

**THE STATE OF NEW HAMPSHIRE**  
**BEFORE THE NEW HAMPSHIRE PUBLIC UTILITIES COMMISSION**  
**JOINT REBUTTAL TESTIMONY OF**  
**DENNIS E. MOORE, BRIAN J. RICE, EDWARD A. DAVIS**  
**PUBLIC SERVICE COMPANY OF NEW HAMPSHIRE D/B/A EVERSOURCE**  
**ENERGY**  
**SEPERATELY-METERED ELECTRIC VEHICLE TIME-OF-USE RATE AND LOAD**  
**MANAGEMENT PROPOSALS**  
**Docket No. DE 20-170**

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1 **Q. Mr. Moore, please state your name, business address and position.**

2 A. My name is Dennis Moore, I work at 107 Selden Street in Berlin, Connecticut. I am the  
3 Director of IT Enterprise Business Solutions at Eversource Energy Service Company.

4 **Q. Have you previously testified before the Commission?**

5 A. No, I have not.

6 **Q. Have you previously submitted testimony in this proceeding?**

7 A. Yes. On June 15, 2021, I submitted direct, pre-filed joint testimony with Mr. Brian J.  
8 Rice and Mr. Michael R. Goldman on opportunities for the Company to offer separately-  
9 metered residential electric vehicle (“EV”) time-of-use (“TOU”) rates and alternative  
10 load management solutions. In that testimony, I described my educational and  
11 professional background.

12

1 **Q. Mr. Rice, please state your name, business address and position.**

2 A. My name is Brian J. Rice. My business address is 247 Station Drive, Westwood, MA  
3 02090. My position is Manger, Regulatory Projects at Eversource Energy Service  
4 Company.

5 **Q. Have you previously testified before the Commission?**

6 A. Yes, in Docket No. DE 19-197, the Statewide Multi-use Online Energy Data Platform. I  
7 have also submitted testimony in several Commission dockets, including the Company's  
8 Electric Vehicle ("EV") make-ready infrastructure proposal filed in Docket No. DE 19-  
9 057, which opened Docket No. DE 21-078.

10 **Q. Have you previously submitted testimony in this proceeding?**

11 A. Yes. On June 15, 2021, I submitted direct, pre-filed joint testimony with Mr. Dennis E.  
12 Moore and Mr. Michael R. Goldman on opportunities for the Company to offer  
13 separately-metered residential electric vehicle ("EV") time-of-use ("TOU") rates and  
14 alternative load management solutions. In that testimony, I described my educational and  
15 professional background.

16 **Q. Mr. Davis, please state your name, business address and position.**

17 A. My name is Edward A. Davis. My business address is 107 Selden Street, Berlin, CT  
18 06037. My position is Director, Rates at Eversource Energy Service Company and in that  
19 position I provide rate and tariff related services to the operating companies of  
20 Eversource Energy including Public Service Company of New Hampshire d/b/a  
21 Eversource Energy ("Eversource" or "the Company").

1 **Q. Have you previously testified before the Commission?**

2 A. Yes. I have on many occasions testified before the Commission on behalf of Eversource,  
3 and at the state utility commissions in Connecticut and Massachusetts on behalf of other  
4 Eversource Energy affiliates on rate related matters.

5 **Q. Have you previously submitted testimony in this proceeding?**

6 A. Yes. On June 15, 2021, I submitted direct, pre-filed testimony on separately-metered  
7 residential electric vehicle EV TOU rate designs. In that testimony, I summarize my  
8 educational and professional background.

9 **Q. What is the purpose of this testimony?**

10 A. The purpose of our testimony is to address several recommendations regarding EV rate  
11 design included in the testimony of the New Hampshire Department of Energy (“DOE”)  
12 and the jointly-filed testimony of Clean Energy New Hampshire and the Conservation  
13 Law Foundation (“CENH-CLF”). Specifically, our rebuttal testimony responds to  
14 assertions regarding the Company’s metering and billing systems, certain elements of  
15 implementing a separately-metered residential EV TOU rate, and proposals for high-  
16 demand draw commercial EV rates.

17 **I. METERING AND BILLING SYSTEMS**

18 **Q. Please summarize the Company’s ability to utilize current metering and enterprise**  
19 **systems to support EV TOU rates, as well as any necessary changes, the reasons for**  
20 **those changes, and what it would require to implement those changes.**

21 A. The Company is currently able to make time-varying rates available to customers, but  
22 implementation of new rate structures such as the one outlined by the guidance in Order

1 No. 26,394, or those suggested in DOE's testimony, will require costly updates to  
2 enterprise systems, as there are a number of technical differences between current  
3 enterprise system design and what is required to provide the rate design proposals at  
4 issue. Eversource expects that it could reasonably install interval meters with cellular  
5 communications capability in order to measure and retrieve data necessary to bill a three-  
6 period rate consistent with the rate design guidance provided by the Commission in Order  
7 No. 26,394. However, the Company would need to undertake updates to its meter data  
8 management system, billing system and other back-office systems which were not  
9 originally designed to support multi-period, seasonal TOU rates as outlined in Order No.  
10 26,394 and DOE's testimony. As discussed in our original testimony, given that the  
11 three-period TOU structure outlined by the Commission is substantially different from  
12 any rate currently offered by the Company, the system changes would be relatively  
13 extensive, requiring expenditures of up to \$9 million to complete, and would require a  
14 level of effort of many months.

15  
16 **Q. Please summarize recommendations of DOE and ChargePoint regarding the**  
17 **Company's metering and enterprise systems?**

18 A. DOE has acknowledged the technological, logistical and cost challenges a three-period  
19 rate presents, and therefore has based the rate design recommendations in their testimony  
20 on an assumption that the Company would be able to more readily implement two-period  
21 rate structures<sup>1</sup>. This assumption by DOE was based on the observation that other  
22 Eversource affiliates presently offer rates with peak and off-peak differentiation of

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<sup>1</sup> Direct Testimony of Sanem Sergici at Bates 16

1 certain rate components. ChargePoint similarly recognizes that Eversource's current  
2 billing and other enterprise systems may complicate near-term implementation of a three-  
3 period EV TOU rate. ChargePoint responded positively to Eversource's expectations that  
4 there will be future opportunities to offer a larger variety of rate options to EV customers  
5 as a result of more comprehensive updates to the Company's enterprise billing and data  
6 management systems<sup>2</sup>. Eversource appreciates that both DOE and ChargePoint are  
7 sensitive to the technological and cost considerations associated with implementation of  
8 new rate structures and agree that consideration of other approaches is appropriate for  
9 accomplishing the same ends without incurring such costs. However, there will be  
10 implementation costs with any new rate offering, particularly time-varying rates. In  
11 response to DOE's suggested rate design offerings presented in testimony, the Company  
12 discusses the anticipated costs of offering new two-period rate options to New Hampshire  
13 EV customers later in this testimony.

14  
15 **Q. Please discuss the implications of certain recommendations of CENH-CLF**  
16 **regarding the Company's metering and enterprise systems.**

17 A. The testimony of CENH-CLF contains several assertions which do not reflect an accurate  
18 understanding of the Company's metering and enterprise systems and which are  
19 important to correct, as they have cost and implementation implications that could have  
20 ramifications to customer bills. In his testimony, Mr. Villareal represents that  
21 Eversource's current meters are not capable of collecting interval data and that  
22 Eversource may not have the communications capability or interoperable systems

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<sup>2</sup> Direct Testimony of Matthew Deal at 18

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1 necessary to collect and use interval data<sup>3</sup>. However, Eversource explained in response  
2 to DOE 4-005 that it currently procures Hubble (Aclara) KV2c and Honeywell Alpha A3  
3 meters which have the necessary interval data capabilities required for a TOU rate  
4 offering, and the Company likewise has the ability to read interval meters using MV90xi  
5 and a cellular communication network. CENH-CLF recommends the Commission require  
6 the Company to pay for “metering upgrade costs”<sup>4</sup> but the Company has not identified  
7 significant metering upgrade costs, and those meter costs that are proposed have been  
8 generally accounted for in the design of the rate. The majority of costs Eversource  
9 expects to incur to launch a three-period TOU rate, which totals the previously-  
10 referenced \$9 million, are not metering upgrade costs. They are costs associated with the  
11 work to program new configurations and processes in the Company’s enterprise systems  
12 necessary to support a new rate structure that has more components than any other rate  
13 the Company currently offers.

14  
15 **Q. Please describe in further detail the changes to enterprise systems necessary for the**  
16 **implementation of new three-period EV TOU rates?**

17 A. The Company estimated the scope of changes to enterprise systems based on high-level  
18 business requirements for offering a three-period EV TOU rate to residential customers.  
19 The project scope was summarized in the Company’s response to DOE 2-019 and  
20 includes:

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<sup>3</sup> Direct Testimony of Christopher R. Villarreal at 25 and 27

<sup>4</sup> *Ibid at 28*

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- 1           • Updates to the Company's meter data management system (MV90xi) necessary to  
2           generate a billing determinant file for a new three-period EV TOU rate.
- 3           • Numerous updates to utilize Meter Bill Tracker for multi-period data transfer with  
4           the Company's C2 billing system, the system used for residential and small  
5           business customers.
- 6           • Creation of new meter and usage configurations, service plans, and changes to bill  
7           file in C2 to support printing bills with the new rate structure.
- 8           • Modification of the EDI files sent to competitive suppliers to include three-part  
9           usage.

10           These updates and related elements of the project scope to make a three-period  
11           separately-metered EV TOU rate available to customers are considerably complex and  
12           labor-intensive, and constitute a majority of the estimated \$9 million in costs.

13

14   **Q.   Why are the Company's enterprise systems not already designed to support three-**  
15   **period TOU rates or other advanced structures?**

16   A.   The Company's current enterprise systems have been developed to meet the needs of  
17   customers while also minimizing costs ultimately passed on to customers. Eversource  
18   has sought to prudently manage enterprise IT costs by utilizing industry-standard  
19   solutions and maximizing the use of current systems to defer more significant enterprise  
20   IT investments. Eversource has effectively utilized the current C2 system to serve  
21   customers since 2007 and been able to defer investments to replace other systems for  
22   longer periods. Customer interest in more sophisticated rate options has historically been

1 limited. The Company currently offers a residential time-varying rate (R-OTOD) that  
2 only has approximately 43 customers enrolled and Eversource affiliates have historically  
3 observed similar low interest by customers in optional TOU rates. While Eversource  
4 expects the general trend of deploying and piloting new rate designs to continue to  
5 progress among utilities, non time-varying rate structures such as those offered by the  
6 Company have been and are still today most prevalent in the industry. As a result, many  
7 of the utility enterprise solutions previously purchased or licensed by the Company, and  
8 which still support customer service, have not included the functionality to support  
9 advanced rate structures without additional modification.

10  
11 **Q. Are future enterprise IT initiatives expected to expand opportunities to offer new**  
12 **and advanced rate options?**

13 A. Yes. Consistent with the directives of the respective state agencies throughout all service  
14 territories, Eversource Energy anticipates undertaking enterprise IT initiatives in the  
15 coming years that are expected to expand opportunities to serve customers in an  
16 increasingly sophisticated energy marketplace and meet the evolving energy needs of the  
17 New England region. Eversource Energy affiliates have filed proposals for  
18 comprehensive, customer-focused initiatives to deploy advanced metering in  
19 Massachusetts and Connecticut, and the Company is assessing the feasibility of  
20 deploying advanced metering in New Hampshire pursuant the Settlement Agreement on  
21 Permanent Distribution Rates approved by the Commission in Docket No. DE 19-057. In  
22 addition to investments in metering and communications infrastructure, advanced  
23 metering initiatives are planned to include launch of a new enterprise Customer

1 Information System (CIS) that, when complete, is expected to better enable new rate  
2 design options as compared to current systems. It is important for these enterprise IT  
3 initiatives to be strategically planned, approved by regulators and prudently managed to  
4 ensure the Company can update enterprise systems at the lowest possible cost while also  
5 maximizing efficiencies with operational improvements and expansion of customer  
6 options.

7  
8 Eversource believes that the best outcomes for customers will result from this  
9 comprehensive approach to enterprise system upgrades that advance regulatory and  
10 policy objectives while delivering a broader range of customer and operational benefits.  
11 This approach to enterprise IT management stands in contrast to implementing new  
12 separately-metered EV TOU rates in the near-term. Implementing new EV TOU rates  
13 outside the context of larger enterprise system upgrades would serve a narrow purpose  
14 while incurring avoidable and possibly unnecessary costs. Investments incurred to  
15 implement either the three-period EV TOU rate or the alternatives presented in DOE's  
16 testimony will currently only serve a limited number of customers and are also likely to  
17 be substantially abandoned upon deployment of new enterprise systems as either  
18 redundant or obsolete.

19  
20 **Q. Is there a near-term solution for offering EV TOU rates to customers at a lower**  
21 **cost?**

22 A. Potentially. Eversource Energy affiliates utilize some of the same enterprise systems to  
23 offer rates with more basic TOU structures for limited rate components. The Company

1 also offers a Residential Time-of-Day rate for which it has proposed changes, such as a  
2 reduced peak period, currently under review in Docket No. DE 21-119 that may be able  
3 to serve as a form of transition rate for EV customers.<sup>5</sup> It would be possible for the  
4 Company to better utilize existing system capabilities if it were to offer an EV TOU rate  
5 that mirrored these existing offerings by utilizing the same time periods and providing  
6 time-differentiated pricing limited to the same rate components as other rate options  
7 currently supported by enterprise systems. Currently applicable TOU rate plans  
8 supported by Eversource Energy and its affiliates include only peak and off-peak pricing  
9 for some, but not all, components of service (e.g. distribution, transmission, supply).  
10 Current rate plans that provide TOU pricing for supply costs are also limited to customers  
11 taking default energy service from the utility. Competitive suppliers that bill customers  
12 directly on a pass-through basis may offer TOU pricing under any terms to which  
13 customers agree, but Eversource systems do not support complete billing of TOU rates on  
14 behalf of competitive suppliers or community aggregations.

15  
16 **Q. What's the estimated cost of implementing a separately-metered EV TOU rate that**  
17 **mirrors existing Eversource Energy rate structures?**

18 A. An EV TOU rate which is a direct copy of other current rate offerings would require  
19 much more limited updates to enterprise systems, and therefore result in lower costs and  
20 level of effort to implement. Eversource estimates that an EV TOU rate modeled on Rate  
21 7 of The Connecticut Light & Power Company could be implemented with system

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<sup>5</sup> Testimony and attachments of E. Davis can be found on the Docket No. DE 21-119 webpage:  
<https://www.puc.nh.gov/Regulatory/Docketbk/2021/21-119.html>

1 changes estimated to cost an order of magnitude less to complete compared with a three-  
2 period EV TOU rate. Such a rate would offer peak and off-peak pricing for supply and  
3 transmission. Distribution rates are not time differentiated under Rate 7. To the extent  
4 that Eversource's two-period residential TOU rate could be adopted, peak and off-peak  
5 pricing would be available only for transmission and distribution.

6

7 **Q. Does the Company recommend developing the simplified EV TOU rates described**  
8 **above for near-term implementation?**

9 A. Not at this time. If the Commission finds that immediate availability of separately-metered  
10 EV TOU rates is a priority that merits specific ratepayer-funded utility expenditures and  
11 directs the Company to do so, Eversource would of course take necessary steps to make  
12 these simplified EV TOU rate options available to customers. However, the Company  
13 projects at this time that individual customer savings realized under a separately-metered  
14 residential EV TOU rate may be minimal and insufficient to generate even modest  
15 enrollment or motivate customer behavior. As shown in Exhibit EAD-3 of the Company's  
16 original filing, providing residential customers an opportunity to charge an EV at lower off-  
17 peak rates under the proposed three-period EV TOU rate would only position them to save  
18 an average of \$0.31 per month, based on 260 kWh of usage per month. With the time and  
19 expense required to enroll in a separate EV-only service offsetting already minimal  
20 savings, it's likely many will decline to make such an investment without a true incentive  
21 to do so. Eversource notes that while Liberty Utilities has made an existing TOU rate  
22 structure available for separately-metered EV charging, it has not reported or projected any

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1 sales from customers enrolled in the rate<sup>6</sup>. The Company has not estimated the level of  
2 savings that may be achievable under the modified and simplified EV TOU rate structures  
3 described above, but estimates net savings would be comparably low.

4  
5 Eversource continues to believe that an EV managed charging program, as proposed in the  
6 Company's original filing, is a much more motivating and customer accessible option that  
7 can be made available in the near-term at lower cost than most EV TOU rate options, and  
8 would likely result in better achievement of EV policy goals of modifying customer  
9 charging behavior to reduce peak demand and lessening the burden on the electrical grid.

10 The Company also notes that this direction is consistent with approaches presently being  
11 taken to serve EV customers elsewhere in New England. The Connecticut Public Utilities  
12 Regulatory Authority recently concluded that utilities in Connecticut should not be required  
13 to develop EV-only TOU rates for residential customers at this time, but rather directed  
14 utilities to administer managed charging programs for residential customers<sup>7</sup>. The  
15 Massachusetts Department of Public Utilities has similarly concluded that it is premature to  
16 consider EV TOU rate proposals prior to deployment of new enterprise systems, but that it  
17 remains important that EV customers are provided with appropriate price signals through  
18 load management incentive programs<sup>8</sup>.

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<sup>6</sup> Liberty Utilities response to DOE 2-2

<sup>7</sup> Final Decision, Docket No. 17-12-03RE04, July 14, 2021 at 18-19

<sup>8</sup> DPU-20-69-A at 44 and 47

1 **II. HIGH-DEMAND DRAW EV CHARGING RATE DESIGN**

2 **Q. Please explain the steps the Company has taken develop and propose rate options**  
3 **for high-demand draw EV charging.**

4 A. Eversource designed a rate option for high-demand draw, commercial EV charging  
5 without demand charges pursuant to the Settlement Agreement on Permanent  
6 Distribution Rates (“the Settlement Agreement”) approved by the Commission in Docket  
7 No. DE 19-057. The terms of the Settlement Agreement required the Company to file a  
8 proposed alternative to demand charges for EV charging rates in Docket No. DE 19-057.  
9 The Company made this required filing on April 15, 2021 and the Commission  
10 subsequently opened Docket No. 21-078 for review of the Company’s proposed demand  
11 charge alternative EV charging rate and accompanying EV make-ready infrastructure  
12 proposal, and further ordered that those two proposals remain together in Docket No. DE  
13 21-078 for separate consideration from the proposals at issue in this docket.

14  
15 To help determine the design of the demand charge alternative rate, the Company met  
16 with diverse stakeholders in advance of filing the rate, to ensure the rate satisfied the  
17 customer needs and market barriers such a rate was intended to resolve. As part of this  
18 design input process, the Company reviewed and evaluated a variety of potential rate  
19 design options which it then presented and discussed with the stakeholder groups. As  
20 explained in testimony the Company filed in support of its proposal in Docket No. DE  
21 21-078<sup>9</sup>, the Eversource team developed its demand charge alternative with the goals of  
22 addressing recognized market entry barriers that demand charges create for the

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<sup>9</sup> <https://www.puc.nh.gov/Regulatory/Docketbk/2021/21-078.html>

1 development of public Direct Current Fast Charging (“DCFC”) infrastructure, while also  
2 minimizing potential for cross-subsidization and assuring rate stability and simplicity, as  
3 compared with time-varying and hybrid volumetric/demand charge high-demand draw  
4 commercial rate designs.

5  
6 **Q. How do current commercial rates that include demand charges present market**  
7 **barriers to the development of DCFC infrastructure?**

8 A. Stakeholders that participated in Docket No. 19-057 and were signatories to the approved  
9 Settlement Agreement noted that DCFC stations are currently characterized by having a  
10 low load factor, or utilization rate, with sporadic instances of high energy use. Site hosts  
11 can face high demand charges due to the few peak charging sessions that occur each  
12 month, but are not offset by overall utilization, as that remains low. Given the limited  
13 flexibility for EV charging site hosts to pass on demand charge costs to customers, this  
14 dynamic creates the risk of economically unsustainable losses<sup>10</sup>. The Company sought to  
15 address the potential adverse impacts of demand charges on EV charging station cost  
16 structures through an alternative rate that assesses higher volumetric rates for high-  
17 demand draw charging in lieu of demand charges. The result of this alternative rate  
18 structure is that it allows DCFC charging customers to much more readily anticipate how  
19 operating costs will vary with charging activity at low levels of station utilization, and  
20 therefore more reliably manage the financial results of DCFC operations.

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<sup>10</sup> Docket No. DE 19-057 Direct Testimony of Kevin Miller at 12-13

1 **Q. How has the Company sought to minimize the risks of costs being unfairly shifted to**  
2 **non-EV customers through alternative rate structures?**

3 A. The Company agrees it's important that any alternative rate avoid a disproportionate or  
4 persistent discount to what customers would pay under otherwise applicable rates.  
5 Providing such a degree of discount risks unfairly shifting costs to other customers if  
6 alternative rates did not result in EV charging customers paying a fair share of costs for  
7 their use of the electric power system. The Company sought to minimize this risk with  
8 the demand charge alternative under review in Docket No. DE 21-078 by accounting for  
9 the fact that high-demand draw EV charging stations are expected to have a load profile  
10 very different from other commercial customers. Using current commercial utilization  
11 rates in New Hampshire, the Company calculated alternative volumetric rates based upon  
12 a 10 percent load factor for high-demand draw EV charging customers instead of a load  
13 factor representative of non-EV commercial customers with dissimilar load profiles. This  
14 method of calculating alternative rates produces volumetric rates that are high, to offset  
15 unfair cost shifting, but more predictable and accessible than demand charges for EV  
16 charging station owners. Indeed, the Company's proposed alternative transmission and  
17 distribution rates produce a combined rate of over 29 cents/kWh, providing a stable  
18 volumetric rate that mitigates cost shifting (which further decreases as utilization levels  
19 increase) while eliminating demand charges. The Company believes the alternative rate  
20 proposed in Docket No. DE 21-078 best maximizes revenue contributed, consequently  
21 avoiding unfair cost shifting, from high-demand draw EV charging facilities at low levels  
22 of utilization (which is the current state of such facilities in New Hampshire) while

1 mitigating this identified significant barrier to the development of public DCFC charging  
2 infrastructure.

3  
4 **Q. What rate design elements have been recommended in this proceeding that**  
5 **Eversource should make available for high-demand draw EV charging customers?**

6 A. Clean Energy New Hampshire and Conservation Law Foundation recommend the  
7 Commission issue an order stating that no demand charges be applied to EV charging for  
8 at least 10 years or upon DCFC reaching a utilization factor of 30 percent across all  
9 utility service territories<sup>11</sup>. ChargePoint does not propose a specific rate design for high-  
10 demand draw applications but notes that TOU rates may not be the ideal solution for  
11 public DCFC stations that are often used by EV drivers that cannot adjust their usage to  
12 avoid the impact of higher priced TOU time periods<sup>12</sup>, rendering TOU price signals moot  
13 for this particular application. DOE has provided the most detailed high-demand draw  
14 rate proposal of the parties to this docket, recommending a two-period seasonal EV TOU  
15 high-demand draw rate and providing an illustrative rate included in the Testimony of  
16 Sanem Sergici<sup>13</sup>.

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<sup>11</sup> Direct Testimony of Christopher Villarreal for Clean Energy New Hampshire and Conservation Law Foundation at 28

<sup>12</sup> Direct Testimony of Matthew Deal at 7

<sup>13</sup> Direct Testimony of Sanem Sergici at Bates 26-29

1 **Q. Does Eversource believe the Commission should suspend demand charges for EV**  
2 **charging independent of rate offerings, as suggested by CLF and CENH?**

3 A. No. Without also introducing alternative rate structures to offset the revenue impact of  
4 eliminating of demand charges, unfair cost shifting to other customer sectors are likely to  
5 result. Eversource recognizes that the suspension of demand charges proposed by  
6 CENH-CLF reflect a view that the Commission should consider rate design as a means of  
7 implementing EV policy and encouraging EV adoption across New Hampshire. The  
8 Company agrees that suspension of demand charges would eliminate a large potential  
9 barrier to the development of EV charging infrastructure and, in turn, likely help  
10 encourage the further adoption of EVs. However, the Company's current demand  
11 charges have been thoughtfully developed, reviewed and approved by the Commission as  
12 fairly reflecting the cost of providing service to customers. Waiving such demand  
13 charges without introducing an alternative rate structure for EV charging stations would  
14 risk substantially under-collecting costs from EV charging customers and shifting the  
15 cost of supporting the electric power system to other customers. Eversource does not  
16 believe it is the current policy of New Hampshire to encourage EV adoption through rate  
17 design elements that risk shifting substantial costs to non-EV customers. This is in  
18 contrast to the Company's proposed demand charge alternative rate that uses higher  
19 volumetric rates to mitigate cost shifting risks created by eliminating demand charges.

20 **Q. Does Eversource recommend implementation of the illustrative high-demand draw**  
21 **EV TOU rate proposed by DOE?**

22 A. No. Implementation of the illustrative high-demand draw TOU rate proposed by DOE  
23 would also shift costs to non-EV customers to a greater degree than the Company's

1 proposed demand charge alternative. DOE represents that subsidized rates for public  
2 charging infrastructure are not warranted and believes customers on the demand charge  
3 alternative rate proposed by Eversource in Docket No. 21-078 would pay less than their  
4 fair share of system costs. But contrary to this assertion, DOE recommends a rate design  
5 that would result in EV charging station customers paying even less than they would  
6 under the demand charge alternative rate proposed by Eversource. As shown in Exhibit  
7 EAD-Rebuttal-1 the illustrative TOU rate proposed by DOE would collect, at most,  
8 approximately 40 percent of the distribution and transmission revenue that would be  
9 generated under the demand charge alternative proposed by the Company at lower levels  
10 of station utilization that are anticipated during at least initial operational periods of New  
11 Hampshire charging stations.

12  
13 **Q. Why did DOE determine that TOU rates should be set at levels which would result**  
14 **in high-demand draw EV customers paying disproportionately less for electric**  
15 **service than other customer sectors?**

16 A. A significant driver behind the rates calculated by DOE appears to be the allocation of  
17 costs based upon the class-average load profile for Rate GV – the existing rate (that  
18 includes demand charges) that would most likely apply to high-demand draw customers.  
19 As previously explained by the Company, the load profile of high-demand draw DCFC  
20 customers is expected to be significantly different from that of the overall GV Rate class.  
21 This is significant because of how such a different load profile can generate revenue in  
22 the absence of demand charges. The load factor, or utilization level, of EV charging  
23 stations is expected to be considerably lower than that of the GV rate class average,

1 particularly in initial years of station operation, as indicated by current utilization levels  
2 of charging stations in New Hampshire. Designing a rate using the GV class-average  
3 load profile assumes that revenues currently recovered through demand-based rates  
4 would be recovered from a much higher volume of kWh sales under the high-demand  
5 draw TOU rate than would actually occur for high-demand draw EV charging customers  
6 in New Hampshire for the foreseeable future. The result of DOE's reliance on this  
7 premise is that their proposed TOU rate for high-demand draw customers produces lower  
8 revenues and increases the risk that EV charging customers, with much different  
9 utilization than the average rate GV customers, will contribute much less than their fair  
10 share of costs than they otherwise would under prevailing demand-charge based rates, or  
11 Eversource's proposed demand charge alternative.

12  
13 **Q. Could the TOU rate proposed by DOE be adjusted to reduce the likelihood of unfair**  
14 **cost shifting?**

15 A. The Company does not currently have sufficient data from which a class-average EV  
16 charging load profile could be reliably produced in order to comprehensively revise the  
17 rate calculations performed by DOE's consultant to result in a high-demand draw TOU  
18 rate that would avoid unfair cost shifting. This is another reason why high-demand draw  
19 TOU rates may not be best suited for New Hampshire in the near-term, but could likely  
20 prove to be appropriate as the market evolves. The Company expects that there will be  
21 better opportunities to design high-demand draw EV TOU rate designs in the future  
22 based on robust historical load data as EV adoption expands. At this time, Eversource  
23 has addressed the expected difference in load profiles between high-demand draw EV

1 charging customers and rate GV customers by adjusting proposed alternative rates based  
2 upon the ratio of the rate GV class-average load factor to a load factor reflective of initial  
3 EV charging station operations. Application of a similar adjustment to the TOU rate  
4 proposed by DOE would produce an illustrative TOU rate less likely to risk shifting costs  
5 to non-EV customers, but the resulting rates would be much higher and likely risk  
6 preserving barriers to the development of DCFC infrastructure.

7  
8 Eversource is concerned that introducing much higher rates for charging during peak  
9 periods would make it more difficult for charging station owners to anticipate operating  
10 costs in a way that would provide needed confidence in the financial results of charging  
11 station operations. Furthermore, even if end-user charging rates were aligned with TOU  
12 rate structures, such high rates would be punitive to EV customers who have little  
13 discretion to select the time at which it is necessary for them to use high-demand draw  
14 DCFC charging facilities.

15  
16 The Company believes the demand charge alternative proposed in Docket No. DE 21-078  
17 strikes a more effective balance between addressing demand charge barriers and  
18 mitigating cost shifting. The Company deliberately sought to advance these goals in a  
19 manner that provides a simple, stable volumetric price that was well received by  
20 stakeholders. Further increasing alternative pricing to an extreme during some periods  
21 would risk upsetting the balance that Eversource sought to achieve through its proposed  
22 demand-charge alternative.

23

1 **IV. CONCLUSION**

2 **Q. Please summarize the Company's recommended approach for serving EV**  
3 **customers in the near-term.**

4 A. Eversource looks forward to effectively serving its customers that are expected to drive  
5 EVs in growing numbers, and advancing appropriate New Hampshire policies that  
6 support equitable rate design and optimal use of distribution company facilities as EV  
7 adoption grows. The Company encourages the Commission to consider that simple,  
8 customer-friendly and lower-cost approaches to EV rate design, such as managed  
9 charging and the Company's proposed demand charge alternative rate, may be the most  
10 constructive and beneficial to customers for the Company to implement in the near-term.  
11 Eversource believes that it can most effectively support the responsible and equitable  
12 near-term development of public DCFC infrastructure through the demand charge  
13 alternative presently under review by the Commission in Docket No. 21-078.  
14 Eversource also continues to believe that managed charging is the most customer-friendly  
15 low cost approach the Company could pursue in the near-term to encourage optimized  
16 charging activity by residential customers. However, to the extent the near-term  
17 availability of residential EV TOU rate options is a priority of the Commission that  
18 merits incremental ratepayer-funded expenditures, Eversource advises that separately-  
19 metered EV TOU rates which are structured similarly to current Eversource TOU rates  
20 could be implemented at lower incremental cost than could more complex TOU rate  
21 structures that include either a three-period TOU rate or the two-period rate  
22 recommended in DOE testimony (varying all three components of generation,  
23 transmission, and distribution). Importantly, Eversource does not expect that

1 recommended near-term approaches will necessarily be permanent rate solutions for EV  
2 customers. The Company has every intention of continuing to tailor its EV offerings as  
3 the New Hampshire EV market evolves. Eversource fully expects that the continued  
4 growth of EV adoption and further modernization of Company systems will produce the  
5 information and capabilities necessary to equitably serve EV customers in the most  
6 beneficial ways to all New Hampshire customers.

7 **Q. Does this conclude your testimony?**

8 **A.** Yes. It does.

**EV HIGH-DEMAND DRAW CHARGING RATES  
ANNUAL REVENUE COMPARISON**

1	Maximum Charging Load (kW)		120	120	120	120	120	120	120
2	Load Factor (%)		3%	5%	7%	10%	15%	20%	30%
3	Total EV Charging (kWh)		31,536	52,560	73,584	105,120	157,680	210,240	315,360
4									
5									
6	<u>Rate GV</u>								
7	Customer Charge	\$	211	\$ 211	\$ 211	\$ 211	\$ 211	\$ 211	\$ 211
8	Distribution Demand Charge (Avg. \$/kW)	\$	6.770	\$ 6.770	\$ 6.770	\$ 6.770	\$ 6.770	\$ 6.770	\$ 6.770
9	Transmission Demand Charge (\$/kW)	\$	10.400	\$ 10.400	\$ 10.400	\$ 10.400	\$ 10.400	\$ 10.400	\$ 10.400
10	SCRC Demand (\$/kW)	\$	0.650	\$ 0.650	\$ 0.650	\$ 0.650	\$ 0.650	\$ 0.650	\$ 0.650
11	Distribution Energy Charge (Avg. \$/kWh)	\$	0.006	\$ 0.006	\$ 0.006	\$ 0.006	\$ 0.006	\$ 0.006	\$ 0.006
12	Other Energy Charge (\$/kWh)	\$	0.014	\$ 0.014	\$ 0.014	\$ 0.014	\$ 0.014	\$ 0.014	\$ 0.014
13	Energy Service Charge (\$/kWh)	\$	0.060	\$ 0.060	\$ 0.060	\$ 0.060	\$ 0.060	\$ 0.060	\$ 0.060
14									
15									
16	Non-Bypassable Revenue	\$	28,825	\$ 29,247	\$ 29,669	\$ 30,301	\$ 31,355	\$ 32,409	\$ 34,517
17	Generation Revenue	\$	1,900	\$ 3,167	\$ 4,433	\$ 6,333	\$ 9,500	\$ 12,667	\$ 19,000
18	Total Revenue	\$	30,725	\$ 32,414	\$ 34,102	\$ 36,634	\$ 40,855	\$ 45,076	\$ 53,518
19	<u>Eversource Demand Charge Alternative (DE 21-078)</u>								
20	Distribution Alternative (\$/kWh)	\$	0.1298	\$ 0.1298	\$ 0.1298	\$ 0.1298	\$ 0.1298	\$ 0.1298	\$ 0.1298
21	Transmission Alternative (\$/kWh)	\$	0.1455	\$ 0.1455	\$ 0.1455	\$ 0.1455	\$ 0.1455	\$ 0.1455	\$ 0.1455
22	SBC Alternative (\$/kWh)	\$	0.0091	\$ 0.0091	\$ 0.0091	\$ 0.0091	\$ 0.0091	\$ 0.0091	\$ 0.0091
23	Other Energy Charge (\$/kWh)	\$	0.014	\$ 0.014	\$ 0.014	\$ 0.014	\$ 0.014	\$ 0.014	\$ 0.014
24									
25									
26	Non-Bypassable Revenue	\$	11,937	\$ 18,207	\$ 24,477	\$ 33,882	\$ 49,557	\$ 65,232	\$ 96,582
27	Generation Revenue	\$	1,900	\$ 3,167	\$ 4,433	\$ 6,333	\$ 9,500	\$ 12,667	\$ 19,000
28	Total Revenue	\$	13,837	\$ 21,374	\$ 28,910	\$ 40,215	\$ 59,057	\$ 77,899	\$ 115,582
29	<u>DOE Illustrative High-Demand Draw Rate (\$/kWh)<sup>1</sup></u>								
30									
31	Summer Peak								
32		Transmission	0.106	0.106	0.106	0.106	0.106	0.106	0.106
33		Distribution	0.031	0.031	0.031	0.031	0.031	0.031	0.031
34		Other	0.016	0.016	0.016	0.016	0.016	0.016	0.016
35		Generation	0.158	0.158	0.158	0.158	0.158	0.158	0.158
36	Winter Peak								
37		Transmission	0.093	0.093	0.093	0.093	0.093	0.093	0.093
38		Distribution	0.024	0.024	0.024	0.024	0.024	0.024	0.024
39		Other	0.016	0.016	0.016	0.016	0.016	0.016	0.016
40		Generation	0.057	0.057	0.057	0.057	0.057	0.057	0.057
41									
42	Annual Average Peak								
43		Transmission	0.098	0.098	0.098	0.098	0.098	0.098	0.098
44		Distribution	0.027	0.027	0.027	0.027	0.027	0.027	0.027
45		Other	0.016	0.016	0.016	0.016	0.016	0.016	0.016
46		Generation	0.099	0.099	0.099	0.099	0.099	0.099	0.099
47									
48		Non-Bypassable Revenue	\$ 4,457	\$ 7,428	\$ 10,400	\$ 14,857	\$ 22,285	\$ 29,714	\$ 44,571
49		Generation Revenue	\$ 3,125	\$ 5,208	\$ 7,291	\$ 10,416	\$ 15,623	\$ 20,831	\$ 31,247
50		Total Revenue	\$ 7,582	\$ 12,636	\$ 17,691	\$ 25,273	\$ 37,909	\$ 50,545	\$ 75,818
51									
52	Maximum DOE proposed revenue / Estimated Eversource Alternative Revenue (Non-Bypassable)		37%	41%	42%	44%	45%	46%	46%
53									
54									

55 1. Maximum revenue estimated based on proposed peak rates; actual revenue would likely be lower