STATE OF NEW HAMPSHIRE
BEFORE THE
PUBLIC UTILITIES COMMISSION

Docket No. DE 20-170

Electric Vehicle Time of Use Rates

Liberty Utilities (Granite State Electric) Corp. d/b/a Liberty

REBUTTAL TESTIMONY

OF

HEATHER M. TEBBETTS

AND

MELISSA J. SAMENFELD

December 10, 2021

I. INTRODUCTION

Q. Ms. Tebbetts, please introduce yourself.

A. My name is Heather M. Tebbetts, my business address is 9 Lowell Road, Salem, New Hampshire, and I am employed by Liberty Utilities Service Corp. I am Manager of Rates and Regulatory Affairs and am responsible for providing rate-related services for Liberty Utilities (Granite State Electric) Corp. d/b/a Liberty ("Liberty" or the "Company"). Please see the Direct Testimony of Heather M. Tebbetts and Melissa J. Samenfeld, filed June 15, 2021, for a description of my educational background and work experience.

Q. Ms. Samenfeld, please state your full name, business address, and position.

A. My name is Melissa B. Samenfeld, my business address is 114 North Main Street, Concord, New Hampshire, and I am employed by Liberty Utilities Service Corp. I am an Analyst II in the Rates and Regulatory Affairs department and am responsible for providing rate-related services for the Company. Please see the Direct Testimony Heather M. Tebbetts and Melissa J. Samenfeld, filed June 15, 2021, for a description of my educational background and work experience.

II. PURPOSE OF TESTIMONY

Q. What is the purpose of your testimony?

A. Our testimony responds to the direct testimony of Department of Energy ("DOE") witness Sanem I. Sergici related to the rate design of commercial electric vehicle charging rates. Specifically, we address Ms. Sergici's recommendation that the Company adopt time-of-use ("TOU") electric vehicle ("EV") rates for commercial high demand EV customers.

III. DOE PROPOSAL

Q. Please summarize Ms. Sergici's testimony.

A. Ms. Sergici's testimony provides that TOU rates are most appropriate for EV charging to send price signals to both customers owning the stations and the EV drivers using them, instead of flat fixed rates with demand charges.

Q. What does she recommend?

A. Ms. Sergici recommends that the proposal by Liberty, which utilizes a fixed rate with greater volumetric charges and lower demand charges versus the commercial rates available to customers today, are not appropriate for EV charging, and that the Company should adopt TOU rates instead.

Q. Do you agree with these recommendations?

A. Not entirely. The Company appreciates Ms. Sergici's efforts to advance this important topic and her design does include benefits for our customers, including the opportunity for EV station owners to offer time-differing rates to their EV customers if they so choose. However, we think that the use of three-part rates is problematic and that the omission of a demand charge in the design Ms. Sergici proposes is a significant shortcoming.

Q. Please explain the three-part rates.

A. The three-part rates Ms. Sergici proposes have peak, mid peak, and off peak periods. They were developed using usage data provided by Liberty and utilize the system cost

duration curve for distribution rates, though she does not provide hours of the day these rates should be applicable to.

Q. What is the system cost duration curve?

A. The system cost duration curve assigns a greater share of the system costs incurred to serve customers to those hours that have the highest usage by customers.

Q. How is the curve used to allocate costs assigned to a class of customers?

A. The Company currently uses this approach to allocate costs of transmission and distribution. The transmission rates assigned to each rate class are determined by reviewing the coincident peak (the total load from Liberty customers at the highest annual hour of load at ISO New England) with the load for each rate class. Those costs are allocated to each rate class and the rates reflect the costs borne by the customer class. For distribution, the costs to serve customers are determined through a marginal cost of service study completed for rate cases, with the most recent study completed in 2018.

Q. But you disagree with using this method to allocate costs for the EV customers?

A. Correct. We believe the use of three-part rates, as proposed by Ms. Sergici, may be reasonable in other instances but not for the Company because we do not have usage data pertaining to EV charging stations, which is necessary data to implement this rate structure. Until the Company has commercial high demand charging stations in its territory for more than a period of twelve months, the data to create a new rate class for EV charging stations does not exist. The data used by Ms. Sergici is for commercial and

residential customers, none of which are simply high demand EV charging stations behind a meter.

Q. Please explain.

A. Distribution costs to serve customers are extremely difficult to assign because those costs are based on serving customers at the Company's system peak hour, which may be different than the ISO New England peak hour. The Company's system peak is going to be based on the mix of customers in its territory and, in many years, Liberty's peak differs from the ISO New England peak by up to three hours, with the Company's peak being earlier in the day. Since the Company has no data on the usage of high demand EV changing stations in Liberty's unique distribution system, we do not know if their peak load will coincide with Liberty's peak, with the ISO New England peak, or at some other time.

Q. Is that why your proposal includes flat rate with a high volumetric charge, low demand charge, and moderate customer charge??

A. Yes. By utilizing the data we have on our largest customer class for loads greater than 200 kW, which is our Rate G-1, we are able to provide a rate structure that recovers the cost to serve customers with these large loads while taking in to consideration the points made in Order No. 26,394 (Aug. 19, 2020) in Docket No. IR 20-004, that "cost of service is a foundational component of rate design," and, "we encourage the utilities to consider applying the marginal cost methodology we approved in [Docket No.] DE 17-189." Order No. 26,394 at 3, 5. (citing the docket in which Liberty obtained approval of its

Battery Storage Pilot Program). At this time, we do not have cost of service information for an EV charging rate class, as noted above.

Q. You indicated above that your other concern with Ms. Sergici's proposal is that it excludes a demand charge; does her testimony address this fact?

A. It does not. Ms. Sergici notes on Bates 4, lines 5 through 7, "In the absence of demand charges, TOU rate is more consistent with the marginal cost principles, while minimizing cross subsidies."

Q. Do you agree?

A. Not as her statement relates to the issue at hand. I agree with Ms. Sergici that rates varying by hour are necessarily more consistent with marginal cost principles because the Company's costs to serve its customers also varies by hour, based on changing market and operating conditions, among other factors. That said, for reasons I explain above we lack the data to accurately reflect this dynamic.

Q. Are there other reasons why the inclusion of a demand charge is important?

A. Yes. Implementing rates on a strictly TOU basis has the potential to create behavioral incentives to customers that could increase system costs and shift costs between classes in ways that are inconsistent with industry-standard ratemaking principles.

Q. Please explain.

A. TOU rates will tend to deter customers from charging during the very high price periods. By designing TOU rates during mid peak to be lower than the Company's proposed EV-L rate the distribution costs to serve the EV TOU customers with the same amount of

load are not recovered through the low volumetric charges. Ms. Sergici's proposal provides for a mid peak rate of $0.10062 versus the Company's $0.14009 rate, yet she does not provide the hours in which her rates will be instituted and, as further described below, the lower rates during mid peak hours may coincide with the Company's system peak, thus the cost to serve these customers will not be collected. Our system improvements to ensure safe and reliable service are not only built to serve our customers at the base load periods, but also for abnormal conditions such as loss of supply and failure of equipment. We model to build our system to our system peak which may be different from the ISO New England peak, as previously noted.

Q. Can you provide an example of why it is not possible to establish TOU periods for Liberty's high demand charging stations absent data indicating their usage patterns?

A. Yes. The Company's 2021 system peak occurred on June 30, 2021, hour ending 15 (which is 2 PM through 2:59 PM), as compared to the ISO New England 2021 peak which occurred on June 29, 2021, hour ending 18 (or 5 PM through 5:59 PM). Ms. Sergici did not recommend a time period for peak hours, but her testimony notes in a few instances that a five hour peak period is appropriate, which is consistent with Order No. 26,394 at 17 (Aug. 18, 2020) ("we agree with the City of Lebanon that the five-hour peak duration is more appropriate than the four-hour peak duration").

However, if the peak hour of Liberty's high demand EV charging station customers turned out to be late on June 29 (it was 98 degrees at Manchester Airport that afternoon), as people drive home from work or head out of the city to cool off, there is a chance that

the peak five hours in the rate design would not have included both the Company's early system peak hour and captured the EV charging stations late peak usage. EV station customers would thus not have been billed the cost to serve them – their high use would be billed at an off peak rate. If the peak hours were set at 3 PM through 8 PM to accommodate charging at the highest use periods late on that day, which aligns with the Company's residential EV TOU rate, the peak period would have missed the Company's early peak. If the peak hours were set at 2 PM through 7 PM to capture the Company's system peak, they would have lost the later hour of high EV charging usage, leaving the only way to collect those costs to serve would be to include a demand component in the rate design.

These decisions cannot be made without data showing how high demand EV charging stations actually operate on Liberty's system.

Q. Will there be a future opportunity to review the data from customers to determine if cost shifting is occurring?

A. Yes. In the Company's next rate case, which we currently anticipate filing in 2023, the Company will review the usage of customers taking the proposed rate and incorporate it into its marginal cost of service study to determine if cost shifting is occurring and the next steps for rate design based on the analysis.

Q. Do you think that would be a good time to revisit some or all of the design elements proposed by Ms. Sergici are appropriate?

A. Yes. A rate case provides the opportunity to review all costs associated with serving all customers.

Q. Are there other benefits to the customer by including a demand charge in the rate design?

A. Yes. When a customer requests commercial service, the Company undertakes a calculation of revenue for the service requested to determine a payback period for the distribution costs to serve the customer, such as poles, transformers, etc. The customer charge and expected usage over a period of twelve months is used to calculate the revenue. If costs are greater than the revenues, the customer bears those costs and they must be paid upfront. If the purpose of higher rates during peak hours is to deter customers from charging at those times, more of the volumetric revenues will come from the mid peak period at lower rates, thus the customer will need to pay more upfront to make up for that revenue loss. By including demand charges, more revenue is included in that calculation resulting in a lower upfront cost to the customer.

Q. What is your recommendation?

A. The Company's recommendation is that the Commission approve the Company's commercial charging rates as originally proposed and reject the three period TOU rate proposal by Ms. Sergici and allow Liberty time to capture sufficient data to create an EV charging rate class for commercial loads at the next rate case.

IV. CONCLUSION

Q. Does this conclude your testimony?

A. Yes, it does.