

**STATE OF NEW HAMPSHIRE
PUBLIC UTILITIES COMMISSION**

DE 17-189

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

Petition to Approve Battery Storage Pilot Program

Order Following Hearing on Phase One of the Battery Storage Pilot Program

O R D E R N O. 26,784

March 15, 2023

In this order, the Commission acknowledges the completion of the evaluation period of the first phase of Liberty's Battery Storage Pilot Program, determines that batteries utilized in the pilot may charge from the grid, and memorializes next steps for several matters in this docket.

I. PROCEDURAL HISTORY AND BACKGROUND

Liberty Utilities (Granite State Electric) Corp. d/b/a Liberty (Liberty) implements a Battery Storage Pilot Program (Battery Pilot) as a distributed energy resource under RSA 374-G to store and dispatch electric energy to offset predicted system peaks. The Battery Pilot was approved by the Commission in Order No. 26,209 (January 17, 2019) in this docket. Order No 26,209 conditionally approved a settlement agreement (Settlement Agreement) that structured the Battery Pilot into two phases, the second of which Liberty may request authorization to implement if certain conditions are met.

Due to the combined impacts of the Commission's conditions preceding the Battery Pilot and a pandemic, the first phase was not fully deployed and studied as initially anticipated, and interim review hearings were scheduled. *See, e.g.*, Order No. 26,634 (June 15, 2020) and Order No. 26,588 (February 25, 2022).

Filings in early 2021 (see, Tabs 80–84) contained or related to a request for the Commission to interpret terms of the Settlement Agreement related to battery charging and discharge by pilot participants with distributed generation (DG) facilities. Liberty requested that the Commission interpret the Settlement Agreement to allow all customers' batteries to be charged in the off-peak hours to make available the full charge to the customer when needed for critical peak hours or for peak events. Tab 80 at page 4. The New Hampshire Department of Energy (DOE) questioned whether participants with DG facilities (namely photovoltaic solar energy generation) could charge batteries using the electric grid and then use the batteries to export to the grid during peak events without violating legal requirements that net-metered exports be from renewable energy sources only. Tab 81 at pages 4–5.

Liberty also filed numerous reports, status updates, and analyses, including its interim report on the evaluation period of the first phase of the Battery Pilot, which was admitted as Exhibit 22 (Interim Report). The evaluation period ran from December 2020 through August 2022.

On February 7, 2023, the Commission held a final review hearing on the first phase of the Battery Pilot. At that hearing, the Interim Report was reviewed, and the following issues were discussed: results from Phase 1, interpretation of the Settlement Agreement; the status of the “bring your own device” (BYOD) working group; reporting requirements related to the ongoing implementation of the first phase of the Battery Pilot; and the potential for a second phase of the Battery Pilot.

The filings referenced above, and related docket filings, other than any information for which confidential treatment is requested of or granted by the Commission, are posted at <https://www.puc.nh.gov/Regulatory/Docketbk/2017/17-189.html>.

II. COMMISSION ANALYSIS

a. Review of the Phase I Interim Evaluation Report

The Commission finds that the first phase of the Battery Pilot has been deployed and that several conditions related to the deployment and evaluation period of Phase 1 of the Battery Pilot have been met.

Under the terms of the Settlement agreement, Liberty may request authorization to initiate Phase 2 after having installed a minimum of 100 Phase 1 batteries that have been operational and available for Liberty to control and dispatch for at least 18 months. Exhibit 18 at Bates page 9. In addition, Liberty shall not commence Phase 2 unless:

- a. it has dispatched the Phase 1 batteries coincident with the monthly ISO-NE system coincident peak on average with an accuracy of at least 75 percent or greater determined with reference to expected peak hour kWh reduction achieved during actual peak hours in connection with either the full 18-month Phase 1 period or the most recent 12-month period during Phase 1;
- b. it has realized RNS and LNS and FCM cost savings during Phase 1 that are not less than projected in the submitted benefit-cost analyses, taking into account and adjusting for changes in actual rates or clearing prices;
- c. it demonstrates to the Commission that the investments and costs necessary to implement Phase 2, when considered in conjunction with those incurred or anticipated to be incurred in connection with Phase 1, have a forecasted net present value that is positive after incorporating historical Phase 1 average peak forecasting accuracy as described in (a) above, updated information about applicable RNS and LNS transmission rates, and other updated assumptions for relevant benefits and costs (those assumptions shall include, but are not limited to, FCM rates, actual battery costs, revised revenue-neutral TOU rates based on the default energy service rate (assuming no change in load shape as a result of participation in the pilot), transmission rates, and distribution rates then in effect, actual customer behavioral response to and experience with the Phase 1 TOU rates, actual full net energy metering credit costs based on the actual number of discharge events when Liberty takes control of the installed batteries and the actual costs (e.g., energy, distribution,

- transmission, etc.) associated with those discharge events, and any costs or benefits associated with utility revenue impacts attributable to battery charging, actual charging rates, TOU rates, and default energy service rates; and
- d. there has been no material adverse change in any relevant circumstances or criteria. If Phase 2 is not approved, the Commission may examine the prudence of continuing Phase 1, based on a revised and updated benefit-cost analysis of alternatives regarding the batteries installed during Phase 1, and a determination may be made to terminate the Phase 1 program following an adjudicative proceeding.

Id. at Bates pages 9–10. Finally, the Settlement Agreement states that Phase 2 requires Commission approval following an expedited adjudicative process initiated by Liberty. *Id.* at Bates page 11. The DOE (formerly Staff of the Commission) must file a recommendation regarding Phase 2 within 60 days of Liberty’s request for approval of a second phase. *Id.*

The Interim Report, as presented at the February 7, 2023, hearing, supports the following facts: Liberty installed and commissioned at least 100 batteries on or before November 20, 2020. Interim Report at Bates pages 7–8. During the evaluation period (between December 2020 and August 2022) Liberty dispatched the Phase 1 batteries coincident with the ISO-NE system peak with an accuracy of 79% based on the weighted average monthly coincident peak, or 81% based on the weighted average annual coincident peak. *Id.* at Bates pages 10–12. Guidehouse (Liberty’s third-party consultant that prepared the Interim Report) calculated a comparison of savings from Regional Network System (RNS) charges, Local Network System (LNS) charges and Avoided Capacity Costs for the Phase 1 period during the evaluation period, and determined that actual and projected savings were not directly comparable to original forecasts. *Id.* at Bates page 13. Nonetheless, Guidehouse concluded that actual savings were higher than projected savings given higher-than-projected performance during both monthly and annual coincident peaks, after adjusting figures to match the estimated number of batteries installed and system charges in the Settlement

Agreement. *Id.* The Battery Pilot's benefit-cost ratio after the evaluation period of Phase 1 is 0.87. Transcript of February 7, 2023 Hearing (Hearing Transcript) at pages 68–69.

Phase 1, if it were a freestanding pilot program, would not be cost-effective program because the benefit-to-cost ratio is below 1. However, we determine that Liberty completed the rollout and evaluation period for Phase 1; Liberty dispatched the Phase 1 batteries with the monthly ISO-NE coincident system peak with an average accuracy of at least 75 percent, determined with reference to expected peak hour kWh reduction achieved during actual peak hours in connection with the full 18-month Phase 1 period; and Liberty realized RNS, LNS and avoided capacity cost savings during Phase 1 that were not less than projected in the initially submitted benefit-cost analyses, taking into account and adjusting for changes in actual rates or clearing prices.

b. Issue Related to Battery Pilot Participants with Distributed Generation

The Commission finds that participating customers with renewable DG may charge their batteries from the electric grid because the batteries are programmed not to export to the grid unless directed to do so by Liberty and are otherwise always under Liberty's control.

The Settlement Agreement provides that

Participating customers without on-site [DG] shall not be permitted to export battery power to the grid except when the batteries are under Liberty's control. Net-metered customers shall not be permitted to charge their batteries from the grid except when the batteries are under Liberty's control; subject to the foregoing limitation, those customers shall receive credit for all energy exported to the grid, whether from their batteries or from their DG, according to the terms of the Alternative Net Metering Tariff with credits determined based on the TOU rates.

Exhibit 18 at Bates pages 7–8.

At hearing, the Commission heard testimony that the batteries are always controlled by a computer configured so that energy is never exported absent a direct command. Hearing Transcript at pages 32–33, 43. This testimony establishes with a reasonable degree of certainty that Battery Pilot customers with DG will not distribute to the grid during non-events. Therefore, we conclude that Battery Pilot participants with renewable DG are authorized to charge the batteries with electric energy from the grid for on-premises use and to be discharged to the grid by Liberty to offset predicted system peaks.

c. Future Plan for the Battery Pilot, Phase II, BYOD, and Reporting

At hearing the Commission indicated that it would give the parties time to collaborate and consider potential next steps for the Battery Pilot, including whether to pursue a second phase, and if so, what a second phase might look like given the passage of time. Hearing Transcript at page 101. In any Phase 2 proposal, the Commission would carefully study the results from existing installations, new assumptions, the resulting cost-effectiveness, and what, if any benefit would accrue from installing more batteries. *See id.* at page 95. Further, as stated by Liberty, owning assets behind the meter, as is the case here, is not at the core of Liberty's business. *Id.* at 64.

Additionally, Liberty sought direction on whether the BYOD component of the Battery Pilot should be pursued given that a BYOD working group did not coalesce as contemplated by the Settlement Agreement. *Id.* at page 8. However, Liberty ultimately agreed that the BYOD issue could also be addressed in the first instance by the parties. *Id.* at page 119.

Finally, the Commission indicated that the continued operation of Phase 1 batteries should be accompanied by simplified reporting, and requested a proposal from the parties for future reporting requirements. *Id.* at page 120.

The Commission therefore directs Liberty, after consultation with the parties, to propose next steps in this matter. Next steps shall address the ongoing operation of the Phase 1 batteries, including simplified reporting metrics; whether BYOD initiatives should be addressed in this docket or other dockets, and if in this docket then under what structure; and whether a second phase will be pursued, and if so, a proposed procedural schedule.

Based upon the foregoing, it is hereby

ORDERED, that the evaluation period of the first phase of the Battery Pilot is complete as discussed herein; and it is

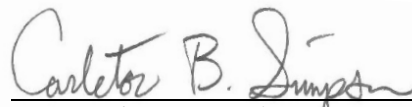
FURTHER ORDERED, that the issue of the interpretation of the Settlement Agreement is resolved and Battery Pilot participants with distributed generation may charge their batteries with electric energy from the grid as discussed herein; and it is

FURTHER ORDERED, Liberty shall file a proposal for next steps no later than May 30, 2023, addressing the topics addressed above, including: the ongoing operation of the Phase 1 batteries, including simplified reporting metrics; whether BYOD initiatives should be addressed in this docket or other dockets, and if in this docket then under what structure; and whether a second phase of the Battery Pilot will be pursued, and if so, a proposed procedural schedule.

By order of the Public Utilities Commission of New Hampshire this fifteenth day of March, 2023.



Daniel C. Goldner
Chairman



Carleton B. Simpson
Commissioner

Service List - Docket Related

Docket#: 17-189

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