

**STATE OF NEW HAMPSHIRE
PUBLIC UTILITIES COMMISSION**

DE 20-170

Electric Distribution Utilities Electric Vehicle Time of Use Rates

Order Approving Electric Vehicle Time of Use Rates

O R D E R N O. 26,604

April 7, 2022

On August 11, 2018, SB 575, a bill establishing requirements for, and restrictions on, electric vehicle charging stations, went into effect. SB 575 required the Commission to determine whether certain rate designs should be implemented for electric vehicle charging stations, specifically requiring the Commission to determine whether to implement electric vehicle time of use rates for residential and commercial customers. In this order the Commission approves time of use rates for separately metered electric vehicle charging stations. The rates are designed to promote implementation of electric vehicle charging stations in New Hampshire.

I. PROCEDURAL HISTORY

On November 9, 2020, the Commission held a prehearing conference. Appearances were entered by Public Service Company of New Hampshire d/b/a Eversource Energy (Eversource), Liberty Utilities (Granite State Electric) Corp. d/b/a Liberty Utilities (Liberty), Unitil Energy Systems, Inc. (Unitil), the Office of the Consumer Advocate (OCA), and Department of Energy Staff (NHDOE). The Commission granted petitions to intervene filed by: Clean Energy New Hampshire (Clean Energy); New England Convenience Store & Energy Marketers Association, Inc. (NECS); Conservation Law Foundation (CLF); ChargePoint, Inc. (Chargepoint); the New

Hampshire Department of Environmental Services (NHDES); and the City of Lebanon (Lebanon).

Parties filed comments on December 9, 2020, and reply comments on January 8, 2021. The electric utilities filed testimony on June 16, 2021. The intervenors filed testimony on October 15, 2021. The electric utilities filed rebuttal testimony on December 10, 2021. On January 18, 2022, Liberty, Unitil, NHDES and NHDOE, filed a partial settlement agreement (Settlement) concerning agreed-upon rate design for the TOU rates for Liberty and Unitil. A hearing was held on January 25, and 28, 2022. The Commission issued record requests on February 1, 2022. The parties filed written closing statements and responses to record requests on February 4, 2022.

II. BACKGROUND

On August 18, 2020, the Commission issued Order No. 26,394 in Docket IR 20-004, requiring that a new proceeding be opened to consider utility-specific electric vehicle time of use (EV TOU) rate proposals, to be filed on a timeline developed by NHDOE. That order also directed NHDOE to further develop the alternative metering feasibility assessment concept described in Order No. 26,394, with the input of the parties to the new proceeding. The Commission commenced this proceeding to facilitate the development and subsequent review of utility-specific EV TOU rate proposals.

III. POSITIONS OF THE PARTIES

A. LIBERTY

Liberty has an existing electric vehicle charging rate for residential customers approved in the prior rate case docket, DE 19-064. The customer charge is \$11.62 per month and the tariff provides for seasonal time varying rates with three periods for distribution, transmission, and default service rates. The rate is available to

residential customers with separately metered EV charging equipment. See Tariff 21 at 123. As a result, Liberty's testimony in this instant docket covered only small commercial applications and high demand draw commercial applications. Liberty proposed two rates, depending on the demand. The first is Rate EV-L for demand 200 kW and greater. The second is Rate EV-M for demands 20 kW to 200 kW. Each rate is in line with Liberty's current commercial and industrial rates, G-1 and G-2, respectively.

The calculation of the rates started with reviewing the revenue requirement currently approved for rates G-1 and G-2 in Docket No. DE 19-064. Both rates have customer, demand, and volumetric charges. The design of these existing rates is such that the demand charges¹ recover the majority of the costs of serving customers in these rate classes, rather than the volumetric charges. To provide consistency to the volumetric charges, the rates calculated for Rate EV-L and EV-M provide for the revenue requirement of Rates G-1 and G-2 to be heavily weighted on the volumetric kWh charge. The revenue requirement for both EV rates provides for 85 percent to volumetric kWh, 5 percent to the customer charge, and 10 percent to the demand charge.

By making this change, the cost to the customer owning the stations will be significantly less on their monthly bill than under current G-1 and G-2 rates. Rate EV-M provides for service for installations of 72 kW or less. This aligns with single phase service requirements in Liberty's specifications for electrical standards. Rate

¹ Demand represents the rate of power (voltage x current) consumption at a given moment in time and is measured in kW (real power) or kVA (apparent power), depending on the metered data available. Demand is billed separately for commercial customers based on the peak demand in a given time period. Those charges are referred to as demand charges. Commercial customers also pay a rate based on consumption, kWh, over the billing period.

EV-L provides for installations greater than 72 kW to align with three phase service requirements in Liberty's specifications for electrical standards, as well. Given that the revenues from the proposed rates are lower versus the standard commercial rates, as a result of the change to the allocation of costs between kWh, kW, and the customer charge, the customer will receive a reduced revenue credit towards the costs for the make ready work necessary for service, but the customer's monthly bill will be lower.² Liberty's proposed rates are not time varied.

Liberty joined the Settlement and therefore modified its original TOU rate design.

B. Unitil

Unitil requested approval of three programs: (1) a suite of time of use ("TOU") rate offerings, (2) an electric vehicle infrastructure development program ("EV Program"), and (3) a Marketing, Communications, and Education ("MC&E") Plan to increase customer awareness of electric vehicles ("EVs") and engage with customers about the TOU rates and EV Program offerings. The EV Program offerings included: (1) domestic "whole-house" TOU (TOU-D); (2) domestic EV TOU (TOU-EV-D); (3) small general service EV TOU (TOU-EV-G-2); and (4) large general service EV TOU (TOU-EV-G1).

Unitil posited that the two main principles of EV-specific rate design are: (1) rate design should encourage efficient usage of existing assets rather than undergoing expensive distribution system upgrades to serve EVs, and (2) bill increases due to EV

² Liberty requires the customer to pay some of the costs of installing service for the EV charging facility. Those costs are referred to as CIAC or make ready. The credit toward make ready costs is the amount of those costs that Liberty will be responsible for. That amount is a credit against the make ready costs.

infrastructure upgrades should be kept to a minimum for customers who do not own EVs.

Domestic EV TOU (TOU-EV-D)

This rate has three time periods— peak, mid-peak and off-peak—and has winter and summer rates. All three billing components—distribution, transmission and energy supply—are time varied, there is no demand charge, and the ratio of peak to off-peak rates is 3:1. Customers must be separately metered to be on this rate.

Small General Service EV TOU (TOU-EV-G2)

The rate is tailored to serve up to 200 kVA of load, or approximately up to ten Level 2 chargers, each charging at 19.2 kW peak. This rate has three time periods— peak, mid-peak, and off-peak—and has winter and summer rates. All three billing components—distribution, transmission and energy supply—are time varied, and customers must be separately metered. A temporary demand charge holiday is offered for these customers at 75 percent for year 1, 50 percent for year 2, 25 percent for year 3, and ending thereafter.

Large General Service EV TOU (TOU-EV-G1)

The “high demand draw” rate is tailored to serve customers with more than 200 kVA of load, enabling sites with clustered Level 2 and Direct Current Fast Chargers (DCFC) which currently range from 50 kW to 350 kW per charger. This rate has three time periods—peak, mid-peak, and off-peak—and has winter and summer rates. All three billing components—distribution, transmission and energy supply—are time varied, and customers must be separately metered. A temporary demand charge holiday is offered for these customers at 75 percent for year 1, 50 percent for year 2, 25 percent for year 3, and ending thereafter.

Unitil joined the Settlement and therefore moved away from its original TOU rate design.

C. Eversource

Eversource developed a residential EV TOU rate consisting of time-differentiated rates for the distribution, transmission, and company-provided energy service components of rates. TOU pricing for peak, mid-peak, and off-peak periods were determined, based on the marginal cost of providing service for each of these components. Eversource aligned the cost of service and rate design of each component to achieve a five-hour peak period from 2 pm – 7pm, weekdays (excluding holidays), a daily mid-peak period from 7 am through 11 pm (excluding peak periods), and a daily off-peak from 11 pm each day through 7 am the following day.

The proposed Residential EV TOU Rate (Rate R-EV) assumes a residential customer's charging equipment will be separately metered but connected to the same service as the primary residence. This design aligns with marginal costs across all three components of service to achieve a greater than 3:1 peak/off-peak ratio. Eversource estimated it would need to invest approximately \$9 million in modifications to existing enterprise billing data management and other enterprise systems to make the proposed EV TOU rate available to customers. Completion of anticipated work could also require a lead time of up to 30 months following the Commission's approval of a separately metered EV TOU rate.

Eversource analyzed the reduction in a residential EV customer's bill by moving to a TOU rate and charging only during the off-peak period. According to Eversource, there are clear savings due to the volumetric TOU rate differential, but those savings are offset by fixed costs, relating to billing, data management and additional metering, needed to implement a separate TOU rate.

Eversource stated that the net savings from the EV TOU rate design appear to be relatively small compared with other rate alternatives such as managed charging. Eversource argued that the additional metering and billing requirements and costs to implement the EV TOU rate need to be weighed against savings that are more directly and readily achievable through the managed charging program.

According to Eversource, although its AMR meters are capable of operating in an AMI mode, Eversource lacks the infrastructure for interval data and billing to make use of the interval capability. Eversource's existing rate R-OTOD, Residential Time-of-Day Service is an available option for customers who may seek a time-differentiated rate for predominantly off-peak EV charging. This rate offers two time periods, peak and off-peak. The Company is separately filing proposed amendments to this rate pursuant the Docket No. DE 19-057 settlement agreement that may further enhance its suitability for EV customers and alignment with SB 575.

Eversource's proposed load management program would provide annual cash incentives of up to \$150 to customers who agree to allow the Company and its EV charging partners to directly control EV charging activity through networked electric vehicle supply equipment (EVSE). Through direct load control, the burden to avoid charging during peak periods would be taken off customers and they would receive a financial benefit similar to, but likely greater than, what may be sought through a separately metered TOU rate.

Based on an assessment of the Company's current enterprise systems, Eversource proposed that the near-term launch of an EV managed charging initiative is the most cost-effective starting point for what is expected to be an ongoing evolution and expansion of EV customer options as adoption grows and technological advances continue.

Eversource expects that future comprehensive updates to the Company's billing, data management, and other enterprise systems will likely expand the rate options it can provide to all customers, including those with EVs. Nonetheless, Eversource did not recommend the modification of current enterprise systems for the narrow purpose of offering EV TOU rates.

In its closing, Eversource stated that RSA 236:133, V(b) directs the Commission to “[c]onsider and determine whether it is appropriate to implement electric vehicle time of use rates for residential and commercial customers” and that “[t]he standards for determination of such implementation shall include consideration [of] 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.” Eversource argued that EV time of use rates are not presently the most practical or effective solution for customers when those rates are unlikely to be of interest to customers and when lower cost and more effective alternatives are available. Eversource supported its proposed demand charge alternative rate in Docket No. DE 21-078 as a more suitable offering to overcome barriers to EV charging infrastructure development throughout the state.

In response to a record request identified as Exhibit 33, Eversource prepared a high-level, estimate of the work required and cost to develop service plan options within its C2 billing system to implement a new, two-period residential time-of-use rate option (based on monthly peak and off-peak period kWh consumption), for three components of service: distribution, transmission, and company-supplied energy service. The Company estimates that work would involve design, build, test and deployment under its C2 system and take approximately 6 months. Eversource's estimated cost is approximately \$600,000. For this estimate, Eversource assumed that

a scalar time-of-use meter would be utilized, and that competitive supply service would not be time-differentiated.

D. Clean Energy and CLF

Clean Energy and CLF urged rejection of Liberty's and Unitil's demand charge proposal and recommended instead a 10-year demand charge holiday for EV rate designs or until DCFC utilization factors reach 30 percent.

Clean Energy and CLF asked the Commission to require the utilities to collect information regarding EV adoption and usage rates to help inform the pace of evolution for rate design for EVs until such time as utilization rates for DCFCs reach a level at which demand charges can be recovered across more usage. Clean Energy and CLF suggested that the utilities should make available public hosting capacity maps to help identify optimal locations for the siting of EV charging infrastructure, including DCFCs. The parties asked the Commission to develop a state-wide EV rate design policy and implementations, including prohibiting demand charges for EV charging, regardless of charging level, for a period of at least 10 years, or upon DCFC reaching a utilization factor of 30 percent across their service territories, to minimize the potential for rate shock at site host locations, and to provide certainty to the emerging EV marketplace in New Hampshire.

Clean Energy and CLF recommended a different approach for DCFCs, which are less elastic than other use cases, stating that an alternative to a time of use rate may be more appropriate. Rate designs that make the installation of DCFCs harder will delay adoption of EVs. The parties recommended that Unitil's rate design not apply to DCFCs until higher utilization rates are realized by these locations, consistent with the discussion on demand charges.

Clean Energy and CLF opposed the Eversource managed charging option. They observed that a managed charging program should be treated more like a competitive service offering rather than as the default option for Eversource's customers. If the Commission were to approve Eversource's proposal, then Eversource would have a competitive advantage against other providers. CLF and Clean Energy argue that the Commission should rely on rate design options as the means to promote EV adoption across the state. To the extent the utility and any other providers then want to offer managed charging services on top of that retail rate, those offerings should be competitive.

The parties supported the Eversource TOU rate except that they found the mid-peak price (from 7 am to 2 pm and 7 pm to 11 pm every weekday and from 7 am to 11 pm on weekends) too long. Clean Energy and CLF claimed that regardless of Eversource's claim that the rate design was based on marginal costs, the long mid-peak period results in a sub-optimal time of use rate proposal, when the Commission should be lowering barriers to adoption. They recommended reducing the mid-peak time period to 7 pm to 9 pm on weekdays and making all weekends and holidays off-peak. They pointed out inconsistencies between the Settlement proposal by Liberty and Unitil compared with the Eversource proposal. The lack of consistency between utility proposals could act as a barrier to EV adoption. If each utility implemented a time of use rate with similar program design, then customer confusion would be reduced, and market entrants could standardize rate information.

Regarding Eversource's claims that it would cost \$9 million to implement the proposed three period TOU rates, Clean Energy and CLF observed that it is important to differentiate between two issues: metering and generating a bill. Eversource currently offers an interval meter for customers on their existing time of use rate tariff,

but the rate is a two-part rate (peak and off-peak) whereas the EV rate will have three components. If Eversource's interval metering solution for its residential time of use rate does not work with the Itron system installed by Eversource, according to Clean Energy and CLF, this is not an EV implementation issue, this is an Eversource business issue, and EV customers should not be penalized for Eversource's technological problems.

Clean Energy and CLF questioned why Eversource is installing meters that are not interoperable with other components of its business, including its metering communication infrastructure and its billing system. Thus, if Eversource has a communications network that is not compatible, then Eversource should have to pay for this fix, not customers.

Settlement

CLF supported the residential TOU rate in the Settlement, but objects to the EV commercial rate provisions. Regarding commercial rates, the Settlement proposes time of use rates that would maintain 50 percent of the demand charge for the analogous commercial customer rate class. According to CLF, at low utilization rates, demand charges act as a penalty for installing EV charging infrastructure, especially DCFC. CLF urges the Commission to reject the demand charge alternative proposal in the Settlement and require the utilities to develop demand charge alternatives that eliminate all or most demand charges.

Clean Energy also supported the residential TOU and opposes the EV commercial TOU rates and demand charge proposals included in the Settlement. At present time, with relatively few EVs on the road, a DCFC may be used by only a few vehicles each day, or in remote areas, a few vehicles each week. Many DCFC installations require a three-phase 480-volt AC electric circuit. Most existing DCFC

stations are 50 kilowatts (KW) with much faster DCFC stations, including ones that deliver up to 350 KW starting to be installed. Draws of this magnitude can result in significant demand charges, which at low utilization rates are spread across just a few users. In these scenarios, demand charges can be responsible for over 90 percent of electricity costs and can make the cost per unit of charge (kwh or time) unreasonable. Such rates either discourage site hosts from installing chargers, or drivers from using the station.

E. ChargePoint

ChargePoint provides charging network services and data-driven, cloud-enabled capabilities that allow site hosts to manage their charging assets and optimize services. ChargePoint also sells EV charging equipment for numerous charging arrangements, from home and multifamily uses to chargers for workplaces, hospitality, retail, and transport fleet uses.

ChargePoint supports alternative rate designs that contain alternatives to demand charges in any high demand draw EV TOU rate proposals, developed for public charging stations as well as EV fleet charging. According to ChargePoint, demand charges remain a significant operating cost barrier to public EV infrastructure deployment. Implementing appropriate rate designs that eliminate, defer, or reduce demand charges, is key to unlocking increased investment in the EV charging.

In response to Liberty's suggestion that it will install four Level 2 charging stations at Tuscan Village in order to gather data, ChargePoint noted that it is not necessary for Liberty to own charging stations in order to obtain data regarding EV charging. According to ChargePoint, Liberty currently has access to any EV charging load data taking place on separately metered third-party owned EV charging stations

in its service territory through the utility owned meter. Additionally, Liberty could also access EV charging load data through a utility incentive program (such as make-ready) where the Company requires customers to share certain charging data with the utility. ChargePoint noted that this is a common requirement for utility incentive programs across the country.

ChargePoint stated that Until has proposed certain EV charging data sharing requirements to qualify for incentives in its EV incentive program proposed in DE 21-030. Similarly, as part of its proposed make-ready program, Eversource expects NHDES to require qualified site hosts to collect and report certain EV charging data. To clarify any misconception, ChargePoint recommended that the Commission determine that utility ownership of EV charging stations is not required in order for utilities to collect EV charging data.

ChargePoint acknowledged that Eversource's current billing and other enterprise systems may complicate near-term implementation of an EV TOU rate. Therefore, ChargePoint supported Eversource's proposal to implement a managed charging program. ChargePoint was encouraged by Eversource's expectation that there will be more opportunities to offer different rate options to EV customers in the future as part of more comprehensive updates to the Company's enterprise billing and data management systems. ChargePoint urged the Commission and Eversource to continue exploring methods to implement EV TOU rates in the near term. To this end, the Commission and the Company should consider the use of alternative metering such as the embedded metering capabilities of EV charging stations, or through a third party distributed energy management systems (DERMS) provider.

According to ChargePoint, the Settlement may present an incremental improvement on existing rates available to Until's and Liberty's customers and it is

possible that certain site hosts may opt to take service under the Commercial Customer EV TOU rates described in the Settlement, if available.

Nonetheless, ChargePoint urged the Commission to view this docket as a “starting point” and continue to encourage the utilities to develop additional EV rate options for their customers, including commercial non-TOU rates that allow EV site hosts to operate economically and sustainably in New Hampshire. ChargePoint continued to argue that TOU rates are not a good fit for DCFC units. ChargePoint recommended that in future dockets the Commission should separate its consideration of DCFC stations from other charging uses and evaluate alternatives to TOU rates for those stations.

F. City of Lebanon

The City of Lebanon took the position that Liberty’s proposed rate design for commercial electric vehicle charging station customers, proposed Rates EV-L and EV-M, does not reflect basic cost causation principles of regulated rate design and risks undue cost shifting to other customers. While the City appreciated Liberty’s effort to minimize the use of demand charges, it believed that the proposed commercial EV TOU tariff did not comply with the Commission guidance for EV charging rate design in Order 26,394.

According to the City, Liberty’s proposed largely flat volumetric rate, with no coincident peak demand charge, does not reflect any temporal price signal. Growing coincident peak demands require new investment in capacity to meet those peaks. Without temporal price signals that reflect when demand and costs are high, the City argued that customers have no incentive to shift flexible loads, such as a substantial portion of EV charging, to times when underlying demand and costs are lower.

G. Town of Derry

The Town of Derry (Derry) filed comments on the Settlement. Derry is a municipality which has implemented Level 2 chargers on behalf of its residents to attract tourists to its downtown area. The four Level 2 chargers were operational from 2018 to the beginning of 2021. Derry echoed the points raised by CLF and Clean Energy in their comments. Derry also opposed the inclusion of demand charges to a nascent industry and claimed demand charges will harm ratepayers as well as NH tourism.

H. NECS

NECS members own thousands of potential host locations along New England's most traveled highways and roadways; and will remain arguably the most desirable locations for hosting DCFC. One of several barriers to private investment installing DCFC's are the resultant electric charges, charging equipment costs, and upgrades necessary to install and operate these high draw charging systems, and specifically the host location responsibility for demand charges. According to NECS, users of publicly accessible charging equipment cannot respond to rate design signals provided by application of TOU rates. As a result, NESC opposes the demand charge proposals for commercial customers as well as the TOU rate design contained in the Settlement.

I. OCA

In its closing statement OCA supported the Settlement stating that it is consistent with the rate design principles laid out in Order No. 26,394 as the rates in the Settlement signal the advantage of shifting load from peak to off-peak periods to promote efficiency system wide and curtail increased peak demand as the EV market grows in New Hampshire. OCA recommended the Commission direct Eversource to meaningfully embrace a two-period time varying rate for residential customers, a

manually billed three-period time of use rate consistent with the Settlement methodology for commercial customers, and to develop an alternative metering pilot that would utilize the metering embedded in chargers and vehicles for the purposes of offering time varying rates.

J. NHDOE

In its initial testimony, NHDOE recommended that all three utilities propose an EV TOU alternative to current demand charge-based rates for high-demand draw commercial EV charging applications. In the absence of demand charges, a TOU rate is more consistent with the marginal cost principles, while minimizing cross subsidies. Utilities' arguments that commercial EV charging applications are not ideal for TOU rates are not persuasive to NHDOE. Unless utilities design rates reflecting efficient and marginal cost-based price signals, market participants will not respond with innovation. The State of New Hampshire does not have an official transportation electrification public policy goal, therefore, according to NHDOE, there is no public policy basis for creating cross-subsidies in the rate design for commercial charging applications at this time.

Eversource

Given that Eversource is not able to implement a three-period EV TOU rate for its residential customers at this time, NHDOE recommended that the two-period domestic TOU rate be the transitional rate for these customers. A seasonally differentiated two-period rate with a shorter peak window that reflects the marginal facility costs, and a lower customer charge will provide stronger price signals and is more likely to be attractive to customers both with and without EVs. Eversource's proposed high draw demand alternative rate to demand charges is revenue neutral at the 10 percent station utilization level for which it was designed. While this rate is

designed to recover at least a portion of demand related revenues in the form of volumetric charges, it will still lead to cross-subsidies. Moreover, in NHDOE's view, this rate does not provide marginal cost-based price signals for a more efficient use of system assets. NHDOE recommended that Eversource design an EV TOU rate as an alternative to demand charges, using the approach utilized in the design of NHDOE's illustrative EV TOU rate for Eversource.

In its closing statement, the NHDOE recommended that the Commission direct Eversource to adopt a two-period time-varying rate for residential customers and a manually billed three-period time of use rate using a methodology consistent with the Settlement for commercial customers. NHDOE further recommended that the Commission direct Eversource to develop an alternative metering pilot that would utilize metering embedded in chargers and vehicles for the purpose of offering time varying rates.

According to NHDOE, Eversource's estimate of \$9 million to implement a three-period seasonal TOU is based on several flawed assumptions and should be rejected. First, Eversource's \$9 million cost estimate includes offering time-varying rates to competitive suppliers, a capability that Eversource testified at hearing would represent a significant portion of the cost estimate. Such an offering to competitive suppliers is not required, and through the record request identified as Exhibit 33, the Commission has asked Eversource to provide a more realistic cost estimate for implementing a rate similar to the rate designed by Eversource but based on the two-period design Eversource already offers. The less complex nature of this two-period offering, plus the non-reliance on Electronic Data Interchange (EDI) system necessary to offer time-varying competitive supply, should result in a cost estimate that is much more reasonable.

If it does not result in a cost estimate that is acceptable to the Commission, NHDOE recommends that the Commission direct Eversource to work with NHDOE, OCA, and other parties to develop and issue an RFP for a third-party to provide billing and metering services utilizing charger-embedded metering or vehicle telemetry. NHDOE observed that Eversource's load management proposal would utilize charger-embedded metering and rely on third party software as a service provider to verify customer load curtailment and provide customer incentives. The Company already uses customer-owned meters in other applications at its affiliated utilities. NHDOE argues that there is no reason that same model should not apply to time of use rates. If Eversource cannot embrace alternative metering and third-party billing offerings, then NHDOE suggested that this is a function the Commission should direct be opened to competition from private market actors

Liberty and Unitil Settlement

Although NHDOE initially developed model methodology and TOU rate designs for EV charging for Liberty and Unitil, NHDOE ultimately supported the Settlement. The NHDOE recommended approval of the Settlement and asserted that the rate development methodology described in the Settlement is grounded in cost causation, sends price signals that will encourage electric vehicle owners to shift load to times when charging results in fewer system costs, and will result in savings for all ratepayers. The NHDOE argued that the Settlement represents an innovative time-varying rate design methodology with a balanced approach to the issue of demand charges, and a demonstrated commitment to alternative metering.

NHDOE recommended that all three utilities offer a customer contributed option for the additional meter and that each utility develop a marketing plan. NHDOE further recommend that each utility develop an alternative metering feasibility pilot,

and that the Commission require annual reports from the utilities regarding the rates and pilots at issue in this proceeding.

IV. SETTLEMENT FOR LIBERTY AND UNITIL

The following section is a summary of the pertinent terms of the Settlement. The Settlement does not address residential EV TOU rates for Liberty because those rates are already approved and are in effect. See Section II.A. above.

A. Unitil Residential EV TOU Rate

Unitil's rate TOU-EV-D should be implemented, subject to the following clarifications.

1. Customer Charge

For Unitil, the monthly customer charge should be set at \$5.26.

2. Time Varying Periods

The separately metered residential electric vehicle charging rates shall have three time of use periods (off-peak, mid-peak, and peak). The peak period shall be no more than five hours in duration, and the ratio between the total paid by a customer \$/kWh during peak periods to the \$/kWh paid by a customer during off periods (peak to off-peak ratio or ratio) shall be no less than 3:1 on average annually, consistent with Order No. 26,394.

3. Transmission and Generation Rate Development Method

To develop the transmission and generation rate peak, mid-peak, and off-peak time of use ratios for application to future rate changes, Unitil's proposed methodology, should be adopted subject to the following clarifications:

- (1) To calculate the generation revenue requirement, the Company shall differentiate between those generation costs related to ISO-NE's Forward Capacity Market (FCM) and costs unrelated to the FCM, the former of which

is allocated entirely to summer peak hours; and

- (2) The transmission revenue requirement shall be based on the most recent ten-year (2010-2020) period of ISO-NE monthly peaks rather than the most recent twenty-year period (2000-2020).

4. Distribution Rate Development Method

To develop the distribution rate peak, mid-peak, and off-peak time of use ratios for application to future rate changes, the NHDOE's proposed method is adopted. That method is as follows:

- (1) the total current revenues for the class are first reduced by the costs recovered through the fixed monthly customer charge to derive the costs to be recovered through the time-varying kWh rate;
- (2) the distribution costs are calculated each hour within the year by taking the total system load from that hour squared and then calculating the percentage of the total system load squared that that hour represents for the whole year;
- (3) the resulting hourly percentage is then multiplied by the class's volumetric portion of distribution revenue to derive the monetary portion each hour represents of that total volumetric revenue;
- (4) those hourly monetary portions are then summed within each TOU period to represent the distribution revenue requirement recovered by TOU rates; and
- (5) the resulting TOU period distribution revenue requirement is then divided by the class's energy usage in each TOU period to derive a time-period specific distribution TOU rate (\$/kWh).

B. Commercial Customer EV TOU Rates Liberty and Unitil

Unitil's rate TOU-EV-G1 and TOU-EV-G2, and Liberty's rate EV-M and EV-L, should be implemented, subject to the following clarifications:

1. Eligibility Requirements

At least 90 percent of a customer's individually metered load, as projected at the time the utility conducts its calculation relating to the customer contribution in aid of construction, must be utilized for EV charging. Customers whose electric vehicle charging load will represent less than 90 percent of the load served by the customer meter shall be ineligible for service under this rate.

2. Optionality

Customers may opt-in to the appropriate commercial customer electric vehicle rate for their demand, and may opt-out at any time, but shall not be eligible to return to the rate for a period of 12 months once they have opted out.

3. Customer Charge

The customer charge shall be set at the customer charge for the analogous commercial customer rate class.

4. Time Varying Periods

At the time of initial offering, and for the purpose of future updates, separately metered commercial customer EV charging rates shall have three time of use periods (off-peak, mid-peak, and peak). The peak period shall be no more than five hours in duration.

5. Time Varying Components

The separately metered commercial customer EV charging rates shall offer time varying transmission, distribution, and generation components, except that Unitil is

not offering a time-based generation component for its G-1 rate class. The time varying generation component shall be imputed to the customer by the utility from the default service load. In instances where a utility views the imputed time-varying generation rate for high demand EV customers as resulting in an unreasonable cost shift to other large default service customers, that utility may choose not to offer an imputed time varying generation rate.

6. Rate Development Method, Demand Charge, and Revenue Neutrality

The transmission, generation, and distribution rate peak, mid-peak, and off-peak TOU ratios shall be developed in a manner similar to that used to develop the Unitil residential TOU rate described above, except that those rates will maintain a demand charge representing 50 percent of the demand charge for the analogous commercial customer rate class. The TOU rate is developed using the analogous commercial customer rate class revenue requirement (as a separate class for commercial EV charging customers does not exist at this time). As such, it does not recover sufficient revenues from low utilization commercial EV charging customers. Maintaining 50 percent of demand charge is intended to alleviate the distribution revenue shortfall created by the low utilization stations. The revenue neutrality model assumes a charging station utilization rate of five percent with an annual consumption allocation of 50 percent during the peak period, 30 percent during the mid-peak period, and 20 percent during the off-peak period. The parties stipulate and agree these assumptions are reasonable until they can be updated based on actual observed data for EV chargers that receive time-varying price signals.

C. Other Matters

1. Implementation Date

The rates shall take effect June 1, 2022, or within 90 days of a Commission

Order in this proceeding, whichever is later, to allow for billing system programming and testing. If either Unitil or Liberty is unable to offer the rates described within 90 days, then that Company at issue shall file notification with the Commission providing explanation for the delay.

2. Marketing

The Companies agree to pursue targeted marketing opportunities, such as through charging station vendor relationships and EV manufacturer relationships, which may allow the Companies to target residential EV TOU rate offerings toward existing EV owners within their territory.

3. Reporting

Unitil and Liberty shall separately file reports at 12 months, and then again at 24 months, after a Commission Order approving the rates described herein, describing marketing efforts to date, the number of customers enrolled per rate, the average load shape per rate, and the average utilization rate per rate class.

4. Annual Rate Update

Unitil and Liberty shall update the generation, distribution and transmission rates within their separately metered EV TOU rates based upon default and transmission service cost filings, and any other applicable rate changes, consistent with the ratios resulting from the rate development method set forth above. The rates initially developed using the method set forth above will be used to calculate peak, mid-peak, and off-peak time of use ratios for the summer and winter seasons.

5. Update Rate and Class Revenue Requirement to Actual Cost of Service

At the time of each Company's next rate case, separately metered EV classes shall be treated as distinct classes for the purpose of distribution cost allocation and marginal cost determinations, to the extent feasible given the number of customers

and load enrolled in each class at that time.

6. Alternative Metering Feasibility Assessment

If approved by the Commission in Docket No. DE 21-030, Unitil shall file a report with the results of its proposed alternative metering feasibility assessment pilot once at least 50 customers have enrolled and at least six months of usage data have been collected. The parties agree to review data and analysis from the Unitil pilot once completed, and then hold a technical session to consider pilot expansion or full program offerings.

V. COMMISSION ANALYSIS

a. Settlement Liberty and Unitil EV TOU Rates

Unless precluded by law, disposition may be made of any contested case at any time prior to the entry of a final decision or order. RSA 541-A:31, V(a). Pursuant to N.H. Admin. R. Puc 203.20(b), the Commission shall approve the disposition of any contested case by stipulation if it determines that the result is just and reasonable and serves the public interest. The Commission encourages parties to settle disagreements through negotiation and compromise because it is an opportunity for creative problem solving, allows parties to reach a result in line with their expectations, and is often a better alternative to litigation. *Hampstead Area Water Company, Inc.*, Order No. 26,131 at 3 (May 3, 2018). Nonetheless, the Commission cannot approve a settlement, even when all parties agree, without independently determining that the result comports with applicable standards. *Id.*

In considering the proposal for EV TOU rates contained in the Settlement we are guided by the same rate making principles we approved in Order No. 26,394.

We find that cost of service rate design is appropriate for electric vehicle supply equipment (EVSE), subject to the qualifications below concerning the use of marginal cost methodology for initial rates. The Commission has generally designed rates based primarily on marginal cost of service, to

ensure rates recover costs associated with serving a particular customer class and price signals are reflective of that class's long run marginal costs, while using embedded cost of service studies to allocate the revenue requirement. *See Re Pub. Serv. Co. of New Hampshire*, 77 NH PUC 276, 285 (June 8, 1992) (cost of service studies described as the foundation of rate design). Order No. 26,394 at 4.

We find that the time-varying rate methodology described in the Settlement has the potential to limit system-related costs caused by both residential and commercial EV charging by sending price signals to encourage charging during times when system capacity is abundant and energy costs are low, while also discouraging charging when system capacity is limited, and energy costs are high. Without such price signals, EV charging has the potential to increase peak demand and the need for capacity-related investments, increasing system costs to the detriment of those ratepayers who choose not to drive, or cannot afford to purchase, an electric vehicle.

We recognize that under current rate designs, revenues from New Hampshire commercial customers are primarily collected using demand charges. Demand charges are a rate design which effectively captures the distribution costs caused by those customers. The Settlement recommends a 50 percent reduction in demand charges. The Commission's record requests, Exhibits 27 and 28 examined alternative demand charge reductions of 60 percent and 75 percent. The responses demonstrated that the volumetric charges increase only modestly, thus not moving the needle much on efficient and marginal cost-based price signals compared to the 50 percent reduction recommended in the Settlement. We find that the Settlement's 50 percent demand charge reduction along with the proposed TOU rates strike an appropriate balance between the objective of removing unnecessary barriers to EV deployment, and the need to limit potential cross subsidization by imposing costs on those customers causing the costs. We will ask the utilities to report deployment of EV charging in their service territories as well as the load imposed by those facilities, as provided in the

Settlement, and will continue to consider whether the TOU rate design for EV charging provides an appropriate balance of customer interests. Therefore, we approve the provisions of the Settlement applicable to Unitil and Liberty.

b. Eversource EV TOU rates

In response to a record request (Exhibit 35) Eversource reduced its incentive from \$150 to \$100 per device. With that reduction, Eversource projects the total five-year cost of the offer would decline to \$835,750, down from the previously stated range of \$985,750 - \$1,368,250. Even after considering this improvement, we have decided, on balance, that Eversource's alternative load management approach should be left to the competitive market. Based upon Eversource's considerably lower estimated costs for a two-period TOU rate contained in Exhibit 33 (\$600,000 compared with \$9 million), we will require Eversource to adopt a two-period time-varying rate for residential customers. The time varying generation component will only be available to Eversource default service customers. To the extent similar billing or other system changes are required in Eversource's other utility jurisdictions, we would expect Eversource to appropriately allocate those costs resulting in lower costs to New Hampshire ratepayers. Further, we direct Eversource to adopt a manually billed three-period TOU rate consistent with the Settlement methodology for commercial customers. We also require Eversource to develop an alternative metering pilot proposal that will utilize metering embedded in chargers and vehicles for the purpose of offering time varying rates.

c. Settlement Provisions Applicable to all Utilities

Finally, we will require all three Utilities to undertake the marketing, reporting, annual rate updates, and updates of rate and class revenue requirements for EV TOU rates to actual cost of service in their next rate cases, as provided in the Settlement.

d. Alternative Metering Feasibility Assessment by Unitil

If approved by the Commission in Docket No. DE 21-030, Unitil shall file a report with the results of its proposed alternative metering feasibility assessment pilot once at least 50 customers have enrolled and at least six months of usage data have been collected, as required by the Settlement.

Based upon the foregoing, it is hereby

ORDERED, the Settlement is approved; and it is

FURTHER ORDERED, that Liberty and Unitil shall file conforming tariffs within 90 days of this order; and it is

FURTHER ORDERED, that Eversource shall develop proposals for a two-period TOU rate for separately metered EV charging residential customers and a three-period TOU rate for separately metered EV charging commercial customers, and file those proposed rates with the Commission within 90 days of this order, together with estimates of costs to implement, as discussed herein; and it is

FURTHER ORDERED, that Eversource shall conform to the provisions of the Settlement dealing with marketing, annual reporting, annual rate updates and cost of service studies; and it is

FURTHER ORDERED, that Eversource shall develop an alternative metering feasibility assessment pilot proposal and submit it to the Commission within six months of this order.

By order of the Public Utilities Commission of New Hampshire this seventh day of April, 2022.



Daniel C. Goldner

Chairman



Pradip Chattopadhyay

Commissioner



F. Anne Ross

Commissioner

Service List - Docket Related

Docket# : 20-170

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