

**STATE OF NEW HAMPSHIRE  
PUBLIC UTILITIES COMMISSION**

**DE 20-170**

**Electric Distribution Utilities Electric Vehicle Time of Use Rates**

**Order Denying Eversource Electric Vehicle Time of Use Rates**

**O R D E R N O. 26,797**

**March 31, 2023**

In this order the Commission rejects a three-period time of use rate for Eversource commercial customers with separately metered electric vehicle charging stations due to the high costs of manual billing. The Commission finds that Eversource's existing residential whole house two-period time of use rate will be sufficient to support electric vehicle charging in the near term and therefore does not approve the proposed new time of use rate for separately metered residential charging stations. The Commission also does not approve Eversource's proposed alternative metering pilot because of the high estimated cost. Instead, the Commission will monitor industry developments in both electric vehicle telemetry and charging station meter technology.

**I. PROCEDURAL HISTORY**

The Commission commenced this proceeding, DE 20-170, on September 16, 2020, to facilitate the development of utility-specific EV TOU rate proposals. On April 7, 2022, the Commission issued Order No. 26,604 in this docket. The order approved a settlement reached between the New Hampshire Department of Energy Staff (DOE), Unitil Energy Systems, Inc. (Unitil) and Liberty Utilities (Granite State Electric) Corp. d/b/a Liberty Utilities (Liberty).

The settlement established TOU rates for Unitil and Liberty using three time periods and two seasonal periods. The rates were adjusted for distribution, transmission and electric supply for residential and commercial EV charging customers. For commercial EV charging customers, Order No. 26,604 approved a 50 percent reduction of demand charges in addition to the TOU rates.

Order No. 26,604 further required that Public Service Company of New Hampshire d/b/a Eversource Energy (Eversource), file TOU rates for separately metered residential and commercial EV charging equipment. Finally, the Commission directed Eversource to design and file a proposed pilot program to test the accuracy of telemetric EV equipment and EV charging equipment in measuring the level of charge being sent to the EV.

On July 7, 2022, Eversource filed TOU tariffs for separately metered residential and commercial EV charging facilities. On October 7, 2022, Eversource filed its proposed metering pilot program. The Commission held a hearing on January 31, 2023, to consider the proposed tariffs and pilot program. Eversource filed responses to record requests on February 8, 2023.<sup>1</sup>

## **II. POSITIONS OF THE PARTIES**

### **A. Eversource**

#### Commercial TOU EV Proposal

In a record request identified as Exhibit 36, Eversource prepared a high-level, estimate of the time and cost to develop a manually billed three-period TOU EV rate for commercial customers consistent with the methodology set out in Order No. 26,604. Eversource estimates, that to develop the data entry and billing software and processes to support the three-period EV TOU Rate (Rate EV-1) for commercial

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<sup>1</sup> For additional procedural history please refer to Order No. 26,604 (April 7, 2022).

customers, would require expenditures of approximately \$500,000 and would take eight months. This rate would be manually billed and would offer time varying rates for distribution, transmission and Eversource electric supply. Commercial customers using competitive electric supply would only receive TOU rates for distribution and transmission.

#### Residential EV TOU Proposal

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 was designed for two periods, peak, and off-peak. The proposed rates are based on the marginal cost of providing service for each of these components. 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. Eversource stated that it would have to modify its existing enterprise billing data management and other enterprise systems to make the proposed two-period EV TOU rate available to residential customers. Completion of anticipated work could also require a lead time of 10 months following the Commission's approval of a separately metered EV TOU rate, or 6 months from the time of a resourced project kick-off meeting. The estimated cost would be approximately \$600,000. See Exhibit 36.

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, given resource considerations, Eversource did not recommend the modification of current enterprise systems for the narrow purpose of offering EV TOU rates.

### Existing Residential Whole House TOU Rate

Eversource's existing rate R-OTOD, Residential Time-of-Day Service is an available option for customers who seek a time-differentiated rate for predominantly off-peak EV charging. This rate offers two time periods, with peak and off-peak distribution and transmission energy charges. According to Eversource, the Company is separately filing proposed amendments to this rate pursuant to Docket No. DE 19-057 settlement agreement that may further enhance its suitability for EV customers and alignment with SB 575.

### Alternative Meter Testing Pilot

Eversource designed the pilot to determine the technical and practical feasibility of utilizing metering embedded in electric vehicle supply equipment (EVSE) and metering embedded in EVs for the purposes of offering EV only, time varying rates to residential customers. *See Exhibit 37.* The pilot would evaluate charging session data accuracy, data availability, and data security, of data provided by meters embedded in select EVSE and select EVs as compared with revenue-grade utility interval meters. Thus, the pilot would require a separate interval meter installed on the EV equipment to compare the utility meter output with the embedded meter output. Eversource estimated a 30-month timeline to develop the pilot and enroll up to 100 customers, including the 12-month-long pilot itself. The pilot proposal is contingent upon approval and implementation of the Company's proposed Rate R-EV.

For administrative efficiency and to expedite the pilot as much as possible, Eversource proposed conducting some of the required tasks simultaneously with implementation of Rate R-EV following Commission approval. The pilot includes work by an independent contractor at a cost of \$400,000. Eversource estimates the pilot costs at approximately \$511,000. *See Exhibit 37.* This cost would be in addition to the

\$600,000 cost estimate to develop and implement the residential EV TOU rate discussed above. See Exhibit 36.

### **B. Department of Environmental Services**

The Department of Environmental Services (DES) pointed to the benefits that increased EV adoption will have on air quality in New Hampshire. DES encouraged the design of EV TOU tariffs to allow flexibility and to consider future scalability to net metering of EV time-of-use interconnections. The DES suggested that in the future there may be opportunities to allow EV assets to be deployed to reduce electrical demand during times of peak loads.

### **C. DOE**

The DOE supported Eversource's proposed residential and commercial EV TOU rates as well as its pilot. Nonetheless, DOE noted that the proposed tariffs and pilot had higher costs than expected and encouraged Eversource to find ways to reduce costs.

### **D. ChargePoint**

ChargePoint described an industry standard for the metering accuracy embedded within the EVSE through National Institute of Standards and Technology's (NIST's) Handbook 44, Section 3.4. Section 3.4 has, up until January 1st of this year, been labeled as a "tentative code". As of January 1, 2023, that is now a permanent code.

Further, various states are taking actions to verify or certify electric vehicle charging embedded metering to meet those accuracy standards. ChargePoint noted that there are a number of pilots to determine the accuracy of EV charging embedded metering, in States such as Ohio, Minnesota, and California. ChargePoint noted that

California recently became the first state in the nation to enable widespread EVSE sub-metering across all utility service territories.

### **III. COMMISSION ANALYSIS**

#### **a. Eversource EV TOU rates**

The statute directs our inquiry in this docket:

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.”

In Order No. 26,604 we directed Eversource to propose EV TOU tariffs for separately metered residential and commercial customers and to develop a pilot to measure EVSE embedded meter accuracy. Order No. 26,604 at 26.

#### Commercial EV TOU Rate (Rate EV-1)

We will not approve Eversource’s proposed Commercial EV TOU three-period manually billed tariff (Rate EV-1). We appreciate Eversource’s attempt to propose a TOU EV rate that conforms to the rate design set out in the Settlement approved in Order No. 26,604. Nonetheless, we find that the \$500,000 cost of developing this tariff is high, and entails manual operations that cannot be justified when balanced against the potential overall benefits to the Eversource load shape as required by RSA 236:133, V(b).

#### Residential EV TOU Rate (Rate R-EV)

We find the cost of developing the data entry and billing software to support this proposed two-period EV TOU rate (R-EV rate) at \$600,000 is too high. Given that Eversource already offers a two-period time-varying rate for residential customers based on the whole house load, and given that the proposed Rate R-EV rate does not offer additional peak and off-peak rate advantages relative to the current whole house

rates, we cannot find sufficient benefit to support this additional cost of isolating the EV charging load for TOU treatment.

#### Managed Charging Proposals

The Commission has considered the Company's testimony raising concerns about implementing the Rate R-EV compared to other more readily implementable initiatives, such as managed charging. Eversource considered managed charging as a viable near-term solution that can advance the policy objectives of time-of-use rate and that "(m)anaged charging solutions can be implemented in a fairly short time period without the need for additional metering or costly upgrades to enterprise IT systems." Transcript of Hearing January 28, 2022, Morning Session at 22. The Commission agrees with the merits of demand management programs, however, managed charging does not fit within the scope of this docket which focuses on using TOU rates to incent customers to charge EVs during times of lower system demand.

We encourage Eversource to explore flexible solutions, including managed charging, for New Hampshire with best practices derived from Connecticut and Massachusetts, that especially target lowering coincident peak demand systemwide. We note that such managed charging may fit within Eversource's triennial plan in New Hampshire if it can be shown to be cost effective. It is apparently included in energy efficiency plans in Massachusetts. Exhibit 38; *see also*, RSA 374-F:3, X (includes demand management within the energy efficiency goals of electric restructuring).

Finally, the Commission observes that Eversource's limited capacity meters as well as its legacy back-office software are impediments to moving forward with more adaptable and dynamic rate designs. These impediments appear to lead Eversource to make investment choices that impose extremely high costs on regulatory attempts to better manage the electric distribution system. Eliminating those impediments

proactively will play a crucial role in pursuing opportunities to make cost-effective investment choices moving forward.

**b. Alternative Metering Feasibility Assessment Pilot**

The proposed pilot would be offered to residential customers and, based on Eversource's cost estimates, would cost \$1,111,000 (\$600,000 plus \$511,000). We find this cost to be too high when balanced against the limited data likely to be produced by the proposed pilot depending upon enrollment success.

While Eversource collaborates with a handful of charger manufacturers for the Pilot, it is unclear whether these chargers will be the only ones that will fill market needs in the future or whether further tests will then be warranted. We note further that, based on testimony by ChargePoint in this docket,

There is an industry standard for the metering accuracy embedded within the EVSE through NIST's Handbook 44, National Institute of Standards and Technology. It's Handbook Section 3.4, that has, up until January 1st of this year, been labeled as a "tentative code". As of January 1st of this year, that is now a permanent code. And various states are taking actions to verify or certify electric vehicle charging embedded metering to meet those accuracy standards. Transcript of Hearing, January 31, 2023, at 100-101,

Thus, as the market evolves, more testing and data will likely become available, enabling further consolidation of standards. Accordingly, the Commission considers that the Pilot will not generate useful results, relative to the costs involved, at this time.

**Based upon the foregoing, it is hereby**


**ORDERED**, that the proposed commercial rate EV-1 is DENIED; and it is

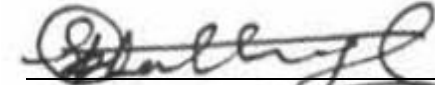
**FURTHER ORDERED**, that the proposed rate R-EV is DENIED; and it is

**FURTHER ORDERED**, that the proposed alternative metering feasibility assessment pilot is DENIED.



By order of the Public Utilities Commission of New Hampshire this thirty-first day of March, 2023.

  
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Daniel C. Goldner  
Chairman

  
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Pradip K. Chattopadhyay  
Commissioner

# Service List - Docket Related

Docket#: 20-170

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Email Addresses

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ClerksOffice@puc.nh.gov  
nhregulatory@eversource.com  
tga@tga3.com  
asbury@unitil.com  
clifton.below@lebanonNH.gov  
kevin.boughan@eversource.com  
campbellm@unitil.com  
davecaron@derrynh.org  
jessica.chiavara@eversource.com  
edward.davis@eversource.com  
matthew.deal@chargepoint.com  
mdean@mdeanlaw.net  
Energy-Litigation@energy.nh.gov  
sdunbar@keyesfox.com  
sam@cleanenergynh.org  
mikefowler@derrynh.org  
thomas.c.frantz@energy.nh.gov  
gouldingc@unitil.com  
Everett.Hammond@LebanonNH.gov  
maureen.karpf@libertyutilities.com  
Goksin.Kavlak@brattle.com  
george.knowles@eversource.com  
nkrakoff@clf.org  
donald.m.kreis@oca.nh.gov  
Philip.W.LaMoreaux@des.nh.gov  
heidi.w.lemay@energy.nh.gov  
marc.lemenager@eversource.com  
melansona@nhec.com  
Erica.Menard@libertyutilities.com  
kevin.miller@chargepoint.com  
jeff.moulton5@gmail.com  
Shaun.Mulholland@LebanonNH.gov  
nawazelski@unitil.com  
elizabeth.r.nixon@energy.nh.gov  
amanda.o.noonan@energy.nh.gov  
ocalitigation@oca.nh.gov  
rebecca.ohler@des.nh.gov

katherine.peters@eversource.com  
brian.rice@eversource.com  
agustin.ros@brattle.com  
Melissa.Samenfeld@libertyutilities.com  
sanem.sergici@brattle.com  
michael.sheehan@libertyutilities.com  
karen.sinville@libertyutilities.com  
chris@cleanenergyNH.org  
taylorp@unitil.com  
jennifer.ullram@eversource.com  
jvanrossum@clf.org  
nvijaykar@keyesfox.com  
chris@pluggedinstrategies.com  
craig.wright@des.nh.gov  
Matthew.C.Young@energy.nh.gov  
agilleo@greenlots.com  
tad.montgomery@LebanonNH.gov