulation after the close of the record and our decision to remove the grid

²⁴⁵ The Attorney General also notes that the Joint Stipulation was filed, without a motion, after the close of evidentiary hearings (Attorney General Comments at 2).

modernization base commitment investments from the PBR, the Department will not review or approve the Joint Stipulation here. Nonetheless, we fully expect that the Companies will work equally and equitably with all interested stakeholders to address the myriad of issues that may arise as we work towards meeting our grid modernization goals.

XI. COMPANIES' FEE FREE PROPOSAL

A. Introduction

Eversource proposes to implement a credit/debit card payment system (hereinafter “fee free”) that will allow customers to pay their bills electronically without incurring a transaction fee (Exhs. ES-PMC-1, at 5; ES-DPH-1, at 50). Eversource states that the fee free payment system is necessary to accommodate changing customer expectations and preferences regarding their payment options (Exh. ES-PMC-1, at 5).

Currently, Eversource customers who choose to pay their bills using a credit or debit card incur a transaction fee of \$2.25,²⁴⁶ paid directly to a third-party payment processing agent (Exhs. ES-PMC-1, at 7; ES-DPH-1, at 50, 52). The Companies' proposal is based on an agreement between ESC (acting as agent for both NSTAR Electric and WMECo) and SpeedPay Inc. (“SPI”), a third-party vendor selected to administer the program following a RFP process (Exhs. ES-PMC-1, at 10-15; ES-PMC-3; ES-PMC-4; ES-DPH-1, at 51).

Under the agreement, SPI would offer credit/debit card transactions to Eversource customers without charging a transaction fee, and the transaction costs would be charged to the

²⁴⁶ In the test year, NSTAR Electric customers paid a transaction fee of \$3.95 and WMECo customers paid a transaction fee of \$3.50; however, the fee was reduced to \$2.25 for both customer groups in September 2016 (Exhs. ES-PMC-1, at 5, 19; DPU-13-2; DPU-13-3).

Companies (Exh. ES-PMC-1, at 7).²⁴⁷ Eversource proposes to recover these costs from all customers through base distribution rates (Exhs. ES-PMC-1, at 7; ES-DPH-1, at 51-52).

The Companies estimate the total cost of the fee free proposal to be approximately \$30 million over the next five years, or approximately \$6 million per year (Exhs. ES-DPH-1, at 52, 54; ES-DPH-2 (East), Sch. DPH-9 (Rev. 3); ES-DPH-2 (West), Sch. DPH-9 (Rev. 3)). To determine the estimated program cost, Eversource multiplied the anticipated number of transactions over the five-year period by the expected cost per transaction provided by SPI in response to the Companies' RFP (Exh. ES-DPH-1, at 54). Further, in deriving this cost estimate, the Companies assumed that 30 percent of Eversource customers will migrate to the fee free option from other payments options by year five of the program (Exhs. ES-PMC-1, at 14, 15; DPU-13-9).²⁴⁸

The Companies propose to allocate the \$6 million annual cost between NSTAR Electric and WMECo based on each company's number of customers, which results in an allocation of 85 percent to NSTAR Electric and 15 percent to WMECo (Exhs. ES-DPH-1, at 53, 54; ES-DPH-2 (East), Sch. DPH-9 (Rev. 2); ES-DPH-2 (West), Sch. DPH-9

²⁴⁷ The cost for the Companies would be a per-transaction amount subject to change over the term of the agreement with SPI, depending on specified parameters such as the number of transactions completed and the dollar value of transactions (Exh. ES-DPH-1, at 52).

²⁴⁸ The Companies did not initially propose any cost savings associated with customers who migrate to the fee free proposal. During the course of the proceeding, Eversource acknowledged that there would be some savings as customers migrated from other payment methods (primarily paying by check and direct debit) toward using credit or debit cards (Exh. AG-37-12). Specifically, the Companies estimated annual savings of \$52,891 and \$9,738 for NSTAR Electric and WMECo, respectively (Exhs. DPU-48-6; AG-37-12).

(Rev. 2)). Thus, Eversource's proposed revenue requirement includes \$5,093,091 and \$906,909 in costs associated with the fee free proposal, allocated to NSTAR Electric and WMECo, respectively (Exhs. ES-DPH-2 (East), Schs. DPH-6, at 1, DPH-9 (Rev. 3); ES-DPH-2 (West), Schs. DPH-6, at 1, DPH-9 (Rev. 3)).

For ratemaking purposes, the Companies propose to establish a reserve funded through the annual \$6 million contribution collected through distribution rates, and to charge the actual amounts paid by the Companies to SPI against the reserve fund, so that the balance of the fund represents the difference between the amount collected through distribution rates and the amounts actually paid over the course of the agreement with SPI (Exh. ES-DPH-1, at 53). The Companies propose to amortize any over- or under-collection at the time of their next base rate proceeding (Exh. ES-DPH-1, at 53).

Finally, to minimize customer confusion, the Companies request that the Department also approve implementation of the fee free credit/debit card payment program for customers of NSTAR Gas (Exh. ES-PMC-1, at 19). The Companies seek authorization to defer the actual transaction costs incurred on behalf of gas customers until NSTAR Gas' next base rate proceeding, at which point the deferred costs would be amortized (Exh. ES-PMC-1, at 18-19).

B. Positions of the Parties

1. Attorney General

The Attorney General argues that the Department should reject Eversource's proposed fee free program because it is not "free," but in fact is one of the most expensive of the various methods that customers can use to pay their bills (Attorney General Brief at 138;

Attorney General Reply Brief at 37). The Attorney General submits that paying by credit or debit card is currently the most expensive payment method available to customers, and will continue to be the most expensive method even if the fee free program is implemented (Attorney General Brief at 139). Moreover, the Attorney General contends that customers who do not pay their bills with a credit or debit card will be forced to subsidize those that do,²⁴⁹ and that recuperating costs from all customers through base rates is inconsistent with the Companies' obligation to provide least-cost service to customers (Attorney General Brief at 138, 139).

Additionally, the Attorney General contends that the fee free program may actually harm customers who pay their bill by credit card, since credit card interest rates typically range between 13 and 25 percent, and such interest payments would more than offset any benefit received from paying their bills fee free (Attorney General Brief at 140, citing Tr. 6, at 1064). Rather than implementing the fee free proposal, the Attorney General asserts, the Companies should instead encourage customers to use online bank payments or automated clearing house ("ACH") payments, both of which are less costly options (Attorney General Brief at 140, citing Exhs. DPU-13-2; DPU-13-3; AG-54-3, at 2).

²⁴⁹ The Attorney General claims that, based on the Companies' projections, all customers will pay for the program but only 30 percent of customers are expected to use it (Attorney General Brief at 140, citing Exh. ES-PMC-1, at 14-15, 30; Attorney General Reply Brief at 37).

The Attorney General also contends that the reported program costs and proposed cost savings²⁵⁰ associated with customer migration are not known and measurable as they rest on “uncertainties compounded by speculation” (Attorney General Brief at 141-142; Attorney General Reply Brief at 37-38). In particular, the Attorney General claims the Companies do not know how many customers ultimately will take advantage of the program, or the actual amount of the per-customer transaction fee, or what any offsetting savings will be (Attorney General Brief at 142, citing Tr. 13, at 2774-2776). For these reasons, the Attorney General asserts that the Department should reduce the revenue requirements for NSTAR Electric and WMECo by \$5,040,200 and \$897,171, respectively (Attorney General Brief at 142).

Finally, regarding the Companies’ request to defer the fee free program costs for NSTAR Gas, the Attorney General contends that this request violates due process because NSTAR Gas, its customers, and other stakeholders are not parties to this proceeding (Attorney General Brief at 141; Attorney General Reply Brief at 37 n. 14). Therefore, the Attorney General argues the Department should reject Eversource’s request for a deferral, and she recommends that the Department direct NSTAR Gas to submit a separate filing to request approval of a fee free program (Attorney General Brief at 141).

2. Cape Light Compact

Cape Light Compact argues that Eversource’s proposal to recover \$6 million per year for the fee free program is “not appropriate” (Cape Light Compact Brief at 78). Cape Light

²⁵⁰ The Attorney General notes that the Companies included in the revenue requirements minor offsetting cost savings related to the migration of customers to payment by credit or debit card from other payment methods (Attorney General Brief at 142).

Compact contends that the proposed cost of the program is not known and measurable and that the Companies have not properly taken into account offsetting savings from customer migration from other forms of payment (Cape Light Compact Brief at 79). Cape Light Compact supports the Attorney General's recommendation to eliminate from Eversource's revenue requirement the Companies' proposed pro forma adjustments for the fee free proposal (Cape Light Compact Brief at 79).

3. Low Income Network

The Low Income Network argues that the Companies' proposal to accept credit and debit card payments without charging a fee presents possible risks for low-income customers (Low Income Network Brief at 10). In particular, the Low Income Network contends that low-income customers may resort to these payment options and ultimately pay interest, penalties, and late fees if their credit card balances are not paid in full each month, or face overdraft fees on debit card use (Low Income Network Brief at 10). According to the Low Income Network, low-income customers are substantially more likely than other residential customers to make payments by credit or debit card (Low Income Network Brief at 10).

Low-income customers, however, choose a credit/debit card not as a convenience but because they are "cash-poor" or wish to avoid service termination (Low Income Network Brief at 10-11).

While the Low Income Network does not strictly oppose the fee free program, it asserts that as a condition of any approval, the Department must order the Companies to conduct extra training for customer service representatives so that whenever credit/debit card

payment options are being discussed with low-income customers, representatives can inform such customers of payment plan arrangements, the arrearage management program, and protections against service termination for customers that are seriously ill, elderly, or have infants in the household (Low Income Network Brief at 12). The Low Income Network also recommends that the Department direct the Companies to make available information about payment locations by including a list of locations on Eversource's website, through bill messages, bill "envelope stuffers," and via calls with customer service representatives when appropriate (Low Income Network Brief at 13). Finally, the Low Income Network recommends that the Department direct the Companies to report back to the Department within six months of the final Order on efforts to expand the number of locations where customers can make in-person payments without incurring any fee (Low Income Network Brief at 13).²⁵¹

4. Companies

Eversource argues that its current policy of charging customers a transaction cost of \$2.25 who pay their electric bills with a credit or debit card has led to customer dissatisfaction (Companies Brief at 192, citing Exh. ES-DPH-1, at 50). Specifically, Eversource notes that the Companies have experienced numerous customer service complaints regarding the customer-side fees (Companies Brief at 552, citing Tr. 6, at 1084). The Companies contend that by implementing a fee free credit/debit card payment option they can

²⁵¹ As noted below, currently some walk-in locations charge a nominal amount for in-person bill payments (Exhs. DPU-13-3; DPU-13-13).

align Eversource's service offerings with customer experience in the marketplace and improve customer satisfaction (Companies Brief at 192, 554, citing Exh. ES-DPH-1, at 50-51). According to Eversource, its commitment to excellent customer service is driving the Companies' proposal, and the fee free program will enable the Company to "catch up" to other industries with payment methods that align with customer expectations (Companies Brief at 137, 142, 146, 194, 553; Companies Reply Brief at 134).²⁵² Because of this emphasis on customer satisfaction, Eversource disagrees with the Attorney General that instead of the fee free proposal, the Companies should encourage customers to use online bank payments or ACH payments (Companies Brief at 553). Rather, Eversource claims that national J.D. Power customer surveys, as well as Eversource's own experience with customer complaints, indicate that customers are more satisfied when they can pay their electric bills using a credit card with no fee (Companies Reply Brief at 134, citing Exhs. DPU-13-10; DPU-48-6; AG-54-4; AG-54-5; Tr. 6, at 1049, 1052, 1094-1095). Further, the Companies contend that in response to internal satisfaction surveys related to billing and payment matters, approximately seven percent of the negative complaints received from customers relate to dissatisfaction with credit card fees currently charged (Companies Reply Brief at 135, citing Exh. DPU-13-16).²⁵³

²⁵² For example, the Companies offer an analogy related to parking meters and note that one "used to carry coins [...] to come into Cambridge, into Boston [...] to feed the meter" but that now it is possible to pay for parking using one's phone (Companies Brief at 553, citing Tr. 6, at 1051).

²⁵³ The Companies claim that a focus on customer satisfaction is what led the Department to consider imposing service quality-related penalties based on the results of customer

Regarding the issue of cross-subsidization raised by the Attorney General, the Companies counter that many aspects of Eversource's customer service activities are included in the cost of service, despite not being used by all customers in any given year, such as the Companies' call center (Companies Brief at 551, citing Exh. DPU-13-10). Further, the Companies insist that while not all customers may take advantage of fee free credit/debit payment option, it is wholly reasonable to provide the program and to socialize the associated costs across all customers (Companies Brief at 552, citing Exh. DPU-13-10). Eversource also notes that because the fee free program would be available to all customers, it is consistent with the principle of cost causation (Companies Brief at 555).

Moreover, Eversource maintains that the cost of the proposed fee free program is based on reasonable assumptions regarding customer migration and, because the Companies used a competitive RFP process, the proposal is consistent with the provision of least-cost service (Companies Brief at 192, 193, 554). In this regard, the Companies claim that the Attorney General misunderstands the cost of the fee free program, and that the annual bill impact amounts to an average of \$4.32 per customer (Companies Brief at 552-553). In addition, Eversource contends that offering the fee free program costs less than owning and maintaining an in-person payment center, such as a business office (Companies Brief at 553).

satisfaction surveys (Companies Reply Brief at 134). Eversource notes that while the Department ultimately decided against imposing such penalties, the Department maintained the requirement to improve customer satisfaction (Companies Reply Brief at 134, citing Order Adopting Revised Service Quality Standards, D.P.U. 12-120-D, at 10 (2015)).

In response to claims that the fee free program costs are not known and measurable, Eversource notes that the proposal constitutes the best possible estimation, with adoption rates based on the experience of industry leaders, and that the costs are fully reconcilable (Companies Brief at 556; Companies Reply Brief at 135). Eversource also contends that while, any cost savings associated with the program are speculative and difficult to quantify, the lack of easily quantifiable savings is not, in and of itself, sufficient reason to justify disallowing the fee free program (Companies Brief at 559; Companies Reply Brief at 136).

Further, with respect to the proposed ratemaking treatment sought by the Companies, they claim that because the customer migration trend is expected to be steep over the first five years, a “different” ratemaking approach (*i.e.*, establishing a reserve fund) is necessary (Companies Brief at 194). As such, the Companies contend that the proposal is designed to provide customers with the full benefit of the lowest cost per transaction, while also providing appropriate ratemaking treatment for transitioning the associated costs into base rates in the future once a more representative level of expense is known (Companies Brief at 194, 558). In this regard, Eversource explains that it initially considered establishing a representative level of costs into base rates as part of the instant filing, but the level of uncertainty and risk in estimating a known and measurable amount was “significant” (Companies Brief at 557; Companies Reply Brief at 135). Eversource claims it also have considered a separate cost recovery mechanism outside of base rates, but ultimately determined that option to be administratively inefficient (Companies Brief at 557; Companies Reply Brief at 135).

Eversource contends that if the Department determines that the current proposal or projected adoption rate is too high or too costly, the Companies would be amenable to a reduced annual budget (Eversource does not offer an alternative annual amount) for the fee free program, subject to the same true up method initially proposed (Companies Reply Brief at 136). Eversource argues that while this would accomplish the same objective from a cost recovery perspective, it could result in a larger future increase to reconcile an under recovery if the annual contribution to the reserve fund is too low (Companies Reply Brief at 136).

Finally, Eversource contends that if the fee free proposal is approved, the Companies will require an implementation period of approximately six months to make system changes to accommodate the new payment offering (Companies Brief at 138 n.35). According to Eversource, the cost to NSTAR Gas will be significant on an annual basis, assuming customer participation rates are as robust as the Companies anticipate (Companies Brief at 138 n.35). Therefore, Eversource requests that the Department approve implementation of the fee free program for both electric and gas customers, and authorize the Companies to defer the actual transaction costs incurred on behalf of gas customers for amortization in rates in the next rate case (Companies Brief at 138 n.35).

C. Analysis and Findings

Eversource proposes to implement a fee free credit/debit card payment program that allows customers to pay their electric bills via credit or debit card without incurring the third-party transaction fee of \$2.25 (Exhs. ES-PMC-1, at 5, 7; ES-DPH-1, at 50, 52). The Companies estimate the cost of the program to be \$30 million over five years, or \$6 million

annually, and propose to recover the cost from all customers through base distribution rates (Exhs. ES-PMC-1, at 7, 15; ES-DPH-1, at 51-52, 54; ES-DPH-2 (East), Sch. DPH-9 (Rev. 3); ES-DPH-2 (West), Sch. DPH-9 (Rev. 3); AG-19-14; Tr. 6, at 1079).

The Attorney General and Cape Light Compact both argue that the program should be rejected as the costs associated with the fee free proposal are not known and measurable, but instead are based on assumptions that are speculative at best (Attorney General Brief at 142; Cape Light Compact Brief at 79). As a threshold matter, proposed adjustments to test year expenses based on estimates typically are not allowed. D.T.E. 98-51, at 62; D.P.U. 92-210, at 83; Dedham Water Company, D.P.U. 849, at 32-34 (1982). However, irrespective of whether Eversource has provided sufficient and reliable cost information to support the fee free program as a known and measurable change to the Companies' costs of service, the Department is not persuaded that the proposal, on the whole, is in the best interest of ratepayers.

In particular, we find that the estimated annual cost of the fee free proposal is disproportionate to the combined cost of all other payment options. During the test year, NSTAR Electric incurred approximately \$1.2 million in costs to process all types of payments, and WMECo incurred \$172,773 in costs to process all types of payments (Exhs. AG-37-8; AG-37-9; Tr. 6, at 1086). At an annual cost of \$6 million, the fee free program would not only be the most expensive of all payment options, but the cost of processing credit and debit card transactions fee free would eclipse the total cost of

processing all other payment types by almost 450 percent (Exhs. AG-37-8; AG-37-9; Tr. 6, at 1086-1087).

Further, we find that the proposal will result in costs being borne by a vast majority of customers who are unlikely to take advantage of the fee free program. In this regard, the record shows that during the test year only approximately 1.64 percent of NSTAR Electric customers chose to pay their bill by credit/debit card and only 3.40 percent of WMECo customers chose to pay by credit/debit card (Exhs. DPU-13-2; DPU-13-3; Tr. 6, at 1062). Yet, under the Companies' proposal, all customers would be responsible for the program's cost, even those who choose to pay their bills by another method. Thus, even assuming that Eversource's estimate of 30 percent customer migration to the fee free option proves accurate, 70 percent of customers would be subsidizing the cost for the convenience of the remaining 30 percent of the Companies' customers. Thus, on its surface, the Companies' proposal is inconsistent with established cost-causation principles in ratemaking. Bay State Gas Company, D.T.E./D.P.U. 06-36, at 41 (2007); D.P.U. 96-50 (Phase I) at 133-134.

Moreover, we are not persuaded by Eversource's reference to other customer service activities, such as the call center, where costs are borne by all customers through the cost of service, but not used by all customers (Companies Brief at 551-552). While Eversource is correct that all customers pay for call centers through base distribution rates despite not always using them, the comparison is misplaced because a customer call center is a necessary business expense for a distribution utility with no comparable low-cost alternative. On the other hand, with respect to the proposed fee free payment option, the record shows that

customers have several low-cost, and even no-cost, payment options (Exhs. DPU-13-2; DPU-13-3; Tr. 6, at 1081). For example, customers may pay their bills by mailing a check and paying the cost of a first class stamp, or they may pay in person, which can be free or cost a nominal amount (i.e., \$1.00 or \$1.50), depending on the location (Exhs. DPU-13-2; DPU-13-3). In addition, customers can use no-cost electronic payment options such as on-line bank payments, ACH (both one-time and recurring) payments, and mobile payments (Exhs. DPU-13-2; DPU-13-3; Tr. 6, at 1081).

Eversource defends its proposal by emphasizing that the fee free proposal is necessary to increase customer satisfaction (Companies Brief at 194, 553). In this regard, the Companies point to customer satisfaction surveys wherein customers expressed displeasure with having to pay a transaction fee when choosing to pay by credit or debit card (Exhs. DPU-13-16; AG-54-4; Tr. 6, at 1094). However, the record shows that in one of the referenced surveys, the percentage of customers that expressed discontent with credit card convenience fees was roughly equal to the percentage of customers who also expressed dissatisfaction because their electric rates are too high (Exh. AG-54-4; Tr. 6, at 1097-1098). While the Department recognizes the importance of maintaining customer satisfaction by offering convenient payment options to customers, we find that the fee free proposal fails to strike an appropriate balance between this objective and the Companies' obligation to provide least-cost service to all of their customers. The estimated annual cost of \$6 million associated with the fee free proposal is simply too costly to adhere to the standard of

least-cost service.²⁵⁴ Further, we are not convinced that the fee free proposal is necessary as a means to “catch up” with other payment services available to customers in the market (Exh. ES-PMC-1, at 6, 34; Tr. 6, at 1051; see also n.252 above).²⁵⁵

Finally, we turn to the Low Income Network’s concern about low-income customers paying high interest rates for credit card payments if the fee free proposal were to be approved. The Companies concede that credit card companies can charge high interest rates, often in the range of 13 to 25 percent (Tr. 6, at 1064). It stands to reason that these penalties can create a financial hardship for any customer who fails to pay his/her electric bill, but especially a low-income customer. Further, the Department recognizes that a fee free credit/debit card payment option could dissuade some low-income customers from choosing to take advantage of other options, such as the arrearage forgiveness programs, payment plan arrangements, and various customer protections (Tr. 6, at 1066-1067).

Based on the above considerations, we conclude that Eversource’s fee free proposal, on the whole, is not in the best interest of ratepayers. Therefore, the Department declines to

²⁵⁴ We note that if the Companies’ customer migration assumptions are valid, the annual cost of the fee free program presumably would eventually surpass \$6 million as a 30 percent adoption rate continues into the future (Exhs. DPU-13-9, Att.; DPU-13-12, Att.).

²⁵⁵ As noted above in n.252, the Companies analogize the fee free proposal to paying for parking meters via a smartphone rather than with coins (Companies Brief at 553; Tr. 6, at 1051). However, in the parking meter analogy, the customer parking his/her car is paying for his/her own convenience in both scenarios - the cost has not changed, merely the mode of payment. A more apt analogy that adheres to the theme of parking meters would be a proposal where parking meters became “free,” but property or automotive taxes are increased for everyone to pay for the cost. Under this scenario, we would expect there to be opposition from those who would be paying for a service that they may not use.

approve the proposal. Accordingly, the Department will remove \$5,040,200 from NSTAR Electric's cost of service²⁵⁶ and \$897,171 from WMECo's cost of service.²⁵⁷ Finally, in light of this decision, we need not specifically address the Companies' proposal to implement the fee free proposal for NSTAR Gas customers, though we do recognize that the Companies' proposal to do so in this proceeding raises important due process concerns.

XII. PROPERTY TAX COST RECOVERY PROPOSAL

A. Introduction

Eversource states that WMECo has incurred \$8,314,371 in incremental property taxes from 2012 through 2015 as a result of the City of Springfield's adoption of the RCNLD valuation method (Exh. AG-44-1, Att. (a); Tr. 9, at 1840-1841, 1867-1868; RR-DPU-31). WMECo has withheld paying the incremental property tax levied by Springfield (Exh. DPU-39-7 & Att.; Tr. 9, at 1874-1875). Eversource states that WMECo sought abatements from Springfield for the incremental tax amounts levied in 2012 through 2015, but the requests were denied (Exhs. ES-DPH-1, at 192; DPU-39-6, at 2-3 & Att. (a)). Thereafter, WMECo appealed the abatement decisions to the Massachusetts Appellate Tax Board ("Appellate Tax Board") and those appeals still are pending (Exhs. ES-DPH-1, at 192; DPU-39-6, at 3 & Att. (a); Tr. 9, at 1860).²⁵⁸ Eversource states that if the Appellate Tax

²⁵⁶ \$5,093,091 less savings of \$52,891 = \$5,040,200 (see n.248 above).

²⁵⁷ \$906,909 less savings of \$9,738 = \$897,171 (see n.248 above).

²⁵⁸ On December 16, 2009, the Appellate Tax Board issued a ruling approving the City of Boston Board of Assessors' adoption of the RCNLD valuation method for assessing utility property. Boston Gas Company v. The Board of Assessors of Boston, Docket No. F275055, F275056 (December 16, 2009). Boston Gas Company appealed the

Board denies these appeals, WMECo will seek relief with the Massachusetts Court of Appeals (Exh. ES-DPH-1, at 192).

Pursuant to Article II (5) of the Merger Settlement (see Section V.A above), WMECo may seek recovery of incremental property taxes incurred during the rate freeze (i.e., January 1, 2012 through December 31, 2015) associated with the adoption of the RCNLD valuation method, provided that the incremental expense meets the minimum annual threshold for exogenous costs.²⁵⁹ The Merger Settlement is silent with respect to the method to be used to recover exogenous costs.

B. Companies Proposal

Eversource seeks to recover the aforementioned \$8,314,371 in incremental property taxes that WMECo incurred from 2012 through 2015 as an exogenous cost pursuant to the Merger Settlement (Exhs. ES-DPH-1, at 189, AG-44-1, Att. (a); Tr. 9, at 1840-1841, 1867-1868; RR-DPU-31). WMECo proposes to recover these costs, amortized over five years, pursuant to a new Municipal Property Tax Adjustment (“MPTA”) tariff

ruling to the Supreme Judicial Court, which upheld the Appellate Tax Board’s decision and determined that the valuation method used by Boston was reasonable. Boston Gas Company v. Board of Assessors, 458 Mass. 715, 729, 739-740 (2011). The Supreme Judicial Court then remanded the matter to the Appellate Tax Board for further findings. On April 21, 2011, the Appellate Tax Board issued a final ruling in the matter denying Boston Gas Company’s appeal of the property tax valuation of the City of Boston Board of Assessors. Boston Gas Company v. The Board of Assessors of Boston, Docket No. F275055, F275056 (April 21, 2011).

²⁵⁹ Pursuant to the Merger Settlement, the dollar threshold for qualification as an exogenous factor in any calendar year covered by the Merger Settlement shall be determined by multiplying the total distribution revenues of that year by a factor of 0.003212 (Merger Settlement at Art. II (5)).

(Exhs. ES-DPH-1, at 190, RR-DPU-51, Att. (a) at 336-338 (proposed M.D.P.U. No. 534)).²⁶⁰ WMECo further proposes that any abatements associated with the incremental taxes subject to exogenous cost recovery will be credited to ratepayers through the MPTA (Tr. 9, at 1844, 1865, 1872; RR-DPU-51, Att. (a) at 336-338 (proposed M.D.P.U. No. 534)).

C. Positions of the Parties

1. Attorney General

The Attorney General does not contest WMECo's eligibility to recover the incremental property taxes incurred during the rate freeze that result from Springfield's use of the RCNLD valuation method (Attorney General Brief at 190). The Attorney General argues, however, that the claimed amounts should be reduced to reflect income tax deductions (Attorney General Brief at 191). Specifically, the Attorney General maintains that the Companies' proposal does not capture the state and federal tax benefits WMECo would receive after it deducts the amounts from its income taxes (Attorney General Brief at 190).

2. TEC and WMIG

TEC and WMIG credit Eversource for vigorously challenging municipal efforts to use the RCNLD valuation method (TEC and WMIG Brief at 16). TEC and WMIG maintain, however, that they have concerns about allowing WMECo to recover the incremental

²⁶⁰ WMECo sought to recover an additional \$1,991,983 through the MPTA, representing incremental property taxes assessed by Springfield in 2016 (Exh. AG-1-44, Att. (a); Tr. 9, at 1840-1841, 1867-1868; RR-DPU-31). WMECo sought a deferral of these amounts in a separate proceeding, Western Massachusetts Electric Company, D.P.U. 16-107. On November 30, 2017, the Department denied WMECo's request for a deferral. D.P.U. 16-107 (November 30, 2017). Accordingly, WMECo is not eligible to recover these amounts.

property taxes while it still has a pending appeal challenging these taxes (TEC and WMIG Brief at 16). Specifically, TEC and WMIG assert that if WMECo is allowed to recover these costs while an appeal is pending, the Companies would no longer have a financial incentive to aggressively challenge the use of the RCNLD valuation method (TEC and WMIG Brief at 16-18).

3. Companies

The Companies argue that the incremental property taxes at issue far exceed the threshold for recovery in the Merger Settlement (Exh. ES-DPH-1, at 189). Further, Eversource notes that the Attorney General does not contest that WMECo is eligible to recover incremental property taxes incurred during the rate freeze arising from the use of the RCNLD valuation method (Companies Brief at 502).

Eversource argues that the Attorney General's request to reduce WMECo's recovery of incremental property tax expense based on tax benefits is flawed (Companies Brief at 502). Specifically, Eversource maintains that any revenues received through the recovery of exogenous costs would be subject to taxation and WMECo's property tax expense is a deduction already (Companies Brief at 502). Therefore, the Companies maintain that reducing recovery, as the Attorney General suggests, would only prevent WMECo from receiving the full amount of exogenous costs to which it is entitled (Companies Brief at 502).

D. Analysis and Findings

The Merger Settlement provides that, if certain conditions are met, WMECo may seek recovery of incremental RCNLD-related property taxes incurred during the rate freeze as exogenous costs (Merger Settlement at Art. II (5)). At the close of the record in this case,

Eversource's appeals to the Appellate Tax Board of Springfield's denials of its tax abatement requests were pending (Exh. ES-DPH-1, at 192; DPU-39-6, at 3 & Att. (a); Tr. 9, at 1860).

If such appeals are unsuccessful, Eversource states that it will appeal further to the Massachusetts Court of Appeals (Exh. ES-DPH-1, at 192). There is no timeline for resolution of the appeals.

The Department is unable to now assess whether at the end of the appeals process there will be any incremental taxes and, if there are, whether the amount will be above the annual threshold subject to recovery from ratepayers as exogenous costs.²⁶¹ Accordingly, the Department cannot consider Eversource's request for recovery of WMECo's incremental property taxes as an exogenous cost at this time. This finding is consistent with the treatment of NSTAR Gas' similar request for exogenous cost recovery in its last base rate proceeding. D.P.U. 14-150, at 280-281.

Once all appeals are exhausted, WMECo may file a petition seeking exogenous cost recovery of any incremental property tax assessed using the RCNLD valuation method from 2012 through the year ending December 31, 2015. D.P.U. 14-150, at 281. At that time, the Department and any parties to the proceeding will have an opportunity to investigate the proposal to determine whether the costs satisfy the thresholds and other requirements in the

²⁶¹ Eversource maintains that WMECo has incurred \$8,314,371 in incremental property taxes associated with Springfield's use of the RCNLD valuation method during the applicable period (Exhs. ES-DPH-1, at 189, AG-44-1, Att. (a); Tr. 9, at 1840-1841, 1867-1868; RR-DPU-31). The Appellate Tax Board or an appellate court could, however, determine that the amount of incremental taxes owed by WMECo is different than the amount sought.

Merger Settlement for exogenous cost recovery and are otherwise recoverable from ratepayers. D.P.U. 14-150, at 281.²⁶²

Having found that WMECo's request for exogenous cost recovery is not ripe for consideration at this time, the Department disallows Eversource's proposed MPTA tariff, M.D.P.U. No 534. The Department will consider a request to establish an MPTA tariff as part of any future petition seeking exogenous cost recovery under the Merger Settlement.

XIII. STORM COST RECOVERY MECHANISM

A. Current Storm Funds and Storm Cost Recovery Filings

1. NSTAR Electric

In Boston Edison Company, D.P.U./D.T.E. 96-23 (1998), the Department approved a restructuring settlement that, among other things, established a storm fund for Boston Edison Company. The Department allowed Boston Edison Company to access the storm fund when the incremental O&M expense of a storm exceeded \$1.0 million. D.P.U./D.T.E. 96-23, at 81-83. The settlement required Boston Edison Company to prefund the storm fund at \$8.0 million and, whenever storm costs were paid from the fund, restore the fund balance to \$8.0 million, up to a maximum of \$3.0 million per year. D.P.U./D.T.E. 96-23, at 81-83. In D.T.E. 05-85, at 7-8, 13, 33, the Department approved the proposed merger that formed

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Although the Merger Settlement allows Eversource to seek recovery of incremental tax amounts associated with the RCNLD valuation method, the Merger Settlement makes no provision for the recovery of ancillary costs such as accrued interest or litigation expenses. Therefore, interest and litigation costs are not eligible for recovery as exogenous costs under the provisions of the Merger Settlement. D.P.U. 14-150, at 278-279.

the corporate entity known as NSTAR Electric,²⁶³ increased the amount in the storm fund to \$13.5 million, and increased the annual replenishment amount to a maximum of \$4.5 million per year.

Pursuant to its storm fund mechanism, NSTAR Electric filed for, and the Department approved, the recovery of costs associated with two storms that occurred in 2011 (“Tropical Storm Irene”) and an October 29, 2011 snowstorm (“October Snowstorm”) over a five-year period (2014 through 2018) with interest at the prime rate (Exh. ES-DPH-1, at 126). See also NSTAR Electric Company, D.P.U. 13-52, at 106-107. As a result, NSTAR Electric currently recovers approximately \$8.0 million annually, and will do so through the end of 2018 (Exh. ES-DPH-1, at 126, citing NSTAR Electric Company, D.P.U. 16-172, Exh. NSTAR-BKR-13 (2016). Further, NSTAR Electric has filed with the Department for approval to recover costs through the storm fund of approximately (1) \$109.8 million for eight storms that occurred between 2012 through 2015, and (2) \$11.1 million for two storms that occurred in February 2016. NSTAR Electric Company, D.P.U. 16-74, Exh. EVER-LML-1-SUMMARY (Rev. 3); NSTAR Electric Company, D.P.U. 17-51, Exh. EVER-LML-1-SUMMARY.²⁶⁴

²⁶³ Pursuant to the settlement agreement approved in D.T.E. 05-85, at 7, 33, Boston Edison, Cambridge Electric Light Company, Commonwealth Electric Company, and Canal Electric Company merged into a single corporate entity known as NSTAR Electric.

²⁶⁴ Both D.P.U. 16-74 and D.P.U. 17-51 are currently pending before the Department.

2. WMECo

In D.T.E. 06-55, the Department approved the establishment of a storm fund reserve to pay for incremental O&M costs associated with any individual major storm event with incremental O&M costs over \$300,000. D.T.E. 06-55, at 7. The Department required WMECo to prefund the storm fund with \$300,000, and to accrue an additional \$300,000 per year to the storm fund. D.T.E. 06-55, at 7. In D.P.U. 10-70, at 192, the Department approved increasing the annual funding level to \$575,000. D.P.U. 10-70, at 192. The Department also approved an annual reconciliation of the storm fund through the storm recovery reserve cost adjustment (“SRRCA”) factor. D.P.U. 10-70, at 203 & February 17, 2017 Compliance Filing (2011). Further, the Department allowed WMECo to amortize recovery of a \$15,307,551 deficit balance over five years outside of base distribution rates and to establish a symmetrical cap of \$3.0 million on the storm fund. D.P.U. 10-70, at 193, 198. In instances where the funds exceed the cap, the Department required WMECo to return the excess amount to ratepayers and, in instances where the fund had a deficiency in excess of the cap, the Department allowed WMECo to propose a method to recover the deficiency in excess of the cap. D.P.U. 10-70, at 199. Further, the Department approved the use of a carrying charge at the customer deposit rate on the storm fund monthly balance. D.P.U. 10-70, at 201.

Pursuant to D.P.U. 10-70, WMECo has subsequently filed six annual petitions to the Department for reconciliation of the storm fund through the SRRCA and approval of its storm recovery adjustment factor (“SRAF”). In Western Massachusetts Electric Company,

D.P.U. 11-102/11-102-A (2014), WMECo sought recovery of \$24,557,641 in storm-related costs for the period January 2008 through September 2011. The Department approved recovery of most of these costs but denied recovery of \$622,202, which included costs for t-shirts, video and radio commercials, insurance, storm bonuses, and \$448,919 of non-incremental capitalized wages. D.P.U. 11-102/11-102-A at 42-50, 68, 84-88, 103.²⁶⁵ In Western Massachusetts Electric Company, D.P.U. 13-135, at 2 (2016), WMECo petitioned the Department for recovery of \$27,109,008 in storm-related costs for the October Snowstorm and for Hurricane Sandy. The Department approved cost recovery for most of these costs, but denied WMECo \$563,069 in capital labor costs. Western Massachusetts Electric Company, D.P.U. 13-135-A at 21-24 (2014).²⁶⁶ Additionally, WMECo has three other storm filings pending before the Department.²⁶⁷

²⁶⁵ For the calendar year 2012, in which there were no new storms, WMECo filed and the Department approved the reconciliation of WMECo's annual SRRCA factor. Western Massachusetts Electric Company, D.P.U. 12-90 (2012).

²⁶⁶ The Department found that WMECo's method for calculating total capital labor costs overstated non-incremental labor costs, and that WMECo should have assigned a portion of these costs to contractor labor costs. D.P.U. 13-135-A at 21-24. The Department further found that WMECo failed to demonstrate it had taken reasonable and prudent steps to bill Verizon, and conditionally disallowed 50 percent of vegetation management costs. D.P.U. 13-135-A at 44-45. WMECo has submitted a motion for reconsideration of the Department's findings related to vegetation management, which is under Department review in D.P.U. 13-135.

²⁶⁷ The following investigations are pending before the Department: (1) Western Massachusetts Electric Company, D.P.U. 14-126 (2014), in which WMECo experienced no new storms but seeks reconciliation of its SRAF; (2) Western Massachusetts Electric Company, D.P.U. 15-149 (2015), in which the WMECo filed for approval for recovery of \$3,882,229 in costs associated with a July 2014 thunderstorm and November 2014 snowstorm; and (3) Western Massachusetts Electric

B. Companies Storm Fund Proposal

1. Storm Fund Mechanism

Eversource proposes to consolidate the storm fund mechanism for NSTAR Electric and WMECo for storm costs incurred on and after January 1, 2018, and to recover future qualifying storm-related costs pursuant to a new tariff (Exh. ES-DPH-1, at 110-111; RR-DPU-51, Att. (a) at 122-123 (proposed M.D.P.U. No. 524)). Eversource states that it largely modeled the storm fund components after the mechanism approved in D.P.U. 15-155, with some modifications (Exhs. ES-CAH-1, at 25; ES-DPH-1, at 111).²⁶⁸

First, as noted, Eversource proposes to continue storm fund operations of NSTAR Electric and WMECo in a consolidated storm fund for storm costs incurred on and after January 1, 2018 (Exh. ES-DPH-1, at 111-112). Second, Eversource proposes that any single storm in which Eversource incurs \$1.2 million in incremental O&M cost will be eligible for recovery through the storm fund (Exh. ES-DPH-1, at 112, 115). Eversource calculated the proposed threshold by increasing NSTAR Electric's \$1.0 million threshold by the cumulative inflation change based on the gross GDP-PI from the U.S. Bureau of Economic Analysis

Company, D.P.U. 16-179 (2016), in which WMECo experienced no new storms but seeks reconciliation of its SRAF. The Department approved these three filings subject to further investigation. D.P.U. 14-126, at 5; D.P.U. 15-149, at 5; D.P.U. 16-179, at 5.

²⁶⁸ In addition to proposed storm fund components that are similar to those approved in D.P.U. 15-155, Eversource seeks approval to recover carrying charges for storms that exceed the proposed \$30.0 million cap inclusion within the storm fund, to establish a replenishment factor if the combination of any deferral balance and/or the balance of the storm fund exceeds \$75.0 million, and to recover lean-in costs related to the costs of pre-staging resources when a storm event fails to materialize (Exhs. ES-DPH-1, at 113, 120-124). We address these issues in detail below.

from January 1, 2005 through December 31, 2016, resulting in an increase to the qualifying threshold from \$1.0 million to \$1.2 million (Exh. ES-DPH-1, at 115).²⁶⁹ Given that the Companies plan to legally consolidate operations effective January 1, 2018, Eversource proposes that a single \$1.2 million threshold apply to NSTAR Electric and WMECo's consolidated storm fund mechanism (Exh. ES-DPH-1, at 115).²⁷⁰

Third, Eversource proposes to recover the \$1.2 million threshold amount through base distribution rates for a representative number of storms (Exh. ES-DPH-1, at 124). Based on a normalized level of three major storm events per year, Eversource proposes to recover a total of \$3.6 million annually through base distribution rates (Exhs. ES-DPH-1, at 125; ES-DPH-2, Sch. DPH-21, at 3, 4 (East); ES-DPH-2, Sch. DPH-21, at 3, 4 (West)). Eversource proposes to allocate the \$3.6 million annual amount to NSTAR Electric and WMECo on an 80/20 split, respectively (Exh. ES-DPH-1, at 125).²⁷¹ Accordingly, Eversource proposes that NSTAR Electric recover \$2.88 million annually in base distribution

²⁶⁹ Eversource states that it used the same method approved by the Department in D.P.U. 15-155 to calculate its proposed qualifying storm event threshold (Exh. ES-DPH-1, at 114).

²⁷⁰ Eversource proposes that its \$1.2 million threshold would replace the current threshold for storm cost recovery of \$300,000 and \$1.0 million for WMECo and NSTAR Electric, respectively (Exh. ES-DPH-1, at 112).

²⁷¹ Eversource states that it determined this proposed base distribution rate allocation by the ratio of NSTAR Electric storm costs and WMECo storm costs to the total net incremental storm costs incurred from February 2010 through February 2016 (Exhs. ES-DPH-1, at 125; ES-DPH-2, Sch. DPH-21, at 4 (East); ES-DPH-2, Sch. DPH-21, at 4 (West)).

rates, and WMECo recover \$720,000 annually in base distribution rates (Exh. ES-DPH-1, at 126).

Fourth, Eversource proposes to include an annual contribution to the storm fund through base distribution rates in the consolidated amount of \$10.0 million (Exh. ES-DPH-1, at 112; see Exh. ES-DPH-2, Sch. DPH-21, at 2, lines 59, 60 (East)). Eversource asserts that its current total storm fund allowance of \$5.075 million annually is insufficient based on the total actual net cost of 21 storm fund eligible events experienced since 2010 (Exh. ES-DPH-1, at 110, 115).²⁷² Eversource states that it applied the same method approved for National Grid in D.P.U. 15-155 to determine a new level of base distribution rate contributions for storm fund eligible events (Exh. ES-DPH-1, at 117). In calculating the proposed base distribution rate contribution, Eversource excluded the costs related to the two largest storm events from total costs incurred during the six-year period from February 2010 through February 2016 (Exh. ES-DPH-1, at 117). Next, Eversource took the \$96.0 million in rounded storm costs that resulted from removing the two largest storm events (\$187.0 million in net incremental storm costs minus \$92.0 million) and divided by 77 (the number of months between February 2010 through the end of the test year of June 30, 2016) to determine an average monthly incremental O&M storm fund eligible cost of approximately \$1.2 million (Exhs. ES-DPH-1, at 117; ES-DPH-2, Sch. DPH-21, at 2 (East); ES-DPH-2, Sch. DPH-21, at 2 (West)). Eversource then multiplied the resulting \$1.2 million average

²⁷² The \$5.075 million total consists of \$4.5 million per year for NSTAR Electric (collected through base distribution rates) and \$575,000 per year for WMECo (collected through the SRRCA) (Exh. ES-DPH-1, at 110, 115).

monthly storm fund eligible cost by twelve months to derive an average annual incremental O&M storm fund eligible cost of approximately \$15.0 million (Exh. ES-DPH-1, at 117). Eversource proposes, however, a \$10.0 million annual storm fund contribution in base distribution rates, which it states is consistent with the amount the Department approved for National Grid (Exh. ES-DPH-1, at 117-118, citing D.P.U. 15-155, at 79). Eversource proposes to collect the \$10.0 million annual storm fund contribution in base distribution rates from NSTAR Electric and WMECo ratepayers on an 80/20 basis, respectively, collecting annually \$8.0 million in NSTAR Electric's base distribution rates and \$2.0 million in WMECo's distribution rates (Exhs. ES-DPH-1, at 118; ES-DPH-1, at 117; ES-DPH-2, Sch. DPH-21, at 2 (East); ES-DPH-2, Sch. DPH-21, at 2 (West)).²⁷³

Fifth, Eversource proposes a symmetrical cap of \$30.0 million on the storm fund's balance to trigger either a customer refund for an over-recovery balance that exceeds the cap, or a customer charge for an under-recovery balance that exceeds the cap (Exh. ES-DPH-1, at 112, 121). Eversource seeks to accrue interest at the prime rate on the storm fund balance commencing at the start date of the storm event (Exh. ES-DPH-1, at 112-113, 121).

Eversource asserts that its proposal to apply the \$30.0 million storm fund cap is consistent

²⁷³ Eversource determined the proposed 80/20 split by the ratio of NSTAR Electric storm costs and WMECo storm costs to total net incremental storm costs between February 2010 and February 2016 (Exhs. ES-DPH-1, at 118; ES-DPH-1, at 117; ES-DPH-2, Sch. DPH-21, at 2 (East); ES-DPH-2, Sch. DPH-21, at 2 (West)). This represents an annual increase of \$3.5 million over current levels for NSTAR Electric and an annual increase of \$2.0 million over current levels for WMECo (Exhs. ES-DPH-1, at 118; ES-DPH-2, Sch. DPH-21, at 1 (East); ES-DPH-2, Sch. DPH-21, at 1 (West)).

with Department's directives in D.P.U. 15-155 (Exh. ES-DPH-1, at 121).²⁷⁴ In addition, Eversource proposes to accrue carrying charges for those storms that exceed the \$30.0 million cap beginning at the start of the storm event (Exh. ES-DPH-1, at 121).

Sixth, Eversource proposes that if the combination of the cost for storms in excess of \$30.0 million and the storm fund balance exceed \$75.0 million (i.e., the total sum of all single storms in excess of \$30.0 million and/or the balance in the storm fund exceeds \$75.0 million), it may file for an annual replenishment amount, pending a prudence review by the Department (Exh. ES-DPH-1, at 123). Eversource asserts that this would enable it to reduce the outstanding, unrecovered storm balance, minimize carrying charges, and mitigate bill impacts that would accompany the pancaking effect of significant storm cost recovery (Exhs. ES-DPH-1, at 113, 123; DPU-2-19).

Finally, Eversource proposes that it be allowed to recover "lean-in" costs from the storm fund in the event that an anticipated emergency response plan ("ERP") event does not materialize (Exh. ES-DPH-1, at 113, 123-124). Lean-in costs are defined as costs incurred in response to anticipated Type 3 or greater ERP events to mobilize and pre-stage third-party contractors (Exh. ES-DPH-1, at 113,123-124).²⁷⁵ Eversource proposes cost recovery for all

²⁷⁴ In D.P.U. 15-155, at 82, the Department approved a \$30.0 million symmetrical cap for National Grid's storm fund mechanism.

²⁷⁵ The ERP applies to emergency events caused by any hazard or threat that results in, or could result in, a major disruption of the electrical service to Eversource customers. NSTAR Electric Company/Western Massachusetts Electric Company, D.P.U. 17-ERP-10, ERP at 13 (2017). An emergency event is defined as a Type 3 ("moderate regional event"), Type 2 ("serious regional event"), or Type 1 ("full scale

lean-in costs regardless of whether the actual magnitude and cost of storm is above or below the \$1.2 million storm fund threshold (Exh. ES-DPH-1, at 113). Eversource requests that lean-in cost recovery accrue carrying charges at the prime rate beginning at the date of the storm event (Exh. ES-DPH-1, at 120-121). Eversource proposes that the following five criteria be met for recovery of lean-in costs: (1) Eversource's Incident Commander determines that circumstances warrant activation of the ERP;²⁷⁶ (2) pre-staging of external-crew resources is anticipated as part of the ERP activation to facilitate the efficient restoration of service to potentially affected customers; (3) pre-staging of external-crew resources will require Eversource to incur incremental cost due to the circumstances at hand; (4) Eversource provides written notice to the Department informing the Department: (a) of the activation of the ERP; (b) that the event classification declared is a Type 3 or greater (i.e., Type 3, Type 2, or Type 1); and (c) that the Eversource is commencing efforts to procure and pre-stage external crews to address oncoming storm conditions; and (5) the total incremental costs actually incurred by Eversource falls below the \$1.2 million threshold for storm-fund eligibility due to the fact that actual storm conditions did not develop as anticipated, thereby obviating a full response by the Eversource under the ERP requirements (Exh. ES-CAH-1, at 29).

catastrophic event”) (Exh. DPU-2-1, Att. at 1-3). See also D.P.U. 17-ERP-10, ERP at 21-23.

²⁷⁶ Eversource states that whenever a significant incident capable of causing interruptions to electric service is anticipated to occur, or occurs, the Incident Commander is responsible for analyzing the expected severity and complexity of the incident, with the collaboration and input of the Section Chiefs (Exh. DPU-2-1, at 1).

2. Outstanding Storm Fund Balance

Eversource proposes to collect all unrecovered storm costs incurred prior to January 1, 2018 through separate reconciling charges for NSTAR Electric customers and WMECo customers (Exh. ES-DPH-1, at 128; RR-DPU-51, Att. (a) at 116-121 (proposed M.D.P.U. Nos. 116E, 1054C). As part of its revised rate design proposal, the Companies propose that, effective January 1, 2019, storm costs will be recovered from all customers in both the Eastern and Western Massachusetts territories through a consolidated charge (RR-DPU-51, Att. (a) at 123 (proposed M.D.P.U. No. 524)). The Department will address the proposed change to recovery of storm costs through a consolidated charge effective January 1, 2019, in our subsequent Order addressing rate design issues.

Eversource proposes to recover the approximate \$105.0 million storm fund balance for NSTAR Electric (from storms that have occurred since 2011) over a five-year period beginning January 1, 2018,²⁷⁷ with interest accruing at the prime rate from the date of the storm event (Exhs. ES-DPH-1, at 129; DPU-30-8).²⁷⁸ Eversource states that NSTAR Electric is currently recovering approximately \$8.0 million annually with interest at the prime rate over a period of five years (2014 through 2018) associated with two storm events in

²⁷⁷ Eversource initially estimated NSTAR Electric's storm fund deficit to be approximately \$100.0 million but, as of March 31, 2017, Eversource estimates NSTAR Electric's storm fund deficit to be approximately \$105.0 million (Exhs. ES-DPH-1, at 129; DPU-30-8).

²⁷⁸ Eversource estimates that, at NSTAR Electric's current rate of storm fund replenishment of \$4.5 million through base distribution rates, it would take approximately 22 years to replenish its storm fund deficit assuming no additional storms (Exh. ES-DPH-1, at 129).

2011 (Tropical Storm Irene and the October Snowstorm) (Exh. ES-DPH-1, at 126).²⁷⁹ Since 2011, Eversource states that NSTAR Electric has incurred a total of \$125.0 million of incremental storm fund eligible storm costs for ten storm events (between 2012 and 2016) and that costs for these storms have been offset somewhat by recovery in base distribution rates of \$4.5 million annually (Exh. ES-DPH-1, at 126, 127 (Table DPH-1), 129). As of March 31, 2017, however, NSTAR Electric calculates a storm fund deficit of approximately \$105.0 million (Exh. DPU-30-8).²⁸⁰ Eversource states that, assuming the Department approves storm fund cost recovery as proposed, NSTAR Electric's total unrecovered storm fund balance would take ten years to recover (2012 through 2022) (Exhs. ES-DPH-1, at 129).²⁸¹ Absent changes to the storm fund, Eversource estimates NSTAR Electric's current total annual revenue recovery rate associated with its outstanding storm fund balance

²⁷⁹ NSTAR Electric sought to recover a total of \$37,963,558, consisting of \$22,830,603 for Tropical Storm Irene and \$15,132,955 for the October Snowstorm. D.P.U. 13-52, at 1. The Department approved recovery of \$34,201,144 in storm-related costs. D.P.U. 13-52, at 106-107 & Stamp Approved Compliance Filing (January 2, 2014).

²⁸⁰ Eversource notes that it experienced three storm events over the current \$1.0 million threshold for NSTAR Electric in 2017 (Exh. DPU-30-8). Consistent with Eversource's proposal for recovering 2017 outstanding storm fund eligible costs at the current threshold (discussed in detail below) Eversource proposes to recover these additional storm costs through NSTAR Electric's current storm fund mechanism as a unique rate for NSTAR Electric customers (see Exhs. ES-DPH-1, at 128; DPU-30-8).

²⁸¹ This assumes that NSTAR Electric continue to recover approximately \$8.0 million per year towards these costs through the end of 2018 pursuant to the Department's Order in D.P.U. 13-52, and no additional storm events occur (Exh. ES-DPH-1, at 130).

to be approximately \$31.0 million (Exhs. ES-DPH-1, at 130; ES-DPH-5, at line 27 (East)).²⁸²

For WMECo, Eversource proposes to continue with WMECo's current storm cost recovery annually through the SRRCA at the current level until WMECo fully recovers the total outstanding balance of storm costs as of December 31, 2017 (Exh. ES-DPH-1, at 131). Eversource states that WMECo has been recovering its major storm costs on a more "real time" basis than NSTAR Electric (Exh. ES-DPH-1, at 127). Eversource states that WMECo currently has a rate in place through its SRRCA to recover storm costs approved for recovery in D.P.U. 11-102/11-102-A and D.P.U. 13-135, and for storms currently pending review before the Department in Western Massachusetts Electric Company, D.P.U. 15-149 (2015) (Exh. ES-DPH-1, at 127-128). Eversource proposes recovery of WMECo's outstanding storm balance as of January 1, 2018 at the level currently recovered in the SRRCA until the cost are fully recovered, unless additional significant storms occur in 2017 with costs that raise the balance to a level that it would not be recovered in five years (Exh. ES-DPH-1, at 130-131). In this instance Eversource proposes to amortize WMECo's storm fund balance over five years (Exh. ES-DPH-1, at 131). Eversource projects that, assuming no additional storms events occur and the level of recovery continues at current levels, the outstanding balance for these WMECo storms will be fully recovered by December 31, 2019

²⁸² This amount is subject to the final determination of recoverable storm costs for: (1) storm costs sought for recovery in D.P.U. 16-74; (2) Winter Storm Lexi and Winter Storm Mars, for which NSTAR Electric is seeking recovery in D.P.U. 17-51; and (3) any additional storms that may occur prior to new rates going into effect January 1, 2018 (Exh. ES-DPH-1, at 130).

(Exh. ES-DPH-1, at 128). If the level of recovery exceeds five years, Eversource then proposes that WMECo recover the unrecovered balance over five years beginning in 2018 (Exh. ES-DPH-1, at 131).

C. Positions of the Parties

1. Attorney General

The Attorney General raises arguments regarding (1) the recovery of deferred costs through a replenishment factor, (2) recovery of carrying charges in a replenishment factor for storms in which Eversource incurs over \$30.0 million in incremental O&M costs, which are not eligible for recovery through the storm fund, (3) recovery of lean-in costs, and (4) the proposed recovery of the outstanding storm cost balance. The Attorney General did not comment on the other aspects of the Companies' storm fund proposal.

First, the Attorney General asserts that Eversource should not be allowed to recover deferred costs for single storms in excess of \$30.0 million through the proposed annual replenishment factor as a means to reduce the deferred storm fund balance (Attorney General Brief at 179). The Attorney General contends that the Department has not previously allowed electric distribution companies to recover deferred storm costs through a replenishment factor (Attorney General Brief at 179). Rather, the Attorney General states that the Department recently allowed National Grid to petition the Department for a replenishment factor only for storm costs that are eligible for storm fund recovery (Attorney General Brief at 179, citing D.P.U. 15-155, at 82). Finally, the Attorney General argues that denial of recovery of these deferred costs through a replenishment factor would not result in unlawful confiscation, because Eversource can seek recovery of individual storm

events with incremental O&M costs that exceed \$30.0 million in its next base distribution rate case (Attorney General Brief at 179-180, citing Boston Edison Company v. Department of Public Utilities, 375 Mass. 1, 10 (1978); Massachusetts Electric Company and Nantucket Electric Company, D.P.U. 15-155-A at 15 (2017); D.P.U. 15-155, at 82).

Next, the Attorney General argues that carrying charges for deferred amounts that are not eligible for storm fund recovery should not be collected in the replenishment factor (Attorney General Brief at 180). The Attorney General asserts that the Department allows for collection of carrying charges for storm fund eligible events only, not for outlier storms for which incremental O&M costs exceed \$30.0 million (Attorney General Brief at 180, citing D.P.U. 15-155-A at 15-16; D.P.U. 15-155, at 82-84). The Attorney General further argues that Eversource will not be harmed by not collecting carrying charges for outlier storms where incremental O&M costs exceed \$30.0 million because the Companies can seek a prudence review of these storm costs between rate cases and can seek recovery of carrying costs in those reviews (Attorney General Brief at 181; citing D.P.U. 15-155-A at 15-16; D.P.U. 15-155 at 82). In addition, the Attorney General argues that Eversource can seek carrying costs in a Department prudence review of any outlier storm (Attorney General Brief at 181).

Additionally, the Attorney General contends that the Department should reject Eversource's request to recover lean-in costs associated with pre-staging crews through its storm fund for predicted ERP Type 3 or greater storm events that do not qualify for storm fund recovery (Attorney General Brief at 181). The Attorney General argues that, because

Eversource could neither identify when lean-in costs last occurred nor identify the dollar magnitude of any such costs, these costs are not extraordinary and do not require special recovery through the storm fund (Attorney General Brief at 182). Further, the Attorney General asserts that a Department approval to recover lean-in costs would create an incentive for Eversource to needlessly incur and inflate these costs (Attorney General Brief at 182).

Finally, the Attorney General recommends that the Department deny NSTAR Electric cost recovery for any purported storm fund under-recovery as well as any additional storms that may occur prior to new rates becoming effective on January 1, 2018 (Attorney General Brief at 183, citing Exh. ES-DPH-1, at 128). The Attorney General argues that Eversource provided no supporting evidence that it incurred \$124,766,641 in incremental maintenance O&M costs for ten storms (Attorney General Brief at 182, citing Exh. ES-DPH-1, at 127 (Table DPH-1)). The Attorney General asserts that costs must be verifiable to be considered reasonable and prudent (Attorney General Brief at 183, citing Massachusetts Institute of Technology v. Department of Public Utilities, 425 Mass 856, 871-872 (1997)). Further, the Attorney General argues that Eversource presented certain storm costs in D.P.U. 16-74 and D.P.U. 17-51, which are currently pending prudence review (Attorney General Brief at 183). According to the Attorney General, Eversource acknowledged that the Department's review of D.P.U. 16-74 and D.P.U. 17-51 could affect the amount NSTAR Electric seeks for recovery from ratepayers for any under-recovery (Attorney General Brief at 183, citing Exhs. ES-DPH-1, at 127 (Table DPH-1); ES-DPH-5 (East); DPU-16-6).

2. Companies

Eversource disputes the Attorney General's argument that deferred costs for single storms greater than \$30.0 million and associated carrying charges should be ineligible for recovery through replenishment factor (Companies Brief at 480, 482). Eversource states that the Attorney General did not cite to a Department standard that supported her contention that deferred costs are ineligible for recovery through the replenishment factor (Companies Brief at 480). In this regard, Eversource asserts that, in D.P.U. 15-155, the Department did not prohibit or otherwise indicate that deferred costs on storms over \$30.0 million were ineligible for cost recovery through the replenishment factor (Companies Brief at 480). Further, Eversource argues that, absent a replenishment factor as proposed, multiple storms of significant magnitude could trigger the filing of a base distribution rate case (Companies Brief at 481). Thus, Eversource asserts that if recovery of multiple extraordinary storms is postponed, it would exacerbate bill impacts by pancaking (1) additional carrying charges that will accrue on the unrecovered balance, and (2) the base distribution rate increase that will result from the rate case (Companies Brief at 481, citing Exhs. ES-DPH-1, at 122; DPU-2-19; DPU-2-20; Tr. 5, at 1015). Eversource maintains that to avoid these negative impacts and maintain rate continuity, it should be allowed to recover these costs, subject to a prudence review and reconciliation, on an accelerated basis (Companies Brief at 481, citing Exhs. ES-DPH-1, at 122; Companies Reply Brief, App. C at 14, citing Exhs. DPU-2-19; DPU-2-20).

Eversource also argues that the Department has previously allowed the implementation of a replenishment factor where it benefits customers to reduce outstanding balances of storm costs developed over time due to the layering of storm events (Companies Brief at 481, citing Exh. DPU-2-19; Massachusetts Electric Company/Nantucket Electric Company, D.P.U. 13-59 (2013)). Further, Eversource contends that the Attorney General's recommendation to not allow a replenishment factor is contrary to the Department's goals in D.P.U. 15-155 to reduce interest costs paid by customers (Companies Brief at 482, citing D.P.U. 15-155, at 84; Companies Reply Brief, App. C at 14). In this regard, Eversource argues that holding unrecovered costs on the balance sheet for an extended period would be a concern to credit rating agencies (Companies Brief at 482, citing Tr. 5, at 1017). As such, Eversource asserts that a credit downgrade could ultimately lead to higher capital costs that would ultimately be passed on to ratepayers (Companies Brief at 482).

Additionally, Eversource claims that the Department has previously decided that carrying charges are allowed on deferred storms, starting at the date of the storm event (Companies Brief at 482). According to Eversource, regardless of the magnitude of the storm event, the Companies still incur those costs and have a right to recover carrying charges on the incurred costs from the date of the storm event (Companies Brief at 482).

Next, Eversource asserts that the Attorney General's argument to reject Eversource's proposal to recover lean-in costs is baseless (Companies Brief at 483). Eversource notes that the Department has consistently placed a strong emphasis on pre-staging of external crews in preparation for a large storm, and has levied penalties for deficient response of such storms

(Companies Brief at 483; Companies Reply Brief, App. C at 15). Thus, Eversource contends that recovery of lean-in costs is consistent with the Department's storm response priorities (Companies Brief at 484, citing DPU-16-1; Companies Reply Brief, App. C at 15). Further, Eversource asserts that its lean-in proposal is consistent with recovery mechanisms in effect for two of the Companies' regional affiliates, CL&P and Public Service Company of New Hampshire (Companies Brief at 484, citing Exh. DPU-2-7; Companies Reply Brief, App. C at 15).

Eversource also argues that the Attorney General's contention that allowing the Companies to recover lean-in costs would improperly serve as an incentive to incur and inflate such costs is baseless (Companies Brief at 484-485). Eversource counters that, as lean-in costs are proposed for recovery through the storm fund, the Companies still would need to demonstrate that such costs were prudently incurred (Companies Brief at 485, citing Exhs. ES-DPH-1, at 124; DPU-2-10). Further, Eversource asserts that the incurrence of pre-staging lean-in costs for large-scale storm events that do not materialize is relatively rare (Companies Brief at 484, citing DPU-2-8; Tr. 5, at 992-1002). Eversource explains that there were no lean-in costs in the test year and, as a result, it does not have such costs currently embedded in base distribution rates (Companies Brief at 484, citing Exh. DPU-2-11, Tr. 5 at 997, 1005-1006). Should the Department approve collection of lean-in costs through the storm fund, however, Eversource commits to track such costs separately in order to demonstrate prudence of cost incurrence and eligibility pursuant to its

proposal on this matter (Companies Brief at 484, citing Tr. 5, at 1002-1004; Companies Reply Brief, App. C at 15).

Finally, Eversource asserts that the Department should disregard the Attorney General's arguments to reject the proposal to recover through base distribution rates NSTAR Electric's unrecovered storm balance (Companies Brief at 485). Eversource contends that the Attorney General's argument misstates the nature of the proposal (Companies Brief at 485). Eversource explains that it is not seeking Department approval in this proceeding of the storm costs at issue in D.P.U. 16-74 and D.P.U. 17-51, nor is Eversource seeking a determination of prudence regarding the incurrence of those costs (Companies Brief at 486; Companies Reply Brief, App. C at 15). Rather, Eversource asserts that under its proposal when the amount of storm costs is ultimately approved in D.P.U. 16-74 and D.P.U. 17-51, those costs will be recovered in accordance with the recovery parameters set in this case, i.e., over a period of five years beginning January 1, 2018 with interest at the prime rate from the date of the storm event (Companies Brief at 486). Further, Eversource notes that it is not seeking to recover storm costs related to other storm events that occur prior to January 1, 2018, without a prudence review (Companies Brief at 486-487). Eversource states that under its proposal it would begin recovery of the approved outstanding storm cost balance, and then amend the mechanism at a later date after any outstanding storms that occur prior to January 1, 2018 have been filed for review (Companies Brief at 487, citing Exh. DPU-50-1; Tr. 9, at 1817-1819).

D. Analysis and Findings

1. Introduction

The Department's primary objective for allowing a storm fund is to levelize storm restoration costs of major storms on ratepayers. D.P.U. 13-90, at 13, citing D.P.U. 10-70, at 201-202; D.P.U. 09-39, at 206; D.P.U. 15-155, at 73. The Department has recognized that the use of storm funds may shift the burden of cost recovery disproportionately to ratepayers without providing commensurate benefits. D.P.U. 13-90, at 13. As such, the Department has put all electric distribution companies on notice that if they seek continuation of a storm fund in their next base distribution rate case, they must demonstrate why the continuation of a storm fund is in the best interest of ratepayers D.P.U. 13-90, at 14-15.

2. Continuation of the Storm Fund

a. Introduction

The Department has devoted significant time and resources to the improvement of each electric utility's storm response. As a result, storm response requirements are now more formalized, more comprehensive, and more rigorous. See, e.g., G.L. c. 164, § 1J; 220 CMR 19.03 (setting forth standards for the acceptable performance for emergency preparation and restoration of service for electric and gas companies); NSTAR Electric Company, D.P.U. 11-85-B/11-119-B at 141 (2012) (imposing penalties for company's failure to timely respond to emergency wires-down calls and communicate effectively with municipal officials and customers); Western Massachusetts Electric Company, D.P.U. 11-119-C at 71-72, (2012) (imposing penalties for company's failure to restore service to its customers in a safe and reasonably prompt manner). In order to meet these requirements, electric

distribution companies are expected to properly prepare for and implement storm response measures that restore power safely and expeditiously. These obligations require Eversource to devote substantial resources to achieving the desired results. Further, as recent history indicates, the frequency and severity of major storm events has increased (see, e.g., Exhs. ES-DPH-2, Sch. DPH-21, at 2 (East); DPU-2-24, Att. (b) (outlining 21 major storm events between February 2010 and February 2016)). Not surprisingly, the costs of responding to those events have increased as well.

We acknowledge that NSTAR Electric's current storm fund mechanism has not provided the desired balance between cost recovery and rate stability. Specifically, the overall number of NSTAR Electric's major storm events in the past six years contributed to a large storm fund deficit that expanded even further due to the accumulation of a significant amount in carrying charges.²⁸³ The number and magnitude of these storms could not have been anticipated when NSTAR Electric's storm fund mechanism was developed. As a result, without a storm fund mechanism, it is unlikely that during this time frame NSTAR Electric

²⁸³ As noted above, NSTAR Electric's storm fund balance since 2011 is \$105.0 million (Exhs. ES-DPH-1, at 129; DPU-30-8). This includes related carrying charges. In the six years between 2011 through 2016, NSTAR Electric incurred a total of approximately \$12.1 million in storm fund related carrying charges (Exh. DPU-50-1, Att. (a) at 2). For 2017, storm fund related carrying charges total approximately \$4.1 million (Exh. DPU-50-1, Att. (a) at 2). In total, from 2011 through 2017, NSTAR Electric will have incurred approximately \$16.2 million in carrying charges related to 14 outstanding storm fund events (ten storms currently under review in D.P.U. 16-74, two storms currently under review in D.P.U. 17-51, and Tropical Storm Irene and the October Snowstorm, which the Department reviewed in D.P.U. 13-52) (Exh. DPU-50-1, Att. (a) at 2). From January 2018 through December 2022, the total carrying charges associated with these same 14 storms is approximately \$10.7 million (Exh. DPU-50-1, Att. (a) at 3).

could have absorbed these costs without filing a base distribution rate case, or even multiple rate cases, which could have resulted in an increase in rates to ratepayers for distribution costs other than storm fund costs.²⁸⁴ Therefore, we find that, if properly structured, allowing NSTAR Electric and WMECo to continue to operate a storm fund can provide for adequate recovery of storm costs from customers in a manner that is designed to create rate stability. Moreover, because NSTAR Electric and WMECo plan to legally consolidate effective January 1, 2018, and based on the findings discussed below, we allow the Companies' storm fund to operate on a consolidated basis (see Exh. ES-DPH-1, at 115). See also D.P.U. 15-155, at 75-78.

b. Storm Fund Threshold

NSTAR Electric and WMECo each currently have separate storm fund thresholds. For NSTAR Electric, storms with incremental O&M expenses that exceed \$1.0 million are eligible for storm fund cost recovery. NSTAR Electric recovers all incremental O&M storm costs, including the \$1.0 million deductible (Exh. ES-DPH-1, at 114; Tr. 5, at 1017). WMECo currently has a \$300,000 threshold for storm fund eligibility (Exh. ES-DPH-1, at 114). Unlike NSTAR Electric, however, the first \$300,000 does not qualify for storm fund cost recovery; rather, WMECo recovers only the amounts above the \$300,000 threshold through the storm fund (Exh. ES-DPH-1, at 114; see Tr. 5, at 1019). In addition to the previously noted increase in frequency and magnitude of storms, it also stands to reason that

²⁸⁴ We note that WMECo's annual recovery through the SCCRA has allowed it to more timely recovery storm costs, which has provided it with greater rate stability (see Exh. ES-DPH-1, at 130-131).

overall storm restoration costs have increased since 2010. Thus, we find that it is appropriate to increase the cost-per-storm threshold to reflect the general increase in costs and to prevent including more routine future storms in the storm fund.

Here, Eversource proposes that a storm fund eligible event must meet a \$1.2 million incremental O&M cost threshold, and that any costs falling below \$1.2 million are not eligible for recovery through the storm fund (see Exh. ES-DPH-1, at 114-115). The Attorney General did not address Eversource's proposed storm fund threshold proposal.

The Department has reviewed the record and considered Eversource's derivation of the proposed \$1.2 million cost-per-storm threshold (Exhs. ES-DPH-1, at 114-115; DPU-2-6). Specifically, Eversource adjusted its storm fund threshold by applying to the current threshold amount for NSTAR Electric's a cumulative inflation change factor based on application of the GDP-PI from the U.S. Bureau of Economic Analysis (Exh. ES-DPH-1, at 114).²⁸⁵ The Department finds that this method is consistent with that approved in D.P.U. 15-155, at 77. Further, we find that the \$1.2 million threshold for the consolidated storm fund represents an appropriate cost distinction between events that require a response using resources that are contemplated in base rates and those events that are larger in nature and involve resources beyond the level provided in base rates. As such, we approve

²⁸⁵ Eversource proposes only to adjust NSTAR Electric's deductible for inflation to establish the new threshold for the consolidated storm fund going forward and to eliminate WMECo's deductible as part of the conversion to a single storm fund (Exh. DPU-2-6). Thus, storms affecting only the western part of Massachusetts may not meet the threshold for storm-fund recovery as was the case in the past with WMECo's current threshold of \$300,000 (Exh. DPU-2-6).

Eversource's proposal to apply a \$1.2 million threshold to determine eligibility for storm fund recovery.

c. Annual O&M Expense

In D.P.U. 15-155, at 80, the Department determined that, given that the frequency of storm events varies significantly each year, the test year level of O&M costs associated with storm events were not necessarily representative of National Grid's future costs.

Accordingly, we normalized the level of base distribution rate recovery to derive a more representative amount of the O&M expense associated with storm events. D.P.U. 15-155, at 80. Based on that evaluation, the Department determined that three storms represented a normalized number of annual storm-fund eligible events. D.P.U. 15-155, at 80.

Consistent with this determination, Eversource proposes to include for recovery in base distribution rates three storm fund eligible events per year, based on the proposed \$1.2 million cost-per-storm threshold (Exh. ES-DPH-1, at 124-125). Eversource, therefore, proposes to include \$3.6 million annually in base distribution rates to recover a representative level of the storm fund threshold that occurs each year (\$1.2 million cost-per-storm threshold amount multiplied by three storm fund eligible storms per year) (Exhs. ES-DPH-1, at 125; ES-DPH-2, Sch. DPH-21, at 4 (East); ES-DPH-2, Sch. DPH-21, at 4 (West)).²⁸⁶ Eversource proposes to allocate the \$3.6 million annual amount to NSTAR Electric and WMECo on an 80/20 split, respectively (Exh. ES-DPH-1, at 125). Accordingly, using an 80/20 allocation

²⁸⁶ Based on an average of 21 storms over a seven-year period (February 2010 – February 2016) during which these storms occurred (see Exh. ES-DPH-2, at 2 (East)).

of storm costs, Eversource proposes that NSTAR Electric annually collect \$2.88 million in base distribution rates, and WMECo annually collect \$720,000 in base distribution rates (Exhs. ES-DPH-2, Sch. DPH-21, at 4 (East); ES-DPH-2, Sch. DPH-21, at 4 (West)). The Attorney General did not address Eversource's proposal on this matter.

As the frequency and magnitude of storm events has varied significantly year-to-year, the Department recognizes that the test year level of O&M costs in base distribution rates is not necessarily representative of the Companies' future costs. Therefore, as in D.P.U. 15-155, at 80-81, we find it necessary to normalize the level of base distribution rate recovery to derive a more representative threshold amount for O&M expenses associated with storm events. The Department finds that Eversource's proposed annual collection of \$3.6 million in base distribution rates, based upon recovery for three storm fund qualifying events per year and applying the \$1.2 million cost-per-storm threshold, is reasonable and consistent with the method approved in D.P.U. 15-155, and, therefore, is approved. Further, the Department finds that Eversource's proposed 80/20 allocation ratio of the \$3.6 million in base distribution rates is a reasonable cost allocation based on documented historical storm-fund eligible storm costs (Exhs. ES-DPH-1, at 125; ES-DPH-2, Sch. DPH-21, at 3, 4 (East); ES-DPH-2, Sch. DPH-21, at 3, 4 (West)). Therefore, the Department approves the 80/20 cost allocation of the \$3.6 million annual O&M expense in base distribution rates (\$2.88 million annually for NSTAR Electric and \$720,000 annually for WMECo).

d. Annual Storm Fund Contributions Collected Through Base Distribution Rates

In aggregate, Eversource currently collects \$5.075 million per year in annual base distribution rate contributions to the storm fund. Eversource proposes to increase the aggregate annual base distribution rate contribution to the storm fund by \$4.925 million to \$10.0 million (Exhs. ES-DPH-1, at 112, 116-118). Eversource states that the current annual storm fund contribution of \$5.075 million is insufficient as compared to actual storm cost experienced for 21 storms in the six-year period since 2010 (Exh. ES-DPH-1, at 115-116). The Attorney General did not address the proposed annual storm fund collection amount.

A storm fund is intended to provide a level of rate stability for customers, but only if it actually allows for recovery of storm costs over time without requiring a change to customer rates. D.P.U. 15-155, at 78. As evidenced by the increased frequency and magnitude of storm fund eligible events since 2010, and the projected storm deficit balance if the current storm fund contribution and number and magnitude of storms remained the same, the current storm fund annual contribution of \$5.075 million has proven to be insufficient to maintain rate stability (Exhs. ES-DPH-1, at 129; DPU-30-8). See, e.g., D.P.U. 15-155, at 178; D.P.U. 13-85, at 101, 106; D.P.U. 13-59. Thus, we conclude that an increase in the annual base distribution rate contribution to the storm fund is warranted.

Here, the Department seeks to establish a new annual contribution amount that would permit the Companies to recover storms costs over time without generating a surplus or

deficit balance in the storm fund that would exceed the proposed symmetrical cap.²⁸⁷ We recognize the uncertainty in achieving this result given the unpredictable nature of weather in general, and storm fund qualifying events in particular. Further, we acknowledge that, while major historical storm events provide some perspective upon which to predict the possible frequency and magnitude of future storms, it is by no means sufficiently predictive with any real degree of certainty to definitively plan for future storm events. Notwithstanding these considerations, however, we conclude that, in the absence of better predictive information of future events, Eversource's storm fund history is instructive in the context of developing elements of a new storm fund.

The Department has reviewed the record supporting the proposed annual storm fund contribution by Eversource (see, e.g., Exhs. ES-DPH-1, at 116-119; DPU-2-26). In its review, the Department considered the number of storm fund qualifying storms that have occurred in the six-year period between 2010 and 2016, and storm fund qualifying storms in the test year (Exhs. ES-DPH-2, Sch. DPH-21, at 2 (East); ES-DPH-2, Sch. DPH-21, at 2 (West)). We also considered the individual storms during these time periods that were so extraordinarily high that they should be considered statistical outliers, and reviewed the storms that would not have been eligible for storm fund recovery had the \$1.2 million cost-per-storm threshold been in effect (Exhs. ES-DPH-2, Sch. DPH-21, at 2 (East);

²⁸⁷ The symmetrical cap is discussed in further detail below.

ES-DPH-2, Sch. DPH-21, at 2 (West)).²⁸⁸ Additionally, we reviewed the calculation applied by Eversource as the basis to establish its proposed \$10.0 million storm fund contribution amount, which we determine is consistent with the method approved in D.P.U. 15-155.²⁸⁹ Based on these considerations, we find that Eversource's proposal to set the annual storm fund contribution at \$10.0 million is reasonable and appropriate and will provide sufficient funds to levelize the rate impact for major storms that are eligible for cost recovery through the storm fund and decrease the likelihood that the storm fund will attain a large deficiency balance. Further, we find that Eversource's proposed allocation collection of the \$10.0 million annual storm fund amount on an 80/20 allocation ratio (\$8.0 million for NSTAR Electric and \$2.0 million for WMECo) is a reasonable cost allocation ratio and is consistent with the ratio approved above for the annual O&M expense. Accordingly, we also approve this aspect of Eversource's proposal.

²⁸⁸ We agree that it was appropriate for Eversource to remove approximately \$92 million of combined incremental O&M expense from two extraordinary storms (October Snowstorm and Blizzard Nemo) that occurred in the six-year period between February 2010 and February 2016 in calculating its proposed annual storm fund contribution (see Exhs. ES-DPH-1, at 117; ES-DPH-2, Sch. DPH-21, at 2 (East); ES-DPH-2, Sch. DPH-21, at 2 (West)).

²⁸⁹ The Department acknowledges that Eversource's method for calculating its proposed annual storm fund contribution is consistent with that approved in D.P.U. 15-155 and, mathematically, produces an annual storm fund contribution of approximately \$15.0 million (Exh. ES-DPH-1, at 115). The Department further acknowledges Eversource's proposal for a \$10.0 million annual storm fund (as opposed to \$15.0 million as produced mathematically) is an effort to maintain relative consistency with the \$10.5 million annual storm fund contribution in base distribution rates approved by the Department for National Grid in D.P.U. 15-155 (see Exh. ES-DPH-1, at 117-118).

e. Storm Fund Cap

Neither NSTAR Electric nor WMECo currently has a storm fund cap in their current, respective storm funds. Eversource states that, in an effort to maintain consistency with the storm fund approved in D.P.U. 15-155, it proposes to implement a symmetrical storm fund cap of \$30.0 million, which is the amount that the Department approved for National Grid (Exhs. ES-DPH-1, at 121, citing D.P.U. 15-155, at 82; DPU-2-4). Eversource states that, due to the uncertainty of future storms and storm fund activity, it ultimately decided to maintain consistency with the Department's decision in D.P.U. 15-155 for this aspect of storm fund design (Exh. DPU-2-4).

In D.P.U. 15-155, at 82, the Department found that a symmetrical cap of \$30.0 million on the storm fund balance was appropriate to minimize the potential for frequent rate changes (either positive or negative), and to realign the risks associated with storm cost recovery to protect ratepayers' interest. As a general matter, there is an uncertainty regarding the frequency and magnitude of the storms that could affect the Eversource service territory. For this reason, and in an effort to prevent the storm fund from falling into a significant deficit as a result of a single major storm event, we find it appropriate to exclude from storm fund eligibility any single storm event that exceeds \$30.0 million in incremental costs (exclusive of costs for which Verizon is responsible under a joint operating agreement). Consistent with the Department's finding in D.P.U. 15-155-A at 18, Eversource has the option to seek a deferral of storm costs that exceed \$30.0 million until its next base distribution rate case. Alternatively, Eversource may seek cost recovery

for storms in excess of \$30.0 million through the exogenous cost provision of the PBR mechanism approved in this proceeding (see Section IX.D.5.e above).

f. Carrying Charges

Eversource seeks to accrue interest for storm fund eligible events at the prime rate commencing at the start date for the storm event (Exh. ES-DPH-1, at 112-113, 121).

Eversource also proposes to accrue interest at the prime rate beginning on the date of the storm event on the deferred incremental costs of storms in excess of the \$30.0 million cap (Exh. ES-DPH-1, at 112-113, 120-121).

In D.P.U. 15-155-A at 15-16, the Department allowed for accrual of interest (at the prime rate) for storm events that are eligible for recovery under the storm fund to begin at the time that the costs are incurred.²⁹⁰ The Department made this finding to ensure that the accrual of interest provides for adequate recovery of storm costs from customers in a manner that is designed to create rate stability. See D.P.U. 15-155-A at 15. We see no reason to depart from that finding in the instant case. Therefore, we decline to accept Eversource's proposal and instead approve the accrual of interest at the prime rate beginning at the time the costs are incurred for storm events that are eligible for recovery under the storm fund (i.e., storms with incremental O&M costs above the \$1.2 million cost-per-storm threshold,

²⁹⁰ In D.P.U. 15-155-A, at 15-16, the phrase "at the time that costs are incurred," means the date upon which National Grid was billed for storm cost recovery. In other words, the Department allowed National Grid to begin accruing interest on storm fund eligible events pursuant to the storm fund on the date National Grid incurred costs as a result of billing. Such accrual is consistent with the operation of National Grid's storm fund that was in place prior to the Department's Order in D.P.U. 15-155. See D.P.U. 15-155-A at 15-16.

but below \$30.0 million). Similar to the Department's directives in D.P.U. 15-155-A, Eversource may begin to accrue carrying charges at the prime rate for storm fund eligible events when it is billed for storm cost recovery.

In D.P.U. 15-155, while National Grid sought in its initial proposal to have the Department apply the weighted average cost of capital for carrying charges associated with storms both in the storm fund and for those storms in excess of the storm fund, the Department declined to address the issue of whether to allow carrying charges for a storm event where the incremental O&M expense exceeds \$30.0 million. D.P.U. 15-155, at 82, 84. Similarly, in reconsidering storm fund issues in that proceeding, the Department determined it appropriate only to address individual storm events with incremental O&M costs that exceed \$30 million with respect to the permissive "may" found in the Order at 82 to mean that a company has the option to seek a deferral if it chooses to file for one. D.P.U. 15-155-A at 18. Further, consistent with our findings with respect to storm fund-eligible costs, the Company may seek, in between rate cases, a prudence review of storm costs associated with any storm event where incremental O&M costs exceed \$30 million. D.P.U. 15-155-A at 18.

Here, the Companies question as to carrying charges for storms that exceed \$30.0 million. To that end, the Department clarifies that it will consider the recovery of carrying charges for such large scale storms only after it has had an opportunity to fully investigate the circumstances surrounding the incurrence of the costs to which the carrying charges are proposed to be applied. Thus, the propriety of recovering carrying charges for

storms in excess of \$30.0 million will be determined when the Companies file with the Department for storm cost recovery.

In such a filing, the Department will seek to verify that the costs were prudently incurred, and fully compliant with the Companies' obligations to restore service, consistent with G.L. c. 164, §§ 1J, 85B, 76, 220 CMR 19.00 et seq., and Final Revised Emergency Response Plan Guidelines for Electric Companies, D.P.U. 14-72-A (2015). In such a review, the Department will expect the Companies to show that they have met all performance standards for emergency preparation and restoration of service, including restoring service to customers in a safe and reasonably prompt manner during a qualifying emergency event where widespread outages have occurred due to storms or other causes beyond the control of the Companies. The Companies will be expected to show contact with and prioritization of power restoration for customers with documented needs, designated and maintained communications and communication protocols with local emergency management officials and relevant regulatory agencies, provisions for adequate staffing and deployment and any necessary mutual aid preparations, and the proper identification of additional supplies and equipment during such an emergency event. If the Department determines that a material deficiency exists in the emergency response plan or the Companies' implementation of its emergency response plan, the Department may deny the recovery of all, or any part of, the service restoration costs, commensurate with the degree and impact of the service outage. G.L. c. 164, § 85B.

g. Replenishment Factor

Eversource proposes that if the combination of the single storm deferral balance exceeds \$75.0 million (i.e., the total sum of all single storms in excess of \$30.0 million exceeds \$75.0 million and/or the balance in the storm fund exceeds \$75.0 million), it may file for a “replenishment” factor to reduce the outstanding unrecovered storm fund balance, and minimize carrying charges (Exh. ES-DPH-1, at 123). The Companies further assert that there is Department precedent for a replenishment factor in D.P.U. 13-59 (Company Brief at 481, citing D.P.U. 13-59). The Attorney General asserts that the Department has not previously allowed for a replenishment factor for costs outside of the storm fund (Attorney General Brief at 179). Moreover, she argues that, consistent with D.P.U. 15-155, Eversource may seek cost recovery of individual storms with incremental storms in excess of \$30.0 million in its next base distribution rate case (Attorney General Brief at 180).

The Department’s Order in D.P.U. 13-59, at 11, allowed for the replenishment of an existing storm fund deficit resulting from 14 extraordinary storms that occurred three years prior to the replenishment factor request. In other words, the replenishment request approved in D.P.U. 13-59 was based on a specific storm fund deficit amount resulting from specific historical storms. Conversely, in the instant proceeding, Eversource seeks pre-authorization to request replenishment of a storm fund deferral balance that may or may not occur in the future (see Exh. ES-DPH-1, at 113). Nevertheless, the Department is not convinced that pre-authorizing Eversource to file for replenishment recovery (albeit pending Department prudence review) based upon a pre-defined deferral balance is definitively in the

best interest of ratepayers. Rather than authorizing the Companies to file a replenishment factor, the Companies may seek cost recovery through the exogenous cost provision of the PBR (pending a prudence review) provided that the combination of any single storm in excess of \$30.0 million and balance of the storm fund exceed \$75.0 million.

h. Lean-In Costs

Eversource proposes to recover lean-in costs associated with pre-staging crews for forecasted Type 3 and greater ERP storm preparation activities regardless of whether such storms come to fruition (Exh. ES-DPH-1, at 113,123-124). Eversource states that, in the test year there were no pre-staging (i.e., lean-in) expenses for anticipated storm fund qualifying events that did not materialize (Exh. DPU-2-8).²⁹¹ Further, Eversource states that it is relatively infrequent that forecasted large scale storm events do not end up materializing (Exh. DPU-2-8). Additionally, Eversource could not identify specific storms and estimated lean-in costs over the past five years because it does not currently track lean-in costs separately from overall storm costs (Exh. DPU-2-11). In the absence of historical lean-in cost documentation, Eversource provided a hypothetical example of the types and magnitude of lean-in costs for a storm event (Exh. DPU-2-11, Att.).

The Department concludes that, based upon the lack of actual, historical lean-in cost documentation showing that the Companies pre-staged third-party contractors but no storm ultimately materialized, there is an insufficient basis upon which to approve lean-in cost recovery. There is no evidence upon which to determine that lean-in costs may be

²⁹¹ Eversource applies the terms “pre-staging costs” and “lean-in costs” interchangeably (Tr. 5, at 994).

sufficiently significant to warrant consideration of recovery of these costs. Because of the high degree of uncertainty regarding these costs, the Department is not persuaded they are an appropriate part of the storm fund. Based on the foregoing, the Department rejects Eversource's proposal to recover lean-in costs through the storm fund. The Department may, however, in a future base distribution rate proceeding, consider allowing these costs for recovery through the storm fund if Eversource can provide sufficient documentation of the type and level of costs incurred.

3. Recovery of Remaining Storm Balance

Eversource proposes to recover all unrecovered storm costs occurring prior to January 1, 2018 through separate reconciling factors for NSTAR Electric and WMECo. Specifically, for NSTAR Electric, the Companies propose recovery of costs from ten unrecovered storm events to date, at a cost of approximately \$105.0 million over a period of five years, plus any new storm fund eligible costs that have occurred prior to January 1, 2018 (Exhs. ES-DPH-1, at 128-129; DPU-30-8). For WMECo, Eversource proposes to continue recovery at the level currently recovered in the SRRCA of the outstanding storm balance through a reconciling factor, anticipated to be fully recovered by December 31, 2019, pending no new storms (Exh. ES-DPH-1, at 130-131). The Attorney General argues that Eversource provided no supporting evidence that it incurred \$124,766,641 in incremental O&M costs for ten storms events, which are pending review in D.P.U. 16-74 and D.P.U. 17-51 (Attorney General Brief at 182-183).

The intent of the storm fund analysis in the instant proceeding is to determine the mechanics of storm cost recovery on a going-forward basis. It is not intended for the Department to determine the prudence of cost incurrence related to the ten storms under review in D.P.U. 16-74 and D.P.U. 17-51. Therefore, the Department will not consider in this proceeding the Attorney General's assertion that cost recovery related to these ten storms is inappropriate. Such cost recovery will be more appropriately determined in D.P.U. 16-74 and D.P.U. 17-51.

That said, the Department finds Eversource's proposal to recover the outstanding storm balances for both NSTAR Electric and WMECo through separate reconciling mechanisms over five years is reasonable and appropriate, subject to required prudence reviews and reconciliation.²⁹² Doing so will allow NSTAR Electric to begin recovering its significant outstanding storm balance, but subject to required prudence reviews and reconciliation, and will allow WMECo to continue recovering storm-related costs through its annual reconciliation factor. The Department will address the Companies' proposal to merge the storm cost recovery reconciliation mechanisms for NSTAR and WMECo, effective January 1, 2019, in our subsequent Order addressing rate design issues.

²⁹² Consistent with our findings above regarding the timing of accrual of carrying charges, NSTAR Electric may accrue carrying charges on its outstanding storm fund balance at the prime rate from the time NSTAR Electric is billed for storm cost recovery. WMECo is allowed to accrue carrying charges on its outstanding storm fund balance at the customer deposit rate from the time WMECo is billed for storm cost recovery (see DPU-2-27). D.P.U. 10-70, at 201.

4. Storm Fund Reporting

In an effort to allow for the Department's expedited and efficient review of Eversource's storm-cost filings while also allowing for an evaluation of the prudence of such costs, the Department establishes the following storm reporting requirements. Consistent with the Department's directives in D.P.U. 15-155, Eversource must submit to the Department, no later than six months after the occurrence of a storm fund qualifying event, a preliminary report providing: (1) a detailed explanation of the storm event; (2) a detailed summary of the costs broken-down by cost category; (3) the amount of carrying costs incurred to date; and (4) a detailed summary of anticipated additional costs to be incurred or finalized, including an estimated timeframe for the receipt of outstanding cost information or final cost accounting. D.P.U. 15-155-A at 16-17.²⁹³ Eversource thereafter will provide a quarterly update on the status of finalizing the accounting of storm costs. The Department's expectation is that Eversource will submit a petition for recovery of storm costs, including complete and final documentation and supporting testimony, as soon as practicable after finalizing the storm costs, and no later than six months after such costs are finalized. To the extent that Eversource is unable to prepare a final accounting of storm costs, along with relevant supporting testimony and complete and full documentation to facilitate a full administrative review, within six months of a storm event, the Eversource is directed to file a petition for storm-cost recovery as soon as such information is complete.

²⁹³ This filing requirement does not relieve Eversource of its obligation to make necessary storm-related filings consistent with other Department directives (e.g., reports concerning emergency preparedness and restoration of service under 220 CMR 19.03(4)).

E. Conclusion

Based on the above findings, the Department directs Eversource to implement its storm fund with the modifications set forth herein. The modified storm fund shall apply to any qualifying storms that occur on or after January 1, 2018. The outstanding storm fund balance for both NSTAR Electric and WMECo shall be recovered consistent with the findings above.

XIV. VEGETATION MANAGEMENT PROGRAM

A. Introduction

In its filing, the Companies propose to implement a vegetation management resiliency tree work pilot program to take place in two stages, the first beginning in 2017 (“2017 Pilot”), and the second taking place between 2018 and 2022 (“2018-2022 Pilot”) (collectively, “Vegetation Management RTW Pilot”) (Exhs. ES-VLA-1, at 20-27; ES-DPH-3 (East), WP DPH-15, at 1; ES-DPH-3 (West), WP DPH-15, at 1). Through the Vegetation Management RTW Pilot, the Companies propose to complete resiliency tree work (“RTW”) that includes expanded application of enhanced tree trimming (“ETT”), hazard tree and risk tree removals, additional mid-cycle pruning, and the deployment of mobile light imaging, detection and ranging (“LiDAR”) to assist the Companies with mid-cycle pruning (Exh. ES-VLA-1, at 20).²⁹⁴ The Companies also propose to recover an annual amount for vegetation management costs and to capitalize certain vegetation management expenditures

²⁹⁴ LiDAR, as the Companies intend to utilize it, is an inspection tool that catalogs tree density and the proximity of vegetation to the Companies’ distribution facilities (Exh. ES-VLA-1, at 20; Tr. 5, at 925).

for the initial cycle implementing ETT (Exh. ES-VLA-1, at 12, 16-17). The Department reviews these proposals below.

B. Enhanced Vegetation Management Pilot

1. Introduction

As of 2015, NSTAR Electric and WMECo combined their vegetation management programs into a single, unified plan called the “Eversource Maintenance Program 5.60 Vegetation Management - Distribution Maintenance Program” (“Eversource VM Program”) (Exh. ES-VLA-1, at 8-9). Eversource performs vegetation management activities on the NSTAR Electric and WMECo distribution systems on a consolidated basis, and designates the service areas as Eversource East (NSTAR Electric’s service territory) and Eversource West (WMECo’s service territory), respectively (Exh. ES-VLA-1, at 8). Eversource states that the Eversource VM Program incorporates provisions of NSTAR Electric and WMECo’s former programs in compliance with Department directives (Exh. ES-VLA-1, at 9, citing NSTAR Electric Company, D.P.U. 11-85-B/11-119-B (2012), D.T.E. 06-55). Eversource notes, however, that the work it performs in Eversource East and Eversource West differs because, historically, NSTAR Electric and WMECo executed different vegetation management plans (Exh. ES-VLA-1, at 9).²⁹⁵ Eversource asserts that its

²⁹⁵ For example, prior to 2015, Eversource West performed full-scale, blue-sky enhanced ETT on selected segments with an annual budget of \$2.5 million for both ETT and enhanced tree removal (“ETR”), resulting in approximately 25 miles of annual ETT work (Exh. ES-VLA-1, at 13). Eversource East performed ETT on all primary sections of the circuit; however, it did so at a 10 x 10 x 15 clearance because ground to sky clearance was unlikely to be approved (Exh. ES-VLA-1, at 14). Prior to 2015, Eversource East had an annual budget of \$14.5 million for both ETT and ETR, allowing for approximately 1,850 miles of annual work (Exh. ES-VLA-1, at 13-14).

proposed vegetation management pilot, discussed below, will allow it to achieve a comparable level of vegetation management in both Eversource East and Eversource West (Exh. ES-VLA-1, at 9).

2. Current Vegetation Management Program

NSTAR Electric began performing enhanced vegetation management work in certain areas in 2012 (Exh. ES-VLA-1, at 11). Following Department directives in D.P.U. 11-85-D/11-119-B, NSTAR Electric increased the number of miles for program pruning to meet a four-year cycle for all distribution circuits (Exh. ES-VLA-1, at 11). NSTAR Electric also increased the clearance zone around the distribution primary to an ETT specification, set at 10' x 10' x 15', to the side, under, and above the lines, respectively (Exh. ES-VLA-1, at 11-12).²⁹⁶ In addition, NSTAR Electric developed an enhanced tree removal component ("ETR") to target the removal of risk and hazard trees, which it conducted in parallel scheduled miles based on a four-year cycle (Exh. ES-VLA-1, at 12). Additionally, NSTAR Electric targeted "blue sky" clearance for poor performing areas with approval by municipal tree-wardens (Exh. ES-VLA-1, at 12). Finally, NSTAR Electric began maintaining a forestry database to track the number of hazard trees removed and associated costs, by circuit (Exh. ES-VLA-1, at 12).

As of 2015, in addition to the work above, the Companies have implemented the consolidated Eversource VM Program, which consists of two aspects (Exh. ES-VLA-1,

²⁹⁶ The primary distribution system consists of the feeders emanating from the substation and supplying power to one or more secondary distribution systems.

at 9-10). First, Eversource established trim cycle to ensure that all circuits are trimmed at least once every four years, subject to circuit specific considerations and regardless of current performance (Exh. ES-VLA-1, at 10). Eversource uses a minimum standard clearance specification for the maintenance trims, called the scheduled maintenance trim (“SMT”), at 8’ x 8’ x 12’, to the side, below, and above the lines, respectively (Exh. ES-VLA-1, at 11). Eversource performs this work annually, and books it as an O&M expenditure (Exh. ES-VLA-1, at 11). Eversource also uses reliability-based prioritization methods, identifying the need for mid-cycle trimming or other actions to address poor performing distribution circuits (Exh. ES-VLA-1, at 10).

Second, Eversource executes a hazard tree removal program to identify and target hazard trees for removal, which it coordinates with the cycle-pruning schedule (Exh. ES-VLA-1, at 10).²⁹⁷ In addition, Eversource identifies and targets risk trees for removal (Exh. ES-VLA-1, at 10).²⁹⁸ Eversource states that it evaluates risk and performs hazard tree removals on off-cycle circuits in order to mitigate poor performing circuits (Exh. ES-VLA-1, at 10).

²⁹⁷ A hazard tree, as defined by the International Society of Arboriculture, is one that is sufficiently large enough to cause damage if it fell, has a target should it fall, and has a condition that makes it likely it will fall (Exh. AG-20-43, at 1).

²⁹⁸ Risk trees, in addition to obviously dead or dying trees, are trees that exhibit signs of decay, insect damage, or structural deformities (Exh. ES-VLA-3, at 4). They also include incompatible species, such as small-diameter trees and especially fast growing weed trees, which are located underneath the distribution lines (Exh. ES-VLA-3, at 4).

Eversource uses arborists to conduct field reviews and, during routine audits of vegetation management work performed on its system, requires contractors to complete any necessary re-work for no additional cost (Exh. ES-VLA-1, at 14-15). During the test year, the Companies trimmed 2,090 overhead circuit miles in Eversource East (out of 7,946 overhead primary miles) and 847 overheard circuit miles in Eversource West (out of 3,270 overheard primary miles) (Exh. ES-VLA-1, at 15). In 2016, Eversource spent approximately \$23.5 million on vegetation management (Exh. AG-20-31 (b)).

3. Companies Proposal

a. Vegetation Management Resiliency Tree Work Pilot Program

Eversource proposes to implement a vegetation management resiliency tree work pilot program in two stages: a 2017 RTW Pilot and a 2018-2022 Pilot (Exhs. ES-VLA-1, at 20-27; ES-DPH-3 (East), WP DPH-15, at 1; ES-DPH-3 (West), WP DPH-15, at 1). Through the Vegetation Management RTW Pilot, the Companies will complete RTW that includes expanded application of ETT, hazard tree and risk tree removals, and additional mid-cycle pruning (Exhs. ES-VLA-1, at 20-27; ES-DPH-3 (East), WP DPH-15, at 1; ES-DPH-3 (West), WP DPH-15, at 1). The Vegetation Management RTW Pilot includes a RTW trimming specification that the Companies will use on circuits considered “at risk” for reliability (Exh. AG-11-14). The RTW specification is different from ETT and SMT, and is 15 feet to the side of the wire and 25 feet above the wire, expanding the clearance zone (Exh. AG-11-14). The Companies propose that the 2017 RTW Pilot will serve as a proof of concept, with the 2018-2022 RTW Pilot serving as an expansion of the initiatives based on the Companies’ experience (Exh. ES-VLA-1, at 20). The Companies will implement the

Vegetation Management RTW Pilot as a single, consolidated program operated in both Eversource East and Eversource West service territories, because Eversource has fully integrated NSTAR Electric and WMECo from a management and operational perspective (Exh. ES-VLA-1, at 26-27). The Companies state these initiatives will complement existing tree work and focus on improving reliability and storm resiliency (Exh. ES-VLA-1, at 20).

For the 2017 RTW Pilot, Eversource proposes to deploy a LiDAR unit for its mid-cycle prune (Exh. ES-VLA-1, at 20). Currently, the mid-cycle pruning is a reliability-based strategy that Eversource uses to address emerging poor performing circuits and “hot spots” (Exh. ES-VLA-1, at 20). Eversource states it will deploy the mobile LiDAR unit to patrol and inspect distribution primary on poor performing circuits to identify where mid-cycle pruning is warranted (Exhs. ES-VLA-1, at 20; AG-20-27). Eversource intends to use LiDAR to prioritize geographic areas for removals, which will then take place after an independent condition assessment indicates the removal is warranted (Exh. ES-VLA-Rebuttal at 4).²⁹⁹ Eversource states that the information will aid arborists in the final decision of priority (Exh. ES-VLA-1, at 21).³⁰⁰ Eversource intends to focus on backbones and selected laterals with high customer counts or critical facilities and locations where towns have placed restrictions on vegetation clearance (Exh. ES-VLA-1, at 21). Eversource estimates that the total cost for the 2017 RTW Pilot is \$3,521,000, which includes LiDAR inspection and

²⁹⁹ The LiDAR unit will use software to analyze the distance between trees and primary facilities and categorize this analysis by priority (Exh. ES-VLA-1, at 21).

³⁰⁰ Eversource proposes that arborists will view photographs of the conditions captured by LiDAR to aid in determining priority (Exh. ES-VLA-1, at 21).

analysis, mid-cycle pruning identified by such analysis, and software and hosting fees (Exh. ES-VLA-1, at 22, Table ES-VLA-5). The cost breakdown of the 2017 RTW Pilot is as follows: \$476,000 for LiDAR inspection; \$100,000 for LiDAR analysis; \$2,875,000 for mid-cycle prune; and \$70,000 for software and hosting (Exhs. ES-VLA-1 at 22, Table ES-VLA-5; ES-DPH-3 (East), WP DPH-15, at 1; ES-DPH-3 (West), WP DPH-15, at 1).

For the 2018-2022 RTW Pilot, Eversource proposes to increase mid-cycle pruning, RTW tree trimming activities, and RTW tree removals at an estimated total annual cost of \$25,950,000 (Exh. ES-VLA-1, at 23, Table ES-VLA 6). The Companies plan to extend ETT RTW tree trimming clearing to select laterals serving 100 customers or more or to laterals that serve critical infrastructure needs, increasing the annual target of circuits to be trimmed from 25 miles to 100 miles (Exh. ES-VLA-1, at 23). Additionally, Eversource also plans to undertake aerial LiDAR inspection of the entire service territory in order to catalog tree density and proximity to distribution facilities, as well as commission a study by an independent third party to survey service areas and perform a condition assessment of the trees in proximity to the distribution system (Exh. ES-VLA-1, at 24-25). Eversource estimates the costs of the LiDAR inspection and related study to be \$5.9 million (Exh. ES-VLA-1, at 25). The cost breakdown of the 2018-2022 RTW Pilot is as follows: \$4.72 million annually for enhanced mid-cycle pruning, \$5.0 million annually for RTW tree trimming, \$15.05 million annually for expanded hazard tree assessment and removal, and an annualized \$1.18 million cost based upon the \$5.9 million total for LiDAR inspection and the related study expenses (Exhs. ES-VLA-1, at 22, Table ES-VLA-6; ES-DPH-3 (East),

WP DPH-15, at 1; ES-DPH-3 (West), WP DPH-15, at 1). The Company states the budget for the Vegetation Management RTW Pilot is based on an assessment of forestry challenges on the system, using U.S. forestry statistics and the average costs of removal experienced by Eversource (Exh. ES-VLA-Rebuttal at 2-3).

b. Vegetation Management RTW Pilot Cost Recovery

Eversource proposes to recover both the 2017 RTW Pilot costs and the 2018-2022 RTW Pilot costs over five years through base rates (Exhs. ES-DPH-1, at 78; ES-DPH-3 (East), WP DPH-15, at 1; ES-DPH-3 (West), WP DPH-15, at 1).³⁰¹ Eversource proposes a cost split between NSTAR Electric and WMECo of 85 percent and 15 percent, respectively, subject to reconciliation and a refund of any cost over recovery at the time of Eversource's next base rate proceeding (Exhs. ES-DPH-1, at 78; ES-DPH-3 (East), WP DPH-15, at 2; ES-DPH-3 (West), WP DPH-15, at 2).³⁰² Although the Eversource proposes to fund the Vegetation Management RTW Pilot separately through base rates of both NSTAR Electric and WMECo, Eversource states that the program will be implemented, operated, and managed on a consolidated basis (Exh. ES-DPH-1, at 80).

³⁰¹ Eversource states that its Vegetation Management RTW Pilot is a combination of one-time, non-recurring activities, and annually recurring expenses (Exh. ES-DPH-1, at 79). As such, Eversource proposes to normalize the costs in base rates to spread the "one-time" costs over time. Eversource further proposes recovery of the Vegetation Management RTW Pilot fixed costs through base rates via a reserve fund (Exh. ES-DPH-1, at 79).

³⁰² Costs are split between NSTAR Electric and WMECo, 85 percent and 15 percent, respectively, based on the customer allocator (Exh. ES-DPH-1, at 77).

4. Positions of the Parties

a. Attorney General

The Attorney General argues Eversource undertook the 2017 RTW Pilot absent Department approval, and that the 2017 RTW Pilot and 2018-2022 RTW Pilot lack any meaningful measuring stick or a cost-benefit analysis (Attorney General Brief at 168-170, citing Exh. AG-20-27; Tr. 5, at 934). The Attorney General argues that doubling Eversource's vegetation management budget to almost \$50 million annually does not guarantee improved reliability (Attorney General Reply Brief at 43, citing Exh. AG-11-14).³⁰³ Further, the Attorney General contends that the cost increase associated with the 2018-2022 RTW Pilot alone is \$2 million more than the entire 2016 distribution vegetation management program (Attorney General Brief at 169). The Attorney General asserts that while the Department has recognized that more aggressive storm resiliency programs may be a worthwhile step in strengthening a distribution system, the Companies misconstrue the Department's policy position as one that is in favor of aggressive storm

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According to the Attorney General, in Rhode Island National Grid is spending less money on vegetation management per circuit mile pruned than both NSTAR Electric and WMECo, yet National Grid has ranked in the first-quartile since 2012 (Attorney General Brief at 165-166, citing Exh. AG-GLB-1, at 26). Thus, the Attorney General asserts that rather than proposing to double its annual vegetation management spending, Eversource should be looking for ways to economize and perform its vegetation management program activities more efficiently, similar to National Grid's efforts in Rhode Island (Attorney General Brief at 166).

resiliency programs (Attorney General Reply Brief at 44, citing Companies Brief at 569, D.P.U. 15-155, at 328).³⁰⁴

The Attorney General also argues that Eversource does not have a service reliability problem, and that the Vegetation Management RTW Pilot is an expensive solution to a non-existing vegetation management problem (Attorney General Brief at 171). In this regard, the Attorney General asserts that Eversource maintained first-quartile SAIDI and SAIFI rankings before even beginning the 2017 RTW Pilot (Attorney General Brief at 168). Additionally, the Attorney General argues that the Companies are unable to substantiate whether the wider clearing zones employed in the Vegetation Management RTW Pilot will result in enhanced reliability (Attorney General Reply Brief at 44, citing Attorney General Brief at 168, Exh. AG-11-14). Accordingly, the Attorney General recommends that the Department deny Eversource's request for the recovery of the proposed Vegetation Management RTW Pilot costs (Attorney General Brief at 169, 171).

Further, the Attorney General asserts that Eversource does not need LiDAR or a commissioned study to understand the vulnerabilities of its distribution system (Attorney General Brief at 170). The Attorney General argues that LiDAR is an expensive, superfluous technology, which does little to add to the work of Eversource's engineers and arborists in identifying risk and hazard trees (Attorney General Brief at 173). Moreover, the

³⁰⁴ The Attorney General points to differences in National Grid's vegetation management programs that were in place at the time the Department directed National Grid to propose a storm resiliency program (Attorney General Reply Brief at 44). Specifically, she argues that National Grid was on a five-year trimming cycle and the minimum clearing distances for 6 x 10 x 10, while Eversource currently is on a four-year cycle pruning to ETT clearance (Attorney General Reply Brief at 44-45).

Attorney General asserts that Eversource is uncertain whether LiDAR will save on operation and maintenance cost or whether LiDAR's static images have any intrinsic value to the Eversource's other departments or divisions (Attorney General Brief at 173, citing Tr. 5, at 969; Attorney General Reply Brief at 47). The Attorney General recommends that the Department deny the Eversource's request to recover the costs associated with any of the proposed LiDAR technology (Attorney General Brief at 173).

b. Cape Light Compact

Cape Light Compact argues that Eversource should issue RFPs from trees service companies on a frequent basis to drive vegetation management costs down (Cape Light Compact Brief at 80, citing Exh. AG-GLB-1, at 28). Cape Light Compact further maintains that Eversource should improve communications with municipal officials in advance of major roadway vegetation clearing work, having recognized the importance of those communications (Cape Light Compact Brief at 81, citing Exh. ES-VLA-3, at 9).³⁰⁵

c. UMass

UMass reiterates its support for Eversource expanding its current vegetation management program (UMass Brief at 16, citing Tr. 5, at 943-944). UMASS, however, maintains it is concerned that the proposed Vegetation Management RTW Pilot will exacerbate what it sees as inequities between the Companies' Eastern and Western service territories, specifically Eversource not giving due attention to the Western service territory

³⁰⁵ Cape Light Compact also argues Eversource should reject the use of the herbicide glyphosate in its rights of way (Cape Light Compact Brief at 81, citing D.P.U. 17-05, Letter of Steven Auerbach (April 27, 2017)). The issue of herbicide use is outside the Department's jurisdiction and, therefore, we do not address this argument raised by Cape Light Compact. See 333 CMR 11.

(UMass Brief at 16-17). UMass contends that more attention for the Eversource Western service territory's vegetation management is required, and it argues that there is no dispute that the numerous outages and other adverse events on the Western service territory have been caused by trees (UMass Brief at 17).³⁰⁶

d. Companies

Eversource asserts there are two fundamental reasons why the Department should approve implementation of the Companies' proposed Vegetation Management RTW Pilot (Companies Brief at 131). First, Eversource contends it has long taken proactive steps to enhance and protect its distribution system (Companies Brief at 131). Second, Eversource argues that resilient grid infrastructure is necessary as a foundation for an increasingly modernized grid (Companies Brief at 131, citing Exhs. ES-VLA-1, at 17-18; AG-11-14).

Eversource contends that its system infrastructure is unavoidably exposed to weather events, and vulnerable in the types of harsh conditions that occur with ice storms, heavy wet snow, tropical storms, hurricanes, and other wind events that cause substantial damage and prolonged power outages (Companies Brief at 131, citing Exhs. ES-VLA-1, at 17-18; AG-11-14). Further, Eversource asserts that without a resilient grid, real-time sensing and

³⁰⁶ UMass also argues that the Department should recognize the large magnitude of a problem that loss on transmission line due to inadequate vegetation management has on customers and that Eversource should holistically consider the entire electric system in developing and implementing an enhanced vegetation management plan (UMASS Brief at 17-18). The Department does not have jurisdiction over transmission investments in this proceeding. See Harbor Electric Energy Company, D.P.U. 15-157 at 15, 17-18 (2016) (noting that local distribution facilities are subject to the Department's jurisdiction, while transmission facilities are subject to the Federal Energy Regulatory Commission's jurisdiction). Therefore, we will not address this issue any further.

monitoring investments made as part of a grid-modernization program are rendered moot, because the grid would be lacking sufficient foundation to optimize the use of the modern equipment (Companies Brief at 131, citing Exhs. ES-VLA-1, at 17-18; AG-11-14).

Eversource does not dispute that it is a top tier utility in reliability performance or that changes to vegetation management practices in its Western service territory have resulted in improved reliability (Companies Brief at 565, citing Attorney General Initial Brief at 165; Exh. ES-VLA-1 at 13-14). Eversource argues, however, that revised service quality guidelines require constant improvement (Companies Brief at 565, citing Exh. ES-VLA-1, at 7). Eversource contends that meeting these increased performance levels will require innovation and investment given the Companies' already high level of reliability on the distribution system (Companies Brief at 565, citing Exh. ES-VLA-1, at 7; Companies Reply Brief at 168-169). Eversource also asserts that the Attorney General's recommendations that the Companies cut costs is not in line with service quality standards and ignores that increased spending is necessary to maintain high reliability and in turn maintain its performance levels (Companies Brief at 565-566; Companies Reply Brief at 169).³⁰⁷

In response to the Attorney General's recommendation that the Department deny 2017 RTW Pilot Costs because the Department did not approve them prior to implementation, Eversource argues its Vegetation Management RTW Pilot is consistent with Department

³⁰⁷ The Companies dispute the Attorney General's comparison to National Grid's efforts in Rhode Island as proof for vegetation cost management savings (Companies Brief at 566). Specifically, the Companies argue there are key differences between service territories (particularly with tree canopies) resulting in significant differences in costs (Companies Brief at 566).

vegetation management directives and policies (Companies Brief at 567-568, citing D.P.U. 15-155, at 328-329; D.P.U. 13-90, at 19-20,).³⁰⁸ Further, Eversource contends that the costs of the Vegetation Management RTW Pilot are appropriate as the budget is based on an assessment of forestry challenges on its system (Companies Brief at 569, citing Exh. ES-VLA-Rebuttal at 2). Eversource maintains that it used 2016 historical data and determined that to remove one percent of trees in the “fall zone” it would need to spend \$38.9 million (Companies Brief at 569, citing Exh. ES-VLA-Rebuttal at 3). Further, Eversource argues that in recognition of the cost impacts its spending budget could have on customers, it determined that an amount of \$25 million was an appropriate level of spending to achieve an impact (Companies Brief at 569, citing Exh. ES-VLA-Rebuttal at 3). In addition, Eversource claims that the Attorney General’s recommendation that the Department should deny the Vegetation Management RTW Pilot because Eversource failed to provide a cost-benefit analysis is “nonsensical” (Companies Brief at 572). Eversource maintains that the purpose of the Vegetation Management RTW Pilot is to determine the benefits of the proposed enhanced vegetation management techniques and that, further, it has provided an overview of expected benefits (Companies Brief at 572, citing Exh. AG-20-27).

In response to the Attorney General’s arguments against the deployment of LiDAR, Eversource states that LiDAR is not intended to replace arborists but to be used to

³⁰⁸ The Companies state that the Attorney General did not explicitly recommend the costs for the 2018-2022 RTW Pilot be denied (Companies Brief at 567, n.64). The Companies, however, state it provides a clear argument in support of these costs and responds to arguments the Attorney General made against the 2018-2022 RTW Pilot (Companies Brief at 567, n.64).

supplement the work of arborists (Companies Brief at 570, citing Exh. ES-VLA-1, at 26). Eversource argues that LiDAR will be able to measure and analyze vegetation clearances more objectively for consistency in application of pruning specifications (Companies Brief at 570, citing ES-VLA-1, at 26). Further, Eversource asserts it should not be a surprise that it is the first distribution company to deploy LiDAR given its leading role in vegetation management (Companies Brief at 570).³⁰⁹ According to Eversource, the use of LiDAR will ensure the Company maintains its first quartile reliability status (Companies Brief at 571, citing Tr. 5, at 919-920).

In response to arguments made by Cape Light Compact that the Companies should issue RFPs from tree service companies on a frequent basis, Eversource explains that it does utilize competitive RFPs and outside vendors for aspects of its vegetation management program (Companies Brief at 574, citing Tr. 5, at 901). Eversource maintains that multi-year contracts are a way for Eversource to maintain costs and its procurement department is constantly testing and monitoring the market (Companies Brief at 574, citing Tr. 5, at 901). Further, Eversource states that, because of this, there is no reason for the Department to substitute its own judgement in place of Eversource regarding the issuance of RFPs (Companies Brief at 574-575).

³⁰⁹ Eversource argues that the Attorney General also ignores that Unitil is considering whether to deploy LiDAR and further states that the fact that National Grid's vegetation management pilot does not include LiDAR should not be a surprise since National Grid's proposal has them adopting measures that Eversource already has in place (Companies Brief at 570-571, citing Tr. 5, at 920).

Finally, Eversource, in response to UMASS, states that there should be no concern that the Vegetation Management RTW Pilot will be deployed inequitably (Companies Brief at 576). The Companies state that ETT will continue in Western Massachusetts and that Eversource will be focused on maintaining the clearance level in Eastern Massachusetts that has already been obtained (Companies Brief at 576). Further, the Company states that the RTW Pilot will also occur in Western Massachusetts and the programs will complement each other and improve reliability (Companies Brief at 575, citing Tr. 5, at 962).

5. Analysis and Findings

a. Vegetation Management RTW Pilot

The Department has directed companies to implement vegetation management pilots in order to achieve specific directives. See, e.g., D.P.U. 15-155, at 326-329; D.P.U. 13-90, at 15-23. In D.P.U. 15-155, at 328-329, the Department stated that it would consider implementation of a vegetation management pilot program with the expectation that the pilot program would take place over an established period of time, be designed to target trees outside the scope of the company's current vegetation management program, include in its scope of work extensive hazard tree inspections and removals and clearing of all overhead and under hanging branches, and prioritize critical infrastructure.³¹⁰ The Department has recognized that a more aggressive storm resiliency program is a worthwhile step in

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The Department specifically stated that “the scope of work would include extensive hazard tree inspections and removals and the clearing of all overheard and under hanging branches (i.e., ground-to-sky clearing) associated with the worst performing three-phase circuits, based upon consideration of: (1) tree-related field conditions; (2) customer count; (3) miles of each circuit; and (4) presence of scenic roads or other vegetation management restrictions.” D.P.U. 15-155, at 329.

strengthening a company's distribution system, mitigating some of the physical damage and financial impacts of future storm events to the benefit of ratepayers. D.P.U. 15-155, at 328.

The Attorney General asserts that Eversource undertook the 2017 RTW Pilot absent of Department approval (Attorney General Brief at 169, citing Tr. 5, at 934). While the Companies took a risk in going forward by implementing the 2017 RTW Pilot, the Department is not precluded from reviewing the program and its costs.

The Department recognizes that NSTAR Electric and WMECo are currently counted among the top-tier utilities for reliability performance (Exh. AG-20-29). Vegetation management, however, is an important factor contributing to an electric distribution company's system reliability. D.P.U. 15-155, at 328, citing D.P.U. 13-90, at 19. The Department has previously directed utilities to develop vegetation management pilot programs, including in instances where the company has seen improvements in reliability with existing vegetation management programs. See D.P.U. 15-155, at 327-328.³¹¹ Moreover, the Department acknowledges that the recently revised service quality guidelines will require electric distribution companies to continuously improve reliability. See Order Adopting Revised Service Quality Standards, D.P.U. 12-120-D at 9 (2015). Therefore, the Department finds that the Companies' good performance with regard to reliability indices should not be a disincentive for improving vegetation management over time.

³¹¹ In D.P.U. 15-155, at 328, the Department directed National Grid to file a vegetation management program notwithstanding seeing improvements in reliability with its current vegetation management program.

Upon review of the record, the Department determines that most aspects of the Vegetation Management RTW Pilot will benefit ratepayers by improving the reliability and resiliency of Eversource's distribution system (Exhs. ES-VLA-1, at 20-27; AG-11-14; AG-39-6; RR-DPU-12). The Vegetation Management RTW Pilot will take place over a specific period, which in this instance is six years (Exhs. ES-VLA-1, at 20-27; ES-DPH-3 (East), WP DPH-15, at 1; ES-DPH-3 (West), WP DPH-15, at 1). The initial focus in the 2017 RTW Pilot will be on backbones and selected laterals with high customer counts, critical facilities, and locations where towns have placed restrictions on vegetation clearance (Exh. ES-VLA-1, at 21). As such, it prioritizes critical infrastructure and portions of the distribution system that serve large numbers of customers. See D.P.U. 15-155, at 329. Following the 2017 RTW Pilot, the 2018-2022 RTW Pilot will further increase mid-cycle pruning, RTW tree trimming activities, and RTW tree removals (Exh. ES-VLA-1, at 22). The Companies also provided information that demonstrates that trees and vegetation management are the leading cause of customer outages (Exh. AG-39-6; RR-DPU-12). The Department concludes that these activities are likely to improve the reliability of the Companies' distribution system, mitigate damage in future storm events, and put the Companies in a better position to meet the recently revised service quality guidelines that will result in increasingly stringent reliability standards (Exh. ES-VLA-1, at 17-23). See D.P.U. 12-120-D at 9. Specifically, the Department approves the Companies' Vegetation Management RTW Pilot's expanded application of ETT, hazard tree and risk tree removals, and additional mid-cycle pruning (Exh. ES-VLA-1, at 19). Further, the Department finds

that Eversource's Vegetation Management RTW Pilot is consistent with the criteria the Department set out in D.P.U. 15-155. See D.P.U. 15-155, at 328-329.

At this time, however, the Department finds that the Companies have not demonstrated that LiDAR will further the objectives the Department requires for a vegetation management pilot program. Specifically, LiDAR does not provide any new information in addition to what the Eversource already obtains using current practices or that Eversource would require Eversource to use its arborist further confirm and assess how to use the information in prioritizing circuits (Exh. AG-20-42; Tr. 5, at 923-929). Therefore, the Department disallows the LiDAR costs (\$0.65 million) for the 2017 RTW Pilot (Exhs. ES-VLA-1, at 22; ES-DPH-3 (East), WP DPH-15, at 1; ES-DPH-3 (West), WP DPH-15, at 1; Tr. 5, at 935-936). Additionally, the Department excludes from the 2018-2022 RTW Pilot the costs associated with third-party studies related to LiDAR inspection and analysis and annual mobile LiDAR survey (Exhs. ES-DPH-3 (East), WP DPH-15, at 1; ES-DPH-3 (West), WP DPH-15, at 1). Nevertheless, the Department encourages the Companies to continue to explore additional options and new methods to include in its vegetation management strategy or to improve the support for the direct benefit LiDAR provides to the Company's vegetation management strategy.

With the exception of the exclusions noted above, the Department finds Eversource's Vegetation Management RTW Pilot is reasonable and in the ratepayers interest. Further, the Department directs Eversource to track and maintain necessary information related to its

enhanced vegetation management initiative, including but not limited to costs, benefits, and contribution to reliability improvements.

b. Vegetation Management RTW Pilot Cost Recovery

With the above exclusions related to LiDAR, the Department approves the Vegetation Management RTW Pilot. Eversource proposes that Vegetation Management RTW Pilot cost recovery occur separately in base rates for both NSTAR Electric and WMECo, amortized over a period of five years (Exhs. ES-DPH-1, at 77; ES-DPH-3 (East), WP DPH-15, at 1; ES-DPH-3 (West), WP DPH-15, at 1). While the Attorney General recommended that the Department reject the Vegetation Management RTW Pilot, she did not offer an alternate means of cost recovery should the Vegetation Management RTW Pilot be approved (Attorney General Brief at 169, 171). No other party commented on this issue.

It is a well-established Department precedent that costs recovered through base rates are determined using cost from a historic test year, adjusted for known and measurable changes. D.P.U. 14-150, at 44; D.P.U. 14-120, at 9; D.P.U. 1580, at 13-17, 19; D.P.U. 136, at 3; D.P.U. 19992, at 2; D.P.U. 18204, at 4; D.P.U. 18210, at 2-3; D.P.U. 18264, at 2-4; See also Massachusetts Electric Company v. Department of Public Utilities, 383 Mass. 675, 680 (1981).³¹² In establishing rates pursuant to G.L. c. 164, § 94, the Department examines a test year on the basis that the revenue, expense, and rate base

³¹² A “known” change means that the adjustment must have actually taken place, or that the change will occur based on the record evidence. A “measurable” change means that the amount of the required adjustment must be quantifiable on the record evidence. D.T.E. 98-51, at 62.

figures during that period, adjusted for known and measurable changes, provide the most reasonable representation of a distribution company's present financial situation, and fairly represent its cost to provide service. D.P.U. 14-120, at 9; see Ashfield Water Company, D.P.U. 1438/1595, at 3 (1984).

The Department recognizes that company-initiated pilot programs play an important role in developing innovative and cost effective programs to help those companies better serve their customers.³¹³ By their very nature, however, future cost and programmatic effectiveness of pilot programs are largely unknown at the outset as they have no historical data from which to build upon. For this reason, the Vegetation Management RTW Pilot is presented as a proof of concept program in an effort to better establish those cost and its programmatic effectiveness. Further, Eversource's costs for its proposed Vegetation Management RTW Pilot are neither known nor measurable (see Exhs. ES-VLA-1, at 22-23; AG-20-33; AG-20-37). Finally, the level of cost effectiveness has similarly not been established for the Vegetation Management RTW Pilot.

Accordingly, costs for the Vegetation Management RTW Pilot are not appropriate for cost recovery in base rates as proposed by Eversource. Rather, the Department here approves Eversource's Vegetation Management RTW Pilot and allows the associated costs to be recovered through an annual reconcilable factor (outside of base rates). This RTW

³¹³ The Department recognizes the financial burden borne by ratepayers due to high storm restoration costs. The Department also recognizes that a company's poor pre-storm preparation may have adverse effects on that company's customers. D.P.U. 13-90, at 19, citing D.P.U. 11-01/D.P.U. 11-02, at 70-71; D.P.U. 09-39, at 210-211.

reconciling factor shall recover the actual costs incremental to those recovered in base rates that are directly associated with the Vegetation Management RTW Pilot as approved in the instant proceeding.³¹⁴ The Companies shall submit a tariff within 90 days from the date of this Order that states all the terms and conditions for the RTW reconciling factor, consistent with the directives in this Order.

C. Annualization and Capitalization of Vegetation Management Costs

1. Companies' Proposal

a. Annualization of Vegetation Management Expenses

Eversource states that, during the test year, it incurred expenses associated with its annual cycle trim program of \$5,283,642 for NSTAR Electric (Exhs. ES-DPH-1, at 75; ES-DPH-2 (East), Sch. DPH-15, at 1). Eversource states that because it capitalized (as opposed to expensed) cycle trimming activities for the first six months of the test year, the \$5,283,642 it expensed in the test year reflects only six months of activity. Consequently, its representative level of cycle trim expenses going forward will be higher than the amount expensed in the test year as a result of the full amount of annual cycle trim activity being expensed, with no amounts being capitalized in the future (Exh. ES-DPH-1, at 74-75). To estimate a representative amount of test year vegetation management expenses, Eversource compared the cycle trim program costs in 2015 of \$9.1 million to the total cycle trim program costs in the test year of \$12.1 million, a portion of which NSTAR Electric capitalized (Exh. ES-VLA-1, at 16-17). Eversource estimated that it would spend slightly

³¹⁴ Similar to the carrying charge treatment for deferred storm costs in the instant proceeding, interest on the monthly balance of Vegetation Management RTW Pilot costs will accrue through this reconciling factor at the prime rate.

less than the \$12.1 million test year amount in the future (Exhs. ES-DPH-1, at 76; ES-VLA-1, at 16-17). As a result, Eversource proposes an annualization adjustment of \$5,226,646 to represent the full cost of NSTAR Electric's annual trim cycle program in rates and to incorporate a total rate year level of annual expense of \$10,510,288 (Exh. ES-DPH-1, at 74-75, citing Exhs. ES-DPH 2 (East), Sch. DPH-15, at 2; ES-VLA-1, at 16).

b. Capitalization

In D.P.U. 11-85 B/11-119-B at 134-135, the Department directed NSTAR Electric to track hazardous tree removal separately from its vegetation management program. Specifically, the Department directed NSTAR Electric to submit an updated vegetation management program for its distribution system that would include: (1) a four- to five-year tree trimming cycle (at a minimum); and (2) a mechanism for tracking the number of hazard trees removed with associated costs D.P.U. 11-85-B/11-119-B, at 134-135.³¹⁵

Eversource states that it capitalized the expenditures for the initial cycle implementing the ETT program because ETT increased the clearance "corridor" beyond the clearance achieved with the SMT cycle (Exh. ES-VLA-1, at 12). From 2012 through 2015, Eversource capitalized a total of \$37,378,200 in ETT costs and \$14,808,500 in ETR costs for a total of \$52,186,700 (see RR-AG-13). At the end of the test year, Eversource had

³¹⁵ As discussed above, beginning in 2012, NSTAR Electric instituted a four-year trimming cycle so that the trees along all of its circuits within its distribution system are pruned once every four years (Exh. ES-VLA-1, at 11). NSTAR Electric also began to increase the clearance zone around the distribution primary by trimming to an ETT specification on all primary sections of circuits and developed an ETR element to its program to target the removal of risk and hazard trees in an effort to improve reliability (Exh. ES-VLA-1, at 11-12).

capitalized a total depreciable balance of \$48,671,800 (\$34.8 million for ETT, and \$13.8 million for ETR) (see RR-AG-13). Eversource asserts that it is appropriate to expense the expenditures for ETT work in the second trim cycle and beyond because of the difference between completing a capital improvement to the system (first trim cycle), and performing maintenance of an already widened corridor (second trim cycle and beyond) (Exh. ES-VLA-1, at 12-13, 16).

2. Positions of the Parties

a. Attorney General

The Attorney General agrees that Eversource should be allowed an annualization adjustment to its test year tree trimming costs (Attorney General Brief at 165). The Attorney General, however, asserts that the Department should reject Eversource's capitalization of ETT and ETR costs because capitalizing these costs conflicts with the Department's and FERC's accounting rules (Attorney General Brief at 165, 174-178). The Attorney General maintains that, from 2012 through 2015, Eversource accounted for ETT and ETR costs as capital and booked them to FERC Account 365 (Overhead Conductors and Devices) (Attorney General Brief at 175; Attorney General Reply Brief at 48). The Attorney General argues that this treatment is inconsistent with FERC and Department accounting guidelines and that, instead, Eversource should have booked these tree trimming costs to FERC Account 593 (Maintenance of Overhead Lines) because they represent routine maintenance (Attorney General Brief at 175; Attorney General Reply Brief at 49).

Specifically, the Attorney General argues that, while Eversource contends that its initial ETT and ETR cycle should be capitalized because it extends the life of an asset, any

type of pruning or tree removal along the distribution system, by its very nature, extends the life of the conductors and improves reliability (Attorney General Brief at 176). Further, the Attorney General contends that both the Department and FERC specifically identify that the costs associated with tree trimming and clearing of brush on overhead conductors and devices are to be included in Account 593 (Attorney General Brief at 175-176, citing FERC Uniform System of Accounts, Distribution Expenses, Maintenance Account: 593 Maintenance of Overhead Lines contained in FERC 18 CFR Part 101, Account 593, Item 2.k (revised as of April 1, 2016); 220 CMR 51.01). The Attorney General maintains that only tree trimming costs associated with newly installed overhead conductors and devices can be capitalized under Account 365 (Attorney General Brief at 177; Attorney General Reply Brief at 48, citing FERC 18 CFR part 101, Account 365, Item 9; 220 CMR 51.01; Tr. 13, at 2760).

The Attorney General argues that FERC's instructions require the tree trimming costs incurred after the installation of the distribution line to be expensed to Account 593 (Attorney General Reply Brief at 49). In addition, the Attorney General maintains that other than costs incurred by Eversource to perform initial tree trimming when a distribution line is first installed, that the Uniform System of Accounts for Electric Companies do not contain a provision that allows electric companies to capitalize the costs of subsequent tree trimming to that distribution line (Attorney General Brief at 177; Attorney General Reply Brief at 48).

Further, the Attorney General argues that Eversource should not get a second opportunity to capitalize trimming costs simply because it previously elected narrower clearance zone compared to Eversource's currently elected wider clearance zone (Attorney

General Brief at 178). The Attorney General argues that if Eversource were allowed to capitalize the 2012 through 2015 ETT and ETR costs, it will have effectively charged the customers twice for tree trimming costs: once as an O&M expense through rates that were in effect during the four-year deferral period, and again through the plant-in-service addition included in the rates in the instant case (Attorney General Reply Brief at 49). Accordingly, the Attorney General asserts that the Department should remove from rate base \$34.8 million (the depreciable balance of ETT costs at the end of the test year), and \$13.8 million (the depreciable balance of ETR costs at the end of the test year) (Attorney General Brief at 178, citing RR-AG-13). Finally, the Attorney General asserts that Eversource be precluded from capitalizing all ETR-related costs on its existing circuits going forward (Attorney General Brief at 178, citing RR-AG-13).

b. Cape Light Compact

Cape Light Compact concurs with the Attorney General's position that Eversource's initial ETT cycle costs should not be capitalized (Cape Light Compact Initial Brief at 80). Cape Light Compact asserts that customary utility practice allows capitalizing these costs only as part of a new powerline construction project with a new right-of-way clearing (Cape Light Compact Initial Brief at 80, citing Exh. AG-GLB-1, at 29).

c. Companies

Eversource argues that its normal vegetation management expenses are based on actual expenses incurred during the split test year ending June 30, 2016 for vegetation work such as ETT (Companies Brief at 136, citing Exh. ES-VLA-1, at 16). Eversource contends that NSTAR Electric's test year actual expenses for the vegetation management program

totaled \$10.5 million (Companies Brief at 136). Eversource asserts that it is entitled to recover these prudently incurred actual expenses (Companies Brief at 136).

Further, Eversource argues that it properly accounted for ETT and ETR vegetation management costs in 2012-2016, and that the Department should allow capitalization of these expenditures (Companies Brief at 572; Companies Reply Brief at 170). Eversource asserts that its internal guidelines for capitalization are consistent with the accounting practices of FERC, the Department accounting practices, and generally accepted accounting principles (Companies Brief at 573; Companies Reply Brief at 170, citing Tr. 15, at 3167-3168). Specifically, Eversource argues that Account 365 allows for tree trimming costs to be depreciated over the life of the conductor that is benefitting from the specific tree trimming (Companies Brief at 573, citing AG-37-6; Companies Reply Brief at 170). Further, Eversource asserts that the initial cycle of corridor-expanding work is treated as a capital improvement because it serves to extend the life of Eversource's distribution lines and other equipment on the distribution poles (Companies Brief at 573; Companies Reply Brief at 170-171, citing AG-37-6). In addition, Eversource argues that the level of work involved in the initial ETT differentiates it from routine maintenance (Companies Brief at 573). According to Eversource, it capitalized the initial ETT because it extends the life of its system assets (e.g., poles) rather than merely reducing customer outages (Companies Brief at 573).³¹⁶

³¹⁶ Specifically, Eversource argues that standard vegetation maintenance is designed to prevent outages (i.e., trimming a limb that may otherwise make contact with the system causing a fuse to blow or a recloser to trip), whereas ETT is designed to keep

3. Analysis and Findings

a. Annualization

During the test year, NSTAR Electric expended \$5,283,642 in vegetation management costs (Exh. ES-DPH-1, at 75). Because Eversource capitalized vegetation management trimming activities for the first six months of the test year (July 1, 2015 through December 31, 2015), its test year expenses for NSTAR Electric do not include a representative level of vegetation management expenses for the test year (Exh. ES-DPH-1, at 74). Accordingly, Eversource seeks to annualize NSTAR Electric's split test year vegetation management expenses in order to include a representative total annual level of such expense in base rates on a going forward basis (Exhs. ES-DPH-1, at 75; ES-VLA-1, at 16-17; ES-VLA-4; ES-VLA-5). In order to annualize its vegetation management expenses, Eversource proposes to increase NSTAR Electric's test year vegetation management expense by \$5,226,646 (Exh. ES-DPH-1, at 75). Accordingly, NSTAR Electric's test year pro forma expenses for its vegetation management program totals \$10,510,288 (inclusive of the \$5,226,646 trim cycle expense adjustment) (Exhs. ES-DPH-1, at 75; ES-DPH-2 (East), Sch. DPH-15, at 2; ES-VLA-1, at 17).

In order to allow the test year amount of an expense to be annualized a company must demonstrate that the expense is annually recurring and the amount annualized at is representative of future costs. See, e.g., D.P.U. 15-80/15-81, at 130-131. Here, NSTAR Electric had expenses for only half the test year for a cycle tree trimming program that has

equipment from becoming broken (i.e., a tree falling on a pole, which causes it to break) (Companies Brief at 573, citing Tr. 5, at 3163; Companies Reply Brief at 171).

recurring costs for a full year (Exh. ES-DPH-1, at 74). The Department finds the proposed annualized amount of \$10,510,288 to be representative of future costs (Exhs. ES-DPH-1, at 74; AG-11-10). Accordingly, the Department finds the proposed expenses for NSTAR Electric's vegetation management program to be annually recurring and to be reasonable (Exhs. ES-DPH-1, at 75; ES-VLA-1, at 16-17; ES-VLA-4; ES-VLA-5). D.P.U. 10-55, at 216. The Department therefore approves the annualization adjustment of \$5,226,646 to NSTAR Electric's proposed cost of service, resulting in a total of \$10,510,288 annually in base distribution rates for vegetation management expense.

b. Capitalization

The propriety of NSTAR Electric's capitalization policy has not been previously addressed by the Department. NSTAR Electric represents that its own capitalization policies are consistent with its interpretation of FERC's accounting systems and generally accepted accounting principles (Exhs. AG-11-12; AG-37-6; Tr. 13, at 2755-2756; Tr. 15, at 3167-3168). There is some evidence that other companies, including WMECo, have capitalized the initial costs associated with their own enhanced vegetation management programs (Exh. AG-37 6; Tr. 15, at 3167-3168). Further, there is evidence on the record in this proceeding that in 2012, as a result of the merger between the two entities, NSTAR Electric adopted capitalization of ETT, consistent with the policies employed by WMECO since 2000 (Exhs. AG-37-6; AG-51-6; RR-AG-14).³¹⁷ NSTAR Electric completed the initial

³¹⁷ Further, the Department notes that the issue of WMECo capitalizing these ETT costs was raised during the course of examination in the D.P.U. 10-70 rate case proceeding

cycle of its ETT and ETR programs, and thus will be expensing its vegetation management costs hereafter (Exh. ES-DPH-1, at 74-75). In view of the historic treatment of enhanced vegetation management program costs, the absence of clear Department guidance on the matter, and the fact that future ETT and ETR costs will be expensed, the Department will not disturb Eversource's accounting treatment of its ETT and ETR costs.

Nonetheless, the Department is aware that the subject of capitalized vegetation management costs is an item of contention by the parties in this proceeding, primarily Eversource and the Attorney General.³¹⁸ Since the close of the record in this proceeding, the Department has also become aware of a FERC audit report of American Transmission Systems Incorporated ("ASTI") (Audit of Formula Rates of American Transmission Systems, Inc., Docket No. FA11-8-000, at 15-18 (2013)). In that audit, FERC audit staff disagreed with ASTI's position that the expansion of its transmission corridors met FERC's requirements for capitalizing associated transmission-related tree trimming costs. Docket No. FA11-8-000, at 16 (2013). Specifically, FERC audit staff stated that "while the expansion of corridors may improve reliability by decreasing vegetation caused outages, it does not directly make the transmission assets or system more useful, more efficient, or a greater

(See, e.g., D.P.U. 10-70, Tr. 7 at 1222; Tr. 10 at 1621; Tr. 11 at 1802-1806, 1958-1965).

³¹⁸ The Department's Uniform System of Accounts for Electric Companies specifies that in order to maintain uniformity of accounting, utilities shall submit questions of doubtful interpretation to the Commission for consideration and decision. 220 CMR 51.01(1), 51.02(1)(a); 18 C.F.R. Pt. 101, General Instruction 5.

durability, or of a greater capacity.” Docket No. FA11-8-000, at 17 (2013). FA11-8-000, at 17 (2013).

Based on the conclusions presented by the FERC staff audit, and our review of the Uniform System of Accounts for Electric Companies, the Department questions whether a shift exists as to the capitalizable nature of these types of activities, and hereby instructs any electric distribution company seeking to capitalize distribution system vegetation management costs, except where those costs are associated with the initial installation of a distribution line, to do so only with specific authorization by Department, pursuant to 220 CMR 51.01(1), 51.02(1)(a), 18 CFR Pt. 101, General Instruction 5. Further, the Department places the Companies on notice that the issue of the appropriate accounting treatment of vegetation management.

XV. VERIZON-RELATED VEGETATION MANAGEMENT COSTS

A. Introduction

Both NSTAR Electric and WMECo jointly own utility poles in their respective service territories with Verizon New England, Inc. (“Verizon”) and each company has entered into one or more joint ownership agreements (“JOA”) with Verizon. See, generally, D.P.U. 13-135-A; D.P.U. 13-52. Further, each JOA incorporates intercompany operating procedures (“IOP”) that establish procedures and cost-sharing agreements associated with performing a number of tasks on jointly-owned poles, including preventive tree trimming and storm-related vegetation management.

NSTAR Electric issued invoices in May and August 2014 to Verizon totaling approximately \$7.1 million, which represents 50 percent of the total storm-related vegetation

management costs for storm events occurring from 2011 to 2013 (Exhs. ES-VLA-1, at 31-32; DPU-50-1, Att. (a); AG-25-22, Att. (a)).³¹⁹ In addition, WMECo issued invoices to Verizon totaling approximately \$1 million, which represents 50 percent of the storm-related vegetation management costs for 2008 to 2013 in locations where Verizon received a “demonstrable benefit” (Exhs. ES-DPH-1, at 132; ES-VLA-1, at 32; AG-25-22, Att. (b); Tr. 5, at 975).³²⁰ Verizon did not pay these invoices (Exhs. ES-VLA-1, at 32-33; ES-DPH-1, at 132).

The Companies engaged in settlement discussions with Verizon in relation to the outstanding balances (Exhs. ES-VLA-1, at 31-32, AG-25-11, Att. (confidential); Tr. 5, at 979). On April 4, 2017, the Companies entered into a settlement agreement (“Agreement”) with Verizon related to the outstanding storm-related vegetation management costs (Exhs. DPU-50-1, Att. (b); AG-25-26, Att. (Supp.)). Pursuant to the terms of the Agreement, Verizon paid \$1,514,242 to the Companies (Exhs. DPU-50-1, Att. (b); AG-25-26, Att. (Supp.)).

The Companies also executed a new IOP with Verizon to address future vegetation management cost-sharing in major storm events (Exhs. DPU-50-1, Att. (b); AG-25-26 & Att. (Supp.)). This IOP includes a provision requiring Verizon to pay seven percent of future

³¹⁹ These invoices were issued following the Department’s decision in D.P.U. 13-52, at 48-49, requiring NSAR Electric to take prudent steps to seek recovery from Verizon for vegetation management costs.

³²⁰ Unlike the NSTAR Electric JOA, the WMECo JOA allows for a work practice using timesheets that generate location-specific information on vegetation clearing and identify the Verizon facilities receiving a benefit (Exh. ES-VLA-1, at 29).

vegetation management costs associated with major storm events (Exhs DPU-50-1, Att. (b); AG-25-26, Att. at 6 (Supp.); Tr. 1, at 106-107).³²¹

The Companies propose to recover \$6,695,352 in vegetation management costs from ratepayers in the instant proceeding (Exh. DPU-50-1, Att. (a); Tr. 5, at 982). This amount is the difference between the approximately \$8.1 million billed to Verizon for storm-related vegetation management costs and the amount paid by Verizon pursuant to the Agreement (Tr. 5, at 982). The Companies propose to recover these costs over five years, beginning January 1, 2018, through the storm cost recovery adjustments for both NSTAR Electric and WMECo (Exhs. DPU-50-1 & Att. (a)).

B. Positions of the Parties

1. Attorney General

The Attorney General contends that the Department should deny Eversource's proposal to recover the difference between the amounts it billed Verizon and the amount that Eversource accepted from Verizon in lieu of full payment (Attorney General Brief at 183). The Attorney General maintains that the Companies and Verizon are signatories to JOAs which explicitly provide that heavy storm-related vegetation management work will be handled "immediately without prior review," and that the Companies and Verizon will each pay 50 percent of the costs for such work (Attorney General Brief at 183, citing Exhs. ES-VLA-1, at 27-28; AG-25-15, Att. (a) at 1). The Attorney General argues that,

³²¹ Pursuant to the new IOP, Verizon will pay seven percent of the total vegetation management costs experienced by the Companies in any emergency event classified under the Companies' Emergency Response Plan as a Type 1, 2 or 3 event (Exhs. DPU-50-1, Att. (b); AG-25-26, Att. (Supp.)).

despite Department direction to seek “legal process” regarding Verizon’s responsibility for these costs, Eversource never filed suit against Verizon to enforce the terms of the JOAs (Attorney General Brief at 184, citing Exhs. AG-1-82; AG-25-25; AG-25-26 (Supp.)).

Rather, the Attorney General maintains that the Agreement NSTAR Electric and WMECo entered into with Verizon was outside of any legal process and, therefore, not in compliance with the Department’s directives (Attorney General Brief at 184, citing Exh. AG-25-26 (Supp.)).

Further, pursuant to the terms of the Agreement, the Attorney General states that Verizon is responsible only for seven percent of the total cost of storm-related vegetation management in the overlapping service areas going forward (Attorney General Brief at 184, citing AG-25-26, Att. at 5 (Supp.)). The Attorney General asserts that the terms of the Agreement ask ratepayers to pay 93 percent of these costs going forward, an outcome which the Attorney General contends is neither just nor reasonable (Attorney General Brief at 185).

Based on these considerations, the Attorney General argues that the Department should not allow Eversource shareholders to benefit from the Companies’ imprudence, to the detriment of ratepayers, by ignoring their failure to comply with the Department’s directive to obtain a determination from the courts as to the extent of Verizon’s responsibility for storm-related vegetation management costs under the JOAs (Attorney General Brief at 186). Accordingly, the Attorney General asserts that the Department should deny Eversource’s request to recover the difference between what the Companies billed Verizon and the amount

Verizon paid to Eversource pursuant to the Agreement (Attorney General Brief at 186, citing Exh. AG-25-26 (Supp.)).

2. Companies

The Companies assert that the Department should approve their request to recover the difference in vegetation management costs that were invoiced to Verizon pursuant to the JOAs and the amount paid by Verizon pursuant to the Agreement (Companies Brief at 122, 488). Contrary to the Attorney General's interpretation, Eversource argues that the Department did not mandate that it file suit against Verizon as a prerequisite for recovery of any unpaid Verizon-related costs from ratepayers (Companies Brief at 488). Instead, Eversource contends that the Department directed the Companies to take prudent steps to establish the level of costs properly attributable to Verizon, including, if necessary, instituting "legal process" against Verizon for unpaid storm-related vegetation management costs (Companies Brief at 488, citing D.P.U. 13-135-A at 45, D.P.U. 13-52, at 48; Massachusetts Electric Company and Nantucket Electric Company, D.P.U. 11-56, at 30-31 (2013)). The Companies argue that such "legal process" may include pursuing Verizon in court, or arriving at a resolution through arbitration or mediation (Companies Brief at 488, citing D.P.U. 13-52, at 48, n.30). In this regard, Eversource asserts that the settlement negotiations it entered into with Verizon that resulted in the Agreement fully satisfied the Department's directives regarding legal process (Companies Brief at 488). Further, the Companies maintain that the Agreement is a legally enforceable contract (Companies Brief at 488; Companies Reply Brief, App. C at 16).

Eversource also argues that the amount it recovered from Verizon pursuant to the Agreement was appropriate (Companies Brief at 122). Eversource contends that, pursuant to the JOAs, Verizon must pay a share of vegetation management costs only where there was a mutual benefit and, for the applicable period, this amount was less than the \$8.1 million the Companies billed Verizon (Companies Reply Brief at 122, App. C at 16). Eversource argues that because the Companies were not owed the full \$8.1 million they billed to Verizon, ratepayers were not harmed by the Companies settlement of \$1.5 million (Companies Brief at 122, citing Exh. AG-11-16, Tr. 1, at 103; Companies Reply Brief, App. C at 16). Accordingly, the Companies assert that they should be permitted to recover the balance of \$6,695,352 from ratepayers, as proposed (Companies Brief at 122, 488; Tr. 5, at 982).

C. Analysis and Findings

The Department has consistently found that when seeking to recover storm-related costs from ratepayers, a company has the burden to demonstrate that those costs are reasonable and prudently incurred, and that a company is not seeking to recover any costs from its customers that a third-party is contractually obligated to pay under the terms of a JOA. Western Massachusetts Electric Company, D.P.U. 11-102/11-102-A at 101 (2012); D.P.U. 11-01/D.P.U. 11-02, at 50, 56; Massachusetts Electric Company and Nantucket Electric Company, D.P.U. 11-56, Interlocutory Order at 5; (2012); D.P.U. 10-70, at 68; D.P.U. 09-39, at 212-213. More specifically, the Department has directed electric distribution companies to take prudent steps to seek recovery from Verizon for vegetation management costs including, if necessary, pursuing legal action to recover those costs in

court before seeking recovery of those costs from ratepayers. D.P.U. 13-52, at 48. Legal process may include pursuing Verizon in court, or arriving at a resolution through arbitration or mediation. D.P.U. 13-52, at 48, n.30. Where a company fails to collect vegetation management costs from Verizon through the legal process, the company may then file for recovery of those costs with the Department. D.P.U. 13-52, at 48.

The Attorney General argues that the Companies did not pursue the prerequisite legal process to determine the appropriate extent of Verizon's responsibility for storm-related vegetation management costs under the JOAs and, therefore, should not be allowed to recover any uncollected costs from ratepayers here (Attorney General Brief at 186). Eversource disagrees and maintains that, through its negotiations with Verizon, it has taken reasonable action to establish the level of costs properly attributable to Verizon (Companies Brief at 122).

While the Companies did not reach the Agreement with Verizon through a court action, mediation, or arbitration as contemplated in D.P.U. 13-52, we find that Eversource has demonstrated that its decision to resolve this issue without recourse to formal legal process was reasonable under the circumstances. The Agreement represents a voluntary resolution of the longstanding issue of responsibility for costs associated with storm-related vegetation management work. As joint owners of an essential distribution asset, there is significant benefit from a cooperative resolution of this issue between Verizon and Eversource. In addition to resolving the issue of outstanding costs, the Agreement will reduce future uncertainty by putting in place a clear process to address costs related to storm

events (Exhs. DPU-50-1, Att. (b); AG-25-26 (Supp.)). Accordingly, we find that Eversource is eligible to request recovery of the unrecovered storm-related vegetation management costs at issue.

Eversource must demonstrate that the amount it seeks to recover from ratepayers in this case is reasonable. As noted above, Eversource proposes to recover \$6,695,352 in vegetation management costs from ratepayers representing the difference between the approximately \$8.1 million billed to Verizon for storm-related vegetation management costs and the \$1,514,242 paid by Verizon pursuant to the Agreement (Exhs. DPU-50-1, Atts. (a), (b); AG-25-26, Att. (Supp.); AG-25-22, Atts. (a), (b); Tr. 5, at 982). Our review of the record shows that Verizon had an arguable case under the JOAs that it was not liable to the Companies for the full amounts billed (Exhs. ES-VLA-1, at 31-32; AG-25-11, Att. (confidential); AG-25-26 (Supp.); Tr. 5, at 975-979). Accordingly, we find that the amount of the settlement paid by Verizon pursuant to the agreement is reasonable under the circumstances as it avoids the uncertainties of litigation.

Based on the findings above, the Department will allow the Companies to recover through Eversource's storm cost recovery adjustments the difference between the outstanding balance of storm-related vegetation management costs invoiced to Verizon and the amounts paid by Verizon pursuant to the Agreement (Exhs. DPU-50-1, Atts. (a), (b); AG-25-26, Att. (Supp.); AG-25-22, Atts. (a), (b); Tr. 5, at 982). As noted above, the Companies proposed to amortize recovery of the balance over a period of five years (Exhs. ES-DPH-1, at 133; ES-VLA-1, at 33). Amortization periods are determined based on a case-by-case review of

the evidence. D.P.U. 08-27, at 99; D.P.U. 93-223-B at 14; D.P.U. 84-145-A at 54. In this case, we consider the size of the balance to be recovered, the underlying facts giving rise to the accumulation of the balance, and the impact of recovery on ratepayers. Based on these considerations and the record in this case, the Department finds that five years is an appropriate amortization period.

The Department will allocate the amounts to be recovered to NSTAR Electric and WMECo based on the proportional share of the \$8.1 million amount billed to Verizon (*i.e.*, 87.7 percent to NSTAR Electric and 12.3 percent to WMECo) (Exhs. ES-DPH-1, at 132; ES-VLA-1, at 32; Tr. 5, at 975). Amortizing 87.7 percent of \$6,695,352 over five years produces an annual expense of \$1,173,753 for NSTAR Electric. Amortizing 12.3 percent of \$6,695,352 over five years produces an annual expense of \$165,317 for WMECo.

Going forward, Verizon has agreed to pay seven percent of the total applicable storm-related vegetation management costs as specified in the Agreement (Exh. AG-25-26 (Supp.)).³²² In the event that Verizon fails to pay these amounts, the Companies' shall not be eligible to recover such costs from ratepayers. In this regard, the Companies will be

³²² The Attorney General contends that the revised cost sharing percentage is not reasonable (Attorney General Brief at 185). The Department does not address the reasonableness of the revised cost-sharing arrangement between Verizon and Eversource in this proceeding (Exh. DPU-50-1, Att. (b) at 6). Instead, Eversource shall provide data and analysis to support the reasonableness of the cost sharing arrangement as part of its next storm fund cost recovery proceeding. In particular, the Company shall monitor future fieldwork and collect data to show that the cost sharing arrangement outlined in the Agreement is reasonably representative of the actual benefits to both the Companies and Verizon.

properly incented to take all necessary steps to recover those costs from Verizon and ratepayers will not be at risk for any non-payment.

As a final matter, the Department notes that Unitil addressed a similar issue and has come to a resolution with Verizon that involved the transfer of ownership of jointly owned poles from Verizon to the distribution company. See Fitchburg Gas and Electric Light Company, D.P.U. 17-ARR-04, Exhibit DPU-1-1 (2017). Further, the Companies indicated that they are aware of a similar agreement with National Grid and anticipate that Verizon will seek similar treatment from Eversource (Tr. 5, at 983).³²³ The Department directs the Companies to explore the benefits to ratepayers and feasibility of a transfer of jointly owned poles from Verizon to Eversource and report on such efforts in its next base rate case proceeding.

XVI. CAPITAL STRUCTURE AND RATE OF RETURN

A. Introduction

Eversource proposes a 7.42 percent weighted average cost of capital (“WACC”) for NSTAR Electric and a 7.50 percent WACC for WMECo, representing the rate of return to be applied on rate base to determine the Companies’ total return on their respective investments (Exhs. ES-DPH-2 (East), Sch. DPH-31, at 1 (Rev. 3); ES-DPH-2 (West),

³²³ National Grid and Verizon entered into a new utility pole ownership agreement, effective May 31, 2017, under which poles will continue to be jointly owned by both companies, but the responsibilities for pole set, replacement, or relocation will be based on the type of work needed. Massachusetts Electric Company and Nantucket Electric Company, D.P.U. 17-ARR-01, Exhibit DPU-8 (2017). Further, a percentage of National Grid’s actual costs will be recovered from Verizon for vegetation management costs pursuant to a new IOP for emergency restoration activity. D.P.U. 17-ARR-01, Exh. DPU-8.

Sch. DPH-31, at 1 (Rev. 3)). NSTAR Electric's proposed WACC is based on: (1) a proposed capital structure that consists of 45.69 percent long-term debt, 0.94 percent preferred stock, and 53.37 percent common equity; (2) a proposed cost of long-term debt of 3.88 percent; and (3) a proposed rate of return on common equity (i.e., return on equity or ROE) of 10.50 percent (Exhs. ES-RBH-1, at 3, 7, 70-73; ES-DPH-1, at 176-177; ES-DPH-2 (East), Sch. DPH-31, at 1 (Rev. 3)). WMECo's proposed rate is based on: (1) a proposed capital structure containing 46.66 percent long-term debt and 53.34 percent common equity; (2) a proposed cost of long-term debt of 4.07 percent; and (3) a proposed ROE of 10.50 percent (Exhs. ES-RBH-1, at 3, 7, 70-73; ES-DPH-1, at 176-177; ES-DPH-2 (West), Sch. DPH-31, at 1 (Rev. 3)).

In determining their proposed ROEs, the Companies used the market and financial data developed for a comparison group of 20 electric utility companies and applied: the discounted cash flow ("DCF") model, including the constant growth and multi-stage forms; the risk premium model ("RPM"); and the capital asset pricing model ("CAPM") (Exhs. ES-RBH-1, at 3, 16-20; ES-RBH-3; ES-RBH-4; ES-RBH-6; ES-RBH-9).

The Attorney General calculates a WACC of 6.60 percent, developed using an ROE of 8.875 percent for both NSTAR Electric and WMECo (Exh. AG-JRW-1, at 4; JRW-1). The Attorney General's WACC also is based on proposed capital structures consisting of: (1) 48.99 percent long-term debt, 1.01 percent preferred stock, and 50.00 percent common equity for NSTAR Electric; and (2) 50.00 percent for both WMECo's long-term debt and common equity (Exhs. AG-JRW-1, at 3, 5, 39; JRW-1).

FEA and Sunrun and EFCA also calculate alternate WACCs and ROEs based on their own capital structure determinations for both NSTAR Electric and WMECo (Exhs. FEA-MPG-1, at 4, 48-49 (Corrected); FEA-MPG-3; SREF-DJG-1, at 9-10; SREF-DJG-1, App. F; SREF-DJG-3; SREF-DJG-4). FEA proposes a WACC of 6.83 percent, developed using an ROE of 9.35 percent for both NSTAR Electric and WMECo (Exhs. FEA-MPG-1, at 4, 48-49 (Corrected); FEA-MPG-3). FEA's WACC for NSTAR Electric is based on a capital structure consisting of: (1) 49.06 percent debt, 0.94 percent preferred stock, and 50.00 percent common equity (Exhs. FEA-MPG-1, at 4, 48-49 (Corrected); FEA-MPG-3). FEA's WAAC for WMECo is based on a capital structure consisting of 50.00 percent debt and 50.00 percent common equity (Exhs. FEA-MPG-1, at 4, 48-49 (Corrected); FEA-MPG-3).

Sunrun and EFCA propose a WACC of 6.45 percent for NSTAR Electric and 6.49 percent for WMECo, developed using an ROE of 8.75 percent for both companies (Exhs. SREF-DJG-1, at 9-10; SREF-DJG-1, App. F; SREF-DJG-3; SREF-DJG-4). Sunrun and EFCA's WACCs are based on proposed capital structures consisting of: (1) 51.0 percent long-term debt, 0.94 percent preferred equity, and 49.06 percent common equity for NSTAR Electric; and (2) 51.0 percent long-term debt and 49.00 percent common equity for WMECo (Exhs. SREF-DJG-1, at 9-10; SREF-DJG-1, App. F; SREF-DJG-3; SREF-DJG-4).

Cape Light Compact and UMass also make recommendations. Cape Light Compact recommends an 8.75-percent ROE and use of a capital structure with a 51-percent long-term

debt ratio, while UMass recommends a 9.5-percent ROE (Cape Light Compact Brief at 72-78; UMass Brief at 18-20).

Below, we examine: (1) the Companies' capital structures; (2) their cost of debt and preferred stock; (3) the respective proxy group selections used by the parties in supporting their proposed ROEs; (4) the Attorney General's arguments for authorizing an ROE consistent with regional and national trends; and (5) the appropriate ROE.

B. Capital Structure

1. Companies Proposal

Eversource calculates separate capital structures for NSTAR Electric and WMECo in support of proposing separate revenue requirements (Exhs. ES-DPH-1, at 3, 177; ES-RBH-1, at 370).³²⁴ Eversource proposed to apply the June 30, 2016, test year-end capital structure for NSTAR Electric and WMECo (Exhs. ES-DPH-1, at 176-177; ES-DPH-2 (East), Sch. DPH-31, at 1 (Rev. 3); (Exh. ES-DPH-2 (West), Sch. DPH-31, at 1 (Rev. 3)). For NSTAR Electric that capital structure consisted of \$2,100,000,000 in long-term debt, \$43,000,000 in preferred stock, and \$2,452,820,959 in common equity (Exh. ES-DPH-2 (East), Sch. DPH-31, at 1 (Rev. 3)). These balances produce a capital structure consisting of 45.69 percent long-term debt, 0.94 percent preferred stock, and 53.37 percent common equity (Exhs. ES-DPH-1, at 176; ES-DPH-2 (East), Sch. DPH-31, at 1 (Rev. 3); ES-RBH-1, at 3).

³²⁴ As stated above in Section V above, Eversource plans to complete a corporate consolidation of NSTAR Electric and WMECo effective January 1, 2018. For this proceeding, the Companies maintain separate revenue requirement calculations (Exh. ES-DPH-1, at 3).

As of the test year-end, WMECo's capital structure consisted of \$565,000,000 in long-term debt and \$643,905,916 in common equity (Exhs. ES-RBH-1, at 3; ES-DPH-2 (West), Sch. DPH-31, at 1 (Rev. 3)). These balances correspond to a test year-end capital structure consisting of 46.66 percent long-term debt and 53.34 percent common equity (Exhs. ES-RBH-1, at 3; ES-DPH-1, at 176-177; ES-DPH-2 (West), Sch. DPH-31, at 1 (Rev. 3)). WMECo excluded the portion of capitalization attributable to its solar investments, calculated in accordance with Article 8.2 of the settlement between WMECo and the Attorney General in Western Massachusetts Electric Company, D.P.U. 09-05 (2009) (Exhs. ES-DPH-1, at 177; ES-DPH-2 (West), Sch. DPH-31, at 1 (Rev. 3)). In order to effect this settlement provision, WMECo reduced its test year-end long-term debt balance by \$17,024,396 and reduced its test year-end common equity balance by \$17,495,502³²⁵ (Exhs. ES-DPH-1, at 177; ES-DPH-2 (West), Sch. DPH-31, at 1 (Rev. 3)). WMECo's capitalization adjustments produce a capital structure consisting of \$547,975,604 in long-term debt and \$626,410,414 in common equity (Exh. ES-DPH-2 (West), Sch. DPH-31, at 1 (Rev. 3)).

2. Attorney General Proposal

The Attorney General proposes capital structures for both NSTAR Electric and WMECo that scale the Companies' common equity ratios so that they are equal in proportion to their long-term debt ratios, as a way to reduce the cost of equity, take advantage of

³²⁵ The settlement in D.P.U. 09-05 provides that the revenue requirement associated with WMECo's solar investments will be determined using a capital structure equal to its average debt and equity ratios over the previous five quarters. D.P.U. 09-5, at 11; M.D.P.U. No. 1044E, at 2-3.

lower-cost debt, and reduce the revenue requirement to the benefit of ratepayers (Exh. AG-JRW-1, at 37). In support of her proposal, the Attorney General notes that the average common equity ratio of both her proxy group and the Companies' proxy group are lower than the Companies' proposed capital structures (Exh. AG-JRW-1, at 35-36). The Attorney General's proxy group has an average common equity ratio of 45.33 percent and the Companies' proxy group has an average common equity ratio of 46.90 percent, compared to the Companies' proposed 53.37 percent for NSTAR Electric and 53.34 percent for WMECo (Exhs. AG-JRW-1, at 34-36; AG-JRW-4, at 1).³²⁶ Reasoning that the Companies' common equity proposals produce higher costs and lower financial risk relative to both sets of proxy groups, the Attorney General recommends an imputed common equity ratio of 50.00 percent for both NSTAR Electric and WMECO (Exhs. AG-JRW-1, at 38-39; AG-JRW-5). To achieve this ratio, the Attorney General proportionally increases NSTAR Electric's long-term debt ratio from 45.69 percent to 48.99 percent, and correspondingly increases NSTAR Electric's preferred stock from 0.94 percent to 1.01 percent (Exhs. AG-JRW-1, at 39; AG-JRW-5). She adjusts WMECo's long term debt to 50.00 percent (Exhs. AG-JRW-1, at 39; AG-JRW-5).

Based on this analysis, the Attorney General recommends an imputed capital structure for NSTAR Electric consisting of 48.99 percent long-term debt, 1.01 percent preferred stock, and 50.00 percent common equity, and an imputed capital structure for WMECo of

³²⁶ The Attorney General presents financial results using both mean and medians, however, she has used the median as a measure of central tendency intending to cancel out the influence of outliers among means (Attorney General Brief at 69 n.23, citing Exh. AG-JRW-1, at 33 n.24).

50.00 percent long-term debt and 50.00 percent common equity (Exhs. AG-JRW-1, at 39; AG-JRW-5).

3. FEA Proposal

FEA states that Standard & Poor's Financial Services, LLC's ("S&P")³²⁷ credit rating assessments of utilities consider both on-balance sheet and off-balance sheet debt obligations in measuring a utility's financial risk (Exh. FEA-MPG-1, at 43-44 (Corrected)).³²⁸ FEA determines that NSTAR Electric and WMECO's adjusted debt ratios are 47 percent and 48 percent, respectively, which FEA considers to be significantly lower than that of industry medians for utilities with comparable bond ratings (Exh. FEA-MPG-1, at 44-45 (Corrected)). Based on this information, FEA concludes that both NSTAR Electric and WMECO have capital structures that are too heavily weighted with common equity, which unjustifiably increases their cost of capital, cost of service, and retail rates (Exh. FEA-MPG-1, at 45 (Corrected)).

In order to remedy what it considers to be unbalanced capital structures, FEA reduces the common equity ratio for both NSTAR Electric and WMECO to 50.00 percent by transferring common equity to long-term debt (Exhs. FEA-MPG-1, at 43-44, 84 (Corrected));

³²⁷ Standard & Poor's Financial Services LLC is a financial services company that provides credit ratings, financial research and analysis on stocks, and is known for its stock market indices.

³²⁸ According to S&P, off-balance sheet debt obligations include "the debt-like characteristics of purchased power obligations, operating leases, and other financial obligations that are not capitalized on a utility's balance sheet" (Exhs. FEA-MPG-1, at 43; FEA-MPG-3, n.3; FEA-MPG-22 (note), citing S&P Capital IQ, CreditStats Direct, last updated March 29, 2017).

FEA-MPG-6; FEA-MPG-22). To accomplish the adjustment, FEA reduces NSTAR Electric's common equity balance by \$154,910,480, thus bringing that company's common equity ratio to 50.00 percent, with a corresponding increase to NSTAR Electric's long-term debt balance (Exhs. FEA-MPG-1, at 48-49 (Corrected); FEA-MPG-6; FEA-MPG-22, at 2). This adjustment produces a capital structure consisting of \$2,254,910,480 in long-term debt, \$43,000,000 in preferred stock, and \$2,297,910,480 in common equity (Exhs. FEA-MPG-1, at 48-49 (Corrected); FEA-MPG-22, at 2). For WMECo, FEA reduces its common equity balance by \$39,217,405, thus bringing that company's common equity ratio to 50.0 percent, with a corresponding increase to WMECo's long-term debt (Exhs. FEA-MPG-1, at 48-49 (Corrected); FEA-MPG-22, at 2). This adjustment produces a capital structure consisting of \$587,193,009 in long-term debt and \$587,193,009 in common equity (Exhs. FEA-MPG-1, at 48-49 (Corrected); FEA-MPG-22, at 2).

4. Sunrun and EFCA Proposal

Sunrun and EFCA propose imputing a debt ratio of 51.00 percent for both NSTAR Electric and WMECo, while proposing common equity ratios of 48.06 percent for NSTAR Electric and 49.00 percent for WMECo, and a preferred stock ratio of 0.94 percent for NSTAR Electric (Exh. SREF-DJG-1, at 7-10; SREF-DJG-1, App. F).³²⁹ Sunrun and EFCA note that, although NSTAR Electric and WMECo can support debt ratios above 60.00 percent, they selected debt and capital ratios closer to the Companies' proxy group

³²⁹ On brief, Cape Light Compact also supports use of a 51.00-percent debt ratio for both NSTAR Electric and WMECo (Cape Light Compact Brief at 74).

average to avoid making too abrupt a change to the Companies' proposals (Exh. SREF-DJG-1, App. F at 8-15).

5. Positions of the Parties

a. Attorney General

The Attorney General challenges the Companies' proposed capital structures (Attorney General Brief at 64-66; Attorney General Reply Brief at 63-64). Specifically, she contests Eversource's proposed capitalization ratios and the omission from NSTAR Electric's proposed capital structure of \$350 million in long-term debt issued in May 2017 (Attorney General Brief at 64-66; Attorney General Reply Brief at 63-64).³³⁰

On the first point, the Attorney General argues that NSTAR Electric's and WMECo's proposed capital structures have more common equity and, consequently, indicate less financial risk than the capital structures of other electric utilities (Attorney General Brief at 64; Attorney General Reply Brief at 63). She notes that her proxy group companies show lower average capitalization ratios than Eversource's proposed capital structures, with common equity averaging 45.33 percent, long-term debt averaging 48.76 percent, short-term debt averaging 5.78 percent, and preferred debt averaging 0.12 percent (Attorney General Brief at 64; Attorney General Reply Brief at 64). She also contests the Companies' claims

³³⁰ As discussed in Section V.D above and further below, the Department previously approved NSTAR Electric's application to issue long-term debt securities from time-to-time until December 31, 2018, in an amount not to exceed \$700 million. NSTAR Electric Company, D.P.U. 16-189, at 16-19, 24-25 (March 30, 2017). Pursuant to this authorization, NSTAR Electric issued long-term debt as follows: \$350 million on May 10, 2017 and \$350 million on October 5, 2017. At the time that the parties submitted briefs on the capital structure issue, Eversource had issued only \$350 million in long-term debt pursuant to D.P.U. 16-189.

that NSTAR Electric's and WMECo's proposed capital structures are "very similar" to those approved by the Department in D.P.U. 15-80/D.P.U. 15-81 and D.P.U. 15-155, stating that their common equity ratios are actually higher than what she considers to be the already high equity ratios approved in those proceedings (Attorney General Reply Brief at 64, citing D.P.U. 15-155, at 346; D.P.U. 15-80/D.P.U. 15-81, at 253). The Attorney General maintains that when a regulated utility's capital structure contains a high equity ratio, options include: (1) imputing a more reasonable capital structure to be reflected in revenue requirements; and (2) recognizing the high equity ratio's influence on reducing financial risk as a rationale for authorizing a lower ROE (Attorney General Brief at 64; Attorney General Reply Brief at 63). For these reasons, the Attorney General recommends the Department use an imputed common equity ratio of 50.00 percent for both NSTAR Electric and WMECo (Attorney General Brief at 65; Attorney General Reply Brief at 63).

On the second point, the Attorney General claims that the Companies failed to include NSTAR Electric's May 6, 2017 long-term debt issuance of \$350 million in its determination of the capital structure and revenue deficiency in the current proceeding (Attorney General Brief at 65, citing Exhs. ES-DPH-2, Sch. DPH-31, at 1-2 (East); ES-DPH-2, Sch. DPH-31, at 1-2 (West)). The Attorney General maintains that the debt issuance is consequential because it increases the outstanding balance of long-term debt and the ratio of long-term debt used in the WACC (Attorney General Brief at 65). The Attorney General argues that the Department requires a company to adjust its capital structure for long-term debt issued after the end of the test year, and thus she recommends that the Department include NSTAR

Electric's \$350 million debt issue in the calculation of the capital structure and the cost of debt when determining the Company's overall WACC (Attorney General Brief at 65-66, citing the following regarding inclusion of post-test year debt issuances: D.P.U. 15-155, at 343-344; D.P.U. 11-43, at 204-205; D.P.U. 07-71, at 122-123; D.T.E. 05-27, at 272; D.P.U. 84-94, at 52-53).

b. FEA

FEA argues that the Companies' proposed capital structures contain excessive amounts of common equity relative to total capital, which unnecessarily inflates the revenue requirement and places too heavy a rate burden on ratepayers (FEA Brief at 17). FEA assessed NSTAR Electric's and WMECo's off-balance sheet obligations and determined that both Companies had adjusted debt ratios that were much lower than the industry median adjusted debt ratios for regulated utilities with the same bond ratings (FEA Brief at 18). According to FEA, the Companies' actual capital structures contain more common equity than necessary to support their bond ratings (FEA Reply Brief at 1). Additionally, FEA asserts that the Companies' proposed common equity ratios of over 53.00 percent are significantly higher than the Companies' proxy group average common equity ratio of 48.50 percent, and, therefore, are unreasonable (FEA Brief at 19). FEA contends that an imputed 50.00-percent common equity ratio will preserve the Companies' investment grade bond ratings at a lower cost to customers, and is consistent with sound utility financing principles (FEA Reply Brief at 2). In addition, FEA argues that adjusting the capital

structures of both Companies to a 50.00-percent common equity ratio strikes a better balance between the interests of investors and ratepayers in setting rates (FEA Brief at 20).

c. Sunrun and EFCA, and Cape Light Compact

Sunrun and EFCA, as well as Cape Light Compact, comment briefly on the Companies' proposed capital structures, and maintain that the Companies' debt ratios should be increased to replace higher-cost equity and to lower rates charged to customers (Sunrun and EFCA Brief at 20; Cape Light Compact Brief at 74). Cape Light Compact supports the use of an imputed debt ratio of 51.00 percent to represent what it considers to be a more prudent capital structure for both NSTAR Electric and WMECo (Cape Light Compact Brief at 74).

d. Companies

The Companies argue that their use of the actual test year capital structure is consistent with Department precedent (Companies Brief at 279, citing D.P.U. 13-75, at 274-276; D.P.U. 12-25, at 386-388; D.P.U. 09-30, at 303-304; Companies Reply Brief at 148, citing D.P.U. 15-80/D.P.U. 15-81, at 253). Eversource additionally contends that the proposed capital structures are within range of the equity ratios of the Companies' proxy group (Companies Brief at 280, citing Exh. ES-RBH-1, at 71). According to Eversource, the 53.37- and 53.34-percent common equity ratios proposed for NSTAR Electric and WMECo, respectively, are consistent with the equity capitalization ratios of other comparable electric distribution companies (Companies Brief at 516, citing Exhs. ES-RBH-Rebuttal-1, at 67; ES-RBH-Rebuttal-8; Companies Reply Brief at 148). Further, Eversource asserts that the Department consistently accepts a utility's test year-end capital structure and that the

Department will depart from using the actual capital structure only when it “deviates from sound utility practices” (Companies Brief at 280, citing D.P.U. 15-155, at 343, 346; D.P.U. 15-80/15-81, at 250, 253; D.P.U. 14-150, at 315). For these reasons, the Companies assert that the Department should reject the Attorney General’s, Sunrun and EFCA’s, and FEA’s proposed imputed capital structures for NSTAR Electric and WMECo (Companies Brief at 515, 532-533, 536; Companies Reply Brief at 149).

The Companies further recommend that the Department reject the Attorney General’s proposal to incorporate NSTAR Electric’s May 2017 issuance of \$350 million in long-term debt because it ignores other post-test year changes in NSTAR Electric’s capital structure (Companies Brief at 517-518). The Companies argue that the \$350 million debt issuance is only one of multiple post-test year changes to NSTAR Electric’s capital structure, including to both debt and common equity levels (Companies Brief at 518, citing Tr. 13, at 2800-2801; Tr. 15, at 3123-3124). According to the Companies, during the first six months after the end of the test year, increases in NSTAR Electric’s retained earnings resulted in an increase in the common equity ratio from 53.34 percent to 55.49 percent (Companies Brief at 518, citing Tr. 13, at 2800; Tr. 15, at 3123). Prior to the issuance of the \$350 million in debt in May 2017, NSTAR Electric’s common equity ratio had risen to 55.7 percent (Companies Brief at 518, citing Tr. 15, at 3123). By the end of 2017, the Companies project that NSTAR Electric’s common equity ratio will be 53.34 percent after Eversource issues an additional \$350 million in new long-term debt (Companies Brief at 518, citing Tr. 15,

at 3124).³³¹ Eversource maintains that because NSTAR Electric's levels of common equity and long-term debt fluctuate over time, it would not be appropriate to accept only the issuance of \$350 million long-term debt as a post-test year adjustment to the capital structure without accepting other post-test year adjustments related to common equity (Companies Brief at 518, citing Tr. 13, at 2801).

6. Analysis and Findings

a. Introduction

A company's capital structure typically consists of long-term debt, preferred stock, and common equity. D.P.U. 07-71, at 122; D.T.E. 03-40, at 319; D.T.E. 01-56, at 97; Pinehills Water Company, D.T.E. 01-42, at 17-18 (2001). The ratio of each capital structure component to the total capital structure is used to weight the cost (or return) of each capital structure component to derive a WACC. The WACC is used to calculate the rate of return, which is applied to the company's rate base as part of the revenue requirement established by the Department, and is made up of two components: (1) the cost of the company's long-term debt and preferred stock and (2) the ROE set by the Department. D.P.U. 07-71, at 122; D.T.E. 03-40, at 319; D.T.E. 01-42, at 17-18; South Egremont Water Company, D.P.U. 86-149, at 5 (1986).

The Department normally will accept a company's test year-end capital structure, allowing for known and measurable changes. D.T.E. 03-40, at 323-324; D.P.U. 88-67 (Phase I) at 174; D.P.U. 84-94, at 50. Within a broad range, the Department will defer to

³³¹ The additional \$350 million in new debt issuances would complete the redemption of \$400 million total in maturing debt the Companies identified, and the Department authorized, in D.P.U. 16-189, at 2, 16-19, 24-25 (Exh. DPU-31-6).

the management of a utility in decisions regarding the appropriate capital structure, unless the capital structure deviates substantially from sound utility practice. Mystic Valley Gas Company v. Department of Public Utilities, 359 Mass. 420, 428-429 (1971); D.P.U. 1360, at 26-27; Blackstone Gas Company, D.P.U. 1135, at 4 (1982); see also Cambridge Electric Light Company, D.P.U. 20104, at 42 (1979).

b. Test-Year Capital Structure

As stated above, at test-year end, June 30, 2016, NSTAR Electric reported a long-term debt balance of \$2,100,000,000; WMECo reported a long-term debt balance of \$565,000,000. The Companies made no adjustment to NSTAR Electric's long-term debt balance. As stated above, the Companies reduced WMECo's test-year end long-term debt balance by \$17,024,396 to effect the settlement agreement approved in D.P.U. 09-05, which produces an adjusted test-year end long-term debt balance of \$547,975,604.

At test-year end, June 30, 2016, NSTAR Electric reported a preferred stock balance of \$43,000,000. The Companies made no adjustment to NSTAR Electric's preferred stock balance.

At test-year end, June 30, 2016, NSTAR Electric reported a common equity balance of \$2,452,820,059, consisting of: (1) \$100 in common stock; (2) \$2,180,445,418 in additional paid-in capital; (3) \$269,648,377 in retained earnings; (4) \$2,202,893 in undistributed earnings from subsidiaries; and (5) \$524,171 in accumulated other comprehensive income ("AOCI") (Exhs. ES-DPH-4 (East), Sch. DPH-1, at 5; ES-DPH-2

(East), Sch. DPH-31, at 1 (Rev. 3)).³³² The Companies made no adjustment to NSTAR Electric's common equity balance. As of the end of the test year, WMECo reported a common equity balance of \$643,905,916, consisting of: (1) \$10,866,325 in common stock; (2) \$3,905,151 in premiums on capital stock; (3) \$422,492,440 in additional paid-in capital; (4) \$209,934,694 in retained earnings; (5) a negative \$702,479 in undistributed earnings from subsidiaries; and (6) a negative \$2,590,215 in AOCI (Exhs. ES-DPH-4 (West), Sch. DPH-1, at 5; ES-DPH-2 (West), Sch. DPH-31, at 1 (Rev. 3)). As described above, WMECo reduced its common equity balance by \$17,495,502 attributable to its solar investments, producing a revised common equity balance of \$626,410,414 (Exh. ES-DPH-2 (West), Sch. DPH-31, at 1 (Rev. 3)). The Companies made no other adjustments to WMECo's common equity balance. None of the parties briefed on the issue of the components of the Companies' proposed common equity balances.

Regarding undistributed investment in subsidiaries, equity investment in affiliates (i.e., original investment plus accumulated earnings) is excluded from utility capital structures. Including these amounts would improperly weight a company's capital structure by including investment not used in the utility's operations. D.P.U. 94-50, at 440; D.P.U. 84-94, at 51; D.P.U. 18515, at 56-58. Therefore, the Department excludes these amounts from the Companies' proposed common equity balances. Regarding AOCI, while it is reported on the balance sheet for financial reporting purposes, the Department does not

³³² AOCI refers to balance sheet entries associated with certain types of financial activity, including gains and losses on investments and pension obligations. D.P.U. 09-39, at 337 n.86; Nantucket Electric Company and Massachusetts Electric Company, D.T.E. 04-74, at 21-22 (2004)).

include these types of balance sheet entries in capitalization. D.P.U. 15-155, at 344; D.P.U. 09-39, at 337 n.86; Nantucket Electric Company and Massachusetts Electric Company, D.T.E. 04-74, at 21-22 (2004). Therefore, the Department excludes these ACOI amounts from the Companies' proposed common equity balances.

c. Post Test-Year Changes

NSTAR Electric issued \$350 million in long-term debt in May 2017 and an additional \$350 million on October 5, 2017, pursuant to the Department's authorization in NSTAR Electric Company, D.P.U. 16-189 (March 30, 2017) (Exhs. DPU 31-6; AG-26). See D.P.U. 16-189, Compliance Filing (October 13, 2017). NSTAR Electric's October 5, 2017 long-term debt issuance would be applied to redeeming \$400 million in long-term debt maturing November 15, 2017 (Exhs. DPU-31-6; AG-1-2). D.P.U. 16-189, at 2, 11. WMECo has no post test-year long-term debt issuances.

On November 30, 2016, after the end of the test year, NSTAR Electric received \$25,000,000 in capital contributions from its parent company, Eversource Energy (Exh. AG-15-7, Att. (b)). NSTAR Electric received an additional \$25,000,000 from Eversource Energy on December 30, 2016 (Exh. AG-15-7, Att. (b)). On September 30, 2016, WMECo received \$18,000,000 in capital contributions from Eversource Energy (Exh. AG-15-7, Att. (b)). The Companies report that there have been no additional capital contributions made during 2017 (Exhs. DPU-31-8; AG-15-7, Att. (b)).

As of December 31, 2016, NSTAR Electric reported a retained earnings balance of \$438,467,346 (Exh. AG-1-2, Att. (a) at 32 (Supp.3)). As of December 31, 2016, WMECo

reported a retained earnings balance of \$218,917,697 (Exh. AG-1-2, Att. (b) at 37 (Supp. 3)). During the course of the evidentiary proceedings, the Companies' witness testified that, during 2017, retained earnings continued to grow, resulting in an increased equity ratio, which was offset by the issuance of the indebtedness by the Companies in 2017 (Tr. 13, at 2800-2802; Tr. 15, at 3123-3124). The Companies contend that the debt issuances were necessary to keep the equity ratio in line with the test year amounts (Tr. 13, at 2800-2802; Tr. 15, at 3123-3124). A retained earnings balance as of the date of the issuances, however, is not available in the record.

Because retained earnings balances fluctuate from one quarter to another to a greater degree than other components of capitalization, the Department has not generally considered post-test year adjustments to retained earnings balances to be more representative than test year-end balances. D.P.U. 09-39, at 338; Milford Water Company, D.P.U. 92-101, at 36-37 (1992); D.P.U. 1350, at 156; Massachusetts Electric Company, D.P.U. 1133, at 21-22 (1982); D.P.U. 18515, at 54. Notwithstanding this general practice, however, the Department has recognized post-test year adjustments to retained earnings balances, upon a showing that the updated retained earnings balance was more representative of that company's future retained earnings. D.P.U. 14-120, at 121-122.

The Department has examined the Companies' retained earnings activities, based on NSTAR Electric's Annual Returns to the Department for the years 2007 through 2016 and WMECo's Annual Returns to the Department for the years 2009 through 2016. NSTAR Electric's retained earnings increased from \$831,528,187 as of December 31, 2007 (i.e., the

first full year after the merger of the predecessor companies to NSTAR Electric) to \$1,234,807,729 as of December 31, 2011 (Exhs. AG-1-2, Att. (7)(b through j); AG-1-2, Att. (a) at 40 (Supp. 3)). In 2012, NSTAR Electric transferred \$1,181,068,901 in retained earnings to paid-in capital in connection with the merger of Northeast Utilities with NSTAR in D.P.U. 10-170, after which NSTAR Electric's retained earnings increased year over year to \$438,467,346 as of December 31, 2016 (Exh. AG1-2, Att. (7)(g) at 38, 40). Aside from this transaction, and occasional transfers from unappropriated undistributed subsidiary earnings, there appears to be no particularly unusual activity in NSTAR Electric's retained earnings account (Exhs. AG-1-2, Att. (7)(b through j); AG-1-2, Att. (a) at 40 (Supp. 3)). Similarly, WMECo's retained earnings have increased from \$91,143,206 as of December 31, 2009 to \$218,917,697 as of December 31, 2016 (Exhs. AG-1-2, Att. (7)(k through p); AG-1-2, Att. (b) at 37 (Supp. 3)). Aside from a decrease in retained earnings in 2014 because dividends exceeded net earnings by about \$2 million in that year, and some small transfers from unappropriated undistributed subsidiary earnings made at various times during this period, there appears to be no particularly unusual activity in WMECo's retained earnings account (Exhs. AG-1-2, Att. (7)(k through p); AG-1-2, Att. (b) at 37 (Supp. 3)). Based on our examination of this information, the Department finds it relevant to no longer treat a company's test year-end retained earnings balance necessarily as the most representative basis for determining its capital structure for ratemaking purposes.

Regarding capital structure, the Department will make adjustments only for known and measurable amounts and properly matched changes to test year-end balances. The

purpose of these adjustments would be to accurately reflect a utility's present financial situation and fairly predict its future financial position. See, e.g., Boston Edison Company v. Department of Public Utilities, 375 Mass. 1, 24 (1978).³³³ In so doing, we also must decline known or anticipated changes that would distort the correlation among the capital structure components. In this case, we recognize changes to various components to NSTAR Electric and WMECo's capital structures during various times after the test year. Changes to NSTAR Electric's test year long-term debt balance occurred with long-term debt issuances in May 2017 and October 2017, and with a long-term debt redemption in connection with the October 2017 issuance. As noted above, changes to NSTAR Electric's test year common equity balance occurred with Eversource Energy capital contributions in November 2016 and December 2016. In addition, the record provides the retained earnings balances at December 31, 2016, for NSTAR Electric and WMECo. Because of the timing mismatch among these post test-year changes, making these changes would not produce a suitable correspondence among the components to fairly represent NSTAR Electric's capital structure, nor would those adjustments be based on fully known and measurable record evidence in this proceeding. In particular, the lack of record evidence for post test-year retained earnings balances near NSTAR Electric's post test-year long-term debt issuances does not allow for a

³³³ The Court has similarly held that to the extent that known or anticipated changes in revenues, expenses, or rate base will distort the correlation among these elements, adjustments are made in the test-year data to reflect those changes. The approach depends on keeping the three elements in phase, however, and if an out-of-period adjustment is made to one, corresponding adjustments to the others may be necessary to preserve a fair relationship. Boston Edison Company v. Department of Public Utilities, 375 Mass. 1, at 24 (1978); Bay State Gas Company v. Dep't of Public Utilities, 459 Mass. 807, at 814-815 (2011).

pertinent correlation. Therefore, the Department finds it appropriate to apply NSTAR Electric's test year-end capital structure, which is supported on the record in this proceeding and for which all elements correlate to the test year end of June 30, 2016, adjusted for: (1) undistributed investment in subsidiaries of \$2,202,893 and (2) ACOI of \$524,171.

Changes to WMECo's test year common equity balance occurred with an Eversource Energy capital contribution in September 2016. We find that WMECo's retained earnings balance at December 31, 2016 is sufficiently proximate to the capital contribution that we will make these post test-year changes to WMECo's capital structure. Therefore, the Department finds it appropriate to adjust WMECo's test year-end common equity balance for: (1) undistributed investment in subsidiaries of negative \$702,479; (2) ACOI of negative \$2,590,215; (3) solar investment adjustment to common equity of \$17,495,502; and (4) retained earnings at December 31, 2016. Also, WMECo's test year-end long-term debt balance is adjusted for solar investment \$17,024,396.

Based on WMECo's test year-end common equity balance, adjusted for the \$18,000,000 in capital contributions and its retained earnings balance as of December 31, 2016, WMECo's common equity balance is \$674,181,613, consisting of: (1) \$10,866,325 in common stock; (2) \$3,905,151 in premiums on capital stock; (3) \$440,492,440 in additional paid-in capital; and (4) \$218,917,697 in retained earnings (Exh. AG-1-2(b) at 30 (Supp. 3)). After reducing WMECo's common equity by \$17,495,502 associated with solar investments recovered through a separate mechanism, based on WMECo's test year-end common equity balance, adjusted for the \$18,000,000 in capital contributions and its retained earnings

balance as of December 31, 2016, WMECo's adjusted common equity balance is \$656,686,129 (Exh. AG-1-2, Att. (b) (Supp. 3)). Therefore, the Department uses these adjusted balances to calculate WMECo's common equity component of its capital structure.

d. Conclusion

The aforementioned adjustments produce a capital structure for NSTAR Electric consisting of \$2,100,000,000 in long-term debt (45.72 percent), \$43,000,000 in preferred stock (0.94 percent), and \$2,450,093,895 in common equity (53.34 percent). The Department does not consider this ratio to be so weighted towards equity as to deviate substantially from sound utility practice or impose an unfair burden on consumers. Mystic Valley Gas Company v. Department of Public Utilities, 359 Mass. 420, 428-430 (1971); Boston Gas Co. v. Department of Public Utilities, 359 Mass. 292, 301-302 (1971). Accordingly, we decline to adopt the imputed capital structures recommended by the Attorney General, FEA, and Sunrun and EFCA. Instead, the Department will use the capital structure determined above for purposes of calculating NSTAR Electric's overall cost of capital.

For WMECo, our adjustments produce a capital structure consisting of \$547,975,604 in long-term debt (45.49 percent) and \$656,686,129 in common equity (54.51 percent).

While this common equity ratio is somewhat higher than those approved by the Department in recent years for electric distribution companies,³³⁴ we do not conclude that such a ratio is

³³⁴ The Department approved common equity ratios of 47.78 percent for the electric division of Fitchburg Gas and Electric Light Company ("Fitchburg") in D.P.U. 13-90, at 203; 52.92 percent for Fitchburg's electric division in

so weighted towards equity as to deviate substantially from sound utility practice or impose an unfair burden on consumers. Mystic Valley Gas Co. v. Department of Public Utilities, 359 Mass. 420, 428-430 (1971); Boston Gas Co. v. Department of Public Utilities, 359 Mass. 292, 301-302 (1971). To the extent that the Companies' common equity ratios vary from those of the proxy groups used in this case, that factor will be considered in determining the appropriate ROE for Eversource. Accordingly, we decline to adopt the imputed capital structures recommended by the Attorney General, FEA, Sunrun and EFCA, and the Cape Light Compact. Instead, the Department will use the capital structure determined above for purposes of calculating WMECo's overall cost of capital.

The effects of NSTAR Electric's and WMECo's capital structures on their respective WACCs and revenue requirements are provided in each operating company's Schedule 5 of this Order.

C. Cost of Debt and Preferred Stock

1. Companies Proposal

The Companies have proposed long-term debt costs of 3.88 percent for NSTAR Electric and 4.07 percent for WMECo (Exhs. ES-DPH-2 (East), Sch. DPH-31, at 2 (Rev. 3); ES-DPH-2 (West), Sch. DPH-31, at 2 (Rev. 3)). The Companies derived these embedded cost rates by dividing the adjusted annual interest and amortization expense by the adjusted (pro forma) net carrying value of the long-term debt as described below (Exhs. ES-DPH-2 (East), Sch. DPH-31, at 2 (Rev. 3); ES-DPH-2 (West), Sch. DPH-31, at 2 (Rev. 3)).

D.P.U. 15-80/D.P.U. 15-81, at 253; and 50.70 percent for Massachusetts Electric Company and Nantucket Electric Company in D.P.U. 15-155, at 346.

In the initial filing, Eversource calculated a cost of long-term debt of 4.31 percent for NSTAR Electric, produced by dividing \$89,533,000, representing the sum of (1) \$88,075,000 in annual interest expense, and (2) \$1,458,000 in amortization of premiums, by the net carrying value of its long-term debt of \$2,078,810,000, consisting of \$2,100,000,000 in face value of its long-term bonds outstanding, less the sum of (1) \$8,113,000 in debt discounts and (2) \$13,077,000 in issuance costs (Exh. ES-DPH-2 (East), Sch. DPH-31, at 2). The Companies adjusted NSTAR Electric's cost of long-term debt from 4.31 percent to 4.32 percent to correct an error (Exh. AG-15-11). Further, during the course of the proceeding, Eversource adjusted NSTAR Electric's initially proposed cost of debt to recognize the replacement of \$400 million in long-term debt maturing on November 15, 2017, with \$350 million in long-term debt issued at a lower interest rate, based on the rate associated with NSTAR Electric's issuance of \$350 million in May 2017 (Exhs. ES-DPH-2 (East), Sch. DPH-31, at 2; ES-DPH-2 (East), Sch. DPH-31, at 2 (Rev. 3); DPU-31-6; Tr. 15, at 3124-3125; RR-DPU-42).³³⁵ The debt swap reduced the embedded cost of long-term debt from 4.32 percent to 3.88 percent (Exhs. ES-DPH-2 (East), Sch. DPH-2 (Rev. 2); ES-DPH-2 (East), Schs. DPH-31, at 2 (Rev. 2), DPH-33, at 4 (Rev. 3); RR-DPU-42). Eversource proposed a cost rate of 4.56 percent for NSTAR Electric's preferred stock (Exh. ES-DPH-2 (East), Sch. DPH-31, at 1 (Rev. 3)).

³³⁵ In this calculation, Eversource replaced \$400,000,000 of NSTAR Electric's 5.625 percent series debentures maturing on November 15, 2017 with \$350,000,000 in long-term debt issued at a rate of 3.20 percent associated with the Department's approval in D.P.U. 16-189 of the issuance of up to \$700,000,000 from time to time through December 31, 2018 (Exhs. ES-DPH-2 (East), Sch. DPH-31, at 2 (Rev. 2); DPU-31-6; RR-DPU-42). See also D.P.U. 16-189, at 24-26.

In the initial filing, Eversource calculated a cost of long-term debt of 4.32 percent for WMECo, produced by dividing \$23,530,000, representing the sum of (1) \$23,704,000 in annual interest expense and (2) \$613,000 in amortization of premiums, less (3) \$787,000 in interest expense associated with solar investments, by the net carrying value of its long-term debt of \$544,781,000, consisting of \$565,000,000 in face value of its long term bonds outstanding, less the sum of (1) \$16,362,000 in debt costs associated with solar investment costs being recovered through the Solar Cost Adjustment Factor, (2) \$831,000 in debt discounts, and (3) \$3,025,000 in issuance costs (Exh. ES-DPH-2, Sch. DPH-31, at 2 (East)). During the course of the proceeding, WMECo revised its proposed cost of long-term debt to 4.07 percent based on a number of corrections (Exhs. ES-DPH-2 (West), Sch. DPH-31, at 2 (Rev. 1); AG-15-11). The 4.07 percent cost of debt is derived from dividing \$22,426,000 in annual interest and amortization expense by \$550,538,000 in the net carrying value of its outstanding long-term debt (Exh. ES-DPH-2 (West), Sch. DPH-31, at 2 (Rev. 3)). WMECo's annual interest and amortization expense includes \$23,704,000 in annual interest costs, less (1) \$491,000 in amortization expense, and (2) \$787,000 representing debt costs associated with solar investment being recovered through the Solar Cost Adjustment Factor (Exh. ES-DPH-2 (West), Sch. DPH-31, at 2 (Rev. 3)). WMECo's revised net carrying charge of 4.07 percent is based on the \$565,000,000 face value of its long-term bonds outstanding and \$4,715,000 in debt premiums, less (1) \$16,362,000 in solar adjustments and (2) \$2,815,000 in issuance costs (Exh. ES-DPH-2 (West), Sch. DPH-31, at 2 (Rev. 3)).

2. Intervenor/Limited Intervenor Proposals

FEA, as well as Sunrun and EFCA, propose to use the cost rates for long-term debt that Eversource initially proposed for each operating company (Exhs. AG-JRW-1, at 39; JRW-1; JRW-5; FEA-MPG-1, at 50; FEA-MPG-3; FEA-MPG-22, at 2; SREF-DJG-1, at 9-10; SREF-DJG-3; SREF-DJG-4). FEA and Sunrun and EFCA did not revise their proposals to incorporate Eversource's revised cost rates. The Attorney General initially accepted Eversource's proposed cost of long-term debt (Exhs. AG-JRW-1, at 39; JRW-1; JRW-5). As noted below, however, on brief the Attorney General contests the Companies' calculation of the proposed cost of long-term debt.

3. Positions of the Parties

a. Intervenors/Limited Intervenors

The Attorney General argues that the Companies inappropriately applied carrying charges on unamortized issuance costs when issuing long-term debt (Attorney General Brief at 66). She asserts that the appropriate treatment of issuance costs is to allow their recovery as a straight line amortization over the term of the debt issuance without carrying charges (Attorney General Brief at 67, citing D.P.U. 15-155, at 343-344; D.T.E. 05-27, at 269-272; D.T.E. 03-40, at 319-324; D.P.U. 84-94, at 51-52). The Attorney General recommends that the Department correct the Company's calculation of the embedded cost of long-term debt for both NSTAR Electric and WMECo by using the total amount of debt outstanding as the denominator and the sum of the annual interest expense and the amortization of the issuance expense as the numerator when determining the embedded cost ratio, leaving

carrying charges out of the equation (Attorney General Brief at 67). The Attorney General does not provide the results of such a recalculation.

Neither FEA nor Sunrun and EFCA addressed on brief Eversource's proposed cost rates for long-term debt. Further, no other intervenor or limited intervenor addressed the issue.

b. Companies

The Companies did not respond to the Attorney General's request for recalculation of long-term debt issuance costs. Eversource noted that the 4.56-percent cost rate for NSTAR Electric's preferred stock is based on the operating company's average annual dividend rate (Companies Brief at 281, citing Exh. ES-DPH-2, Sch. DPH-31 (East)). The Companies recommend that the Department approve the proposed cost rates for both the long-term debt and preferred stock because each represents the actual costs, consistent with Department precedent (Companies Brief at 281, citing D.T.E. 01-56, at 97, 100; D.P.U. 90-121, at 157).

4. Analysis and Findings

The Department recognizes that costs associated with the issuance of long-term debt, such as issuance costs, debt discounts, and other amortizations, are necessary operating expenses and are expected to occur from time to time as long-term debt is issued by a company. D.P.U. 10-114, at 294; D.T.E. 01-56, at 99; D.P.U. 90-121, at 160. The appropriate ratemaking treatment of issuance costs is to include them in the effective cost of debt by amortizing the issuance costs over the life of the issue without providing a return on the unrecovered portion of the issuance costs. See D.P.U. 92-78, at 91-92; D.P.U. 90-121, at 160-161.

While Eversource's proposed debt expenses for NSTAR Electric and WMECo appropriately consider issuance costs, the Companies also have factored in carrying charges associated with these issuance costs by subtracting premiums and discounts and unamortized balances from their outstanding debt (Exhs. ES-DPH-2 (East), Sch. DPH-31, at 2 (Rev. 3); ES-DPH-2 (West), Sch. DPH-31, at 2 (Rev. 3)). The Department's policy with respect to the calculation of debt costs is to base the effective cost of debt on the face value of the outstanding debt, as opposed to the face value less various unamortized balances.

D.P.U. 10-70, at 243-244; D.P.U. 95-40, at 80-81; D.P.U. 90-121, at 160-161; Boston Edison Company, D.P.U. 86-71, at 12 (1986). By reducing the outstanding debt balance by these amounts, Eversource's calculation artificially inflates the Companies' effective cost of debt. D.P.U. 14-150, at 324; D.P.U. 10-114, at 294; D.P.U. 90-121, at 160-161. The Companies have not presented any evidence or argument to support a departure from established Department precedent. Therefore, the Department declines to accept the Companies' proposed cost of long-term debt.

Based on Eversource's most recent updates, NSTAR Electric proposes an annual interest and amortization expense associated with long-term debt of \$89,533,000 (Exhs. ES-DPH-2 (East), Sch. DPH-31, at 2 (Rev. 3); AG-15-11, Att. (a)). This annual expense includes \$11,434,000 in costs associated with the \$350 million in long-term debt issued on May 10, 2017 (Exh. ES-DPH-2 (East), Sch. DPH-31, at 2 (Rev. 3)). As discussed above, the Department has accepted the use of NSTAR Electric's test year-end capital structure. Consequently, the Department has excluded both the post-test year issuances of

\$700,000,000 in long-term debt pursuant to D.P.U. 16-189 and the redemption of \$400,000,000 in long-term debt that occurred on November 15, 2017. Consistent with this treatment, the Department will exclude the cost of the additional \$700 million in long-term debt, and retain the cost of the \$400,000,000 in redeemed debt in NSTAR Electric's cost of debt.

NSTAR Electric calculates a total interest and amortization expense of \$89,652,000 associated with its test year-end long-term debt balance (Exh. ES-DPH-2 (East), Sch. DPH-31, at 2 (Revised 1)). The Department has reviewed the Companies' calculations, and finds that Eversource has appropriately calculated NSTAR Electric's cost of long-term debt. Therefore, the Department will use a total annual interest and amortization expense of \$89,653,000 for NSTAR Electric.

WMECo proposes an annual interest and amortization expense associated with long-term debt, net of solar-related adjustment, of \$22,426,000 (Exhs. ES-DPH-2 (West), Sch. DPH-31, at 2 (Rev. 3); AG-15-11, Att. (b)). The Department has reviewed the Companies' calculations, and finds that Eversource has appropriately calculated WMECo's cost of long-term debt.

Dividing NSTAR Electric's annual interest and amortization expense of \$89,653,000 by the face value of its test year-end long-term debt of \$2,100,000,000 produces a cost of long-term debt of 4.27 percent, instead of the 3.88 percent cost rate proposed by Eversource (see Exh. ES-DPH-2 (East), Sch. DPH-31, at 2 (Rev. 3)). Dividing WMECo's annual interest and amortization expense of \$22,426,000 by the face value of its outstanding

long-term debt of \$565,000,000 produces a cost of long-term debt of 3.97 percent, instead of the 4.07 percent cost rate proposed by Eversource (see Exhs. ES-DPH-2 (West), Sch. DPH-31, at 2 (Rev. 3)). Therefore, the Department will apply a cost of long-term debt of 4.27 percent for NSTAR Electric and 3.97 percent for WMECo.

Turning to NSTAR Electric's preferred stock, these securities represent two series consisting of \$18,000,000 with a dividend rate of 4.25 percent, and \$15,000,000 with a dividend rate of 4.78 percent (Exh. ES-DPH-2 (East), Sch. DPH-31, at 1 (Rev. 3)).

Eversource has proposed a weighted average dividend rate of 4.56 percent, based on the annual dividend for these securities (Exhs. ES-DPH-2 (East), Sch. DPH-31, at 1 (Rev. 3); AG-15-11, Att. (a)). No intervenor or limited intervenor addressed Eversource's proposed dividend rate. The Department finds that Eversource calculated the cost of NSTAR Electric's preferred stock in a manner consistent with Department precedent. D.T.E. 01-56, at 97-100. Therefore, the Department will apply a cost of preferred stock of 4.56 percent for NSTAR Electric.

D. Proxy Groups

1. Companies Proxy Group

NSTAR Electric and WMECo are wholly owned subsidiaries of Eversource Energy, and are not publicly traded (Exh. ES-RBH-1, at 16). Therefore, the Companies have no public market for their stock. Consequently, Eversource presents its ROE analysis using the capitalization and financial statistics of a proxy group of 20 electric companies (Exhs. ES-RBH-1, at 18-20; ES-RBH-9). The Companies selected their proxy group from a group of 41 companies classified as "electric utilities" by Value Line Investment Survey

(“Value Line”) (Exh. ES-RBH-1, at 18). From that group, Eversource chose companies that: (1) have consistently paid quarterly dividends; (2) have been covered by at least two utility industry equity analysts; (3) have investment grade senior unsecured bond and/or corporate credit ratings from S&P; (4) have received at least 60 percent of their total income from regulated utility operations over the past three fiscal years; (5) have received at least 60 percent of total regulated operating income from regulated electric utility operations over the three most recent fiscal years; and (6) are not currently known to be a party to a merger or other significant transaction (Exh. ES-RBH-1, at 18-19).

2. Attorney General’s Proxy Group

In order to develop her rate of return recommendation, the Attorney General evaluated the return requirements of investors on the common stock of a proxy group of 30 publicly held electric utility companies (Exhs. AG-JRW-1, at 32-34; AG-JRW-4, at 1-2). In selecting those 30 companies, the Attorney General chose companies that: (1) have at least 50 percent of revenues from regulated electric operations as reported in their Form 10-K filed with the SEC; (2) are listed as an electric utility by Value Line; (3) have an investment grade issuer credit rating by Moody’s Investors Service, Inc. (“Moody’s”)³³⁶ and S&P; (4) have paid a cash dividend in the past six months, with no reductions or omissions; (5) have not been involved in an acquisition of another utility, nor have been the target of an acquisition in the past six months; and (6) have analysts’ long-term earnings per share

³³⁶ Moody's Investors Service is a bond credit ratings firm that also provides international financial research on bonds issued by commercial and government entities.

(“EPS”) growth rate forecasts available from Yahoo! Inc. (“Yahoo”), Thomson Reuters First Call (“First Call”), and/or Zacks Investment Research, Inc. (“Zacks”) (Exh. AG-JRW-1, at 33). On an overall basis, the Attorney General’s resulting proxy group: (1) receives 82 percent of their revenues from regulated electric operations; (2) have an BBB+ bond rating from S&P,³³⁷ and Baa1 Moody’s bond rating,³³⁸ (3) have a current median common equity ratio of 46.9 percent; and (4) have an earned ROE of 9.3 percent (Exhs. AG-JRW-1, at 33-34; AG-JRW-4, at 1).

The Attorney General developed financial and market data for her proxy group and the Companies’ proxy group and applied the DCF model to arrive at her common equity and ROE recommendation for Eversource of 8.875 percent for both NSTAR Electric and WMECo (Exh. AG-JRW-1, at 72; AG-JRW-10).

3. FEA, Sunrun and EFCA Proxy Groups

FEA, as well as Sunrun and EFCA, used Eversource’s proxy group to determine their respective common equity and ROE recommendations (Exhs. FEA-MPG-1, at 52; FEA-MPG-7; SREF-DJG-1, at 7; SREF-DJG-5).

³³⁷ Bonds rated “BBB+” by S&P exhibit adequate protection parameters. However, adverse economic conditions or changing circumstances are more likely to lead to a weakened capacity of the obligor to meet its financial commitment on the obligation. The ratings from “AA” to “CCC” may be modified by the addition of a plus (+) or minus (-) sign to show relative standing within the major rating categories. D.P.U. 15-155, at 349-350 n.259.

³³⁸ Bonds rated “Baa1” by Moody’s are judged to be medium-grade and are subject to moderate credit risk, and thus may possess certain speculative characteristics. The modifier “1” indicates that the obligation ranks in the higher end of its generic rating category. D.P.U. 15-155, at 350 n.260.

4. Positions of the Parties

a. Intervenors/Limited Intervenors

The Attorney General: (1) maintains that her analysis shows that the Companies' investment risk is below that of the proxy group companies; (2) challenges the Companies' assertion concerning the use of short-term debt in her capital structure; and (3) claims that holding companies should not be used to estimate an equity cost rate for operating companies like NSTAR Electric and WMECo (Attorney General Brief at 64-65; Attorney General Reply Brief at 63-64). These arguments are set forth in further detail below.

With respect to investment risk, the Attorney General evaluated the return requirements of investors on the common stock of both her proxy group and the Companies' proxy group of publicly held electric utility distribution companies (Attorney General Brief at 68, citing Exhs. AG-JRW-1, at 32-35; AG-JRW 4).³³⁹ According to the Attorney General, the issuer credit ratings for NSTAR Electric and WMECo are A according to S&P, and A2 according to Moody's, while the average issuer credit ratings for both her proxy group and the Companies' proxy group are BBB+ and Baa1, according to S&P and Moody's, respectively (Attorney General Brief at 68, citing Exhs. AG-JRW-1, at 73; AG-JRW-4, at 1). The Attorney General contends that Eversource's credit ratings are thus two notches above the S&P and Moody's issuer credit rating averages of BBB+ and Baa1 assigned to the proxy groups (Attorney General Brief at 69). Therefore, the Attorney General

³³⁹ On brief, the Attorney General states that her proxy group includes 26 companies when, in fact, it includes 30 companies (Attorney General Brief at 68; Exhs. AG-JRW-1, at 33; AG-JRW-4).

concludes that the Companies' investment risk is below that of the proxy groups (Attorney General Brief at 69, citing Exh. AG-JRW-1, at 73).

Next, the Attorney General disputes the Companies' assertion that she improperly compared common equity ratios proposed by Eversource with those of holding companies in the proxy groups (Attorney General Reply Brief at 64). The Attorney General maintains that she included holding companies to estimate an equity cost rate because these holding companies have publicly traded common stock and NSTAR Electric and WMECo do not (Attorney General Reply Brief at 64, citing Exh. AG-JRW-1, at 36).

Finally, the Attorney General states that, contrary to Eversource's claim, she did not include short-term debt in her recommended capital structure for NSTAR Electric and WMECo (Attorney General Reply Brief at 64, citing Exh. AG-JRW-1, at 36). The Attorney General maintains that, while short-term debt should not be included in the capital structure, she appropriately included it in her comparison of proxy group capital structures for financial risk purposes because short-term debt, like long-term debt, is a fixed obligation that must be repaid (Attorney General Reply Brief at 64, citing Exh. AG-JRW-1, at 39).

Neither FEA nor Sunrun and EFCA addressed on brief the issue of proxy groups. Further, no other intervenor or limited intervenor addressed the issue.

b. Companies

Eversource argues that, in determining its ROE, it has used an appropriate proxy group that includes companies that: (1) are based on valid selection criteria; (2) have sufficient financial and operating data to discern the investment risk of NSTAR Electric and

WMECo versus the comparison group; and (3) derive at least 60 percent of operating income from regulated electric utility operations (Companies Brief at 285, citing Exhs. NG-RBH-1, at 18-20; AG-14-6; D.P.U. 08-35, at 176). In addition, the Companies maintain that “many” of their 20 proxy companies have a form of decoupling in place at their electric utility subsidiaries as well as alternative regulation and incentive plans, including formula-based rate plans, and adjustment mechanisms that automatically adjust rates when an earned return is above or below an authorized range for these subsidiaries (Companies Brief at 285, citing Exhs. NG-RBH-1, at 47-48; ES-RBH-10, at 1-2; RR-DPU-9, Att.). Further, Eversource notes that the Companies’ proxy group selected from Value Line consists of companies that have been found comparable by the Department to other Massachusetts electric distribution companies in recent years (Company Brief at 285, citing D.P.U. 15-55, at 348-349, 353-354; D.P.U. 15-80/D.P.U. 15-81, at 260; D.P.U. 10-70, at 246-247, 249).

The Companies argue that the Attorney General’s contentions concerning the role of holding companies versus operating companies in evaluating comparability of capitalization are irrelevant (Companies Reply Brief at 147-148). Eversource contends that the Department has rejected the Attorney General’s previous attempts to adopt imputed capital structures with 50.00 percent common equity based on capital structures of holding companies (Companies Reply Brief at 147-148, citing D.P.U. 13-75, at 272-273, 275-276). Further, the Companies argue that the Attorney General errs in her approach to calculating the capitalization ratio of her proxy group at the holding company level rather than the operating company levels, because utility operating companies have comparable operations and assets while holding

companies do not (Companies Brief at 517, citing Exh. ES-RBH-Rebuttal-1, at 67; Companies Reply Brief at 147).

The Companies also maintain that the Attorney General errs in including short-term debt when calculating the capitalization ratio of her proxy group, because permanent capital, rather than short-term capital, is used to finance long-lived assets (Companies Brief at 517, citing Exh. ES-RBH-Rebuttal-1, at 67; Companies Reply Brief at 147). The Companies aver that the Department does not include short-term debt in the capital structure because short-term debt is not used to finance costs included in rate base and short-term debt does not reflect permanent capital used to finance permanent assets (Companies Brief at 517, citing Exh. ES-RBH-Rebuttal-1, at 67, D.P.U. 09-39, at 341-342; Companies Reply Brief at 147 citing Exh. ES-RBH-Rebuttal-1, at 65-66). The Companies state that if short-term debt cannot be included in a company's capital structure, it logically cannot be included in the capitalization ratio of a proxy group for comparison purposes (Companies Reply Brief at 147, citing D.P.U. 09-39, at 341-342).

5. Analysis and Findings

a. Introduction

Apart from the disagreement over the use of holding companies in the Attorney General's proxy group and the inclusion of short-term debt in capital structure calculations discussed above, the Attorney General, FEA, and Sunrun and EFCA do not object to the Companies' proxy group. The use of a proxy group of companies is standard practice in setting an ROE that is comparable to returns on investments of similar risk. D.P.U. 08-35, at 176-177; D.T.E. 99-118, at 80-82; D.P.U. 92-78, at 109-110; D.P.U. 1300, at 97. The

use of a proxy group is especially relevant for evaluation of a cost of equity analysis when a distribution company does not have common stock that is publicly traded. D.P.U. 08-35, at 176-177; D.T.E 99-118, at 80-82; D.P.U. 92-78, at 109-110. The Department has stated that companies in the proxy group must have common stock that is publicly traded, and must be generally comparable in investment risk. D.P.U. 1300, at 97.

b. Proxy Groups

In our evaluation of the proxy groups used by the Companies and the Attorney General, we recognize that it is neither necessary nor possible to find a group in which the companies match NSTAR Electric and WMECo in every detail. D.P.U. 09-39, at 386; D.T.E. 99-118, at 80; D.P.U. 87-59, at 68; D.P.U. 1100, at 135-136. Rather, we may rely on an analysis that employs valid criteria to determine which companies will be in the proxy group, and that provides sufficient financial and operating data to discern the investment risk of the Companies versus the proxy group. D.T.E. 99-118, at 80; D.P.U. 87-59, at 68; D.P.U. 1100, at 135-136.

The Department expects diligence by parties in assembling proxy groups that will produce statistically reliable analyses required to determine a fair rate of return for the company. D.P.U. 10-55, at 480-482. Overly exclusive selection criteria may affect the statistical reliability of a proxy group, especially if such screening criteria result in a limited number of companies in the proxy group. D.P.U. 10-55, at 480-482. The Department expects parties to limit criteria to the extent necessary to develop a broader as opposed to a narrower proxy group. D.P.U. 10-114, at 299; D.P.U. 10-55, at 481-482. To the extent

that a particular company's characteristics differ from those of the others in a proxy group, those differences should be identified in sufficient detail to enable a reviewer to discern any effects on investment risk. D.P.U. 10-114, at 299; D.P.U. 10-55, at 480-482.

c. Use of Holding Companies

The Companies and Attorney General dispute the use of holding companies in proxy groups. Eversource contends that utility operating companies are more fitting because they have comparable operations and assets while holding companies do not (Companies Reply Brief at 147). The Attorney General asserts that the inclusion of holding companies is appropriate here where the holding companies have publicly traded common stock and NSTAR Electric and WMECo do not (Attorney General Reply Brief at 64).

Companies considered for a proxy group must have common stock that is publicly traded and must be of generally similar investment risk. D.P.U. 1300, at 97. As noted above, the Department recognizes that it is neither necessary nor possible to find a group that matches a company in every detail. D.P.U. 09-39, at 386; D.T.E. 99-118, at 80; D.P.U. 87-59, at 68; D.P.U. 1100, at 135-136. Moreover, the current structure of the utility industry, with fewer publicly traded companies resulting from merger and acquisition activities, makes the inclusion of holding companies in proxy groups unavoidable. D.P.U. 10-55, at 482; D.P.U. 09-39, at 350; D.P.U. 09-30, at 308; D.P.U. 08-35, at 175; D.P.U. 07-71, at 135; D.T.E. 99-118, at 81. Eliminating holding companies from a proxy group may unduly limit the ability to determine a company's comparability to the proxy group.

The disagreements at issue occur in the context of recommending appropriate capital structure ratios based on comparisons of common equity between proxy groups and the Eversource proposals (Exhs. ES-RBH-1, at 70-72; ES-RBH-9, at 1; ES-RBH-Rebuttal-1, at 66-67, 92-93; ES-Rebuttal-8, at 1; AG-JRW-1, at 36; JRW-4, at 1; JRW-5). Because the Department has allowed the use of holding companies in the selection of proxy group companies while acknowledging their differences from operating companies, we accept the Attorney General's use of her proxy group in capital structure comparisons (Exhs. AG-JRW-1, at 36; JRW-4, at 1; JRW-5). D.P.U. 10-55, at 482; D.P.U. 09-39, at 350; D.P.U. 09-30, at 308; D.P.U. 08-35, at 175. We also recognize in the choice of operating companies Eversource's efforts to develop as close a comparison group as possible, and, therefore, we accept the Companies' comparison results (Exhs. ES-RBH-1, at 70-72; ES-RBH-9, at 1; ES-RBH-Rebuttal-1, at 66-67, 92-93; ES-Rebuttal-8, at 1).

d. Use of Short-term Debt

The Attorney General and the Companies disagree on the role of short-term debt in comparing proxy group capital structures (Exhs. ES-RBH-Rebuttal-1, at 64-67; AG-JRW-1, at 2, 35-36). While the Attorney General includes short-term debt as part of her proxy group's capital structure ratios, the Companies assert that short-term debt should not be considered when determining the capitalization of companies in a proxy group (Exhs. ES-RBH-Rebuttal-1, at 64-67; ES-RBH-Rebuttal-8, at 1; AG-JRW-1, at 35-36; JRW-4, at 1; JRW-5). The Department generally excludes short-term debt from a utility's capitalization for ratemaking purposes. D.P.U. 09-39, at 340-341; D.T.E. 05-27,

at 271-272; D.T.E. 02-24/25, at 209. Nevertheless, the extent to which a company's balance sheets carry short-term debt is indisputably a factor in evaluating the relative risk of that company in relation to a proxy group. In this case, the Attorney General chose to include short-term debt in her analysis of capital structures (Exh. AG-JRW-1, at 39). There is no single approach as to how a party offering a proxy group analysis should present the supporting financial and operating data associated with companies in that proxy group. So long as information about a proxy group's capital structure is presented in sufficient detail to allow a fact finder to evaluate the relative risk characteristics of a company in relation to that proxy group, the inclusion of short-term debt in a proxy group's capital structure would not compromise the reliability of the proxy group.³⁴⁰ Therefore, the Department does not reject the Attorney General's use of short-term debt as a factor.

e. Conclusion

The Department finds that Eversource and the Attorney General each employed a set of valid criteria to select their respective proxy groups, and that they each provided sufficient information about the proxy groups to allow the Department to draw conclusions about the relative risk characteristics of the Companies versus the members of the proxy groups.

D.P.U. 12-25, at 402; D.P.U. 09-30, at 307. Therefore, the Department will accept the Companies' proxy group and the Attorney General's proxy group to assist the Department in determining both NSTAR Electric's and WMECo's fair and reasonable costs of equity.

³⁴⁰ The inclusion of short-term debt in a proxy group's capital structure will, of course, tend to reduce the common equity ratio of the proxy group as a whole (Exhs. ES-RBH-Rebuttal-8, at 1; JRW-4, at 1; JRW 5; ES-AG-1-2).

Our acceptance of the proxy groups notwithstanding, we identify several factors that the Department will take into consideration in determining the appropriate ROE for the Companies. First, as discussed below, NSTAR Electric, WMECo, and the proxy group members have a number of reconciling mechanisms. The extent to which these particular reconciling mechanisms affect a company's cash flow and financial performance will affect the evaluation of the Companies' comparability to the proxy groups. Second, some of the holding companies in the Attorney General's comparison group are also involved in non-regulated businesses beyond gas distribution activities, potentially making these companies more risky, all else being equal, and in turn, more profitable than the Companies. D.P.U. 09-39, at 350; D.P.U. 09-30, at 308; D.P.U. 08-35, at 175. The Companies' high credit ratings will also affect our evaluation of investment risk, as well as WMECo's favorable common equity ratio (Exhs. ES-RBH-1, at 17-18; RBH-R-18; AG-1-11, Att. (a)). Therefore, while we accept Eversource's and the Attorney General's proxy groups as a basis for evaluating their ROE proposals, we also will consider the particular characteristics of the Companies as compared to members of the proxy groups when determining the appropriate ROE.

E. Return on Equity

1. Companies Proposal

In determining their proposed ROE,³⁴¹ the Companies rely on the discounted cash flow ("DCF") model (including the constant growth and multi stage models), capital asset

³⁴¹ The terms ROE and cost of equity are used interchangeably herein.

pricing model (“CAPM”), and the bond yield plus risk premium approach (“risk premium model”) (Exhs. ES-RBH 1, at 6-7; ES-RBH-3; ES-RBH-4; ES-RBH-5; ES-RBH-7; ES-RBH-8). These models were applied to market and financial data developed from the Companies’ proxy group (Exh. ES-RBH-1, at 16-21). Based on the results of these models and the Companies’ evaluation of their business risks relative to the proxy group,³⁴² Eversource determines that its consolidated ROE for both NSTAR Electric and WMECo is in the range of ten percent to 10.75 percent (Exhs. ES-RBH-1, at 3, 6-7, 69, 73; ES-RBH-Rebuttal-1, at 3, 161). As part of this analysis, the Companies state that they considered flotation costs and the effect of the Companies’ ROE on their financial integrity (Exh. ES-RBH-1, at 3, 44, 49-51).³⁴³

The Companies state that their proposed ROE of 10.5 percent takes into account the implementation of revenue decoupling, DER, long-term renewable energy contract obligations, and a PBR mechanism, the Companies’ particular business risks, and additional qualitative considerations to which the Department has previously given weight in establishing authorized returns (Exhs. ES-RBH-1, at 3, 16, 44-48, 73; ES-RBH-10; ES-RBH-Rebuttal-1, at 107-114, 161-162; RR-DPU-9). In this regard, the Companies state that their proposed ROE of 10.50 percent is based, in part, on a proxy group of electric

³⁴² On the low end, the Companies’ constant growth analysis produced an ROE of 8.08 percent (Exhs. ES-RBH-R-2, at 1; ES-RBH-Rebuttal-1, at 163). On the high end, the Company’s CAPM analysis produced an ROE of 11.46 percent (Exhs. ES-RBH-R-6; ES-RBH-Rebuttal-1, at 163).

³⁴³ Flotation costs are the costs, such as underwriting fees, legal fees, and registration fees, incurred by a publicly traded company when it issues new securities. D.P.U. 88-135/151, at 115; D.P.U. 85-266-A/271-A at 169.

distribution companies that, in general, already have implemented revenue stabilization mechanisms (Exh. ES-RBH-1, at 16, 45-48). Thus, according to Eversource, any reduction in the ROE because the Companies have implemented revenue decoupling, DER, long-term renewable energy contract obligations, PBR mechanism, or capital-cost recovery mechanisms is a matter of speculation and conjecture and would ignore established legal standards requiring a return commensurate with the return for enterprises with corresponding risks (Exh. ES-RBH-1, at 7-9, 18-20, 46-48, citing Federal Power Commission v. Hope Natural Gas Co., 320 U.S. 591, 603 (1944) (“Hope”); Bluefield Waterworks & Improvement Co., v. Public Service Commission of West Virginia, 262 U.S. 679, 692-93 (1923) (“Bluefield”)).

2. Attorney General Proposal

The Attorney General relies on the DCF model, including the constant growth model, and the CAPM, and applied these models to both her proxy group and the Companies’ proxy group (Exhs. AG-JRW-1, at 3-4, 47-75; AG-JRW-10; AG-JRW-11). The Attorney General calculates an ROE for Eversource of 8.875 percent based on an evaluation of her DCF results of 8.80 percent and 8.95 percent and her CAPM results of 7.90 percent for both proxy groups (Exhs. AG-JRW-1, at 4, 72; AG-JRW-10; AG-JRW-11).

3. FEA Proposal

FEA recommends an ROE of 9.35 percent for Eversource, calculated by the DCF model, including the constant growth and multi-stage growth models, the risk premium model, and the CAPM to the Companies’ proxy group (Exhs. FEA-MPG-1, at 51-81 (Corrected); FEA-MPG-9; FEA-MPG-10; FEA-MPG-11; FEA-MPG-12; FEA-MPG-14; FEA-MPG-16; FEA-MPG-17; FEA-MPG-18; FEA-MPG-21). FEA’s 9.35 percent ROE is

the midpoint of DCF, CAPM, and risk premium modeling results for the Companies' proxy group ranging from a low of 9.00 percent to a high of 9.70 percent (Exhs. FEA-MPG-1, at 4, 81 (Corrected); DPU-FEA 1-1).³⁴⁴

4. Sunrun and EFCA Proposal

Sunrun and EFCA propose an 8.75 percent ROE for the Companies based on the results of two equity cost models: the DCF model and the CAPM (Exhs. SREF-DJG-1, at 7, 9-10, 25 & Apps. C-E, H; SREF-DJG-8; SREF-DJG-14; SREF-DJG-15). On the basis of their DCF and CAPM analyses, Sunrun and EFCA calculate two identical ROEs of 7.5 percent, and then select their recommended 8.75 percent ROE from the upper end of a so-called "range of reasonableness" between 7.5 percent and 9.0 percent (Exhs. SREF-DJG-1, at 7-10, 25 & Apps. C, E; SREF-DJG-3; SREF-DJG-4). Sunrun and EFCA also used the Companies' proxy group to conduct their modeling (Exh. SREF-DJG-1, at 7).

5. UMass Proposal

UMass proposes for Eversource to be required to defend its recommended 10.50 percent ROE proposal by showing that utilities in other New England states have authorized rates of return too low to attract capital and preserve their financial integrity (Exh. UMass-RS-1, at 56). UMass states that Eversource's choice of the mid-point in its recommended 10.00 percent to 10.75 percent ROE range is too high because it is at odds with the regulatory paradigm that expects utility services franchises substituting for

³⁴⁴ FEA used the Companies' proxy group to conduct its modeling (Exhs. FEA-MPG-1, at 52 (Corrected); FEA-MPG-7).

competitive markets to generate comparable results; i.e., the entity with the lowest cost of capital should be the most competitive (Exh. UMass-RS-1, at 53-55). According to UMass, in a hypothetical competitive solicitation process for franchise rights, Eversource would lose to the lower bids of the utilities in other New England states because of the Companies' overstated estimate of its required return (Exh. UMass-RS-1, at 56). Although UMass did not propose a specific ROE in its direct case, on brief, UMass recommends an ROE of 9.5 percent (UMass Brief at 20).

6. Market Conditions and Cost of Equity Trends

a. Introduction

Market conditions and their related data play an important role in defining the parties' respective positions on cost of equity (Exhs. ES-RBH-1, at 55; AG-JRW-1, at 21). The Companies and intervenors offer conflicting interpretations of market conditions and the corresponding risk profiles for NSTAR Electric and WMECo (Exhs. ES-RBH-1, at 55-70; ES-RBH-Rebuttal-1, at 2-6, 14, 25-26, 68-70; AG-JRW-1, at 18-32; AG-JRW-Surrebuttal-1, at 2-5; FEA-MPG-1, at 32-41 (Corrected); SREF-DJG-1, at 13 & Apps. C at 6-10, D at 8-9, 11-12). By way of illustration, the Companies and intervenors vigorously dispute the implications of recently observed trends in authorized utility ROEs regionally and nationally (Exhs. ES-RBH-1, at 9-16; ES-RBH-Rebuttal-1, at 8-12; AG-JRW-1, at 8-17; AG-JRW-Surrebuttal-1, at 26-29; FEA-MPG-1, at 24-32 (Corrected); SREF-DJG-1, App. A at 4-8; UMass-RS-1, at 55-56). The Companies and intervenors draw on data selected from the market place to implement their models in an effort to accurately assess current market conditions and to forecast the market's likely future course with respect to and in support of

the most appropriate cost of equity for Eversource (Exhs. ES-RBH-1; ES-RBH-Rebuttal-1; AG-JRW-1; AG-JRW-Surrebuttal-1; FEA-MPG-1 (Corrected); SREF-DJG-1 and Appendices; UMass-RS-1).

In support of her position, the Attorney General notes that recent rate case records show that authorized electric and gas utility ROEs across the U.S. have trended downward (Exh. AG-JRW-1, at 8).³⁴⁵ The Attorney General attributes this trend to (1) low utility industry risk for equity investment; (2) historically low capital costs for utilities as evidenced by long-term bond yields and interest rates; (3) continued tepid annual gross domestic product (“GDP”) growth of the U.S. economy at 2.00 percent to 2.50 percent; (4) low forecast growth for the world’s economies compared to historical averages; and (5) greatly reduced investment risk in utilities attributable to revenue decoupling and cost reconciling rate adjustment mechanisms (Exhs. AG-JRW-1, at 8-9; see also ES-RBH-1, at 9-10). The Attorney General goes on to enumerate the market conditions related to the trend, including low utility industry betas,³⁴⁶ increasing upgrades in utility credit ratings, long-term bond yields near and below 4.0 percent, and noting further a Moody’s report concluding that lower

³⁴⁵ The Attorney General also observes that ROEs granted to utilities in Massachusetts have increased during the same period (Exhs. AG-JRW-1, at 16-18; see also Exh. ES-RBH-1, at 12).

³⁴⁶ Beta is a measure of volatility, or systematic risk, of a security or portfolio in comparison to the market as a whole.

ROEs between 9.0 percent and 10.0 percent are not impairing utilities' credit profiles (Exh. AG-JRW-1, at 9-13).³⁴⁷

Conversely, the Companies observe "no discernable trend" in authorized ROEs for electric and gas utilities, noting that authorized ROEs have maintained at about 10.00 percent (Exh. ES-RBH-1, at 10). The Companies also observe that interest rates are expected to increase as the Federal Reserve System ("Federal Reserve") moves away from its post-financial crisis monetary policy of lowering interest rates and toward policy normalization, including two increases to the Federal Funds rate (Exh. ES-RBH-1, at 15).³⁴⁸ The Companies state that credit ratings agencies also consider the risk of the regulatory environments in which the utilities operate, adding that the predictability and consistency of regulatory actions have a significant impact on cash flow (Exh. ES-RBH-1, at 15). Further, Eversource notes that revenue stabilization mechanisms may mitigate risk, but only affect the cost of equity if the mechanisms reduce risk below the Companies' peers in the proxy group and if investors knowingly reduce their return requirements in the Companies as a direct consequence of the mechanisms (Exh. ES-RBH-1, at 16).

³⁴⁷ Moody's Investors Service is a bond credit ratings firm that also provides international financial research on bonds issued by commercial and government entities.

³⁴⁸ The Federal Funds Rate is the rate at which banks lend reserve balances to other banks on an overnight basis. Reserves are excess balances held at a Federal Reserve Bank to maintain reserve requirements. The Federal Open Market Committee of the Federal Reserve sets the Federal Funds Rate. The Federal Funds Rate is one of the most important interest rates in the U.S. economy since it affects monetary and financial conditions, which in turn have a bearing on critical aspects of the broad economy including employment, growth, and inflation.

b. Positions of the Parties

i. Attorney General

The Attorney General challenges the financial modeling practices and observations that the Companies use to support their view that current market conditions and utility cost of equity trends warrant the higher ROE that they propose for NSTAR Electric and WMECo (Attorney General Brief at 84-101). In support of her position, the Attorney General argues that: (1) the electric utility industry is one of the lowest risk industries in the United States and, as such, its cost of equity capital is among the lowest in the United States; (2) NSTAR Electric and WMECo's risk profile conforms to this low-risk industry category as measured by their own S&P, as well as Moody's issuer credit ratings, of A and A2, respectively, which are higher than both the Companies' and Attorney General's proxy groups S&P and Moody's issuer credit ratings of BBB+ and Baa1, respectively; (3) NSTAR Electric and WMECo have higher common equity ratios and, therefore, lower financial risk than the capital structures of the two proxy groups; (4) historically low interest rates and long-term bond yields have depressed capital costs; and (4) authorized ROEs for electric utilities companies have declined in recent years (Attorney General Brief at 98-99, citing Exhs. AG-JRW-1, at 72-74; JRW-2; JRW-3; JRW-8; Attorney General Reply Brief at 75-77, citing Exhs. AG-JRW-1, at 63-64; AG-JRW-Surrebuttal, at 1; Tr. 11, at 2161). Further, the Attorney General argues that the Companies' proposed cost of capital is based on "fatally flawed" analyses used to develop that cost (Attorney General Brief at 98, citing Exh. AG-JRW-1, at 72-74).

While acknowledging that her recommended ROE of 8.875 percent is low by historic standards, the Attorney General asserts that her recommended ROE nonetheless satisfies the requirements of Hope and Bluefield (Attorney General Brief at 62, 100; Attorney General Reply Brief at 75, 77). In support of her position, the Attorney General argues that the fundamental factors driving interest rates, capital costs, and GDP growth remain at low levels and are likely to remain so for some time (Attorney General Brief at 85, citing Exh. AG-JRW-1, at 21-32; Attorney General Reply Brief at 77). She further argues that the Companies' forecasts of higher interest rates and capital costs with the end of the Federal Reserve's quantitative easing program are erroneous because:³⁴⁹ (1) actual interest rates have gone down; (2) recent studies show that economists' forecasts of higher interest rates consistently have been wrong; and (3) slow economic growth and low inflation continue to keep interest rates and capital costs low (Attorney General at 85-86, citing Exhs. ES-RBH-1 at 24-26, 56-57; AG-JRW-1, at 21-32).

The Attorney General also takes issue with the Companies' claim that their proposed ratemaking mechanisms should have no effect on the Companies' risk relative to its peers and, therefore, no influence on their ROE recommendation (Attorney General at 86-87, citing Exhs. ES-RBH-1 at 44-49; ES-RBH-10; AG-JRW-1, at 95-97; Attorney General Reply Brief at 76, citing Exh. AG-JRW-Surrebuttal-1, at 12-13). The Attorney General notes that

³⁴⁹ Quantitative easing is a monetary tool used by central banks to stimulate the economy by making it easier for banks to borrow money. In an effort to promote more accommodative financial conditions following the financial crisis of 2008 and the ensuing recession, the Federal Reserve conducted large-scale purchases of assets including long-term Treasury securities and mortgage-backed securities.

97 percent of NSTAR Electric's distribution revenues and 95 percent of WMECo's distribution revenues will be affected by the Companies' proposed revenue decoupling mechanism (Exh. AG-JRW-1, at 96). By contrast, she contends that not all the proxy companies' revenues are covered by rate mechanisms, since many do not receive 100 percent of their revenues from regulated operations (Attorney General at 87, citing Exhs. AG-JRW-1, at 96; JRW-4). The Attorney General further contends that not all regulated operating subsidiary utilities in the Companies' proxy group have rate mechanisms, and that the rate mechanisms at the proxy companies vary widely (Attorney General at 87, citing Exh. ES-RBH-1, at 47). Finally, the Attorney General notes that the Companies will have an revenue decoupling mechanism and PBR mechanism in place affecting at least 95 percent of each operating company's revenues, versus an unknown percent of the revenues of the Companies' proxy group are affected by similar rate mechanisms (Attorney General Brief at 88, citing Exh. AG-14-9).

Accordingly, for the reasons stated above, the Attorney General concludes that the Department should take into consideration that NSTAR Electric and WMECo are less risky than either of the proxy groups and find a lower allowed return for the Companies as compared to the proxy groups (Attorney General Brief at 88, citing Exh. AG-JRW-1, at 97). Adding that the Companies' requested allowed ROE of 10.50 percent will result in unjust and unreasonable rates, the Attorney General recommends the Department use her ROE of 8.875 percent to set base rates (Attorney General Reply Brief at 77).

ii. FEA

FEA similarly challenges the Companies' financial modeling practices and observations of current market conditions behind their proposed allowed ROE, including unsustainable growth expectations (FEA Brief at 2-5). Noting that the other intervenors' recommended ROEs fall within a range of 8.75 percent to 9.35 percent, FEA asserts that the Companies' proposed ROE of 10.50 percent is a material outlier that does not represent current market conditions (FEA Brief at 1-5). According to FEA, current market conditions have allowed electric distribution companies such as NSTAR Electric and WMECo to: (1) support investment grade bond ratings, (2) access capital on favorable terms, and (3) support strong valuation of utility stock (FEA Brief at 2). FEA considers that all of these factors support a finding that the Companies' current earned returns provide them with fair compensation, and that the Companies' requested ROE will significantly exceed this level of fair compensation (FEA Brief at 2).

FEA also contends that electric utilities across the country have experienced a steady decline in authorized returns by approximately 90 basis points since 2009 (FEA Brief at 2, citing Exh. FEA-MPG-1, at 25-26 (Corrected)). FEA maintains that even with this clear trend towards lower authorized returns, the market continues to recognize the electric utility industry as a low-risk investment, with continuing improvements in credit ratings (FEA Brief at 2, citing Exh. FEA-MPG-1, at 25-26, 28-29 (Corrected)). FEA asserts that, despite credit ratings agencies' assessments that lower authorized ROEs will not harm utilities' ability to earn fair returns, attract capital and maintain stable investment grade bond ratings, the

Companies have ignored the existence of such favorable market conditions in their analysis, and instead rely on excessive and unsustainable growth rates to artificially inflate their ROE estimate (FEA Brief at 3-5, citing Exhs. FEA-MPG-1, at 18, 29, 40-41, 86, 91-92 (Corrected); ES-RBH-1, at 9-12, 18).

iii. Sunrun and EFCA

Sunrun and EFCA recommend that the Department reject the Companies' proposed ROE, and argue that it significantly overstates the revenue requirements and shifts large amounts of capital from customers to shareholders without showing measurable customer, system, or societal benefits (Sunrun and EFCA Brief at 2, 17). Sunrun and EFCA maintain that the Companies' cost of equity modeling employs assumptions that violate fundamental and widely accepted financial and valuation tenets, and, thus, artificially inflates their proposed ROE (Sunrun and EFCA Brief at 19, citing Exh. SREF-DJG-1, at 12).

Sunrun and EFCA identify what they consider to be four specific problems in the Companies' analysis. First, Sunrun and EFCA argue that the Companies base their recommended ROE on the mistaken standard that an investor's subjective expectation determines the level of ROE sufficient to attract capital (Sunrun and EFCA Brief at 21, citing Exh. ES-RBH-Rebuttal-1, at 125; Sunrun and EFCA Reply Brief at 8).³⁵⁰ Rather, Sunrun and EFCA maintain that the correct standard is a fair and reasonable return on the utility's cost of equity as determined through objective tests articulated by federal and state courts

³⁵⁰ Sunrun and EFCA cite to the Companies' rebuttal testimony linking DCF model growth estimates to investors' growth rate expectations (Sunrun and EFCA Brief at 21, citing Exh. ES-RBH-Rebuttal-1, at 125).

(Sunrun and EFCA Brief at 21, citing Exhs. SREF-DJG-1, at 8; SREF-DJG-Rebuttal at 1; Sunrun and EFCA Brief at 8, citing Hope at 605; Lowell Gas Company v. Department of Public Utilities, 324 Mass. 80, 96 (1948)).

Additionally, Sunrun and EFCA assert that the Companies' proposed ROE will disincentivize investments in DER because it increases the level of the proposed minimum monthly reliability charge ("MMRC"), which the Companies base on the purported costs of serving DER customers (Sunrun and EFCA Brief at 21). According to Sunrun and EFCA, if the authorized ROE is greater than the Companies' market-based cost of equity, this inflated return will artificially inflate the revenue requirement, which, in turn, will increase any MMRC imposed on DER customers (Sunrun and EFCA Brief at 21).

Next, Sunrun and EFCA contend that an overstated ROE will incentivize the Companies to construct or upgrade traditional infrastructure over investing in lower cost, local DER or non-wires alternatives (Sunrun and EFCA Reply Brief at 9). Sunrun and EFCA contend that, although Eversource has claimed that the disruptive financial effects of DER warrant a higher ROE, the Companies have failed to quantify the effects of DER on its financial performance (Sunrun and EFCA Brief at 21, citing Exh. ES-RBH-Rebuttal-1, at 119). Sunrun and EFCA argue that Eversource cannot support its claim that Massachusetts' embrace of DER threatens to make the Companies a less attractive investment (Sunrun and EFCA Brief at 23; Sunrun and EFCA Reply Brief at 9).

Finally, Sunrun and EFCA maintain that Eversource should harmonize its proposed ROE and PBR mechanism in ways that produce benefits for the Companies, the customers,

and shareholders (Sunrun and EFCA Brief at 13). Specifically, Sunrun and EFCA propose that the Department set a lower base ROE and consider using performance incentives as a means by which the Companies may obtain additional earnings on top of the base ROE as a reward for improved service (Sunrun and EFCA Brief at 14-15, citing Tr. 12, at 2443; D.P.U. 94-158, at 56-57).

Accordingly, for the foregoing reasons, Sunrun and EFCA recommend that the Department reject the Companies' proposed ROE of 10.50 percent. Instead, they recommend that the Department set the Companies' allowed ROE at 8.75 percent (Sunrun and EFCA Brief at 2, 17; Sunrun and EFCA Reply Brief at 10).

iv. Cape Light Compact

Cape Light Compact supports the recommendation of Sunrun and EFCA for an ROE of 8.75 percent, and argues that a high ROE contravenes the shift from capital-driven to performance-driven revenues commenced with the Department's grid modernization Orders (Cape Light Compact Brief at 72, 74, 75-76, citing D.P.U. 12-76-B at 16, 19, and App. 1, at 12). Further, Cape Light Compact contends that the Companies' proposed 10.50 percent ROE overstates the return needed to attract capital and to maintain financial integrity, and further notes that Eversource, which is earning a return above peer utilities in other New England states, has not demonstrated that authorized ROEs well below 10.50 percent for these peer companies have put those companies' financial integrity in jeopardy or prevented them from attracting capital (Cape Light Compact Brief at 72-73).

Contending that climate and grid modernization policies have created a new context for moving from cost of service ratemaking toward PBR, Cape Light Compact argues that electric distribution companies' authorized returns should be set at low base levels, but should provide opportunities for increased returns through performance (Cape Light Compact Brief at 75). Thus, Cape Light Compact recommends that the Department take incremental steps to align the utility business model with grid modernization objectives (Cape Light Compact Brief at 76, citing Exh. AC-AA-1, at 13). According to Cape Light Compact, the Department could gradually decrease the pre-authorized rate of return on traditional utility investment and allow extra compensation for achieving desired performance goals (Cape Light Compact Reply Brief at 13, citing Companies Brief at 541; Exh. AC-AA-7, at 54).

Cape Light Compact contends that the instant case should mark the beginning of a gradual shift in the Companies' profit model, away from profits derived from spending towards profits derived from performance (Cape Light Compact Reply Brief at 14). Further, Cape Light Compact contends that, contrary to Eversource's claims, new opportunities to earn higher returns through performance on challenging environmental and grid modernization goals should provide the Companies with an advantage in attracting capital and maintaining financial integrity (Cape Light Compact Reply Brief at 14, citing Companies Brief at 541). For all of these reasons, Cape Light Compact supports the recommendation of Sunrun and EFCA for an ROE of 8.75 percent (Cape Light Compact Brief at 74).

v. UMass

UMass recommends that the Department reject the Companies' proposal and adopt a lower ROE of 9.5 percent to balance the interest of customers and shareholders (UMass Brief at 20). UMass argues that Eversource's requested 10.50 percent is excessive in light of generally lower levels of risk for regulated utilities, and contends that the Companies are further protected from risk through reconciliation and other cost recovery mechanisms such as the PBR mechanism proposed in the current proceeding (UMass Brief at 18).

Additionally, UMass contends that the Companies' choice of an ROE equivalent to the midpoint of the proxy group selected is inappropriate, because it is inconsistent with market-based principles, which provide that, in a competitive environment, the entity with the lowest costs is likely to be the more successful (UMass Brief at 19). UMass maintains that because the Companies' proxy group companies are all financially stable with investment grade bond and credit ratings and have returns that preserve their financial integrity, setting Eversource's ROE at the low end of the proxy group range would be consistent with Department precedent (UMass Brief at 19-20, citing ES-RBH-1, at 9 n.7). For these reasons, UMass recommends an ROE of 9.5 percent (UMass Brief at 20).

vi. Companies

Eversource argues that its proposed ROE of 10.50 percent reflects current capital market conditions and is the result of a number of widely accepted common equity cost models (Companies Brief at 283, 290, 531-532, 535, citing Exh. ES-RBH-1, at 3, 56, 64-68). Eversource contends that the Department is obligated to provide a return for NSTAR Electric and WMECo commensurate with the returns for similar enterprises having

corresponding risks (Companies Brief at 281, 290-291, 530, citing Attorney General v. Department of Public Utilities, 392 Mass. 262, 266 (1984), quoting Hope at 603).

In this regard, the Companies note that their proposed ROE of 10.50 percent is based, in part, on a proxy group of electric distribution companies that have comparable risk given that these utility companies, in general, already have implemented revenue stabilization mechanisms and incentive plan mechanisms (Companies Brief at 282, 290-291, citing Exh. ES-RBH-1, at 44-48). The Companies argue that decoupling and PBR mechanism-like forms of alternative regulation and incentive plans only affect ROE if (1) the mechanism's effect is to reduce risk below the levels faced by proxy group peer companies, and (2) investors knowingly reduced their return requirements as a direct result of the mechanism (Companies Brief at 289, citing Exh. ES-RBH-1, at 48). The Companies additionally note that a number of proxy companies have incentive plans, including formula-based rate plans, and automatic adjustment mechanisms, and that, because such mechanisms are common among the proxy group, there is no reason to assume that the Companies would be materially less risky (Companies Brief at 290, citing Exhs. ES-RBH-1, at 47-48; ES-RBH-10; AG-14-9; Tr. 4, at 670-671, 735-736; RR-DPU-9). Thus, according to Eversource, any reduction in the ROE because the Companies have a revenue decoupling or incentive plan mechanism would be inappropriate (Companies Brief at 282, 525).

Further, Eversource argues that the ROE authorized in this case must allow the Companies to maintain their credit and ability to attract capital (Companies Brief at 282, citing Boston Edison v. Department of Public Utilities, 375 Mass. 305, 315 (1978), citing

Hope at 603; New England Telephone and Telegraph Company v. Department of Public Utilities, 327 Mass. 81, 88 (1951); Massachusetts Electric Company v. Department of Public Utilities, 376 Mass. 294, 299 (1978); Attorney General v. Department of Public Utilities, 392 Mass. 262, 265 (1984)). According to the Companies, in setting the ROE, the Department must recognize the Companies' need to attract capital on a going forward basis (Companies Brief at 283).

Eversource argues that, without a fair return, the Companies will not be able to attract investors to maintain safe and reliable service (Companies Brief at 283). In this regard, the Companies assert that the Attorney General's recommended ROE of 8.875 percent will deny the Companies a fair rate of return and impair their ability to attract capital (Companies Brief at 530, 532; Companies Reply Brief at 147). The Companies also note that the Attorney General's recommended ROE represents a significant departure from the returns granted by the Department over the past two decades and by other public utility commissions in recent years (Companies Brief at 531-532; Companies Reply Brief at 156). Additionally, Eversource disputes Sunrun and EFCA's suggestion that the Companies based their proposed ROE's ability to attract capital on a speculative, undisclosed, subjective expectation of investors, stating rather that their ROE recommendation is based on observable market data (Companies Reply Brief at 156; citing Exh. ES-RBH-1, at 22).

The Companies also contest the arguments of Sunrun and EFCA, FEA, UMass, and Cape Light Compact for reducing the allowed ROE in order to: (1) prevent associated DER disincentives; (2) link ROE with performance standards, (3) favor the low end of the proxy

group range, and/or (4) align with regional and national trends (Companies Brief at 532-541; Companies Reply Brief at 156-160). On the first point, Eversource counters that it is unreasonable for Sunrun and EFCA to argue that the Companies' proposed ROE will erode their incentive to invest in DER, because an ROE cannot be legally set to maximize DER if using the ROE to that purpose risks damaging the Companies' financial integrity (Companies Brief at 535; Companies Reply Brief at 157, citing Boston Edison Company v. Department of Public Utilities, 375 Mass. 1, 16-17 (1978)). The Companies point out that the Massachusetts Supreme Judicial Court has recognized the role of ROE as a fair and reasonable vehicle for covering expenses, debt service, and dividends while compensating investors' risk as it attracts capital and assures confidence in the enterprise's financial integrity (Companies Brief at 535, citing Massachusetts Electric Company v. Department of Public Utilities, 376 Mass 294, 299 (1978); Fitchburg Electric Light Company v. Department of Public Utilities, 371 Mass. 881, 884 (1977)). The Companies note that Massachusetts has been identified as among the first states where DER is most likely to disrupt the electric industry (Companies Brief at 535, citing Exhs. ES-RBH-1, at 51-55; ES-RBH-Rebuttal-1, at 117-119, DPU 31-5; Companies Reply Brief at 157, citing Exh. ES-RBH-1, at 55 n.59). Eversource maintains that DER presents a long-term risk impact on capital market conditions and, because credit rating agencies have noted the negative influence of DER on utility risk profiles, the Companies have taken this risk into consideration in formulating their proposed ROE (Companies Brief at 535, citing Exhs. ES-RBH-1, at 3, 51-55; ES-RBH-Rebuttal-1, at

117-119; DPU 31-5). The Companies recommend that the Department reject Sunrun and EFCA's analysis and, instead, set an ROE that is consistent with law and record evidence.

Second, in response to Cape Light Compact's recommendation for a performance-based ROE tied to grid modernization, the Companies maintain that setting a minimum ROE would be contrary to legal precedent (Companies Brief at 540, citing Fitchburg Electric Light Company v. Department of Public Utilities, 371 Mass. 881, 884 (1977); Massachusetts Electric Company v. Department of Public Utilities, 376 Mass. 294, 299 (1978); Attorney General v. Department of Public Utilities, 392 Mass. 262, 266, quoting Hope at 603; Companies Reply Brief at 159). The Companies contend that a minimum ROE would place them at a disadvantage in attracting capital relative to other utilities, and would not properly compensate investors for their risk, nor would that maintain the firms' financial integrity, all of which contravenes well-settled Massachusetts law (Companies Brief at 541; Companies Reply Brief at 159, citing Incentive Regulation, D.P.U. 94-158, at 46; 392 Mass. 262, 266, quoting Hope at 591, 603). Moreover, the Companies argue that the concept of a minimum ROE relative to grid modernization efforts has not been fully litigated and that there is a lack of substantial evidence for the Department to rely on in determining whether a minimum ROE should be adopted, and, if so, the appropriate level of that minimum ROE (Companies Brief at 541, citing New England Telephone and Telegraph Company v. Department of Public Utilities, 371 Mass. 67, 80, 84 (1976); Companies Reply Brief at 160). Consequently, the Companies contend that the Department should reject Cape Light Compact's recommendation.

Third, the Companies reject UMass' recommended 9.50 percent ROE based on the low end of the range of companies in the Companies' proxy group (Companies Brief at 539, citing UMass Brief at 20). The Companies assert that UMass' argument is inconsistent with Department precedent, which is to set ROEs that are at the higher end or lower end of the reasonable range based on above average or subpar management performance or customer service (Companies Brief at 539, citing D.P.U. 15-155, at 381-382 n.270). Moreover, the Companies contend that there is no evidence of subpar management performance or customer service on the part of the Companies that would warrant use of an ROE at the low end of the range (Companies Brief at 539).

Fourth, Eversource challenges the claims of FEA and UMass that authorized ROEs are trending downward in other New England states and nationwide, and that Eversource should reduce its own ROE recommendation to align with those trends (Companies Brief at 539; Companies Reply Brief at 158). The Companies maintain that their data charts show no discernable national trends associated with authorized ROEs from 2010 to 2016, and contend that ROEs authorized in Massachusetts are comparable to ROEs authorized in other New England states (Companies Brief at 539; Companies Reply Brief at 158).

Accordingly, for all the reasons above, the Companies assert that the Department should allow their proposed ROE of 10.50 percent because it is based on analysis of market-based data detailed in record evidence and consistent with legal precedent.

c. Analysis and Findings

The Companies and intervenors present observations in the instant case that paint two distinctly different pictures of capital market conditions and the relative risks posed to Eversource in support of their respective ROE recommendations (Exhs. ES-RBH-1, at 55-70; ES-RBH-Rebuttal-1, at 2-6, 14, 25-26, 68-70; AG-JRW-1, at 18-32; AG-JRW-Surrebuttal-1, at 2-5; FEA-MPG-1, at 32-41 (Corrected); SREF-DJG-1, at 13 & Apps. C at 6-10, D at 8-9, 11-12; UMass-RS-1, at 56). First addressing the market conditions debated among the Companies and intervenors, there is an abundance of record evidence indicating the slow pace of economic recovery since the 2008 economic crisis. GDP growth, inflation, and interest rates all remain historically low (Exhs. ES-RBH-Rebuttal-1, at 40-42; ES-RBH-1, at 63-65; AG-JRW-1, at 11-12, 81; AG-JRW-14). Projecting future market trends, whether interest rates, dividends and earnings growth, or GDP growth is difficult through surveys and modeling alike, and both the Companies and intervenors urge caution on the conclusions (Exhs. ES-RBH-1, at 21-22; AG-JRW-1, at 50, 56-57; AG-JRW-Rebuttal-1, at 3-5; FEA-MPG-1, at 116 (Corrected)).

The parties draw from a host of data sources and methodologies to draw their competing interpretations and conclusions (Exhs. ES-RBH-1, at 26-28, 64-69; ES-RBH-Rebuttal-1, at 32-35, 38-45, 73-77; AG-JRW-1, at 55-61, 79-84). The Companies offer a view of an economy on the verge of accelerated growth (Exh. ES-RBH-1, at 64-67). The intervenors weigh existing conditions more heavily to color their more cautious, tempered view (Exhs. AG-JRW-1, at 11-12, 18-19, 21-31; AG-JRW-Surrebuttal-1, at 2-3,

19-21; FEA-MPG-1, at 37-39, 57, 61-65 (Corrected); SREF-DJG-1, at 13 & Apps, C at 7-10, D at 8-9, 11-12). The Companies offer more optimistic future trends for the U.S. economy, and emphasize signs of increasing interest rates and long-term Treasury yields, higher GDP growth rates, and higher dividend yields (Exh. ES-RBH-1, at 64-67). The intervenors offer a less enthusiastic outlook based on their interpretation of present and recent past events, and their skepticism for future capital market projections (Exhs. AG-JRW-1, at 11-12, 18-19, 21-31; AG-JRW-Surrebuttal-1, at 2-5, 19-21; FEA-MPG-1, at 37-39, 57, 61-65 (Corrected); SREF-DJG-1, at 13 & Apps., C at 7-10, D at 8-9, 11-12). We will consider capital market projections in evaluating the analysis models used by the parties in proposing an ROE for Eversource.

Turning to Eversource's risk profile as it compares to proxy group peers, we review the credit issuer ratings and evidence relating to revenue stabilization and reconciling mechanisms. The number of annual credit upgrades in the electric and gas utilities industry is at or over 70 percent between 2012 and 2016, indicating that credit rating agencies see declining risk in the industry overall (Exh. AG-JRW-1, at 9-10). Low betas, indeed the lowest among most industries measured, also indicate low risk for the utility sector (Exhs. AG-JRW-1, at 9-10; JRW-8). Such indicators of risk are the baseline, and the Companies do not disagree (Exhs. ES-RBH-1, at 11-12; ES-RBH-Rebuttal-1, at 68). Nevertheless, credit ratings are not a direct proxy for an individual firm's risk level (Exhs. ES-RBH-1, at 11-12; ES-RBH-Rebuttal-1, at 62-64, 72-73; ES-RBH-Rebuttal-18). Rather, allowed ROEs and the regulatory process behind have a significant bearing on credit

rating agencies' setting ratings for regulated utilities (Exhs. ES-RBH-1, at 14-15; ES-RBH-Rebuttal-1, at 95-97). Other factors such as cash from operations and volatility in credit spreads and valuations also influence risk (Exhs. ES-RBH-1, at 56, 60-62, 67-69; ES-RBH-Rebuttal-1, at 16).

Regarding trends in authorized ROE nationally and regionally, those arguments are superfluous and inoperative here. As stated below, under the principles of Hope and Bluefield, regulated utilities are entitled to earn a return on capital investments consistent with the returns for businesses of similar risk levels. The return for regulated utilities must be adequate to provide access to capital and to support credit quality, and must result in just and reasonable rates for consumers. ROE trends are not a factor in setting a specific company's ROE under the Hope and Bluefield principles. Therefore, the Department will not factor ROE trends in setting the allowed ROE for the Companies.

7. Discounted Cash Flow Model

a. Companies DCF Analysis

The DCF model is based on the premise that a stock's current price is equal to the present value of the expected future cash flows that investors expect to receive (Exh. ES-RBH-1, at 17). The Companies used both constant growth and a multi-stage DCF models (Exhs. ES-RBH-1, at 3, 6, 24-37; ES-RBH-3; ES-RBH-4).

The constant growth DCF model comprises a forward looking dividend yield component and an expected dividend growth rate into perpetuity. The Companies calculated the dividend yield component based on the current annualized dividends of their proxy group (Exh. ES-RBH-1, at 24). The Companies use the Professional Services ("Bloomberg")

dividend estimates, adjusting them by one-half of the growth rate (Exh. ES-RBH-1, at 25; ES-RBH-3).³⁵¹ For the expected growth rate, the Companies used a consensus of Zacks, Firstcall, and Value Line surveys to estimate a long-term earnings growth rate (Exhs. ES-RBH-1, at 26-28; ES-RBH-Rebuttal-2).³⁵² The Companies' initial analysis produced a cost of equity range using the constant growth DCF model of 8.89 percent to 8.94 percent (Exhs. ES-RBH-1, at 6, 29, 74; ES-RBH-3). During the proceedings, the Companies updated their data to produce a cost of equity range using the constant growth DCF model of 8.77 percent to 8.95 percent (Exh. ES-RBH-Rebuttal-1, at 163).

To address what they contend are certain simplifying assumptions underlying the constant growth model, the Companies also used a multi-stage DCF model (Exh. ES-RBH-1, at 30). This model employs multiple earnings growth rate and payout rate assumptions (Exh. ES-RBH-1, at 33-37). Earnings growth and payout ratio assumptions change throughout the three stages of this model (Exh. ES-RBH-1, at 33-37).³⁵³ The Companies' model sets the stock price equal to the present value of future cash flows received over three stages, with cash flows defined as project dividends in the first two stages (Exh. ES-RBH-1, at 32). In the third stage, cash flows equal both dividends and the expected price at which

³⁵¹ Bloomberg provides financial data, news, and analytics.

³⁵² Zachs Investment Research, Inc., Firstcall Research, and Value Line, Inc. provide a wide range of investment research and industry analysis services.

³⁵³ Generally, the three stages are described as: (1) a high-growth rate for a period of time (usually three to seven years); (2) followed by a transition period during which the growth will decline in linear increments; and (3) followed by a stable growth rate forever.

the stock will be sold at the end of the period, also called the “terminal price”

(Exh. ES-RBH-1, at 32). The Companies calculated the terminal price based on the Gordon model, which defines the price as the expected dividend divided by the difference between the cost of equity (the discount rate) and the long-term expected growth rate

(Exh. ES-RBH-1, at 32). The Companies also used the terminal price-earnings (“P/E”) ratio multi-stage DCF model to assess the reasonableness of the inputs and results by dividing the terminal stock price by the expected earnings per share in the terminal year to calculate the expected P/E ratio (Exh. ES-RBH-1, at 34).³⁵⁴

In particular, the Companies employed a long-term GDP growth rate of 5.36 percent (Exhs. ES-RBH-1, at 35; ES-RBH-Rebuttal-1, at 38, 40). In its initial filing, Eversource’s multi-stage Gordon growth method DCF model produced a cost of equity range of 9.09 percent to 9.14 percent,³⁵⁵ and its multi-stage terminal P/E method DCF model produced a cost of equity range of 10.11 percent to 10.24 percent (Exhs. ES-RBH-1, at 6, 37, 74; ES-RBH-4). During the proceedings, the Companies updated their data to produce a multi-stage DCF Gordon growth method model mean range of 8.81 percent to 9.00 percent, and a multi-stage DCF terminal P/E method model mean range of 10.40 percent to

³⁵⁴ The Companies state that the terminal P/E ratio can be divided by the terminal growth rate to develop a price-to-earnings growth ratio, which, if inconsistent with historical experience, may indicate incorrect or inconsistent modeling assumptions (Exh. ES-RBH-1, at 34).

³⁵⁵ The Gordon growth method is a methodology used in a DCF analysis that assumes the company will grow and generate free cash flows forever at a consistent rate.

10.88 percent (Exhs. ES-RBH-Rebuttal-1, at 2-3, 40 n.68, 62-63; ES-RBH-Rebuttal-2; ES-RBH-Rebuttal-3).

b. Attorney General DCF Analysis

The Attorney General relies on a constant growth DCF model, reasoning that the public utility business is in the steady state (or constant growth) stage of a three-stage DCF model (Exh. AG-JRW-1, at 49-50). To determine the cost of equity using her constant growth DCF model, the Attorney General summed the estimated dividend yield and growth rates of her proxy group (Exh. AG-JRW-1, at 61). The Attorney General calculated the DCF dividend yield for the proxy group using the current annual dividend and the 30-day, 90-day, and 180-day average stock prices based on data supplied by Yahoo Finance (Exhs. AG-JRW-1, at 51; AG-JRW-10, at 2).³⁵⁶ Using this method, the median dividend yields for the Attorney General's proxy group range from 3.3 percent to 3.5 percent (Exhs. AG-JRW-1, at 51; AG-JRW-10, at 2). Within this range, the Attorney General chose the average of the medians of 3.45 percent as the dividend yield for her proxy group (Exhs. AG-JRW-1, at 51, 61; AG-JRW-10, at 2). The Attorney General then calculated the corresponding dividend yield for the Companies' proxy group of 3.35 percent, which represented the average of the median dividend yields ranging from 3.2 percent to 3.5 percent (Exhs. AG-JRW-1, at 51, 61; AG-JRW-10, at 2).

The dividend yield is obtained by dividing the annualized expected dividend in the coming quarter by the current stock price (Exh. AG-JRW-1, at 51-52). To annualize the

³⁵⁶ Yahoo Finance provides financial data, business news, and related information.

expected dividend, the Attorney General multiplied the expected dividend for the coming quarter by four, and multiplied the result by one half of the expected growth rate (Exh. AG-JRW-1, at 51-52).

In developing the expected growth rate, the Attorney General relies on the historic and projected growth rates of earnings per share (“EPS”), dividends per share, and book value per share provided by Value Line, as well as the EPS growth forecasts of Wall Street analysts provided by Yahoo Finance, Firstcall, and Zacks (Exhs. AG-JRW-1, at 53; AG-JRW-10, at 3-6). Although the Attorney General assumes that EPS and dividends per share will exhibit similar growth rates over the very long term, she relies on historic and projected dividends per share and book value per share as well as internal growth to balance what she states are the shortcomings of relying solely on EPS as a proxy for the DCF growth rate (i.e., an upward bias among Wall Street analysts) (Exhs. AG-JRW-1, at 56-57; AG-JRW-10, at 3-6). The DCF projected growth rate for the Attorney General proxy group and the Companies’ proxy group is 5.25 percent and 5.5 percent, respectively (Exhs. AG-JRW-1, at 60-61; AG-JRW-10, at 1, 3-6).

The Attorney General adds the adjusted dividend yields and the estimated growth rates to determine a cost of equity for both her proxy group and the Companies’ proxy group (Exhs. AG-JRW-1, at 61; AG-JRW-10, at 1). The DCF analysis performed by the Attorney General yields a cost of equity of 8.80 percent for her proxy group and 8.95 percent for the Companies’ proxy group, respectively (Exhs. AG-JRW-1, at 61; AG-JRW-10, at 1).

c. FEA DCF Analysis

FEA calculates two constant growth DCF models and one multi-stage DCF model to produce average equity costs ranging from 7.89 percent to 9.10 percent (Exhs. FEA-MPG-1, at 54-67 (Corrected); FEA-MPG-9; FEA-MPG-12; FEA-MPG-14). For its securities inputs, FEA relies on the average weekly high and low stock prices of the utilities in the Companies' proxy group over a 13-week period ending March 31, 2017 (Exhs. FEA-MPG-1, at 52, 54 (Corrected); FEA-MPG-9; FEA-MPG-11; FEA-MPG-12; FEA-MPG-14). FEA also collected the most recent quarterly dividends paid by each company in the Companies' proxy group as reported by Value Line between January 27, 2017 and March 17, 2017 (Exh. FEA-MPG-1 at 55 n.31 (Corrected)). FEA then used consensus professional security analysts' earnings growth estimates from Zacks, SNL Financial LC ("SNL"), and Thompson Reuters Corporation ("Reuters") to produce an average growth rate of 5.67 percent for the proxy group (Exhs. FEA-MPG-1, at 55-56 (Corrected); FEA-MPG-8).³⁵⁷ The average and median constant growth DCF returns for the Companies' proxy group for the 13-week analysis are 9.10 percent and 9.22 percent, respectively (Exhs. FEA-MPG-1, at 56 (Corrected); FEA-MPG-9).

In its second constant growth DCF calculation, FEA uses a sustainable long-term growth rate of 4.51 percent derived from dividend payout ratios and earnings retention ratios as well as from market to book ratios and Value Line projections of earnings, dividends,

³⁵⁷ SNL provides industry-specific financial market data feed of public and private companies worldwide. Among other things, Reuters provides financial news, information, and analytics services.

earned returns on book equity, and stock issuances (Exhs. FEA-MPG-1, at 58 (Corrected); FEA-MPG-11). This second, “sustainable” constant growth DCF analysis over a 13-week period produces Companies’ proxy group average and median DCF results of 7.89 percent and 7.55 percent, respectively (Exhs. FEA-MPG-1, at 59 (Corrected); FEA-MPG-12).

FEA’s multi-stage growth DCF analysis employs: (1) the 5.67 percent consensus analysts’ growth projections for the first stage, short-term growth period; (2) a growth rate range of 4.45 percent to 5.43 percent for the second stage transition period;³⁵⁸ and (3) 4.2 percent consensus analysts’ projections of long-term GDP growth for the third stage (Exhs. FEA-MPG-1, at 66 (Corrected); FEA-MPG-14).³⁵⁹ This multi-stage model produces average and median DCF returns on equity of 7.90 percent and 7.96 percent, respectively (Exhs. FEA-MPG-1, at 66 (Corrected); FEA-MPG-14). Noting its concerns that DCF model results below eight percent were not consistent with market evidence, FEA relies on its 9.10-percent constant growth DCF model result for a high-end DCF return estimate (Exhs. FEA-MPG-1, at 67 (Corrected); FEA-MPG-9).

³⁵⁸ FEA states that growth rates for the second stage, transition period were reduced or increased by an equal factor reflecting the difference between the analysts’ growth rates and the long-term sustainable growth rates, resulting in growth rates of 5.43, 5.18, 4.94, 4.69, and 4.45 percent in years six through 10, respectively (Exhs. FEA-MPG-1, at 60 (Corrected); FEA-MPG-14).

³⁵⁹ For the third stage analysis, FEA relied on the consensus economists’ projected five- and ten-year average GDP growth rates as published by Blue Chip Economic Indicators (Exhs. FEA-MPG-1, at 63 (Corrected); FEA-MPG-14).

d. Sunrun and EFCA DCF Analysis

Sunrun and EFCA employed a constant growth DCF model that assumes dividends are paid on a quarterly basis and held constant for four consecutive quarters (Exh. SREF-DJG-1, App. C at 3). The model also uses 30-day averages of adjusted closing stock prices reported by Yahoo Finance for each company in the Companies' proxy group, (Exhs. SREF-DJG-1, App. C at 4-5; SREF-DJG-6).³⁶⁰ Sunrun and EFCA used the quarterly dividend paid in the first quarter of 2017 obtained from NASDAQ for each company in the Companies' proxy group (Exhs. SREF-DJG-1, at 7 & App. C at 6; SREF-DJG-7). Additionally, Sunrun and EFCA assume that the Companies increase dividend payments each quarter by an annual growth rate (SREF-DJG-1, App. C at 6). For the growth rate, Sunrun and EFCA chose 4.1 percent, representing the long-term forecast for nominal GDP provided by the Congressional Budget Office, which includes an inflation rate of two percent (Exh. SREF-DJG-1, App. C at 7-9). Sunrun and EFCA state that their 4.1-percent growth rate assumes that, over the long-term, the annual growth in Eversource's earnings will match the growth of the entire U.S. economy (Exh. SREF-DJG-1, App. C at 9). Sunrun and EFCA placed Eversource's terminal growth rate between two percent and four percent, and maintain that the terminal growth rate for utilities will fall between the rate of inflation and the expected rate of nominal GDP growth (Exhs. SREF-DJG-1, App. C at 8; SREF-DJG-8). With the average of reported dividends and stock prices from the Companies' proxy group,

³⁶⁰ Sunrun and EFCA maintain that adjusted closing prices, rather than actual closing prices, are ideal for analyzing historical stock prices, because adjusted prices provide accurate representation of a firm's equity value beyond the market price by accounting for stock splits and dividends (Exh. SREF-DJG-1, App. C at 5 n.3).

and using what they state is a “reasonable” terminal growth rate estimate, Sunrun and EFCA calculated a 7.5-percent DCF cost of equity estimate for Eversource (Exh. SREF-DJG-1, App. C at 10; SREF-DJG-9).

e. Positions of the Parties

i. Attorney General

The Attorney General argues that the Department should reject Eversource’s DCF analysis for three reasons (Attorney General Brief at 72). First, the Attorney General contends that the Companies’ have given little weight to their constant growth DCF results, and she claims that utility P/E ratios have persisted, based on expectations of continued reduced risk in the utility industry and corresponding lower risk utility stocks (Attorney General Brief at 72; Attorney General Reply Brief at 66-68, citing Exh. AG-JRW-Surrebuttal-1, at 12-14). She notes that, despite calculating 29 constant-growth stage DCF equity cost rates averaging 8.9 percent, the Companies used only six of the ROE estimates to derive their 10.50-percent ROE recommendation (Attorney General Brief at 72, citing Exh. AG-JRW-1, at 78; Attorney General Reply Brief at 67-68).

Second, the Attorney General argues that the Companies’ DCF analyses rely solely on what she considers to be inflated long-term EPS growth rate projections of Wall Street analysts and Value Line (Attorney General Brief at 72, citing Exh. AG-JRW-1, at 56-57, 78-81; Attorney General Reply Brief at 67-69). Third, the Attorney General contends that the Companies are inconsistent in their use of historic versus projected data (Attorney General Brief at 76, citing Exh. AG-JRW-1, at 84). In particular, the Attorney General contends that in developing their constant growth DCF analysis, the Companies ignored data

on historical EPS, dividends per share, and book value per share (Attorney General Brief at 76, citing Exh. AG-JRW-1, at 84; Attorney General Reply Brief at 70). In addition, the Attorney General claims that, in developing a terminal DCF growth rate for its multi-stage growth DCF analysis, the Companies ignored well known, long-term real GDP growth rate forecasts and, instead, relied solely on historical GDP data going back to 1929 (Attorney General Brief at 76, citing Exh. AG-JRW-1, at 84; Attorney General Reply Brief at 70).

Finally, the Attorney General contends that the Companies' GDP growth rate of 5.36 percent used in their multi-stage DCF model is excessive, unsupported by theoretical or empirical evidence, not reflective of economic growth in the United States, and about 100 basis points above projections of long-term GDP growth (Attorney General Brief at 72-74, citing Exh. AG-JRW-1, at 60-61, 81-83; Attorney General Reply Brief at 69-70). The Attorney General claims that despite some fluctuations, nominal GDP growth rates have declined over the years and have been in the 3.5 to four percent range over the past five years (Attorney General Brief at 74, citing Exh. AG-JRW-1, at 74). Further, she argues that the compounded GDP growth rate of 6.45 percent over the 50 years since the mid-1960s belies a "monotonic and significant" decline in nominal GDP growth rates in recent decades (Attorney General Brief at 74, citing Exh. AG-JRW-1, at 82). Therefore, the Attorney General concludes that a more appropriate nominal GDP growth rate figure for today's economy is in the range of four to five percent (Attorney General Brief at 74).

ii. FEA

FEA contends that the Companies' DCF analysis ignores Eversource's favorable risk under current market conditions and has excessive and unsustainable growth rate assumptions that inflate their ROE results (FEA Brief at 5). Specifically, FEA asserts that the Companies' arguments for a higher cost of capital defy market evidence, which reflects high stock prices, low dividend yields, and the resulting low costs of capital (FEA Brief at 8; FEA Reply Brief at 2-3). According to FEA, the Companies incorrectly discount the market's current high valuation of utility stocks and their resulting high P/E ratios (FEA Brief at 8; FEA Reply Brief at 2-3, citing Companies Brief at 537). FEA contends that this assessment ignores market sentiments that are favorable toward utility companies and lumps utility investments in with general corporate investments having higher expected ROEs (FEA Brief at 8).

Further, FEA notes that the Companies' multi-stage DCF model assumes an inflated growth rate that is significantly higher than consensus economists' projections of future GDP growth (FEA Brief at 5). According to FEA, the Companies' nominal GDP growth projections for their multi-stage DCF model is flawed because their growth forecast was based on a combination of historical real GDP growth and projected inflation outlooks (FEA Reply Brief at 3-4). FEA maintains that the Companies' reliance on historical growth rate numbers overstates real GDP growth, and, therefore, overstates a sustainable long-term growth rate for use in their DCF methodology (FEA Reply Brief at 4). FEA argues that a DCF result implying an ROE below 8.0 percent reasonably reflects investor-required returns,

and concludes that an ROE of 9.0 percent is appropriate for NSTAR Electric and WMECo (FEA Brief at 10).

iii. Sunrun and EFCA

Sunrun and EFCA challenge Eversource's DCF model for its use of a long-term growth rate that exceeds the growth rate of the entire U.S. economy (Sunrun and EFCA Brief at 19). Sunrun and EFCA argue that the Companies' long term growth rate conflicts with a fundamental tenet of finance that, in the long run, a company cannot grow at a faster rate than the aggregate economy in which it operates (Sunrun and EFCA Brief at 19 n.71, citing Exhs. SREF-DJG-1, at 13; SREF-DJG-Rebuttal at 7). Sunrun and EFCA note that Eversource uses long-term growth rates in its DCF analysis that are as high as 9.0 percent, which produces cost of equity results up to 10.61 percent (Sunrun and EFCA Brief at 19 n.72, citing Exh. SREF-DJG-1, at 14). However Sunrun and EFCA's assert that 4.1 percent is the highest realistic growth rate, which produces a cost of equity of 7.5 percent (Sunrun and EFCA Brief at 19 n.72, citing Exh. SREF-DJG-1, at 14).

iv. Companies

(A) Constant Growth DCF Model

Eversource argues that the Attorney General's constant growth DCF calculation is subjective and incapable of replication (Companies Brief at 519, citing Exh. ES-RBH-Rebuttal-1, at 14, 18-19, 32-33; Companies Reply Brief at 149). The Companies also assert that the Attorney General's constant growth DCF approach inappropriately relies on historical growth rates as a measure of investors' expected growth rates, when the model's growth rate is a forward-looking measure (Companies Brief at 519,

citing Exh. ES-RBH-Rebuttal-1, at 31). In addition, the Companies contend that the Attorney General's DCF recommendation incorrectly relies on dividend per share and book value per share growth rates, which they contend are merely derivative of earnings growth (Companies Brief at 519, citing Exh. ES-RBH-Rebuttal-1, at 27-32).

Eversource also challenges Sunrun and EFCA's contention that the Companies' long-term growth rate improperly exceeds that of the national economy, asserting that the Companies' constant growth DCF growth rates are correctly a function of investor growth expectations, based on analysts' growth expectations (Companies Brief at 534, citing Exh. ES-RBH-Rebuttal-1, at 125-126). Additionally, Eversource disputes Sunrun and EFCA's suggestion that the Companies based their recommended ROE on a speculative, undisclosed, subjective expectation of investors, stating rather that their growth rate and subsequent ROE recommendation is based on observable market data (Companies Reply Brief at 156, citing Exh. ES-RBH-1, at 22). The Companies also challenge FEA's argument that the Companies' DCF analysis assumes an inflated growth rate relative to future GDP growth, maintaining that the consensus growth rates the Companies used in their model are actually below the average consensus growth rates relied on by FEA for its own constant growth DCF model (Companies Brief at 537, citing Exh. ES-RBH-Rebuttal-1, at 99).

The Companies dispute the Attorney General's claim that they gave insufficient weight to the results of their constant-growth DCF analysis (Companies Brief at 520; Companies Reply Brief at 150). Instead, the Companies contend that the Attorney General apparently refuses to consider a multi-stage DCF model in setting a ROE, despite the limiting

assumptions underlying the constant-growth DCF model, such as her assumption of using a constant P/E ratio in perpetuity (Companies Brief at 520, citing Exh. ES-RBH-1, at 24; Companies Reply Brief at 150).

In this regard, the Companies maintain that the Attorney General's and FEA's use of unusually high P/E ratios in perpetuity is an unrealistic assumption for the constant growth DCF model, leading to cost of equity anomalies (Companies Brief at 519, 536-537, citing Exh. ES-RBH-Rebuttal-1, at 17-18, 79; Companies Reply Brief at 149, 158, citing D.P.U. 13-90, at 219 (2014)). Referring to FEA's 9.00 percent DCF calculation as "problematic," the Companies fault FEA for not placing less weighing on its constant growth DCF model results despite acknowledging an "abnormal expansion" of P/E ratios (Companies Brief at 536-537, citing Exh. ES-RBH-Rebuttal-1, at 79). The Companies add that with P/E ratios for utilities currently at unusually high levels, it is necessary to consider the results of the multi-stage DCF model when determining an appropriate level of ROE (Companies Brief at 520, citing Exh. ES-RBH-1, at 29-30; Companies Reply Brief at 150, citing Exh. ES-RBH-1, at 29-30).

Turning to DCF growth rates, Eversource dismisses the Attorney General's contention that their EPS growth rate estimates were upwardly biased (Companies Brief at 520; Companies Reply Brief at 150). First, the Companies assert that litigation and new financial regulations in 2003 have helped to neutralize analysts' bias in the median forecast errors (Companies Brief at 520, citing Exh. ES-RBH-Rebuttal-1, at 26-27; Companies Reply Brief at 150). Second, the Companies maintain that the Department has noted, and the Attorney

General's witness has admitted, a lack of pronounced bias in the EPS forecasts for utilities (Companies Brief at 520-521, citing D.P.U. 15-155, at 362-363; D.P.U. 13-75, at 302; Companies Reply Brief at 150). Third, the Companies maintain that regardless of analysts' forecasts, investor expectations are more important when applying the DCF model, and the DCF-estimated ROE must recognize that the EPS growth rate expectations of investors drive stock prices, even if those expectations are influenced by analysts' forecasts (Companies Brief at 521, citing D.P.U. 15-155, at 362-363; Companies Reply Brief at 150). Further, the Companies note that the Attorney General conceded that any bias that may exist for utilities is at most in the range of 20 basis points (Companies Brief at 520-521, citing D.P.U. 15-155, at 362-363).³⁶¹

(B) Multi-Stage DCF Model

The Companies dispute the Attorney General's assertion that the Companies' proposed multi-stage DCF growth rate of 5.36 percent, based on GDP growth rate, fails to take into consideration the more recent lower trends in GDP growth or the current forecasts by economists and some federal agencies (Company Brief at 521, citing Attorney General Brief at 73-75). In support of its GDP-derived growth rate, Eversource notes that the annual nominal GDP growth rate has remained relatively stable since 1990 and was greater than five percent in twelve of the last 27 years (Companies Brief at 521-522, citing Exh. ES-RBH-Rebuttal-1, at 38-39). Additionally, in opposition to FEA's preference for

³⁶¹ The Companies also note that the Attorney General claims to have given "primary weight" in her DCF model to the same projected growth rates of Wall Street analysts that she criticizes the Companies for using (Companies Reply Brief at 150-151, citing Exh. AG-JRW-Surrebuttal-1, at 17).

five- or ten-year consensus GDP projections, the Companies argue that their multi-stage DCF analysis reflects growth expectations beginning ten years in the future when there are no consensus forecasts and when it is reasonable to assume that real growth will revert to the long-term average over time (Companies Brief at 537, citing Exh. ES-RBHRebuttal-1, at 100).

Further, the Companies argue that their proposed long-term growth rate is consistent with the long-term growth rates of other respected economic forecasts (Companies Brief at 522). In support of its position, Eversource asserts that a 2010 report issued by McKinsey & Company (“McKinsey Report”), relied upon by the Attorney General in developing her testimony, states that the long-term earnings growth for the market as a whole is unlikely to differ significantly from growth in GDP (Companies Brief at 522, citing Exh. ES-RBH-Rebuttal-1, at 47-48; Companies Reply Brief at 151). The Companies also note that the McKinsey Report states that: “[r]eal GDP has averaged 3 to 4 percent over [the] past seven or eight decades, which would indeed be consistent with nominal growth of 5 to 7 percent given current inflation of 2 to 3 percent” (Companies Brief at 522, citing Exh. ES-RBH-Rebuttal-1, at 41-42).³⁶² Therefore, the Companies maintain that their proposed growth rate of 5.36 percent is supported by the McKinsey Report because the selected growth rate represents a combination of historical real GDP growth rate and a

³⁶² The Companies note that the Attorney General points to a more recent McKinsey study to support her claim of lower expected GDP growth associated with slowing employment growth, but neglects to include McKinsey’s observations that best practices and technological innovations could also potentially elevate GDP (Companies Reply Brief at 151, citing McKinsey & Company, “Can Long-Term Growth be Saved?”, McKinsey Global Institute, January 2015, at 53).

corresponding level of expected inflation, and falls within the lower end of the five to seven percent range noted by the McKinsey Report (Companies Brief at 522, citing Exh. ES-RBH-Rebuttal-1, at 41-42). Moreover, the Companies argue that the Attorney General has not explained why she considers economists' near-term interest rate projections to be improper while at the same time accepting their long-term real GDP growth rate projections (Companies Reply Brief at 151).

In addressing the Attorney General's and FEA's contention that the Companies' multi-stage DCF approach incorrectly relies on historical GDP data rather than economists' projections, the Companies state that they did not use economists' GDP forecasts because they did not encompass the entire period covered by the multi-stage DCF model and because the forecasts are not consensus-based (Companies Reply Brief at 151, 158, citing Exh. ES-RBH-Rebuttal-1, at 42).

Finally, in response to the Attorney General's contention that economists' forecasts of higher interest rates should be given no weight because they have been proven wrong, the Companies maintain that they have augmented economists' forecasts with observable market data (Companies Reply Brief at 151, citing Exh. ES-RBH-1, at 64). The Companies argue that with the 30-year Treasury yield increasing by over 50 basis points since July 2016 and with Federal Reserve monetary policies ending, it is all but certain that interest rates will rise (Companies Reply Brief at 151-152, citing Exhs. ES-RBH-1, at 60, 64; ES-RBH-Rebuttal-1, at 75-76; Tr. 4, at 684, 686, 735). Accordingly, the Companies recommend that the Department reject the intervenors' DCF analyses, calculations, and criticisms of the

Companies' DCF calculations and set an ROE consistent with law and record evidence (Companies Brief at 532, 535-537).

v. Analysis and Findings

In developing their proposed ROEs, the Companies and intervenors use a form of the DCF model that assumes an infinite investment horizon and a constant growth rate (Exhs. ES-RBH-1, at 24-26; AG-JRW-1, at 49; SREF-DJG-1, at 7 & App. C at 2; FEA-MPG-1, at 51-53 (Corrected)). This model has a number of very strict assumptions (e.g., the infinite investment horizon and dividend growth at a constant rate in perpetuity) (Exh. ES-RBH-1, at 24). These assumptions affect the estimates of the cost of equity. D.P.U. 10-114, at 312; D.P.U. 09-39, at 387.

Because regulatory commissions establish a level of authorized earnings for a utility that, in turn, implicitly influences dividends per share, the estimation of the growth rate from such data is an inherently circular process. D.P.U. 10-114, at 312; D.P.U. 10-55, at 512; D.P.U. 09-30, at 357-358. Specifically, the DCF model includes an element of circularity when applied in a rate case because investors' expectations depend upon regulatory decisions. D.P.U. 10-70, at 253; D.P.U. 09-30, at 357-358. Consequently, this circularity affects the results of both the Companies' and the intervenors' DCF models. The Attorney General's, Sunrun and EFCA's, and FEA's DCF models place less emphasis on analyst forecasts of EPS growth rates which, to some extent, compensates for this circularity (Exhs. AG-JRW-1, at 56-57; SREF-DJG-Rebuttal at 10-12; FEA-MPG-1, at 63-65 (Corrected)).

The Companies and intervenors use different data sources to estimate the dividend yield and growth rates (Exhs. ES-RBH-1, at 24-25; ES-RBH-3; AG-JRW-1, at 47-56; AG-JRW-10; SREF-DJG-1, App. C at 6-10; FEA-MPG-1, at 55-66 (Corrected)). Although the various parties applied their quarterly and average dividend yields differently in their respective DCF equations, the common objective of projecting annual growth balanced out to achieve comparable results (Exhs. ES-RBH-1, at 23-25; AG-JRW-1, at 47-49; FEA-MPG-1, at 53-54 (Corrected); SREF-DJG-1, App. C at 6).

In addition, the Companies and the Attorney General use different growth rates in their respective DCF analyses (Exhs. ES-RBH-1, at 35-36; ES-RBH-4; ES-RBH-R-3; AG-JRW-1, at 60-61; AG-JRW-10, at 1). Determining the appropriate long-term growth expectations of investors in a DCF analysis can be difficult and controversial. Fitchburg Gas and Electric Light Company, D.T.E. 99-18, at 83 (2001); D.T.E. 98-51, at 120; D.P.U. 88-135/151, at 125. As stated above, FEA and Sunrun and EFCA also use different growth rates than the Companies' growth rate (Exhs. FEA-MPG-1, at 55-64 (Corrected); FEA-MPG-8 through FEA-MPG-12; FEA-MPG-14; SREF-DJG-1, App. C, at 6-10; SREF-DJG-8; SREF-DJG-9).

The Department finds that both the Companies' and intervenors' approaches are logical and reasonable. Further, there is no evidence to establish that investors rely overwhelmingly on one approach over the other. Therefore, we find that all approaches provide a credible basis for evaluating a determination of the Companies' allowed ROE. The Department has found that investors' heavy reliance on EPS forecasts gives credence to the

Attorney General's argument that investors are aware of upward biases. D.P.U. 13-75, at 302. Accordingly, the Department will take these biases into consideration in evaluating the DCF analyses.

8. Capital Asset Pricing Model

a. Companies Proposal

The Companies use the CAPM to estimate the cost of equity for its proxy group (Exhs. ES-RBH-1, at 37; ES-RBH-5; ES-RBH-6; ES-RBH-7). The application of the Companies' CAPM results in eight individual costs of equity estimates, ranging from 9.16 percent to 11.46 percent (Exhs. ES-RBH-1, at 40, 74; ES-RBH Rebuttal-1, at 163; ES-RBH-Rebuttal-6). Eversource asserts that it considered these results when determining its proposed ROE (Exhs. ES-RBH-1, at 6, 37; ES-RBH-Rebuttal-6).

The CAPM is a market-based investment model based on capital markets theory and modern portfolio theory. In the CAPM, the required rate of return on common equity is equal to the expected risk free rate of return plus a premium for the implicit systematic risk of the security (Exh. ES-RBH-1, at 37-38). There are three necessary components to calculate the cost of equity in the CAPM: (1) an expected risk free rate of return; (2) the market risk premium; and (3) the beta, a measure of systematic risk (Exhs. ES-RBH-1, at 37-38; ES-RBH-5; ES-RBH-6; ES-RBH-7).³⁶³

The Companies calculated a market risk premium range of 9.16 percent to 11.46 percent based on DCF analyses (Exhs. ES-RBH-Rebuttal-1, at 163;

³⁶³ The beta of a stock measures the stock's volatility relative to that of the rest of the market. Betas for utility stocks are usually less than 1.0, which indicates a lower variability and hence lower risk relative to the market.

Sch. ES-RBH-Rebuttal-6). The Companies first used the current and forecasted 30-year Treasury bond yields to arrive at current, near-term, and long-term risk free rates (Exhs. ES-RBH-1, at 39; ES-RBH-5; ES-RBH-6; ES-RBH-7). The CAPM market risk premium is derived from the total return on the overall market minus the risk free rate of return. The Companies developed a range of risk-free rates from 2.97 percent to 3.43 percent, relying on the current 30-year Treasury bond rates as published in Bloomberg, as well as the near- and long-term projected 30-year Treasury bond rates based on interest rate forecasts published in Blue Chip Financial Forecasts (Exhs. ES-RBH-Rebuttal-1, at 163; ES-RBH-Rebuttal-6).³⁶⁴ The Companies then developed ex-ante market risk premiums based on data from both Bloomberg and Value Line by calculating their respective estimated market required returns less the Treasury bond yield (Exhs. ES-RBH 1, at 39-40; ES-RBH-5; ES-RBH-7).

More specifically, the Companies obtained beta coefficients for their proxy group from Bloomberg (0.603) and Value Line (0.73) (Exhs. ES-RBH-1, at 40; ES-RBH-6). Using these beta coefficients in combination with separate Bloomberg and Value Line data and current, near term, and long-term risk free rates, Eversource then calculated four Bloomberg market DCF-derived CAPM results and four Value Line market DCF-derived CAPM results (Exhs. ES-RBH-1, at 40; ES-RBH-7).

³⁶⁴ Blue Chip Financial Forecasts is a publication product of Wolters Kluwer Legal & Regulatory U.S., which provides top analysts' forecasts of U.S. and foreign interest rates and currency values, and the factors that influence those forecasts.

b. Attorney General Proposal

The Attorney General uses a traditional CAPM approach in which the cost of equity is equal to the sum of the interest rate on risk-free bonds and an equity risk premium (“ERP”) (i.e., the excess return that an investor expects to receive above the risk-free rate for investing in stocks) (Exhs. AG-JRW-1, at 62; AG-JRW-11, at 1). The Attorney General’s CAPM analysis results in a cost of equity of 7.90 percent (Exhs. AG-JRW-1, at 68-71; AG-JRW-11, at 1).

In her analysis, the Attorney General first used the upper bound of the six-month average yield on 30-year Treasury bonds (i.e., four percent) as the risk-free rate (Exhs. AG-JRW-1, at 63; AG-JRW-11). The Attorney General then calculated an estimated market risk premium of 5.5 percent, in the upper end of a range of market risk premiums between four percent and six percent (Exhs. AG-JRW-1, at 69; AG-JRW-11, at 1, 5-6). The Attorney General based her market risk premium on analysis of numerous surveys of financial professionals, including financial forecasters, chief financial officers, and academics (Exhs. AG-JRW-1, at 69-71; AG-JRW-11, at 1). To calculate the beta coefficient, the Attorney General performed a regression analysis of the returns of the companies in her proxy group against the return of the Standard & Poor’s 500 Index (“S&P 500”),³⁶⁵ representing the market, which resulted in a median beta coefficient of 0.70 percent (Exhs. AG-JRW-1, at 71; AG-JRW-11, at 1, 3). The Attorney General then multiplied the

³⁶⁵ The S&P 500 is an American stock market index based on the market capitalizations of 500 large companies having common stock listed on the New York Stock Exchange or the NASDAQ Stock Market.

estimated market risk premium of 5.5 percent by the beta coefficients of 0.70 percent to produce an expected ERP of 4.00 percent (Exhs. AG-JRW-1, at 71; AG-JRW-11, at 1). The risk-free rate of four percent added to beta of the expected risk premiums of 5.50 percent results in a cost of equity of 7.90 percent (Exhs. AG-JRW-1, at 71; AG-JRW-11, at 1).

c. FEA Proposal

FEA's CAPM analysis produces a range of returns from 8.17 percent to 9.40 percent, and FEA recommends using the high-end return of 9.40 percent (FEA-MPG-1, at 80 (Corrected); FEA-MPG-21). FEA uses a projected 30-year Treasury bond yield of 3.80 percent for its risk-free rate, a beta of 0.73 percent derived from the Companies' proxy group average, and a market risk premium range of 6.0 percent to 7.7 percent, incorporating both forward-looking and historic estimates (FEA-MPG-1, at 76-78, 80 (Corrected); FEA-MPG-19; FEA-MPG-20). The 7.70 percent market risk premium is a forward-looking estimate of the expected return on the market as represented by the S&P 500, and the 6.0-percent market risk premium is an estimate of the historical arithmetic average of the achieved total return on the S&P 500 covering the period 1926 through 2016 (Exh. FEA-MPG-1, at 77-78 (Corrected)).

d. Sunrun and EFCA Proposal

Sunrun and EFCA calculate a cost of equity of 7.5 percent through their CAPM analysis (Exhs. SREF-DJG-1, at 14-16; SREF-DJG-14). Sunrun and EFCA develop their CAPM by using a 3.04 percent risk-free rate based on the current 30-day average yield on 30-year Treasury bonds, a 0.73 beta, and an equity risk premium of 6.2 percent taken from selected ERP results supplied by expert surveys and prominent economists

(Exhs. SREF-DJG-1, at 14-16 & App. D at 8-12; SREF-DJG-10 through SREF-DJG-14).³⁶⁶

Sunrun and EFCA calculate their own ERP of 5.26 percent, but after comparing risk premiums offered in surveys and by financial forecasters, settle on the comparison group's highest ERP estimate of 6.2 percent (Exh. SREF-DJG-1, App. D at 11-12).³⁶⁷

e. Positions of the Parties

i. Attorney General

The Attorney General argues that the Companies' CAPM analysis produces long-term EPS growth rate projections that are highly overstated (Attorney General Brief at 81, citing Exh. AG-JRW-1, at 90-91). According to the Attorney General, the Companies' primary errors are with their use of inflated market risk premiums of 10.19 percent and 11.21 percent (Attorney General Brief at 79, citing Exh. AG-JRW-1, at 86-88). Further, the Attorney General contends that the Companies' long-term EPS growth rates of 11.04 percent and 12.00 percent are based on overly optimistic and upwardly biased Wall Street analysts' forecasts that are inconsistent with both historic and projected economic growth and earnings growth in the U.S. (Attorney General Brief at 80-81, citing Exh. AG-JRW-1, at 88-91; Attorney General Reply Brief at 69 n.29, citing Exh. AG-JRW-Surrebuttal-1, at 16).

³⁶⁶ Sunrun and EFCA develop their ERP in part by reviewing statistics contained in a survey of economists and institutions collected by the IESE Business School, the graduate business school of the University of Navarra (Exh. SREF-DJG-1, App. D at 8-9 n.15).

³⁶⁷ Sunrun and EFCA compare their ERP estimate with estimates from the following: IESE Business School Survey (5.3 percent); Graham & Harvey Survey (4.0 percent); Duff & Phelps Report (5.5 percent); and Dr. Aswath Damodaran (6.2 percent) (Exh. SREF-DJG-1, App. D at 12).

In this regard, the Attorney General maintains that long-term economic, earnings, and dividend growth rates in the United States indicate that historical long-term growth rates are in the five percent to seven percent range (Attorney General Brief at 80). Moreover, the Attorney General asserts that more recent trends suggest lower future economic growth than the long-term historic GDP growth, in the range of four percent to five percent for today's economy, and notes that the projected long-term GDP growth rate forecasts by economists and government agencies are currently in the four percent to five-percent range as well (Attorney General Brief at 81, citing Exh. AG-JRW-1, at 89-90).

Finally, the Attorney General argues that, given current low inflation and limited economic growth, the Companies' projected earnings growth rates, implied expected stock market returns, and equity risk premiums are not indicative of the realities of the economy (Attorney General Brief at 81-82, citing Exh. AG-JRW-1, at 91). According to the Attorney General, the interest rate forecasts used by the Companies for their CAPM ROE recommendations are higher than actual interest rates, and, therefore, should be given no weight (Attorney General Reply Brief at 72). Based on the above, the Attorney General concludes that the Department should reject the Companies' proposed CAPM findings and resulting ROE recommendations (Attorney General Brief at 82).

ii. FEA

FEA contends that the Companies have overstated a reasonable market return estimate in deriving the market risk premium for their CAPM by focusing on exaggerated DCF returns on the market (FEA Brief at 14-15, citing Exh. ES-RBH-Rebuttal-1, at 81-82). FEA

notes that the Companies critiqued FEA's 11.50 percent expected market return estimate as too low in relation to historical returns (FEA Brief at 14-15, citing Exh. ES-RBH-Rebuttal-1, at 81-82; FEA Reply Brief at 4). However, FEA maintains that the Companies' projection of a return significantly in excess of 12 percent between 1976 and 2015 exceeds the 40-year average and does not reflect the expectation that market returns can be strong in some years and weak in others (FEA Brief at 14-15, citing Exh. ES-RBH-Rebuttal-1, at 81-82). FEA asserts that its forward-looking expected return on the market more accurately reflects expected market returns than historical returns, and, therefore, produces a more reasonable CAPM result than those recommended by the Companies (FEA Reply Brief at 4).

iii. Sunrun and EFCA

Sunrun and EFCA argue that the Companies' CAPM analysis is flawed because it uses an ERP more than twice as high as the estimate reported by "thousands of experts" (SREF and EFCA Brief at 20, citing Exh. SREF-DJG-1, at 13). Sunrun and EFCA also fault the Companies for deriving their ERP by comparing Treasury note returns and authorized utility ROEs (SREF and EFCA Brief at 20, citing Exh. ES-RBH-Rebuttal at 138-139). Sunrun and EFCA assert that their 6.2 percent ERP estimate, which they claim is based on ERP data compiled in surveys and by economists rather than utility commission ROE awards, is more credible than the 11.21 percent ERP the Companies use as an input for their CAPM analysis (SREF and EFCA Brief at 20, citing Exh. SREF-DJG-1, at 14). Accordingly, SREF and EFCA recommend that the Department find that the Companies have

failed to meet their burden of proving the propriety of their proposed ROE (SREF and EFCA Brief at 19).

iv. Companies

The Companies argue that the Attorney General's CAPM calculation must be rejected because the equity risk premium she relied on assumes market returns that do not make theoretical or practical sense (Companies Brief at 522, citing Exh. ES-RBH-Rebuttal-1, at 47-48). Further, the Companies contend that the Attorney General's CAPM analyses do not reflect fundamental risk-return relationships (Companies Brief at 522). The Companies also disagree with Sunrun and EFCA's critique of using authorized returns as an input and FEA's low expected market return relative to long-term historical market experience (Companies Brief at 534-535, 537).

The Companies dismiss the Attorney General's claim that reliance on analysts' forecasts invalidates the Companies' CAPM approach (Companies Brief at 522). Using the same analysis as discussed above regarding the DCF model, the Companies maintain that recent evidence does not support any upward bias in analysts' forecasts in particular for electric utilities (Companies Brief at 522-523). Finally, the Companies contend that the Attorney General's 8.78 percent implied market return produced by her CAPM is illogical because it is lower than the 8.875 percent recommended ROE resulting from her DCF approach, despite the fact that a return for the overall market should be higher than the return for utilities, which are seen as less risky than the overall market (Companies Brief at 523, citing Exh. ES-RBH-Rebuttal-1, at 47-48).

In addition, the Companies argue that FEA's CAPM calculation of 9.70 percent is not reasonable and that FEA's expected market return is well below the long-term historical market experience (Companies Brief at 537, citing Exh. ES-RBH-Rebuttal-1, at 81-82). In particular, the Companies note that it is not reasonable that FEA's expected total market return estimates are in the bottom twelfth percentile of the 90 annual returns reported by Morningstar, Inc.³⁶⁸ (Companies Brief at 537, citing Exh. ES-RBH-Rebuttal-1, at 81-82).

For all these reasons, the Companies recommend that the Department reject the arguments of the intervenors associated with their CAPM analyses. Finally, the Companies assert that the Department should consider Eversource's CAPM results in addition to the Companies' DCF model analysis to augment any unreasonable results of the constant growth DCF model due to anomalous capital market conditions (Companies Brief at 523, citing Exh. ES-RBH-Rebuttal-1, at 79-81). Eversource concedes that the Department has placed "limited weight" on CAPM results in the past, but the Companies recommend giving their CAPM results some weight in setting NSTAR Electric's and WMECo's ROE (Companies Brief at 523, citing D.T.E. 01-56, at 113).

f. Analysis and Findings

The Department has previously found that the traditional CAPM as a basis for determining a utility's cost of equity has limited value because of a number of questionable assumptions that underlie the model. D.P.U. 10-114, at 318; D.P.U. 10-70, at 270;

³⁶⁸ Morningstar, Inc. provides a variety of investment services to financial advisors, asset management firms, retirement plans and retirement sponsors, individual investors, and private and institutional investors. These services include financial news, financial data, research, analysis, and modeling tools.

D.P.U. 08-35, at 207; D.T.E. 03-40, at 359-360; D.P.U. 956, at 54. For example, the Department has not been persuaded that long-term government bonds are the appropriate proxy for the risk-free rate, and has found that the coefficient of determination for beta is generally so low that the statistical reliability of the results is questionable. D.T.E. 01-56, at 113; D.P.U. 93-60, at 256-257; D.P.U. 92-78, at 113; D.P.U. 88-67 (Phase I) at 182-184.

Current federal monetary policy that is intended to stimulate the economy has pushed treasury yields to near historic lows (Exh. AG-JRW-1, at 30-31). Consequently, the Department has found that a CAPM analysis based on current treasury yields may tend to underestimate the risk-free rate over the long term and, thereby, understate the required ROE. D.P.U. 14-150, at 350; D.P.U. 12-25, at 427; D.P.U. 11-01/D.P.U. 11-02, at 416. The CAPM is based on investor expectations and, therefore, it is appropriate to use a prospective measure for the risk-free rate component. The Department has found that Blue Chip Financial Forecasts is widely relied on by investors and provides a useful proxy for investor expectations for the risk-free rate. D.P.U. 13-75, at 314.

Because the CAPM is considered an ex-ante, forward looking model that recognizes that investors are generally risk averse and will demand higher returns in exchange for assuming higher levels of investment risk, the Department finds that the Companies' approach based on DCF analyses is less reliable than the survey results of financial professionals, such as relied on by the Attorney General. D.P.U. 13-90, at 225-226; D.P.U. 13-75, at 314. The Department notes that a 2015 survey of over 8,000 academics,

financial analysts, and companies estimates a market risk premium of 5.5 percent, which is far lower than the 9.16 percent to 11.46 percent range used in the Companies' analysis (Exhs. ES-RBH-Rebuttal-1, at 163; ES-RBH-Rebuttal-6; AG-JRW-1, at 68; AG-JRW-11, at 6). To the extent that FEA's and Sunrun and EFCA's market risk premium analyses rely on forward-looking projections or survey results, the Department places more weight on the results of these analyses than on historic results offered by FEA. Accordingly, the Department places more weight on the Attorney General's and Sunrun and EFCA's approaches to developing a market risk premium, with somewhat less weight on the FEA's approach.

Based on the above considerations, the Department will place limited weight on the results of the respective CAPM estimates in determining the appropriate ROE. However, to the limited extent that we rely on CAPM estimates, the Department gives more weight to the Attorney General's and Sunrun and EFCA's proposed CAPM.

9. Risk Premium Model

a. Company Proposal

The Companies state that the risk premium model is based on the concept that investing in common stock is riskier than investing in debt and, therefore, investors require a higher rate of return for equity (Exh. ES-RBH-1, at 40-41).³⁶⁹ In the bond yield plus risk

³⁶⁹ The equity risk premium is defined as the incremental return that an equity investment provides over the risk-free rate (Exhs. ES-RBH-1, at 40-41; ES-RBH-8). The risk premium method of determining the cost of equity recognizes that common equity capital is more risky than debt from an investor's standpoint, and that investors require higher returns on stocks than on bonds to compensate for the additional risk. The general approach is relatively straightforward: (1) determine the historical spread

premium model used by the Companies, the cost of equity is derived by calculating a risk premium over the returns available to bondholders (Exh. ES-RBH-1, at 40-41). Based on data from 1,488 electric utility proceedings between January 1, 1980 and November 29, 2016, the Company derived a risk premium analysis producing a cost of equity range of 10.01 percent to 10.34 percent applicable to its proxy group (Exh. ES-RBH-8).

Eversource calculated the risk premium as the difference between: (1) actual authorized returns using data from 1,488 electric utility rate proceedings between January 1, 1980, and November 29, 2016; and (2) the then prevailing long-term Treasury yield (i.e., 30-year bonds) (Exhs. ES-RBH-1, at 41; ES-RBH-8). To account for the forward-looking return and interest rates, Eversource calculated the average return period between the filing of each case and the approval of rates, as well as the level of interest rates during the pendency of the proceedings (Exh. ES-RBH-1, at 41). To assess the relationship between the 30-year Treasury yield and the equity risk premium, Eversource relied on a statistical analysis that concluded there was a statistically significant inverse relationship between the 30-year Treasury yield and the equity risk premium (Exhs. ES-RBH-1, at 42-43; ES-RBH-8).

b. FEA Proposal

FEA's risk premium model is based on two estimates of an equity risk premium: the first estimating the difference between the required return on utility common equity investments and U.S. Treasury bonds; the second estimating the difference between common

between the return on debt and the ROE; and (2) add this spread to the current debt yield to derive an estimate of current equity return requirements. D.P.U. 13-75, at 316 n.201.

equity returns and contemporary A-rated utility bond yields by Moody's (Exh. FEA-MPG-1, at 68 (Corrected)). For both estimates, FEA used regulatory commission-authorized returns as the proxy for the required return on utility common equity (Exh. FEA-MPG-1, at 68 (Corrected)).

In estimating the risk premium on Treasury bonds, FEA measured the difference between utility common equity returns and Treasury bond yields on an annual basis for each year over the period 1986 through 2016, noting that utility stocks consistently traded at a premium to book value (Exhs. FEA-MPG-1, at 68-69 (Corrected); FEA-MPG-15). This analysis produced a range of equity risk premiums over U.S. Treasury bond yields of 4.25 percent to 6.72 percent for five-year averages, and 4.38 percent to 6.40 percent for ten-year averages (Exhs. FEA-MPG-1, at 69 (Corrected); FEA-MPG-16). FEA incorporated five- and ten-year rolling average risk premiums over the study period to gauge risk premium variability over time and to mitigate the impact of anomalous market conditions and skewed risk premiums over an entire business cycle (Exhs. FEA-MPG-1, at 69 (Corrected); FEA-MPG-16; FEA-MPG-17).

The risk premiums over contemporary Moody's A-rated utility bond yields ranged from 2.88 percent to 5.57 percent for the five-year rolling average and 3.20 percent to 5.04 percent for the ten-year rolling average (Exhs. FEA-MPG-1, at 69 (Corrected); FEA-MPG-17). FEA weighted the resulting high-end risk premiums more heavily than the low-end risk premiums and determined a range of Treasury bond and utility bond risk

premiums between 4.9 percent and 6.1 percent that resulted in ROEs of 9.5 percent to 9.9 percent (Exh. FEA-MPG-1, at 73-74 (Corrected)).

c. Sunrun and EFCA Proposal

Sunrun and EFCA calculate the ERP using an implied risk premium model similar to the constant growth DCF model that determines the discount rate for the entire market, and uses as inputs the current value of the S&P 500, dividends paid by the entire market, and potential dividends including stock buybacks (Exh. SREF-DJG-1, App. D at 9-10). After collecting data for the S&P 500, operating earnings, dividends, and buybacks for the S&P 500 covering the previous six years, Sunrun and EFCA calculated the dividend yield, buyback yield, gross cash yield for each year, and the compound annual growth rate from operating earnings (Exh. SREF-DJG-1, App. D at 11). Combining these inputs with the risk-free rate and current value of the index, Sunrun and EFCA calculated a current expected return on the entire market of 8.3 percent and then subtracted the risk-free rate to produce an implied equity risk premium of 5.26 percent (Exh. SREF-DJG-1, App. D at 11). As discussed above, Sunrun and EFCA compared their implied equity risk premium with selected ERPs from expert surveys and economists and found the average to be close to their own (Exh. SREF-DJG-1, App. D at 11-12; SREF-DJG-13).

d. Positions of the Parties

i. Attorney General

The Attorney General asserts that the Companies' application of the bond yield plus risk premium model is flawed for four reasons (Attorney General Brief at 83). First, the Attorney General argues that the Companies' method produces an inflated measure of the risk

premium because it is based on historic authorized ROEs less Treasury yields, and then is applied to projected Treasury yields that always are forecasted to increase (Attorney General Brief at 83). Second, the Attorney General contends that the Companies' overall approach improperly uses authorized ROEs as an input to the model, and that such an approach is more of a gauge of public utility commission behavior than a consideration of investor behavior (Attorney General Brief at 83-84, citing Exh. AG-JRW-1, at 94). In this regard, the Attorney General claims that in setting ROEs, regulatory commissions evaluate capital market data such as dividend yields, expected growth rates, interest rates, as well as rate case specific regulatory information (Attorney General Brief at 83-84, citing Exh. AG-JRW-1, at 94). Further, the Attorney General argues that the Companies' risk premium analysis and resulting ROE recommendations rely on forecasted interest rates that are higher than actual interest rates (Attorney General Reply Brief at 72).

Third, the Attorney General argues that a comparison of the Companies' risk premium results to actual authorized ROEs for electric utility companies confirms the errors in the Companies' approach (Attorney General Brief at 84). The Attorney General notes that authorized ROEs for electric distribution companies have decreased in recent years, from 10.01 percent in 2012, to 9.8 percent in 2013, to 9.76 percent in 2014, 9.58 percent in 2015, and to 9.60 percent in 2016 (Attorney General Brief at 84, citing Exh. AG-JRW-1, at 14). Fourth, the Attorney General asserts that Eversource's long-term projected Treasury bond yield of 4.35 percent is 100 basis points above current yields and, therefore, is not reasonable (Attorney General Brief at 83, citing Exh. AG-JRW-1, at 93).

ii. FEA

FEA contends that the Companies overstate the significance of the inverse relationship between equity risk premiums and interest rates, and fault the Companies for using the inverse relationship as the sole driver of their risk premium study (FEA Brief at 12). FEA avers that, while academic studies have shown an inverse relationship among these variables in the past, researchers have found that the relationship changes over time and is influenced by changes in perception of risk between bond investments and equity investments (FEA Brief at 12; FEA Reply Brief at 5). Arguing that the inverse relationship is not based simply on changes to interest rates, FEA asserts that the Companies' exclusive reliance on interest rates as the explanatory variable for the equity risk premium takes the notion of a simplistic inverse relationship too far (FEA Brief at 12). FEA contends that all relevant factors affecting how investors perceive the relative risk of equity and bond investments should be considered, not just interest rates (FEA Brief at 12, citing Exh. FEA-MPG-1, at 101 (Corrected)). For these reasons, FEA argues that the Companies' claims related to a fair return on equity based on a risk premium methodology are without merit and should be rejected (FEA Reply Brief at 5).

iii. Sunrun and EFCA

Sunrun and EFCA argue that the Companies' ERP based on the comparison of returns on Treasury notes to returns on equity awarded by regulatory commissions is less credible than Sunrun and EFCA's ERP based on market data (Sunrun and EFCA Brief at 20, citing Exh. ES-RBH-Rebuttal, at 138-139). Sunrun and EFCA further note that the Companies'

ERP of 11.21 percent is more than twice as high as the estimate reported by thousands of experts across the country (Sunrun and EFCA Brief at 20, citing Exh. SREF-DJG-1, at 14).

iv. Companies

The Companies dispute the Attorney General's and Sunrun and EFCA's argument that the Companies' bond yield plus risk premium approach gauges regulatory commission behavior rather than investor behavior (Companies Brief at 523, 534). The Companies argue that regulatory decisions reflect market based analyses (Companies Brief at 523, 534, citing Exh. ES-RBH-Rebuttal-1, at 48-49). Further, the Companies contend that because authorized returns are publicly available, such data are to some degree reflected in investors' return expectations and requirements (Companies Brief at 523, 534, citing Exh. ES-RBH-Rebuttal-1, at 48-49). The Companies maintain that Sunrun and EFCA's reliance on IESE Business School survey responses that excluded authorized return data for estimating an ERP, incorrectly includes market risk premium data in developing Sunrun and EFCA's ERP (Companies Brief at 534, citing Exh. ES-RBH-Rebuttal-1, at 139-140).³⁷⁰ For these reasons, the Companies assert that authorized returns are a reasonable measure of investor required returns (Companies Brief at 523, citing Exh. ES-RBH-Rebuttal-1, at 48-49).

The Companies also maintain that FEA's risk premium calculation is flawed, and they contend that FEA's method ignores the important inverse relationship between the risk

³⁷⁰ The Companies state that the IESE Business School survey sources Sunrun and EFCA cited were references used to justify use of market risk premiums, and therefore Sunrun and EFCA's survey included market risk premium data that is inappropriate for the Bond Yield Plus Risk Premium approach (Exh. ES-RBH-Rebuttal-1, at 139).

premium and level of interest rates, whether measured by Treasury or utility bond yields (Companies Brief at 537-538, citing Exh. ES-RBH-Rebuttal-1, at 86). According to the Companies, FEA's method understates the required risk premium in the current market (Companies Brief at 537-538, citing Exh. ES-RBH-Rebuttal-1, at 86). The Companies also contend that the low end of FEA's risk premium results is far lower than any ROE authorized since at least 1986 and, as such, has no relevance in estimating the ROE in the instant case (Companies Brief at 538, citing Exh. ES-RBH-Rebuttal-1, at 86).

Finally, the Companies note that in the past, the Department has viewed the risk premium approach as a "supplemental approach" in determining the level of ROE (Companies Brief at 523-524, citing D.P.U. 07-71, at 137). Based on the above, Eversource argues that the Department should at least supplement its calculation of the Companies' ROE with the risk premium approach (Company Brief at 524).

e. Analysis and Findings

The Department has repeatedly found that an equity risk premium analysis can overstate the amount of company-specific risk and, therefore, the cost of equity. D.P.U. 10-114, at 322; D.P.U. 88-67 (Phase I) at 182-184. More specifically, the Department has found that the return on long-term corporate or public utility bonds may have risks that could be diversified with the addition of common stock in investors' portfolios and, therefore, the risk premium model overstates the risk accounted for in the resulting cost of equity. D.P.U. 10-114, at 322; D.P.U. 90-121, at 171; D.P.U. 88-67 (Phase I) at 182-183. Nonetheless, the Department has acknowledged the value of the risk premium model as a

supplemental approach to other ROE models. D.P.U. 10-114, at 322; D.P.U. 07-71, at 137; D.T.E. 99-118, at 85-86.

In the instant case, the Companies' and FEA's risk premium analyses are flawed. First, the Department has recognized the circularity inherent in the use of authorized utility returns to derive the risk premium. D.P.U. 13-75, at 319; D.P.U. 90-121, at 171; D.P.U. 88-67 (Phase I) at 182-183. In addition, the Department has criticized the use of corporate bond yields in determining the base component of the risk premium analysis, and we are not convinced that the Companies' or FEA's substitution of projected Treasury debt yields provide a better approach. D.P.U. 09-39, at 388-389; D.P.U. 08-35, at 202; D.P.U. 90-121, at 171. The Companies and FEA use projected cost of Treasury debt in this model, suggesting that the risk premium approach is forward-looking and, therefore, and maintain that using the forward-looking approach is appropriate (Exhs. ES-RBH-8; FEA-MPG-1, at 68-74 (Corrected)). The Department disagrees. The risk premium model is not a forward looking approach, and is, instead, based on current market conditions. See D.P.U. 13-75, at 319; D.P.U.12-25, at 433. Sunrun and EFCA's calculation of the S&P 500's current value in their implied equity risk premium more closely approaches current market conditions, but Sunrun and EFCA's application of the risk premium among other models produces an ROE that is too low (Exhs. SREF-DJG-1, App. D at 11-12; SREF-DJG-1, App. D at 1-3). Accordingly, the Department finds that current treasury yields are more appropriate than projected yields for use in a risk premium analysis. For

these reasons, the Department finds that Eversource's risk premium model overstates the required ROE for the Companies.

10. Flotation Costs

a. Companies' Proposal

The Companies factor flotation costs into their proposed ROE and assert that such costs must be considered part of capital costs that are properly reflected on the balance sheet under "paid in capital" rather than current expenses (Exh. ES-RBH-1, at 39-51). According to the Companies, flotation costs represent a permanent reduction to common equity, and, therefore, they should be recovered similar to the recovery of debt issuance costs (Exh. ES-RBH-Rebuttal at 141-143).

To determine flotation costs, the Companies use the equity issuing costs incurred in the two most recent stock issuances for Eversource Energy and its proxy group, and they modified the DCF calculation to derive the dividend yield that would reimburse investors for direct issuance costs to develop a flotation cost estimate of 0.12 percent (Exhs. ES-RBH-1, at 51; ES-RBH-11).³⁷¹ Eversource states, however, that it did not simply increase its proposed ROE by twelve basis points to reflect the effect of the flotation costs. Instead, the Companies state that they considered the effect of these flotation costs in addition to other business risks when determining the appropriate ROE within the range of results produced by the various cost of equity models (Exh. ES-RBH-1, at 50).

³⁷¹ The Companies used the two most recent open market common stock issuances for Eversource Energy (2009 and 2005) and for the companies in their proxy group (Exh. ES-RBH-11, at 1).

b. FEA Proposal

FEA states that flotation cost adders are inappropriate because such costs are approximated by the Companies and therefore are not known and measurable (Exh. FEA-MPG-1, at 111 (Corrected)). Additionally, FEA notes that NSTAR Electric and WMECo are not publicly traded companies, but rather are subsidiaries of a publicly traded company and the Companies do not incur costs related to selling common stock (Exh. FEA-MPG-1, at 111 (Corrected)).

c. Sunrun and EFCA Proposal

Sunrun and EFCA consider the recovery of flotation costs to be inappropriate in the instant case (Exh. SREF-DJG-1, at 22). Sunrun and EFCA state that the Companies' claim that flotation costs are "out of pocket" expenses is misleading because such costs are embedded in an underwriting spread (*i.e.*, the difference between the price at which the underwriter purchases the firm's shares and the price at which the underwriter sells the shares to investors) (Exh. SREF-DJG-1, at 22-23). Sunrun and EFCA also state that the market already accounts for flotation costs since investors are aware of underwriter's fees and know that flotation costs are priced into shares (Exh. SREF-DJG-1, at 23). Finally, Sunrun and EFCA oppose any effort to increase a proposed cost of equity proposal that they consider already to be far above Eversource's true required return (Exh. SREF-DJG-1, at 24).

d. Positions of the Parties

i. Attorney General

The Attorney General argues that the Companies' flotation cost adjustment results in overstating their required ROE (Attorney General Brief at 63). No other intervenors addressed flotation costs on brief.

ii. Companies

The Companies argue that flotation costs for stock issuances must be considered part of capital costs rather than current expenses on the income statement (Companies Brief at 289, citing Exh. ES-RBH-1, at 49). According to the Companies, flotation costs are incurred over time and, although a great majority of these costs are incurred prior to the test year, they remain part of the cost structure during the test year and beyond (Companies Brief at 289, citing Exh. ES-RBH-1, at 49).

e. Analysis and Findings

The Department has previously rejected issuance cost adjustments for the purpose of determining ROE. D.P.U. 90-121, at 180; D.P.U. 88-67 (Phase I) at 193; Western Massachusetts Electric Company, D.P.U. 86-280-A at 112 (1987); D.P.U. 85-137, at 100.

The Companies have not persuaded us to depart from our precedent here. The Companies' proposal to weigh flotation costs when establishing its ROE relies on issuance costs that investors are well aware of when they enter the market for publicly traded stocks.

Therefore, the Companies' proposal suffers from the same defects that the Department has previously identified, namely the double-counting of flotation costs. D.P.U. 10-70, at 259; D.P.U. 88-67 (Phase I) at 193; D.P.U. 85-137, at 100.

The Department allows companies to recover issuance costs associated with common stock by amortizing those costs over a period of time. 220 CMR 51.02, 18 CFR Ch. 1, Subchapter C, Part 101, Other Income and Deductions, Account 425; 220 CMR 50, Income Accounts, Account 425. NSTAR Electric and WMECo, however, are wholly-owned subsidiaries of Eversource Energy, and, therefore, have no publicly-traded stock on which to incur flotation costs (Exh. AG-1-2, Att. (a) at 8 (Supp. 1)). Moreover, neither NSTAR Electric nor WMECo have issued any significant amount of common stock for a number of years, and thus do not have any flotation costs. See Massachusetts Electric Company, D.P.U. 800, at 51 (1982) (common stock issued to parent; flotation allowances inappropriate for subsidiary company); Western Massachusetts Electric Company, D.P.U. 20279, at 37 (1980) (subsidiary of holding company does not experience issuance costs; to the extent issuance costs affect marketing of holding company's securities, it has no bearing on securities of subsidiary); Massachusetts Electric Company, D.P.U. 19376, at 7-13 (1979) (stock issuance selling costs of parent company not to be considered in setting cost of common equity in subsidiary's rate case). Department records indicate that, aside from several minimal common stock issues made in connection with merger and acquisition petitions, NSTAR Electric's most recent common stock issuance was approved in Boston Edison Company, D.P.U. 94-160 (1994). WMECo's most recent common stock issuance was approved in Western Massachusetts Electric Company, D.P.U. 13403 (1960). For these reasons, the Department will not take flotation costs into consideration when determining the Companies' required ROE.

11. Conclusion

The standard for determining the allowed ROE is set forth in Bluefield and Hope. The allowed ROE should preserve a company's financial integrity, allow it to attract capital on reasonable terms, and be comparable to returns on investments of similar risk. Bluefield at 692-693; Hope at 603, 605. The allowed ROE should be determined "having regard to all relevant facts." Bluefield at 692.

The Companies recommend that the Department approve an ROE of 10.50 percent, based on an ROE performance range of 10.0 percent to 10.75 percent. The Attorney General recommends an ROE of 8.875 percent. Other parties made the following recommendations: FEA, 9.35 percent; Sunrun and EFCA, 8.75 percent; Cape Light Compact, 8.75 percent; and UMass, 9.5 percent. The Department has found that both quantitative and qualitative factors must be taken into account in determining an allowed ROE. D.P.U. 11-01/D.P.U. 11-02, at 424; D.P.U. 08-27, at 134-138; D.T.E. 02-24/25, at 229-231; D.P.U. 92-78, at 115; D.P.U. 89-114/90-331/91-80 (Phase I) at 224-225.; see also Boston Edison Company v. Department of Public Utilities, 375 Mass. 1, 11 (1978); Boston Gas Co. v. Department of Public Utilities, 359 Mass. 292, 305-306 (1971). Thus, in determining an appropriate ROE for the Companies, the Department first evaluates the quantitative factors presented in this case.

The use of empirical analyses in this context is not an exact science. A number of judgments are required in conducting a model based rate of return analysis. Even in studies that purport to be mathematically sound and highly objective, crucial subjective judgments

are made along the way and necessarily influence the end result. Western Massachusetts Electric Company, D.P.U 18731, at 59 (1977). Each level of judgment to be made in these models contains the possibility of inherent bias and other limitations. D.T.E. 01-56, at 117; D.P.U. 18731, at 59.

As discussed above, the evidence demonstrates that each equity cost model used by the Companies, the Attorney General, FEA, and Sunrun and EFCA suffers from a number of simplifying and restrictive assumptions. Applying them to the financial data of a proxy group of companies could provide results that may not be reliable for the purpose of setting the Companies' ROE. For example, we note the limitations of the DCF models, including the simplifying assumptions that underlie the constant growth form of the model, and its element of circularity, as well as the inherent limitations in comparing the Companies to publicly traded companies. In particular, we find that the Companies' DCF analysis overestimates the cost of equity by minimizing the low-outlier estimates. We also find that the Attorney General's DCF model retains some elements of circularity because investor expectations depend upon regulatory decisions. Similarly, the Department finds the Attorney General's and FEA's use of high P/E ratios will affect the results of their analyses, as does Sunrun and EFCA's assumption that a company's long-term growth rate cannot exceed that of the national economy.

The Department further finds that the CAPM analyses also are flawed because of the simplifying assumptions underlying CAPM theory and the subjectivity inevitable in estimating market risk premiums. To the extent we rely on the CAPM estimates, we give more weight

to the Attorney General's and FEA's analyses, with some weight on Sunrun and EFCA's analysis, because the magnitude of the deficiencies within the Companies' proposed CAPM, including the estimate of a market risk premium, is greater. Finally, we find that the Companies' risk premium approach suffers from a number of limitations and tends to overstate NSTAR Electric's and WMECo's required ROE.

While the results of analytical models are useful, the Department must ultimately apply its own judgment to the evidence to determine an appropriate ROE. We must apply to the record evidence and arguments considerable judgment and agency expertise to determine the appropriate use of the empirical results. Our task is not a mechanical or model driven exercise. D.P.U. 08-35, at 219-220; D.P.U. 07-71, at 139; D.T.E. 01-56, at 118; D.P.U. 18731, at 59; see also Boston Edison Company v. Department of Public Utilities, 375 Mass. 1, 15 (1978).³⁷² The Department must account for additional factors specific to a company that may not be reflected in the results of the models.

We note that a portion of the revenues of the companies in both proxy groups is derived from unregulated and competitive lines of business (Exhs. AG-JRW-4, at 1; AG-14-6; AG-1-2, Att. (a) at 8 (Supp. 1)). All else equal, this mix of regulated and

³⁷² As the Department stated in New England Telephone and Telegraph Company, D.P.U. 17441, at 9 (1973):

Advances in data gathering and statistical theory have yet to achieve precise prediction of future events or elimination of the bias of the witnesses in their selection of data. Thus, there is no irrefutable testimony, no witness who has not made significant subjective judgments along the way to his conclusion, and no number that emerges from the welter of evidence as an indisputable "cost" of equity.

unregulated operations would tend to overstate the proxy groups' risk profiles relative to that of the Companies. Therefore, in applying this comparability standard, we will consider such risk differentials when weighing the results of the models used to estimate the Companies' allowed ROE.

Turning to rate mechanisms, as set forth in further detail in the Department's subsequent Order addressing rate design, the Department will consider NSTAR Electric's implementation of a revenue decoupling mechanism. The Department previously approved a revenue decoupling mechanism for WMECo in D.P.U. 10-70, at 40-43, and has directed all gas and electric distribution companies to file for revenue decoupling in a base rate proceeding. D.P.U. 07-50-A at 84. The Department has found that revenue decoupling mechanisms can act to reduce the variability of a company's revenues and, accordingly, reduce its risks. See D.P.U. 09-39, at 398; D.P.U. 09-30, at 371-372; D.P.U. 07-50-A at 72-73. In addition, the Department granted in this Order establishment of a PBR mechanism, which, among other things, allows the Companies to implement an annual rate adjustment to support the net increase in rate base arising from the annual capital additions that the Companies make to upgrade their distribution system (see Section IX above). In addition, as described in Section VIII.J above, the Department has approved the Companies' proposal as to the calculation of property taxes for communities using the NBV method.

In the instant case, the Companies and the intervenors debate the cause-effect connection between rate mechanisms and the cost of equity (Exhs. ES-RBH-1, at 44-48; ES-RBH-Rebuttal-1, at 107-114; AG-JRW-1, at 95-97; AG-JRW-Surrebuttal-1, at 13, 26;

FEA-MPG-1, at 20-23, 107-110). The Companies state that, even though such mechanisms in general reduce risk, separating peer companies by levels of risks enough to affect the cost of equity is infeasible where such mechanisms are common and because investors do not reduce their return requirements in response (Exhs. RBH-1, at 47-48; ES-RBH-10; ES-RBH-Rebuttal-1, at 108-111; DPU-31-16; AG-14-9; AG-14-10; Tr. 4, at 735-736). Although many companies in both proxy groups employ some form of revenue stabilization or revenue decoupling mechanism, the Department finds that the degree of revenue stabilization varies among the companies, and calculating their relative impacts is infeasible (Exhs. ES-RBH-10; AG-JRW-4). We take these uncertainties into consideration when determining an ROE.

Finally, there are other qualitative factors that the Department will consider in determining a company's allowed ROE. It is both the Department's long-standing precedent³⁷³ and accepted regulatory practice³⁷⁴ to consider qualitative factors such as

³⁷³ For example, the Department has set a utility's ROE at the low end of a range of reasonableness upon a showing that a utility's management performance was deficient. D.P.U. 12-86, at 257-258 (deficiencies regarding affiliate transactions and selection of rate case consultants warranted ROE at lower end of reasonable range); D.P.U. 11-43, at 218-222 (company's improper handling of a billing error, failure to provide acceptable unaccounted for water report, improper flushing practices, and insufficient communication with customers warranted ROE at lower end of reasonable range); D.P.U. 11-01/D.P.U. 11-02, at 424-426 (company shortcomings in storm response warranted ROE at lower end of reasonable range); D.P.U. 10-114, at 339-340 (company activities related to Department-ordered audit warranted ROE at lower end of reasonable range); D.P.U. 08-35, at 220 (customer service deficiencies warranted ROE at lower end of reasonable range); D.P.U. 08-27, at 136, 137 (failure to conduct competitive bidding for outside consultants and provide detailed rate case expense invoices warranted ROE at lower end of reasonable range); see also

management performance and customer service in setting a fair and reasonable ROE. With respect to a company's performance, the Department has determined that where a company's actions have had the potential to affect ratepayers or have actually done so, the Department may take such actions into consideration in setting the ROE. D.P.U. 11-01/D.P.U. 11-02, at 424; D.T.E. 02-24/25, at 231; D.P.U. 85-266-A/271 A at 6-14. Thus, the Department may set ROEs that are at the higher end or lower end of the reasonable range based on above average or subpar management performance and customer service. See, e.g.,

D.P.U. 12-86, at 274-276 & n.181 (deficiencies regarding affiliate transactions and selection of rate case consultants warranted ROE at lower end of reasonable range);

D.P.U. 11-01/D.P.U. 11-02, at 424, 427 (company shortcomings in storm response warranted ROE at lower end of reasonable range). In this case, the Department has reviewed the Companies' annual service quality reports filed with us, and notes that the Companies

D.P.U. 85-266-A/271-A at 172 (failure to fulfill public service obligations warranted ROE at lower end of reasonable range).

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See, e.g., In re Citizens Utilities Company, 171 Vt. 447, 453 (2000) (general principle that rates may be adjusted depending on the adequacy of the utility's service and the efficiency of its management); US West Commc'ns, Inc. v. Washington Utils. and Transp. Comm'n, 134 Wash.2d 74, 121 (1998) (a utility commission may consider the quality of service and the inefficiency of management in setting a fair and reasonable rate of return); North Carolina ex rel. Utils. Comm'n v. Gen. Tel. Company of the Southeast, 285 N.C. 671, 681 (1974) (the quality of the service rendered is, necessarily, a factor to be considered in fixing the just and reasonable rate therefore); Gulf Power Company v. Wilson, 597 So.2d 270, 273 (1992) (regulator was authorized to adjust rate of return within reasonable range to adjust for mismanagement); Wisconsin Pub. Serv. Corp. v. Citizens' Util. Bd., Inc., 156 Wis.2d 611, 616 (1990) (prudence is a factor regulator considers in setting utility rates and can affect the allowed ROE).

have met or exceed all of their performance standards for the years 2013 through 2016.

Service Quality Reports for Electric Distribution Companies, D.P.U. 17-SQ-10 through 14, at 3 (2017); Service Quality Reports for Electric Distribution Companies, D.P.U. 16-SQ-10 through 14, at 3 (2016); Service Quality Reports for Electric Distribution Companies, D.P.U. 15-SQ-10 through 14, at 3-5 (2016); Service Quality Reports for Electric Distribution Companies, D.P.U. 14-SQ-10 through 14, at 3-4 (2016). Moreover, the Department finds no evidence of systematic service quality shortcomings in other areas of the Companies' operations that warrant an adjustment to Eversource's allowed ROE.

Based on a review of the evidence presented in this case, the arguments of the parties, and the considerations set forth above, the Department finds that an allowed ROE of 10.0 percent is within a reasonable range of rates that will preserve the Companies' financial integrity, will allow it to attract capital on reasonable terms and for the proper discharge of its public duties, will be comparable to earnings of companies of similar risk and, therefore, is appropriate in this case.³⁷⁵ In making these findings, the Department has considered both qualitative and quantitative aspects of the parties' various methods for determining the

³⁷⁵ In setting this ROE, the Department has taken into consideration the amount of the storm fund assessment paid by the Companies pursuant to G.L. c. 25, § 18. See Fitchburg Gas and Electric Light Company at al. v. Department of Public Utilities, 467 Mass. 768 (2014).

Companies' proposed ROE, as well as the arguments of and evidence presented by the parties in this proceeding.³⁷⁶

XVII. PROPOSED TARIFF CHANGES AND FEES

A. Introduction

The current tariffs for NSTAR Electric and WMECo can be classified into four primary categories: (1) terms and conditions; (2) distribution rates; (3) reconciling rates; and (4) other provisions (Exh. ES-RDP-9, at 11). There are separate terms and conditions governing the provision of distribution service and the provisions associated with competitive suppliers (Exh. ES-RDP-9, at 11). The distribution rate tariffs are applicable to all customers taking service under retail rates (Exhs. ES-RDP-9, at 11). Reconciling rate tariffs govern all rates that require an annual reconciliation of costs and revenue (Exh. RDP-9, at 11). Finally, there are other provisions, including various riders that specify adjustments and services to the distribution rate tariffs (Exh. ES-RDP-9, at 11, 35).

Eversource proposes changes in various provisions of all four categories of tariffs. Eversource also proposes to consolidate, for effect January 1, 2018, the Companies' terms and conditions, reconciling rate tariffs, and the various other provisions (Exh. ES-RDP-9, at 17). In the sections below and in other sections of this Order, the Department addresses the proposed changes to the Companies' (1) terms and conditions, applicable to both distribution service and competitive suppliers; (2) certain reconciling rate tariffs; and (3) certain other provisions. The Companies' proposed changes to the distribution rate

³⁷⁶ In setting this ROE, the Department does not find any subpar management performance or customer service by the Companies that would warrant an adjustment to the ROE within the reasonable range.

tariffs, along with any reconciling rate tariffs and other provisions not specifically addressed in this Order will be discussed in our subsequent Order addressing rate design issues.

B. Proposed Terms and Conditions for Distribution Service

1. Introduction

The Companies explain that their Terms and Conditions for Distribution Service (“Terms and Conditions”), proposed M.D.P.U. No. 500, set forth rules for the provision of distribution service (Exh. ES-RDP-9, at 11). The Other Provisions describe adjustments and services that apply to the standard distribution rate tariffs (Exh. ES-RDP-9, at 11). The Companies explain that there is a significant amount of overlap in their current tariffs, and they propose to consolidate their Terms and Conditions and Other Provisions for effect January 1, 2018 (Exhs. ES-RDP-9, at 11, 17; ES-RDP-12; ES-RDP-14; RR-DPU-51, Att. (a) (proposed M.D.P.U. No. 500)). In consolidating the Terms and Conditions, the Companies compared the individual tariffs of the four legacy operating companies and incorporated the major provisions from each of the individual tariffs into the consolidated tariff (Exh. AG-46-2). The basis of the Companies’ proposed consolidated tariff is Commonwealth Electric Company’s current Terms and Conditions tariff (i.e., M.D.T.E. No. 300A) (Exh. AG-49-6).

Specifically, the Companies propose: (1) to adopt new definitions for service areas because of their rate consolidation proposal; (2) to adopt WMECo’s current language relating to the availability of station service power for distributed generation customers; (3) to replace references to standard offer service with references to basic service; (4) to adopt new

language regarding final bill provisions;³⁷⁷ (5) to update and consolidate the line extension provisions in Appendix B of the proposed Terms and Conditions; (6) to include a new Appendix C that lists the cities and towns in the Companies' service territory; (7) to include provisions on curtailment or interruption of service and on force majeure; and (8) to add new language on past due interest charges for generation service charges on standard complete billing service (Exhs. ES-RDP-9, at 19-20; AG-46-2).³⁷⁸

2. Positions of the Parties

a. Attorney General

i. Introduction

The Attorney General argues that the Department should: (1) eliminate the Companies' force majeure provision; (2) limit the Companies' obligation for meter and communication device installation to 30 days; and (3) eliminate language that limits the Companies' liability for curtailment or interruption of service (Attorney General Brief at 202). These arguments are discussed in further detail below.

ii. Force Majeure

The Attorney General opposes the Companies' proposed force majeure provision that exempts the Companies from liability from conditions over which the Companies have no

³⁷⁷ The Companies originally proposed final bill language (in Section II.F.3) that already existed in their proposed Terms and Conditions in Section II.B.5 (Exhs. AG-49-2; RR-DPU-51, Att. (a) at 5, 12-13). Therefore, the Companies proposed to restore the original language regarding customer notice of termination (Exh. AG-49-2, at 2; RR-DPU-51, Att. (a) at 12-13). No parties commented on this issue on brief.

³⁷⁸ Eversource also proposes to update the Schedule of Fees and Charges in Appendix A of the Terms and Conditions (Exh. ES-RDP-9, at 20). The Department will address this proposal separately in Section XVII.C below.

control (Attorney General Brief at 202, citing Exh. ES-RDP-14, at 181; Tr. 11, at 2254-2255). According to the Attorney General, the Companies' proposed language could preempt Department authority and is duplicative of the "Limitation of Liability" provision in the Terms and Conditions (Attorney General Brief at 202, citing Exh. ES-RDP-12, at 181). The Attorney General contends that only the Department or "a court of competent jurisdiction" determines whether the Companies "shall be excused from performing under the Schedule of Rates and ... not be liable for damages" due to a force majeure (Attorney General Brief at 203, citing Exh. ES-RDP-14, at 181).

Further, the Attorney General maintains that the Companies' "Limitation of Liability" provision exempts the Companies from liability for damages unless the Companies are negligent (Attorney General Brief at 203, citing Exh. ES-RDP-14, at 181). The Attorney General argues that a force majeure event outside the control of the Companies would not be caused by any action or omission that the Department would find as negligent (Attorney General Brief at 203). Therefore, the Attorney General concludes that the "Limitation of Liability" provision precludes the necessity of the Companies' force majeure provision in their proposed Terms and Conditions (Attorney General Brief at 203).

iii. Obligation for Meter and Communication Device Installation

The Attorney General argues that the Companies are providing themselves with more flexibility by changing their obligation for meter and communication device installation upon customer request from "within 30 days" to "if reasonably possible, within 30 days" (Attorney General Brief at 204, citing Exh. ES-RDP-14, at 166-167). According to the

Attorney General, any delay in the Companies' installation of metering or communication devices could delay restoration or initiation of service and could have an adverse impact on a customer's quality and cost of service (Attorney General Brief at 204, citing G.L. c. 164, §§ 122, 124(a)-124(i)). Moreover, the Attorney General asserts that the Companies state that they are not aware of any meter changes that were not completed within 30 days of a customer request (Attorney General Brief at 204, citing Exh. AG-49-6). Therefore, the Attorney General recommends that the Department exclude the Companies' proposed language "if reasonably possible" from Section II.D.1 of the proposed Terms and Conditions (Attorney General Brief at 204).

iv. Limitation of Liability for Curtailment or Interruption of Service

The Attorney General objects to the Companies' proposed tariff language that would automatically exclude the Companies' liability regarding curtailment or interruption of service (Attorney General Brief at 204, citing Exh. ES-RDP-14, at 181; Tr. 11, at 2254-2255). According to the Attorney General, the Companies' proposed language – "the Company may, in its sole judgment, curtail or interrupt electric service or reduce voltage and such action shall not be construed to constitute a default nor shall the Company be liable therefor in any respect" – could preclude a customer from resolving disputes (Attorney General Brief at 205, citing G.L. c. 164, §§ 1a, 1f, 1i, 139, 139a, 140, 142; 220 CMR 8.00, 10.00, 18.00, 19.00, 25.00).

The Attorney General asserts that the Companies' rationale that the language currently exists in the Commonwealth Electric tariff, and therefore, that the provision is not new, does

not justify implementing more stringent language for all of Eversource's customers (Attorney General Brief at 205, citing Exh. AG-49-16). Moreover, the Attorney General argues that only relying on the fact that the provision is preexisting does not explain why the Companies proposed to include it in the consolidated Terms and Conditions tariff (Attorney General Brief at 205). The Attorney General disputes the Companies' claim that the provision is necessary to maintain system integrity and she maintains that it is unnecessary (Attorney General Brief at 205). Therefore, the Attorney General recommends that the Department exclude the Companies' proposed language that limits the Companies' liability during curtailments or interruption of service (Attorney General Brief at 205).

b. Cape Light Compact

Cape Light Compact asserts that Eversource's proposed tariff M.D.P.U. No. 500 includes a provision entitled "Unusual Load Characteristics" (Cape Light Compact Brief at 70-71, citing ES-RDP-12-A at 8). According to Cape Light Compact, Eversource could invoke this provision in a way that subverts its obligations to integrate DER as part of grid modernization efforts (Cape Light Compact Brief at 70). Cape Light Compact argues that the Department's grid modernization Orders contemplate changing customer load patterns through all manners of distributed energy resources, such as microgrids, customer-sited storage, EVs, and distributed generation, for demand optimization (Cape Light Compact Brief at 70). Cape Light Compact notes that Eversource does not define the term "unusual characteristics" for load and reserves too much discretion for itself (Cape Light Compact Brief at 71). Cape Light Compact asserts that Eversource has an obligation to proactively

integrate all forms of DER and should clarify this definition so that grid modernization efforts may not constitute “unusual [load] characteristics” (Cape Light Compact Brief at 71).

c. Companies

i. Introduction

On brief, Eversource did not respond to the Attorney General’s arguments regarding the above issues. However, Eversource discussed its proposals at various points in this proceeding, as set forth below.

ii. Force Majeure

Eversource proposes a force majeure provision that would exempt the Companies from liability from damages as a result of a force majeure event, i.e., outside interferences beyond the Companies’ control (Exh. ES-RDP-14, at 181). The Companies states that, with the exception of the WMECo tariff, the force majeure provision appears in all of Eversource’s legacy tariffs (Tr. 11, at 2256-2257). Eversource argues that it is maintaining consistency among the legacy companies by including the force majeure provision in the proposed tariff (Tr. 11, at 2257).

iii. Obligation for Meter and Communication Device Installation

Eversource states that its proposed language providing for meter and communication device installation upon customer request “if reasonably possible, within 30 days” appears in its existing Commonwealth Electric Company legacy tariff (Exh. AG-49-6). Eversource also

states that it is unaware of any instance in which it was unable to install a meter within the 30-day time frame (Exh. AG-49-6).³⁷⁹

iv. Limitation of Liability for Curtailment or Interruption of Service

The Companies state that implementation of a provision for limitation of liability for interruption or curtailment of service is necessary to maintain system integrity and safety (Tr. 11, at 2257). Eversource states that, with the exception of the WMECo tariff, the limitation of liability for interruption or curtailment of service appears in all of the legacy company tariffs (Tr. 11, at 2258).³⁸⁰

³⁷⁹ Eversource states that typical reasons it would not complete a request for installation of a meter or communication device within 30 days are due to storm-related events or safety issues (Exh. DPU-6-2).

³⁸⁰ The Companies did not address Cape Light Compact's arguments on brief.

3. Analysis and Findings

a. Force Majeure

As set forth above, the Attorney General maintains that Eversource's proposed "Force Majeure" provision is duplicative of the proposed "Limitation of Liability" provision³⁸¹ in the Terms and Conditions that releases the Companies from liability for damages in instances where there is no negligence attributable to Eversource (Attorney General Brief at 203). The Attorney General maintains that the force majeure provision could preempt the authority of the Department or a court of competent jurisdiction to determine whether damage is the result of a force majeure (Attorney General Brief at 203). The two proposed provisions at issues are as follows:

Force Majeure

The Company shall be excused from performing under the Schedule of Rates and shall not be liable in damages or otherwise if and to the extent that it shall be unable to do so or prevented from doing so by statute or regulation or by action of any court or public authority having or purporting to have jurisdiction in the premises; or by loss, diminution or impairment of electrical supply from its generating plants or suppliers or the systems of others with which it is interconnected; or by a break or fault in its transmission or distribution system; failure or improper operation of transformers, switches or other equipment necessary for electric distribution; or by reason of storm, flood, fire, earthquake, explosion, civil disturbance, labor dispute, act of God or public enemy, failure of any supplier to perform, restraint by any court or regulatory agency, or any other intervening cause, whether or not similar thereto; the Company shall use efforts reasonable under the circumstances to overcome such cause and to resume full performance.

³⁸¹ This stand-alone provision is different from the limitation of liability language associated with the curtailment of or interruption of service provision, which is discussed below.

Limitation of Liability

Unless there is negligence on the part of the Company, the Company shall not be liable for damage to the person or property of the Customer or any other persons resulting from the use of electricity or the presence of the Company's appliances and equipment on the Customer's premises. In any event, for non-residential Customers served under general service rates, the Company shall not be liable in contract, in tort (including negligence and M.G.L. c. 93A), strict liability or otherwise for any special, indirect, or consequential damages whatsoever including, but not limited to, loss of profits or revenue, loss of use of equipment, cost of capital, cost of temporary equipment, overtime, business interruption, spoilage of goods, claims of Customers of the Customer or other economic harm.

(RR-DPU-51, Att. (a) at 16-17 (proposed M.D.P.U. No. 500, §§ II.I.2, II.I.3)).

Consistent with the Attorney General's argument, a force majeure provision and a limitation of liability provision are based on principles of mitigating a utility's risk and limiting exposure to liability in the utility's provision of service to customers. However, the record is not sufficient for the Department to find that the Companies' proposed limitation provision affords adequate protection from liability in the event of a force majeure occurrence. Therefore, we are not persuaded by the Attorney General's argument that these provisions are duplicative.

Moreover, the proposed provisions are substantially similar to the provisions already in place in NSTAR Electric's legacy companies' tariffs and contain no substantive changes from those existing tariffs (see M.D.T.E. No. 100A, §§ II.9B, II.9.D (Boston Edison Company); M.D.T.E. No. 200A, §§ II.9B, II.9C (Cambridge Electric Light Company); M.D.T.E. No. 300A, §§ II.9B, II.9C (Commonwealth Electric Company); Exh. AG-49-16). Thus, inclusion of the force majeure and limitation of liability provisions in the consolidated tariffs maintains consistency of application of these provisions with NSTAR Electric's legacy

tariffs. In addition, we note that Fitchburg Gas and Electric Light Company and all of the electric distribution companies subject to the Department's jurisdiction companies have both force majeure and a limitation of liability provisions in their currently effective terms and conditions. See, e.g., M.D.P.U. No. 266, § II.9.C., F (Fitchburg Gas and Electric Light Company); M.D.P.U. No. 1316, § I.9.A., B (Massachusetts Electric Company/Nantucket Electric Company). As such, the request by the Companies is neither new nor novel.

Based on these considerations, the Department approves the force majeure and the limitation of liability provisions contained in the Companies' proposed terms and conditions, M.D.P.U. No. 500; provided, however, that in their next base distribution rate case filing, the Companies must demonstrate the continuing propriety of including both a force majeure provision and a limitation of liability provisions in their terms and conditions. Further, the Department directs all electric and gas companies to make the same showing in their respective next base distribution rate case filings where they propose both a force majeure provision and a limitation of liability provision.

b. Obligation for Meter and Communication Device Installation

As noted above, the Attorney General recommends that the Department remove the phrase "if reasonably possible" from the sentence: "The Company shall complete installation of the meter or communication device, if reasonably possible, within thirty (30) days of receiving a written request from the Customer or Competitive Supplier" in the Companies' proposed Terms and Conditions in Section II.D.1 (Attorney General Brief at 204;

RR-DPU-51, Att. (a) at 7 (proposed M.D.P.U. No. 500, § II.D.1)). The Department agrees with this recommendation.

The record shows that Eversource's current practice is to complete meter or communication device installations within 30 days in the Boston Edison Company and WMECo service territories (Exhs. AG-49-2, Att. (a) at 7 (M.D.T.E. No. 100A, § II.4A); Att. (b) at 8 (M.D.P.U. No. 1023C, § II.4A)). Moreover, the Companies are not aware of any meter changes that were not completed within 30 days, if the request was within the Companies' capabilities (Exh. AG-49-6). Thus, we find that the Companies' need to allow for more than 30 days for installations of a meter or a communication device is speculative and unsupported by record evidence (see Exh. AG-49-6; Tr. 11, at 2249-2250).

Accordingly, the Department directs Eversource to strike the phrase, "if reasonably possible," from the sentence: "The Company shall complete installation of the meter or communication device, if reasonably possible, within thirty (30) days of receiving a written request from the Customer or Competitive Supplier" (RR-DPU-51, Att. (a) at 7).

c. Limitation of Liability for Curtailment or Interruption of Service

The Attorney General recommends that the Department reject the Companies' proposed tariff language that would eliminate Eversource's liability in the event of interruption or curtailment of service. The proposed provision is as follows:

Curtailment or Interruption of Service

Whenever the integrity of the Company's system or the supply of electricity is believed to be threatened by conditions on its system or upon the systems with which it is directly or indirectly interconnected, the Company may, in its sole judgment, curtail or interrupt electric service or reduce voltage and such action shall not be construed to constitute a default nor shall the Company be liable

therefor in any respect. The Company will use efforts reasonable under the circumstances to overcome the cause of such curtailment, interruption or reduction and to resume full performance.

(RR-DPU-51, Att. (a) at 16 (proposed M.D.P.U. No. 500, § II.I.1)).

Similar to the force majeure and limitation of liability provisions discussed above, the curtailment or interruption of service provision is neither new nor novel. The current tariffs applicable to NSTAR Electric's three legacy companies each have the same or similar liability disclaimer language (i.e., "such action shall not be construed to constitute a default nor shall the Company be liable therefor in any respect") objected to by the Attorney General (see M.D.T.E. No. 100A, § II.9A (Boston Edison Company); M.D.T.E. No. 200A, § II.9A (Cambridge Electric Light Company); M.D.T.E. No. 300A, § II.9A (Commonwealth Electric Company)). Further, this language appears in even earlier versions of these legacy tariffs (see M.D.T.E. No. 100, § II.9A (Boston Edison Company); M.D.T.E. No. 200, § II.9A (Cambridge Electric Light Company); M.D.T.E. No. 300, § II.9.A (Commonwealth Electric Company)).³⁸²

One difference among the current terms and conditions tariffs for the NSTAR Electric three legacy companies is Boston Edison Company uses a "reasonableness" standard in applying this curtailment/interruption provision; neither Cambridge Electric Light Company nor Commonwealth Electric Company uses a reasonableness standard. That is, the Boston Edison Company provision states: "reasonably believes the integrity..." and "in the exercise

³⁸² Western Massachusetts Electric Company's currently effective Terms and Conditions (M.D.P.U. No. 1023C) has no express provision concerning curtailment/interruption.

of reasonable judgment...”³⁸³ In considering Eversource’s proposed M.D.P.U. No. 500, § II.I.1 (Curtailment or Interruption of Service) and the currently effective equivalent provisions, we find that application of a reasonableness standard as provided in the Boston Edison Company tariff is appropriate. In this context, we consider reasonable to mean not arbitrary, capricious, or in bad faith. Accordingly, the Department directs Eversource to modify proposed M.D.P.U. No. 500, § II.I.1 to include “reasonably believes the integrity...” and “in the exercise of reasonable judgment...” as provided in Boston Edison Company’s currently effective M.D.T.E. No. 100A, § 9A.

Based on this finding regarding the inclusion of the reasonableness standard and the fact that this curtailment/interruption provision pertains to protection of the integrity of Companies’ electric distribution system, and similar to our finding above, we are not persuaded that it is necessary or appropriate to modify the long-standing language disclaiming liability in this curtailment/interruption provision. Therefore, the Department does not exclude the language proposed by the Attorney General. However, we note that our decision today should not be construed as dispositive of whether a customer may maintain a viable action against the Companies under this provision.

³⁸³ M.D.T.E. No. 100A, § 9A reads in pertinent part:

Whenever the Company reasonably believes the integrity of the Company's system or the supply of electricity to be threatened by conditions on its system or upon the systems with which it is directly or indirectly interconnected, the Company may, in the exercise of reasonable judgment, curtail or interrupt electric service or reduce voltage, and such action shall not be construed to constitute a default nor shall the Company be liable therefore in any respect. The Company will use reasonable efforts under the circumstances to overcome the cause of such curtailment, interruption, or reduction and to resume full performance.... (emphasis added).

d. Unusual Load Characteristics

Cape Light Compact argues that the following language in the proposed M.D.P.U. No. 500 is vague and should be clarified:

Unusual Load Characteristics

The Company may, in the exercise of reasonable judgment, refuse to supply service to loads having unusual characteristics that might adversely affect the quality of service supplied to other Customers, the public safety, or the safety of the Company's personnel. In lieu of such refusal, the Company may require a Customer to install any necessary operating and safety equipment in accordance with requirements and specifications of the Company provided such installation does not conflict with applicable electrical code, and Federal, State or Municipal law.

(RR-DPU-51, Att. (a) at 8 (proposed M.D.P.U. No. 500, § II.D.3)).

The Department finds that this language is consistent with the Model Terms and Conditions established in Investigation into Developing Competitive Supplier Model Terms and Conditions, D.P.U./D.T.E. 97-65, Att. I at 108 (1997). Further, the language is found in the Companies' current tariffs (see M.D.T.E. No. 100A, § II.4C (Boston Edison Company); M.D.T.E. No. 200A, § II.4C (Cambridge Electric Light Company); M.D.T.E. No. 300A, § II.4C (Commonwealth Electric Company); M.D.P.U. No. 1023C § II.4C (WMECo)) and no change to the language is proposed. We are not persuaded by Cape Light Compact's arguments. Consistent with the requirements of this provision, we expect that the Companies will exercise reasonable engineering judgment and discretion, in light of all relevant circumstances, in determining whether unusual load characteristics should preclude service to a particular customer. Accordingly, we do not require any modification to this provision.

e. Conclusion

The Department has reviewed the proposed tariff language changes and finds them to be reasonable, except as they pertain to the above directives. All of the approved changes are designed to bring the Companies' tariffs in compliance with Department precedent and to make them consistent with other proposals that the Companies have put forth in this proceeding.

C. Administrative Fees and Charges

1. Introduction

The Companies propose to update the fees in Appendix A of the Terms and Conditions such that the fees will be the same for NSTAR Electric and WMECo customers (Exh. ES-RDP-9, at 24). The proposed updated charges include a returned check fee, account restoration fees, and a warrant fee (Exh. ES-RDP-9, at 24). Additionally, the Companies propose to implement a new sales tax abatement fee, which is intended to cover the administrative cost that the Companies incur to refund sales taxes at the request of customers who had not provided sales tax exemption certificates in a timely manner (Exh. ES-RDP-9, at 24).³⁸⁴ The Companies' proposed fees are:

- Returned Check: \$11.00
- Sales Tax Abatement: \$52.00
- Warrant: \$214.00

³⁸⁴ Pursuant to G.L. c. 64H, § 6, non-residential electric customers are liable for sales and use taxes, subject to a variety of exemptions. In order to qualify for exemption from sales and use taxes, eligible customers must submit a sales tax exemption certificate to the Companies. G.L. c. 64H, § 8.

- Account Restoration (Meter): \$71.00
- Account Restoration (Pole): \$101.00
- Account Restoration (Manhole): \$161.00

(Exhs. DPU-6-4, Atts. (a) - (g); DPU-62-11, Att. (b) at 217; Tr. 11, at 2231-2232, 2260-2266).

2. Positions of the Parties

a. Attorney General

According to the Attorney General, the Companies' proposed \$71.00 fee for account restoration (meter) represents approximately a 700 percent increase for Commonwealth Electric Company and Cambridge Electric Light Company, a 450 percent increase for Boston Edison Company, and a 225 percent increase for WMECo (Attorney General Brief at 206, citing Tr. 11, at 2260). Additionally, the Attorney General maintains that the proposed warrant fee increased significantly to \$214.00 (Attorney General Brief at 206, citing Tr. 11, at 2266). Because the fee increases are large, the Attorney General maintains that they could disproportionately impact a disadvantaged segment of the Companies' customer base (Attorney General Brief at 202, 207). The Attorney General recommends that the Department allow the Companies to implement their proposed fee increase over time, which she asserts is consistent with the principle of rate continuity (Attorney General Brief at 207). The Attorney General recommends that the fees be set at the level established in 2010 for WMECo and adjusted upwards annually over seven years to reflect the cost increases (Attorney General Brief at 207).

Moreover, the Attorney General argues that low-income customers should be exempt from the Companies' proposed increase to certain fees, such as the account restoration fee (Attorney General Brief at 202, 207). According to the Attorney General, there is precedent for the Department to exempt customers on the low-income rate from certain fees on the basis of income criteria (Attorney General Brief at 207 & n.55, citing American Hoechst Corporation, 379 Mass 408 (1980); Boston Edison Company v. Department of Public Utilities, 375 Mass 443, 489 (1971)). The Attorney General claims that National Grid exempts its low-income customers from its account restoration fee, and she recommends that the Department approve similar language in Eversource's Terms and Conditions (Attorney General Brief at 207, citing Massachusetts Electric Company and Nantucket Electric Company, M.D.P.U. No. 1192, Appendix A).

b. Low Income Network

The Low Income Network requests that the Department reject the Companies' proposed increases to certain restoration and warrant fees (Low Income Network Brief at 1; Low Income Network Reply Brief at 1). According to the Low Income Network, the Companies' proposals to increase restoration and warrant fees by 118 percent to 610 percent violate the Department's principle of rate continuity, and, therefore, should be rejected (Low Income Network Brief at 3, 5; Low Income Network Reply Brief at 1). The Low Income Network purports that the Companies' fee proposal could increase fees by more than seven times and would be imposed on low-income households that already struggle to pay their electric bill (Low Income Network Brief at 5).

The Low Income Network asserts that the proposed \$214.00 warrant fee is an unjustly high burden for a low-income family, as it represents more than half of that customer's weekly take-home pay (Low Income Network Reply Brief at 3, citing G.L. c. 161, § 1). Additionally, the Low Income Network maintains that a restoration fee of \$71 is equal to 140 percent the cost of a week's groceries for an average low-income household (Low Income Network Reply Brief at 2-3 & n.6, citing to a 2015 Bureau of Labor Statistics survey). For these reasons, the Low Income Network argues that the proposed fees are unjust and unreasonable (Low Income Network Reply Brief at 3).

According to the Low Income Network, it is Department policy to maintain a customer's connection to electricity service when a customer is faced with the choice between food or rent and utility service (Low Income Network Brief at 7, citing D.P.U. 87-260, at 177-178; D.P.U. 88-67 (Phase I) at 240-241; Low Income Network Reply Brief at 3). The Low Income Network explains that protections include the low-income discount rates, no-cost energy efficiency programs, payment plans that may include arrearage forgiveness, and restrictions on termination of service for low-income households in the winter and at all times for vulnerable households (Low Income Network Brief at 7, citing G.L. c. 164, §§ 1F(7), 124A, 124D, 124E, 124F, 124H, 141; 220 CMR 25.00, 27.00, & 29.00). Therefore, in the alternative to the Department rejecting the increases to the restoration and warrant fees, the Low Income Network maintains that the Department should protect low-income customers, and their access to utility service, by directing the Companies to adopt the same approach as National Grid in its Terms and Conditions tariff to exempt

low-income customers from these fees (Low Income Network Brief at 3-4, 6, citing Massachusetts Electric Company and Nantucket Electric Company, M.D.P.U. No. 1192, Appendix A, § I; Low Income Network Reply Brief at 1, 3). In the alternative to waiving the proposed restoration and warrant fees for low-income customers, the Low Income Network recommends that the restoration and warrant fees be raised by no more than the proposed two-year increase to WMECo's R-2 and R-4 rates (i.e., 4.2 percent and 2.5 percent, respectively) (Low Income Network Brief at 9).³⁸⁵

In response to the Companies' proposal to phase-in account restoration and warrant fees over five years, the Low Income Network claims that this scheme would provide only partial and temporary relief for customers by deferring the full amount of the fees (Low Income Network Reply Brief at 2). Therefore, the Low Income Network maintains that these fees should be rejected, or in the alternative, that low-income customers on Rate R-2 and Rate R-4 should be exempt for any such fees (Low Income Network Reply Brief at 3).

c. Companies

Eversource asserts that its proposal to charge a \$71.00 restoration fee (meter) and a \$214.00 warrant fee is cost based and is a long due change in its fee structure (Companies Brief at 560, citing Tr. 11, at 2268).

In response to the Low Income Network's concerns, the Companies are willing to phase-in the cost increases over five years (Companies Brief at 560). The Companies explain

³⁸⁵ Also, without referencing the record or advancing any substantive argument for a change in the current structure, the Low Income Network suggests that the low-income discount (i.e., 36-percent) should apply to the restoration and warrant fees (Low Income Network Brief at 9).

that, for example, Boston Edison Company's fee would increase \$11.20 per year for five years to move from the current restoration fee of \$15.00 to the actual cost of \$71.00 (Companies Brief at 560). The Companies assert that this proposal mitigates the increase in fees that the Companies would charge and protects low-income customers from the increased fees for a reasonable period (Companies Brief at 560). According to the Companies, their proposal to mitigate the fee increases provides a reasonable balance between cost-causation and tempering impacts to customers (Companies Brief at 560).

The Companies offer the phase-in option as an alternative to the Low Income Network's recommendation to fully exempt low-income customers from both the warrant and restoration fees (Companies Brief at 560; Companies Reply Brief at 178). Eversource maintains that it provides many protections for low-income customers (Companies Brief at 560, citing Tr. 11, at 2269). According to the Companies, they ensure that during most of the year, their low-income customers are not disconnected for non-payment (Companies Brief at 560). Further, the Companies argue that they offer other programs, such as the arrears forgiveness program, that serve to avoid disconnection in the first place (Companies Brief at 560, citing Tr. 11, at 2269). Moreover, the Companies note that either exempting low-income customers from the warrant and restoration fee (meter), or implementing a phase-in of these fees, require a commensurate adjustment to their distribution revenue requirement because Eversource would be recovering a lower amount of its revenue requirement through the fees than the level that is reflected in their cost of service (Companies Reply Brief at 179).

3. Analysis and Findings

a. Introduction

Fees for ancillary services such as processing returned checks are intended to reimburse a company for actual costs incurred in providing these particular services. See, e.g., D.P.U. 95-118, at 84; Whitinsville Water Company, D.P.U. 89-67, at 4-5 (1989); D.P.U. 956, at 62. The Department has found that fees for these various services must be based on the costs associated with these functions that the company actually incurred. D.P.U. 08-35, at 58 (2009); D.P.U. 89-67, at 4; D.P.U. 956, at 62. While the Department has accepted gradual adjustments to fees, excessive increases in a single step may violate the Department's continuity goal. D.T.E. 05-27, at 354-355.

b. Returned Check Fee

The Companies propose to increase their existing returned check fees from \$9.00 (Boston Edison), \$8.00 (Cambridge Electric Light), \$9.00 (Commonwealth Electric Company), and \$7.00 (WMECo) to \$11.00 for all companies (Exhs. ES-RDP-17, Sch. RDP-1 (Rev.); DPU-6-4, Att. (a); AG-49-2, Atts. (a) at 18, (b) at 17, (c) at 17, (d) at 20). The Department has reviewed the Companies' supporting calculations and assumptions, and finds that a returned check fee of \$11.00 is reasonable as it is based on the costs Eversource incurs associated with this function (Exhs. ES-RDP-17, Sch. RDP-1 (Rev.); DPU-6-4, Att. (a)). The Department further finds that the Companies have correctly incorporated the additional revenues associated with the fee increase as a revenue credit in their proposed costs of service (Exhs. ES-DPH-3 (East), WP DPH-5, at 1 (Rev. 1);

ES-DPH-3 (West), WP DPH-5, at 1 (Rev. 1); Tr. 11, at 2267-2268). Accordingly, the Department approves a returned check fee of \$11.00.

c. Sales Tax Abatement Fee

No Massachusetts gas or electric distribution company currently collects a sales tax abatement fee. The separate charge for sales tax abatements requires customers requesting abatement to pay the associated costs instead of spreading these costs onto all customers (Exh. DPU-6-20). The Companies' expect this fee to discourage customers from postponing the return of their tax exemption forms until after a charge for sales tax reappears on their bills (Exh. DPU-6-20). If the customer returns the sales tax exemption form before their current sales tax exemption expires, the Companies will avoid labor and administrative costs required to complete the sales tax abatement process (Exhs. DPU-6-4, Att. (g); DPU-6-20). In the test year, Eversource completed 2,473 sales tax abatements, representing a cost of \$128,708, and processed by the Companies' billing department (Exh. DPU-6-4). The Department finds the sales tax abatement fee to be reasonable because it assigns direct cost responsibility to customers who have failed to provide the Companies a sales tax exemption form in a timely manner and, as a result, have caused the Companies to incur costs. Further, the Department has reviewed the Companies' supporting calculations and assumptions, and finds that a sales tax abatement fee of \$52.00 is reasonable as it is based on the costs Eversource incurs associated with this function (Exhs. ES-RDP-17, Sch. RDP-4 (Rev.); DPU-6-4, Att. (d)). The Department further finds that the Companies have correctly incorporated the additional revenues associated with the fee as a revenue credit in their

proposed costs of service (Exhs. ES-DPH-3 (East), WP DPH-5, at 1 (Rev. 1); ES-DPH-3 (West), WP DPH-5, at 1 (Rev. 1); Tr. 11, at 2267-2268). Accordingly, the Department approves the sales tax abatement fee of \$52.00.

d. Warrant and Account Restoration Fees

With respect to the account restoration and warrant fees, the Companies concede that the proposed increases are below cost and do not reflect the costs the Companies actually incurred (Tr. 11, at 2268). While the Department accepts that a gradual adjustment to fees set according to cost can be advisable, the Department finds that increasing fees for account restoration at the meter from \$10 (Cambridge Electric Light Company and Commonwealth Electric Company), \$15 (Boston Edison Company), or \$30 (WMECo) to \$71 is too large of an increase in a single step and, therefore, violates our own continuity goal. See D.T.E. 05-27, at 354-355. Similarly, the increases to the warrant fee from \$70.00 (Boston Edison Company, Cambridge Electric Light Company, and Commonwealth Electric Company) and \$98.00 (WMECo) to the proposed fee of \$214.00 are too large in a single step and, therefore, violate our own continuity goal. See D.T.E. 05-27, at 354-355.

The Attorney General recommends that the fees be set at the level established in 2010 for WMECo and adjusted upwards annually over seven years to reflect the cost increases (Attorney General Brief at 207). As an alternative, the Companies offer to allow the increases to occur over five years, using the existing fee for each legacy company as a starting point (Companies Brief at 560). The Low Income Network requests that the Department reject the increases to these fees, or, in the alternative, exempt low-income

customers taking service on the low-income discount rates from any such fee increases that the Department may allow (Low Income Network Reply Brief at 3). Additionally, the Attorney General argues that low-income customers should be exempt from the Companies' proposed increase to certain fees, such as the account restoration (meter) fee (Attorney General Brief at 202, 207).

The Department declines to adopt the recommendation to exempt customers taking service on the low-income discount rates from these fees because there is not sufficient evidence to make this change. In order to make this adjustment, the Companies' revenue would need to be adjusted by the proposed fee (i.e., \$71.00 for account restoration (meter) and \$214.00 for warrant) multiplied by the number of customers taking service on the low-income discount rate charged the fee for account restoration (meter) and warrant in the test year. However, there is no evidence on the record regarding the number of low-income customers charged the account restoration (meter) and warrant fees in the test year to perform this calculation. Therefore, the Department declines to adopt the Low Income Network and the Attorney General's recommendation. Further, the Department declines to adopt the phase-in approach because the Department would not be able to properly adjust revenues beyond the adjustment made in this Order. The Department finds it appropriate to approve the same fee for all customers for effect January 1, 2018. Therefore, the Department finds that a \$30.00 fee for account restoration (meter) and that a \$98.00 fee for warrants for effect January 1, 2018 provide a reasonable balance of our continuity and efficiency goals. These are the current fees charged to customers in the WMECo service

territory (Exh. AG-49-2, Att. (d)). Therefore, we approve an account restoration fee (meter) of \$30.00 and a warrant fee of \$98.00.

The Department's decision requires an adjustment to the Companies' proposed revenue. NSTAR Electric originally proposed \$1,671,549 in test year pro forma account restoration fee revenue based on a proposed fee of \$71.03 (Exh. ES-DPH-3 (East), WP DPH-5, at 1 (Rev. 1)). Revising the proposed fee to \$30.00 results in test year pro forma account restoration fee revenue of \$705,990 (Exh. ES-DPH-3 (East), WP DPH-5, at 1 (Rev. 1)). Therefore, the Department directs the Companies to reduce NSTAR Electric's revenue by \$965,559. WMECo originally proposed \$607,307 in test year pro forma account restoration fee revenue based on a proposed fee of \$71.03 (Exh. ES-DPH-3 (West), WP DPH-5, at 1 (Rev. 1)). Revising the proposed fee to \$30.00 results in test year pro forma account restoration fee revenue of \$256,500 (Exh. ES-DPH-3 (West), WP DPH-5, at 1 (Rev. 1)). Therefore, the Department directs the Companies to reduce WMECo's revenue by \$350,807.

Further, NSTAR Electric originally proposed \$198,804 in test year pro forma warrant fee revenue based on a proposed fee of \$214.46 (Exh. ES-DPH-3 (East), WP DPH-5, at 1 (Rev. 1)). Revising the proposed fee to \$98.00 results in test year pro forma account restoration fee revenue of \$90,846 (Exh. ES-DPH-3 (East), WP DPH-5, at 1 (Rev. 1)). Therefore, the Department directs the Companies to reduce NSTAR Electric's revenue by \$107,958. WMECo originally proposed \$14,583 in test year pro forma warrant fee revenue based on a proposed fee of \$214.46 (Exh. ES-DPH-3 (West), WP DPH-5, at 1 (Rev. 1)).

Revising the proposed fee to \$98.00 results in test year pro forma warrant fee revenue of \$6,664 (Exh. ES-DPH-3 (West), WP DPH-5, at 1 (Rev. 1)). Therefore, the Department directs the Companies to reduce WMECo's revenue by \$7,919.

Regarding the account restoration fees at the pole and manhole, the Department has reviewed the Companies' supporting calculations and assumptions, and finds that an account restoration fee at the pole of \$101.00 and an account restoration fee at the manhole of \$161.00 are reasonable as they are based on the costs that Eversource incurs associated with these functions (Exhs. ES-RDP-17, Sch. RDP-4 (Rev.); DPU-6-4, Att. (d)). The Department further finds that the Companies have correctly incorporated the additional revenues associated with these fees as a revenue credit in their proposed cost of service (Exhs. ES-DPH-3 (East), WP DPH-5, at 1 (Rev. 1); ES-DPH-3 (West), WP DPH-5, at 1 (Rev. 1); Tr. 11, at 2267-2268).

e. Conclusion

With the exception of the warrant and account restoration at the meter fees, the Department approves the Companies' proposed fees. The Department finds it reasonable, based on its continuity goals, to set the warrant and account restoration (meter) fees at the price that WMECo currently charges to its customers. Accordingly, the Department directs the Companies to decrease its revenue by \$1,432,243 (i.e., \$1,073,517 for NSTAR Electric and \$358,726 for WMECo). Further, the Department finds it reasonable to eliminate the service/fuse call charge (see Tr. 11, at 2263-2264).

D. Terms and Conditions – Competitive Suppliers and Competitive Renewable Energy Attribute Suppliers

1. Introduction

Eversource proposes to consolidate the Companies' four existing Terms and Conditions – Competitive Suppliers and Competitive Renewable Energy Attribute (“REA”) Suppliers tariffs (“Competitive Supplier Terms and Conditions”) and the Terms and Conditions for WMECO Green Options Suppliers tariff into one tariff (Exhs. ES-RDP-9, at 25-26; ES-RDP-14 (Part 3) at 1-135; RR-DPU-51, Att. (a) at 49-83 (proposed M.D.P.U. No. 501)). The Companies also propose changes that are intended to: (1) allow a customer to inform the Companies if the customer wishes to be protected from unwanted solicitation from competitive suppliers; (2) require customers to provide authorization for the release of historical use information; (3) require the Companies to release customer information to competitive suppliers unless the customer has notified the Companies of his or her wish to be protection from unwanted solicitations; (4) require the Companies to transfer customers to basic service upon default of a competitive supplier; (5) require a signed new service contract with a competitive supplier after reinstatement of defaulted supplier service; (6) include rules required for competitive suppliers and competitive REA suppliers to participate in ISO New England (“ISO-NE”); and (7) address competitive supplier and customer load estimation (Exh. ES-RDP-9, at 25). Finally, the Companies propose changes to the Schedule of Fees and Charges in the Competitive Supplier Terms and Conditions, Appendix A (“Appendix A”) (Exhs. ES-RPD-9, at 26; ES-RPD-17, Sch. RDP-5). The

changes to Appendix A include, among other things, eliminating the Extending Metering Fee section and increasing the fees and charges for the Competitive Supplier Referral Program.

2. Positions of the Parties

a. Attorney General

The Attorney General asserts that consumers should have the right to request that Eversource refrain from actively providing their names to competitive suppliers (Attorney General Reply Brief at 102). As a result, the Attorney General argues that the Companies, pursuant to the proposed tariff amendments, should be permitted to create a list of customers who do not wish to be solicited by competitive suppliers (Attorney General Reply Brief at 102).

b. Cape Light Compact

Cape Light Compact argues that the Companies' proposed tariff changes are substantial in nature, vague, inappropriate, unnecessary, and made without consultation or input from competitive suppliers (Cape Light Compact Brief at 65). Cape Light Compact also argues that the proposal to increase fees on competitive suppliers participating in the Competitive Supplier Referral Program is unreasonable, acts as a barrier to participation, and should be rejected (Cape Light Compact Brief at 67-69).

c. Choice Energy

Choice Energy argues that many of the Companies' proposed tariff changes impose substantial or significant changes on retail suppliers without any explanation or support (Choice Energy Brief at 3, 8-9). Choice Energy contends that the proposed tariff changes are "ill-considered," "error-riddled," inconsistent with the terms and conditions of other

Massachusetts utilities, and lack input from interested stakeholders (Choice Energy Brief at 3-4, 8-9; Choice Energy Reply Brief at 2). Choice Energy also argues, among other things, that the Companies should not be permitted to make the changes regarding customer “protections” from competitive supplier solicitation, increase fees, or change the process that applies when a competitive supplier defaults at ISO-NE (Choice Energy Brief at 9-21; Choice Energy Reply Brief at 3-7). Choice Energy recommends that the Department reject all of the proposed tariff changes that go beyond simply consolidating NSTAR Electric’s and WMECo’s existing tariffs (Choice Energy Brief at 3; Choice Energy Reply Brief at 4).

d. Low Income Network

The Low Income Network supports two of the Companies’ proposed tariff changes: (1) allowing a customer to notify Eversource if the customer wishes to be protected from unwanted solicitation from competitive suppliers; and (2) requiring Eversource to release customer information to competitive suppliers unless a customer has requested protection from unwanted solicitations (Low Income Network Brief at 14). The Low Income Network also argues that in order to protect customers from unwanted solicitations, the Department should allow the Companies to create a list of customers who do not want to be solicited by competitive suppliers (Low Income Network Brief at 22).

e. RESA

RESA argues that (1) the Companies’ proposed changes deviate substantially from the model competitive supplier terms and conditions as they have been revised with Department approval over time; (2) the Companies failed to meet their burden to establish that the proposed changes are appropriate; (3) the Companies failed to engage the competitive

supplier community in proposing the changes; (4) because the proposed changes are unrelated to base distribution rates or PBR mechanisms, “key stakeholders” could not have anticipated the proposal and, therefore, would not have intervened in the proceeding (RESA Brief at 9-10; RESA Reply Brief at 5). RESA also argues, among other things, that the Companies should not be permitted to change the process where competitive suppliers default with ISO-NE, or to increase fees related to the Competitive Supplier Referral Program (RESA Brief at 11-24). RESA recommends that the Department reject the proposed changes and require Eversource to seek approval of the changes in a separate proceeding where all interested stakeholders can participate (RESA Brief at 11; RESA Reply Brief at 5).

f. TEC and WMIG

TEC and WMIG argue that this proceeding is not the appropriate venue for the Department to address the proposed changes to the Competitive Supplier Terms and Conditions because the changes are not related to Companies’ base distribution rates or PBR proposal (TEC and WMIG Reply Brief at 13).

g. The Companies

The Companies argue that the proposed tariff changes, among other things, protect customer information and rights under competitive supplier service, clarify specific issues, including participation rules at ISO-NE, and update certain fees (Companies Brief at 562). Further, the Companies contend that the proposed tariff changes streamline the presentation of information to customers and increase administrative efficiency both in terms of internal communications and regulatory filings (Companies Brief at 563). In addition, Eversource maintains that it provided fair notice of the proposed changes, as well as sufficient support

for them throughout the record, and that the proposed changes are consistent with existing practices and Department precedent (Companies Reply Brief at 173). Moreover, the Companies reject the argument that the proposed tariff changes place new or unreasonable burdens on retail electric suppliers, and maintain that their primary obligation is to their customers and not to competitive suppliers (Companies Brief at 563). As a result, Eversource asserts that it has supported all of the proposed changes, including the increased fees, and the Department should approve the proposed changes to the Competitive Supplier Terms and Conditions (Companies Brief at 562-564; Companies Reply Brief at 178).

3. Analysis and Findings

The Department has reviewed the Companies' proposal to consolidate and change the Competitive Supplier Terms and Conditions, including Appendix A, and the parties' arguments regarding such changes. Based on our review, the Department denies the Companies' proposal to consolidate and change the Competitive Supplier Terms and Conditions. The Department, however, approves the Company's proposed fees and changes to Appendix A.

The Department developed and approved model terms and conditions governing the relationship between the distribution companies, customers, and competitive suppliers ("Model Terms and Conditions") in Investigation into Developing Competitive Supplier Model Terms and Conditions, D.P.U./D.T.E. 97-65 (1997). In that proceeding, the Department stated that the Model Terms and Conditions will serve as a basis for the tariffs submitted for approval by each distribution company, and the goal is uniformity among the

distribution companies. D.P.U./D.T.E. 97-65, at 3. To accommodate company-specific circumstances, the Department noted that a company may propose tariff provisions that vary from the Model Terms and Conditions. D.P.U./D.T.E. 97-65, at 3. The company proposing the changes, however, is required to make a strong showing of the reasonableness of the variances, and a departure from the Model Terms and Conditions may only be warranted by compelling circumstances that a distribution company demonstrates are peculiar to it. D.P.U./D.T.E. 97-65, at 3. Further, the Department has found that customers and the competitive market are best served by attaining as much uniformity as reasonable among the electric distribution companies and the marketplace at large. Massachusetts Electric Company and Nantucket Electric Company, D.P.U. 16-193 (May 31, 2017).

Further, when changes to the Model Terms and Conditions are required, the Department has opened a generic proceeding to fully investigate the proposals. In Investigation into Terms and Conditions for Competitive Electric Suppliers, D.P.U. 09-46 (2009), the Department required the electric distribution companies to jointly propose revised Model Terms and Conditions that complied with the Green Communities Act, Section 60.³⁸⁶ D.P.U. 09-46, at 4. After reviewing the electric distribution companies proposal, convening a technical session to discuss the proposal, and receiving a counter proposal from RESA and other competitive supply companies, the Department approved Model Terms and Conditions, and required each electric distribution company to submit revised Competitive Supply Terms and Conditions consistent with the Department's Order. D.P.U. 09-46-A, at 1-2, 25-26.

³⁸⁶ Chapter 169 of the Acts of 2008, an Act Relative to Green Communities

Pursuant to the current Model Terms and Conditions, the Companies' currently effective Competitive Supplier Terms and Conditions are substantially similar to those of National Grid and Unitil. While minor differences exist between the three distribution companies' currently effective Competitive Supplier Terms and Conditions³⁸⁷ none of the differences are as extensive as the Companies' proposed changes. Because of the significance and materiality of the changes in the rules and responsibilities proposed by the Companies, we find that the Companies' proposal would benefit from advance discussion with competitive suppliers, after which time the Companies may make a filing with the Department for review and approval of any changes to the Competitive Supplier Terms and Conditions. Thus, in this circumstance, the Companies first should reach out to competitive suppliers to review significant revisions to the Competitive Supplier Terms and Conditions. Subsequently, as part of any filing with the Department seeking review and approval to revise the Competitive Supplier Terms and Conditions, the Companies must demonstrate their efforts in conferring with competitive suppliers.

Based on these considerations, at this time, the Department denies the Companies' proposed changes to the Competitive Supplier Terms and Conditions, and the proposal to consolidate the Competitive Supplier Terms and Conditions and the Terms and Conditions for

³⁸⁷ For example, the NSTAR Electric tariffs (M.D.P.U. No. 101D; M.D.P.U. No. 201D; and M.D.P.U. No. 301D) apply to Renewable Energy Attribute Suppliers in addition to competitive supply companies, while WMECo (M.D.P.U. No. 1024F), National Grid (M.D.P.U. No. 1201), and Unitil's (M.D.P.U. No. 285) tariffs for Competitive Supply Terms and Conditions do not include Renewable Energy Attribute Suppliers.

WMECO Green Options Suppliers. Accordingly, proposed tariff M.D.P.U. No. 501 is disallowed.³⁸⁸

Regarding the Companies' proposal to increase fees and make changes to Appendix A, the Department finds that Appendix A is not a part of the Model Terms and Conditions, but is to be approved by the Department on a company-specific basis. See D.P.U. 09-46, Stamp-Approved Compliance Filings (February 8, 2010). As such, the fees found in Appendix A must be based on a company's actual costs incurred or on the actual costs of providing the particular services. D.P.U. 09-46-A at 22; D.P.U. 08-27, at 46 (2009). In addition, the Department has stated that the costs associated with the Supplier Referral Program should be reasonable and transparent, and that the competitive suppliers should understand the extent of the costs prior to participating in the program. D.P.U. 09-46-A at 22.

In this case, the intervenors did not argue that the actual costs provided in Exhibit ES-RDP-17, Schedule RDP-5 were incorrect, provide examples on how the costs were inflated, or demonstrate how the costs could be lower. Instead, the intervenors argued that the proposed fee increases were excessive, unreasonable, and would create a barrier to participation in the Supplier Referral Program (Cape Light Compact Brief at 67-69; Choice

³⁸⁸ On November 22, 2017, the Department approved specific changes to Eversource's Competitive Supplier Terms and Conditions tariff, which memorializes how customers are treated in the municipal aggregation programs. Investigation into Municipal Aggregation Programs, D.P.U. 16-10, Stamp-Approved Compliance Filing (November 22, 2017). These changes were specifically mandated by the Department in D.P.U. 16-10 after a full investigation and, as a result, shall be incorporated in the Companies' current Competitive Supplier Terms and Conditions.

Energy Brief at 18-19; RESA Brief at 20-21). The Department has reviewed the Companies' calculations and assumptions and finds that proposed fees for the Supplier Referral Program are based on costs that Companies actually incur associated with these functions and, therefore, are reasonable and transparent (Exh. ES-RDP-17, Sch. RDP-5). As a result, the Department approves the fee increases and changes to Appendix A, to the extent that the proposed changes remain consistent with the Companies' current Competitive Supply Terms and Conditions.

E. Residential Assistance Adjustment Clause

1. Introduction

In August 2003, the Department established an automatic enrollment program for the purpose of increasing participation in the low-income discount rate. Low-Income Discount Rate Participation Rate, D.T.E. 01-106-A (2003). The Department directed electric and gas companies to exchange information with the Executive Office of Health and Human Services on a quarterly basis so that every recipient of a means-tested public benefit who is also the electric and/or gas customer of record would be automatically enrolled in the discount rate without the usual paper application. D.T.E. 01-106-A at 10, 13. In 2006, the Department established standards for electric and gas arrearage management programs ("AMPs") to help eligible customers pay overdue utility bills with payment programs, debt forgiveness, or a combination of the two. Standards for Arrearage Programs for Low-Income Customers, D.T.E. 05-86, at 10, 14-15 (2006). The Department determined that the appropriate cost recovery mechanism for both the revenue shortfall caused by the discount rate and

incremental AMP expenses is the RAAF. D.T.E. 01-106-C/05-55/05-56, at 11, 14; D.T.E. 05-86, at 12-13.

NSTAR Electric's recovery of the revenue shortfall caused by the discount rate and incremental AMP expenses is governed by provisions set forth in its legacy companies' Residential Assistance Adjustment Clause ("RAAC") tariffs (M.D.P.U. No. 110D (Boston Edison Company); M.D.P.U. No. 210D (Cambridge Electric Company); M.D.P.U. 310D (Commonwealth Electric Company)). The RAAC tariffs contain a net cost/benefit formula that was approved by the Department as part of a settlement agreement in NSTAR Electric's last base rate case. D.T.E. 05-85, at 9-10, 33. The formula sets forth the method by which NSTAR Electric recovers AMP-related costs. Specifically, pursuant to the formula, reasonable costs associated with the AMP in excess of the benefits are reconciled annually through the RAAF. D.T.E. 05-85, at 10.

WMECo's recovery of the revenue shortfall caused by the discount rate and incremental AMP expenses is governed by provisions set forth in its RAAC tariff (M.D.P.U. No. 1040K). WMECo's current RAAC does not contain a net cost/benefit formula.

2. Companies' Proposal

Eversource proposes to consolidate the Companies' RAAC tariffs into one tariff, to eliminate NSTAR Electric's net/cost benefit formula, and to recover all expenses directly associated with the AMP consistent with WMECo's current cost recovery method (Exh. ES-RDP-9, at 32; RR-DPU-51, Att. (a) at 112-115 (proposed M.D.P.U. No. 523)).

Eversource states that for the test year, elimination of the formula would produce an additional \$1,396,726 in recoverable costs (Exhs. ES-RDP-9, at 33; ES-DPH-5 (Rev. 3)). In its initial rate design proposal, Eversource proposes to maintain separate RAAFs for the Eastern and Western Massachusetts service territories because the Companies' base distribution rates have been developed under separate revenue requirements and the low-income discounts are different for NSTAR Electric and WMECO (Exh. DPU-41-11). In its revised rate design proposal, Eversource proposes to maintain separate RAAFs for the Eastern and Western Massachusetts service territories in 2018 (Exh. DPU-56-9, at 2 (Supp.); RR-DPU-51, Att. (a) at 114 (proposed M.D.P.U. No. 523, § 1.05)). In 2019, the Companies propose to combine the revenue requirement calculation in the RAAC for a consolidated RAAF for the Eastern and Western Massachusetts service territories (Exh. DPU-56-9, at 2 (Supp.); RR-DPU-51, Att. (a) at 115 (proposed M.D.P.U. No. 523, § 1.05)).³⁸⁹ No party commented on the Companies' proposal on brief.

3. Analysis and Findings

The Department finds that Eversource's proposal to consolidate the Companies' RAACs is reasonable and appropriate and, therefore, it is allowed. Regarding the proposed elimination of the AMP net cost/benefit formula in the NSTAR Electric tariffs, this formula was established as part of a settlement approved by the Department in D.T.E. 05-85.

D.T.E. 05-85, at 9-10, 33. Pursuant to the formula, reasonable costs associated with the

³⁸⁹ Additionally in their revised rate design proposal, the Companies propose a uniform low-income discount (i.e., 36 percent) for both Eastern and Western Massachusetts service territories (Exh. DPU-56-9, at 2 (Supp.)).

AMP in excess of the benefits are reconciled and recovered annually through NSTAR Electric's legacy companies' RAAFs. D.T.E. 05-85, at 10.

AMPs are legislatively mandated by St. 2005, c. 140, § 17 and there is no statutory requirement that they be cost effective. 2013 Arrearage Management Programs, D.P.U. 13-AMP-01 through D.P.U. 13-AMP-08, at 9 (July 17, 2014). Neither WMECo, nor any other gas or electric distribution company (other than NSTAR Electric), currently uses a net cost/benefit formula as part of its recovery of AMP costs. Further, because the settlement in D.T.E. 05-85 that established the net cost/benefit formula is no longer in effect, there is currently no basis to require that the Companies' maintain the net cost/benefit formula. Moreover, we find that eliminating the net cost/benefit formula for NSTAR Electric is consistent with the Department's treatment of the same issue for NSTAR Gas in its last base rate case. D.P.U. 14-150, at 383. Accordingly, the Department allows Eversource's proposal to eliminate the net cost/benefit formula from the proposed consolidated RAAC. The Department will address the Companies' proposal to implement a uniform low-income discount and to consolidate the RAAFs in our subsequent Order addressing rate design issues.

F. Renewable Energy Charge

1. Introduction

Eversource proposes to consolidate the renewable energy charge into one tariff, proposed M.D.P.U. No. 521 (RR-DPU-51, Att. (a) at 107).³⁹⁰ Pursuant to G.L. c. 25, § 20, the Companies propose a renewable energy charge of \$0.00050 per kWh, applicable to all customers (RR-DPU-51, Att. (a) at 107 (proposed M.D.P.U. No. 521)). The renewable energy charge provides funding to the Massachusetts Renewable Energy Trust Fund (RR-DPU-51, Att. (a) at 107 (proposed M.D.P.U. No. 521)). No party addressed the Companies' proposed tariff.

2. Analysis and Findings

The Department has reviewed the proposed tariff language and finds it to be reasonable. Therefore, the Department approves the Companies proposal to consolidate the renewable energy charge, as well as the renewable energy charge of \$0.00050 per kWh, applicable to all customers.

G. Optional Load Data Service Tariff

1. Introduction

Eversource proposes several changes to NSTAR Electric's and WMECo's current provisions governing load data services found in M.D.T.E. Nos. 151, 152 (Boston Edison Company); M.D.T.E. No. 251, 252 (Cambridge Electric Light Company); M.D.T.E. Nos. 351, 352 (Commonwealth Electric Company); and M.D.P.U. No. 1038B

³⁹⁰ In doing so, the Companies propose to cancel the following tariffs: M.D.T.E. No. 108, M.D.T.E. No. 208, M.D.T.E. No. 308, and M.D.P.U. No. 1031C (RR-DPU-51, Att. (a) at 107).

(WMECo) (Exh. ES-RDP-14 (Part 4) at 139-188; RR-DPU-51, Att. (a) at 85-87 (proposed M.D.P.U. No. 514)). Specifically, Eversource proposes to: (1) consolidate the tariffs into one new tariff, M.D.P.U. No. 514; (2) align the fees associated with interval load data access; (3) increase the fees associated with load pulse data access; and (4) update certain language, e.g., allow use of cellular rather than analog telephone line (Exh. ES-RDP-14 (Part 4) at 149-188; RR-DPU-51, Att. (a) at 85-87 (proposed M.D.P.U. No. 514)). In addition, Eversource proposes to terminate WMECo's current Extended Metering Options tariff, M.D.P.U. No. 1037D (Exhs. ES-RDP-9, at 35; ES-RDP-14 (Part 4) at 139-148).

2. Positions of the Parties

a. Cape Light Compact

Cape Light Compact contends that Eversource proposes to remove customers' abilities to connect their own metering equipment to the Companies' devices, which adversely affects the competitive supply market (Cape Light Compact Brief at 69-70). Cape Light Compact states that it currently uses meter clamps as part of its energy efficiency plan and the proposed tariff revisions would preclude such use (Cape Light Compact Brief at 70, citing D.P.U. 15-122, Tr. 3, at 437, 459-461). Thus, Cape Light Compact asserts that, to the extent that the Department allows the Companies' proposal to preclude the attachment of external devices, equipment used by Cape Light Compact and others in similar circumstances should be specifically exempt (Cape Light Compact Brief at 70).

With respect to the proposed fee increases for interval load data access and load pulse data access, Cape Light Compact asserts the increases are "hostile" to grid modernization as they raise an additional barrier for customers, suppliers, and aggregators looking to access

usage data, and make it “nearly impossible” to empower or engage customers in a modernized grid (Cape Light Compact Brief at 66-67, citing D.P.U. 12-76-B at 36).

b. Choice Energy

Choice Energy argues that Eversource’s proposal to increase its fees for access to customers’ usage data is unsupported and will serve as a barrier to customer empowerment or engagement (Choice Energy Brief at 24-25, citing e.g., Exhs. RESA-FL-1, at 25-27; ES-RPD-12, at 82-83). Choice Energy also asserts that Eversource is proposing to prevent any type of external device being attached to any company meter and that such change is discriminatory and should be rejected (Choice Energy at 24-25). With respect to the Extended Metering Options tariff, M.D.P.U. No. 1037D, Choice Energy argues that it would be inappropriate to eliminate a competitive supplier’s ability to request the read on request option because it would limit customer switches to the meter read date (Choice Energy Brief at 19).

c. RESA

RESA argues that the Department should deny Eversource’s request to increase the fees for interval load data access and load pulse data access (RESA Brief at 16-17). RESA asserts that the fee increases are excessive and that the Companies have not provided sufficient support for the increases (RESA Brief at 16-17). In addition, RESA argues that a fundamental principle of the Department’s grid modernization proceedings is to empower customers and Eversource’s fee increases contravene this principle (RESA Brief at 18).

Finally, RESA argues that the Department should reject the Companies’ proposal to remove the read-on-request option from WMECo’s Extended Meter Options tariff,

M.D.P.U. No. 1037D, because Eversource did not seek input from the competitive suppliers (RESA Brief at 23). In addition, RESA argues that while the optional meter read provision is not currently used, current Department initiatives to engage customers and enhance the retail market may lead to instances where a customer seeks to switch to a competitive supplier before his/her scheduled meter read date (RESA Brief at 23-24).

d. TEC and WMIG

TEC and WMIG argue that the Companies' proposed fee increases should be disallowed because (1) access to interval load data is a requirement for competitive suppliers to offer innovative products, and (2) pulse access is required for customers who want real-time, situational awareness of energy consumption or who desire to utilize third-party management systems (TEC and WMIG Reply Brief at 13-14). As such, TEC and WMIG contend that the increased fees represent a barrier to customer engagement enabled by timely access to data (TEC and WMIG Reply Brief at 14).

e. Companies

Eversource asserts that it is not proposing to remove customers' abilities to connect their own metering equipment, but instead is providing clarification regarding requirements for device attachments and providing consistency between the WMECo and NSTAR Electric territories (Companies Reply Brief at 95, citing Tr. 12, at 2601-2602). The Companies assert that they have an obligation to collect accurate data from customer meters and, therefore, it is in the best interest of customers that Eversource's equipment performs properly and without interference from external equipment (Companies Reply Brief at 95-96).

In addition, Eversource asserts that it has fully supported its fee increase proposal (Companies Brief at 562-563, citing e.g., Exhs. ES-RDP-9, at 25-26; ES-RDP-12).

3. Analysis and Findings

We first consider the appropriateness of the Companies' proposed tariff change as it relates to the ability of customers to connect their own metering equipment to Eversource's devices. In comparing the proposed consolidated tariff M.D.P.U. No. 514, with each tariff currently in effect, we note that the Companies continue to offer interval load data access and load pulse data access (see, e.g., M.D.T.E. No. 152, at 2).³⁹¹ The Companies also retained a special request section permitting a customer to request special services subject to mutual agreement (proposed M.D.P.U. No. 514, at 2). The Companies have simplified the special requests sections to exclude certain references, e.g., that the Companies will address availability, the cost of implementation, and technical alternatives (compare proposed M.D.P.U. No. 514, at 2 with M.D.T.E. No. 152, at 2). Nonetheless, the tariff continues to permit special requests and we expect Eversource to continue to work with customers and requestors to ensure that authorized attachments are permitted to the extent that they do not interfere with the customer's meter (proposed M.D.P.U. No. 514, at 2).³⁹² Based on the

³⁹¹ The redline comparison provided by the Companies is difficult to follow as it includes tariffs that are deleted in whole (Exh. ES-RPD-14 (Part 4) at 139-188; see also Tr. 12, at 2599). In the future, we expect companies that wish to consolidate tariffs to provide a redline version that compares each tariff individually for ease of review.

³⁹² The continued use by Cape Light Compact of meter clamps as part of its energy efficiency plan is more appropriately handled through the energy efficiency or grid modernization dockets. See, e.g., Thee Cape Light Compact Three-Year Energy Efficiency Plan, D.P.U. 15-166; D.P.U. 15-122.

foregoing, we find that the Companies' proposed consolidation of its load data services tariffs and the revised language contained in the consolidated tariff M.D.P.U. No. 514 is appropriate and, therefore, allowed.

In considering the appropriateness of the proposed fee alignments and increases, the Department has found that fees for various services, such as meter testing, returned checks, and cross-connection inspection fees, must be based on the costs that the company actually incurred associated with these functions. D.P.U. 08-27, at 46; D.T.E. 01-42, at 28; D.T.E. 95-118, at 84; D.P.U. 89-67, at 4-5. Fees for ancillary services such as processing after-hours call-outs are intended to reimburse a company for actual costs incurred in providing these particular services. See, e.g., D.P.U. 95-118, at 84; D.P.U. 89-67, at 4-5; D.P.U. 956, at 62.

The Department has reviewed the Companies' calculations and assumptions and finds that the four fees in proposed M.D.P.U. No. 514 are based on the costs that the Companies actually incur associated with these functions and, thus, are reasonable (Exhs. RESA-1-1; RESA-1-2; RESA-1-3; Tr. 11, at 2374-2377). The Department's rate setting goal of fairness dictates that customers pay the cost to serve them. Thus, the cost to provide this service should be charged to the customers that cause the cost, rather than be subsidized by other customers.

Finally, Choice Energy and RESA have raised concerns with respect to the Companies' request to terminate WMECo's current Extended Metering Options tariff, M.D.P.U. No. 1037D, which would eliminate the read on request provision. The record

demonstrates that competitive suppliers do not currently use WMECo's read-on-request provision (Exh. ES-RDP-9, at 35). RESA also notes that the read on request provision is not used and further recognizes that the Department has open dockets to determine how to "enhance the value of the retail market to customers" (RESA Brief at 23, citing D.P.U. 14-140, D.P.U. 15-122). To the extent that future Department decisions and retail market enhancements make the read-on-request provision reasonable or necessary, the inclusion of such provision would be an appropriate topic for discussion in those dockets that are specific to the competitive supply community. Further, the read-on-request provision at issue only applies to WMECo and not to NSTAR Electric, and for administrative efficiency the Companies are attempting to align their general procedures and tariffs. Based on these considerations, we grant Eversource's request to terminate the Extended Metering Option tariff, M.D.P.U. No. 1037D.

H. Basic Service Cost Adjustment Provision

1. Introduction

NSTAR Electric's and WMECo's current basic service tariffs include basic service cost adjustment provisions ("BSAP"), which provide for the recovery of non-supply costs associated with providing basic service through the basic service cost adjustment ("BSCA") factor that is added to the basic service rate for billing purposes (see M.D.P.U. Nos. 103AB, 203AB, 303AB, 1026BE). The BSAP for NSTAR Electric and WMECo provides for the recovery of supply-related bad debt costs as well as the recovery of fixed levels of costs for administration of basic service, conducting the competitive bidding processes, and regulatory

compliance.³⁹³ In their proposed basic service tariff, M.D.P.U. No. 516, the Companies propose revisions to the BSAP to provide for the annual recovery of (1) \$10,988 in administrative costs; (2) \$700,988 in costs associated with the competitive bidding process; and (3) \$2,822,467 in costs associated with basic service regulatory compliance, including required communication with basic service customers (RR-DPU-51, Att. (a) at 97 (proposed M.D.P.U. No. 516)). Additionally, the existing BSAP for WMECo includes a working capital allowance. Consistent with WMECo's existing BSAP, the Companies propose to provide for the recovery of a working capital allowance associated with basic service for NSTAR Electric (Exh. ES-DPH-1, at 198-199; RR-DPU-51, Att. (a) at 97 (proposed M.D.P.U. No. 516)). D.P.U. 10-70, at 77-78. The Companies state that they will update their BSCA filings based on the basic service net lag factor approved in this proceeding (Exh. ES-DPH-1, at 199). No party addressed these issues on brief.

2. Analysis and Findings

The Department has previously determined that costs associated with supply-related bad debt; the design and implementation of the competitive bidding process, including the evaluation of supplier bids and contract negotiations, the ongoing administration and execution of contracts with suppliers, including accounting activities necessary to track payments made to suppliers; and complying with the Department's basic service regulatory requirements, including required communications with its basic service customers should be included in the calculation of basic service prices. D.T.E. 02-40-B at 16-17.

³⁹³ The Department previously has directed that the BSAP indicate the fixed level of administrative costs to be recovered through the BSCA factor. D.P.U. 10-70, at 367.

The Department has reviewed the proposed costs of (1) \$10,988 in administrative costs; and (2) \$700,988 associated with the competitive bidding process (Exh. ES-DPH-4, Sch. DPH-11, at 1 (Rev. 1); RR-DPU-51, Att. (a) at 97 (proposed M.D.P.U. No. 516)). In particular, the \$700,988 in costs associated with the competitive bidding process include (a) \$617,061 for wholesale procurement and support; (b) \$296 in website update support; (c) 49,808 for billing system rate change support; and (d) \$33,823 for legal support (Exh. ES-DPH-4, Sch. DPH-11, at 1 (Rev. 1)). The Department finds that these two categories of proposed costs reflect the Companies' costs of providing basic service, are consistent with our directives in D.T.E. 02-40-B, and, as such, are appropriately recovered through the BSAP (see Exh. ES-DPH-4, Sch. DPH-11, at 1 (Rev. 1)). Additionally, Eversource proposes recovery of \$2,822,467 in regulatory compliance costs, but all of these costs are attributable to regulatory assessments that the Companies propose to reallocate to basic service (compare Exh. ES-DPH-4, Sch. DPH-11, at 1 (Rev. 1) with Exhs. ES-DPH-2 (East), Sch. DPH-17 (Rev. 1); ES-DPH-2 (West), Sch. DPH-17 (Rev. 1)).³⁹⁴ As addressed in Section VIII.O.3 above, the Department disallowed the Companies' proposal to reallocate regulatory assessment amounts to basic service. As a result, we disallow the Companies' proposal to collect this amount through the BSAP.

In WMECo's last base rate case, the Department excluded basic service cash working capital from the cash working capital allowance recovered through base rates and directed

³⁹⁴ The Department makes annual assessments to electric companies under its jurisdiction pursuant to G.L. c. 25, § 18.

WMECo to recover basic service cash working capital through the BSAP. D.P.U. 10-70, at 77-78. The Department finds the same method for cash working capital allowances is appropriate for NSTAR Electric. As addressed in Section VII.D above, the Department calculated separate lead-lag factors for O&M expense and for basic service for the Companies.³⁹⁵ Further, the Department finds that the Companies have properly excluded basic service cash working capital from the cash working capital allowance allowed to be recovered through base rates (Exh. ES-DPH-1, at 198-199). Accordingly, the Department approves the Companies' proposal to collect a basic service cash working capital allowance through the BSAP. At this time, the Department will not address any other provisions of this proposed tariff. Instead, we will address any further issues in our subsequent addressing rate design issues.

I. Additional Tariff Provisions

Eversource proposes to eliminate their economic development riders and interruptible load credit provisions because these programs no longer exist (Exh. ES-RDP-9, at 35).

Eversource also proposes changes to the following tariffs that are not addressed above or elsewhere in this Order: (1) Off-Cycle Meter Read for Switch of Supplier, proposed M.D.P.U. No. 513; (2) Power Purchase Availability, proposed M.D.P.U. No. 515; (3) Standards for Interconnection of Distributed Generation, proposed M.D.P.U. No. 526; (4) Farm Discount Rider, proposed M.D.P.U. No. 529; (5) Miscellaneous Charges, proposed M.D.P.U. No. 533; and (6) Load Response Program, proposed M.D.P.U. No. 535.

³⁹⁵ The Department calculated a basic service net lag factor of 1.72 days for purposes of the Companies' BSAP cash working capital allowance.

No party opposed the Companies' proposed elimination of the aforementioned tariffs or the proposed tariff changes. The Department finds it reasonable to terminate the Companies' economic development riders and interruptible load credit provisions, because these programs no longer exist. Further, we find that the Companies' proposed changes with respect to the foregoing tariffs are reasonable and, therefore, we approve the proposed changes. Eversource is directed to file revised tariffs with its compliance filing consistent with the directives below.

J. Other Tariff Issues

1. Compliance Filings

As discussed above in various sections of this Order, the Department has allowed certain provisions with respect to some of the Companies' proposed tariffs, but reserved other issues raised by these tariffs for discussion in our subsequent Order addressing rate design issues. Further, as noted above, the Department will address distribution rate tariffs and most of the reconciling rate tariffs in the next Order. In order to facilitate the compliance filing review in this proceeding, the Department directs the Companies to file only one set of compliance tariffs. This filing shall be made following the Department's subsequent Order in this proceeding.

2. Tariff Numbering System

Presently, Eversource relies on multiple tariff numbering systems. NSTAR Electric's tariffs use three different alphanumeric numbering systems, with tariffs applicable to the legacy Boston Edison Company using a 100-series, to the legacy Cambridge Electric Light Company using a 200-series, and to the legacy Commonwealth Electric Company using a

300 series. WMECo uses an entirely different alphanumeric system, with tariffs numbered in a 1000 series. The Companies propose to maintain these numbering systems for the proposed commercial and industrial distribution rate tariffs and the storm cost recovery adjustment factor tariffs (Exh. ES-RDP-10, Sch. RDP-1). The Companies propose to introduce a 500 alphanumeric series system for the proposed terms and conditions tariffs, residential distribution rate and streetlighting tariffs, other reconciling rate tariffs and other provisions (Exh. ES-RDP-10, Schs. RDP-1, RDP-2).

Under G.L. c. 164, § 94, a utility's proposed rates must be found as consistent with the public interest. One component of this standard, applicable to tariff construction, requires that a proposed tariff have sufficient detail to explain the basis for the rate to be charged for the offered service. Boston Gas Company, D.P.U. 92-259, at 47-48 (1993); Dedham Water Company, D.P.U. 13271, at 10 (1961). The Department's regulations prescribe tariff construction. For example, pursuant to 220 CMR 5.02(3)(a), each tariff or schedule shall show prominently the name of the company, firm, association or individual responsible, together with the name of any independent agency filing the tariff or schedule and its or his address. Moreover, each tariff or schedule must be designated by an individual number progressing from that last filed by the same party or in case of a new series, from Number 1 and sequentially thereafter. 220 CMR 5.04(a).

Eversource's tariff numbering systems fails to comply with the Department's regulations. While the Department has previously accepted the use of a tariff numbering system similar to that currently used by NSTAR Electric in Keyspan Energy Delivery New

England, D.T.E. 04-62, at 16, 47-48 (2004), the Department ultimately directed those companies to revise their tariff numbering in order to conform more closely to the requirements of 220 CMR 5.02(4). D.P.U. 10-55, at 602. Moreover, in the case of a post-merger NSTAR Electric, the existing 100 to 300 tariff series for the legacy companies that make up NSTAR Electric, and a separate tariff numbering system for what will become the legacy WMECo, would make it difficult for the Department to ensure that the Companies' tariffs are recorded and maintained in proper order. Adding yet another 500 tariff series on top of this existing system will only serve to increase the present difficulties.

Therefore, in order to prevent customer confusion and ensure compliance with Department regulations, the Companies are directed to submit, as part of their compliance filing, tariffs that clearly identify the legal business name of the particular company (i.e., NSTAR Electric Company).³⁹⁶ Additionally, the Companies are directed to renumber their tariffs sequentially as required by 220 CMR 5.04(a), using numbering not already used or proposed in this proceeding.

³⁹⁶ If the Companies wish to include the d/b/a "Eversource Energy" in their tariffs, they may do so, provided that it is clear that "Eversource Energy" is only being used as part of a d/b/a arrangement.

XVIII. SCHEDULES: NSTAR ELECTRIC COMPANY**A. NSTAR Electric Schedule 1 – Revenue Requirements and Calculation of Revenue Increase**

	PER COMPANY	COMPANY ADJUSTMENT	DPU ADJUSTMENT	PER ORDER
COST OF SERVICE				
Total O&M Expense	322,597,077	222,884	(28,959,408)	293,860,553
Depreciation & Amortization	176,196,744	74,023	(6,609,654)	169,661,113
Taxes Other Than Income Taxes	99,430,889	1,185,985	(27,485)	100,589,389
Income Taxes	106,987,033	130,775	(5,122,353)	101,995,455
Return on Rate Base	208,211,099	(5,049,088)	(2,871,303)	200,290,708
Additional Uncollectibles (Revenue Deficiency)	426,407	(29,016)	(310,652)	86,739
Total Cost of Service	913,849,249	(3,464,437)	(43,900,854)	866,483,958
OPERATING REVENUES				
Distribution Revenues	829,692,282	0	0	829,692,282
Total Other Revenues	23,962,582	631,625	(47,112)	24,547,095
Total Operating Revenues	853,654,864	631,625	(47,112)	854,239,377
Total Revenue Deficiency	60,194,385	(4,096,062)	(43,853,742)	12,244,581

Numbers may not add due to rounding, and minor discrepancies between these numbers and those in the text are due to rounding.

B. NSTAR Electric Schedule 2 – Operations and Maintenance Expenses

	PER COMPANY	COMPANY ADJUSTMENT	DPU ADJUSTMENT	PER ORDER
Test Year O&M Expense	274,358,971	(470,430)	0	273,888,541
ADJUSTMENTS TO O&M EXPENSE:				
Postage Expense	(126,159)	0	0	(126,159)
Uncollectible Expense	(3,573,684)	0	0	(3,573,684)
Fee Free Payment Processing	5,093,091	0	(5,093,091)	0
Fee Offset	0	0	52,891	52,891
Dues and Memberships	(93,080)	0	0	(93,080)
Employee Benefits Costs	1,548,219	1,104,330	(323,914)	2,328,635
Insurance Expense And Injuries & Damages	(87,075)	0	0	(87,075)
Payroll Expense	10,035,441	(964,281)	0	9,071,160
Variable Compensation	(3,057,252)	(91,433)	(460,042)	(3,608,727)
Vegetation Expense Annualization	5,226,646	0	0	5,226,646
Vegetation Management Resiliency Tree Work Pilot	22,752,025	0	(22,752,025)	0
Rate Case Expense	471,976	153,383	(29,052)	596,307
Regulatory Assessments	(2,188,739)	455,947	2,409,292	676,500
Lease Expense	400,375	219,956	(154,496)	465,835
Information Systems Expense Adjustment	1,362,605	(114,437)	(1,248,168)	0
GIS Verification Adjustment	1,023,615	167,661	(1,191,276)	0
Storm Cost Adjustment	2,880,000	0	0	2,880,000
Storm Fund Adjustment	3,500,000	0	0	3,500,000
Eversource Service Company Charges	0	0	(3,778)	(3,778)
Insurance Policy Distribution	0	0	(158,407)	(158,407)
Residual O&M Inflation Adjustment	3,070,102	(237,812)	(7,342)	2,824,948
Total Other O&M Expenses	48,238,106	693,314	(28,959,408)	19,972,012
Total O&M Expense	322,597,077	222,884	(28,959,408)	293,860,553

Numbers may not add due to rounding, and minor discrepancies between these numbers and those in the text are due to rounding.

C. NSTAR Electric Schedule 3 – Depreciation and Amortization Expenses

	PER COMPANY	COMPANY ADJUSTMENT	DPU ADJUSTMENT	PER ORDER
Depreciation and Amortization Expense	152,153,130	74,023	(6,600,402)	145,626,751
Amortization of Deferred Assets	24,043,614	0	(9,252)	24,034,362
Total Depreciation and Amortization Expense	176,196,744	74,023	(6,609,654)	169,661,113

Numbers may not add due to rounding, and minor discrepancies between these numbers and those in the text are due to rounding.

D. NSTAR Electric Schedule 4 – Rate Base and Return on Rate Base

	PER COMPANY	COMPANY ADJUSTMENT	DPU ADJUSTMENT	PER ORDER
Utility Plant in Service	5,277,871,546	5,236,686	0	5,283,108,232
LESS:				
Reserve for Depreciation	1,629,791,051	1,250,000	2,351,645	1,633,392,696
Reserve for Amortization	21,408,453	0	0	21,408,453
Net Utility Plant in Service	3,626,672,042	3,986,686	(2,351,645)	3,628,307,083
ADDITIONS TO PLANT:				
Cash Working Capital	37,453,650	128,535	(2,644,558)	34,937,628
ASC 740 (net)	60,537,693	0	0	60,537,693
Materials and Supplies	34,922,056	0	0	34,922,056
Total Additions to Plant	132,913,399	128,535	(2,644,558)	130,397,377
DEDUCTIONS FROM PLANT:				
Reserve for Deferred Income Tax	984,178,132	669,989	0	984,848,121
Customer Deposits	6,369,673	0	0	6,369,673
Customer Advances	34,634,865	0	0	34,634,865
Total Deductions from Plant	1,025,182,670	669,989	0	1,025,852,659
RATE BASE	2,734,402,771	3,445,232	(4,996,203)	2,732,851,801
COST OF CAPITAL	7.61%	-0.19%	-0.09%	7.33%
RETURN ON RATE BASE	208,211,099	(5,049,088)	(2,871,303)	200,290,708

Numbers may not add due to rounding, and minor discrepancies between these numbers and those in the text are due to rounding.

E. NSTAR Electric Schedule 5 – Cost of Capital

PER COMPANY				
	PRINCIPAL	PERCENTAGE	COST	RATE OF RETURN
Long-Term Debt	\$2,100,000,000	45.69%	4.31%	1.97%
Preferred Stock	\$43,000,000	0.94%	4.56%	0.04%
Common Equity	\$2,452,820,959	53.37%	10.50%	5.60%
Total Capital	\$4,595,820,959	100.00%		7.61%
Weighted Cost of Debt				1.97%
Preferred				0.04%
Equity				5.60%
Cost of Capital				7.61%

COMPANY ADJUSTMENTS				
	PRINCIPAL	PERCENTAGE	COST	RATE OF RETURN
Long-Term Debt	\$2,100,000,000	45.69%	3.88%	1.77%
Preferred Stock	\$43,000,000	0.94%	4.56%	0.04%
Common Equity	\$2,452,820,959	53.37%	10.50%	5.60%
Total Capital	\$4,595,820,959	100.00%		7.42%
Weighted Cost of Debt				1.77%
Preferred				0.04%
Equity				5.60%
Cost of Capital				7.42%

PER ORDER				
	PRINCIPAL	PERCENTAGE	COST	RETURN
Long-Term Debt	\$2,100,000,000	45.72%	4.27%	1.95%
Preferred Stock	\$43,000,000	0.94%	4.56%	0.04%
Common Equity	\$2,450,093,895	53.34%	10.00%	5.33%
Total Capital	\$4,593,093,895	100.00%		7.33%
Weighted Cost of Debt				1.95%
Preferred				0.04%
Equity				5.33%
Cost of Capital				7.33%

Numbers may not add due to rounding, and minor discrepancies between these numbers and those in the text are due to rounding.

F. NSTAR Electric Schedule 6 – Cash Working Capital

	PER COMPANY	COMPANY ADJUSTMENT	DPU ADJUSTMENT	PER ORDER
Total O&M Expense	322,597,077	222,884	(28,959,408)	293,860,553
Less Uncollectible Accounts	11,499,968	0	0	11,499,968
Taxes Other Than Income	99,430,890	1,185,985	(27,485)	100,589,390
Amount Subject to CWC	<u>410,527,999</u>	<u>1,408,869</u>	<u>(28,986,893)</u>	<u>382,949,975</u>
Cash Working Capital Factor (33.30/365)	9.12%	9.12%	9.12%	9.12%
Total Cash Working Capital Allowance	37,453,650	128,535	(2,644,558)	34,937,628

Numbers may not add due to rounding, and minor discrepancies between these numbers and those in the text are due to rounding.

G. NSTAR Electric Schedule 7 – Taxes Other Than Income Taxes

	PER COMPANY	COMPANY ADJUSTMEN T	DPU ADJUSTMENT	PER ORDER
FICA	6,686,097	(49,763)	(27,485)	6,608,849
Medicare	1,806,639	(13,446)	0	1,793,193
Federal Unemployment	45,739	0	0	45,739
State Unemployment	259,370	0	0	259,370
State Insurance Premium Excise Tax	230,381	0	0	230,381
Tangible Property Tax	1,275,000	0	0	1,275,000
Universal Health Tax	40,372	0	0	40,372
State Sales and Use Tax	3,918	0	0	3,918
Property Taxes	89,083,373	1,249,194	0	90,332,567
Taxes Other Than Income	99,430,889	1,185,985	(27,485)	100,589,389

Numbers may not add due to rounding, and minor discrepancies between these numbers and those in the text are due to rounding.

H. NSTAR Electric Schedule 8 – Income Taxes

	PER COMPANY	COMPANY ADJUSTMENT	DPU ADJUSTMENT	PER ORDER
Rate Base	2,734,402,771	3,445,232	(4,996,203)	2,732,851,801
Return on Rate Base	208,211,099	(5,049,088)	(2,871,303)	200,290,708
Interest Expense	(53,813,047)	5,243,623	(4,748,515)	(53,317,939)
Amortization of Net Unfunded Deferred Tax Liab.	1,488,887	0	0	1,488,887
Income Tax Impact of Flowthrough Items	1,311,689	0	0	1,311,689
Amortization of Investment Tax Credits	0	0	0	0
Total Deductions	(51,012,471)	5,243,623	(4,748,515)	(50,517,363)
Taxable Income Base	157,198,628	194,535	(7,619,818)	149,773,346
Gross Up Factor	1.6722	1.6722	1.6722	1.6722
Taxable Income	262,873,992	325,309	(12,742,172)	250,457,130
Mass Franchise Tax 8%	21,029,919	26,025	(1,019,374)	20,036,570
Federal Taxable Income	241,844,072	299,285	(11,722,798)	230,420,559
Federal Income Tax at 35%	84,645,425	104,750	(4,102,979)	80,647,196
Amort. ITC	1,311,689	0	0	1,311,689
Total Income Taxes	106,987,033	130,775	(5,122,353)	101,995,455

Numbers may not add due to rounding, and minor discrepancies between these numbers and those in the text are due to rounding.

I. NSTAR Electric Schedule 9 - Revenues

	PER COMPANY	COMPANY ADJUSTMENT	DPU ADJUSTMENT	PER ORDER
DISTRIBUTION REVENUES PER BOOKS	829,692,282	69,143	0	829,761,425
Operating Revenues	29,548,876	0	0	29,548,876
<u>Other Revenues</u>				
Special Contracts	217,639	0	0	217,639
Late Payment Charges	3,437,879	0	0	3,437,879
Rent from Electric Property	8,322,192	689,974	577,328	9,589,494
Other Electric Revenue	11,648,697	208,683	(624,440)	11,232,940
Revenues from Transmission of Electricity of Others	336,175	(336,175)	0	0
Total Other Revenues	23,962,582	562,482	(47,112)	24,477,952
Total Operating Revenues	853,654,864	631,625	(47,112)	854,239,377

Numbers may not add due to rounding, and minor discrepancies between these numbers and those in the text are due to rounding.

XIX. SCHEDULES: WESTERN MASSACHUSETTS ELECTRIC COMPANY**A. WMECO Schedule 1 – Revenue Requirements and Calculation of Revenue Increase**

	COMPANY PER COMPANY	ADJUSTMENT	DPU ADJUSTMENT	PER ORDER
COST OF SERVICE				
Total O&M Expense	67,567,718	82,708	(4,964,458)	62,685,968
Depreciation & Amortization	32,781,024	(1,164,091)	(3,249,638)	28,367,295
Taxes Other Than Income Taxes	18,259,052	948,871	(35,148)	19,172,775
Income Taxes	19,459,290	(46,295)	(561,925)	18,851,069
Return on Rate Base	33,576,776	(597,919)	(1,315,642)	31,663,215
Additional Uncollectibles (Revenue Deficiency)	443,454	(12,264)	(122,990)	308,200
Total Cost of Service	172,087,313	(788,990)	(10,249,800)	161,048,522
OPERATING REVENUES				
Base Distribution Revenues	132,415,741	0	0	132,415,741
Other Operating Revenues	4,008,528	197,255	(358,726)	3,847,057
Total Operating Revenues	136,424,269	197,255	(358,726)	136,262,798
Total Revenue Deficiency	35,663,044	(986,245)	(9,891,074)	24,785,725

Numbers may not add due to rounding, and minor discrepancies between these numbers and those in the text are due to rounding.

B. WMECO Schedule 2 – Operations and Maintenance Expenses

	PER COMPANY	COMPANY ADJUSTMENT	DPU ADJUSTMENT	PER ORDER
Test Year O&M Expense (6/30/2016)	\$59,918,641	(\$159,997)	\$0	\$59,758,644
ADJUSTMENTS TO TEST YEAR O&M EXPENSE:				
Postage Expense	(27,580)	0	0	(27,580)
Uncollectible Expense	(2,063,199)	0	0	(2,063,199)
Fee Free Payment Processing	906,909	0	(906,909)	0
Fee Free Payment Processing O&M Savings Offset	0	0	9,378	9,378
Dues and Memberships	(2,693)	0	0	(2,693)
Employee Benefits Costs	206,047	205,993	(24,483)	387,557
Insurance Expense and Injuries & Damage	(110,172)	0	0	(110,172)
Payroll Expense	1,694,639	0	(173,600)	1,521,039
Variable Compensation	(714,682)	0	(85,221)	(799,903)
Vegetation Management Resiliency Tree Work Pilot	3,902,175	0	(3,902,175)	0
Rate Case Expense	311,279	37,027	(5,127)	343,179
Regulatory Assessments	(374,453)	80,051	413,176	118,774
Lease Expense	13,819	0	(27,167)	(13,348)
Information Systems Expense Adjustment	244,633	(6,696)	(237,937)	(0)
Storm Cost Adjustment	720,000	0	0	720,000
Storm Fund Adjustment	2,000,000	0	0	2,000,000
Eversource Service Company Charges	0	0	(662)	(662)
Residual O&M Inflation Adjustment	942,355	(73,669)	(1,056)	867,630
Insurance Policy Distribution	0	0	(22,675)	(22,675)
Sum of O&M Expense Adjustments	7,649,077	242,705	(4,964,458)	2,927,324
Total O&M Expense	67,567,718	82,708	(4,964,458)	62,685,968

Numbers may not add due to rounding, and minor discrepancies between these numbers and those in the text are due to rounding.

C. WMECO Schedule 3 – Depreciation and Amortization Expenses

	PER COMPANY	COMPANY ADJUSTMENT	DPU ADJUSTMENT	PER ORDER
Depreciation and Amortization Expense	30,276,615	(44,091)	(3,248,078)	26,984,446
Amortization of Deferred Assets	2,504,409	(1,120,000)	(1,560)	1,382,849
Total Depreciation and Amortization Expense	32,781,024	(1,164,091)	(3,249,638)	28,367,295

Numbers may not add due to rounding, and minor discrepancies between these numbers and those in the text are due to rounding.

D. WMECO Schedule 4 – Rate Base and Return on Rate Base

	PER COMPANY	COMPANY ADJUSTMENT	DPU ADJUSTMENT	PER ORDER
Utility Plant in Service	834,673,665	(1,586,025)	(3,488,926)	829,598,714
LESS:				
Reserve for Depreciation	232,345,474	(6,919)	0	232,338,555
Reserve for Amortization	19,245,859	0	0	19,245,859
Net Utility Plant in Service	583,082,332	(1,579,106)	(3,488,926)	578,014,300
ADDITIONS TO PLANT:				
Cash Working Capital	7,547,362	94,114	(452,922)	7,188,554
ASC 740 (net)	19,209,890	0	0	19,209,890
Materials and Supplies	2,242,787	0	0	2,242,787
Total Additions to Plant	29,000,039	94,114	(452,922)	28,641,231
DEDUCTIONS FROM PLANT:				
Reserve for Deferred Income Tax	168,804,718	(255,350)	(672,829)	167,876,539
Customer Deposits	2,114,715	0	0	2,114,715
Customer Advances	291,410	0	0	291,410
Total Deductions from Plant	171,210,843	(255,350)	(672,829)	170,282,664
RATE BASE	440,871,528	(1,229,642)	(3,269,019)	436,372,867
COST OF CAPITAL	7.62%	-0.11%	-0.25%	7.26%
RETURN ON RATE BASE	33,576,776	(597,919)	(1,315,642)	31,663,215

Numbers may not add due to rounding, and minor discrepancies between these numbers and those in the text are due to rounding.

E. WMECO Schedule 5 – Cost of Capital

PER COMPANY				
	PRINCIPAL	PERCENTAGE	COST	RATE OF RETURN
Long-Term Debt	\$547,975,604	46.66%	4.32%	2.02%
Preferred Stock	\$0	0.00%	0.00%	0.00%
Common Equity	\$626,410,414	53.34%	10.50%	5.60%
Total Capital	\$1,174,386,018	100.00%		7.62%
Weighted Cost of Debt				2.02%
Preferred Equity				0.00%
Equity				5.60%
Cost of Capital				7.62%

COMPANY ADJUSTMENTS				
	PRINCIPAL	PERCENTAGE	COST	RATE OF RETURN
Long-Term Debt	\$547,975,604	46.66%	4.07%	1.90%
Preferred Stock	\$0	0.00%	0.00%	0.00%
Common Equity	\$626,410,414	53.34%	10.50%	5.60%
Total Capital	\$1,174,386,018	100.00%		7.50%
Weighted Cost of Debt				1.90%
Preferred Equity				0.00%
Equity				5.60%
Cost of Capital				7.50%

PER ORDER				
	PRINCIPAL	PERCENTAGE	COST	RETURN
Long-Term Debt	\$547,975,604	45.49%	3.97%	1.81%
Preferred Stock	\$0	0.00%	0.00%	0.00%
Common Equity	\$656,686,129	54.51%	10.00%	5.45%
Total Capital	\$1,204,661,733	100.00%		7.26%
Weighted Cost of Debt				1.81%
Preferred Equity				0.00%
Equity				5.45%
Cost of Capital				7.26%

Numbers may not add due to rounding, and minor discrepancies between these numbers and those in the text are due to rounding.

F. WMECO Schedule 6 – Cash Working Capital

	PER COMPANY	COMPANY ADJUSTMENT	DPU ADJUSTMENT	PER ORDER
Total O&M Expense	67,567,718	82,708	(4,964,458)	62,685,968
Less Uncollectible Accounts	3,100,435		0	3,100,435
Taxes Other Than Income	18,259,052	948,871	0	19,207,923
Total Costs Applicable to Cash Working Capital	82,726,335	1,031,579	(4,964,458)	78,793,456
Cash Working Capital Factor (33.30/365)	9.123%	9.123%	9.123%	9.123%
Total Cash Working Capital Allowance	7,547,362	94,114	(452,922)	7,188,554

Numbers may not add due to rounding, and minor discrepancies between these numbers and those in the text are due to rounding.

G. WMECO Schedule 7 – Taxes Other Than Income Taxes

	PER COMPANY	COMPANY ADJUSTMENT	DPU ADJUSTMENT	PER ORDER
FICA	1,294,826	0	(17,574)	1,277,252
Medicare	356,766	0	0	356,766
Federal Unemployment	10,015	0	0	10,015
State Unemployment	63,080	0	(17,574)	45,506
State Insurance Premium Excise Tax	30,003	0	0	30,003
Federal Highway Tax	1,610	0	0	1,610
Universal Health Tax	8,203	0	0	8,203
State Sales and Use Tax/Other	942	0	0	942
Property Tax	16,493,608	948,871	0	17,442,479
Taxes Other Than Income	18,259,052	948,871	(35,148)	19,172,775

Numbers may not add due to rounding, and minor discrepancies between these numbers and those in the text are due to rounding.

H. WMECO Schedule 8 – Income Taxes

	PER COMPANY	COMPANY ADJUSTMENT	DPU ADJUSTMENT	PER ORDER
Rate Base	440,871,529	(1,229,642)	(3,269,019)	436,372,867
Return on Rate Base	33,576,776	(597,919)	(1,315,642)	31,663,215
Add: Flow-Through and Permanent Items	3,815,783	0	0	3,815,783
Less: Interest Expense	(8,885,325)	529,051	479,743	(7,876,530)
Add: FAS 109 Income Taxes and ITC	176,747	0	0	176,747
Total Deductions	(4,892,795)	529,051	479,743	(3,884,000)
Taxable Income Base	28,683,981	(68,867)	(835,898)	27,779,215
Gross Up Factor	1.672241	1.672241	1.672241	1.672241
Taxable Income	47,966,524	(115,163)	(1,397,823)	46,453,537
Massachusetts Income Tax (8%)	3,837,322	(9,213)	(111,826)	3,716,283
Federal Taxable Income	44,129,202	(105,950)	(1,285,998)	42,737,254
Federal Income Tax Calculated (35%)	15,445,221	(37,082)	(450,099)	14,958,039
Total Income Taxes Calculated	19,282,543	(46,295)	0	19,236,248
Add: FAS 109 Income Taxes and ITC	176,747	0	0	176,747
Total Income Taxes	19,459,290	(46,295)	(561,925)	18,851,069

Numbers may not add due to rounding, and minor discrepancies between these numbers and those in the text are due to rounding.

I. WMECO Schedule 9 - Revenues

	PER COMPANY	COMPANY ADJUSTMENT	DPU ADJUSTMENT	PER ORDER
<u>Distribution Revenues</u>				
Distribution Revenues	132,218,977	0	(464,646)	131,754,331
Revenue Decoupling (Prior Year Refund)	(5,104,988)	0	0	(5,104,988)
Revenue Decoupling	5,301,752	0	464,646	5,766,398
Total Distribution Revenues	132,415,741	0	0	132,415,741
<u>Other Revenues</u>				
Sales for Resale (447)	55,380	0	0	55,380
Late Payment Charges (450)	526,847	(238,893)		287,954
Misc. Revenues (451)	246,414	436,148	(358,726)	323,836
Rent from Electric Property (454)	800,581	0		800,581
Other Electric Revenue (456)	2,379,306	0	0	2,379,306
Total Other Revenues	4,008,528	197,255	(358,726)	3,847,057
Adjusted Total Operating Revenues	136,424,269	197,255	(358,726)	136,262,798

Numbers may not add due to rounding, and minor discrepancies between these numbers and those in the text are due to rounding.

XX. ORDER

Accordingly, after due notice, hearing and consideration, it is

ORDERED: That the proposed tariffs filed in the instant proceeding by NSTAR Electric Company and Western Massachusetts Electric Company, to become effective, after suspension by the Department, on December 1, 2017, are DISALLOWED; and it is

FURTHER ORDERED: That NSTAR Electric Company shall file new schedules of rates and charges designed to increase annual electric revenues by \$12,244,581; and it is

FURTHER ORDERED: That Western Massachusetts Electric Company shall file new schedules of rates and charges designed to increase annual electric revenues by \$24,785,725; and it is

FURTHER ORDERED: That NSTAR Electric Company and Western Massachusetts Electric Company shall file the aforementioned new schedules of rates and charges following the issuance of and in compliance with the Department's subsequent Order addressing rate design; and it is

FURTHER ORDERED: That the new rates shall apply to electricity consumed on or after January 1, 2018, but unless otherwise ordered by the Department, shall not become effective earlier than seven days after the rates are filed with supporting data demonstrating that such rates comply with this Order; and it is

FURTHER ORDERED: That NSTAR Electric Company and Western Massachusetts Electric Company shall comply with all other orders and directives contained in this Order.

By Order of the Department,

/s/

Angela M. O'Connor, Chairman

/s/

Robert E. Hayden, Commissioner

/s/

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.