



February 20, 2020

**Via Hand-Delivery and Electronic-Mail**

Debra A. Howland  
Executive Director and Secretary  
New Hampshire Public Utilities Commission  
21 S. Fruit Street, Suite 10  
Concord, N.H. 03301-2429

RE: IR 20-004, Investigation of Electric Vehicle Rate Design Standards, Electric Vehicle Time of Day Rates for Residential and Commercial Customers  
Comments of Unitil Energy Systems, Inc.

Dear Secretary Howland,

Unitil Energy Systems, Inc. ("Unitil" or the "Company") appreciates the opportunity to provide recommendations regarding the Commission's investigation of electric vehicle (EV) rate design standards and electric vehicle time of day rates for residential and commercial customers as part of the investigation docketed in IR 20-004. The Company believes electric distribution utilities represent an essential participant in the development of EV infrastructure and adoption to enable customer choice in the transportation market.

According to the U.S. Energy Information Administration (EIA), New Hampshire's largest source of carbon dioxide (CO<sub>2</sub>) emissions is the transportation sector, representing more than half of all CO<sub>2</sub> emitted.<sup>1</sup> Transportation is also the largest source of greenhouse gas (GHG) emissions nationally according to the Environmental Protection Agency (EPA), with 90 percent of the fuels used coming from petroleum sources.<sup>2</sup> Addressing emissions in the transportation sector is vital to meeting New Hampshire's environmental goals and objectives.

The Company believes that two essential factors will facilitate the transition to EVs: electric service rate design and EV charging infrastructure. Unitil recognizes that varying customer behaviors may necessitate a suite of EV charging rate structures, including fixed rates and time of day/time of use (TOU) rates. Proper rate design will balance demand and energy charges to ensure cost causation while enabling EV adoption. Pricing structures must be simple and easily understood to promote managed

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<sup>1</sup> State Carbon Dioxide Emissions Data, U.S. Energy Information Administration (October 23, 2019). Available at: <https://www.eia.gov/environment/emissions/state/>

<sup>2</sup> Sources of Greenhouse Gas Emissions, United States Environmental Protection Agency (Accessed February 20, 2020). Available at: <https://www.epa.gov/ghgemissions/sources-greenhouse-gas-emissions>

charging to best utilize existing system capacity and mitigate environmental impacts. Additionally, robust charging infrastructure is required to allow travel, alleviate range anxiety, and fundamentally change customer behavior to facilitate an economic and environmentally sound transition to EVs.

### **Legislative Background**

Senate Bill (SB) 575-FN was introduced in 2018, aiming to establish requirements for electric vehicle charging stations. Unitil supported SB 575-FN and testified that further development of electric vehicle infrastructure is essential to meet New Hampshire's environmental and transportation goals.<sup>3</sup> The bill received bipartisan support throughout the legislative process and was signed into law by Governor Sununu on June 12, 2018.

In addition to adding relevant definitions into statute, SB 575-FN provides, "The public utilities commission shall:

- a) Within 2 years, consider and determine whether it is appropriate to implement any of the following rate design standards for electric companies and public service companies:
  1. Cost of service;
  2. Prohibition of declining block rates;
  3. Time of day rates;
  4. Seasonal rates;
  5. Interruptible rates;
  6. Load management techniques; and
  7. Demand charges
- b) Consider and determine whether it is appropriate to implement electric vehicle time of day rates for residential and commercial customers. The standards for determination of such implementation shall include consideration whether such implementation would encourage energy conservation, optimal and efficient use of facilities and resources by an electric company, and equitable rates for electric consumers."

The Company's comments provided herein are designed to address these issues, the issues identified in Staff's memorandum, and other relevant topics for consideration by the Commission.

### **Definitions**

The Company acknowledges and also supports the principles of "efficiency, equity, simplicity, continuity, and revenue sufficiency" with regard to electric rate design in general.<sup>4</sup> In October of 2019, the National Association of Regulatory Utility Commissioners (NARUC) released *Electric Vehicles: Key Trends, Issues,*

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<sup>3</sup> NH Senate Transportation Committee SB 575-FN, relative to electric vehicle charging stations (January 23, 2018). Available at: [http://gencourt.state.nh.us/bill\\_Status/HearingReport.aspx?id=9685&sy=2018](http://gencourt.state.nh.us/bill_Status/HearingReport.aspx?id=9685&sy=2018)

<sup>4</sup> Investigation into Grid Modernization, Order No. 25,877 at 7 (April 1, 2016).

*and Considerations for State Regulators.*<sup>5</sup> The two main principles of EV-specific rate design were identified as follows: 1) rate design should be utilized to increase efficient usage of existing assets rather than undergoing expensive distribution system upgrades to serve EVs, and 2) bill increases due to EV infrastructure upgrades should be kept to a minimum for customers who do not own EVs.<sup>6</sup> Perhaps most importantly, the NARUC report provides that EV adoption could lead to lower rates for all electric customers.<sup>7</sup>

SB 575-FN directed the Commission to consider the following rate design standards; Unital's perspective is outlined in line below.

#### Cost of Service:

Cost of Service regulation provides that the utility's revenue requirement "reflects the total amount that must be collected in rates for the utility to recover its costs and earn a reasonable return."<sup>8</sup> All of the Company's tariffs are designed for cost of service; EV-specific rates should conform to this principle to the maximum extent practicable as well.

#### Prohibition of Declining Block Rates:

As described in the Staff memorandum, declining block rates price successive blocks of power used by a customer at decreasing per unit prices. While declining block rates are not prohibited in New Hampshire, the cost of electricity production does not necessarily decline as usage increases. Rate structures that provide electricity at lower prices for higher levels of usage seemingly run afoul of energy conservation principles and also introduce added environmental costs.<sup>9</sup> Therefore, the Company does not recommend that EV rate designs include declining block structures.

#### Time of Day Rates:

Unital strongly supports the availability of time of day/TOU rates for EV charging, particularly residential and private commercial fleet charging. While TOU structures may not be suitable for all charging applications (such as public commercial and Direct Current Fast Charging (DCFC)), the Company believes that a suite of rate offerings tailored for different customer types and use cases may be appropriate. Further detail is provided below (see Residential and Commercial Time of Day Rates for Electric Vehicle Charging).

#### Seasonal Rates:

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<sup>5</sup> National Association of Regulatory Utility Commissioners, *Electric Vehicles: Key Trends, Issues, and Considerations for State Regulators* (October 2019). Available at: <https://pubs.naruc.org/pub/32857459-0005-B8C5-95C6-1920829CABFE>

<sup>6</sup> Id. at 25.

<sup>7</sup> Id. at 21.

<sup>8</sup> *Tariff Development I: The Basic Ratemaking Process*, Darryl Tietjen, Public Utility Commission of Texas (Accessed February 20, 2020). Available at: <https://pubs.naruc.org/pub.cfm?id=538E730E-2354-D714-51A6-5B621A9534CB>

<sup>9</sup> *Regulatory Assistance Project, Pricing Do's and Don'ts: Designing Retail Rates As if Efficiency Counts* (April 2011). Available at: <https://www.raponline.org/wp-content/uploads/2016/05/rap-lazar-pricingdosanddnts-2011-04.pdf>

Seasonal rates represent a consideration for future EV rate design. Today, the only seasonal rate the Company offers is basic service with solicitations changing every June 1<sup>st</sup> and Dec 1<sup>st</sup>. The Company supports EV rate design that is easily understood by customers. Seasonal variability in rates would likely necessitate education, outreach, and communication to ensure customers realize potential rate changes and behavioral attributes that could impact energy bills and peak demand.

#### Interruptible Rates:

Interruptible rates are designed with particular customers in mind who agree to eliminate their electrical load at times of peak demand. Customers who choose this category of service receive notice of when peaks will occur or are occurring. The Company does not see interruptible rates as a desirable option for EV charging. First, EV rates should be designed to encourage off peak usage, minimizing the need for service interruption. Second, customers may require charging during peak times, particularly during long-range travel and corridor driving. Total interruption of electrical service for EV charging stations would likely lead to frustration, interference with commerce, and customer confusion unless incentives and education are provided.

#### Load Management Techniques:

Load management techniques represent an important consideration for EV rate design. As EV adoption continues to grow, charging (particularly DCFC) has the potential to magnify electricity demand peaks. However, as EV load is flexible, one goal of EV rate design should be to move charging to times of low demand or high penetrations of power generation. Through rate design structures that maximize capacity availability and minimize system upgrades and costs, the benefits of added energy volumes from EV load can flow to all customers. Such techniques are often referred to as “managed charging” or “smart charging” with EVs serving as demand response resources tied to novel rate design structures that potentially include TOU.

Unitil currently offers a load responsive program (Schedule LR) to interested customers.<sup>10</sup> In addition, Unitil is currently piloting load management offerings to commercial and industrial customers. The initiative allows customers to curtail their load throughout events called by Unitil during hours of peak ISO-NE demand. The Company also plans to offer a Wi-Fi thermostat adjustment initiative during the summer of 2020 and a battery storage initiative. In all cases, customers are paid an incentive based on their average kW savings for events during the season.

#### Demand Charges:

Demand charges are designed to capture the infrastructure costs to meet a customer’s peak capacity requirement. In New Hampshire, only C&I customer classes have a demand charge component. EV charging stations, particularly DCFC, are susceptible to demand charges as these sites draw significant amounts of energy (50 kW up to 350 kW per charging station). Many DCFC sites have low load factors and utilization, creating a barrier of entry for some competitive market charging infrastructure

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<sup>10</sup> Unitil Energy Systems, Inc. Load Responsive Program Schedule LR (Issued October 20, 2006). Available at: [https://unitil.com/sites/default/files/tariffs/Schedule\\_LR.pdf](https://unitil.com/sites/default/files/tariffs/Schedule_LR.pdf)

companies. Unitil believes that EV rates should be designed for off peak usage and to encourage managed charging capabilities (controllable power output depending on time and rate). However, for customers that cannot manage demand during peak system periods, the demand charge needs to reflect the service being provided. Additionally, the Commission should consider whether utility ownership of publically available charging, such as DCFC, presents an option for market transformation in certain applications (low income/environmental justice communities, corridor DCFC, etc.).

### **Rate Design Standards for Electric Vehicle Charging Stations**

#### **Current Offerings:**

A detailed summary of Unitil's Electric Delivery Service Rates is provided in Attachment 1 at the end of these comments.

#### **Alignment with Principles:**

The Company believes that implementation of EV TOU rates for both residential and commercial customers would align with the Commission's rate design principles of efficiency, equity, simplicity, continuity, and revenue sufficiency. New rate offerings should not disrupt customers; in fact, they should enable customers to adopt novel technologies, address environmental concerns, and reduce costs. EV-specific rate designs would likely encourage EV adoption and help customers who already own EVs to implement beneficial off-peak charging patterns that are believed to lead to lower rates for all customers.<sup>11</sup> Furthermore, if EV rates are designed to encourage managed charging, the added load would be incremental and should not exacerbate peaking problems. Rate design should encourage diversity of usage and discourage on peak charging; under such circumstances, rates should reflect added system infrastructure and energy costs.

#### **Distribution, Energy, and/or Transmission:**

It may be worth considering whether multiple EV TOU rate design options for residential and commercial customers employing a combination of distribution, transmission, and energy rates would be beneficial. Regardless of the structures employed, EV rate design should strive to mitigate costs for applicable customers, create benefits for all, and avoid cost shifting. The overall goal should be to transition more customers to EVs, and rates with more sizable cost differentials between the peak and off peak rates would likely help to achieve this paradigm.

#### **Adequacy of Current and Proposed Rate Offerings:**

While current, fixed electricity rate structures have proven sufficient to enable early EV adoption, the Company believes that TOU rates for EVs would encourage energy conservation, optimal and efficient

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National Association of Regulatory Utility Commissioners, Electric Vehicles: Key Trends, Issues, and Considerations for State Regulators (October 2019) at 21. Available at: <https://pubs.naruc.org/pub/32857459-0005-B8C5-95C6-1920829CABFE>

use of grid facilities, and reduce and/or mitigate increases in peak demand. The Company suggests that the Commission consider the appropriateness of a variety of rate structures including residential whole-house TOU, residential EV-specific TOU, fixed rates for public and corridor/DCFC charging, and TOU for commercial and industrial applications. Given the dynamic nature of the transportation market and wide variety of customer travel needs, it is unlikely that any one option will be suitable for all customers alike.

#### Metering, Communication, and Billing Costs:

Today, Unitil has two way communications to electric meters through Automated Metering Infrastructure (AMI) for all customers. AMI uses powerline carrier technology to receive daily reads for each meter. With appropriate programming, Unitil's existing AMI meters are capable of recording four separate TOU registers and communicating up to two data elements daily, which can be used for TOU structures with discrete time periods. The Company is in the process of deploying next generation AMI technology which will provide fifteen minute interval data three times per day, potentially expanding TOU rate structure capabilities.

Implementation of TOU rates for EV customers would require a customer outreach, education and communication plan. The main objective would be to raise customer awareness for and encourage adoption of new EV TOU rates. The Company believes that such an effort would likely include bill inserts, customer mailings, dedicated website updates, social media, and email.

Unitil also generally supports data sharing efforts that are currently on going within the Commission (Docket DE 19-197, Development of a Statewide, Multi-Use Online Energy Data Platform). Customers will continue to demand access to their energy data which will enable technology adoption, including EVs.

#### Venue:

Unitil believes that the appropriate venue for electric distribution utility proposals for EV rates is a rate case, aligning with PUC Staff perspectives.<sup>12</sup> This is particularly true if applicable TOU structures will apply to the distribution rate component in addition to energy and transmission. As with other rate designs, EV rates should be neutral to the utility's revenue requirement to mitigate cost shifting.

#### Role of the Utility:

Electrification of the transportation sector represents an opportunity to dramatically reduce greenhouse gas (GHG) emissions with electric utilities representing a critical enabling entity. Some states, such as Washington and Oregon, have broad initiatives where utilities have received regulatory approval to

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<sup>12</sup> NH Electric Vehicle Charging Stations Infrastructure Commission Meeting Minutes (October 4, 2019) at 3. Available at: <https://www.des.nh.gov/organization/divisions/air/tsb/tps/msp/documents/20191004-meeting-notes.pdf>

develop, own, and manage charging stations.<sup>13</sup> Other states, such as California, Washington, DC, and Massachusetts have recently approved utility investments in EV charging up to the customer's meter known as "make-ready" infrastructure.<sup>14</sup> Some groups advocate for full utility ownership (electrical infrastructure and charging stations) in low income, environmental justice, and disadvantaged communities that are unlikely to see competitive market investment in order to stimulate EV charging, particularly for DCFC locations.<sup>15</sup>

### Make-Ready Infrastructure

EV make-ready programs facilitate the development of the EV and EV charging market by increasing the availability of publically available Level 2 and DCFC charging stations, increasing customer awareness with EVs, and preparing for integration of EVs with the electric distribution system. Typically, make-ready infrastructure includes the following electrical equipment and connections:

- Distribution primary lateral service feed;
- Necessary transformer and transformer pad;
- New service meter;
- New service panel; and
- Associated conduit, conductor, and other equipment necessary to connect each piece of EV chargers

Make-ready programs have been approved by regulatory commissions as such investments are viewed as being in the public interest, will reduce barriers to investments in EV charging infrastructure, will meet a need regarding the adoption of electric vehicles that is unlikely to be met by the competitive EV charging market, and will not impede the competitive EV charging market.<sup>16</sup>

Make-ready programs align with New Hampshire policy objectives and have been supported by several EV market participants and stakeholder groups. In July 2019, the New Hampshire Department of Business and Economic Affairs (NH BEA) released a report (Evaluating Electric Vehicle Infrastructure in New Hampshire) following an extensive stakeholder process.<sup>17</sup> The most common policy recommendation identified was "approval of reasonable utility make-ready investments as necessary investments in the distribution system and therefore eligible for rate-basing. Make-ready investments

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<sup>13</sup> National Association of Regulatory Utility Commissioners, *Electric Vehicles: Key Trends, Issues, and Considerations for State Regulators* (October 2019) at 17. Available at: <https://pubs.naruc.org/pub/32857459-0005-B8C5-95C6-1920829CABFE>

<sup>14</sup> Id. at 19.

<sup>15</sup> MJ Bradley and Georgetown Climate Center, *Utility Investment in Electric Vehicle Charging Infrastructure: Key Regulatory Considerations* (November 2017) at 8. Available at: [https://www.georgetownclimate.org/files/report/GCC-MJBA\\_Utility-Investment-in-EV-Charging-Infrastructure.pdf](https://www.georgetownclimate.org/files/report/GCC-MJBA_Utility-Investment-in-EV-Charging-Infrastructure.pdf)

<sup>16</sup> MA D.P.U. 13-182-A, *Investigation by the Department of Public Utilities upon its own Motion into Electric Vehicles and Electric Vehicle Charging* at 13. Available at: <https://fileservice.eea.comacloud.net/FileService.Api/file/FileRoom/9233599>

<sup>17</sup> *Evaluating Electric Vehicle Infrastructure in New Hampshire* (July 2019). Available at: <https://www.nh.gov/osi/resource-library/documents/nh-ev-infrastructure-analysis.pdf>

include the utility infrastructure just up to the [electric vehicle supply] equipment”.<sup>18</sup> Unitil encourages the Commission to consider approval of future utility EV programs that enable utilities to develop make-ready infrastructure and maintain and operate EV charging stations.

In addition to SB 575-FN, another EV bill was passed by the New Hampshire legislature and signed into law by Governor Sununu in 2018, SB 517, Establishing an Electric Vehicle Charging Stations Infrastructure Commission.<sup>19</sup> Unitil also supported SB 517 and is a member of the SB 517 commission (“EV Commission”) to provide input to the legislature on how EV infrastructure can be advanced within the state.<sup>20</sup> Unitil, Eversource, Liberty Utilities, and the New Hampshire Electric Cooperative have jointly proposed to support the make-ready work required to install DCFC and Level 2 chargers funded by the VW Settlement Trust.<sup>21</sup> The legislative EV Commission has requested “the electric utilities work with the Public Utilities Commission to design and obtain approval for a ‘make ready’ program from New Hampshire that is designed to work in conjunction with the RFP and beyond.”<sup>22</sup> The NH BEA stakeholder group also supported these investments stating, “New Hampshire utilities have outlined a proposal for investment in DCFC that combines utility investments in make-ready infrastructure with a portion of the Volkswagen Settlement funding. This proposal is widely supported by stakeholders surveyed.”<sup>23</sup> While the competitive RFP process is still underway for the first phase of this effort, Unitil will continue to support the development of EV charging in NH and will seek recovery of any investments in a future proceeding before the Commission.

#### Residential EV Rates

It is believed that approximately 80% of EV charging happens and will happen at home; therefore, it is important for utilities to offer options for residential charging including both fixed and TOU rate options.<sup>24</sup> Rates designed specifically for EVs could spur adoption of clean transportation, supporting policy and environmental initiatives within the state and region. Utility-facilitated behind the meter partnerships and incentives could provide customers with a streamlined process for upgrading their electrical infrastructure (service panel, wiring, connection of EVSE, and EVSE). Residential customers represent an important class given the disproportionate ratio of charging at home versus other locations and the need to optimize charging patterns to mitigate peak demand and infrastructure costs.

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<sup>18</sup> Id. at 2.

<sup>19</sup> Senate Bill 517 – Final Version, An Act establishing an electric vehicle charging stations infrastructure commission (May 30, 2018). Available at:

[http://gencourt.state.nh.us/bill\\_Status/billText.aspx?sy=2018&id=1829&txtFormat=html](http://gencourt.state.nh.us/bill_Status/billText.aspx?sy=2018&id=1829&txtFormat=html)

<sup>20</sup> NH Senate Transportation Committee SB 517, establishing an electric vehicle charging stations infrastructure commission (January 30, 2018). Available at:

[http://gencourt.state.nh.us/bill\\_Status/HearingReport.aspx?id=10182&sy=2018](http://gencourt.state.nh.us/bill_Status/HearingReport.aspx?id=10182&sy=2018)

<sup>21</sup> NH Electric Vehicle Charging Stations Infrastructure Commission Meeting Minutes (June 28, 2019). Available at: <https://www.des.nh.gov/organization/divisions/air/tsb/tps/msp/documents/20190628-meeting-notes.pdf>

<sup>22</sup> Id. at 2.

<sup>23</sup> Id.

<sup>24</sup> Edison Electric Institute, Electric Vehicle Sales Forecast and the Charging Infrastructure Required Through 2030 (November 2018) at 2. Available at:

[https://www.edisonfoundation.net/iei/publications/Documents/IEI\\_EEI%20EV%20Forecast%20Report\\_Nov2018.pdf](https://www.edisonfoundation.net/iei/publications/Documents/IEI_EEI%20EV%20Forecast%20Report_Nov2018.pdf)



- Fixed Rates
  - Residential customers currently and in the future will be able to choose fixed rates for all uses, including EV charging
  - Some customers may continue to demand the flexibility and certainty that fixed rates provide
  - However, TOU rates should incentivize customers to migrate from fixed rates to lower peaks
- TOU Rates
  - Residential “whole-house”
    - An important initial option for EV customers in addition to customers who may want to change their behaviors and usage to reduce costs and peak demand
    - This option is an important step to enable some customers to transition to time-varying rates
    - Depending on behavior, customers may realize savings for all uses, including EV charging
  - Residential EV-specific charging with second meter and/or optimized rate
    - As customers adopt EVs in greater numbers, a dedicated residential rate class for EV charging only may represent a key option
    - Such rates could offer highly incentivized off peak charging with a significantly more expensive on peak rate
    - A second dedicated meter could ensure that EV charging has a dedicated rate class, is manageable through demand response programs, and is discrete from other loads

#### Commercial and Industrial (C&I) EV Rates

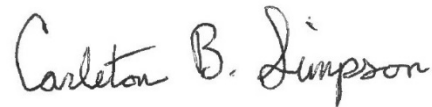
Businesses, municipalities, and other C&I customers will continue to adopt EVs at an accelerating rate. Dedicated C&I rate classes for EV charging may represent essential options for fleets and the public. Off peak charging is essential to mitigate peak demand and reduce charging costs for these customers as well. EV-specific rates may spur adoption of cleaner transportation, supporting policy and environmental initiatives within the state and region.

- Fixed Rates
  - Publically available charging may require fixed rates as people on the road need to charge when they are traveling, regardless of the time of day
  - This paradigm does not necessarily align with TOU pricing
  - Corridor charging, particularly DCFC, is on-demand and an essential service to alleviate range anxiety and encourage EV adoption
  - Demand charges may continue to make sense in these applications due to the low load factors and potential customer issues with demand management
- TOU Rates

- Time-varying rates are also an essential element of C&I offerings to stimulate the EV market
- Some customers hosting publically available EV charging may choose time-varying rates
- The largest market segment for C&I TOU represents fleet vehicles<sup>25</sup>
- C&I “whole facility”
  - EV TOU structures would allow C&I customers to change their behavior and usage to reduce costs and peak demand
- C&I EV-specific charging with dedicated meter and/or optimized rate
  - Such rates could offer highly incentivized off peak charging with significantly more expensive on peak energy
  - A second dedicated meter may represent an option to ensure that EV charging is manageable through demand response programs and discrete from other loads

Unitil appreciates the opportunity to provide these comments regarding EV charging rates and infrastructure development efforts. Please do not hesitate to contact me if you have any additional questions concerning this matter.

Sincerely,



Carleton B. Simpson  
Attorney for Unitil Service Corp.

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<sup>25</sup> Id. at 14.

## Attachment 1: Unitil Summary of Electric Delivery Service Rates

NHPUC No. 3 - Electricity Delivery  
Unitil Energy Systems, Inc.

Forty-Second Revised Page 4  
Superseding Forty-First Revised Page 4

### SUMMARY OF DELIVERY SERVICE RATES

Each bill rendered for electric delivery service shall be calculated through the application of the effective rates as listed below.

<u>Class</u>	<u>Distribution Charge*</u>	<u>Non-Transmission External Delivery Charge**</u>	<u>Transmission External Delivery Charge**</u>	<u>Total External Delivery Charge**</u>	<u>Stranded Cost Charge**</u>	<u>Storm Recovery Adjustment Factor***</u>	<u>System Benefits Charge****</u>	<u>Total Delivery Charges</u>
<b>D</b>	Customer Charge	\$16.22					(1)	\$16.22
	All kWh	\$0.03558	(\$0.00108)	\$0.02610	\$0.02502	(\$0.00012)	\$0.00084	\$0.06884
<b>G2</b>	Customer Charge	\$29.19						\$29.19
	All kW	\$10.51				(\$0.02)		\$10.49
	All kWh	\$0.00000	(\$0.00108)	\$0.02610	\$0.02502	(\$0.00002)	\$0.00084	\$0.03336
<b>G2 - kWh meter</b>	Customer Charge	\$18.38						\$18.38
	All kWh	\$0.00883	(\$0.00108)	\$0.02610	\$0.02502	(\$0.00012)	\$0.00084	\$0.04209
<b>G2 - Quick Recovery Water Heat and/or Space Heat</b>	Customer Charge	\$9.73						\$9.73
	All kWh	\$0.03204	(\$0.00108)	\$0.02610	\$0.02502	(\$0.00012)	\$0.00084	\$0.06530
<b>G1</b>	Customer Charge	\$162.18	Secondary Voltage					\$162.18
	Customer Charge	\$86.49	Primary Voltage					\$86.49
	All kVA	\$7.60				(\$0.03)		\$7.57
	All kWh	\$0.00000	(\$0.00108)	\$0.02610	\$0.02502	(\$0.00003)	\$0.00084	\$0.03335
<b>ALL GENERAL</b>	Transformer Ownership Credit (kW/kVA)							(\$0.50)
	Voltage Discount at 4,160 Volts or Over (all kW/kVA and kWh)							2.00%
	Voltage Discount at 34,500 Volts or Over (all kW/kVA and kWh)							3.50%

(1) Includes low-income portion of \$0.00150 per kWh, energy efficiency portion of \$0.00528 per kWh and lost base revenue portion of \$0.00074 per kWh.

\* Authorized by NHPUC Order No. 26,236 in Case No. DE 19-043, dated April 22, 2019  
 \*\* Authorized by NHPUC Order No. 26,278 in Case No. DE 19-111, dated July 31, 2019  
 \*\*\* Authorized by NHPUC Order No. 26,236 in Case No. DE 19-043, dated April 22, 2019  
 \*\*\*\* Authorized by NHPUC Order No. 26,323 in Case No. DE 17-136, dated December 31, 2019

Issued: January 15, 2020  
Effective: January 1, 2020

Issued By: Christine Vaughan  
Sr. Vice President