



Stacey M. Donnelly
Senior Counsel

December 30, 2024

Mark D. Marini, Secretary
Department of Public Utilities
One South Station, 3rd Floor
Boston, MA 02110

Re: D.P.U. 23-150 – Massachusetts Electric Company and Nantucket Electric Company each d/b/a National Grid – Compliance Filing for Residential Heat Pump Rate

Dear Secretary Marini:

On behalf of Massachusetts Electric Company (“Mass. Electric”) and Nantucket Electric Company (“Nantucket Electric”) each d/b/a National Grid (together, the “Company”), enclosed for filing is the Company’s proposal for a heat-pump rate eligible to all Rate R-1 and Rate R-2 customers of the Company who install heat pumps for space heating in all or part of their home, submitted in compliance with the final decision of the Department of Public Utilities (the “Department”) issued on September 30, 2024 in the above-referenced proceeding (the “Order”).

In the Order, the Department directed the Company to submit for approval a heat-pump rate tariff eligible to all Rate R-1 and Rate R-2 customers who install heat pumps for space heating in all or part of their home, that adjusts the base distribution kilowatt-hour charge during the winter months to reflect operation of heat pumps for space heating. As part of the Company’s compliance filing to propose the residential heat-pump rate, the Department directed the Company to provide: (1) the time required to implement the heat-pump rate offering; (2) the tracking and reporting requirements articulated in D.P.U. 23-80/D.P.U. 23-81, at 408; and (3) a description of the outreach and marketing efforts the Company will undertake. In addition, the Department required the Company to further explain how it will track potential increases in summer peak demand due to heat-pump penetration, as recommended by the Office of the Attorney General. The Department granted an extension of time for the Company to comply with the directives set forth on pages 512-513 of the Order to no later than December 30, 2024.

In compliance with the above-referenced directives, the Company is submitting the Residential Heat Pump Rate Implementation Plan as Exhibit HP-1, and the following updated clean and redlined tariffs to reflect the implementation of the Heat Pump Rate as Exhibit HP-2:

- Mass. Electric, Residential Regular R-1 Retail Delivery Service, M.D.P.U. No. 1585 (canceling M.D.P.U. No. 1544);
- Mass. Electric, Residential-Low Income R-2 Retail Delivery Service, M.D.P.U. No. 1586 (canceling M.D.P.U. No. 1545);

Mark D. Marini, Secretary
D.P.U. 23-150
December 30, 2024
Page 2

- Nantucket Electric, Residential Regular R-1 Retail Delivery Service, M.D.P.U. No. 690 (canceling M.D.P.U. No. 676);
- Nantucket Electric, Residential-Low Income R-2 Retail Delivery Service, M.D.P.U. No. 691 (canceling M.D.P.U. No. 677); and
- Mass. Electric and Nantucket Electric, Revenue Decoupling Mechanism Provision, M.D.P.U. No. 1587 (canceling M.D.P.U. No. 1580).

The Company is also submitting the Heat-Pump Rate calculations for the kWh charge and estimated customer bill impacts as Exhibit HP-3.

Thank you for your attention to this matter. Please contact me if you have any questions regarding the Company's compliance filing.¹

Very truly yours,



Stacey M. Donnelly

Enclosures

cc: D.P.U. 23-150 Service List

¹ This filing is submitted in electronic form only. The Company will follow up with a paper version when directed by the Department.

January 10, 2025

Mark D. Marini, Secretary
Department of Public Utilities
One South Station, 3rd Floor
Boston, MA 02110

Re: D.P.U. 23-150 – Massachusetts Electric Company and Nantucket Electric Company each d/b/a National Grid – Responses to Questions of Department of Public Utilities Regarding Residential Heat Pump Rate Filing

Dear Secretary Marini:

On behalf of Massachusetts Electric Company and Nantucket Electric Company each d/b/a National Grid (together, the “Company”), this letter provides the following responses to the questions of the Department of Public Utilities (the “Department” or “DPU”) dated January 8, 2025, regarding the Company’s proposed residential heat pump rate (“Heat Pump Rate”) filing submitted on December 30, 2024.

DPU Question 1: The definition of winter period in proposed M.D.P.U. No. 1585, at 1, is October 1 through March 31. Please explain why the Company defined the winter season as such, rather than using the timeframe of November 1 through April 30, which would be consistent with Unitil’s heat pump proposal (see Unitil’s proposed Schedules HP-RES at 1; HP-RES 1, at 1).

Company Response: The Company proposed a winter period of October 1 through March 31 for the Heat Pump Rate to align with the beginning of each new rate year (October 1). However, the Company has no objection to adjusting its winter period for the Heat Pump Rate to November 1 through April 30, to be consistent with Unitil’s proposal in D.P.U. 23-80/D.P.U. 23-81. A November 1 through April 30 winter period also aligns with the winter heating season for the Company’s gas distribution affiliate, Boston Gas Company d/b/a National Grid.

To show the adjustment of the Heat Pump Rate winter period to November 1 through April 30, the Company is providing: (1) an updated Heat Pump Rate Implementation Plan as Exhibit HP-1-Revised (clean and redlined); (2) updated tariffs as Exhibit HP-2-Revised (clean and redlined);¹ and (3) updated calculations for the kWh charge and estimated customer bill impacts for the Heat Pump Rate as Exhibit HP-3-Revised, which reflects the updated kWh for the November 1 through April 30 period and results in no impact on rates.

¹ Adjusting the Heat Pump Rate winter period to November 1 through April 30 does not result in any revisions to the Company’s proposed Revenue Decoupling Mechanism Provision, M.D.P.U. No. 1587, filed on December 30, 2024. However, the Company is including the Revenue Decoupling Mechanism Provision in this filing for completeness.

DPU Question 2: As shown on Exhs. HP-1, at 4 and HP-3, at 1 of the compliance filing, residential heat-pump kWh winter usage is estimated to be 2.8 times the average Rate R-1 and Rate R-2 winter usage. Please explain the derivation of the 2.8 factor and provide all documentation supporting the 2.8 factor. Further, explain how the use of a 2.8 factor is consistent with the Department's directive at pages 511-512 of the final Order to implement a heat-pump rate similar to that approved for Unitil.

Company Response: The Company calculated the multiplier of 2.8 using Exhibit Unitil-JDT-6 from D.P.U. 23-80.² Specifically, the Company divided Row 4 (Distribution Charge) by Row 22 (Volumetric Fixed Cost Recovery Charge) to equal the 2.8 factor (rounded from 2.800873). The 2.8 factor represents the difference between winter heat pump usage and overall average usage for Rate R-1 and Rate R-2 customers. Therefore, the Company used the 2.8 factor to adjust the base distribution billing units and to compute the kWh rate for the winter period. Accordingly, the use of a 2.8 factor is consistent with the Department's directive at pages 511-512 of the final Order in D.P.U. 23-150 because the Company derived the 2.8 factor directly from the approved Unitil heat pump rate.

Thank you for your attention to this matter. Please contact me if you have any questions regarding the Company's compliance filing.³

Very truly yours,



Stacey M. Donnelly

Enclosures

cc: D.P.U. 23-150 Service List

² Exhibit Unitil-JDT-6 from D.P.U. 23-80 can be accessed at:
<https://fileservice.eea.comacloud.net/FileService.Api/file/FileRoom/19878167>.

³ This filing is submitted in electronic form only. The Company will follow up with a paper version when directed by the Department.

January 22, 2025

Mark D. Marini, Secretary
Department of Public Utilities
One South Station, 3rd Floor
Boston, MA 02110

Re: D.P.U. 23-150 – Massachusetts Electric Company and Nantucket Electric Company each d/b/a National Grid – Responses to Follow-Up Questions of Department of Public Utilities Regarding Residential Heat Pump Rate Filing

Dear Secretary Marini:

On behalf of Massachusetts Electric Company and Nantucket Electric Company each d/b/a National Grid (together, the “Company” or “National Grid”), this letter responds to the Department of Public Utilities’ (the “Department”) additional follow-up question dated January 13, 2025, regarding the derivation of the 2.8 factor for the Company’s proposed residential heat pump rate (“Heat Pump Rate”).

Specifically, the Department has requested that the Company replicate Unitil’s “Heat Pump Rate Design” tab from Exhibit Unitil-JDT-6 from D.P.U. 23-80, using the most recent National Grid data. The Department requested that the Company use the typical bill for a National Grid gas heating customer for the winter period of November through April, convert the gas heating load to kWh, adjust it to assume heat pump efficiencies using the average temperature coefficient of performance, and provide a breakdown as shown in the electric rate design model in Exhibit Unitil-JDT-6 from D.P.U. 23-80.

In the enclosed Exhibit NG-4, page 1 strictly replicates the approach used by Unitil in D.P.U. 23-80, to provide a multiplier of 2.7 for the Heat Pump Rate. This multiplier is slightly lower than the 2.8 factor used by Unitil in D.P.U. 23-80, and by the Company in the Heat Pump Rate proposal submitted on December 30, 2024. Alternatively, Exhibit NG-4, page 2, uses the Company’s heat pump load forecast from the most recently available load forecast (December 2024), which provides a multiplier of 2.8.

Mark D. Marin, Secretary
D.P.U. 23-150
January 22, 2025
Page 2

Thank you for your attention to this matter. Please contact me if you have any questions regarding the Company's compliance filing.¹

Very truly yours,



Stacey M. Donnelly

Enclosure

cc: D.P.U. 23-150 Service List

¹ This filing is submitted in electronic form only. The Company will follow up with a paper version when directed by the Department.

Exhibit HP-1 Revised
(Clean)

Massachusetts Electric Company
Nantucket Electric Company
each d/b/a National Grid
D.P.U. 23-150
Exhibit HP-1-Revised
H.O. Tassone



Residential Heat-Pump Rate Implementation Plan

Massachusetts Electric Company and
Nantucket Electric Company
each d/b/a National Grid

Revised January 10, 2025

Docket No. D.P.U. 23-150

Submitted to:
Massachusetts Department of Public Utilities

Contents

- 1. Overview of D.P.U. 23-150 Requirements 1
- 2. Heat-Pump Rate 3
 - 2.1 Rate Design Calculation Methodology 3
 - 2.2 Estimated Participant Bill Savings and Revenue Shift 4
 - 2.3 Limitations 5
- 3. Heat-Pump Rate Implementation..... 6
 - 3.1 Implementation Timeline..... 6
 - 3.2 Customer Opt-in Process 6
 - 3.2.1 Customer Intake Opt-in & Verification Proposal 6
 - 3.2.2 Verification 9
 - 3.2.3 Processing requests and applications 9
 - 3.3 Implementation Costs 10
- 4. Tracking and Reporting Requirements 12
- 5. Outreach and Marketing..... 15

1. Overview of D.P.U. 23-150 Requirements

In its final decision issued on September 30, 2024 in D.P.U. 23-150 (“Order”), the Department of Public Utilities (“Department”) rejected Massachusetts Electric Company and Nantucket Electric Company each d/b/a National Grid’s (together, the “Company”) proposed Electrification Pricing option and instead directed the Company to implement a heat-pump rate similar to that recently approved in Fitchburg Gas and Electric Light Company d/b/a Unitil, D.P.U. 23-80/D.P.U. 23-81. Order at 512. Specifically, the Department directed the Company to submit for approval a heat-pump rate tariff eligible to all Rate R-1 and Rate R-2 customers who install heat pumps for space heating in all or part of their home, that adjusts the base distribution kilowatt-hour (“kWh”) charge during the winter months to reflect operation of heat pumps for space heating. *Id.* at 512. The Department ordered that the rate shall be an interim offering, available until the Company’s next base distribution rate case, or until an alternative is approved by the Department. *Id.* at 512-13.

As part of the Company’s compliance filing to propose the residential heat-pump rate, the Department directed the Company to provide (1) the time required to implement the heat-pump rate offering; (2) the tracking and reporting requirements articulated in D.P.U. 23-80/D.P.U. 23-81, at 408;¹ and (3) a description of the outreach and marketing efforts the Company will

¹ The Department directed Unitil to provide as part of its annual reconciliation filing the number of customer opting into (and off) the new tariffs; 12 months of pre- and post-installation monthly kWh use; and monthly peak kW use, if possible. The Department also required Unitil to include the number of customers, by rate class, opting into the heat-pump rate who received a rebate through the Mass Save program, as well as the number of customers who received a rebate through the Mass Save program, but have not opted into the heat-pump rate. Order at 500 n.229 (citing, D.P.U. 23-80/D.P.U. 23-81, at 408).

undertake. Order at 513. In addition, the Department required the Company to further explain how it will track potential increases in summer peak demand due to heat-pump penetration, as recommended by the Office of the Attorney General (“AGO” or the “Attorney General”). Id. (citing AGO Br. at 146, 151). The Department ordered a compliance filing consistent with the directives related to the heat-pump rate to be submitted no later than 45 days following the issuance of the Order. Id. at 513.

On October 11, 2024, the Department granted the Company’s Motion for Extension of Time to comply with the directives set forth on pages 512-513 of the Order to no later than December 30, 2024.

On December 6, 2024, the Company proposed in D.P.U. 24-194 that participants in the Targeted Electrification Demonstration Program will be enrolled in the heat-pump rate when it is approved and will receive a bill credit sized to offset the estimated increase in total energy costs under this rate.

In addition to this Residential Heat-Pump Rate Implementation Plan provided as Exhibit HP-1, the Company is providing revised Residential R-1 and R-2 Retail Delivery Service tariffs, and a revised Revenue Decoupling Mechanism Provision tariff, as Exhibit HP-2; and the Heat-Pump Rate calculations for the kWh charge and estimated customer bill impacts as Exhibit HP-3.

2. Heat-Pump Rate

2.1 Rate Design Calculation Methodology

In compliance with the Order, the Company proposes to calculate the residential heat-pump rate (the “Heat-Pump Rate”) in the same manner as that approved by the Department for Unitil in D.P.U. 23-80/D.P.U. 23-81, such that the base distribution kWh charge is adjusted during the winter months to reflect operation of heat pumps for space heating. The Heat-Pump Rate will be an optional rate, open to all residential customers receiving electric distribution service under Rate R-1 and Rate R-2.

The Heat-Pump Rate calculation is included in Exhibit HP-3, page 1. Heat-Pump Rate customers will pay the monthly customer charge of \$10.00 per month applicable to all residential customers pursuant to the Order. In addition to the customer charge, Heat-Pump Rate customers will be responsible for paying seasonal kWh rates, as presented in Exhibit HP-3, page 1. During the summer (May 1 through October 31), the Heat-Pump Rate will be equal to the base distribution rate for Rate R-1 and Rate R-2 customers approved in the Order of \$0.06546 per kWh (Exhibit NG-PP-6 (C)-Second Amended, page 2). The Rate R-1 and Rate R-2 base distribution rate may be updated annually as part of the Company’s Performance-Based Ratemaking (“PBR”) filing submitted with the Department no later than June 15 each year, and the Company proposes that the summer Heat-Pump Rate remain equal to that rate.

During the winter (November 1 through April 30), the Heat-Pump Rate will be \$0.02337 per kWh. This rate is computed by taking the remainder of the Rate R-1 and Rate R-2 target revenue computed in the Company’s Second Amended Compliance Filing submitted on

December 10, 2024, of \$672,818,120, deducting the amounts expected to be collected from the customer charge and summer kWh charge, and dividing by residential heat-pump kWh winter usage. The residential heat-pump kWh winter usage is estimated to be 2.8 times the average Rate R-1 and Rate R-2 winter usage.

2.2 Estimated Participant Bill Savings and Revenue Shift

As calculated in Exhibit HP-3, at pages 2-5, the Heat-Pump Rate will provide participating customers with a 64 percent discount on the kWh base distribution charge in the winter months, which translates to approximately 12 percent savings on the total bill (including basic service supply, all distribution and transmission charges, and all surcharges and adjustment factors) relative to the default Rate R-1. Depending on the size of the heat-pump (three to five tons) and assuming average residential baseline usage, this may range from approximately \$35 to \$47 in monthly savings in October, to approximately \$95 to \$141 monthly savings in January, which is the calendar month when the most energy is typically used for heating. Rate R-2 customers will also save 12 percent on the total bill from the Heat-Pump Rate in addition to their Rate R-2 discount, assuming average residential baseline usage and a three to five ton heat pump.

The revenue under-collection (shortage) resulting from the Heat-Pump Rate will be included in the Company's Revenue Decoupling Mechanism ("RDM"). The Company is currently unable to estimate the amount of the under-collection because the Company does not have sufficient data to support an estimate of the total number of existing heat-pumps currently operated by residential customers within its service territory.

2.3 Limitations

The Heat-Pump Rate will be an interim offering available until the Company's next base distribution rate case, or until an alternative is approved by the Department or the R-1 and R-2 Heat-Pump Rates are otherwise terminated by the Department. At such time when the Heat-Pump Rate is no longer effective, customers taking service under the Heat-Pump Rate will return to the applicable residential default rate and may opt into any alternative rates in effect for which they may be eligible.

It is important to set a firm ending date for the Heat-Pump Rate. The Company's 2024 to 2033 Electric Peak (MW) Forecast and 2050 Load Assessment project that distribution system peak demand will first occur during the winter heating months between 2030 and 2035. As such, continuation of the Heat-Pump Rate's discounted winter charge will send an inefficient price signal to customers as system costs are increasingly driven by anticipated peaks associated with winter heating. Continuation of the Heat-Pump Rate beyond 2029 would also undermine the benefits of Advanced Metering Infrastructure ("AMI") enabled time-varying and demand-based rates, which the Company expects to be available to customers in late-2029 or early-2030, following the Company's next base distribution rate case and the availability of 12 months of system-wide AMI meter data.

The Company also anticipates that the transition off of the Heat-Pump Rate and onto any other rates in effect for Rate R-1 and Rate R-2 customers when the Heat-Pump Rate is retired will likely represent a bill increase for customers accustomed to receiving the winter discount under the Heat-Pump Rate. In contrast, time-varying and demand-based rates, which the

Company hopes to have available when the Heat-Pump Rate is retired, will provide customers with opportunities to manage their bills, but potential savings may be lower than those experienced under the Heat-Pump Rate for many customers. Programmatic mechanisms may be necessary to transition customers off of the Heat-Pump Rate depending on the expected size of the bill increase and the number of customers affected.

3. Heat-Pump Rate Implementation

3.1 Implementation Timeline

The Company anticipates making the necessary changes to its billing system (CSS) by October 1, 2025, in order to implement the Heat-Pump Rate for the next heating season. The Company's Information Technology ("IT") department will adhere to their standard delivery process to make these changes, which encompasses the following phases.

Project Phase	Planned Timelines
Requirements and Design	March 2025 through April 2025
Development – Code and Unit Test	May 2025 through July 2025
Testing Phase(s) (System Integration, User Acceptance, Regression)	Aug. 2025 through Sep. 2025
Final Deployment	October 1, 2025

3.2 Customer Opt-in Process

3.2.1 Customer Intake Opt-in and Verification Proposal

The newly established Heat-Pump Rate will be available to all Rate R-1 and Rate R-2 customers who use electric heat-pumps for space heating in all or part of their home. This includes the following groups of the Company's customers:

- Customers with existing heat-pumps who did not receive a Mass Save incentive;
- Customers with existing heat-pumps switching from delivered fuels and who received a Mass Save incentive associated with their electric account;
- Customers with existing heat-pumps who are also Boston Gas Company d/b/a National Grid (“Boston Gas”) customers and who received a Mass Save incentive associated with their gas account;
- Customers with existing heat-pumps who received a Mass Save incentive from a different gas utility;
- Customers with new heat-pumps who do not receive a Mass Save incentive;
- Customers with new heat-pumps switching from delivered fuels and receiving a Mass Save incentive associated with their electric account;
- Customers with new heat-pumps who are also Boston Gas customers and receiving a Mass Save incentive associated with their gas account; and
- Customers with new heat-pumps who are receiving a Mass Save incentive from a different gas utility.

The Company proposes that both the Company’s and Boston Gas’ customers who have previously enrolled in Mass Save since 2019, and have successfully received an incentive from the Company or Boston Gas, be automatically enrolled in the new Heat-Pump Rate when it becomes effective within the billing system.

All other customers will be required to proactively apply for the Heat-Pump Rate in order for it to be applied to their respective billing account. The Company will conduct marketing and outreach to inform these customers about the Heat-Pump Rate and the opportunity to enroll in the Heat-Pump Rate (see the Company’s marketing proposal in Section 5, below). The Company proposes two intake avenues for enrolling customers into the Heat-Pump Rate within its customer billing system, as set forth below:

(1) Auto-enrollment from accounts participating in Mass Save energy efficiency heat-pump incentive programs where the incentive was paid either by the Company or by Boston Gas. Additionally, on a roll-forward basis, any new customers who receive Mass Save heat-pump rebates through either the Company, Boston Gas, or through the proposed electrification pooling mechanism currently before the Department in D.P.U. 24-140 through D.P.U. 24-149 after the Heat-Pump Rate is established will be auto-enrolled. This proposal will limit reliance on contact center in-bound calls and processing time within the back-office, and provide a seamless customer experience, while eliminating the need for two intake verifications for new heat-pump customers.

Under this process, all customers who previously received a Mass Save heat-pump incentive through the Company or Boston Gas (before the Heat-Pump Rate becomes effective) will be automatically enrolled into the Heat-Pump Rate. Data will be provided to the back-office for processing of the Heat-Pump Rate. Customers with an active billing account that previously received a heat-pump rebate from the Company or Boston Gas through the Mass Save program will be automatically enrolled in the Heat-Pump Rate if the service address associated with such rebate matches the customer billing system service address data associated with that account. This customer base will also be notified of auto-enrollment in the Heat-Pump Rate and will be provided the option and instructions to opt-out if desired.

(2) Intake via contact center and back-office processing. This offering is available for customers wishing to enroll into the Heat-Pump Rate via inbound calling or through self-service applications via the Company's website and mobile application portals, such as in

response to marketing campaigns and outreach. This solution will be available to all qualifying customers. Any intake and enrollment will be subject to providing verification information as part of the application.

3.2.2 Verification

For customers to have the Heat-Pump Rate applied on their billing account upon application, they will be required to provide a form of verification of the heat-pump for their account premises. Forms of evidence the Company will deem acceptable for a Heat-Pump Rate application include photos of equipment serial numbers; proof of payment or receipt of equipment purchase; or invoice or receipt from contractor installation.

The Company reserves the right to audit the authenticity of the verification information provided with the customer's application. If the authenticity of the verification information cannot be confirmed by the Company, the Company will remove the customer from the Heat-Pump Rate until verification information from the customer is confirmed.

3.2.3 Processing requests and applications

For inbound phone calls, the response from the Company will be to send a solutions email to the customer following the call outlining the requirements and including the application the customer must provide to receive the Heat-Pump Rate that later will be submitted to a back-office mailbox for processing.

For intake through the Company's website, customers will be directed to a portal that includes the same requirements as the solutions email. In both cases, a workflow will be triggered to the Company's back-office team to review submitted applications and subsequently

update CSS with the Heat-Pump Rate. When the Heat-Pump Rate application is processed by the back-office, enrollment confirmation or denial will be provided to the customer.

Information regarding Heat-Pump Rate eligibility and the customer enrollment process is submitted with the revised Residential R-1 and R-2 Retail Delivery Service Tariffs in Exhibit HP-2.

3.3 Implementation Costs

A preliminary estimate of the costs for Heat-Pump Rate implementation and ongoing support is summarized below.

Cost Categories	Year 1	Year 2	Year 3	Year 4	Total
Marketing & Outreach	\$93,750	\$93,750	\$93,750	\$93,750	\$375,000
Contact Center	\$210,000	\$210,000	\$210,000	\$210,000	\$840,000
Web Application & App Portal	TBD				
CSS System Upgrades	TBD				
Back-Office Customer Account Maintenance	\$165,000	\$165,000	\$165,000	\$165,000	\$660,000
Total	\$468,750	\$468,750	\$468,750	\$468,750	\$1,875,000

Marketing and Outreach: The total estimated costs related to customer outreach are \$375,000, which may include paid searches and targeted communications via emails, text messages, direct mail, and call campaigns.

Contact Center: The total estimated costs related to contact center are \$840,000, which includes hiring one to two full-time equivalents (“FTEs”) to manage the intake process via phone calls.

Web Application and App Portal: The Company will explore opportunities to build a web and phone application intake process, where customers can upload a copy of their receipt or picture of the heat-pump to provide a more seamless experience. This will be a new functionality that will require incremental time and resources, the estimated costs of which are not yet available.

CSS System Upgrades: The Heat-Pump Rate implementation will require CSS billing system upgrades, which may require incremental resources to be hired by the Company.

Back-Office Customer Account Maintenance: The total incremental labor cost for the back-office (Account Maintenance) to support the Heat-Pump Rate implementation and on-going support while the rate is available is estimated at approximately \$660,000 (including burdens). This estimate is based on the assumption of hiring two incremental FTEs to support the back-office for the design and maintenance of the Heat-Pump Rate. Back-office resources will need to be hired prior to Heat-Pump Rate going into effect – with a target hiring date by April 1, 2025 – to ensure the requirements of rate design and implementation are met systematically prior to the estimated go-live date of October 1, 2025. Any new rate structure changes will require additional updates and testing due to all of the anticipated variations of the new program.

Due to the complexity of the proposed program design, enrollment process, and on-going maintenance for the new rate classification, the back-office not only will need to maintain the new program, which includes rate structure changes and reporting, but also will need to have the resources to oversee the new program. It is necessary that the back-office has additional resources to maximize the positive customer experience and to avoid the potential negative

impact of the changes to customers.

The Company will continue to evaluate the costs described in the sections above and reserves the right to seek recovery of incremental costs to implement the Heat-Pump Rate by submitting additional information regarding such costs.

4. Tracking and Reporting Requirements

In the Order, the Department directed the Company to provide the following data with its annual RDM reconciliation filing:

1. Number of customers opting into (and off) the new tariffs;
2. Twelve months of pre- and post-installation monthly kWh use, and monthly peak kW use, if possible;
3. Number of customers, by rate class, opting into the Heat-Pump Rate who received a rebate through the Mass Save program;
4. Number of customers who received a rebate through the Mass Save program, but have not opted into the Heat-Pump Rate.

Order at 500 n.229 (citing, D.P.U. 23-80/D.P.U. 23-81, at 408.

In accordance with the Department's directives, in its annual RDM reconciliation filing on or before January 15 following each calendar year, the Company will provide data on the number of customers opting into (and off) the Heat-Pump Rate, as well as 12 months of pre- and post-installation monthly kWh use. The revised RDM tariff proposing these new reporting requirements is provided in Exhibit HP-2.

However, the Company currently is not able to provide the monthly peak kW use by customer because the Company does not have the capability to meter residential customer peak

demand at this time.

Additionally, the Company cannot report on all customers opting into (or customers who have not opted into) the Heat-Pump Rate who have received a rebate from the Mass Save program due to the program limitations discussed below. Under the current energy efficiency program design, approved in D.P.U. 21-124 and D.P.U. 21-128, heat-pump incentives are tracked by either the electric or natural gas service provider acting as the relevant Program Administrator (“PA”) for specified measures within each service territory. For example, heat-pump installations within a specific geography displacing electric resistance, oil, and propane heating are paid for and tracked by the electric PA for that particular territory. Heat-pumps displacing natural gas heating are paid for and tracked by the gas PA for that particular territory. Therefore, the Company’s data platforms track only heat-pump incentives paid to a Company customer when that customer’s heat-pump was installed to displace electric resistance, oil, or propane heat; or when that customer resides in a portion of the National Grid service territories where National Grid is both that customer’s electric and gas distribution utility.

As part of the 2025 to 2027 Three-Year Energy Efficiency Plan filings in D.P.U. 24-140 through D.P.U. 24-149, the PAs have jointly proposed a pooled electrification model for paying and tracking incentives delivered through prescriptive, or retail, pathways. Should this mechanism be approved by the Department, each PA would have access to data about every prescriptive heat-pump rebate paid within both the PA’s gas and electric service territories in Massachusetts, independent of which heating fuel the heat-pump would be displacing. This would afford the Company, on a going-forward basis, access to information on the significant

majority of residential heat-pump incentives paid through Mass Save energy efficiency programs, including those displacing natural gas consumption within the Company's electric service territory. Under the proposed approach, heat-pumps installed to displace natural gas heating through the residential turnkey services or income-eligible program delivery pathways would continue to be supported by the natural gas PAs and, therefore, remain unavailable to the Company in situations where the gas PA is owned by a different holding company.

In summary, in its annual reconciliation filing, the Company currently will be able to provide data for only items 1 and 2 listed above. At this time, due to the limitations described above, the Company will not be able to report on items 3 and 4 listed above.

In addition, the Order directed the Company to explain how it will track potential increases in summer peak demand due to heat-pump penetration, as recommended by the Attorney General. Order at 513 (citing, AGO Br. at 146, 151). Although the Company currently estimates heat-pump penetration as part of its load forecasting methodology, actual heat-pump penetration and its impact on peak demand cannot be tracked completely, because the Company does not have data on the total number of new and existing heat-pumps or other cooling technologies installed in its service territory beyond those customers who have participated in Company energy efficiency programs. Further, the Company is not able to track the impact of heat-pump usage on individual customers' peak demand in the absence of interval meter data both pre- and post-installation of a heat pump.

5. Outreach and Marketing

The Company will provide awareness and adoption of the new Heat-Pump Rate through a multi-channel approach using targeted and broad reach tactics. Outreach may include email, direct mail, bill inserts, text messages, call campaigns, and updating of the Company's website.

The Company will also update all existing mandated bill inserts that list available rate plans to include the new Heat-Pump Rate. Education may include an offer of the new pricing option accompanied by an estimate of bill savings potential. The Company tracks its customer accounts that have received incentives for heat-pumps through its Mass Save energy efficiency programs. The Company will also conduct targeted outreach to electric customers who have received a heat-pump rebate from either the Company or Boston Gas within the last three to five years from Mass Save.

The Company will also include the new rate offering as a benefit to purchasing electric heat-pumps. For customers considering heat-pump installation, information on the heat-pump rate pricing may be included in marketing materials, such as webpages and advertisements, that are related to the heat-pump incentive programs for which the Company or Boston Gas is the relevant PA, as delivered through the Mass Save program. Additionally, information on the Heat-Pump Rate may be made available through the heat-pump installation contractor network (referred to as the "Heat Pump Installer Network," or "HPIN"), as well as through the lead vendors who deliver electrification through the Company's residential turnkey services and income-eligible energy efficiency programs under the Mass Save brand.

Exhibit HP-2 Revised
(Clean Tariffs)

MASSACHUSETTS ELECTRIC COMPANY

RESIDENTIAL REGULAR R-1
RETAIL DELIVERY SERVICE

AVAILABILITY

Electric delivery service under this rate is available for all domestic purposes in an individual private dwelling or an individual apartment and for church and farm purposes. The Company may under unusual circumstances permit more than one set of living quarters to be served through one meter under this rate, but if so, the Customer Charge shall be multiplied by the number of separate living quarters so served. A church and adjacent buildings owned and operated by the church may be served under this rate, but any such buildings separated by public ways must be billed separately.

Customers receiving delivery service under this rate shall be charged the applicable charges contained in the Summary of Electric Service Rates Tariff as in effect from time to time.

MONTHLY CHARGE

The Monthly Charge will be the sum of the applicable Customer and kWh Charges.

MINIMUM CHARGE

The monthly minimum charge shall be the monthly Customer Charge.

HEAT PUMP RATE

All customers who qualify for Residential Regular R-1 Retail Delivery Service ("Rate R-1") and have a device that is used to heat or supplement another heat source for their home or part of their home by transferring thermal energy from the outside with the use of the refrigeration cycle are eligible to opt into the R-1 Heat Pump Rate. Under the R-1 Heat Pump Rate, customers will be charged the R-1 Heat Pump Base Distribution Charge based on their kWh usage during the winter heating season, defined as November 1 through April 30. Service under the R-1 Heat Pump Rate will be contingent on the customer confirming an eligible device as described above is installed at the service location. The Monthly Charge will be the sum of the applicable Customer Charge and all applicable kWh charges, including kWh charges for the R-1 Heat Pump Rate, contained in the Summary of Electric Service Rates Tariff as in effect from time to time. The monthly minimum charge shall be the monthly Customer Charge.

The R-1 Heat Pump Rate will be available to qualifying Rate R-1 customers until the Company's next distribution rate plan, or until an alternative rate is approved by the Department of Public Utilities ("Department") or the R-1 Heat Pump Rate is otherwise terminated by the Department.

Customers selecting the R-1 Heat Pump Rate may choose to return to the default rate under Rate R-1 after 12 billing cycles. Customers returning to the default rate under Rate R-1 from the R-1 Heat Pump Rate must remain on the default rate under Rate R-1 for 12 billing cycles before being eligible to select the R-1 Heat Pump Rate again.

MASSACHUSETTS ELECTRIC COMPANY

RESIDENTIAL REGULAR R-1
RETAIL DELIVERY SERVICE

Customers who previously applied for a heat pump rebate through one of the Company's or Boston Gas Company d/b/a National Grid's (together, "National Grid") energy efficiency programs (approved by the Department under the National Grid Three-Year Energy Efficiency Plans and pursuant to the Green Communities Act) will be automatically enrolled in the R-1 Heat Pump Rate. Additionally, on a roll-forward basis, any new customers who apply for a heat pump rebate through National Grid's energy efficiency programs after the billing rate is established will be auto-enrolled in the R-1 Heat Pump Rate. Customers who are auto-enrolled in the R-1 Heat Pump Rate will have the option to opt-out, if desired.

All other Rate R-1 customers will need to apply for the R-1 Heat Pump Rate through the Company's contact center via inbound calling or through self-service application via the Company's website and mobile application portals. Any intake and enrollment will be subject to providing verification information as part of the application for the R-1 Heat Pump Rate. The Company reserves the right to audit the authenticity of the verification information provided with the customer application. If the authenticity of the verification information cannot be confirmed by the Company, the Company will remove the customer from the R-1 Heat Pump Rate until verification information from the customer is confirmed.

RATE ADJUSTMENT PROVISIONS

The charges for delivery service under this rate shall be subject to adjustments pursuant to the following provisions:

- Advanced Metering Infrastructure Provision
- Attorney General Consultant Expenses Provision
- Basic Service Adjustment Provision
- Electric Vehicle Program Provision
- Electronic Payment Recovery Provision
- Energy Efficiency Provision
- Grid Modernization Provision
- Infrastructure, Safety, Reliability and Electrification Provision
- Net Metering Provision
- Pension/Post-retirement Benefits Other than Pension Mechanism Provision
- Performance-Based Ratemaking Provision
- Renewable Provision
- Renewable Energy Recovery Provision
- Residential Assistance Adjustment Provision
- Revenue Decoupling Mechanism Provision
- Smart Grid Adjustment Provision
- SMART Provision
- Solar Cost Adjustment Provision
- Storm Fund Replenishment Provision
- Tax Credit Provision
- Transition Cost Adjustment Provision
- Vegetation Management Pilot Provision

MASSACHUSETTS ELECTRIC COMPANY

RESIDENTIAL REGULAR R-1
RETAIL DELIVERY SERVICE

TRANSMISSION SERVICE COST ADJUSTMENT

Transmission service is available to all retail customers taking service under this rate. For those customers, the transmission charge under this rate shall be calculated in accordance with the Company's Transmission Service Cost Adjustment Provision.

BASIC SERVICE

Any Customer who does not have a supplier other than the Company will receive and pay the Company for Basic Service in accordance with the terms and price for Basic Service established by the Department of Public Utilities.

FARM DISCOUNT

Customers who meet the eligibility requirements for being engaged in the business of agriculture or farming as defined in M.G.L. Chapter 128 Section 1a at their service location are eligible for an additional discount from their distribution service rates. The discount will be calculated as 10% of the Customer's total bill for service provided by the Company before application of this discount. Customers who meet the requirements of this section must provide the Company with appropriate documentation of their eligibility under this provision.

TERMS AND CONDITIONS

The Company's Terms and Conditions in effect from time to time where not inconsistent with any specific provisions hereof, are a part of this rate.

MASSACHUSETTS ELECTRIC COMPANY

RESIDENTIAL-LOW INCOME R-2
RETAIL DELIVERY SERVICE

AVAILABILITY

Electric delivery service under this rate is available upon verification of a low-income Customer's receipt of any means-tested public benefit, or verification of eligibility for the low-income home energy assistance program, or its successor program, for which eligibility does not exceed 200 percent of the federal poverty level ("FPL") based on a household's gross income. In a program year in which maximum eligibility for LIHEAP exceeds 200 percent of the federal poverty level, a household that is income eligible under LIHEAP shall be eligible for the low-income electric discount.

It is the responsibility of the Customer to annually certify, by forms provided by the utility, the continued compliance with the foregoing qualifications.

The Company will guarantee the Customer's payment to its designated supplier up to the prices that the Company charges to Customers for Basic Service in accordance with the regulations established by the Department.

The Company may under unusual circumstances permit more than one set of living quarters to be served through one meter under this rate, but if so, the Customer Charge shall be multiplied by the number of separate living quarters so served.

Customers receiving delivery service under this rate shall be charged the applicable charges contained in the Summary of Electric Service Rates Tariff as in effect from time to time.

MONTHLY CHARGE

The Monthly Charge will be the sum of the applicable Customer and kWh Charges.

MINIMUM CHARGE

The monthly minimum charge shall be the monthly Customer Charge.

HEAT PUMP RATE

All customers who qualify for Residential Low-Income R-2 Retail Delivery Service ("Rate R-2") and have a device that is used to heat or supplement another heat source for their home or part of their home by transferring thermal energy from the outside with the use of the refrigeration cycle are eligible to opt into the R-2 Heat Pump Rate. Under the R-2 Heat Pump Rate, customers will be charged the R-2 Heat Pump Base Distribution Charge based on their kWh usage during the winter heating season, defined as November 1 through April 30. Service under the R-2 Heat Pump Rate will be contingent on the customer confirming an eligible device as described above is installed at the service location. The Monthly Charge will be the sum of the applicable Customer Charge and all applicable kWh charges, including kWh charges for the R-2 Heat Pump Rate, contained in the Summary of Electric Service Rates Tariff as in effect from time to time. The monthly minimum charge shall be the monthly Customer Charge.

The R-2 Heat Pump Rate will be available to qualifying Rate R-2 customers until the Company's next distribution rate plan, or until an alternative rate is approved by the Department of Public Utilities ("Department") or the R-2 Heat Pump Rate is otherwise terminated by the Department.

Customers selecting the R-2 Heat Pump Rate may choose to return to the default rate under Rate R-2 after 12 billing cycles. Customers returning to the default rate under Rate R-2 from the R-2 Heat Pump Rate must remain on the default rate under Rate R-2 for 12 billing cycles before being eligible to select the R-2 Heat Pump Rate again.

MASSACHUSETTS ELECTRIC COMPANY

RESIDENTIAL-LOW INCOME R-2
RETAIL DELIVERY SERVICE

Customers who previously applied for a heat pump rebate through one of the Company's or Boston Gas Company d/b/a National Grid's (together, "National Grid") energy efficiency programs (approved by the Department under the National Grid Three-Year Energy Efficiency Plans and pursuant to the Green Communities Act) will be automatically enrolled in the R-2 Heat Pump Rate. Additionally, on a roll-forward basis, any new customers who apply for a heat pump rebate through National Grid's energy efficiency programs after the billing rate is established will be auto-enrolled in the R-2 Heat Pump Rate. Customers who are auto-enrolled in the R-2 Heat Pump Rate will have the option to opt-out, if desired.

All other Rate R-2 customers will need to apply for the R-2 Heat Pump Rate through the Company's contact center via inbound calling or through self-service application via the Company's website and mobile application portals. Any intake and enrollment will be subject to providing verification information as part of the application for the R-2 Heat Pump Rate. The Company reserves the right to audit the authenticity of the verification information provided with the customer application. If the authenticity of the verification information cannot be confirmed by the Company, the Company will remove the customer from the R-2 Heat Pump Rate until verification information from the customer is confirmed.

RATE ADJUSTMENT PROVISIONS

The charges for delivery service under this rate shall be subject to adjustments pursuant to the following provisions:

- Advanced Metering Infrastructure Provision
- Attorney General Consultant Expenses Provision
- Basic Service Adjustment Provision
- Electric Vehicle Program Provision
- Electronic Payment Recovery Provision
- Energy Efficiency Provision
- Grid Modernization Provision
- Infrastructure, Safety, Reliability and Electrification Provision
- Net Metering Provision
- Pension/Post-retirement Benefits Other than Pension Mechanism Provision
- Performance-Based Ratemaking Provision
- Renewable Provision
- Renewable Energy Recovery Provision
- Residential Assistance Adjustment Provision
- Revenue Decoupling Mechanism Provision
- Smart Grid Adjustment Provision
- SMART Provision
- Solar Cost Adjustment Provision
- Storm Fund Replenishment Provision
- Tax Credit Provision
- Transition Cost Adjustment Provision
- Vegetation Management Pilot Provision

MASSACHUSETTS ELECTRIC COMPANY

RESIDENTIAL-LOW INCOME R-2
RETAIL DELIVERY SERVICE

TRANSMISSION SERVICE COST ADJUSTMENT

Transmission service is available to all retail customers taking service under this rate. For those customers, the transmission charge under this rate shall be calculated in accordance with the Company's Transmission Service Cost Adjustment Provision.

BASIC SERVICE

Any Customer who does not have a supplier other than the Company will receive and pay the Company for Basic Service in accordance with the terms and price for Basic Service established by the Department of Public Utilities.

FARM DISCOUNT

Customers who meet the eligibility requirements for being engaged in the business of agriculture or farming as defined in M.G.L. Chapter 128 Section 1a at their service location are eligible for an additional discount from their distribution service rates. The discount will be calculated as 10% of the Customer's total bill for service provided by the Company before application of this discount. Customers who meet the requirements of this section must provide the Company with appropriate documentation of their eligibility under this provision.

LOW INCOME DISCOUNT

The Customer's total bill for service as determined based upon the provisions above, in addition to charges for generation service billed under the Standard Complete Billing Service option pursuant to §8B of both the Company's Terms and Conditions for Competitive Suppliers and Terms and Conditions for Municipal Aggregators in effect from time to time, will be discounted by the appropriate percentage based on the Customer's household income relative to the FPL and the state median income. The low income discount tiers are presented in the Company's Residential Assistance Adjustment Provision, which may change from time to time.

TERMS AND CONDITIONS

The Company's Terms and Conditions in effect from time to time, where not inconsistent with any specific provisions hereof, are a part of this rate.

NANTUCKET ELECTRIC COMPANY

RESIDENTIAL REGULAR R-1
RETAIL DELIVERY SERVICE

AVAILABILITY

Electric delivery service under this rate is available for all domestic purposes in an individual private dwelling or an individual apartment and for church and farm purposes. The Company may under unusual circumstances permit more than one set of living quarters to be served through one meter under this rate, but if so, the Customer Charge shall be multiplied by the number of separate living quarters so served. A church and adjacent buildings owned and operated by the church may be served under this rate, but any such buildings separated by public ways must be billed separately.

Customers receiving delivery service under this rate shall be charged the applicable charges contained in the Summary of Electric Service Rates Tariff as in effect from time to time.

MONTHLY CHARGE

The Monthly Charge will be the sum of the applicable Customer and kWh Charges.

ADJUSTMENT FOR CABLE FACILITIES SURCHARGE

The amount determined under the preceding provisions shall be adjusted in accordance with the Company's Cable Facilities Surcharge Provision to reflect costs related to the Company's cable facilities.

For purposes of applying the Cable Facilities Surcharge, the summer months are defined as the months of June through September. Winter months are the months of October through May.

MINIMUM CHARGE

The monthly minimum charge shall be the monthly Customer Charge.

HEAT PUMP RATE

All customers who qualify for Residential Regular R-1 Retail Delivery Service ("Rate R-1") and have a device that is used to heat or supplement another heat source for their home or part of their home by transferring thermal energy from the outside with the use of the refrigeration cycle are eligible to opt into the R-1 Heat Pump Rate. Under the R-1 Heat Pump Rate, customers will be charged the R-1 Heat Pump Base Distribution Charge based on their kWh usage during the winter heating season, defined as November 1 through April 30. Service under the R-1 Heat Pump Rate will be contingent on the customer confirming an eligible device as described above is installed at the service location. The Monthly Charge will be the sum of the applicable Customer Charge and all applicable kWh charges, including kWh charges for the R-1 Heat Pump Rate, contained in the Summary of Electric Service Rates Tariff as in effect from time to time. The monthly minimum charge shall be the monthly Customer Charge.

The R-1 Heat Pump Rate will be available to qualifying Rate R-1 customers until the Company's next distribution rate plan, or until an alternative rate is approved by the Department of Public Utilities ("Department") or the R-1 Heat Pump Rate is otherwise terminated by the Department.

Customers selecting the R-1 Heat Pump Rate may choose to return to the default rate under Rate R-1 after 12 billing cycles. Customers returning to the default rate under Rate R-1 from the R-1 Heat Pump Rate must remain on the default rate under Rate R-1 for 12 billing cycles before being eligible to select the R-1 Heat Pump Rate again.

NANTUCKET ELECTRIC COMPANY

RESIDENTIAL REGULAR R-1
RETAIL DELIVERY SERVICE

Customers who previously applied for a heat pump rebate through one of the Company's or Boston Gas Company d/b/a National Grid's (together, "National Grid") energy efficiency programs (approved by the Department under the Three-Year Energy Efficiency Plans and pursuant to the Green Communities Act) will be automatically enrolled in the R-1 Heat Pump Rate. Additionally, on a roll-forward basis, any new customers who apply for a heat pump rebate through National Grid's energy efficiency programs after the billing rate is established will be auto-enrolled in the R-1 Heat Pump Rate. Customers who are auto-enrolled in the R-1 Heat Pump Rate will have the option to opt-out, if desired.

All other Rate R-1 customers will need to apply for the R-1 Heat Pump Rate through the Company's contact center via inbound calling or through self-service application via the Company's website and mobile application portals. Any intake and enrollment will be subject to providing verification information as part of the application for the R-1 Heat Pump Rate. The Company reserves the right to audit the authenticity of the verification information provided with the customer application. If the authenticity of the verification information cannot be confirmed by the Company, the Company will remove the customer from the R-1 Heat Pump Rate until verification information from the customer is confirmed.

RATE ADJUSTMENT PROVISIONS

The charges for delivery service under this rate shall be subject to adjustment pursuant to the following provisions:

- Advanced Metering Infrastructure Provision
- Attorney General Consultant Expenses Provision
- Basic Service Adjustment Provision
- Electric Vehicle Program Provision
- Electronic Payment Recovery Provision
- Energy Efficiency Provision
- Grid Modernization Provision
- Infrastructure, Safety, Reliability and Electrification Provision
- Net Metering Provision
- Pension/Post-retirement Benefits Other than Pension Mechanism Provision
- Performance-Based Ratemaking Provision
- Renewable Provision
- Renewable Energy Recovery Provision
- Residential Assistance Adjustment Provision
- Revenue Decoupling Mechanism Provision
- Smart Grid Adjustment Provision
- SMART Provision
- Solar Cost Adjustment Provision
- Storm Fund Replenishment Provision
- Tax Credit Provision
- Transition Cost Adjustment Provision
- Vegetation Management Pilot Provision

TRANSMISSION SERVICE COST ADJUSTMENT

Transmission service is available to all retail customers taking service under this rate. For those customers, the transmission charge under this rate shall be calculated in accordance with the Company's Transmission Service Cost Adjustment Provision.

NANTUCKET ELECTRIC COMPANY

RESIDENTIAL REGULAR R-1
RETAIL DELIVERY SERVICE

BASIC SERVICE

Any Customer who does not have a supplier other than the Company will receive and pay the Company for Basic Service in accordance with the terms and price for Basic Service established by the Department of Public Utilities.

FARM DISCOUNT

Customers who meet the eligibility requirements for being engaged in the business of agriculture or farming as defined in M.G.L. Chapter 128 Section 1a at their service location are eligible for an additional discount from their distribution service rates. The discount will be calculated as 10% of the Customer's total bill for service provided by the Company before application of this discount. Customers who meet the requirements of this section must provide the Company with appropriate documentation of their eligibility under this provision.

TERMS AND CONDITIONS

The Company's Terms and Conditions in effect from time to time where not inconsistent with any specific provisions hereof, are a part of this rate.

NANTUCKET ELECTRIC COMPANY
RESIDENTIAL-LOW INCOME R-2
RETAIL DELIVERY SERVICE

AVAILABILITY

Service under this rate is available upon verification of a low-income Customer's receipt of any means-tested public benefit, or verification of eligibility for the low-income home energy assistance program, or its successor program, for which eligibility does not exceed 200 percent of the federal poverty level ("FPL") based on a household's gross income. In a program year in which maximum eligibility for LIHEAP exceeds 200 percent of the federal poverty level, a household that is income eligible under LIHEAP shall be eligible for the low-income electric discount.

It is the responsibility of the Customer to annually certify, by forms provided by the utility, the continued compliance with the foregoing qualifications.

The Company will guarantee the Customer's payment to its designated supplier up to the prices that the Company charges to Customers for Basic Service in accordance with regulations established by the Department.

The Company may under unusual circumstances permit more than one set of living quarters to be served through one meter under this rate, but if so, the Customer Charge shall be multiplied by the number of separate living quarters so served.

Customers receiving delivery service under this rate shall be charged the applicable charges contained in the Summary of Electric Service Rates Tariff as in effect from time to time.

MONTHLY CHARGE

The Monthly Charge will be the sum of the applicable Customer and kWh Charges.

MINIMUM CHARGE

The monthly minimum charge shall be the monthly Customer Charge.

HEAT PUMP RATE

All customers who qualify for Residential Low-Income R-2 Retail Delivery Service ("Rate R-2") and have a device that is used to heat or supplement another heat source for their home or part of their home by transferring thermal energy from the outside with the use of the refrigeration cycle are eligible to opt into the R-2 Heat Pump Rate. Under the R-2 Heat Pump Rate, customers will be charged the R-2 Heat Pump Base Distribution Charge based on their kWh usage during the winter heating season, defined as November 1 through April 30. Service under the R-2 Heat Pump Rate will be contingent on the customer confirming an eligible device as described above is installed at the service location. The Monthly Charge will be the sum of the applicable Customer Charge and all applicable kWh charges, including kWh charges for the R-2 Heat Pump Rate, contained in the Summary of Electric Service Rates Tariff as in effect from time to time. The monthly minimum charge shall be the monthly Customer Charge.

The R-2 Heat Pump Rate will be available to qualifying Rate R-2 customers until the Company's next distribution rate plan, or until an alternative rate is approved by the Department of Public Utilities ("Department") or the R-2 Heat Pump Rate is otherwise terminated by the Department.

Customers selecting the R-2 Heat Pump Rate may choose to return to the default rate under Rate R-2 after 12 billing cycles. Customers returning to the default rate under Rate R-2 from the R-2 Heat Pump Rate must remain on the default rate under Rate R-2 for 12 billing cycles before being eligible to select the R-2 Heat Pump Rate again.

NANTUCKET ELECTRIC COMPANY

RESIDENTIAL-LOW INCOME R-2
RETAIL DELIVERY SERVICE

Customers who previously applied for a heat pump rebate through one of Company's or Boston Gas Company d/b/a National Grid's (together, "National Grid") energy efficiency programs (approved by the Department under the National Grid Three-Year Energy Efficiency Plans and pursuant to the Green Communities Act) will be automatically enrolled in the R-2 Heat Pump Rate. Additionally, on a roll-forward basis, any new customers who apply for a heat pump rebate through National Grid's energy efficiency programs after the billing rate is established will be auto-enrolled in the R-2 Heat Pump Rate. Customers who are auto-enrolled in the R-2 Heat Pump Rate will have the option to opt-out, if desired.

All other customers will need to apply for the R-2 Heat Pump Rate through the Company's contact center via inbound calling or through self-service application via the Company's website and mobile application portals. Any intake and enrollment will be subject to providing verification information as part of the application for the R-2 Heat Pump Rate. The Company reserves the right to audit the authenticity of the verification information provided with the customer application. If the authenticity of the verification information cannot be confirmed by the Company, the Company will remove the customer from the R-2 Heat Pump Rate until verification information from the customer is confirmed.

RATE ADJUSTMENT PROVISIONS

The charges for delivery service under this rate shall be subject to adjustments pursuant to the following provisions:

- Advanced Metering Infrastructure Provision
- Attorney General Consultant Expenses Provision
- Basic Service Adjustment Provision
- Electric Vehicle Program Provision
- Electronic Payment Recovery Provision
- Energy Efficiency Provision
- Grid Modernization Provision
- Infrastructure, Safety, Reliability and Electrification Provision
- Net Metering Provision
- Pension/Post-retirement Benefits Other than Pension Mechanism Provision
- Performance-Based Ratemaking Provision
- Renewable Provision
- Renewable Energy Recovery Provision
- Residential Assistance Adjustment Provision
- Revenue Decoupling Mechanism Provision
- Smart Grid Adjustment Provision
- SMART Provision
- Solar Cost Adjustment Provision
- Storm Fund Replenishment Provision
- Tax Credit Provision
- Transition Cost Adjustment Provision
- Vegetation Management Pilot Provision

TRANSMISSION SERVICE COST ADJUSTMENT

Transmission service is available to all retail customers taking service under this rate. For those customers, the transmission charge under this rate shall be calculated in accordance with the Company's Transmission Service Cost Adjustment Provision.

NANTUCKET ELECTRIC COMPANY
RESIDENTIAL-LOW INCOME R-2
RETAIL DELIVERY SERVICE

BASIC SERVICE

Any Customer who does not have a supplier other than the Company will receive and pay the Company for Basic Service in accordance with the terms and price for Basic Service established by the Department of Public Utilities.

FARM DISCOUNT

Customers who meet the eligibility requirements for being engaged in the business of agriculture or farming as defined in M.G.L. Chapter 128 Section 1a at their service location are eligible for an additional discount from their distribution service rates. The discount will be calculated as 10% of the Customer's total bill for service provided by the Company before application of this discount. Customers who meet the requirements of this section must provide the Company with appropriate documentation of their eligibility under this provision.

LOW INCOME DISCOUNT

The Customer's total bill for service as determined based upon the provisions above, in addition to charges for generation service billed under the Standard Complete Billing Service option pursuant to §8B of both the Company's Terms and Conditions for Competitive Suppliers and Terms and Conditions for Municipal Aggregators in effect from time to time, will be discounted by the appropriate percentage based on the Customer's household income relative to the FPL and the state median income. The low income discount tiers are presented in the Company's Residential Assistance Adjustment Provision, which may change from time to time.

TERMS AND CONDITIONS

The Company's Terms and Conditions in effect from time to time, where not inconsistent with any specific provisions hereof, are a part of this rate.

MASSACHUSETTS ELECTRIC COMPANY
NANTUCKET ELECTRIC COMPANY
REVENUE DECOUPLING MECHANISM PROVISION

The prices for distribution service contained in all of the Company's tariffs are subject to adjustment to reflect the operation of its Revenue Decoupling Mechanism ("RDM").

Definitions

"Actual Billed Distribution Revenue" shall mean the amounts the Company has billed during the applicable calendar year for customer charges, distribution demand charges, distribution energy charges, Second Feeder Service charges, and any other charges or discounts that the Company records as base distribution revenue, but excluding the discount provided to Rate R-2 customers and the Residential Assistance Adjustment. Actual Billed Distribution Revenue shall exclude the RDM Adjustment Factor, as it is subject to its own reconciliation.

"Annual Target Revenue" or "ATR" shall mean the class-specific revenue requirement as approved by the Department in the Company's most recent base distribution rate case adjusted annually pursuant to the Company's Performance-Based Ratemaking ("PBR") Provision, as may be amended from time to time, and as otherwise adjusted and approved by the Department, less a Streetlighting Sales adjustment pursuant to the Department's directive in D.P.U. 14-136-A as defined below.

"Current Year" shall mean the calendar year immediately preceding March 1 of the year during which the proposed RDM Adjustment Factors will be in effect.

"Department" shall mean the Massachusetts Department of Public Utilities.

"Distribution Company" or "Company" shall mean Massachusetts Electric Company and Nantucket Electric Company.

"Distribution Revenue Allocator" shall be derived from the Company's most recent base distribution rate case as approved by the Department and shall be as follows by rate class:

Rate R-1/R-2	60.6%
Rate G-1	12.0%
Rate G-2	10.7%
Rate G-3	16.3%
Streetlighting	0.4%

"Forecasted kWh" shall mean the forecasted amount of electricity, as measured in kWh, to be distributed to the Company's distribution customers for the twelve month period during which the proposed RDM Adjustment Factor will be in effect.

"RDM" shall mean Revenue Decoupling Mechanism.

"RDM Adjustment Factor" shall mean a per kWh factor for each rate class equal to the difference (either positive or negative) between the Actual Billed Distribution Revenue and the ATR for the current year, allocated to the Company's rate classes through the Distribution Revenue Allocator, and each rate class's allocable share divided by the Forecasted kWh for that rate class.

MASSACHUSETTS ELECTRIC COMPANY
NANTUCKET ELECTRIC COMPANY
REVENUE DECOUPLING MECHANISM PROVISION

“Streetlight Sales Adjustment” shall mean the annual cumulative dollar adjustment to each year’s ATR as a result of selling its streetlighting equipment pursuant to G.L. c. 164 § 34A subsequent to the effective date of new base distribution rates resulting from a base distribution rate case. The Streetlight Sales Adjustment shall be a downward adjustment to each year’s ATR and shall be calculated as the proceeds received by the Company from the sale of its streetlighting equipment multiplied by the avoided cost of no longer owning, operating, and maintaining such equipment, stated as a percentage, as determined by the Company’s final streetlight revenue requirement. The Streetlight Sales Adjustment shall be set to zero and calculated for new streetlight sales effective with the subsequent implementation of new base distribution rates as provided for above. The Streetlight Sales Adjustment is pursuant to the Department’s directive in D.P.U. 14-136-A.

The Company’s RDM shall include an annual RDM Reconciliation which will reconcile ATR and Actual Billed Distribution Revenue for the same calendar year. The RDM Reconciliation amount (either positive or negative) plus interest on the monthly average over- or under-recovery balance at the monthly prime lending rate, as reported by Bank of America, shall determine the RDM Adjustment Factors. The Company shall submit a filing by January 15 of each year (“RDM Filing”), in which the Company shall propose adjustments to distribution rates to reflect the RDM Adjustment Factors to be billed to customers for the twelve months beginning March 1 following the filing. In addition, the RDM Filing shall present the current year’s ATR against which the Company shall perform its RDM Reconciliation.

I. Determination of ATR

The current year ATR for each rate class shall consist of the class-specific revenue requirement as approved by the Department in the Company’s most recent base distribution rate case and as adjusted by the Streetlight Sales Adjustment and the operation of the PBR Provision, and as otherwise adjusted and approved by the Department.

The rate class-specific revenue requirements approved by the Department are as follows:

Rate R-1/R-2	\$672,818,120
Rate G-1	\$132,674,197
Rate G-2	\$119,164,358
Rate G-3	\$181,585,581
Streetlighting	\$18,347,645
Total	\$1,124,589,901

Each year’s ATR will change during the year as a result of the Company implementing new base distribution rates approved by the Department. As a result, each year’s ATR shall reflect the number of months during which base distribution rates based upon the prior ATR were in effect and the number of months during which new base distribution rates based upon the above ATR were in effect. The proportion of ATR so determined shall be the annual ATR divided by 12 and multiplied by the number of months during the year for which it was in effect.

MASSACHUSETTS ELECTRIC COMPANY
NANTUCKET ELECTRIC COMPANY
REVENUE DECOUPLING MECHANISM PROVISION

II. RDM Adjustment Factors

The RDM Adjustment Factors will be based on the RDM Reconciliation amount for the prior calendar year. For each calendar year, this RDM Reconciliation amount shall be equal to the difference (either positive or negative) between the Actual Billed Distribution Revenue, and the ATR for the same year. Since the Company's RDM Filing will reflect estimated amounts for billed distribution revenue, this estimate will be replaced with and reconciled to actual billed revenue in the subsequent RDM Filing. The amount of over- or under-recovery resulting from the RDM Reconciliation shall be used to determine a rate class specific per kilowatt-hour RDM Adjustment Factor based on Forecasted kWh for each rate class. The amount of over- or under-recovery shall be allocated to the rate classes by applying the Distribution Revenue Allocator. The amount approved by the Department to be recovered or refunded through the RDM Adjustment Factors shall be subject to reconciliation, including interest on the monthly average over- or under-recovery balance at the monthly prime lending rate, as reported by the Bank of America.

III. Cap on RDM Adjustment Factors

By January 15 following each calendar year, the Company shall submit to the Department its proposed RDM Adjustment Factors effective for consumption on and after March 1 following such filing and will be included with each rate class' distribution energy charge for billing purposes. If the total amount to be reflected in the RDM Adjustment Factors represents an under-recovery of ATR to be recovered from customers as determined in accordance with Sections I and II, the amount to be reflected in the RDM Adjustment Factors effective March 1 following such filing may not exceed one percent (1%) of total revenue as recorded during the prior calendar year. Total revenue shall include amounts that the Company has billed customers through applicable charges for distribution service, transmission service, transition charges, Energy Efficiency, Basic Service, and any and all related adjustment factors. Total revenue shall also include an adjustment for electric supply for those customers who were with competitive suppliers during the year. To the extent that the application of this revenue cap results in a RDM rate adjustment that is less than that calculated in accordance with Sections I and II, the difference shall be deferred with interest calculated at the Customer Deposit Rate and included in the RDM Reconciliation for recovery in subsequent years. If the total amount to be reflected in the RDM Adjustment Factors represents an over-recovery of ATR to be credited to customers as determined in accordance with Sections I and II, the entire amount is to be reflected in the RDM Adjustment Factors effective March 1 following such filing.

IV. Interim RDM Adjustments

If at any time during the year, the total of cumulative distribution revenue excess/shortfall for the Company in total is estimated to be 10% above or below the Company's ATR for the current year, the Company will petition the Department for an interim adjustment prior to its next scheduled RDM Filing.

V. Adjustments to Rates

Each adjustment of the prices under the Company's applicable tariffs shall be in accordance with a notice filed with the Department on or before January 15 following each calendar year setting forth the amount of the increase or decrease and the new RDM Adjustment Factors. The notice shall further

MASSACHUSETTS ELECTRIC COMPANY
NANTUCKET ELECTRIC COMPANY
REVENUE DECOUPLING MECHANISM PROVISION

specify the effective date of such adjustment, which shall be March 1 following the filing of the notice, or such other date as the Department may authorize.

VI. Information to be Filed with the Department

Information pertaining to the RDM Adjustment Factors shall be filed with the Department in the RDM Filing. Such information shall include: (1) the proposed RDM Adjustment Factors and a summary of the RDM Reconciliation; (2) the reconciliation of the prior year's RDM Adjustment Factors by customer class and the total Company calendar year adjustment; and (3) the reconciliation of actual/estimated distribution revenue to target distribution revenue for each month of the prior year.

The Company shall also file for its residential, commercial, industrial, and street lighting customer classes: (1) monthly customer counts; (2) monthly kWh sales; (3) lost base revenue from energy efficiency programs for the most recent calendar year available; (4) forecasted sales for the subsequent year; and (5) a summary estimate of the revenue decoupling adjustment resulting from customers participating in net metering.

As part of its annual RDM Filing, the Company shall also provide the following data with respect to the residential Heat Pump Rate: (1) the number of customers opting into (and off) the Heat Pump Rate; and (2) 12 months of pre- and post-installation monthly kWh use.

This provision is applicable to all Retail Delivery Service tariffs of the Company. The operation of this RDM Provision is subject to Chapter 164 of the General Laws.

Exhibit HP-3 Revised

Massachusetts Electric Company
Nantucket Electric Company
Rate Design for Proposed R-1/R-2 Optional HEAT PUMP Pricing-kWh Charge

	Billing Units	Proposed Rates	Proposed Revenue
	(a)	(b)	(c) = (a) x (b)
(1) Revenue Allocation Target			<u>\$672,818,120</u>
<u>Customer Charge:</u>			
(2) All bills	14,180,780	\$10.00	\$141,807,800
(3) kWh Deliveries - Nov-Apr (R-1 & R-2 * 2.8)	10,870,433,973	\$0.02337	\$254,042,042
(4) kWh Deliveries - Summer (R-1 & R-2)	4,228,452,368	\$0.06546	<u>\$276,794,492</u>
(5) Total Revenue			<u>\$672,644,334</u>
(6) Difference to Target			(\$173,787)

- (1) Exhibit NG-PP-6 (C) - Second Amended, Page 2, Line 1
- (2)(a) Exhibit NG-PP-6 (C) - Second Amended, Page 2, Line 2, Column (a)
- (2)(b) Exhibit NG-PP-6 (C) - Second Amended, Page 2, Line 2, Column (b)
- (3)(a) Workpaper NG-PP-2 (C), Page 9, Line (81)+sum of Lines (88)-(92) for R-1 and R-2 * 2.8
- (3)(b) Workpaper NG-PP-2 (C), Page 9, Line (81)+sum of Lines (88)-(92) for R-1 and R-2 * Summer kWh charge \$0.06546 / Line (3), Column (a)
- (4)(a) Workpaper NG-PP-2 (C), Page 9, Line (82)-(87) for R-1 and R-2
- (4)(b) Exhibit NG-PP-6 (C) - Second Amended, Page 2, Line 3, Column (b)
- (5) Sum of Lines (2) through (4)
- (6) Line (5) - Line (1)

Massachusetts Electric Company
Nantucket Electric Company
Calculation of Illustrative R-1 Heat-Pump Rate Customer Bill Impacts

	3 Ton Heat-Pump		5 Ton Heat-Pump	
	841 kWh usage (October)*	2,269 kWh usage (January)**	1,127 kWh usage (October)***	3,341 kWh usage (January)****
	(a)	(b)	(c)	(d)
(1) Illustrative R-1 Heat-Pump Customer Monthly Bill	\$261.55	\$688.68	\$347.10	\$1,009.34
(2) Illustrative Typical Residential R-1 Monthly Bill	\$296.94	\$784.18	\$394.54	\$1,149.96
(3) Illustrative R-1 Heat-Pump Customer Monthly Bill \$ Increase/(Decrease)	(\$35.39)	(\$95.50)	(\$47.44)	(\$140.62)
(4) Illustrative R-1 Heat-Pump Customer Monthly Bill % Increase/(Decrease)	(12%)	(12%)	(12%)	(12%)

(1) (a) Page 4, Line 29, Column (e)

(2) (a) Page 4, Line 29, Column (b)

(1) (b) Page 4, Line 29, Column (f)

(2) (b) Page 4, Line 29, Column (c)

(1) (c) Page 5, Line 29, Column (e)

(2) (c) Page 5, Line 29, Column (b)

(1) (d) Page 5, Line 29, Column (f)

(2) (d) Page 5, Line 29, Column (c)

(3) Line (1) - Line (2)

(4) Line (3) ÷ Line (2)

* 841 kWh is equal to average residential customer usage in the month of October (600 kWh), plus 3-ton heat-pump usage in the same month

** 2,269 kWh is equal to average residential customer usage in the month of January (600 kWh), plus 3-ton heat-pump usage in the same month

*** 1,127 kWh is equal to average residential customer usage in the month of October (600 kWh), plus 5-ton heat-pump usage in the same month

**** 3,341 kWh is equal to average residential customer usage in the month of January (600 kWh), plus 5-ton heat-pump usage in the same month

Massachusetts Electric Company
 Nantucket Electric Company
 Calculation of Illustrative R-2 Heat-Pump Rate Customer Bill Impacts

	3 Ton Heat-Pump		5 Ton Heat-Pump	
	841 kWh usage (October)* (a)	2269 kWh usage (January)** (b)	1127 kWh usage (October)*** (c)	3341 kWh usage (January)**** (d)
(1) Illustrative R-2 Heat-Pump Customer Monthly Bill	\$177.85	\$468.30	\$236.03	\$686.35
(2) Illustrative R-2 Residential Monthly Bill	\$201.92	\$533.24	\$268.29	\$781.97
(3) Illustrative R-2 Heat-Pump Customer Monthly Bill \$ Increase/(Decrease)	(\$24.07)	(64.94)	(\$32.26)	(95.62)
(4) Illustrative R-2 Heat-Pump Customer Monthly Bill % Increase/(Decrease)	(12%)	(12%)	(12%)	(12%)

- (1) (a) Page 4, Line 31, Column (c)
- (2) (a) Page 4, Line 31, Column (b)
- (1) (b) Page 4, Line 31, Column (f)
- (2) (b) Page 4, Line 31, Column (c)
- (1) (c) Page 5, Line 31, Column (c)
- (2) (c) Page 5, Line 31, Column (b)
- (1) (d) Page 5, Line 31, Column (f)
- (2) (d) Page 5, Line 31, Column (c)
- (3) Line (1) - Line (2)
- (4) Line (3) ÷ Line (2)

* 841 kWh is equal to average residential customer usage in the month of October (600 kWh), plus 3-ton heat-pump usage in the same month
 ** 2269 kWh is equal to average residential customer usage in the month of January (600 kWh), plus 3-ton heat-pump usage in the same month
 *** 1127 kWh is equal to average residential customer usage in the month of October (600 kWh), plus 5-ton heat-pump usage in the same month
 **** 3341 kWh is equal to average residential customer usage in the month of January (600 kWh), plus 5-ton heat-pump usage in the same month

Massachusetts Electric Company
Nantucket Electric Company
Calculation of Monthly Residential Bills for Customers with 3 Ton Heat-Pump

	Residential (non-Heat-Pump) Customer Typical Bill			Residential Heat-Pump Rate Customer Typical Bill		
	Effective Rate (a)	Amount (\$41 kWh October usage) (b)	Amount (2,269 kWh January usage) (c)	Effective Rate (d)	Amount (\$41 kWh October usage) (e)	Amount (2,269 kWh January usage) (f)
Delivery Service						
(1) Customer Charge		\$10.00	\$10.00		\$10.00	\$10.00
(2) Base Distribution Charge	\$0.06546			\$0.02337		
(3) Basic Service Adjustment Factor	(\$0.00057)			(\$0.00057)		
(4) Residential Assistance Adjustment Factor	\$0.00976			\$0.00976		
(5) Storm Fund Replenishment Factor	\$0.00406			\$0.00406		
(6) Pension/PBOP Factor	(\$0.00145)			(\$0.00145)		
(7) Revenue Decoupling Mechanism Adjustment Factor	\$0.00226			\$0.00226		
(8) Attorney General Consulting Expense Factor	\$0.00003			\$0.00003		
(9) Solar Cost Adjustment Factor	\$0.00051			\$0.00051		
(10) Smart Grid Distribution Adjustment Factor	\$0.00000			\$0.00000		
(11) Renewable Energy Recovery Factor	\$0.00013			\$0.00013		
(12) Tax Act Credit Factor	\$0.00000			\$0.00000		
(13) Vegetation Management Cost Factor	\$0.00044			\$0.00044		
(14) Grid Modernization Factor	\$0.00144			\$0.00144		
(15) Exogenous Storm Fund Factor	\$0.00198			\$0.00198		
(16) Advanced Metering Infrastructure Factor	\$0.00027			\$0.00027		
(17) Total Distribution Energy Charge	\$0.08432	\$70.91	\$191.32	\$0.04223	\$35.52	\$95.82
(18) SMART Factor	\$0.00729	\$6.13	\$16.54	\$0.00729	\$6.13	\$16.54
(19) Electric Vehicle Program Factor	\$0.00038	\$0.32	\$0.86	\$0.00038	\$0.32	\$0.86
(20) Transition Charge	(\$0.00050)	(\$0.42)	(\$1.13)	(\$0.00050)	(\$0.42)	(\$1.13)
(21) Transmission Service Adjustment Factor	\$0.04100	\$34.48	\$93.03	\$0.04100	\$34.48	\$93.03
(22) Energy Efficiency Charge	\$0.03025	\$25.44	\$68.64	\$0.03025	\$25.44	\$68.64
(23) Net Metering Recovery Surcharge	\$0.01767	\$14.86	\$40.09	\$0.01767	\$14.86	\$40.09
(23) Renewables Charge	\$0.00050	\$0.42	\$1.13	\$0.00050	\$0.42	\$1.13
(24) Subtotal Delivery Charges		\$162.14	\$420.48		\$126.75	\$324.98
Supply Service						
(25) Base Basic Service Charge	\$0.15142			\$0.15142		
(26) Basic Service Admin Cost Factor	\$0.00887			\$0.00887		
(27) Smart Grid Customer Cost Adjustment Factor	\$0.00000			\$0.00000		
(28) Subtotal Commodity	\$0.16029	\$134.80	\$363.70	\$0.16029	\$134.80	\$363.70
(29) Total R-1 Residential Typical Bill		\$296.94	\$784.18		\$261.55	\$688.68
(30) R-2 Low Income Discount	32%	\$95.02	\$250.94		\$83.70	\$220.38
(31) Total R-2 Residential Typical Bill		\$201.92	\$533.24		\$177.85	\$468.30
(a) Per M.D.P.U. No. 1-25-A						
(b)(c), (e), (f) Line (1): Per M.D.P.U. No. 1-25-A						
(b)(c), (e), (f) Lines (17) through (23), Line (28): kWh x Column (a)						
(b)(c), (e), (f) Line (24) = SUM (Lines (17) through (23))						
(b)(c), (e), (f) Line (29): Line (24) + Line (28)						
(b)(c), (e), (f) Line (30): Line (29) x Line (30), Column (a)						
(b)(c), (e), (f) Line (31): Line (29) - Line (30)						
(d) per M.D.P.U. No. 1-25-A, except Line (3) = Page 1, Line (3), Column (b)						

Massachusetts Electric Company
Nantucket Electric Company
Calculation of Monthly Residential Bills for Customers with 5 Ton Heat-Pump

	Residential (non-Heat-Pump) Customer Typical Bill			Residential Heat-Pump Rate Customer Typical Bill		
	Effective Rate (a)	Amount (1,127 kWh October usage) (b)	Amount (3,341 kWh January usage) (c)	Effective Rate (d)	Amount (1,127 kWh October usage) (e)	Amount (3,341 kWh January usage) (f)
Delivery Service						
(1) Customer Charge		\$10.00	\$10.00		\$10.00	\$10.00
(2) Base Distribution Charge	\$0.06546			\$0.02337		
(3) Basic Service Adjustment Factor	(\$0.00057)			(\$0.00057)		
(4) Residential Assistance Adjustment Factor	\$0.00976			\$0.00976		
(5) Storm Fund Replenishment Factor	\$0.00406			\$0.00406		
(6) Pension/PBOP Factor	(\$0.00145)			(\$0.00145)		
(7) Revenue Decoupling Mechanism Adjustment Factor	\$0.00226			\$0.00226		
(8) Attorney General Consulting Expense Factor	\$0.00003			\$0.00003		
(9) Solar Cost Adjustment Factor	\$0.00051			\$0.00051		
(10) Smart Grid Distribution Adjustment Factor	\$0.00000			\$0.00000		
(11) Renewable Energy Recovery Factor	\$0.00013			\$0.00013		
(12) Tax Act Credit Factor	\$0.00000			\$0.00000		
(13) Vegetation Management Factor	\$0.00044			\$0.00044		
(14) Grid Modernization Factor	\$0.00144			\$0.00144		
(15) Exogenous Storm Fund Factor	\$0.00198			\$0.00198		
(16) Advanced Metering Infrastructure Factor	\$0.00027			\$0.00027		
(17) Total Distribution Energy Charge	\$0.08432	\$95.03	\$281.71	\$0.04223	\$47.59	\$141.09
(18) SMART Factor	\$0.00729	\$8.22	\$24.36	\$0.00729	\$8.22	\$24.36
(19) Electric Vehicle Program Factor	\$0.00038	\$0.43	\$1.27	\$0.00038	\$0.43	\$1.27
(20) Transition Charge	(\$0.00050)	(\$0.56)	(\$1.67)	(\$0.00050)	(\$0.56)	(\$1.67)
(21) Transmission Service Adjustment Factor	\$0.04100	\$46.21	\$136.98	\$0.04100	\$46.21	\$136.98
(22) Energy Efficiency Charge	\$0.03025	\$34.09	\$101.07	\$0.03025	\$34.09	\$101.07
(23) Net Metering Recovery Surcharge	\$0.01767	\$19.91	\$59.04	\$0.01767	\$19.91	\$59.04
(23) Renewables Charge	\$0.00050	\$0.56	\$1.67	\$0.00050	\$0.56	\$1.67
(24) Subtotal Delivery Charges		\$213.89	\$614.43		\$166.45	\$473.81
Supply Service						
(25) Base Basic Service Charge	\$0.15142			\$0.15142		
(26) Basic Service Admin Cost Factor	\$0.00887			\$0.00887		
(27) Smart Grid Customer Cost Adjustment Factor	\$0.00000			\$0.00000		
(28) Subtotal Commodity	\$0.16029	\$180.65	\$535.53	\$0.16029	\$180.65	\$535.53
(29) Total R-1 Residential Typical Bill		\$394.54	\$1,149.96		\$347.10	\$1,009.34
(30) R-2 Low Income Discount	32%	\$126.25	\$367.99		\$111.07	\$322.99
(31) Total R-2 Residential Typical Bill		\$268.29	\$781.97		\$236.03	\$686.35

(a) Per M.D.P.U. No. 1-25-A
(b)(c), (e), (f) Line (1): Per M.D.P.U. No. 1-25-A
(b)(c), (e), (f) Lines (17) through (23), Line (28): kWh x Column (a)
(b)(c), (e), (f) Line (24) = SUM (Lines (17) through (23))
(b)(c), (e), (f) Line (29): Line (24) + Line (28)
(b)(c), (e), (f) Line (30): Line (29) x Line (30), Column (a)
(b)(c), (e), (f) Line (31): Line (29) - Line (30)
(d) per M.D.P.U. No. 1-25-A, except Line (3) = Page 1, Line (3), Column (b)

Residential Heat Pump Rate Design (using Unitil's approach)

Line													
1	Assumptions:												
2	R-1: Residential	<u>Proposed Rate</u>											
3	Customer Charge	\$	10.00										
4	Distribution Charge	\$	0.06546										
5	Average Monthly UPC												
		R-1 Average Monthly Use (kWh) (a)	Cost Recovery per Month (b)	Fixed Cost Recovery in Volumetric Rate (c)	Fixed Cost Recovery in Fixed Charge (d)	Avg. Monthly Use with Heat Pump (kWh) (e)	Normal Therm UPC (f)	Therm (Heating Load) (g)	Avg. Temp. (h)	Avg. Temp COP (i)	kWh Conversion (j)	kWh Usage (k)	
6	January	610.64	\$ 49.97	\$ 39.97	\$ 10.00	1,891.81	132.00	114.00	28.7	2.6	3,340.20	1,281.17	
7	February	530.69	\$ 44.74	\$ 34.74	\$ 10.00	1,973.00	149.00	131.00	30.6	2.7	3,838.30	1,442.30	
8	March	530.12	\$ 44.70	\$ 34.70	\$ 10.00	1,712.15	133.00	115.00	37.6	2.9	3,369.50	1,182.03	
9	April	454.90	\$ 39.78	\$ 29.78	\$ 10.00	1,131.23	90.00	72.00	48.0	3.1	2,109.60	676.33	
10	May	484.53	\$ 41.72	\$ 31.72	\$ 10.00	484.53	46.00						
11	June	586.92	\$ 48.42	\$ 38.42	\$ 10.00	586.92	23.00						
12	July	770.46	\$ 60.43	\$ 50.43	\$ 10.00	770.46	18.00						
13	August	762.80	\$ 59.93	\$ 49.93	\$ 10.00	762.80	15.00						
14	September	536.16	\$ 45.10	\$ 35.10	\$ 10.00	536.16	16.00						
15	October	457.56	\$ 39.95	\$ 29.95	\$ 10.00	457.56	20.00						
16	November	494.26	\$ 42.35	\$ 32.35	\$ 10.00	777.59	47.00	29.00	43.2	3.0	849.70	283.33	
17	December	641.48	\$ 51.99	\$ 41.99	\$ 10.00	1,436.48	93.00	75.00	34.4	2.8	2,197.50	795.01	
18		6,860.52	\$ 569.09	\$ 449.09	\$ 120.00	12,520.68							5,660.16
19													
20	Derrivation of Heat Pump Rate												
21	Customer Charge	\$	10.00										
22	Customer Charge Revenue		\$120.00										
23	Winter Volumetric Charge Revenue	\$	213.54	per customer, November through April									
24	Volumetric Fixed Cost Recovery Charge	\$0.02393		Line 21 divided by Heat Pump kWh for Nov. through Apr.									
25	Results												
26	R-1-HP: Residential Heat Pump Service	<u>Proposed Rate</u>											
27	Customer Charge	\$	10.00										
28	Distribution Charge - Winter	\$	0.02393										
29	Distribution Charge - Summer	\$	0.06546										
30	Multiplier	\$	2.7										

Line (3) M.D.P.U 1-25-A
Line (4) M.D.P.U 1-25-A
Column (a) Lines (6)-(17): Workpaper NG-PP-3 (REV-2) page 2, line 2 (a)-(1) ÷ line 1 (a)-(1)
Column (b) = Column (c) + Column (d)
Column (c) = Column (a) X Line (4)
Column (d) = Line (3)
Column (e) = Column (a) + Column (k)
Column (f) Company Records for average gas customer usage
Column (g) = Column (f) - Column (g) Line (19)
Line (18) = Sum of Lines (6) - (17)
Line (19) Column (g) = Average of Lines (11)-(14) Column (g)
Line (20) Column (g): Therm to kWh conversion factor
Column (h) Electrification Load Profile assumptions from the Company's Latest Electric Load Forecast
Column (i) Electrification Load Profile assumptions from the Company's Latest Electric Load Forecast
Column (j) = Column (g) Lines (6)-(17) X Column (g) Line (20)
Column (k) = Column (j) / Column (i)
Line (21) = Line (3)
Line (22) = Line (21) X 12
Line (23) = Sum of Column (c) November - April
Line (24) = Line (23) / Sum (Column (c) for November - April)
Line (27) = Line (21)
Line (28) = Line (24)
Line (29) = Line (4)
Line (30) = Line (29) / Line (28)

Residential Heat Pump Rate Design (alternative approach)

Line

1 **Assumptions:**

2	R-1: Residential	<u>Proposed Rate</u>
3	Customer Charge	\$ 10.00
4	Distribution Charge	\$ 0.06546

	R-1 Average Monthly Use (kWh) (a)	Cost Recovery per Month (b)	Fixed Cost Recovery in Volumetric Rate (c)	Fixed Cost Recovery in Fixed Charge (d)	Avg. Monthly Use with Heat Pump (kWh) (e)	Average Forecasted kWh Usage (f)
5	Average Monthly UPC					
6	January	610.64	\$ 49.97	\$ 39.97	\$ 10.00	2,263.72
7	February	530.69	\$ 44.74	\$ 34.74	\$ 10.00	1,759.96
8	March	530.12	\$ 44.70	\$ 34.70	\$ 10.00	1,439.82
9	April	454.90	\$ 39.78	\$ 29.78	\$ 10.00	889.87
10	May	484.53	\$ 41.72	\$ 31.72	\$ 10.00	484.53
11	June	586.92	\$ 48.42	\$ 38.42	\$ 10.00	586.92
12	July	770.46	\$ 60.43	\$ 50.43	\$ 10.00	770.46
13	August	762.80	\$ 59.93	\$ 49.93	\$ 10.00	762.80
14	September	536.16	\$ 45.10	\$ 35.10	\$ 10.00	536.16
15	October	457.56	\$ 39.95	\$ 29.95	\$ 10.00	457.56
16	November	494.26	\$ 42.35	\$ 32.35	\$ 10.00	1,139.86
17	December	641.48	\$ 51.99	\$ 41.99	\$ 10.00	1,749.77
18		6,860.52	\$ 569.09	\$ 449.09	\$ 120.00	12,841.43
19						

20 **Derrivation of Heat Pump Rate**

21	Customer Charge	\$ 10.00
22	Customer Charge Revenue	\$120.00
23	Winter Volumetric Charge Revenue	\$ 213.54 per customer, November through April
24	Volumetric Fixed Cost Recovery Charge	\$0.02310 Line 21 divided by Heat Pump kWh for Nov. through Apr.

25 **Results**

26	R-1-HP: Residential Heat Pump Service	<u>Proposed Rate</u>
27	Customer Charge	\$ 10.00
28	Distribution Charge - Winter	\$ 0.02310
29	Distribution Charge - Summer	\$ 0.06546
30	Multiplier	\$ 2.8

Line (3) M.D.P.U 1-25-A

Line (4) M.D.P.U 1-25-A

Column (a) Lines (6)-(17): Workpaper NG-PP-3 (REV-2) page 2, line 2 (a)-(l) ÷ line 1 (a)-(l)

Column (b) = Column (c) + Column (d)

Column (c) = Column (a) X Line (4)

Column (d) = Line (3)

Column (e) = Column (a) + Column (f)

Column (f) Heating Electrification Load Profile assumptions from the Company's Latest Electric Load Forecast

Line (18) = Sum of Lines (6) - (17)

Line (21) = Line (3)

Line (22) = Line (21) X 12

Line (23) = Sum of Column (c) November - April

Line (24) = Line (23) / Sum (Column (e) for November - April)

Line (27) = Line (21)

Line (28) = Line (24)

Line (29) = Line (4)

Line (30) = Line (29) / Line (28)