

GRID MODERNIZATION FACTOR

1.0 APPLICABILITY

This Grid Modernization Factor tariff (“GMF tariff”) provides for the recovery of incremental costs associated with the Company’s Grid Modernization Plan (“GMP”) approved by the Department of Public Utilities (the “Department”). To be eligible for recovery, GMP costs must: (1) be preauthorized by the Department; (2) be incremental relative to the Company’s current investment practices or new types of technology for capital investments; (3) be incremental to those costs that the Company currently recovers through its base distribution rates for operation and maintenance (“O&M”) expenses and solely attributable to preauthorized grid modernization investments; (4) be prudently incurred; (5) have aggregate total expenditures for preauthorized Eligible GMP Projects less than the three-year expenditure cap determined by the Department; and (6) be recorded as in-service by December 31 of each GMP Investment Year.

The Company’s rates for retail Delivery Service are subject to adjustment to reflect the operation of this GMF tariff. The Grid Modernization Factor (“GMF”), as defined herein, shall be applied to all retail delivery service kilowatt-hours (“kWhs”) as determined in accordance with the provisions of Section 3.0 below. The GMF shall be determined annually by the Company, subject to the Department’s review and approval. The operation of this GMF tariff is subject to Chapter 164 of the General Laws.

2.0 DEFINITIONS

2.1 Accumulated Deferred Income Taxes (ADIT) means the accumulated deferred income taxes associated with cumulative Eligible GMP Investments as of the end of the respective GMP Investment Year. For the year in which the Eligible GMP Investment was placed into service, the accumulated deferred income taxes will be determined on a monthly basis. The accumulated deferred income taxes for subsequent years shall be calculated based upon the average of the beginning and ending calendar year balances.

2.2 Accumulated Reserve for Depreciation (ARD) means the Accumulated Reserve for Depreciation, including net salvage, associated with cumulative Eligible GMP Investments as of the end of the respective GMP Investment Year. For the year in which the Eligible GMP Investment was placed into service, the Accumulated Reserve for Depreciation will be determined on a monthly basis. The Accumulated Reserve for Depreciation for

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subsequent years shall be calculated based upon the average of the beginning and ending calendar year balances.

- 2.3 Allowed O&M Expense (O&M) is the incremental O&M expense that is incurred by the Company as a result of implementing its GMP and is solely attributable to preauthorized grid modernization investments, including incremental GMP development and evaluation costs, the cost of which is not being recovered in base distribution rates or through another cost recovery mechanism. Eligible O&M costs are the actual monthly GMP-related O&M expenses incurred in the GMP Investment Year prior to the Recovery Year. Allowed O&M Expense will exclude all overhead and burdens O&M expenses, including pension and post-retirement benefits other than pension costs recovered through any other reconciling mechanism.
- 2.4 Depreciation Expense (DEPR) is the annual depreciation expense associated with the average annual cumulative Eligible GMP Investments placed into service through the end of the calendar year prior to the Recovery Year. For the year during which the Eligible GMP Investment is placed into service, the Company shall calculate depreciation expense for use in the GMP Revenue Requirement by (1) dividing the annual depreciation accrual rates, determined in the Company's most recent distribution rate case, by 12, and (2) applying the resulting rate to the average monthly plant balances during the year. Depreciation expense for subsequent years may be calculated based on the average of the beginning and end of year plant balances.
- 2.5 Eligible GMP Investments are the cumulative capitalized costs of Eligible GMP Projects recorded as in-service, including net salvage, and are used and useful at the end of the GMP Investment Year that is prior to the GMP Recovery Year.
- 2.6 Eligible GMP Project is a project contained in the Company's GMP and preauthorized by the Department to be eligible for cost recovery as a project which contributes towards achieving the Department's grid modernization objectives to: (1) optimize system performance by attaining optimal levels of grid visibility, command and control, and self-healing; (2) optimize system demand by facilitating consumer price-responsiveness; and (3) interconnect and integrate distributed energy resources.

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- 2.7 GMP is the Grid Modernization Factor that recovers the annual GMP Revenue Requirement approved by the Department.
- 2.8 GMP is the Company's five-year Grid Modernization Plan which includes a three-year short-term investment plan consisting of Eligible GMP Projects, plus a five year strategic plan outlining how the Company intends to meet the Department's grid modernization objectives.
- 2.9 GMP Investment Year is the annual period beginning on January 1 and ending on December 31.
- 2.10 Recovery Year is the 12-month period for which the GMP is in effect beginning on July 1 and ending on June 30 of each year.
- 2.11 GMP Revenue Requirement is the revenue requirement associated with GMP plant-in-service for each GMP Investment Year prior to the Recovery Year, plus Allowed O&M Expense. For the year in which an Eligible GMP Investment is placed into service, the GMP Revenue Requirement will be calculated on a monthly basis. The GMP Revenue Requirement for subsequent years shall be calculated based upon the average of the beginning and ending calendar year balances. The GMP Revenue Requirement will be calculated to recover (1) the monthly revenue requirement for Eligible GMP Investments placed into service in the GMP Investment Year immediately prior to the Recovery Year; (2) the average annual revenue requirement for the calendar year ending December 31 of the GMP Investment Year immediately prior to the Recovery Year, for cumulative Eligible GMP Investments placed into service in GMP Investment Years two years prior to the Recovery Year; and (3) Allowed O&M Expense.
- 2.12 Gross Plant Investments are the capitalized costs of Eligible GMP Investments recorded on the Company's books for Eligible GMP Investments. Actual capitalized cost of Eligible GMP Investments shall include applicable overhead and burden costs subject to the test provided in Section 4.0.
- 2.13 Pre-Tax Rate of Return (PTRR) shall be the after-tax weighted average cost of capital established by the Department in the Company's most recent general rate case, adjusted to

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a pre-tax basis by using currently effective federal and state income tax rates applicable to the period for which the GMP Revenue Requirement is calculated.

- 2.14 Property Tax Expense (PTE) means the property taxes calculated based on Eligible net GMP Investments multiplied by the Property Tax Rate. Property taxes will be excluded in the GMP Revenue Requirement in the first Recovery Year following the GMP Investment Year in which the eligible taxable plant went into service. Property taxes will be included in the GMP Revenue Requirement beginning in the second Recovery Year at 50% of the annual property tax amount. In subsequent years, the GMP Revenue Requirement will reflect a full year of property taxes.
- 2.15 Property Tax Rate is the Company's composite property tax rate determined in the Company's most recent general rate case, calculated as the ratio of total annual property taxes paid to total taxable net plant in service.
- 2.16 Rate Base (RB) is the investment value upon which the Company is permitted to earn its authorized rate of return.

3.0 GRID MODERNIZATION FACTOR ("GMF")

3.1 Rate Formula

$$GMF_c = \frac{(GMR + PPRA) \times DRA_c}{FkWh_c}$$

Where:

- c Designates a separate factor for each rate class group.
- GMF_c The Grid Modernization Factor, by rate class, as defined in Section 2.7.
- GMR The GMP Revenue Requirement as defined in Section 2.11.
- PPRA The Past Period Reconciliation Amount defined as the difference between (a) the amount authorized to be recovered through the prior year's GMFs as approved by the Department and (b) the actual revenue billed through the

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applicable GMFs. Interest calculated on the average monthly balance using the customer deposit rate, as outlined in 220 CMR 26.09, shall also be included in the PPRA.

DRA_c The Distribution Revenue Allocator representing the percentage of final revenue requirement allocated to each rate class group as determined in the Company's most recent general rate case as follows:

Service Territory/Area	Rate Classes	Distribution Revenue Allocator
All	R-1/R-2	41.145%
All	R-2/R-3	4.575%
Greater Boston	G-1/T-1	3.446%
Greater Boston	G-2/T-2	27.907%
Greater Boston	G-3/WR	7.998%
Cambridge	G-0/G-1/G-6	0.829%
Cambridge	G-2	1.329%
Cambridge	G-3/SB1	0.856%
Cambridge	G-4	0.012%
Cambridge	G-5	0.018%
South Shore, Cape Cod, Martha's Vineyard	G-1/G-7	3.930%
South Shore, Cape Cod, Martha's Vineyard	G-2	1.088%
South Shore, Cape Cod, Martha's Vineyard	G-3	0.610%
South Shore, Cape Cod, Martha's Vineyard	G-4	0.008%
South Shore, Cape Cod, Martha's Vineyard	G-5	0.053%
South Shore, Cape Cod, Martha's Vineyard	G-6	0.008%
Western Massachusetts	23/24/G-0/T-0	2.626%
Western Massachusetts	G-2/T-4	1.159%
Western Massachusetts	T-2	1.495%
Western Massachusetts	T-5	0.498%
Eastern Massachusetts	S-1/S-2	0.315%
Western Massachusetts	S-1/S-2	0.095%
Total		100.000%

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FkWh_c The forecasted kWh to be delivered to the Company's retail delivery service customers.

3.2 Request for GMFs

The Company shall submit annually to the Department its proposed GMFs by May 15 to become effective for usage on and after July 1.

3.3 Application of GMFs on Customer Bills

The GMF shall be calculated to the nearest one one thousandth (\$0.00001) of a cent per kWh and will be applied to the monthly kWh sales. In the Eastern Massachusetts territory, the GMF will be included with the distribution kWh charge on customers' bills.

4.0 OVERHEAD AND BURDEN ADJUSTMENTS

For purposes of GMF calculations, the actual overhead and burdens shall be reduced to the extent that actual O&M overhead and burdens in a given year are less than the amount included in base distribution rates as determined in its most recent general rate case. Such reduction shall be the difference between the actual O&M overhead and burdens and the amount included in base distribution rates. In addition, the percentage of capitalized overhead and burdens assigned to GMF projects shall be set equal to the ratio of GMF to non-GMF direct costs in any given year.

5.0 FILINGS WITH THE DEPARTMENT

5.1 GMP Term Filing

The Department preauthorized the Company's first three-year short-term investment plan Eligible GMP Projects and spending cap in D.P.U. 15-122 (2018), establishing three years of GMP spending for the GMP Investment Years 2018 through 2020 (first authorization term). By July 1, 2020, the Company shall submit its next GMP term filing that shall include a second three-year short-term investment plan for GMP Investment Years 2021 through 2023 (second authorization term) plus a five-year strategic plan through 2026 identifying how the Company intends to achieve the grid modernization objectives. The operation of this GMF tariff is applicable to Eligible GMP Investment and Allowed O&M

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Expense associated with the first two GMP terms (2018 through 2020, and 2021 through 2023).

5.2 Annual GMP Cost Recovery Filing

The annual GMP cost recovery filing shall be submitted to the Department by May 15 and include, but not be limited to:

- (1) Full project documentation of all Eligible GMP Projects' capital investment recorded as in-service during the Prior GMP Investment Year and documentation of Allowed O&M Expense, with narrative providing justification that the costs meet the cost recovery eligibility requirements in Section 1.0;
- (2) Supporting documentation demonstrating that the costs sought for recovery are preauthorized, incremental, prudently incurred, in service, and used and useful (where applicable);
- (3) Any cost variances as defined in the Company's capital authorization policies;
- (4) A demonstration that the proposed factors are calculated appropriately;
- (5) Bill impacts; and
- (6) Demonstration that aggregate total of expenditures for preauthorized Eligible GMP Projects is under the three-year expenditure cap determined by the Department. This information shall also be included in the Term Report indicated below.

5.3 Grid Modernization Annual Report

The Grid Modernization Annual Report shall be submitted to the Department by April 1 following the completion of the GMP Investment Year.

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5.4 Grid Modernization Term Report

The Grid Modernization Term Report shall be submitted to the Department by April 1 following the completion of the three-year, short-term investment plan.