

May 21, 2021

By E-Filing

Mark D. Marini, Secretary
Department of Public Utilities
One South Station, 5th Floor
Boston, MA 02110

Re: Distributed Energy Resource Planning and Assignment and Recovery of Costs for the Interconnection of Distributed Generation – D.P.U. 20-75

Dear Secretary Marini:

On behalf of Massachusetts Electric Company and Nantucket Electric Company, each d/b/a National Grid (“National Grid”), enclosed for filing in the above matter are National Grid’s Responses to Information Requests EDC-2-4 and EDC-2-5. Each individual Information Request Response and attachments is submitted in a separate PDF file. In addition, both Information Request Responses with associated attachments are submitted as a single PDF file.

Thank you for your attention to this matter. Please contact me if you have any questions regarding this filing.

Sincerely,



Nancy D. Israel, Esq.

Enclosures

cc: Katie Zilgme, Hearing Officer

Information Request EDC-2-4

Request:

Refer to National Grid's response to EDC-1, at 1. Please provide a table with the total megawatt ("MW") of DG capacity that are currently interconnected to the substations that are part of each Group Study Region, with separate columns for facilities greater than or equal to 200 kW each and facilities less than 200 kW each.

Response:

See Attachment EDC-2-4.

Group Study Area	Substation	Total MW Interconnected (≥ 200 kW)	Total MW Interconnected (< 200 kW)	Total MW Interconnected
Ayer-Clinton	Laurel Circle	14.926	2.649	17.575
Ayer-Clinton	Fitch Road	4.889	3.508	8.397
Ayer-Clinton	Ayer	13.381	3.690	17.071
Barre-Athol	Wendell Depot	16.380	2.792	19.172
Barre-Athol	Royalston	0.000	0.353	0.353
Barre-Athol	Chestnut Hill	16.013	3.455	19.468
Barre-Athol	Barre	18.876	2.996	21.872
Gardner-Winchendon	Westminster	6.018	1.518	7.536
Gardner-Winchendon	East Winchendon	22.188	1.915	24.103
Gardner-Winchendon	East Westminster	4.977	1.816	6.793
Gardner-Winchendon	Crystal Lake	40.956	2.806	43.762
Hopedale-West	Whitins Pond	21.645	5.687	27.332
Hopedale-West	Mendon	1.498	4.386	5.884
Hopedale-West	Uxbridge	29.077	6.010	35.087
Hopedale-West	Rocky Hill	0.883	2.963	3.846
Hopedale-West	Depot Street/Little Depot	8.824	7.020	15.844
Millbury-Grafton	Vernon Hill	10.617	1.238	11.855
Millbury-Grafton	Pondville	2.272	2.332	4.604
Millbury-Grafton	Millbury	17.352	9.953	27.305
Millbury-Grafton	Bloomington	0.799	2.843	3.642
MPL-East	Ware	9.906	2.337	12.243
MPL-East	Shearers Corner	2.000	0.445	2.445
MPL-East	Palmer 503	21.621	2.705	24.326
MPL-East	Little Rest Road	27.892	1.950	29.842
Shutesbury	Shutesbury	4.500	0.653	5.153
Spencer-Rutland	Treasure Valley	31.732	3.258	34.990
Spencer-Rutland	Meadow Street	19.676	2.461	22.137
Spencer-Rutland	Leicester	12.290	2.452	14.742
Spencer-Rutland	Lashaway	13.414	2.164	15.578
Webster-Sturbridge-Charlton	West Charlton	24.849	2.388	27.237
Webster-Sturbridge-Charlton	Snow Street	40.880	3.256	44.136
Webster-Sturbridge-Charlton	North Oxford	41.005	5.533	46.538
Webster-Sturbridge-Charlton	East Webster	9.383	5.420	14.803
	Totals:	510.719	104.952	615.671

Information Request EDC-2-5

Request:

Refer to National Grid's response to EDC-2, at 1. Please provide:

- (a) An updated bill impact estimate assuming all of the identified upgrades are constructed, but no distributed energy resources ultimately pay CIP fees to interconnect; and
- (b) An updated bill impact estimate assuming all capacity enabled by the upgrades identified is utilized by distributed energy resources over the next ten years.

Response:

- (a) See Attachments EDC-2-5-1 through EDC-2-5-5.
- (b) See Attachments EDC-2-5-6 through EDC-2-5-10.

For purposes of Attachments EDC-2-5-1 and EDC-2-5-6, the Company has continued to use its March 1, 2021 rates, which it used to calculate the high-level illustrative monthly bill impacts for a 500 kWh residential customer receiving Basic Service in Attachment EDC-2-1 submitted on April 6, 2021, to allow the Department to compare the illustrative bill impacts presented in this response to those presented in Information Request EDC-2. The Company has presented illustrative bill impacts associated with the revenue requirements associated with each of the assumed amortization periods of 10, 20, and 30 years consistent with those presented in Information Request EDC-2. The Company began the bill impact analysis using a monthly residential bill based on rates effective March 1, 2021 and determined each year's incremental increase in the illustrative factor to arrive at the illustrative incremental bill impact for each successive year.

Consistent with the Company's response to Information Request EDC-2, the illustrative bill impacts and illustrative revenue requirements presented in this response reflect those resulting from the Company's investment in distribution plant additions and cost of removal and exclude investments in transmission plant that may be required by the Company or its transmission affiliate, New England Power Company. In addition to resolving the open issues identified in the Company's response to Information Request EDC-5 submitted on April 6, 2021, the Company would need a complete estimate of all associated transmission upgrades and how they would be allocated between DG customers and distribution customers, and then would need to allocate costs to distribution rate classes based on a coincident peak allocator, consistent with the

allocation of transmission costs billed to the Company (on the basis of the Company's demand at the time of the system's peak).

Massachusetts Electric Company
 Nantucket Electric Company
 Summary of Illustrative Bill Impacts - No CIP Fees
 10, 20, and 30 Year Amortization

	Year 1	Year 2	Year 3	Year 4	Year 5
	(a)	(b)	(c)	(d)	(e)
(1) Illustrative % Increase @ 10 Year Amortization	1.71%	0.80%	-0.03%	-0.16%	-0.15%
(2) Illustrative % Increase @ 20 Year Amortization	1.41%	0.54%	0.06%	-0.08%	-0.08%
(3) Illustrative % Increase @ 30 Year Amortization	1.31%	0.46%	0.08%	-0.06%	-0.06%

- (1) Page 2, Line (11)
- (2) Page 3, Line (11)
- (3) Page 4, Line (11)

Massachusetts Electric Company
Nantucket Electric Company
Calculation of Illustrative Factor and Residential Bill Impact - No CIP Fees
Assuming 10 Year Amortization

	<u>Year 1</u>	<u>Year 2</u>	<u>Year 3</u>	<u>Year 4</u>	<u>Year 5</u>
	(a)	(b)	(c)	(d)	(e)
(1) Total Annual Recovery	\$67,026,944	\$98,573,918	\$97,476,483	\$91,205,866	\$85,268,707
(2) Residential Distribution Revenue Allocator	<u>57.7%</u>	<u>57.7%</u>	<u>57.7%</u>	<u>57.7%</u>	<u>57.7%</u>
(3) Total Allocated Residential Recovery	\$38,674,547	\$56,877,151	\$56,243,931	\$52,625,785	\$49,200,044
(4) Forecasted Annual Residential kWh	<u>8,111,041,508</u>	<u>8,111,041,508</u>	<u>8,111,041,508</u>	<u>8,111,041,508</u>	<u>8,111,041,508</u>
(5) Illustrative Annual Factor	\$0.00476	\$0.00701	\$0.00693	\$0.00648	\$0.00606
(6) Illustrative Incremental Change in Factor	\$0.00476	\$0.00225	(\$0.00008)	(\$0.00045)	(\$0.00042)
(7) Monthly Residential kWh Deliveries	<u>500</u>	<u>500</u>	<u>500</u>	<u>500</u>	<u>500</u>
(8) Year-Over-Year Illustrative Increase in Monthly Bill	\$2.38	\$1.13	(\$0.04)	(\$0.23)	(\$0.21)
(9) Residential Monthly Bill at Start of Year	<u>\$139.56</u>	<u>\$141.94</u>	<u>\$143.07</u>	<u>\$143.03</u>	<u>\$142.80</u>
(10) Illustrative Residential Monthly Bill	\$141.94	\$143.07	\$143.03	\$142.80	\$142.59
(11) Illustrative % Increase	1.71%	0.80%	-0.03%	-0.16%	-0.15%

- (1) Attachment EDC-2-5-2, Line 4
(2) Currently effective R-1/R-2 Distribution Revenue Allocator percentage
(3) Line (1) x Line (2)
(4) Company forecast for for the furthest year in the Company's forecast (calendar year 2025)
(5) Line (3) ÷ Line (4), truncated to 5 decimal places
(6) Line (5) - Line (5) from prior year
(7) 500 kWh
(8) Line (6) x Line (7)
(9) Year 1: Page 5; all other years: prior year Line 16
(10) Line (8) + Line (9)
(11) Line (8) ÷ Line (9)

Massachusetts Electric Company
Nantucket Electric Company
Calculation of Illustrative Factor and Residential Bill Impact - No CIP Fees
Assuming 20 Year Amortization

	<u>Year 1</u>	<u>Year 2</u>	<u>Year 3</u>	<u>Year 4</u>	<u>Year 5</u>
	(a)	(b)	(c)	(d)	(e)
(1) Total Annual Recovery	\$55,442,749	\$77,102,942	\$79,644,821	\$76,516,336	\$73,449,907
(2) Residential Distribution Revenue Allocator	<u>57.7%</u>	<u>57.7%</u>	<u>57.7%</u>	<u>57.7%</u>	<u>57.7%</u>
(3) Total Allocated Residential Recovery	\$31,990,466	\$44,488,398	\$45,955,062	\$44,149,926	\$42,380,596
(4) Forecasted Annual Residential kWh	<u>8,111,041,508</u>	<u>8,111,041,508</u>	<u>8,111,041,508</u>	<u>8,111,041,508</u>	<u>8,111,041,508</u>
(5) Illustrative Annual Factor	\$0.00394	\$0.00548	\$0.00566	\$0.00544	\$0.00522
(6) Illustrative Incremental Change in Factor	\$0.00394	\$0.00154	\$0.00018	(\$0.00022)	(\$0.00022)
(7) Monthly Residential kWh Deliveries	<u>500</u>	<u>500</u>	<u>500</u>	<u>500</u>	<u>500</u>
(8) Year-Over-Year Illustrative Increase in Monthly Bill	\$1.97	\$0.77	\$0.09	(\$0.11)	(\$0.11)
(9) Residential Monthly Bill at Start of Year	<u>\$139.56</u>	<u>\$141.53</u>	<u>\$142.30</u>	<u>\$142.39</u>	<u>\$142.28</u>
(10) Illustrative Residential Monthly Bill	\$141.53	\$142.30	\$142.39	\$142.28	\$142.17
(11) Illustrative % Increase	1.41%	0.54%	0.06%	-0.08%	-0.08%

- (1) Attachment EDC-2-5-2, Line 8
(2) Currently effective R-1/R-2 Distribution Revenue Allocator percentage
(3) Line (1) x Line (2)
(4) Company forecast for for the furthest year in the Company's forecast (calendar year 2025)
(5) Line (3) ÷ Line (4), truncated to 5 decimal places
(6) Line (5) - Line (5) from prior year
(7) 500 kWh
(8) Line (6) x Line (7)
(9) Year 1: Page 5; all other years: prior year Line 16
(10) Line (8) + Line (9)
(11) Line (8) ÷ Line (9)

Massachusetts Electric Company
Nantucket Electric Company
Calculation of Illustrative Factor and Residential Bill Impact - No CIP Fees
Assuming 30 Year Amortization

	<u>Year 1</u>	<u>Year 2</u>	<u>Year 3</u>	<u>Year 4</u>	<u>Year 5</u>
	(a)	(b)	(c)	(d)	(e)
(1) Total Annual Recovery	\$51,447,238	\$69,446,384	\$72,804,307	\$70,442,828	\$68,143,406
(2) Residential Distribution Revenue Allocator	<u>57.7%</u>	<u>57.7%</u>	<u>57.7%</u>	<u>57.7%</u>	<u>57.7%</u>
(3) Total Allocated Residential Recovery	\$29,685,056	\$40,070,564	\$42,008,085	\$40,645,512	\$39,318,745
(4) Forecasted Annual Residential kWh	<u>8,111,041,508</u>	<u>8,111,041,508</u>	<u>8,111,041,508</u>	<u>8,111,041,508</u>	<u>8,111,041,508</u>
(5) Illustrative Annual Factor	\$0.00365	\$0.00494	\$0.00517	\$0.00501	\$0.00484
(6) Illustrative Incremental Change in Factor	\$0.00365	\$0.00129	\$0.00023	(\$0.00016)	(\$0.00017)
(7) Monthly Residential kWh Deliveries	<u>500</u>	<u>500</u>	<u>500</u>	<u>500</u>	<u>500</u>
(8) Year-Over-Year Illustrative Increase in Monthly Bill	\$1.83	\$0.65	\$0.12	(\$0.08)	(\$0.09)
(9) Residential Monthly Bill at Start of Year	<u>\$139.56</u>	<u>\$141.39</u>	<u>\$142.04</u>	<u>\$142.16</u>	<u>\$142.08</u>
(10) Illustrative Residential Monthly Bill	\$141.39	\$142.04	\$142.16	\$142.08	\$141.99
(11) Illustrative % Increase	1.31%	0.46%	0.08%	-0.06%	-0.06%

- (1) Attachment EDC-2-5-2, Line 12
(2) Currently effective R-1/R-2 Distribution Revenue Allocator percentage
(3) Line (1) x Line (2)
(4) Company forecast for for the furthest year in the Company's forecast (calendar year 2025)
(5) Line (3) ÷ Line (4), truncated to 5 decimal places
(6) Line (5) - Line (5) from prior year
(7) 500 kWh
(8) Line (6) x Line (7)
(9) Year 1: Page 5; all other years: prior year Line 16
(10) Line (8) + Line (9)
(11) Line (8) ÷ Line (9)

Massachusetts Electric Company
Nantucket Electric Company
Calculation of Current Monthly Residential Bill

(1)	500	Effective <u>March 1, 2021</u> (a)	<u>Amount</u> (b)
	<u>Delivery Service</u>		
(2)	Customer Charge		\$7.00
(3)	Base Distribution Charge	\$0.04906	
(4)	CapEx Factor	\$0.00352	
(5)	Basic Service Adjustment Factor	\$0.00105	
(6)	Residential Assistance Adjustment Factor	\$0.00488	
(7)	Storm Fund Replenishment Factor	\$0.00301	
(8)	Pension/PBOP Factor	\$0.00179	
(9)	Revenue Decoupling Mechanism Adjustment Factor	\$0.00255	
(10)	Attorney General Consulting Expense Factor	\$0.00003	
(11)	Solar Cost Adjustment Factor	\$0.00033	
(12)	Smart Grid Distribution Adjustment Factor	\$0.00008	
(13)	Net Metering Recovery Surcharge	\$0.01163	
(14)	Renewable Energy Recovery Factor	\$0.00075	
(15)	Tax Act Credit Factor	(\$0.00062)	
(16)	Vegetation Management Factor	\$0.00054	
(17)	Grid Modernization Factor	<u>\$0.00032</u>	
(18)	Total Distribution Energy Charge	\$0.07892	\$39.46
(19)	SMART Factor	\$0.00315	\$1.58
(20)	Electric Vehicle Program Factor	\$0.00011	\$0.06
(21)	Transition Charge	(\$0.00104)	(\$0.52)
(22)	Transmission Service Adjustment Factor	\$0.03858	\$19.29
(23)	Energy Efficiency Charge	\$0.02098	\$10.49
(24)	<u>Renewables Charge</u>	\$0.00050	<u>\$0.25</u>
(25)	Subtotal Delivery Charges		\$77.61
	<u>Supply Service</u>		
(26)	Base Basic Service Charge	\$0.11965	\$59.83
(27)	Basic Service Admin Cost Factor	\$0.00011	\$0.06
(28)	Smart Grid Customer Cost Adjustment Factor	<u>\$0.00412</u>	<u>\$2.06</u>
(29)	Commodity Subtotal	\$0.12388	<u>\$61.95</u>
(30)	Total		\$139.56

(a) M.D.P.U. No. 1-21-C
(b) Line (1) x Column (a), Lines (18) thru (28)

Massachusetts Electric Company
Distribution DG Capital - No CIP Fees

		Year 1	Year 2	Year 3	Year 4	Year 5	
		(a)	(b)	(c)	(d)	(e)	
<u>10 Year Amortization</u>							
1	Annual Revenue Requirement on CapEx	Attachment EDC-2-5-3, Page 1, Line 2	\$47,927,444	\$98,573,918	\$97,476,483	\$91,205,866	\$85,268,707
2	O&M related to capex	Attachment EDC-2-5-3, Page 1, Line 6	\$19,099,500	\$0	\$0	\$0	\$0
3							
4	Total Revenue Requirement		\$67,026,944	\$98,573,918	\$97,476,483	\$91,205,866	\$85,268,707
<u>20 Year Amortization</u>							
5	Annual Revenue Requirement on CapEx	Attachment EDC-2-5-4, Page 1, Line 2	\$36,343,249	\$77,102,942	\$79,644,821	\$76,516,336	\$73,449,907
6	O&M related to capex	Attachment EDC-2-5-4, Page 1, Line 6	\$19,099,500	\$0	\$0	\$0	\$0
7							
8	Total Revenue Requirement		\$55,442,749	\$77,102,942	\$79,644,821	\$76,516,336	\$73,449,907
<u>30 Year Amortization</u>							
9	Annual Revenue Requirement on CapEx	Attachment EDC-2-5-5, Page 1, Line 2	\$32,347,738	\$69,446,384	\$72,804,307	\$70,442,828	\$68,143,406
10	O&M related to capex	Attachment EDC-2-5-5, Page 1, Line 6	\$19,099,500	\$0	\$0	\$0	\$0
11							
12	Total Revenue Requirement		\$51,447,238	\$69,446,384	\$72,804,307	\$70,442,828	\$68,143,406

Massachusetts Electric Company
 Distribution DG Capital - No CIP Fees
 Summary Illustrative Revenue Requirement - 10 Years

		Year 1	Year 2	Year 3	Year 4	Year 5
		(a)	(b)	(c)	(d)	(e)
1	Cumulative Net Historic Capital Adjustment					
2	Annual Revenue Requirement on CapEx					
3						
4	Cumulative Net CapEx Adjustment	\$47,927,444	\$98,573,918	\$97,476,483	\$91,205,866	\$85,268,707
5						
6	O&M related to capex	\$19,099,500	\$0	\$0	\$0	\$0
7						
8	Total	\$67,026,944	\$98,573,918	\$97,476,483	\$91,205,866	\$85,268,707

Massachusetts Electric Company
DG Capital Investment Recovery Illustration
Illustrative Revenue Requirement - 10 Years

Year		<u>1</u> (a)	<u>2</u> (b)	<u>3</u> (c)	<u>4</u> (d)	<u>5</u> (e)
<u>Depreciable Plant Additions</u>						
(1)	Distribution Plant Additions	\$496,587,000	\$0	\$0	\$0	\$0
(2)	CIAC/CIP	\$0	\$0	\$0	\$0	\$0
(3)	Accum. Gross Distribution Plant Additions	PY Line (3) + CY Line (1) & (2)	\$496,587,000	\$496,587,000	\$496,587,000	\$496,587,000
(4)	Cumulative Cost of Removal	\$30,013,500	\$30,013,500	\$30,013,500	\$30,013,500	\$30,013,500
<u>Deferred Tax Calculation:</u>						
(5)	Composite Book Depreciation Rate	Assumes 10 year	10.00%	10.00%	10.00%	10.00%
<u>Vintage Year Tax Depreciation:</u>						
(6)	Federal Tax Depreciation	Page 3, Line (31)	\$79,672,200	\$89,385,660	\$71,508,528	\$57,206,822
(7)	Cumulative Federal Tax Depreciation	PY Line (7) + CY Line (6)	\$79,672,200	\$169,057,860	\$240,566,388	\$297,773,210
(8)	State Tax Depreciation	Page 3, Line (46)	\$79,672,200	\$89,385,660	\$71,508,528	\$57,206,822
(9)	Cumulative State Tax Depreciation	PY Line (9) + CY Line (8)	\$79,672,200	\$169,057,860	\$240,566,388	\$297,773,210
(10)	Book Depreciation	Year 1: Line (3) x Line (5) x 50%; Year 2 and beyond: Line (3) x Line (5)	\$24,829,350	\$49,658,700	\$49,658,700	\$49,658,700
(11)	Cumulative Book Depreciation	PY Line (11) + CY Line (10)	\$24,829,350	\$74,488,050	\$124,146,750	\$173,805,450
(12)	Cumulative State Book / Tax Timer	Line (9) - Line (11)	\$54,842,850	\$94,569,810	\$116,419,638	\$123,967,760
(13)	Effective State Tax Rate		8.000%	8.000%	8.000%	8.000%
(14)	Deferred State Tax Reserve	Line (12) x Line (13)	\$4,387,428	\$7,565,585	\$9,313,571	\$9,917,421
(14a)	Less: State NOL	FY18 NOL true-up plus 75% of FY19 NOL per tax return	\$0	\$0	\$0	\$0
(14b)	Net Deferred State Tax Reserve	Line (14) plus Line (14a)	\$4,387,428	\$7,565,585	\$9,313,571	\$9,917,421
(15)	Cumulative Federal Book / Tax Timer	Line (7) - Line (11)	\$54,842,850	\$94,569,810	\$116,419,638	\$123,967,760
(16)	Effective Tax Rate		21.000%	21.000%	21.000%	21.000%
(17)	Deferred Federal Tax Reserve	Line (15) x Line (16)	\$11,516,999	\$19,859,660	\$24,448,124	\$26,033,230
(18)	Less: Federal deduction for Deferred State Taxes	If Line (14b) > \$0, Line (14b) * -21%, otherwise \$0	(\$921,360)	(\$1,588,773)	(\$1,955,850)	(\$2,082,658)
(19)	Less: Federal NOL	FY18 NOL true-up plus 75% of FY19 NOL per tax return	-	\$0	\$0	\$0
(20)	Net Deferred Federal Tax Reserve	Sum of Line (17) through Line (19)	\$10,595,639	\$18,270,887	\$22,492,274	\$23,950,572
(21)	Total Deferred Tax Reserve	Line (14b) + Line (20)	\$14,983,067	\$25,836,472	\$31,805,845	\$33,867,993
<u>Rate Base Calculation:</u>						
(22)	Gross Plant Additions	Line (3)	\$496,587,000	\$496,587,000	\$496,587,000	\$496,587,000
(23)	Accumulated Book Depreciation	- Line (11)	(\$24,829,350)	(\$74,488,050)	(\$124,146,750)	(\$173,805,450)
(24)	Deferred Tax Reserve	- Line (21)	(\$14,983,067)	(\$25,836,472)	(\$31,805,845)	(\$33,867,993)
(25)	Cumulative Cost of Removal	- Line (4)	\$30,013,500	\$30,013,500	\$30,013,500	\$30,013,500
(26)	Year End Rate Base	Sum of Lines (22) through (25)	\$486,788,083	\$426,275,978	\$370,647,905	\$318,927,057
<u>Revenue Requirement Calculation:</u>						
(27)	Average Rate Base	Year 1: Line (26) ÷ 2; Year 2 and beyond: (PY Line (26) + CY Line (26)) ÷ 2	\$243,394,041	\$456,532,030	\$398,461,941	\$344,787,481
(28)	Pre-Tax ROR	Page 5	9.49%	9.49%	9.49%	9.49%
(29)	Return and Taxes	Line (27) x Line (28)	\$23,098,094	\$43,324,890	\$37,814,038	\$32,720,332
(30)	Book Depreciation	Line (10)	\$24,829,350	\$49,658,700	\$49,658,700	\$49,658,700
(31)	Property Tax expense	Year 1: \$0, Year 2: (PY Line (3) - PY Line (11)) x Prop Tax Rate ÷ 2, Year 3 and beyond: (PY Line (3) - PY Line (11)) x Prop Tax Rate	\$0	\$5,590,328	\$10,003,745	\$8,826,834
(32)	Annual Revenue Requirement	Sum of Lines (29) through (31)	\$47,927,444	\$98,573,918	\$97,476,483	\$91,205,866

1/ Property Tax Rate Calculation	
Year Plant in Service	\$4,554,343,860 DPU 18-150, Exhibit NG-RRP-2 (C), Schedule 6, Page 1
Rate Year Accumulated Depreciation	(\$1,783,103,879) DPU 18-150, Exhibit NG-RRP-2 (C), Schedule 6, Page 1
Rate Year Net Plant in Service	\$2,771,239,981
Rate Year Property Tax Expense	\$65,650,673 DPU 18-150, Exhibit NG-RRP-2 (C), Schedule 7, Page 1
Property Tax Rate	<u>2.37%</u>

Massachusetts Electric Company
DG Capital Investment Recovery Illustration
Calculation of Tax Depreciation and Repairs Deduction - 10 Years

Year		<u>1</u> (a)	<u>2</u> (b)	<u>3</u> (c)	<u>4</u> (d)	<u>5</u> (e)
Federal Tax Depreciation						
<u>Capital Repairs Deduction</u>						
(1) Plant Additions	Page 2, Line (3)	\$496,587,000				
(2) Capital Repairs Deduction Rate	Tax Dept	1/ 0.00%				
(3) Capital Repairs Deduction	Line (1) x Line (2)	\$0				
<u>Bonus Depreciation</u>						
(4) Plant Additions	Line (1)	\$496,587,000				
(5) Less Capital Repairs Deduction	Line (3)	\$0				
(6) Plant Additions Net of Capital Repairs Deduction	Line (4) - Line (5)	\$496,587,000				
<u>Remaining Tax Depreciation</u>						
(7) Plant Additions	Line (1)	\$496,587,000				
(8) Less Capital Repairs Deduction	Line (3)	\$0				
(9) Less Bonus Depreciation	Line (6)	\$0				
(10) Less Plant Additions Subject to 39 Yr Straight Line Depreciation	Per Tax Dept	1/ \$0				
(11) Remaining Plant Additions Subject to 10 YR MACRS Tax Depreciation	Line (7) - (8) - (9) - (10)	\$496,587,000	\$496,587,000	\$496,587,000	\$496,587,000	\$496,587,000
(12) 10 YR MACRS Tax Depreciation Rates	IRS Publication 946, Table A-1	10.00%	18.00%	14.40%	11.52%	9.22%
(13) Total Tax Depreciation on 10 YR MACRS assets	Line (11) x Line (12)	\$49,658,700	\$89,385,660	\$71,508,528	\$57,206,822	\$45,785,321
(14) Plant Additions Subject to 39 Yr Straight Line Depreciation	Line (10)	\$0	\$0	\$0	\$0	\$0
(15) 39 YR SL Depreciation Rates	IRS Publication 946	2.5641%	2.5641%	2.5641%	2.5641%	2.5641%
(16) Total Tax Depreciation on 39 YR SL assets	Line (14) * Line (15)	\$0	\$0	\$0	\$0	\$0
(17) Total Tax Depreciation and Repairs Deduction	Sum of Lines (3), (13), (16)	\$49,658,700	\$89,385,660	\$71,508,528	\$57,206,822	\$45,785,321
(18) Includable Cost of Removal	Page 2, Line (4)	\$30,013,500	\$0	\$0	\$0	\$0
(19) Total Federal Tax Depreciation, Repairs Deduction and Cost of Removal	Line (17) through (18)	\$79,672,200	\$89,385,660	\$71,508,528	\$57,206,822	\$45,785,321
State Tax Deduction						
(20) Plant Additions	Line (1)	\$496,587,000				
(21) Capital Repairs Deduction Rate	Line (2)	0.00%				
(22) Capital Repairs Deduction	Line (20) x Line (21)	\$0				
<u>Remaining Tax Depreciation</u>						
(23) Plant Additions	Line (20)	\$496,587,000				
(24) Less Capital Repairs Deduction	Line (22)	\$0				
(25) Less Plant Additions Subject to 39 Yr Straight Line Depreciation	Per Tax Dept	1/ \$0				
(26) Remaining Plant Additions Subject to 10 YR MACRS Tax Depreciation	Line (23) - Line (24) - Line (25)	\$496,587,000	\$496,587,000	\$496,587,000	\$496,587,000	\$496,587,000
(27) 10 YR MACRS Tax Depreciation Rates	IRS Publication 946, Table A-1	10.0000%	18.0000%	14.4000%	11.5200%	9.2200%
(28) Total Tax Depreciation on 10 YR MACRS assets	Line (26) x Line (27)	\$49,658,700	\$89,385,660	\$71,508,528	\$57,206,822	\$45,785,321
(29) Plant Additions Subject to 39 Yr Straight Line Depreciation	Line (25)	\$0	\$0	\$0	\$0	\$0
(30) 39 YR SL Depreciation Rates	IRS Publication 946	2.5641%	2.5641%	2.5641%	2.5641%	2.5641%
(31) Total Tax Depreciation on 39 YR SL assets	Line (29) * Line (30)	\$0	\$0	\$0	\$0	\$0
(32) Total Tax Depreciation and Repairs Deduction	Line (22) + Line (28) + Line (31)	\$49,658,700	\$89,385,660	\$71,508,528	\$57,206,822	\$45,785,321
(33) Includable Cost of Removal	Page 2, Line (4)	\$30,013,500	\$0	\$0	\$0	\$0
(34) Total State Tax Depreciation, Repairs Deduction and Cost of Removal	Line (32) + Line (33)	\$79,672,200	\$89,385,660	\$71,508,528	\$57,206,822	\$45,785,321

1/ Per FY 2019 Tax return

Massachusetts Electric Company
 DG Capital Investment Recovery Illustration
 MACRS Table

MACRS DEPRECIATION BY CLASS OF PROPERTY

Year	3-year	5-year	7-year	10-year	15-year	20-year
1	33.33%	20.00%	14.29%	10.00%	5.00%	3.75%
2	44.45	32	24.49	18%	9.5	7.219
3	14.81	19.2	17.49	14.40%	8.55	6.677
4	7.41	11.52	12.49	11.52%	7.7	6.177
5		11.52	8.93*	9.22%	6.93	5.713
6		5.76	8.92	7.37%	6.23	5.285
7			8.93	6.55%	5.9	4.888
8			4.46	6.55%	5.9	4.522
9				6.56%	5.91	4.462
10				6.55%	5.9	4.461
11				3.28%	5.9	4.462
12					5.9	4.461
13					5.91	4.462
14					5.9	4.461
15					5.91	4.462
16					2.95	4.461
17						4.462
18						4.461
19						4.462
20						4.461
21						2.231

Massachusetts Electric Company
DG Capital Investment Recovery Illustration
Cost of Capital

Description	Capital Structure (a)	Cost Rate (b)	Weighted Return (c) = (a) x (b)	Taxes (d)	Pre-tax Return (e) = (c) + (d)
1 Long Term Debt	46.43%	5.22% 1/	2.42%		2.42%
2					
3 Preferred Stock	0.08%	4.44% 1/	0.00%		0.00%
4					
5 Total Common Equity	<u>53.49%</u>	9.60% 3/	<u>5.14%</u>	<u>1.93% 2/</u>	<u>7.07%</u>
6					
7 Total Capitalization	<u>100.00%</u>		<u>7.56%</u>	<u>1.93%</u>	<u>9.49%</u>

- 1/ Company's Effective Cost of Long Term Debt and Preferred Stock
2/ Line 5(c) / (1-0.2732) - Line 5(c)
3/ Per Docket No. 18-150 final order Page 497

<u>Effective Tax Rate</u>	<u>From Jan 1, 2018</u>
Federal Tax Rate	21.00%
State Tax Rate	8.00%
Federal Deduction for State Income Taxes	1.68%
State Tax, net of Federal Deduction	6.32%
Federal Tax Rate	21.00%
Effective Tax rate	<u>27.32%</u>

Massachusetts Electric Company
 Distribution DG Capital - No CIP Fees
 Summary Illustrative Revenue Requirement - 20 years

		Year 1	Year 2	Year 3	Year 4	Year 5
		(a)	(b)	(c)	(d)	(e)
1	Cumulative Net Historic Capital Adjustment					
2	Annual Revenue Requirement on Year 1 CapEx					
3						
4	Cumulative Net CapEx Adjustment					
5						
6	O&M					
7						
8	Total					

Page 2, Line (32)

\$36,343,249	\$77,102,942	\$79,644,821	\$76,516,336	\$73,449,907
\$36,343,249	\$77,102,942	\$79,644,821	\$76,516,336	\$73,449,907
\$19,099,500	\$0	\$0	\$0	\$0
\$55,442,749	\$77,102,942	\$79,644,821	\$76,516,336	\$73,449,907

Massachusetts Electric Company
DG Capital Investment Recovery Illustration
Illustrative Revenue Requirement - 20 Years

Year		1 (a)	2 (b)	3 (c)	4 (d)	5 (e)
<u>Depreciable Plant Additions</u>						
(1) Gross Distribution Plant Additions		\$496,587,000	\$0	\$0	\$0	\$0
(2) CIP/CIAC		\$0	\$0	\$0	\$0	\$0
(3) Accum. Gross Distribution Plant Additions	PY Line (3) + CY Line (1) & (2)	\$496,587,000	\$496,587,000	\$496,587,000	\$496,587,000	\$496,587,000
(4) Cumulative Cost of Removal		\$30,013,500	\$30,013,500	\$30,013,500	\$30,013,500	\$30,013,500
<u>Deferred Tax Calculation:</u>						
(5) Composite Book Depreciation Rate	Assumes 20 year	5.00%	5.00%	5.00%	5.00%	5.00%
Vintage Year Tax Depreciation:						
(6) Federal Tax Depreciation	Page 3, Line (31)	\$48,635,513	\$35,848,616	\$33,157,114	\$30,674,179	\$28,370,015
(7) Cumulative Federal Tax Depreciation	PY Line (7) + CY Line (6)	\$48,635,513	\$84,484,129	\$117,641,243	\$148,315,422	\$176,685,437
(8) State Tax Depreciation	Page 3, Line (46)	\$48,635,513	\$35,848,616	\$33,157,114	\$30,674,179	\$28,370,015
(9) Cumulative State Tax Depreciation	PY Line (9) + CY Line (8)	\$48,635,513	\$84,484,129	\$117,641,243	\$148,315,422	\$176,685,437
(10) Book Depreciation	Year 1: Line (3) x Line (5) x 50%; Year 2 and beyond: Line (3) x Line (5)	\$12,414,675	\$24,829,350	\$24,829,350	\$24,829,350	\$24,829,350
(11) Cumulative Book Depreciation	PY Line (11) + CY Line (10)	\$12,414,675	\$37,244,025	\$62,073,375	\$86,902,725	\$111,732,075
(12) Cumulative State Book / Tax Timer	Line (9) - Line (11)	\$36,220,838	\$47,240,104	\$55,567,868	\$61,412,697	\$64,953,362
(13) Effective State Tax Rate		8.000%	8.000%	8.000%	8.000%	8.000%
(14) Deferred State Tax Reserve	Line (12) x Line (13)	\$2,897,667	\$3,779,208	\$4,445,429	\$4,913,016	\$5,196,269
(14a) Less: State NOL	FY18 NOL true-up plus 75% of FY19 NOL per tax return	\$0	\$0	\$0	\$0	\$0
(14b) Net Deferred State Tax Reserve	Line (14) plus Line (14a)	\$2,897,667	\$3,779,208	\$4,445,429	\$4,913,016	\$5,196,269
(15) Cumulative Federal Book / Tax Timer	Line (7) - Line (11)	\$36,220,838	\$47,240,104	\$55,567,868	\$61,412,697	\$64,953,362
(16) Effective Tax Rate		21.000%	21.000%	21.000%	21.000%	21.000%
(17) Deferred Federal Tax Reserve	Line (15) x Line (16)	\$7,606,376	\$9,920,422	\$11,669,252	\$12,896,666	\$13,640,206
(18) Taxes	Less: Federal deduction for Deferred State If Line (14b) > \$0, Line (14b) * -21%, otherwise \$0 FY18 NOL true-up plus 75% of FY19 NOL per tax return	(\$608,510)	(\$793,634)	(\$933,540)	(\$1,031,733)	(\$1,091,216)
(19) Less: Federal NOL		-	\$0	\$0	\$0	\$0
(20) Net Deferred Federal Tax Reserve	Sum of Line (17) through Line (19)	\$6,997,866	\$9,126,788	\$10,735,712	\$11,864,933	\$12,548,990
(21) Total Deferred Tax Reserve	Line (14b) + Line (20)	\$9,895,533	\$12,905,996	\$15,181,141	\$16,777,949	\$17,745,259
<u>Rate Base Calculation:</u>						
(22) Gross Plant Additions	Line (3)	\$496,587,000	\$496,587,000	\$496,587,000	\$496,587,000	\$496,587,000
(23) Accumulated Book Depreciation	- Line (11)	(\$12,414,675)	(\$37,244,025)	(\$62,073,375)	(\$86,902,725)	(\$111,732,075)
(24) Deferred Tax Reserve	- Line (21)	(\$9,895,533)	(\$12,905,996)	(\$15,181,141)	(\$16,777,949)	(\$17,745,259)
(25) Cumulative Cost of Removal	- Line (4)	\$30,013,500	\$30,013,500	\$30,013,500	\$30,013,500	\$30,013,500
(25) Year End Rate Base	Sum of Lines (22) through (25)	\$504,290,292	\$476,450,479	\$449,345,984	\$422,919,826	\$397,123,166
<u>Revenue Requirement Calculation:</u>						
(26) Average Rate Base	Year 1: Line (26) ÷ 2; Year 2 and beyond: (PY Line (26) + CY Line (26)) ÷ 2	\$252,145,146	\$490,370,385	\$462,898,231	\$436,132,905	\$410,021,496
(27) Pre-Tax ROR	Page 5	9.49%	9.49%	9.49%	9.49%	9.49%
(28) Return and Taxes	Line (27) x Line (28)	\$23,928,574	\$46,536,150	\$43,929,042	\$41,389,013	\$38,911,040
(29) Book Depreciation	Line (10)	\$12,414,675	\$24,829,350	\$24,829,350	\$24,829,350	\$24,829,350
(30) Property Tax expense	Year 1: \$0, Year 2: (PY Line (3) - PY Line (11)) x Prop Tax Rate ÷ 2, Year 3 and beyond: (PY Line (3) - PY Line (11)) x Prop Tax Rate 1/	\$0	\$5,737,442	\$10,886,429	\$10,297,973	\$9,709,517
(31) Annual Revenue Requirement	Sum of Lines (29) through (31)	\$36,343,249	\$77,102,942	\$79,644,821	\$76,516,336	\$73,449,907

1/ Property Tax Rate Calculation

Rate Year Plant in Service	\$4,554,343,860	DPU 18-150, Exhibit NG-RRP-2 (C), Schedule 6, Page 1
Rate Year Accumulated Depreciation	(\$1,783,103,879)	DPU 18-150, Exhibit NG-RRP-2 (C), Schedule 6, Page 1
Rate Year Net Plant in Service	\$2,771,239,981	

Rate Year Property Tax Expense \$65,650,673 DPU 18-150, Exhibit NG-RRP-2 (C), Schedule 7, Page 1

Property Tax Rate 2.37%

Massachusetts Electric Company
DG Capital Investment Recovery Illustration
Calculation of Tax Depreciation and Repairs Deduction - 20 Years

Year		<u>1</u> (a)	<u>2</u> (b)	<u>3</u> (c)	<u>4</u> (d)	<u>5</u> (e)
Federal Tax Depreciation						
<u>Capital Repairs Deduction</u>						
(1) Plant Additions	Page 2, Line (3)	\$496,587,000				
(2) Capital Repairs Deduction Rate	Tax Dept	1/ 0.00%				
(3) Capital Repairs Deduction	Line (1) x Line (2)	\$0				
<u>Bonus Depreciation</u>						
(4) Plant Additions	Line (1)	\$496,587,000				
(5) Less Capital Repairs Deduction	Line (3)	\$0				
(6) Plant Additions Net of Capital Repairs Deduction	Line (4) - Line (5)	\$496,587,000				
<u>Remaining Tax Depreciation</u>						
(7) Plant Additions	Line (1)	\$496,587,000				
(8) Less Capital Repairs Deduction	Line (3)	\$0				
(9) Less Bonus Depreciation	Line (6)	\$0				
(10) Less Plant Additions Subject to 39 Yr Straight Line Depreciation	Per Tax Dept	1/ \$0				
(11) Remaining Plant Additions Subject to 20 YR MACRS Tax Depreciation	Line (7) - (8) - (9) - (10)	\$496,587,000	\$496,587,000	\$496,587,000	\$496,587,000	\$496,587,000
(12) 20 YR MACRS Tax Depreciation Rates	IRS Publication 946, Table A-1	3.7500%	7.2190%	6.6770%	6.1770%	5.7130%
(13) Total Tax Depreciation on 20 YR MACRS assets	Line (11) x Line (12)	\$18,622,013	\$35,848,616	\$33,157,114	\$30,674,179	\$28,370,015
(14) Plant Additions Subject to 39 Yr Straight Line Depreciation	Line (10)	\$0	\$0	\$0	\$0	\$0
(15) 39 YR SL Depreciation Rates	IRS Publication 946	2.5641%	2.5641%	2.5641%	2.5641%	2.5641%
(16) Total Tax Depreciation on 39 YR SL assets	Line (14) * Line (15)	\$0	\$0	\$0	\$0	\$0
(17) Total Tax Depreciation and Repairs Deduction	Sum of Lines (3), (13), (16)	\$18,622,013	\$35,848,616	\$33,157,114	\$30,674,179	\$28,370,015
(18) Includable Cost of Removal	Page 2, Line (4)	\$30,013,500	\$0	\$0	\$0	\$0
(19) Total Federal Tax Depreciation, Repairs Deduction and Cost of Removal	Line (17) through (18)	\$48,635,513	\$35,848,616	\$33,157,114	\$30,674,179	\$28,370,015
State Tax Deduction						
(20) Plant Additions	Line (1)	\$496,587,000				
(21) Capital Repairs Deduction Rate	Line (2)	0.00%				
(22) Capital Repairs Deduction	Line (20) x Line (21)	\$0				
<u>Remaining Tax Depreciation</u>						
(23) Plant Additions	Line (20)	\$496,587,000				
(24) Less Capital Repairs Deduction	Line (22)	\$0				
(25) Less Plant Additions Subject to 39 Yr Straight Line Depreciation	Per Tax Dept	1/ \$0				
(26) Remaining Plant Additions Subject to 20 YR MACRS Tax Depreciation	Line (23) - Line (24) - Line (25)	\$496,587,000	\$496,587,000	\$496,587,000	\$496,587,000	\$496,587,000
(27) 20 YR MACRS Tax Depreciation Rates	IRS Publication 946, Table A-1	3.7500%	7.2190%	6.6770%	6.1770%	5.7130%
(28) Total Tax Depreciation on 20 YR MACRS assets	Line (26) x Line (27)	\$18,622,013	\$35,848,616	\$33,157,114	\$30,674,179	\$28,370,015
(29) Plant Additions Subject to 39 Yr Straight Line Depreciation	Line (25)	\$0	\$0	\$0	\$0	\$0
(30) 39 YR SL Depreciation Rates	IRS Publication 946	2.5641%	2.5641%	2.5641%	2.5641%	2.5641%
(31) Total Tax Depreciation on 39 YR SL assets	Line (29) * Line (30)	\$0	\$0	\$0	\$0	\$0
(32) Total Tax Depreciation and Repairs Deduction	Line (22) + Line (28) + Line (31)	\$18,622,013	\$35,848,616	\$33,157,114	\$30,674,179	\$28,370,015
(33) Includable Cost of Removal	Page 2, Line (4)	\$30,013,500	\$0	\$0	\$0	\$0
(34) Total State Tax Depreciation, Repairs Deduction and Cost of Removal	Line (32) + Line (33)	\$48,635,513	\$35,848,616	\$33,157,114	\$30,674,179	\$28,370,015

1/ Per FY 2019 Tax return

Massachusetts Electric Company
DG Capital Investment Recovery Illustration
MACRS Table

MACRS DEPRECIATION BY CLASS OF PROPERTY

Year	3-year	5-year	7-year	10-year	15-year	20-year
1	33.33%	20.00%	14.29%	10.00%	5.00%	3.75%
2	44.45	32	24.49	18	9.5	7.219
3	14.81	19.2	17.49	14.4	8.55	6.677
4	7.41	11.52	12.49	11.52	7.7	6.177
5		11.52	8.93	9.22	6.93	5.713
6		5.76	8.92	7.37	6.23	5.285
7			8.93	6.55	5.9	4.888
8			4.46	6.55	5.9	4.522
9				6.56	5.91	4.462
10				6.55	5.9	4.461
11				3.28	5.9	4.462
12					5.9	4.461
13					5.91	4.462
14					5.9	4.461
15					5.91	4.462
16					2.95	4.461
17						4.462
18						4.461
19						4.462
20						4.461
21						2.231

Massachusetts Electric Company
DG Capital Investment Recovery Illustration
Cost of Capital

Description	Capital Structure (a)	Cost Rate (b)	Weighted Return (c) = (a) x (b)	Taxes (d)	Pre-tax Return (e) = (c) + (d)
1 Long Term Debt	46.43%	5.22% 1/	2.42%		2.42%
2					
3 Preferred Stock	0.08%	4.44% 1/	0.00%		0.00%
4					
5 Total Common Equity	<u>53.49%</u>	9.60% 3/	<u>5.14%</u>	<u>1.93% 2/</u>	<u>7.07%</u>
6					
7 Total Capitalization	<u><u>100.00%</u></u>		<u><u>7.56%</u></u>	<u><u>1.93%</u></u>	<u><u>9.49%</u></u>

1/ Company's Effective Cost of Long Term Debt and Preferred Stock

2/ Line 5(c) / (1 - 0.2732) - Line 5(c)

3/ Per Docket No. 18-150 final order Page 497

<u>Effective Tax Rate</u>	<u>From Jan 1, 2018</u>
Federal Tax Rate	21.00%
State Tax Rate	8.00%
Federal Deduction for State Income Taxes	1.68%
State Tax, net of Federal Deduction	6.32%
Federal Tax Rate	21.00%
Effective Tax rate	27.32%

Massachusetts Electric Company
Distribution DG Capital - No CIP Fees
Summary Illustrative Revenue Requirement - 30 years

		Year 1	Year 2	Year 3	Year 4	Year 5
		(a)	(b)	(c)	(d)	(e)
1	Cumulative Net Historic Capital Adjustment					
2	Annual Revenue Requirement on Year 1 CapEx					
3						
4	Cumulative Net CapEx Adjustment					
5						
6	O&M					
7						
8	Total					

Page 2, Line (32)

\$32,347,738	\$69,446,384	\$72,804,307	\$70,442,828	\$68,143,406
\$32,347,738	\$69,446,384	\$72,804,307	\$70,442,828	\$68,143,406
\$19,099,500	\$0	\$0	\$0	\$0
\$51,447,238	\$69,446,384	\$72,804,307	\$70,442,828	\$68,143,406

Massachusetts Electric Company
DG Capital Investment Recovery Illustration
Illustrative Revenue Requirement - 30 Years

Year		<u>1</u> (a)	<u>2</u> (b)	<u>3</u> (c)	<u>4</u> (d)	<u>5</u> (e)
<u>Depreciable Plant Additions</u>						
(1) Gross Distribution Plant Additions		\$496,587,000	\$0	\$0	\$0	\$0
(2) CIP/CIAC		\$0	\$0	\$0	\$0	\$0
(3) Accum. Gross Distribution Plant Additions	PY Line (3) + CY Line (1) & (2)	\$496,587,000	\$496,587,000	\$496,587,000	\$496,587,000	\$496,587,000
(4) Cumulative Cost of Removal		\$30,013,500	\$30,013,500	\$30,013,500	\$30,013,500	\$30,013,500
<u>Deferred Tax Calculation:</u>						
(5) Composite Book Depreciation Rate	Assumes 30 year	3.33%	3.33%	3.33%	3.33%	3.33%
Vintage Year Tax Depreciation:						
(6) Federal Tax Depreciation	Page 3, Line (31)	\$48,635,513	\$35,848,616	\$33,157,114	\$30,674,179	\$28,370,015
(7) Cumulative Federal Tax Depreciation	PY Line (7) + CY Line (6)	\$48,635,513	\$84,484,129	\$117,641,243	\$148,315,422	\$176,685,437
(8) State Tax Depreciation	Page 3, Line (46)	\$48,635,513	\$35,848,616	\$33,157,114	\$30,674,179	\$28,370,015
(9) Cumulative State Tax Depreciation	PY Line (9) + CY Line (8)	\$48,635,513	\$84,484,129	\$117,641,243	\$148,315,422	\$176,685,437
(10) Book Depreciation	Year 1: Line (3) x Line (5) x 50%; Year 2 and beyond: Line (3) x Line (5)	\$8,276,450	\$16,552,900	\$16,552,900	\$16,552,900	\$16,552,900
(11) Cumulative Book Depreciation	PY Line (11) + CY Line (10)	\$8,276,450	\$24,829,350	\$41,382,250	\$57,935,150	\$74,488,050
(12) Cumulative State Book / Tax Timer	Line (9) - Line (11)	\$40,359,063	\$59,654,779	\$76,258,993	\$90,380,272	\$102,197,387
(13) Effective State Tax Rate		8.000%	8.000%	8.000%	8.000%	8.000%
(14) Deferred State Tax Reserve	Line (12) x Line (13)	\$3,228,725	\$4,772,382	\$6,100,719	\$7,230,422	\$8,175,791
(14a) Less: State NOL	FY18 NOL true-up plus 75% of FY19 NOL per tax return	\$0	\$0	\$0	\$0	\$0
(14b) Net Deferred State Tax Reserve	Line (14) plus Line (14a)	\$3,228,725	\$4,772,382	\$6,100,719	\$7,230,422	\$8,175,791
(15) Cumulative Federal Book / Tax Timer	Line (7) - Line (11)	\$40,359,063	\$59,654,779	\$76,258,993	\$90,380,272	\$102,197,387
(16) Effective Tax Rate		21.000%	21.000%	21.000%	21.000%	21.000%
(17) Deferred Federal Tax Reserve	Line (15) x Line (16)	\$8,475,403	\$12,527,504	\$16,014,389	\$18,979,857	\$21,461,451
(18) Taxes	Less: Federal deduction for Deferred State If Line (14b) > \$0, Line (14b) * -21%, otherwise \$0	(\$678,032)	(\$1,002,200)	(\$1,281,151)	(\$1,518,389)	(\$1,716,916)
(19) Less: Federal NOL	FY18 NOL true-up plus 75% of FY19 NOL per tax return	-	\$0	\$0	\$0	\$0
(20) Net Deferred Federal Tax Reserve	Sum of Line (17) through Line (19)	\$7,797,371	\$11,525,304	\$14,733,238	\$17,461,468	\$19,744,535
(21) Total Deferred Tax Reserve	Line (14b) + Line (20)	\$11,026,096	\$16,297,686	\$20,833,957	\$24,691,890	\$27,920,326
<u>Rate Base Calculation:</u>						
(22) Gross Plant Additions	Line (3)	\$496,587,000	\$496,587,000	\$496,587,000	\$496,587,000	\$496,587,000
(23) Accumulated Book Depreciation	- Line (11)	(\$8,276,450)	(\$24,829,350)	(\$41,382,250)	(\$57,935,150)	(\$74,488,050)
(24) Deferred Tax Reserve	- Line (21)	(\$11,026,096)	(\$16,297,686)	(\$20,833,957)	(\$24,691,890)	(\$27,920,326)
(25) Cumulative Cost of Removal	- Line (4)	\$30,013,500	\$30,013,500	\$30,013,500	\$30,013,500	\$30,013,500
(25) Year End Rate Base	Sum of Lines (22) through (25)	\$507,297,954	\$485,473,464	\$464,384,293	\$443,973,460	\$424,192,124
<u>Revenue Requirement Calculation:</u>						
(26) Average Rate Base	Year 1: Line (26) ÷ 2; Year 2 and beyond: (PY Line (26) + CY Line (26)) ÷ 2	\$253,648,977	\$496,385,709	\$474,928,879	\$454,178,876	\$434,082,792
(27) Pre-Tax ROR	Page 5	9.49%	9.49%	9.49%	9.49%	9.49%
(28) Return and Taxes	Line (27) x Line (28)	\$24,071,288	\$47,107,004	\$45,070,751	\$43,101,575	\$41,194,457
(29) Book Depreciation	Line (10)	\$8,276,450	\$16,552,900	\$16,552,900	\$16,552,900	\$16,552,900
(30) Property Tax expense	Year 1: \$0, Year 2: (PY Line (3) - PY Line (11)) x Prop Tax Rate ÷ 2, Year 3 and beyond: (PY Line (3) - PY Line (11)) x Prop Tax Rate 1/	\$0	\$5,786,480	\$11,180,656	\$10,788,353	\$10,396,049
(31) Annual Revenue Requirement	Sum of Lines (29) through (31)	\$32,347,738	\$69,446,384	\$72,804,307	\$70,442,828	\$68,143,406

1/ Property Tax Rate Calculation

Year Plant in Service	\$4,554,343,860	DPU 18-150, Exhibit NG-RRP-2 (C), Schedule 6, Page 1
Rate Year Accumulated Depreciation	(\$1,783,103,879)	DPU 18-150, Exhibit NG-RRP-2 (C), Schedule 6, Page 1
Rate Year Net Plant in Service	\$2,771,239,981	
Rate Year Property Tax Expense	\$65,650,673	DPU 18-150, Exhibit NG-RRP-2 (C), Schedule 7, Page 1
Property Tax Rate	<u>2.37%</u>	

Massachusetts Electric Company
DG Capital Investment Recovery Illustration
Calculation of Tax Depreciation and Repairs Deduction -30 Years

Year		<u>1</u> (a)	<u>2</u> (b)	<u>3</u> (c)	<u>4</u> (d)	<u>5</u> (e)
Federal Tax Depreciation						
<u>Capital Repairs Deduction</u>						
(1) Plant Additions	Page 2, Line (3)	\$496,587,000				
(2) Capital Repairs Deduction Rate	Tax Dept	1/ 0.00%				
(3) Capital Repairs Deduction	Line (1) x Line (2)	\$0				
<u>Bonus Depreciation</u>						
(4) Plant Additions	Line (1)	\$496,587,000				
(5) Less Capital Repairs Deduction	Line (3)	\$0				
(6) Plant Additions Net of Capital Repairs Deduction	Line (4) - Line (5)	\$496,587,000				
<u>Remaining Tax Depreciation</u>						
(7) Plant Additions	Line (1)	\$496,587,000				
(8) Less Capital Repairs Deduction	Line (3)	\$0				
(9) Less Bonus Depreciation	Line (6)	\$0				
(10) Less Plant Additions Subject to 39 Yr Straight Line Depreciation	Per Tax Dept	1/ \$0				
(11) Remaining Plant Additions Subject to 20 YR MACRS Tax Depreciation	Line (7) - (8) - (9) - (10)	\$496,587,000	\$496,587,000	\$496,587,000	\$496,587,000	\$496,587,000
(12) 20 YR MACRS Tax Depreciation Rates	IRS Publication 946, Table A-1	3.7500%	7.2190%	6.6770%	6.1770%	5.7130%
(13) Total Tax Depreciation on 20 YR MACRS assets	Line (11) x Line (12)	\$18,622,013	\$35,848,616	\$33,157,114	\$30,674,179	\$28,370,015
(14) Plant Additions Subject to 39 Yr Straight Line Depreciation	Line (10)	\$0	\$0	\$0	\$0	\$0
(15) 39 YR SL Depreciation Rates	IRS Publication 946	2.5641%	2.5641%	2.5641%	2.5641%	2.5641%
(16) Total Tax Depreciation on 39 YR SL assets	Line (14) * Line (15)	\$0	\$0	\$0	\$0	\$0
(17) Total Tax Depreciation and Repairs Deduction	Sum of Lines (3), (13), (16)	\$18,622,013	\$35,848,616	\$33,157,114	\$30,674,179	\$28,370,015
(18) Includable Cost of Removal	Page 2, Line (4)	\$30,013,500	\$0	\$0	\$0	\$0
(19) Total Federal Tax Depreciation, Repairs Deduction and Cost of Removal	Line (17) through (18)	\$48,635,513	\$35,848,616	\$33,157,114	\$30,674,179	\$28,370,015
State Tax Deduction						
(20) Plant Additions	Line (1)	\$496,587,000				
(21) Capital Repairs Deduction Rate	Line (2)	0.00%				
(22) Capital Repairs Deduction	Line (20) x Line (21)	\$0				
<u>Remaining Tax Depreciation</u>						
(23) Plant Additions	Line (20)	\$496,587,000				
(24) Less Capital Repairs Deduction	Line (22)	\$0				
(25) Less Plant Additions Subject to 39 Yr Straight Line Depreciation	Per Tax Dept	1/ \$0				
(26) Remaining Plant Additions Subject to 20 YR MACRS Tax Depreciation	Line (23) - Line (24) - Line (25)	\$496,587,000	\$496,587,000	\$496,587,000	\$496,587,000	\$496,587,000
(27) 20 YR MACRS Tax Depreciation Rates	IRS Publication 946, Table A-1	3.7500%	7.2190%	6.6770%	6.1770%	5.7130%
(28) Total Tax Depreciation on 20 YR MACRS assets	Line (26) x Line (27)	\$18,622,013	\$35,848,616	\$33,157,114	\$30,674,179	\$28,370,015
(29) Plant Additions Subject to 39 Yr Straight Line Depreciation	Line (25)	\$0	\$0	\$0	\$0	\$0
(30) 39 YR SL Depreciation Rates	IRS Publication 946	2.5641%	2.5641%	2.5641%	2.5641%	2.5641%
(31) Total Tax Depreciation on 39 YR SL assets	Line (29) * Line (30)	\$0	\$0	\$0	\$0	\$0
(32) Total Tax Depreciation and Repairs Deduction	Line (22) + Line (28) + Line (31)	\$18,622,013	\$35,848,616	\$33,157,114	\$30,674,179	\$28,370,015
(33) Includable Cost of Removal	Page 2, Line (4)	\$30,013,500	\$0	\$0	\$0	\$0
(34) Total State Tax Depreciation, Repairs Deduction and Cost of Removal	Line (32) + Line (33)	\$48,635,513	\$35,848,616	\$33,157,114	\$30,674,179	\$28,370,015

1/ Per FY 2019 Tax return

Massachusetts Electric Company
 DG Capital Investment Recovery Illustration
 MACRS Table

MACRS DEPRECIATION BY CLASS OF PROPERTY

Year	3-year	5-year	7-year	10-year	15-year	20-year
1	33.33%	20.00%	14.29%	10.00%	5.00%	3.75%
2	44.45	32	24.49	18	9.5	7.219
3	14.81	19.2	17.49	14.4	8.55	6.677
4	7.41	11.52	12.49	11.52	7.7	6.177
5		11.52	8.93	9.22	6.93	5.713
6		5.76	8.92	7.37	6.23	5.285
7			8.93	6.55	5.9	4.888
8			4.46	6.55	5.9	4.522
9				6.56	5.91	4.462
10				6.55	5.9	4.461
11				3.28	5.9	4.462
12					5.9	4.461
13					5.91	4.462
14					5.9	4.461
15					5.91	4.462
16					2.95	4.461
17						4.462
18						4.461
19						4.462
20						4.461
21						2.231

Massachusetts Electric Company
DG Capital Investment Recovery Illustration
Cost of Capital

Description	Capital Structure (a)	Cost Rate (b)	Weighted Return (c) = (a) x (b)	Taxes (d)	Pre-tax Return (e) = (c) + (d)
1 Long Term Debt	46.43%	5.22% 1/	2.42%		2.42%
2					
3 Preferred Stock	0.08%	4.44% 1/	0.00%		0.00%
4					
5 Total Common Equity	<u>53.49%</u>	9.60% 3/	<u>5.14%</u>	<u>1.93% 2/</u>	<u>7.07%</u>
6					
7 Total Capitalization	<u>100.00%</u>		<u>7.56%</u>	<u>1.93%</u>	<u>9.49%</u>

1/ Company's Effective Cost of Long Term Debt and Preferred Stock

2/ Line 5(c) / (1 - 0.2732) - Line 5(c)

3/ Per Docket No. 18-150 final order Page 497

<u>Effective Tax Rate</u>	<u>From Jan 1, 2018</u>
Federal Tax Rate	21.00%
State Tax Rate	8.00%
Federal Deduction for State Income Taxes	1.68%
State Tax, net of Federal Deduction	6.32%
Federal Tax Rate	21.00%
Effective Tax rate	27.32%

Massachusetts Electric Company
 Nantucket Electric Company
 Summary of Illustrative Bill Impacts - 10 Years
 10, 20, and 30 Year Amortization

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)
(1) Illustrative % Increase @ 10 Year Amortization	1.24%	0.25%	-0.10%	-0.18%	-0.17%	-0.15%	-0.13%	-0.13%	-0.14%	-0.15%
(2) Illustrative % Increase @ 20 Year Amortization	1.06%	0.12%	-0.02%	-0.11%	-0.11%	-0.10%	-0.09%	-0.09%	-0.09%	-0.10%
(3) Illustrative % Increase @ 30 Year Amortization	1.00%	0.06%	-0.01%	-0.09%	-0.09%	-0.09%	-0.07%	-0.07%	-0.07%	-0.09%

- (1) Page 2, Line (11)
- (2) Page 3, Line (11)
- (3) Page 4, Line (11)

Massachusetts Electric Company
Nantucket Electric Company
Calculation of Illustrative Factor and Residential Bill Impact - 10 Years
Assuming 10 Year Amortization

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)
(1) Total Annual Recovery	\$48,518,984	\$58,755,479	\$54,701,428	\$47,638,081	\$40,897,167	\$34,948,474	\$29,744,954	\$24,602,609	\$19,499,690	\$13,567,250
(2) Residential Distribution Revenue Allocator	<u>57.7%</u>	<u>57.7%</u>	<u>57.7%</u>	<u>57.7%</u>	<u>57.7%</u>	<u>57.7%</u>	<u>57.7%</u>	<u>57.7%</u>	<u>57.7%</u>	<u>57.7%</u>
(3) Total Allocated Residential Recovery	\$27,995,454	\$33,901,911	\$31,562,724	\$27,487,173	\$23,597,665	\$20,165,269	\$17,162,838	\$14,195,705	\$11,251,321	\$7,828,303
(4) Forecasted Annual Residential kWh	<u>8,111,041,508</u>	<u>8,111,041,508</u>	<u>8,111,041,508</u>	<u>8,111,041,508</u>	<u>8,111,041,508</u>	<u>8,111,041,508</u>	<u>8,111,041,508</u>	<u>8,111,041,508</u>	<u>8,111,041,508</u>	<u>8,111,041,508</u>
(5) Illustrative Annual Factor	\$0.00345	\$0.00417	\$0.00389	\$0.00338	\$0.00290	\$0.00248	\$0.00211	\$0.00175	\$0.00138	\$0.00096
(6) Illustrative Incremental Change in Factor	\$0.00345	\$0.00072	(\$0.00028)	(\$0.00051)	(\$0.00048)	(\$0.00042)	(\$0.00037)	(\$0.00036)	(\$0.00037)	(\$0.00042)
(7) Monthly Residential kWh Deliveries	<u>500</u>	<u>500</u>	<u>500</u>	<u>500</u>	<u>500</u>	<u>500</u>	<u>500</u>	<u>500</u>	<u>500</u>	<u>500</u>
(8) Year-Over-Year Illustrative Increase in Monthly Bill	\$1.73	\$0.36	(\$0.14)	(\$0.26)	(\$0.24)	(\$0.21)	(\$0.19)	(\$0.18)	(\$0.19)	(\$0.21)
(9) Residential Monthly Bill at Start of Year	<u>\$139.56</u>	<u>\$141.29</u>	<u>\$141.65</u>	<u>\$141.51</u>	<u>\$141.25</u>	<u>\$141.01</u>	<u>\$140.80</u>	<u>\$140.61</u>	<u>\$140.43</u>	<u>\$140.24</u>
(10) Illustrative Residential Monthly Bill	\$141.29	\$141.65	\$141.51	\$141.25	\$141.01	\$140.80	\$140.61	\$140.43	\$140.24	\$140.03
(11) Illustrative % Increase	1.24%	0.25%	-0.10%	-0.18%	-0.17%	-0.15%	-0.13%	-0.13%	-0.14%	-0.15%

- (1) Attachment EDC-2-5-7, Line 4
- (2) Currently effective R-1/R-2 Distribution Revenue Allocator percentage
- (3) Line (1) x Line (2)
- (4) Company forecast for for the furthest year in the Company's forecast (calendar year 2025)
- (5) Line (3) ÷ Line (4), truncated to 5 decimal places
- (6) Line (5) - Line (5) from prior year
- (7) 500 kWh
- (8) Line (6) x Line (7)
- (9) Year 1: Page 5; all other years: prior year Line 16
- (10) Line (8) + Line (9)
- (11) Line (8) ÷ Line (9)

Massachusetts Electric Company
Nantucket Electric Company
Calculation of Illustrative Factor and Residential Bill Impact - 10 Years
Assuming 20 Year Amortization

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)
(1) Total Annual Recovery	\$41,506,957	\$46,179,966	\$45,127,443	\$40,687,809	\$36,339,861	\$32,468,385	\$29,080,368	\$25,706,654	\$22,335,992	\$18,306,895
(2) Residential Distribution Revenue Allocator	<u>57.7%</u>	<u>57.7%</u>	<u>57.7%</u>	<u>57.7%</u>	<u>57.7%</u>	<u>57.7%</u>	<u>57.7%</u>	<u>57.7%</u>	<u>57.7%</u>	<u>57.7%</u>
(3) Total Allocated Residential Recovery	\$23,949,514	\$26,645,840	\$26,038,535	\$23,476,866	\$20,968,100	\$18,734,258	\$16,779,372	\$14,832,739	\$12,887,867	\$10,563,078
(4) Forecasted Annual Residential kWh	<u>8,111,041,508</u>	<u>8,111,041,508</u>	<u>8,111,041,508</u>	<u>8,111,041,508</u>	<u>8,111,041,508</u>	<u>8,111,041,508</u>	<u>8,111,041,508</u>	<u>8,111,041,508</u>	<u>8,111,041,508</u>	<u>8,111,041,508</u>
(5) Illustrative Annual Factor	\$0.00295	\$0.00328	\$0.00321	\$0.00289	\$0.00258	\$0.00230	\$0.00206	\$0.00182	\$0.00158	\$0.00130
(6) Illustrative Incremental Change in Factor	\$0.00295	\$0.00033	(\$0.00007)	(\$0.00032)	(\$0.00031)	(\$0.00028)	(\$0.00024)	(\$0.00024)	(\$0.00024)	(\$0.00028)
(7) Monthly Residential kWh Deliveries	<u>500</u>	<u>500</u>	<u>500</u>	<u>500</u>	<u>500</u>	<u>500</u>	<u>500</u>	<u>500</u>	<u>500</u>	<u>500</u>
(8) Year-Over-Year Illustrative Increase in Monthly Bill	\$1.48	\$0.17	(\$0.03)	(\$0.16)	(\$0.16)	(\$0.14)	(\$0.12)	(\$0.12)	(\$0.12)	(\$0.14)
(9) Residential Monthly Bill at Start of Year	<u>\$139.56</u>	<u>\$141.04</u>	<u>\$141.21</u>	<u>\$141.18</u>	<u>\$141.02</u>	<u>\$140.86</u>	<u>\$140.72</u>	<u>\$140.60</u>	<u>\$140.48</u>	<u>\$140.36</u>
(10) Illustrative Residential Monthly Bill	\$141.04	\$141.21	\$141.18	\$141.02	\$140.86	\$140.72	\$140.60	\$140.48	\$140.36	\$140.22
(11) Illustrative % Increase	1.06%	0.12%	-0.02%	-0.11%	-0.11%	-0.10%	-0.09%	-0.09%	-0.09%	-0.10%

- (1) Attachment EDC-2-5-7, Line 8
- (2) Currently effective R-1/R-2 Distribution Revenue Allocator percentage
- (3) Line (1) x Line (2)
- (4) Company forecast for for the furthest year in the Company's forecast (calendar year 2025)
- (5) Line (3) ÷ Line (4), truncated to 5 decimal places
- (6) Line (5) - Line (5) from prior year
- (7) 500 kWh
- (8) Line (6) x Line (7)
- (9) Year 1: Page 5; all other years: prior year Line 16
- (10) Line (8) + Line (9)
- (11) Line (8) ÷ Line (9)

Massachusetts Electric Company
Nantucket Electric Company
Calculation of Illustrative Factor and Residential Bill Impact - 10 Years
Assuming 30 Year Amortization

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)
(1) Total Annual Recovery	\$39,088,435	\$41,694,363	\$41,423,141	\$37,714,035	\$34,073,584	\$30,841,772	\$28,026,148	\$25,212,427	\$22,388,900	\$18,967,367
(2) Residential Distribution Revenue Allocator	<u>57.7%</u>	<u>57.7%</u>	<u>57.7%</u>	<u>57.7%</u>	<u>57.7%</u>	<u>57.7%</u>	<u>57.7%</u>	<u>57.7%</u>	<u>57.7%</u>	<u>57.7%</u>
(3) Total Allocated Residential Recovery	\$22,554,027	\$24,057,647	\$23,901,152	\$21,760,998	\$19,660,458	\$17,795,702	\$16,171,087	\$14,547,570	\$12,918,395	\$10,944,171
(4) Forecasted Annual Residential kWh	<u>8,111,041,508</u>	<u>8,111,041,508</u>	<u>8,111,041,508</u>	<u>8,111,041,508</u>	<u>8,111,041,508</u>	<u>8,111,041,508</u>	<u>8,111,041,508</u>	<u>8,111,041,508</u>	<u>8,111,041,508</u>	<u>8,111,041,508</u>
(5) Illustrative Annual Factor	\$0.00278	\$0.00296	\$0.00294	\$0.00268	\$0.00242	\$0.00219	\$0.00199	\$0.00179	\$0.00159	\$0.00134
(6) Illustrative Incremental Change in Factor	\$0.00278	\$0.00018	(\$0.00002)	(\$0.00026)	(\$0.00026)	(\$0.00023)	(\$0.00020)	(\$0.00020)	(\$0.00020)	(\$0.00025)
(7) Monthly Residential kWh Deliveries	<u>500</u>	<u>500</u>	<u>500</u>	<u>500</u>	<u>500</u>	<u>500</u>	<u>500</u>	<u>500</u>	<u>500</u>	<u>500</u>
(8) Year-Over-Year Illustrative Increase in Monthly Bill	\$1.39	\$0.09	(\$0.01)	(\$0.13)	(\$0.13)	(\$0.12)	(\$0.10)	(\$0.10)	(\$0.10)	(\$0.13)
(9) Residential Monthly Bill at Start of Year	<u>\$139.56</u>	<u>\$140.95</u>	<u>\$141.04</u>	<u>\$141.03</u>	<u>\$140.90</u>	<u>\$140.77</u>	<u>\$140.65</u>	<u>\$140.55</u>	<u>\$140.45</u>	<u>\$140.35</u>
(10) Illustrative Residential Monthly Bill	\$140.95	\$141.04	\$141.03	\$140.90	\$140.77	\$140.65	\$140.55	\$140.45	\$140.35	\$140.22
(11) Illustrative % Increase	1.00%	0.06%	-0.01%	-0.09%	-0.09%	-0.09%	-0.07%	-0.07%	-0.07%	-0.09%

- (1) Attachment EDC-2-5-7, Line 12
- (2) Currently effective R-1/R-2 Distribution Revenue Allocator percentage
- (3) Line (1) x Line (2)
- (4) Company forecast for for the furthest year in the Company's forecast (calendar year 2025)
- (5) Line (3) ÷ Line (4), truncated to 5 decimal places
- (6) Line (5) - Line (5) from prior year
- (7) 500 kWh
- (8) Line (6) x Line (7)
- (9) Year 1: Page 5; all other years: prior year Line 16
- (10) Line (8) + Line (9)
- (11) Line (8) ÷ Line (9)

Massachusetts Electric Company
Nantucket Electric Company
Calculation of Current Monthly Residential Bill

(1)	500	Effective <u>March 1, 2021</u> (a)	<u>Amount</u> (b)
	<u>Delivery Service</u>		
(2)	Customer Charge		\$7.00
(3)	Base Distribution Charge	\$0.04906	
(4)	CapEx Factor	\$0.00352	
(5)	Basic Service Adjustment Factor	\$0.00105	
(6)	Residential Assistance Adjustment Factor	\$0.00488	
(7)	Storm Fund Replenishment Factor	\$0.00301	
(8)	Pension/PBOP Factor	\$0.00179	
(9)	Revenue Decoupling Mechanism Adjustment Factor	\$0.00255	
(10)	Attorney General Consulting Expense Factor	\$0.00003	
(11)	Solar Cost Adjustment Factor	\$0.00033	
(12)	Smart Grid Distribution Adjustment Factor	\$0.00008	
(13)	Net Metering Recovery Surcharge	\$0.01163	
(14)	Renewable Energy Recovery Factor	\$0.00075	
(15)	Tax Act Credit Factor	(\$0.00062)	
(16)	Vegetation Management Factor	\$0.00054	
(17)	Grid Modernization Factor	<u>\$0.00032</u>	
(18)	Total Distribution Energy Charge	\$0.07892	\$39.46
(19)	SMART Factor	\$0.00315	\$1.58
(20)	Electric Vehicle Program Factor	\$0.00011	\$0.06
(21)	Transition Charge	(\$0.00104)	(\$0.52)
(22)	Transmission Service Adjustment Factor	\$0.03858	\$19.29
(23)	Energy Efficiency Charge	\$0.02098	\$10.49
(24)	<u>Renewables Charge</u>	\$0.00050	<u>\$0.25</u>
(25)	Subtotal Delivery Charges		\$77.61
	<u>Supply Service</u>		
(26)	Base Basic Service Charge	\$0.11965	\$59.83
(27)	Basic Service Admin Cost Factor	\$0.00011	\$0.06
(28)	Smart Grid Customer Cost Adjustment Factor	<u>\$0.00412</u>	<u>\$2.06</u>
(29)	Commodity Subtotal	\$0.12388	<u>\$61.95</u>
(30)	Total		\$139.56

(a) M.D.P.U. No. 1-21-C
(b) Line (1) x Column (a), Lines (18) thru (28)

Massachusetts Electric Company
Distribution DG Capital - CIP Fees Over 10 Years

		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	
		(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	
<u>10 Year Amortization</u>												
1	Annual Revenue Requirement on CapEx	Attachment EDC-2-5-8, Page 1, Line 2	\$29,419,484	\$58,755,479	\$54,701,428	\$47,638,081	\$40,897,167	\$34,948,474	\$29,744,954	\$24,602,609	\$19,499,690	\$13,567,250
2	O&M related to capex	Attachment EDC-2-5-8, Page 1, Line 6	\$19,099,500	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
3												
4	Total Revenue Requirement		\$48,518,984	\$58,755,479	\$54,701,428	\$47,638,081	\$40,897,167	\$34,948,474	\$29,744,954	\$24,602,609	\$19,499,690	\$13,567,250
<u>20 Year Amortization</u>												
5	Annual Revenue Requirement on CapEx	Attachment EDC-2-5-9, Page 1, Line 2	\$22,407,457	\$46,179,966	\$45,127,443	\$40,687,809	\$36,339,861	\$32,468,385	\$29,080,368	\$25,706,654	\$22,335,992	\$18,306,895
6	O&M related to capex	Attachment EDC-2-5-9, Page 1, Line 6	\$19,099,500	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
7												
8	Total Revenue Requirement		\$41,506,957	\$46,179,966	\$45,127,443	\$40,687,809	\$36,339,861	\$32,468,385	\$29,080,368	\$25,706,654	\$22,335,992	\$18,306,895
<u>30 Year Amortization</u>												
9	Annual Revenue Requirement on CapEx	Attachment EDC-2-5-10, Page 1, Line 2	\$19,988,935	\$41,694,363	\$41,423,141	\$37,714,035	\$34,073,584	\$30,841,772	\$28,026,148	\$25,212,427	\$22,388,900	\$18,967,367
10	O&M related to capex	Attachment EDC-2-5-10, Page 1, Line 6	\$19,099,500	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
11												
12	Total Revenue Requirement		\$39,088,435	\$41,694,363	\$41,423,141	\$37,714,035	\$34,073,584	\$30,841,772	\$28,026,148	\$25,212,427	\$22,388,900	\$18,967,367

Massachusetts Electric Company
Distribution DG Capital - CIP Fees Over 10 Years
Summary Illustrative Revenue Requirement - 10 Years

		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	
		(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	
1	Cumulative Net Historic Capital Adjustment											
2	Annual Revenue Requirement on CapEx	Page 2, Line (32)	\$29,419,484	\$58,755,479	\$54,701,428	\$47,638,081	\$40,897,167	\$34,948,474	\$29,744,954	\$24,602,609	\$19,499,690	\$13,567,250
3												
4	Cumulative Net CapEx Adjustment		\$29,419,484	\$58,755,479	\$54,701,428	\$47,638,081	\$40,897,167	\$34,948,474	\$29,744,954	\$24,602,609	\$19,499,690	\$13,567,250
5												
6	O&M related to capex		\$19,099,500	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
7												
8	Total		\$48,518,984	\$58,755,479	\$54,701,428	\$47,638,081	\$40,897,167	\$34,948,474	\$29,744,954	\$24,602,609	\$19,499,690	\$13,567,250

Massachusetts Electric Company
DG Capital Investment Recovery Illustration - CIP Fees over 10 Years
Illustrative Revenue Requirement - 10 Years

Year		1	2	3	4	5	6	7	8	9	10
		(a)	(b)	(c)	(d)	(e)					
Depreciable Plant Additions											
(1) Distribution Plant Additions		\$496,587,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
(2) CIAC/CIP		(\$195,998,000)	(\$18,517,000)	(\$18,973,000)	(\$19,494,000)	(\$19,803,000)	\$(14,835,000)	\$(14,767,000)	(\$16,135,000)	(\$16,135,000)	(\$26,743,000)
(3) Accum. Gross Distribution Plant Additio	PY Line (3) + CY Line (1) & (2)	\$300,589,000	\$282,072,000	\$263,099,000	\$243,605,000	\$223,802,000	\$208,967,000	\$194,200,000	\$178,065,000	\$161,930,000	\$135,187,000
(4) Cumulative Cost of Removal		\$30,013,500	\$30,013,500	\$30,013,500	\$30,013,500	\$30,013,500	\$30,013,500	\$30,013,500	\$30,013,500	\$30,013,500	\$30,013,500
Deferred Tax Calculation:											
(5) Composite Book Depreciation Rate	Assumes 10 year	10.00%	10.00%	10.00%	10.00%	10.00%	10.00%	10.00%	10.00%	10.00%	10.00%
Vintage Year Tax Depreciation:											
(6) Federal Tax Depreciation	Page 3, Line (31)	\$60,072,400	\$50,772,960	\$37,886,256	\$28,063,296	\$20,634,544	\$15,400,868	\$12,720,100	\$11,663,258	\$10,622,608	\$8,854,749
(7) Cumulative Federal Tax Depreciation	PY Line (7) + CY Line (6)	\$60,072,400	\$110,845,360	\$148,731,616	\$176,794,912	\$197,429,456	\$212,830,324	\$225,550,424	\$237,213,682	\$247,836,290	\$256,691,039
(8) State Tax Depreciation	Page 3, Line (46)	\$60,072,400	\$50,772,960	\$37,886,256	\$28,063,296	\$20,634,544	\$15,400,868	\$12,720,100	\$11,663,258	\$10,622,608	\$8,854,749
(9) Cumulative State Tax Depreciation	PY Line (9) + CY Line (8)	\$60,072,400	\$110,845,360	\$148,731,616	\$176,794,912	\$197,429,456	\$212,830,324	\$225,550,424	\$237,213,682	\$247,836,290	\$256,691,039
(10) Book Depreciation	Year 1: Line (3) x Line (5) x 50%; Year 2 and beyond: Line (3) x Line (5)	\$15,029,450	\$29,133,050	\$27,258,550	\$25,335,200	\$23,370,350	\$21,638,450	\$20,158,350	\$18,613,250	\$16,999,750	\$14,855,850
(11) Cumulative Book Depreciation	PY Line (11) + CY Line (10)	\$15,029,450	\$44,162,500	\$71,421,050	\$96,756,250	\$120,126,600	\$141,765,050	\$161,923,400	\$180,536,650	\$197,536,400	\$212,392,250
(12) Cumulative State Book / Tax Timer	Line (9) - Line (11)	\$45,042,950	\$66,682,860	\$77,310,566	\$80,038,662	\$77,302,856	\$71,065,274	\$63,627,024	\$56,677,032	\$50,299,890	\$44,298,789
(13) Effective State Tax Rate		8.000%	8.000%	8.000%	8.000%	8.000%	8.000%	8.000%	8.000%	8.000%	8.000%
(14) Deferred State Tax Reserve	Line (12) x Line (13)	\$3,603,436	\$5,334,629	\$6,184,845	\$6,403,093	\$6,184,228	\$5,685,222	\$5,090,162	\$4,534,163	\$4,023,991	\$3,543,903
(14a) Less: State NOL	FY18 NOL true-up plus 75% of FY19 NOL per tax return	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
(14b) Net Deferred State Tax Reserve	Line (14) plus Line (14a)	\$3,603,436	\$5,334,629	\$6,184,845	\$6,403,093	\$6,184,228	\$5,685,222	\$5,090,162	\$4,534,163	\$4,023,991	\$3,543,903
(15) Cumulative Federal Book / Tax Timer	Line (7) - Line (11)	\$45,042,950	\$66,682,860	\$77,310,566	\$80,038,662	\$77,302,856	\$71,065,274	\$63,627,024	\$56,677,032	\$50,299,890	\$44,298,789
(16) Effective Tax Rate		21.000%	21.000%	21.000%	21.000%	21.000%	21.000%	21.000%	21.000%	21.000%	21.000%
(17) Deferred Federal Tax Reserve	Line (15) x Line (16)	\$9,459,020	\$14,003,401	\$16,235,219	\$16,808,119	\$16,233,600	\$14,923,708	\$13,361,675	\$11,902,177	\$10,562,977	\$9,302,746
(18) State Taxes	If Line (14b) > \$0, Line (14b) * -21%, otherwise \$0	(\$756,722)	(\$1,120,272)	(\$1,298,817)	(\$1,344,650)	(\$1,298,688)	(\$1,193,897)	(\$1,068,934)	(\$952,174)	(\$845,038)	(\$744,220)
(19) Less: Federal NOL	FY18 NOL true-up plus 75% of FY19 NOL per tax return	-	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
(20) Net Deferred Federal Tax Reserve	Sum of Line (17) through Line (19)	\$8,702,298	\$12,883,129	\$14,936,402	\$15,463,469	\$14,934,912	\$13,729,811	\$12,292,741	\$10,950,003	\$9,717,939	\$8,558,526
(21) Total Deferred Tax Reserve	Line (14b) + Line (20)	\$12,305,734	\$18,217,758	\$21,121,247	\$21,866,562	\$21,119,140	\$19,415,033	\$17,382,903	\$15,484,166	\$13,741,930	\$12,102,429
Rate Base Calculation:											
(22) Gross Plant Additions	Line (3)	\$300,589,000	\$282,072,000	\$263,099,000	\$243,605,000	\$223,802,000	\$208,967,000	\$194,200,000	\$178,065,000	\$161,930,000	\$135,187,000
(23) Accumulated Book Depreciation	- Line (11)	(\$15,029,450)	(\$44,162,500)	(\$71,421,050)	(\$96,756,250)	(\$120,126,600)	(\$141,765,050)	(\$161,923,400)	(\$180,536,650)	(\$197,536,400)	(\$212,392,250)
(24) Deferred Tax Reserve	- Line (21)	(\$12,305,734)	(\$18,217,758)	(\$21,121,247)	(\$21,866,562)	(\$21,119,140)	(\$19,415,033)	(\$17,382,903)	(\$15,484,166)	(\$13,741,930)	(\$12,102,429)
(25) Cumulative Cost of Removal	- Line (4)	\$30,013,500	\$30,013,500	\$30,013,500	\$30,013,500	\$30,013,500	\$30,013,500	\$30,013,500	\$30,013,500	\$30,013,500	\$30,013,500
(26) Year End Rate Base	Sum of Lines (22) through (25)	\$303,267,316	\$249,705,242	\$200,570,203	\$154,995,688	\$112,569,760	\$77,800,417	\$44,907,197	\$12,057,684	(\$19,334,830)	(\$59,294,179)
Revenue Requirement Calculation:											
(27) Average Rate Base	Year 1: Line (26) ÷ 2; Year 2 and beyond: (PY Line (26) + CY Line (26)) ÷ 2	\$151,633,658	\$276,486,279	\$225,137,723	\$177,782,945	\$133,782,724	\$95,185,088	\$61,353,807	\$28,482,441	(\$3,638,573)	(\$39,314,505)
(28) Pre-Tax ROR	Page 5	9.49%	9.49%	9.49%	9.49%	9.49%	9.49%	9.49%	9.49%	9.49%	9.49%
(29) Return and Taxes	Line (27) x Line (28)	\$14,390,034	\$26,238,548	\$21,365,570	\$16,871,601	\$12,695,981	\$9,033,065	\$5,822,476	\$2,702,984	(\$345,301)	(\$3,730,947)
(30) Book Depreciation	Line (10)	\$15,029,450	\$29,133,050	\$27,258,550	\$25,335,200	\$23,370,350	\$21,638,450	\$20,158,350	\$18,613,250	\$16,999,750	\$14,855,850
(31) Property Tax expense	Year 1: \$0, Year 2: (PY Line (3) - PY Line (11)) x Prop Tax Rate ÷ 2, Year 3 and beyond: (PY Line (3) - PY Line (11)) x Prop Tax Rate	\$0	\$3,383,881	\$6,077,308	\$5,431,280	\$4,830,836	\$4,276,959	\$3,764,128	\$3,286,375	\$2,845,241	\$2,442,347
(32) Annual Revenue Requirement	Sum of Lines (29) through (31)	\$29,419,484	\$58,755,479	\$54,701,428	\$47,638,081	\$40,897,167	\$34,948,474	\$29,744,954	\$24,602,609	\$19,499,690	\$13,567,250

1/ Property Tax Rate Calculation

Rate Year Plant in Service	\$4,554,343,860	DPU 18-150, Exhibit NG-RRP-2 (C), Schedule 6, Page 1
Rate Year Accumulated Depreciation	(\$1,783,103,879)	DPU 18-150, Exhibit NG-RRP-2 (C), Schedule 6, Page 1
Rate Year Net Plant in Service	\$2,771,239,981	

Rate Year Property Tax Expense \$65,650,673 DPU 18-150, Exhibit NG-RRP-2 (C), Schedule 7, Page 1

Property Tax Rate 2.37%

Massachusetts Electric Company
DG Capital Investment Recovery Illustration - CIP Fees over 10 Years
Calculation of Tax Depreciation and Repairs Deduction - 10 Years

Year		<u>1</u> (a)	<u>2</u> (b)	<u>3</u> (c)	<u>4</u> (d)	<u>5</u> (e)	<u>6</u> (f)	<u>7</u> (g)	<u>8</u> (h)	<u>9</u> (i)	<u>10</u> (j)
Federal Tax Depreciation											
<u>Capital Repairs Deduction</u>											
(1) Plant Additions	Page 2, Line (3)	\$300,589,000	\$282,072,000	\$263,099,000	\$243,605,000	\$223,802,000	\$208,967,000	\$194,200,000	\$178,065,000	\$161,930,000	\$135,187,000
(2) Capital Repairs Deduction Rate	Tax Dept	1/ 0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
(3) Capital Repairs Deduction	Line (1) x Line (2)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
<u>Bonus Depreciation</u>											
(4) Plant Additions	Line (1)	\$300,589,000	\$282,072,000	\$263,099,000	\$243,605,000	\$223,802,000	\$208,967,000	\$194,200,000	\$178,065,000	\$161,930,000	\$135,187,000
(5) Less Capital Repairs Deduction	Line (3)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
(6) Plant Additions Net of Capital Repairs Deduction	Line (4) - Line (5)	\$300,589,000	\$282,072,000	\$263,099,000	\$243,605,000	\$223,802,000	\$208,967,000	\$194,200,000	\$178,065,000	\$161,930,000	\$135,187,000
<u>Remaining Tax Depreciation</u>											
(7) Plant Additions	Line (1)	\$300,589,000	\$282,072,000	\$263,099,000	\$243,605,000	\$223,802,000	\$208,967,000	\$194,200,000	\$178,065,000	\$161,930,000	\$135,187,000
(8) Less Capital Repairs Deduction	Line (3)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
(9) Less Bonus Depreciation	Line (6)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
(10) Less Plant Additions Subject to 39 Yr Straight Line Depreciation	Per Tax Dept	1/ \$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
(11) Remaining Plant Additions Subject to 10 YR MACRS Tax Depreciation	Line (7) - (8) - (9) - (10)	\$300,589,000	\$282,072,000	\$263,099,000	\$243,605,000	\$223,802,000	\$208,967,000	\$194,200,000	\$178,065,000	\$161,930,000	\$135,187,000
(12) 10 YR MACRS Tax Depreciation Rates	IRS Publication 946, Table A-1	10.00%	18.00%	14.40%	11.52%	9.22%	7.37%	6.55%	6.55%	6.56%	6.55%
(13) Total Tax Depreciation on 10 YR MACRS assets	Line (11) x Line (12)	\$30,058,900	\$50,772,960	\$37,886,256	\$28,063,296	\$20,634,544	\$15,400,868	\$12,720,100	\$11,663,258	\$10,622,608	\$8,854,749
(14) Plant Additions Subject to 39 Yr Straight Line Depreciation	Line (10)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
(15) 39 YR SL Depreciation Rates	IRS Publication 946	2.5641%	2.5641%	2.5641%	2.5641%	2.5641%	2.5641%	2.5641%	2.5641%	2.5641%	2.5641%
(16) Total Tax Depreciation on 39 YR SL assets	Line (14) * Line (15)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
(17) Total Tax Depreciation and Repairs Deduction	Sum of Lines (3), (13), (16)	\$30,058,900	\$50,772,960	\$37,886,256	\$28,063,296	\$20,634,544	\$15,400,868	\$12,720,100	\$11,663,258	\$10,622,608	\$8,854,749
(18) Includable Cost of Removal	Page 2, Line (4)	\$30,013,500	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
(19) Total Federal Tax Depreciation, Repairs Deduction and Cost of Removal	Line (17) through (18)	\$60,072,400	\$50,772,960	\$37,886,256	\$28,063,296	\$20,634,544	\$15,400,868	\$12,720,100	\$11,663,258	\$10,622,608	\$8,854,749
<u>State Tax Deduction</u>											
(20) Plant Additions	Line (1)	\$300,589,000	\$282,072,000	\$263,099,000	\$243,605,000	\$223,802,000	\$208,967,000	\$194,200,000	\$178,065,000	\$161,930,000	\$135,187,000
(21) Capital Repairs Deduction Rate	Line (2)	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
(22) Capital Repairs Deduction	Line (20) x Line (21)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
<u>Remaining Tax Depreciation</u>											
(23) Plant Additions	Line (20)	\$300,589,000	\$282,072,000	\$263,099,000	\$243,605,000	\$223,802,000	\$208,967,000	\$194,200,000	\$178,065,000	\$161,930,000	\$135,187,000
(24) Less Capital Repairs Deduction	Line (22)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
(25) Less Plant Additions Subject to 39 Yr Straight Line Depreciation	Per Tax Dept	1/ \$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
(26) Remaining Plant Additions Subject to 10 YR MACRS Tax Depreciation	Line (23) - Line (24) - Line (25)	\$300,589,000	\$282,072,000	\$263,099,000	\$243,605,000	\$223,802,000	\$208,967,000	\$194,200,000	\$178,065,000	\$161,930,000	\$135,187,000
(27) 10 YR MACRS Tax Depreciation Rates	IRS Publication 946, Table A-1	10.0000%	18.0000%	14.4000%	11.5200%	9.2200%	7.3700%	6.5500%	6.5500%	6.5600%	6.5500%
(28) Total Tax Depreciation on 10 YR MACRS assets	Line (26) x Line (27)	\$30,058,900	\$50,772,960	\$37,886,256	\$28,063,296	\$20,634,544	\$15,400,868	\$12,720,100	\$11,663,258	\$10,622,608	\$8,854,749
(29) Plant Additions Subject to 39 Yr Straight Line Depreciation	Line (25)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
(30) 39 YR SL Depreciation Rates	IRS Publication 946	2.5641%	2.5641%	2.5641%	2.5641%	2.5641%	2.5641%	2.5641%	2.5641%	2.5641%	2.5641%
(31) Total Tax Depreciation on 39 YR SL assets	Line (29) * Line (30)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
(32) Total Tax Depreciation and Repairs Deduction	Line (22) + Line (28) + Line (31)	\$30,058,900	\$50,772,960	\$37,886,256	\$28,063,296	\$20,634,544	\$15,400,868	\$12,720,100	\$11,663,258	\$10,622,608	\$8,854,749
(33) Includable Cost of Removal	Page 2, Line (4)	\$30,013,500	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
(34) Total State Tax Depreciation, Repairs Deduction and Cost of Removal	Line (32) + Line (33)	\$60,072,400	\$50,772,960	\$37,886,256	\$28,063,296	\$20,634,544	\$15,400,868	\$12,720,100	\$11,663,258	\$10,622,608	\$8,854,749

Massachusetts Electric Company
 DG Capital Investment Recovery Illustration
 MACRS Table

MACRS DEPRECIATION BY CLASS OF PROPERTY

Year	3-year	5-year	7-year	10-year	15-year	20-year
1	33.33%	20.00%	14.29%	10.00%	5.00%	3.75%
2	44.45	32	24.49	18%	9.5	7.219
3	14.81	19.2	17.49	14.40%	8.55	6.677
4	7.41	11.52	12.49	11.52%	7.7	6.177
5		11.52	8.93*	9.22%	6.93	5.713
6		5.76	8.92	7.37%	6.23	5.285
7			8.93	6.55%	5.9	4.888
8			4.46	6.55%	5.9	4.522
9				6.56%	5.91	4.462
10				6.55%	5.9	4.461
11				3.28%	5.9	4.462
12					5.9	4.461
13					5.91	4.462
14					5.9	4.461
15					5.91	4.462
16					2.95	4.461
17						4.462
18						4.461
19						4.462
20						4.461
21						2.231

Massachusetts Electric Company
DG Capital Investment Recovery Illustration
Cost of Capital

Description	Capital Structure (a)	Cost Rate (b)	Weighted Return (c) = (a) x (b)	Taxes (d)	Pre-tax Return (e) = (c) + (d)
1 Long Term Debt	46.43%	5.22% 1/	2.42%		2.42%
2					
3 Preferred Stock	0.08%	4.44% 1/	0.00%		0.00%
4					
5 Total Common Equity	<u>53.49%</u>	9.60% 3/	<u>5.14%</u>	<u>1.93% 2/</u>	<u>7.07%</u>
6					
7 Total Capitalization	<u><u>100.00%</u></u>		<u><u>7.56%</u></u>	<u><u>1.93%</u></u>	<u><u>9.49%</u></u>

- 1/ Company's Effective Cost of Long Term Debt and Preferred Stock
2/ Line 5(c) / (1-0.2732) - Line 5(c)
3/ Per Docket No. 18-150 final order Page 497

<u>Effective Tax Rate</u>	<u>From Jan 1, 2018</u>
Federal Tax Rate	21.00%
State Tax Rate	8.00%
Federal Deduction for State Income Taxes	1.68%
State Tax, net of Federal Deduction	6.32%
Federal Tax Rate	21.00%
Effective Tax rate	<u>27.32%</u>

Massachusetts Electric Company
 Distribution DG Capital - CIP Fees Over 10 Years
 Summary Illustrative Revenue Requirement - 20 years

		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
		(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)
1	Cumulative Net Historic Capital Adjustment										
2	Annual Revenue Requirement on Year 1 CapEx										
3											
4	Cumulative Net CapEx Adjustment										
5											
6	O&M										
7											
8	Total										

Page 2, Line (32)

\$22,407,457	\$46,179,966	\$45,127,443	\$40,687,809	\$36,339,861	\$32,468,385	\$29,080,368	\$25,706,654	\$22,335,992	\$18,306,895
\$22,407,457	\$46,179,966	\$45,127,443	\$40,687,809	\$36,339,861	\$32,468,385	\$29,080,368	\$25,706,654	\$22,335,992	\$18,306,895
\$19,099,500	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
\$41,506,957	\$46,179,966	\$45,127,443	\$40,687,809	\$36,339,861	\$32,468,385	\$29,080,368	\$25,706,654	\$22,335,992	\$18,306,895

Massachusetts Electric Company
DG Capital Investment Recovery Illustration - CIP Fees Over 10 Years
Illustrative Revenue Requirement - 20 Years

Year	1 (a)	2 (b)	3 (c)	4 (d)	5 (e)	6 (f)	7 (g)	8 (h)	9 (i)	10 (j)
Depreciable Plant Additions										
(1) Gross Distribution Plant Additions	\$496,587,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
(2) CIP/CIAC	(\$195,998,000)	(\$18,517,000)	(\$18,973,000)	(\$19,494,000)	(\$19,803,000)	(\$18,835,000)	(\$14,767,000)	(\$16,135,000)	(\$16,135,000)	(\$26,743,000)
(3) Accum. Gross Distribution Plant Additions	PY Line (3) + CY Line (1) & (2)	\$300,589,000	\$282,072,000	\$263,099,000	\$243,605,000	\$223,802,000	\$208,967,000	\$194,200,000	\$178,065,000	\$161,930,000
(4) Cumulative Cost of Removal		\$30,013,500	\$30,013,500	\$30,013,500	\$30,013,500	\$30,013,500	\$30,013,500	\$30,013,500	\$30,013,500	\$30,013,500
Deferred Tax Calculation:										
(5) Composite Book Depreciation Rate	Assumes 20 year	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%
Vintage Year Tax Depreciation:										
(6) Federal Tax Depreciation	Page 3, Line (31)	\$41,285,588	\$20,362,778	\$17,567,120	\$15,047,481	\$12,785,808	\$11,043,906	\$9,492,496	\$8,052,099	\$7,225,317
(7) Cumulative Federal Tax Depreciation	PY Line (7) + CY Line (6)	\$41,285,588	\$61,648,366	\$79,215,486	\$94,262,967	\$107,048,775	\$118,092,681	\$127,585,177	\$135,637,276	\$142,862,593
(8) State Tax Depreciation	Page 3, Line (46)	\$41,285,588	\$20,362,778	\$17,567,120	\$15,047,481	\$12,785,808	\$11,043,906	\$9,492,496	\$8,052,099	\$7,225,317
(9) Cumulative State Tax Depreciation	PY Line (9) + CY Line (8)	\$41,285,588	\$61,648,366	\$79,215,486	\$94,262,967	\$107,048,775	\$118,092,681	\$127,585,177	\$135,637,276	\$142,862,593
(10) Book Depreciation	Year 1: Line (3) x Line (5) x 50%; Year 2 and beyond: Line (3) x Line (5)	\$7,514,725	\$14,566,525	\$13,629,275	\$12,667,600	\$11,685,175	\$10,819,225	\$10,079,175	\$9,306,625	\$8,499,875
(11) Cumulative Book Depreciation	PY Line (11) + CY Line (10)	\$7,514,725	\$22,081,250	\$35,710,525	\$48,378,125	\$60,063,300	\$70,882,525	\$80,961,700	\$90,268,325	\$98,768,200
(12) Cumulative State Book / Tax Timer	Line (9) - Line (11)	\$33,770,863	\$39,567,116	\$43,504,961	\$45,884,842	\$46,985,475	\$47,210,156	\$46,623,477	\$45,368,951	\$44,094,393
(13) Effective State Tax Rate		8.000%	8.000%	8.000%	8.000%	8.000%	8.000%	8.000%	8.000%	8.000%
(14) Deferred State Tax Reserve	Line (12) x Line (13)	\$2,701,669	\$3,165,369	\$3,480,397	\$3,670,787	\$3,758,838	\$3,776,812	\$3,729,878	\$3,629,516	\$3,527,551
(14a) Less: State NOL	FY18 NOL true-up plus 75% of FY19 NOL per tax return	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
(14b) Net Deferred State Tax Reserve	Line (14) plus Line (14a)	\$2,701,669	\$3,165,369	\$3,480,397	\$3,670,787	\$3,758,838	\$3,776,812	\$3,729,878	\$3,629,516	\$3,527,551
(15) Cumulative Federal Book / Tax Timer	Line (7) - Line (11)	\$33,770,863	\$39,567,116	\$43,504,961	\$45,884,842	\$46,985,475	\$47,210,156	\$46,623,477	\$45,368,951	\$44,094,393
(16) Effective Tax Rate		21.000%	21.000%	21.000%	21.000%	21.000%	21.000%	21.000%	21.000%	21.000%
(17) Deferred Federal Tax Reserve	Line (15) x Line (16)	\$7,091,881	\$8,309,094	\$9,136,042	\$9,635,817	\$9,866,950	\$9,914,133	\$9,790,930	\$9,527,480	\$9,259,823
(18) Taxes	Less: Federal deduction for Deferred State If Line (14b) > \$0, Line (14b) * -21%, otherwise \$0	(\$567,350)	(\$664,727)	(\$730,883)	(\$770,865)	(\$789,356)	(\$793,131)	(\$783,274)	(\$762,198)	(\$740,786)
(19) Less: Federal NOL	FY18 NOL true-up plus 75% of FY19 NOL per tax return	-	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
(20) Net Deferred Federal Tax Reserve	Sum of Line (17) through Line (19)	\$6,524,531	\$7,644,367	\$8,405,159	\$8,864,952	\$9,077,594	\$9,121,002	\$9,007,656	\$8,765,282	\$8,519,037
(21) Total Deferred Tax Reserve	Line (14b) + Line (20)	\$9,226,200	\$10,809,736	\$11,885,556	\$12,535,739	\$12,836,432	\$12,897,814	\$12,737,534	\$12,394,798	\$11,664,865
Rate Base Calculation:										
(22) Gross Plant Additions	Line (3)	\$300,589,000	\$282,072,000	\$263,099,000	\$243,605,000	\$223,802,000	\$208,967,000	\$194,200,000	\$178,065,000	\$161,930,000
(23) Accumulated Book Depreciation	- Line (11)	(\$7,514,725)	(\$22,081,250)	(\$35,710,525)	(\$48,378,125)	(\$60,063,300)	(\$70,882,525)	(\$80,961,700)	(\$90,268,325)	(\$98,768,200)
(24) Deferred Tax Reserve	- Line (21)	(\$9,226,200)	(\$10,809,736)	(\$11,885,556)	(\$12,535,739)	(\$12,836,432)	(\$12,897,814)	(\$12,737,534)	(\$12,394,798)	(\$11,664,865)
(25) Cumulative Cost of Removal	- Line (4)	\$30,013,500	\$30,013,500	\$30,013,500	\$30,013,500	\$30,013,500	\$30,013,500	\$30,013,500	\$30,013,500	\$30,013,500
(25) Year End Rate Base	Sum of Lines (22) through (25)	\$313,861,575	\$279,194,514	\$245,516,419	\$212,704,636	\$180,915,768	\$155,200,161	\$130,514,266	\$105,415,377	\$81,128,712
Revenue Requirement Calculation:										
(26) Average Rate Base	Year 1: Line (26) ÷ 2; Year 2 and beyond: (PY Line (26) + CY Line (26)) ÷ 2	\$156,930,788	\$296,528,045	\$262,355,467	\$229,110,528	\$196,810,202	\$168,057,964	\$142,857,213	\$117,964,822	\$93,272,045
(27) Pre-Tax ROR	Page 5	9.49%	9.49%	9.49%	9.49%	9.49%	9.49%	9.49%	9.49%	9.49%
(28) Return and Taxes	Line (27) x Line (28)	\$14,892,732	\$28,140,511	\$24,897,534	\$21,742,589	\$18,677,288	\$15,948,701	\$13,557,150	\$11,194,862	\$8,851,517
(29) Book Depreciation	Line (10)	\$7,514,725	\$14,566,525	\$13,629,275	\$12,667,600	\$11,685,175	\$10,819,225	\$10,079,175	\$9,306,625	\$8,499,875
(30) Property Tax expense	Year 1: \$0, Year 2: (PY Line (3) - PY Line (11)) x Prop Tax Rate ÷ 2, Year 3 and beyond: (PY Line (3) - PY Line (11)) x Prop Tax Rate	\$0	\$3,472,930	\$6,600,634	\$6,277,620	\$5,977,398	\$5,700,459	\$5,444,043	\$5,205,167	\$4,984,600
(31) Annual Revenue Requirement	Sum of Lines (29) through (31)	\$22,407,457	\$46,179,966	\$45,127,443	\$40,687,809	\$36,339,861	\$32,468,385	\$29,080,368	\$25,706,654	\$22,335,992

1/ Property Tax Rate Calculation
Rate Year Plant in Service \$4,554,343,860 DPU 18-150, Exhibit NG-RRP-2 (C), Schedule 6, Page 1
Rate Year Accumulated Depreciation (\$1,783,103,879) DPU 18-150, Exhibit NG-RRP-2 (C), Schedule 6, Page 1
Rate Year Net Plant in Service \$2,771,239,981
Rate Year Property Tax Expense \$65,650,673 DPU 18-150, Exhibit NG-RRP-2 (C), Schedule 7, Page 1
Property Tax Rate 2.37%

Massachusetts Electric Company
DG Capital Investment Recovery Illustration - CIP Fees Over 10 Years
Calculation of Tax Depreciation and Repairs Deduction - 20 Years

Year		1	2	3	4	5	6	7	8	9	10
		(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)
Federal Tax Depreciation											
<u>Capital Repairs Deduction</u>											
(1) Plant Additions	Page 2, Line (3)	\$300,589,000	\$282,072,000	\$263,099,000	\$243,605,000	\$223,802,000	\$208,967,000	\$194,200,000	\$178,065,000	\$161,930,000	\$135,187,000
(2) Capital Repairs Deduction Rate	Tax Dept	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
(3) Capital Repairs Deduction	Line (1) x Line (2)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
<u>Bonus Depreciation</u>											
(4) Plant Additions	Line (1)	\$300,589,000	\$282,072,000	\$263,099,000	\$243,605,000	\$223,802,000	\$208,967,000	\$194,200,000	\$178,065,000	\$161,930,000	\$135,187,000
(5) Less Capital Repairs Deduction	Line (3)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
(6) Plant Additions Net of Capital Repairs Deduction	Line (4) - Line (5)	\$300,589,000	\$282,072,000	\$263,099,000	\$243,605,000	\$223,802,000	\$208,967,000	\$194,200,000	\$178,065,000	\$161,930,000	\$135,187,000
<u>Remaining Tax Depreciation</u>											
(7) Plant Additions	Line (1)	\$300,589,000	\$282,072,000	\$263,099,000	\$243,605,000	\$223,802,000	\$208,967,000	\$194,200,000	\$178,065,000	\$161,930,000	\$135,187,000
(8) Less Capital Repairs Deduction	Line (3)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
(9) Less Bonus Depreciation	Line (6)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
(10) Less Plant Additions Subject to 39 Yr Straight Line Depreciation	Per Tax Dept	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
(11) Remaining Plant Additions Subject to 20 YR MACRS Tax Depreciation	Line (7) - (8) - (9) - (10)	\$300,589,000	\$282,072,000	\$263,099,000	\$243,605,000	\$223,802,000	\$208,967,000	\$194,200,000	\$178,065,000	\$161,930,000	\$135,187,000
(12) 20 YR MACRS Tax Depreciation Rates	IRS Publication 946, Table A-1	3.7500%	7.2190%	6.6770%	6.1770%	5.7130%	5.2850%	4.8880%	4.5220%	4.4620%	4.4610%
(13) Total Tax Depreciation on 20 YR MACRS assets	Line (11) x Line (12)	\$11,272,088	\$20,362,778	\$17,567,120	\$15,047,481	\$12,785,808	\$11,043,906	\$9,492,496	\$8,052,099	\$7,225,317	\$6,030,692
(14) Plant Additions Subject to 39 Yr Straight Line Depreciation	Line (10)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
(15) 39 YR SL Depreciation Rates	IRS Publication 946	2.5641%	2.5641%	2.5641%	2.5641%	2.5641%	2.5641%	2.5641%	2.5641%	2.5641%	2.5641%
(16) Total Tax Depreciation on 39 YR SL assets	Line (14) * Line (15)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
(17) Total Tax Depreciation and Repairs Deduction	Sum of Lines (3), (13), (16)	\$11,272,088	\$20,362,778	\$17,567,120	\$15,047,481	\$12,785,808	\$11,043,906	\$9,492,496	\$8,052,099	\$7,225,317	\$6,030,692
(18) Includable Cost of Removal	Page 2, Line (4)	\$30,013,500	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
(19) Total Federal Tax Depreciation, Repairs Deduction and Cost of Removal	Line (17) through (18)	\$41,285,588	\$20,362,778	\$17,567,120	\$15,047,481	\$12,785,808	\$11,043,906	\$9,492,496	\$8,052,099	\$7,225,317	\$6,030,692
State Tax Deduction											
(20) Plant Additions	Line (1)	\$300,589,000	\$282,072,000	\$263,099,000	\$243,605,000	\$223,802,000	\$208,967,000	\$194,200,000	\$178,065,000	\$161,930,000	\$135,187,000
(21) Capital Repairs Deduction Rate	Line (2)	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
(22) Capital Repairs Deduction	Line (20) x Line (21)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
<u>Remaining Tax Depreciation</u>											
(23) Plant Additions	Line (20)	\$300,589,000	\$282,072,000	\$263,099,000	\$243,605,000	\$223,802,000	\$208,967,000	\$194,200,000	\$178,065,000	\$161,930,000	\$135,187,000
(24) Less Capital Repairs Deduction	Line (22)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
(25) Less Plant Additions Subject to 39 Yr Straight Line Depreciation	Per Tax Dept	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
(26) Remaining Plant Additions Subject to 20 YR MACRS Tax Depreciation	Line (23) - Line (24) - Line (25)	\$300,589,000	\$282,072,000	\$263,099,000	\$243,605,000	\$223,802,000	\$208,967,000	\$194,200,000	\$178,065,000	\$161,930,000	\$135,187,000
(27) 20 YR MACRS Tax Depreciation Rates	IRS Publication 946, Table A-1	3.7500%	7.2190%	6.6770%	6.1770%	5.7130%	5.2850%	4.8880%	4.5220%	4.4620%	4.4610%
(28) Total Tax Depreciation on 20 YR MACRS assets	Line (26) x Line (27)	\$11,272,088	\$20,362,778	\$17,567,120	\$15,047,481	\$12,785,808	\$11,043,906	\$9,492,496	\$8,052,099	\$7,225,317	\$6,030,692
(29) Plant Additions Subject to 39 Yr Straight Line Depreciation	Line (25)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
(30) 39 YR SL Depreciation Rates	IRS Publication 946	2.5641%	2.5641%	2.5641%	2.5641%	2.5641%	2.5641%	2.5641%	2.5641%	2.5641%	2.5641%
(31) Total Tax Depreciation on 39 YR SL assets	Line (29) * Line (30)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
(32) Total Tax Depreciation and Repairs Deduction	Line (22) + Line (28) + Line (31)	\$11,272,088	\$20,362,778	\$17,567,120	\$15,047,481	\$12,785,808	\$11,043,906	\$9,492,496	\$8,052,099	\$7,225,317	\$6,030,692
(33) Includable Cost of Removal	Page 2, Line (4)	\$30,013,500	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
(34) Total State Tax Depreciation, Repairs Deduction and Cost of Removal	Line (32) + Line (33)	\$41,285,588	\$20,362,778	\$17,567,120	\$15,047,481	\$12,785,808	\$11,043,906	\$9,492,496	\$8,052,099	\$7,225,317	\$6,030,692

Massachusetts Electric Company
 DG Capital Investment Recovery Illustration - CIP Fees Over 10 Years
 MACRS Table

MACRS DEPRECIATION BY CLASS OF PROPERTY

Year	3-year	5-year	7-year	10-year	15-year	20-year
1	33.33%	20.00%	14.29%	10.00%	5.00%	3.75%
2	44.45	32	24.49	18	9.5	7.219
3	14.81	19.2	17.49	14.4	8.55	6.677
4	7.41	11.52	12.49	11.52	7.7	6.177
5		11.52	8.93	9.22	6.93	5.713
6		5.76	8.92	7.37	6.23	5.285
7			8.93	6.55	5.9	4.888
8			4.46	6.55	5.9	4.522
9				6.56	5.91	4.462
10				6.55	5.9	4.461
11				3.28	5.9	4.462
12					5.9	4.461
13					5.91	4.462
14					5.9	4.461
15					5.91	4.462
16					2.95	4.461
17						4.462
18						4.461
19						4.462
20						4.461
21						2.231

Massachusetts Electric Company
DG Capital Investment Recovery Illustration - CIP Fees Over 10 Years
Cost of Capital

Description	Capital Structure (a)	Cost Rate (b)	Weighted Return (c) = (a) x (b)	Taxes (d)	Pre-tax Return (e) = (c) + (d)
1 Long Term Debt	46.43%	5.22% 1/	2.42%		2.42%
2					
3 Preferred Stock	0.08%	4.44% 1/	0.00%		0.00%
4					
5 Total Common Equity	<u>53.49%</u>	9.60% 3/	<u>5.14%</u>	<u>1.93% 2/</u>	<u>7.07%</u>
6					
7 Total Capitalization	<u><u>100.00%</u></u>		<u><u>7.56%</u></u>	<u><u>1.93%</u></u>	<u><u>9.49%</u></u>

1/ Company's Effective Cost of Long Term Debt and Preferred Stock

2/ Line 5(c) / (1 - 0.2732) - Line 5(c)

3/ Per Docket No. 18-150 final order Page 497

<u>Effective Tax Rate</u>	<u>From Jan 1, 2018</u>
Federal Tax Rate	21.00%
State Tax Rate	8.00%
Federal Deduction for State Income Taxes	1.68%
State Tax, net of Federal Deduction	6.32%
Federal Tax Rate	<u>21.00%</u>
Effective Tax rate	<u>27.32%</u>

Massachusetts Electric Company
Distribution DG Capital - CIP Fees Over 10 Years
Summary Illustrative Revenue Requirement - 30 years

		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
		(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)
1	Cumulative Net Historic Capital Adjustment										
2	Annual Revenue Requirement on Year 1 CapEx										
3											
4	Cumulative Net CapEx Adjustment										
5											
6	O&M										
7											
8	Total										

Page 2, Line (32)

\$19,988,935	\$41,694,362	\$41,423,141	\$37,714,035	\$34,073,584	\$30,841,772	\$28,026,148	\$25,212,426	\$22,388,900	\$18,967,367
\$19,988,935	\$41,694,362	\$41,423,141	\$37,714,035	\$34,073,584	\$30,841,772	\$28,026,148	\$25,212,426	\$22,388,900	\$18,967,367
\$19,099,500	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
\$39,088,435	\$41,694,362	\$41,423,141	\$37,714,035	\$34,073,584	\$30,841,772	\$28,026,148	\$25,212,426	\$22,388,900	\$18,967,367

Massachusetts Electric Company
DG Capital Investment Recovery Illustration - CIP Fees Over 10 Years
Illustrative Revenue Requirement - 30 Years

Year		1	2	3	4	5	6	7	8	9	10
		(a)	(b)	(c)	(d)	(e)					
Depreciable Plant Additions											
(1) Gross Distribution Plant Additions		\$496,587,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
(2) CIP/CIAC		(\$195,998,000)	(\$18,517,000)	(\$18,973,000)	(\$19,494,000)	(\$19,803,000)	(\$14,835,000)	(\$14,767,000)	(\$16,135,000)	(\$16,135,000)	(\$26,743,000)
(3) Accum. Gross Distribution Plant Additions	PY Line (3) + CY Line (1) & (2)	\$300,589,000	\$282,072,000	\$263,099,000	\$243,605,000	\$223,802,000	\$208,967,000	\$194,200,000	\$178,065,000	\$161,930,000	\$135,187,000
(4) Cumulative Cost of Removal		\$30,013,500	\$30,013,500	\$30,013,500	\$30,013,500	\$30,013,500	\$30,013,500	\$30,013,500	\$30,013,500	\$30,013,500	\$30,013,500
Deferred Tax Calculation:											
(5) Composite Book Depreciation Rate	Assumes 30 year	3.33%	3.33%	3.33%	3.33%	3.33%	3.33%	3.33%	3.33%	3.33%	3.33%
Vintage Year Tax Depreciation:											
(6) Federal Tax Depreciation	Page 3, Line (31)	\$41,285,588	\$20,362,778	\$17,567,120	\$15,047,481	\$12,785,808	\$11,043,906	\$9,492,496	\$8,052,099	\$7,225,317	\$6,030,692
(7) Cumulative Federal Tax Depreciation	PY Line (7) + CY Line (6)	\$41,285,588	\$61,648,366	\$79,215,486	\$94,262,967	\$107,048,775	\$118,092,681	\$127,585,177	\$135,637,276	\$142,862,593	\$148,893,285
(8) State Tax Depreciation	Page 3, Line (46)	\$41,285,588	\$20,362,778	\$17,567,120	\$15,047,481	\$12,785,808	\$11,043,906	\$9,492,496	\$8,052,099	\$7,225,317	\$6,030,692
(9) Cumulative State Tax Depreciation	PY Line (9) + CY Line (8)	\$41,285,588	\$61,648,366	\$79,215,486	\$94,262,967	\$107,048,775	\$118,092,681	\$127,585,177	\$135,637,276	\$142,862,593	\$148,893,285
(10) Book Depreciation	Year 1: Line (3) x Line (5) x 50%; Year 2 and beyond: Line (3) x Line (5)	\$5,009,817	\$9,711,016	\$9,086,183	\$8,445,067	\$7,790,117	\$7,212,817	\$6,719,450	\$6,204,416	\$5,666,583	\$4,951,949
(11) Cumulative Book Depreciation	PY Line (11) + CY Line (10)	\$5,009,817	\$14,720,833	\$23,807,016	\$32,252,083	\$40,042,200	\$47,255,016	\$53,974,466	\$60,178,882	\$65,845,465	\$70,797,415
(12) Cumulative State Book / Tax Timer	Line (9) - Line (11)	\$36,275,771	\$46,927,533	\$55,408,470	\$62,010,884	\$67,006,575	\$70,837,665	\$73,610,711	\$75,458,394	\$77,017,128	\$78,095,870
(13) Effective State Tax Rate		8.000%	8.000%	8.000%	8.000%	8.000%	8.000%	8.000%	8.000%	8.000%	8.000%
(14) Deferred State Tax Reserve	Line (12) x Line (13)	\$2,902,062	\$3,754,203	\$4,432,678	\$4,960,871	\$5,360,526	\$5,667,013	\$5,888,857	\$6,036,671	\$6,161,370	\$6,247,670
(14a) Less: State NOL per tax return	FY18 NOL true-up plus 75% of FY19 NOL	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
(14b) Net Deferred State Tax Reserve	Line (14) plus Line (14a)	\$2,902,062	\$3,754,203	\$4,432,678	\$4,960,871	\$5,360,526	\$5,667,013	\$5,888,857	\$6,036,671	\$6,161,370	\$6,247,670
(15) Cumulative Federal Book / Tax Timer	Line (7) - Line (11)	\$36,275,771	\$46,927,533	\$55,408,470	\$62,010,884	\$67,006,575	\$70,837,665	\$73,610,711	\$75,458,394	\$77,017,128	\$78,095,870
(16) Effective Tax Rate		21.000%	21.000%	21.000%	21.000%	21.000%	21.000%	21.000%	21.000%	21.000%	21.000%
(17) Deferred Federal Tax Reserve	Line (15) x Line (16)	\$7,617,912	\$9,854,782	\$11,635,779	\$13,022,286	\$14,071,381	\$14,875,910	\$15,458,249	\$15,846,263	\$16,173,597	\$16,400,133
(18) Taxes	If Line (14b) > \$0, Line (14b) * -21%, otherwise \$0 FY18 NOL true-up plus 75% of FY19 NOL	(\$609,433)	(\$788,383)	(\$930,862)	(\$1,041,783)	(\$1,125,710)	(\$1,190,073)	(\$1,236,660)	(\$1,267,701)	(\$1,293,888)	(\$1,312,011)
(19) Less: Federal NOL per tax return		-	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
(20) Net Deferred Federal Tax Reserve	Sum of Line (17) through Line (19)	\$7,008,479	\$9,066,399	\$10,704,917	\$11,980,503	\$12,945,671	\$13,685,837	\$14,221,589	\$14,578,562	\$14,879,709	\$15,088,122
(21) Total Deferred Tax Reserve	Line (14b) + Line (20)	\$9,910,541	\$12,820,602	\$15,137,595	\$16,941,374	\$18,306,197	\$19,352,850	\$20,110,446	\$20,615,233	\$21,041,079	\$21,335,792
Rate Base Calculation:											
(22) Gross Plant Additions	Line (3)	\$300,589,000	\$282,072,000	\$263,099,000	\$243,605,000	\$223,802,000	\$208,967,000	\$194,200,000	\$178,065,000	\$161,930,000	\$135,187,000
(23) Accumulated Book Depreciation	- Line (11)	(\$5,009,817)	(\$14,720,833)	(\$23,807,016)	(\$32,252,083)	(\$40,042,200)	(\$47,255,016)	(\$53,974,466)	(\$60,178,882)	(\$65,845,465)	(\$70,797,415)
(24) Deferred Tax Reserve	- Line (21)	(\$9,910,541)	(\$12,820,602)	(\$15,137,595)	(\$16,941,374)	(\$18,306,197)	(\$19,352,850)	(\$20,110,446)	(\$20,615,233)	(\$21,041,079)	(\$21,335,792)
(25) Cumulative Cost of Removal	- Line (4)	\$30,013,500	\$30,013,500	\$30,013,500	\$30,013,500	\$30,013,500	\$30,013,500	\$30,013,500	\$30,013,500	\$30,013,500	\$30,013,500
(25) Year End Rate Base	Sum of Lines (22) through (25)	\$315,682,142	\$284,544,064	\$254,167,889	\$224,425,043	\$195,467,104	\$172,372,633	\$150,128,588	\$127,284,385	\$105,056,955	\$73,067,293
Revenue Requirement Calculation:											
(26) Average Rate Base	Year 1: Line (26) ÷ 2; Year 2 and beyond: (PY Line (26) + CY Line (26)) ÷ 2	\$157,841,071	\$300,113,103	\$269,355,977	\$239,296,466	\$209,946,073	\$183,919,869	\$161,250,611	\$138,706,486	\$116,170,670	\$89,062,124
(27) Pre-Tax ROR	Page 5	9.49%	9.49%	9.49%	9.49%	9.49%	9.49%	9.49%	9.49%	9.49%	9.49%
(28) Return and Taxes	Line (27) x Line (28)	\$14,979,118	\$28,480,733	\$25,561,882	\$22,709,235	\$19,923,882	\$17,453,996	\$15,302,683	\$13,163,246	\$11,024,597	\$8,451,996
(29) Book Depreciation	Line (10)	\$5,009,817	\$9,711,016	\$9,086,183	\$8,445,067	\$7,790,117	\$7,212,817	\$6,719,450	\$6,204,416	\$5,666,583	\$4,951,949
(30) Property Tax expense	Year 1: \$0, Year 2: (PY Line (3) - PY Line (11)) x Prop Tax Rate ÷ 2, Year 3 and beyond: (PY Line (3) - PY Line (11)) x Prop Tax Rate 1/	\$0	\$3,502,613	\$6,775,076	\$6,559,733	\$6,359,585	\$6,174,959	\$6,004,015	\$5,844,764	\$5,697,720	\$5,563,422
(31) Annual Revenue Requirement	Sum of Lines (29) through (31)	\$19,988,935	\$41,694,362	\$41,423,141	\$37,714,035	\$34,073,584	\$30,841,772	\$28,026,148	\$25,212,426	\$22,388,900	\$18,967,367
1/ Property Tax Rate Calculation											
Rate Year Plant in Service	\$4,554,343,860	DPU 18-150, Exhibit NG-RRP-2 (C), Schedule 6, Page 1									
Rate Year Accumulated Depreciation	(\$1,783,103,879)	DPU 18-150, Exhibit NG-RRP-2 (C), Schedule 6, Page 1									
Rate Year Net Plant in Service	\$2,771,239,981										
Rate Year Property Tax Expense	\$65,650,673	DPU 18-150, Exhibit NG-RRP-2 (C), Schedule 7, Page 1									
Property Tax Rate	2.37%										

Massachusetts Electric Company
DG Capital Investment Recovery Illustration - CIP Fees Over 10 Years
Calculation of Tax Depreciation and Repairs Deduction -30 Years

Year		<u>1</u> (a)	<u>2</u> (b)	<u>3</u> (c)	<u>4</u> (d)	<u>5</u> (e)	<u>6</u> (f)	<u>7</u> (g)	<u>8</u> (h)	<u>9</u> (i)	<u>10</u> (j)
Federal Tax Depreciation											
<u>Capital Repairs Deduction</u>											
(1) Plant Additions	Page 2, Line (3)	\$300,589,000	\$282,072,000	\$263,099,000	\$243,605,000	\$223,802,000	\$208,967,000	\$194,200,000	\$178,065,000	\$161,930,000	\$135,187,000
(2) Capital Repairs Deduction Rate	Tax Dept	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
(3) Capital Repairs Deduction	Line (1) x Line (2)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
<u>Bonus Depreciation</u>											
(4) Plant Additions	Line (1)	\$300,589,000	\$282,072,000	\$263,099,000	\$243,605,000	\$223,802,000	\$208,967,000	\$194,200,000	\$178,065,000	\$161,930,000	\$135,187,000
(5) Less Capital Repairs Deduction	Line (3)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
(6) Plant Additions Net of Capital Repairs Deduction	Line (4) - Line (5)	\$300,589,000	\$282,072,000	\$263,099,000	\$243,605,000	\$223,802,000	\$208,967,000	\$194,200,000	\$178,065,000	\$161,930,000	\$135,187,000
<u>Remaining Tax Depreciation</u>											
(7) Plant Additions	Line (1)	\$300,589,000	\$282,072,000	\$263,099,000	\$243,605,000	\$223,802,000	\$208,967,000	\$194,200,000	\$178,065,000	\$161,930,000	\$135,187,000
(8) Less Capital Repairs Deduction	Line (3)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
(9) Less Bonus Depreciation	Line (6)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
(10) Less Plant Additions Subject to 39 Yr Straight Line Depreciation	Per Tax Dept	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
(11) Remaining Plant Additions Subject to 20 YR MACRS Tax Depreciation	Line (7) - (8) - (9) - (10)	\$300,589,000	\$282,072,000	\$263,099,000	\$243,605,000	\$223,802,000	\$208,967,000	\$194,200,000	\$178,065,000	\$161,930,000	\$135,187,000
(12) 20 YR MACRS Tax Depreciation Rates	IRS Publication 946, Table A-1	3.7500%	7.2190%	6.6770%	6.1770%	5.7130%	5.2850%	4.8880%	4.5220%	4.4620%	4.4610%
(13) Total Tax Depreciation on 20 YR MACRS assets	Line (11) x Line (12)	\$11,272,088	\$20,362,778	\$17,567,120	\$15,047,481	\$12,785,808	\$11,043,906	\$9,492,496	\$8,052,099	\$7,225,317	\$6,030,692
(14) Plant Additions Subject to 39 Yr Straight Line Depreciation	Line (10)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
(15) 39 YR SL Depreciation Rates	IRS Publication 946	2.5641%	2.5641%	2.5641%	2.5641%	2.5641%	2.5641%	2.5641%	2.5641%	2.5641%	2.5641%
(16) Total Tax Depreciation on 39 YR SL assets	Line (14) * Line (15)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
(17) Total Tax Depreciation and Repairs Deduction	Sum of Lines (3), (13), (16)	\$11,272,088	\$20,362,778	\$17,567,120	\$15,047,481	\$12,785,808	\$11,043,906	\$9,492,496	\$8,052,099	\$7,225,317	\$6,030,692
(18) Includable Cost of Removal	Page 2, Line (4)	\$30,013,500	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
(19) Total Federal Tax Depreciation, Repairs Deduction and Cost of Removal	Line (17) through (18)	\$41,285,588	\$20,362,778	\$17,567,120	\$15,047,481	\$12,785,808	\$11,043,906	\$9,492,496	\$8,052,099	\$7,225,317	\$6,030,692
State Tax Deduction											
(20) Plant Additions	Line (1)	\$300,589,000	\$282,072,000	\$263,099,000	\$243,605,000	\$223,802,000	\$208,967,000	\$194,200,000	\$178,065,000	\$161,930,000	\$135,187,000
(21) Capital Repairs Deduction Rate	Line (2)	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
(22) Capital Repairs Deduction	Line (20) x Line (21)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
<u>Remaining Tax Depreciation</u>											
(23) Plant Additions	Line (20)	\$300,589,000	\$282,072,000	\$263,099,000	\$243,605,000	\$223,802,000	\$208,967,000	\$194,200,000	\$178,065,000	\$161,930,000	\$135,187,000
(24) Less Capital Repairs Deduction	Line (22)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
(25) Less Plant Additions Subject to 39 Yr Straight Line Depreciation	Per Tax Dept	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
(26) Remaining Plant Additions Subject to 20 YR MACRS Tax Depreciation	Line (23) - Line (24) - Line (25)	\$300,589,000	\$282,072,000	\$263,099,000	\$243,605,000	\$223,802,000	\$208,967,000	\$194,200,000	\$178,065,000	\$161,930,000	\$135,187,000
(27) 20 YR MACRS Tax Depreciation Rates	IRS Publication 946, Table A-1	3.7500%	7.2190%	6.6770%	6.1770%	5.7130%	5.2850%	4.8880%	4.5220%	4.4620%	4.4610%
(28) Total Tax Depreciation on 20 YR MACRS assets	Line (26) x Line (27)	\$11,272,088	\$20,362,778	\$17,567,120	\$15,047,481	\$12,785,808	\$11,043,906	\$9,492,496	\$8,052,099	\$7,225,317	\$6,030,692
(29) Plant Additions Subject to 39 Yr Straight Line Depreciation	Line (25)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
(30) 39 YR SL Depreciation Rates	IRS Publication 946	2.5641%	2.5641%	2.5641%	2.5641%	2.5641%	2.5641%	2.5641%	2.5641%	2.5641%	2.5641%
(31) Total Tax Depreciation on 39 YR SL assets	Line (29) * Line (30)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
(32) Total Tax Depreciation and Repairs Deduction	Line (22) + Line (28) + Line (31)	\$11,272,088	\$20,362,778	\$17,567,120	\$15,047,481	\$12,785,808	\$11,043,906	\$9,492,496	\$8,052,099	\$7,225,317	\$6,030,692
(33) Includable Cost of Removal	Page 2, Line (4)	\$30,013,500	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
(34) Total State Tax Depreciation, Repairs Deduction and Cost of Removal	Line (32) + Line (33)	\$41,285,588	\$20,362,778	\$17,567,120	\$15,047,481	\$12,785,808	\$11,043,906	\$9,492,496	\$8,052,099	\$7,225,317	\$6,030,692

Massachusetts Electric Company
 DG Capital Investment Recovery Illustration
 MACRS Table

MACRS DEPRECIATION BY CLASS OF PROPERTY

Year	3-year	5-year	7-year	10-year	15-year	20-year
1	33.33%	20.00%	14.29%	10.00%	5.00%	3.75%
2	44.45	32	24.49	18	9.5	7.219
3	14.81	19.2	17.49	14.4	8.55	6.677
4	7.41	11.52	12.49	11.52	7.7	6.177
5		11.52	8.93	9.22	6.93	5.713
6		5.76	8.92	7.37	6.23	5.285
7			8.93	6.55	5.9	4.888
8			4.46	6.55	5.9	4.522
9				6.56	5.91	4.462
10				6.55	5.9	4.461
11				3.28	5.9	4.462
12					5.9	4.461
13					5.91	4.462
14					5.9	4.461
15					5.91	4.462
16					2.95	4.461
17						4.462
18						4.461
19						4.462
20						4.461
21						2.231

Massachusetts Electric Company
 DG Capital Investment Recovery Illustration
 Cost of Capital

Description	Capital Structure (a)	Cost Rate (b)	Weighted Return (c) = (a) x (b)	Taxes (d)	Pre-tax Return (e) = (c) + (d)
1 Long Term Debt	46.43%	5.22% 1/	2.42%		2.42%
2 Preferred Stock	0.08%	4.44% 1/	0.00%		0.00%
3 Total Common Equity	<u>53.49%</u>	9.60% 3/	<u>5.14%</u>	<u>1.93% 2/</u>	<u>7.07%</u>
4					
5 Total Capitalization	<u>100.00%</u>		<u>7.56%</u>	<u>1.93%</u>	<u>9.49%</u>

- 1/ Company's Effective Cost of Long Term Debt and Preferred Stock
 2/ Line 5(c) / (1-0.2732) - Line 5(c)
 3/ Per Docket No. 18-150 final order Page 497

	From Jan 1, 2018
<u>Effective Tax Rate</u>	
Federal Tax Rate	21.00%
State Tax Rate	8.00%
Federal Deduction for State Income Taxes	1.68%
State Tax, net of Federal Deduction	6.32%
Federal Tax Rate	<u>21.00%</u>
Effective Tax rate	<u>27.32%</u>