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**THE STATE OF NEW HAMPSHIRE
PUBLIC UTILITIES COMMISSION**

Docket No. DE 17-189

**LIBERTY UTILITIES (GRANITE STATE ELECTRIC) CORP.,
d/b/a LIBERTY UTILITIES**

Petition to Approve Battery Storage Pilot Program

COMMENTS OF CONSERVATION LAW FOUNDATION

Introduction

Conservation Law Foundation commends Liberty Utilities for proposing a forward-thinking pilot that seeks to make use of battery storage and time-of-use rates for multiple purposes including peak demand reduction and avoidance of traditional infrastructure costs.

CLF agrees with Liberty Utilities that the time is ripe for the state to begin to take strategic and increasingly widespread advantage of battery storage resources, including batteries located on the residential customer's side of the electric meter. CLF recommends that the state also evaluate options for expanding its use of other storage-type resources, including water

heating and thermal storage.¹ These technologies can be cost-reducing and offer a range of benefits to ratepayers and the electric system.

The comments provided below identify a number of improvements that could strengthen the pilot program proposed by Liberty Utilities, while helping set a positive precedent for future battery storage programs in the state. CLF urges adoption of Liberty’s proposal, with modifications consistent with these comments.

Utility Ownership and Related Issues

1. Cost-effectiveness

Battery storage can serve many purposes. Attached to these comments is a seminal report by the Rocky Mountain Institute, entitled “The Economics of Battery Storage,” that describes a number of the potential uses for battery storage, which include ISO-RTO services, utility services, and customer services.² ISO-RTO services can include energy arbitrage, frequency regulation, spin/non-spin reserves, voltage support, and black start. Utility services can include resources adequacy, distribution investment deferral, transmission congestion relief, and transmission deferral. Customer services can include time-of-use bill management,

¹ While these technologies are not the subject of this docket, these and other types of storage resources are addressed in the following PowerPoint prepared by David Littell of the Regulatory Assistance Project for the Maryland Public Utilities Commission: <http://www.raonline.org/wp-content/uploads/2016/09/rap-littell-storage-mdpsc-2016-sept-1.pdf>.

² The Rocky Mountain Institute report (RMI report) can also be found online at <https://www.rmi.org/wp-content/uploads/2017/03/RMI-TheEconomicsOfBatteryEnergyStorage-FullReport-FINAL.pdf>.

increased PV self-consumption in areas with high PV penetration, demand charge reduction, and backup power.³

As the report indicates, the cost-effectiveness of battery storage increases when a resource is used for multiple purposes—a phenomenon called “stacking.”⁴ To maximize cost-effectiveness, a battery storage program should either prescribe or allow flexibility for services to be stacked. The Rocky Mountain Institute recommends removing regulatory barriers to stacking.

In its report, the Rocky Mountain Institute concludes that “the further downstream energy storage is located on the electricity system, the more services it can offer to the system at large.” A visual depiction of this is shown in Figure 2 at page 19 of the report, which shows that maximum stacking of services can be achieved with behind-the-meter siting of battery storage. While battery storage sited elsewhere can also be cost-effective, and may serve various strategic purposes, the case for cost-effectiveness of behind-the-meter battery storage is particularly strong when stacking is permitted.

CLF applauds Liberty’s efforts to take advantage of multiple benefits of customer-sided battery storage. However, the pilot proposed by Liberty could be modified to further increase flexibility for stacking, including by opening all or a portion of the pilot to non-utility ownership

³ See RMI report at 14-16.

⁴ The economics of utility-scale battery storage projects also benefit from stacking. *See* Synapse Energy Economics, “Stacking Up the Benefits of Storage for New England,” at p.16, Oct. 2017, available at <http://www.synapse-energy.com/sites/default/files/Stacking-Up-Benefits-of-Storage-NE.pdf>.

of battery resources. CLF also urges Liberty to make the time-of-use rate proposed under this pilot more broadly available, in order to enhance opportunities for utility and customer savings.

In addition, cost-effectiveness may be diminished by excess utility ownership, which limits competition and third-party access. It may hinder the development of cost- and service-driven markets, as further discussed below. Customer engagement and satisfaction can also be negatively impacted by a regulated utility command-and-control approach.

2. Competition

CLF understands that Liberty Utilities proposes a pilot, rather than a full-scale program, and that Liberty wishes to control the parameters of its pilot. CLF also appreciates that utilities in general have a profit-motive to rate-base battery storage investments. However, a pilot is most effective when it can demonstrate broad cost-benefit based on developing competitive markets. This provides the most useful data, even if the parameters are not as tightly controlled. In addition, apart from the pilot context, in general it is essential to limit utility ownership of customer-sided battery storage in order to ensure maximum cost-savings through competitive markets, as well as to improve customer satisfaction.

Opening all or a portion of the pilot to non-utility ownership of battery resources, as with a “bring your own device” model, would enhance competition in a manner consistent with the intent of restructuring in New Hampshire. In addition, this pilot will set important precedent for the state. Significant utility ownership of battery storage would have the potential to hinder the robust development of competitive residential battery storage markets and services in New Hampshire. That is not a positive precedent to set.



In a pilot context, utility ownership of a portion of customer-sided battery storage resources could be appropriate in some cases. However, any utility-ownership of customer-sided resources should be limited to a small portion of the total customer base, or desired level of customer-sided battery storage penetration. Apart from pilots, utility ownership of customer-sided battery storage should either be rejected as anti-competitive and unnecessary, or limited to specific cases, such as cases where utility ownership can help overcome barriers to adoption in low-income communities.

The pilot proposed by Liberty in this docket has two segments – a general battery storage, time-of-use segment, and a second segment that is geographically specific and adds the element of a non-wires alternative. If the Commission determines that it is appropriate for Liberty to own a portion of the batteries deployed in this pilot, utility-ownership may be most suitable for the batteries deployed as a non-wires alternative under Liberty’s proposal. Otherwise, alternatives for the non-wires pilot could include a direct solicitation to competitive providers, as we anticipate that Sunrun and ReVision Energy will address in joint testimony filed in this docket.

3. Customer education

Customer education is an important part of utilizing customer-sided battery storage for any purpose, and it is particularly critical to a successful time-of-use rate demand-reduction program. CLF is a vigorous proponent of time-of-use rates, which save money and will be increasingly critical to load management as strategic electrification progresses throughout the region. However, time-of-use rate programs suffer if customer education is not a clear priority from day one.

Liberty must have a specific and rigorous plan for customer education. Ms. Tebbetts commendably has indicated in technical sessions that she is taking a hands-on approach to customer outreach, including personalized, individual phone conversations with interested customers. However, the Commission should ensure that Liberty has a specific and rigorous education plan that applies to all customers (in addition to any ad hoc or responsive customer education) prior to approving the proposed pilot.

Regulated utilities may not have special expertise in this type of customer education. Opening the pilot to a “bring your own device” model could add an additional source of education for participants. Third party service providers may have more experience with direct customer education than regulated utilities that do not typically make direct residential sales.

We recommend that Liberty work very closely with the City of Lebanon, in general as it develops this pilot, but particularly on the subjects of customer outreach, education, and satisfaction. The City of Lebanon, which is a party to this proceeding, has a strong history of success with energy-related education and outreach campaigns, including its recent volunteer-led solarize and weatherize campaigns. Based on information shared at recent technical sessions, I understand that the City has already been engaging in public outreach around Liberty’s proposed pilot. The City can offer invaluable perspectives on local needs and appetites, as well as channels of direct access to engage and inform local residents. The City’s input can also help shape this pilot to dovetail effectively with other ongoing or planned efforts.



Conclusion

Conservation Law Foundation fully supports a battery storage/time-of use rate pilot in the distribution territory of Liberty Utilities. We greatly appreciate Liberty's interest in reducing ratepayer costs using battery storage technologies. CLF urges the Commission to approve Liberty's proposal, with appropriate modifications consistent with these comments and input provided by other stakeholders and interested parties.

CLF also recommends that the Commission direct or encourage the launch of similar battery storage and time-of-use programs in the other New Hampshire electric distribution company territories. A generic docket on these subjects is called for in order to reduce customer costs and mitigate the possibility of increased electric grid costs associated with electrification. As the state launches a new transportation electrification initiative, funded using the VW emissions violation settlement funds, and as heat pumps and other beneficial electric technologies gain additional penetration, strategic efforts to control demand and take better advantage of customer-sided resources are essential to control costs and constrain emissions. Such efforts would be consistent with stakeholder recommendations in Docket No. IR 15-296, the recent Grid Modernization docket, and are particularly important now that the Commission has decided to indefinitely defer non-wires alternatives pilots under Docket No. DE 16-576.

Thank you for the opportunity to provide these comments.



Respectfully submitted,

A handwritten signature in blue ink, appearing to read "M. E. Birchard", is written above a horizontal line.

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Dated: May 1, 2018

Attachments: Ex. 1 – Rocky Mountain Institute report



CERTIFICATE OF SERVICE

I hereby certify that a copy of the foregoing Comments of Conservation Law Foundation have, on this 2nd day of May, 2018, been sent by email to the service list in Docket No. DE 17-189.

A handwritten signature in blue ink, appearing to read "M. E. Birchard", is written above a horizontal line.

Melissa E. Birchard
Conservation Law Foundation