

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

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

Petition to Approve Battery Storage Pilot Program

Docket No. DE 17-189

Technical Statement of Heather M. Tebbetts

April 6, 2018

A. Purpose of Technical Statement

On November 30, 2017, Liberty Utilities (Granite State Electric) Corp. (“Liberty” or “the Company”) filed its proposal for a battery storage pilot program. On February 9, 2018, the Company filed supplemental testimony and a benefit/cost analysis to provide further information about the pilot.

After an initial round of discovery, the parties attended a technical session on March 14, 2018, to review the discovery responses and filings. Additional discovery was propounded at the technical session, along with the understanding that the Company would be providing an update to the benefit/cost analysis, along with responses to informal discovery. A revised benefit/cost analysis is attached to this technical statement (Attachment A Revised) that incorporates the changes described below.

B. Benefit/Cost Analysis Updates

1. Programming Costs

As part of the pilot, Liberty’s billing system and meter data management system will need updates to accommodate billing the time-of-use rates, along with reading cellular meters. At the time of the supplemental filing, the Company did not have actual costs of the updates from its vendors. The updated analysis includes the Cogsdale configuration and testing costs of \$92,290, which includes system configuration, regression testing, and support for bill presentment. The cost to upgrade the Itron MV-90 meter data management system is \$80,000 and will be performed by Itron and the Company. The total costs in the original analysis were estimated to be \$200,000 and the quoted costs provided in the update are \$172,790.

2. Degradation of Batteries

The customer contract provides that during the warranty period (years 0-10) the batteries will not degrade to less than 70% of its full capacity. Tesla believes the approach of daily cycling of the batteries, as is expected for customers participating in the pilot, is similar to the baseline Powerwall use case, and will result in a three percent degradation each year. The Company has updated its analysis to provide for the annual degradation of the batteries.

In reviewing the RNS and LNS charges for the future years, the analysis did not include any escalation of the rates. Additionally, the analysis did not account for any cost-shifting due to other states, such as Massachusetts, introducing battery storage into their portfolios of renewable projects, which will reduce their RNS obligations and shift costs onto New Hampshire and other New England customers. This may be a shortfall of the analysis, but it provides a conservative calculation of the benefits.

3. Non-Wires Alternative (NWA)

One of the purposes of the batteries is to provide a NWA for circuits in Lebanon in order to avoid the cost of a second feeder. The cost of the second feeder is \$644,000. The original analysis mistakenly included the cost as \$640,000. This has been corrected in Attachment A Revised.

4. Meter Reading Costs

As part of the update to the analysis, the Company has confirmed that the data plan costing \$5 per month per meter will suffice and has reduced the monthly meter reading costs from \$50,400 to \$36,000 in the Option 2 analysis (page 2 of Attachment A Revised).

5. Book Depreciation Period

After further review of multiple data requests regarding the warranty and costs associated with the batteries after the warranty has expired, particularly Staff 1-56, the Company revised its book depreciation period from fifteen years to ten years. The primary concern in the discovery is that costs associated with battery maintenance beyond the warranty period are unknown. A secondary concern is whether customers should continue to pay for the batteries through rates in view of the possibility that the batteries may require costly maintenance, and may not provide continued benefits to customers. The Company also conferred with Green Mountain Power as to the book depreciation period it used, and GMP confirmed it used ten years because that is the length of the warranty period. Therefore, the updated analysis in Attachment A Revised uses a 10-year book life for depreciation.

6. NH Business Profits Tax

The NH Business Profits Tax changed for 2018 from 8.2% to 7.9%. This change has been reflected in the analysis on pages 3, 5, and 7 in the calculation of taxes for the revenue requirements of the batteries, meters, and distribution circuit upgrade.

7. Revised Calculation of Net Benefits and Net Present Value

The revisions previously noted provide for a new net benefits calculation over the fifteen year life of the batteries of \$253,977, with a net present value of (\$1,102,900). One of the primary purposes of the pilot is to present a NWA to adding another circuit to the distribution system to allow for greater reliability in the West Lebanon area, as the area's load is expected to grow in the next two to three years. If the Company were to only add a circuit, rather than propose this NWA, the upgrade only provides qualitative attributes to any analysis, while providing a net present value of (\$619,940) for the same period as the pilot, as shown on line

19, page 2. The pilot, while showing a lower net present value than the upgrade alone, will provide qualitative and quantitative benefits to customers with reduction to transmission costs and the ability to retrieve data to inform future decisions for grid modernization and possibly net metering tariffs.

Data collection has been at the forefront of Docket No. DE 16-576, and this pilot feeds right into what the Commission ordered parties to do: create pilots to figure out what the value of distributed energy resources are to inform future tariffs. The Company believes that while this pilot is not directly providing data to accommodate the Commission's Order, the data can be used in conjunction with other data collected in the docket.

The Final Report of the Working Group in Docket No. DE 15-296 included data collection as a means to learn more about how grid modernization programs affect the grid and customer behavior, and again, this pilot will be able to provide data to learn more about the items discussed in that Report.

C. Conclusion

The Company carefully listened during the technical session, reviewed responses to data requests, and used the information to modify the analysis to provide a more conservative calculation of the costs and benefits to the pilot program. Although the net benefits are lower than originally filed, the purposes of the pilot remain the same: to review customer behavioral changes while utilizing TOU rates, if any; to determine if customer satisfaction with respect to reliability has increased; and, to study the effects of batteries on the distribution system.

The Company believes approval of this pilot program will allow for future development of distributed energy resources in the region and it is excited to be the first in New Hampshire to request approval of a pilot of this type, as utilities start to move into the 21st century.