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March 21, 2023

Daniel C. Goldner, Chairman
New Hampshire Public Utilities Commission
21 South Fruit Street, Suite 10
Concord, NH 03301

Re: Investigation of Whether Current Tariffs and Programs are Sufficient to Support Demand Response and Electric Vehicle Charging Programs; WeaveGrid's Initial Comments

Dear Chair Goldner:

I am writing today to provide Weave Grid, Inc.'s ("WeaveGrid")[1] comments in response to the procedural schedule established by the New Hampshire Public Utilities Commission ("Commission") in its February 21, 2023 procedural order issued in this proceeding ("Procedural Order").

I. Introduction and Procedural History

On November 15, 2022, the Commission issued an order of notice ("Order of Notice") in this proceeding, outlining the directives included in the Infrastructure Investment and Jobs Act's amendments to Section 111(d) of the Public Utility

[1] WeaveGrid is a software company that helps utilities support increased EV adoption through greater understanding of customer charging behaviors, managed charging programs, and distribution-level optimization. WeaveGrid's technology leverages utility and charging data, including the embedded vehicle telematics—data, controls, and communication systems—and the charging equipment to transform unpredictable and disaggregated EV charging loads into a cohesive network of controllable grid resources. We also support utilities in engaging their EV customers with personalized messages, insights, and notifications via the web, email, and text messages. WeaveGrid is a market leader in providing these solutions, which we are deploying in utility programs across the United States.

Regulatory Policies Act of 1978 ("PURPA").[2] These amendments required the Commission to consider whether to establish "rate mechanisms and standards related to promoting electric utility demand response practices and electric vehicle charging programs."[3] The Commission likewise indicated certain topics it wished to investigate related to New Hampshire's demand response ("DR") and demand flexibility practices, as well as separate topics related to New Hampshire's current electric vehicle policies.[4]

On February 2, 2023, the Commission convened a prehearing conference to establish a procedural schedule, take statements related to each participant's preliminary, non-binding positions, and to consider the positions of various participants related to the joint motion filed by the Public Service Company of New Hampshire d/b/a Eversource Energy ("Eversource"), Unitil Energy Systems, Inc. ("Until"), and Liberty Utilities (Granite State Electric) Corp. d/b/a Liberty ("Liberty") (collectively, the "Electric Utilities").[5]

On February 6, 2023, the Commission issued a prehearing order in response to the Electric Utilities' joint motion, denying the Electric Utilities' request to separate the docket and requesting that docket participants propose a consensus procedural schedule.[6] On February 21, 2023, the Commission issued the Procedural Order, establishing the schedule for comments and a status conference to be held in June.[7] Pursuant to this schedule, WeaveGrid respectfully provides its comments on the topics identified below.

II. WeaveGrid's Responses to the Commission's Questions

As the Commission indicates, it has conducted the inquiry required by PURPA[8] with respect to electric vehicle ("EV") programs. The Commission's identification of a broad range of topics to be investigated in this proceeding makes clear that it intends to expand the current DR and EV program offerings in New

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[2] Docket No. IR 22-076; Investigation of Whether Current Tariffs and Programs are Sufficient to Support Demand Response and Electric Vehicle Charging Programs, Order of Notice at 1 (November 15, 2022).
[3] *Id.*
[4] *Id.* at 3-5.
[5] *See* N.H. Code Admin. R. Puc 203.15.
[6] Docket No. IR 22-076; Prehearing Order at 2-3 (February 6, 2023).
[7] Docket No. IR 22-076; Procedural Order at 2 (February 21, 2023).
[8] 16 U.S.C. § 2621(d)(21)(A)-(D).

Hampshire and take a forward-thinking approach to DR and EV programs in the state.

As indicated above, WeaveGrid's focus is to increase EV adoption by supporting utilities as they develop various strategies related to EV load management. WeaveGrid's support of these utility programs has provided a unique perspective on how customers interact with various EV program designs. As such, WeaveGrid focuses its initial comments on the EV-related questions posed by the Commission, but reserves the right to provide responses to the other EV and DR-related questions posed by the Commission in its subsequent comments.

1. *What are the relevant Commission decisions, state statutes, and federal laws relating to EV charging?*

While the Commission has considered EV-related policies in its decisions prior to the passage of Senate Bill ("SB") 575-FN[9], the Commission's more recent analysis in its decisions regarding EV time of use ("TOU") are most relevant to its inquiry in this proceeding. In response to the passage of SB 575-FN, the Commission opened Docket No. IR 20-004.[10] In that proceeding, the Commission sought to investigate certain rate design standards for EV charging stations, specifically, "cost of service, prohibition of declining block rates, time of day rates, seasonal rates, interruptible rates, load management techniques, and demand charges."[11] Pursuant to SB 575, the Commission additionally investigated the potential implementation of EV time of day rates for residential and commercial customers.[12]

In Order No. 26,394, the Commission made numerous findings related to EV rates. First, the Commission found it appropriate for each of the Electric Utilities to propose separately metered EV TOU rates.[13] Second, in its assessment of staff's recommendation to require the Electric Utilities to conduct a feasibility assessment of alternative metering options for EV TOU rates, the Commission determined that further investigation was necessary.[14] Third, the Commission found that EV load management offerings "may provide near-term ratepayer benefits without

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[9] An Act Relative to Electric Vehicle Charging Stations, SB 575-FN (2018).
[10] Docket No. IR 20-004, Investigation into Rate Design Standards for Electric Vehicle Charging Stations and Electric Vehicle Time of Day Rates, Order of Notice at 2 (January 16, 2020).
[11] Docket No. IR 20-004, Order No. 26,394 at 1 (August 18, 2020).
[12] *Id.*
[13] *Id.* at 11.
[14] *Id.* at 13-14.

installation of metering infrastructure and other associated upgrades," and found that such offerings would be appropriate to offer in conjunction with EV TOU rate offerings.[15] The Commission, based on these findings and others related to EV TOU rate methodologies, ordered the Electric Utilities to each propose EV TOU rate proposals in a subsequent proceeding.[16]

Pursuant to its findings in Order No. 26,394, the Commission opened Docket No. DE 20-170 to facilitate the development and review of the utility-specific EV TOU rate proposals.[17] On January 18, 2022, Liberty, Unitil, the Office of the Consumer Advocate ("OCA"); the Department of Energy ("DOE"); and the Department of Environmental Services ("DES") submitted a partial settlement agreement on Liberty and Unitil's proposed EV TOU rate designs.[18] The Commission ultimately approved the residential EV TOU rate offering proposed by Unitil, as well as the commercial EV TOU rates of Liberty[19] and Unitil.[20] The Commission emphasized that the time-varying rate methodology incorporated in Liberty and Unitil's rates had "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."[21]

The Commission determined that further revisions to Eversource's proposed EV TOU rates were required.[22] The Commission also rejected Eversource's proposed alternative load management approach, finding that such a program "should be left to the competitive market."[23] Additionally, the Commission required Eversource to develop and submit an alternative metering pilot proposal to utilize the metering in EVs and EV chargers to measure usage in relation to its time varying rates.[24]

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[15] *Id*. at 8.
[16] *Id*. at 18-19.
[17] Docket No. DE 20-170, Electric Distribution Utilities Electric Vehicle Time of Use Rates, Order No. 26,604 at 1 (April 7, 2022).
[18] Docket No. DE 20-170, Settlement Agreement (January 18, 2022).
[19] As noted by the Commission in Order 26,604, at the time of its decision, Liberty already had an existing electric vehicle charging rate for customers approved in its prior rate case proceeding, Docket No. DE 19-064.
[20] Docket No. DE 20-170, Order No. 26,604 at 24-25.
[21] *Id*. at 25.
[22] *Id*. at 26.
[23] *Id.*
[24] *Id.*

While this is not an exhaustive summary of the Commission's actions related to EV programs and rate offerings, recent decisions and filings do present two broader issues to be considered in this proceeding: the feasibility of alternative metering approaches for EVs and the consideration of well-designed EV load management programs.

2. *Can electric metering and EV metering standards be changed to cost effectively and fairly increase EV and expand EV charging infrastructure in New Hampshire?*

In Order 26,604, the Commission required Eversource to propose an alternative metering pilot program.[25] The Commission likewise conditionally approved a proposed alternative metering feasibility assessment by Unitil in Docket No. 21-030.[26] As stated by Eversource, its proposal is designed in a manner similar to Unitil's, both of which are aimed at determining the "technical and practical feasibility of utilizing metering embedded in Electric Vehicle Supply Equipment ("EVSE") and metering embedded in electric vehicles for the purposes of offering [EV] only time varying rates to residential customers."[27]

Eversource's stated goal for the pilot is to compare the accuracy of charging session data from EVs and EVSEs to the accuracy of a revenue grade meter measuring the same energy consumption.[28] As noted by ChargePoint, embedded meters are already being used to offer successful EV rates and programs that would be prohibitively expensive to administer but for the use of EVSE and EV metering capabilities.[29] ChargePoint cited Baltimore Gas & Electric ("BG&E") in Maryland[30] and Xcel Energy in Minnesota[31] and Wisconsin[32] as examples of utilities where alternative approaches were approved by the relevant commissions.

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[25] *Id*.
[26] Docket No. DE 21-030, Unitil Energy Systems, Inc. Request For Change in Rates, Order No. 26,623 (May 3, 2022).
[27] Docket No. DE 20-170, Public Service Company of New Hampshire d/b/a Eversource Energy Alternative Metering Feasibility Assessment Pilot Proposal (October 7, 2022).
[28] Docket No. DE 20-170, Tr. at 37:5-37:15 (Boughan Cross) (January 31, 2023).
[29] Docket No. DE 20-170, Initial Comments of ChargePoint, Inc. at 18 (December 9, 2020).
[30] MD PSC Docket No. 9478, Order No. 88997 (January 14, 2019) ("the Commission directs the Utilities to utilize the "smart" features of such technology to their maximum potential, like advanced metering, to develop and implement time variant rate, load management, and demand response programs").
[31] *See* Northern States Power Company, Order Approving Pilot Program, Minn. PUC Docket No. E002/M-17-817 (May 9, 2018).
[32] *See* Northern States Power Company-Wisconsin, Final Decision, Wisc. PSC Docket No. 4220-TE-104 (July 16, 2020).

To provide an additional jurisdiction that is exploring such issues, New York is currently developing a testing process to gather data and implement standards related to the utilization of EVSE and vehicle telematics as submeters to measure EV consumption and demand during charging sessions.[33] The New York Public Service Commission has emphasized that its investigation is focused on aligning the accuracy of such technologies with the appropriate use case, which may include the use of EVSE and EV telematics for incentive calculation and verification in load management strategies like managed charging programs rather than in EV TOU rates.[34] WeaveGrid is supportive of this approach, and believes that New York's efforts could provide the Commission with useful information and guide decisions related to future EV rates and EV load management programs.

3. *What new programs or opportunities could be implemented to cost-effectively reduce EV charging consumption during periods of unusually high demand?*

In Docket No. DE 20-170, the Commission denied Eversource's proposed load management program.[35] WeaveGrid understands that the Commission's ruling was based on the evidence presented in that proceeding, and WeaveGrid does not take issue with the Commission's findings. However, as part of this investigation, WeaveGrid recommends that the Commission explore future EV load management strategies, as such programs can be a cost-effective method of incentivizing grid-beneficial charging behavior.

For background, there are multiple managed charging approaches. Passive managed charging programs generally consist of customers responding to price signals or incentives to charge during certain time periods. These programs are more behavioral-focused, where EV drivers either must plug and unplug their chargers or schedule their charger or vehicle to charge at certain times. Utilities use a different approach in active managed charging programs, wherein they leverage technology to automate EV charging to reduce power or shift it to certain hours. In these programs, the customer typically indicates when they prefer to have their vehicle fully charged and the charging is subsequently managed after the

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[33] Case 18-E-0138; Proceeding on Motion of the Commission Regarding Electric Vehicle Supply Equipment and Infrastructure, Joint Utilities' Proposal for a Method to Test the Accuracy of Managed Charging-Enabling Technologies (January 10, 2023).
[34] Case 18-E-0138, Order Approving Managed Charging Programs with Modifications at 28 (July 14, 2022).
[35] Docket No. DE 20-170, Order No. 26,604 at 26.

customer plugs in. EV drivers in active managed charging programs retain control of their charging in many of these programs, including informing the utility of their preferred charging schedule while maintaining the ability to override managed charging when necessary.

Well-designed managed charging programs can provide the same price signals to EV drivers to encourage grid-beneficial charging behavior as EV rates, albeit through program incentives rather than traditional rate structures. Moreover, such programs have the potential to provide greater grid benefits in a more cost-effective manner, by allowing EV drivers to utilize EVSE or telematics to enroll in the program, which can avoid the significant customer or utility costs associated with installing a second meter.[36]

Managed charging programs can likewise provide a significant reduction in distribution upgrade costs as EV adoption accelerates.[37] A variety of program types are successful in meeting the overall goal of cost-effective, grid-beneficial charging, and ultimately each Electric Utility should have the flexibility to adapt its managed charging approach to the level of EV adoption in its service territory. Managed charging programs have the added benefit of providing the Electric Utilities with the tools to manage and optimize EV charging against distribution system conditions.

As noted by Eversource, managed charging programs can give utilities more flexibility in addressing the potential distribution system issues presented by a proliferation of EVs in their service territory:

> "I think one of the attractive things about managed charging is that it is more flexible. So, rather than having a rate that is really designed to be more prescriptive and for customers to pay attention, there's a lot more flexibility with managed charging programs to address distribution-level constraints. Also, we avoid the sort of time or peak issue, where you have a bunch of electric vehicles that, you know, want to start charging at the same time. So, they'll all plug in at the same

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[36] Northern States Power Company d/b/a Xcel Energy Minnesota, Compliance Filing at 11-13, Docket No. E002/M-15-111 and E002/M-17-817, Residential Electric Vehicle Charging Tariff (May 31, 2019).

[37] NYSERDA Report Number 22-13. Prepared by Resource Innovations, San Francisco, CA. Available at: https://www.nyserda.ny.gov/About/Publications/Research-and-Development-Technical-Reports/Transportation-Reports.

> time in order to take advantage of the rate. And then, you know, you've got sort of a new problem that's created that you don't really have the ability to remediate or solve."[38]

Moreover, such programs can make things can be more easily understood by customers, can be easier for them to participate in, and can ultimately help EV drivers lower their bills.[39]

As stated at the prehearing conference in this proceeding, EV programs being considered through the lens of demand response models can "limit the potential of the full range of EV charging programs from a load flexibility perspective."[40] WeaveGrid is supportive of the exploration of a wide range of EV programs, including those that focus on the specific benefits that EVs can provide for the distribution system. When compared to a more business-as-usual charging base case, managed charging can yield benefits for drivers, non-participating ratepayers, and society.[41]

[38] Docket No. DE 20-170, Tr. at 95:16-96:6 (Findlay Cross) (January 31, 2023).
[39] Docket No. DE 20-170, Tr. at 96:12-97:6 (Findlay Cross).
[40] Docket No. IR 22-076, Tr. at 67:8-67:12 (Chiavara Statement) (February 2, 2023).
[41] E3 (2020). Benefit-Cost Analysis of Transportation Electrification in the Xcel Energy Colorado Service Territory.

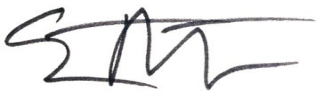
III. Conclusion

WeaveGrid appreciates the opportunity to provide comments on these important issues. Please contact the undersigned should have any questions or require any additional information. Thank you.

Respectfully submitted,

WEAVE GRID, INC.

Sincerely,



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