



October 31, 2017

The Honorable June E. Tierney
Department of Public Service
112 State Street
Montpelier, VT 05620

Dear Commissioner Tierney,

Renewable Energy Vermont appreciates the opportunity comment on the Department of Public Service's draft energy storage report prepared in response to Act 53. REV reiterates our encouragement of the State's support and efforts to progress deployment of a wide variety of life-cycle cost effective energy storage solutions including batteries, pumped hydro, electric vehicles, and thermal, etc. at utility, commercial/institutional, and residential scales. Energy storage is a necessary and rapidly growing component of cost-effective renewable energy integration.

The recommendations from our August 18, 2017 letter in addition to those outlined below are market based; oriented to enable fair compensation to all Vermonters for value that energy storage provides and an equitable competitive market enabling cost effective customer choices. Recommendations included within the Department's report should:

- Enable capture of the full value of energy storage;
- Require energy storage competition in all grid and resource planning efforts and procurements by utilities and the State;
- Ensure fair and equal access for energy storage to the grid and markets;
- Support customer, 3rd party, and utility ownership models.

Additional Recommendations

Value of Storage Investigation

The State should initiate an investigation at the Public Utilities Commission to assess the value of energy storage and ways to unlock markets and customer access to that value. More detailed work needs to be done to disaggregate the multiple value streams of energy storage and incorporate them into a tariff design. The Department and Commission should encourage appropriate pricing through tariffs that provide an economic signal conducive to cost-effective storage applications. As a way to reduce ratepayer risk and leverage private investment and local economic development opportunities, each utility should develop tariff proposals that disaggregate the value streams of energy storage, including traditional ancillary services. Additionally, rates or incentive structures could be crafted to allow for a kWh reimbursement mechanism that would be higher for storage assets controllable by the utility.

State Resiliency Planning

The State and local governments should include energy storage and microgrids as a mitigation strategy and solution within its Hazard Mitigation Plan prepared for FEMA. Such inclusion creates an opportunity for access to federal funds to facilitate planning, feasibility, and resilient energy storage projects.



Open Software Platform / Communications Protocol

Vermont should adopt rules requiring use of open, non-proprietary specifications and standards for utilities and energy storage technology and service providers.

See <http://mesastandards.org/>. It is important to ensure transparent and platform based tools are used by utilities so that a specific software or integration system does not either unintentionally or intentionally result in an inability for a variety of products to be utilized by customers and service providers. For example, a utility could choose a software program that only has capability of communicating with a storage product offered by the same company as the software program, thus creating a product monopoly and market barrier which has the additional consequential effect of discouraging competition and continued innovation.

Competition among energy storage providers will drive cost reductions and continued technology improvements. Customers should be able to deploy the storage product of their choice, within certain guidelines.

REV appreciates and supports the recommendation within the report that software platforms ensure that no single technology provider or application monopolizes the market place and that consumers benefit from the most choices possible. It is important to address this as soon as possible as such monopoly barriers are already in existence in Vermont, as the report identifies on page 27.

Utility Planning

Each utility Integrated Resource Plan should include an assessment of the benefits and need for energy storage and a quantified deployment or procurement range or target amount. By requiring utilities to account for the value of energy storage in their planning, the State can ensure that utilities will identify and pursue energy storage projects that improve system operations and reduce overall long-term costs for ratepayers. Unlike traditional grid infrastructure upgrades that will be necessary to integrate the ever increasing amount of distributed renewable generation on our grid, energy storage is extremely flexible and can be quickly deployed at a fraction of the cost.

Aggregation

In addition to allowing aggregation of multiple customer loads for a single energy storage project, it may be necessary to encourage or authorize aggregation of energy storage solutions to serve across multiple utility territories. REV is concerned that smaller co-ops and municipal distribution utilities may not have the access to capital, local rate base, load, or expertise to develop utility, commercial, or residential scale energy storage solutions. The State should allow for aggregation of storage projects across multiple distribution utilities and clearly allow third party vendors to build, own, operate and manage storage projects to benefit smaller (or larger) utilities on an aggregate basis. Further, we recommend that federal or state funding or technical assistance with energy storage deployment should be prioritized for these small, non-investor owned utilities.

REV's earlier comments offered other market-based recommendations including:

- dynamic electricity price signals through rate design



- load aggregation to enable customers and project owners to access regional markets
- authorizing energy efficiency utilities and customers with self-administered EEU funds to utilize energy storage
- authorize renewable energy + storage projects within the Standard Offer and net metering programs
- workforce development initiatives to support energy storage manufacturing and project development and maintenance
- incenting energy storage products manufactured in Vermont
- incorporating energy storage into all IRPs
- comprehensive review on state regulations, permitting, taxes, and fees impacting rapid energy storage deployment
- establishing a statewide energy storage deployment target.

Consumer Education

Numerous energy storage products and services exist and customers should be able to easily access information about both utility and non-utility offered solutions. REV recommends that the State support creating a clearinghouse, educational website, or database of vendors similar to the Vermont Renewable Energy Business Listing, Thermal Clearinghouse, or Energy Efficiency Network. REV also recommends that utility communications with customers include notification to those customers that non-utility offered products and services are available. Customer education and choices drive down costs and encourage innovation.

Incentives

The State should consider incentives which have successfully enabled other emerging technologies and economic sectors to deploy, grow and scale, and become sustainable. Specifically, tax credits, low interest loans, or other incentives could facilitate deployment of energy storage solutions and private investment in Vermont. REV supports the Department's recommendation to consider special property tax treatment for storage projects similar to what exists for solar generating facilities. California's [Self-Generation Incentive Program](#) is additional model to consider.

Comments on the Draft Report

The report should take both a short term and long term view on energy storage, recognizing that the technology is rapidly evolving and improving as are the energy markets. The recommendations should not be limited based on the existing wholesale market electricity prices (which while at a historic low are not expected to remain at current levels into the future) or on the existing technology. Recommendations in the report should recognize this evolution and be platform / enabling based.

Peak reduction capabilities of energy storage should be detailed and quantified in terms of MWh (referring to page 12). The benefits that 200+ MW of energy storage could offer Vermont ratepayers and utilities should not be downplayed. The regional network service description neglects to acknowledge that decreasing peaks (i.e. leveling demand) has an



inherently positive effect on the transmission system. The transmission system has to be sized to handle maximum loads and energy storage offers a cost effective alternative to unnecessary transmission buildout.

REV appreciates the comprehensive nature of the draft report and the Department's work to develop it and consider stakeholder comments. We look forward to seeing actionable short and long term recommendations with suggested timelines included within the final report.

Vermont needs to evolve its current regulatory markets, rate design policies, and evaluate the roles of distribution, transmission, and efficiency utilities so that all stakeholders are aligned to facilitate the State's total renewable energy, economic, and climate commitments. Seismic developments evolving the energy sector increase the value proposition of storage at the same time that product costs are falling.

We look forward to the State's efforts to eliminate barriers and encourage greater energy storage deployment immediately. Please do not hesitate to reach out to me at 802-595-5373 or olivia@revermont.org with any questions on our comments.

Best Regards,

Olivia Campbell Andersen
Executive Director

Renewable Energy Vermont represents businesses, non-profits, utilities, and individuals committed to reducing our reliance on dirty fossil fuels by increasing clean renewable energy and energy efficiency. Vermont's clean energy economy directly enables at least 19,080 jobs at 3,751 businesses, representing approximately 6% of Vermont's workforce. Together, we will achieve 90% total renewable energy (electric, thermal, transportation) before 2050.