

December 4, 2019

**Ms. Anne Margolis, Deputy Planning Director
Vermont Department of Public Service
112 State Street
Montpelier, Vermont 05620-2601**

Dear Ms. Margolis:

Vermont Electric Power Company(VELCO) offers the following comments on the Department's November 1, 2019 draft recommendation options on storage. I first want to thank the Department, and you in particular, for organizing and moderating the thoughtful, transparent and candid discussions on this issue. These discussions were informed, very constructive and should lead to a more effective outcome.

Overview

VELCO supports the Department's goal of ensuring community safety, securing greater permitting clarity and maintaining electric grid reliability. As is the case with the current regulatory construct, our distribution utility customer/owners will be substantially more impacted by whatever changes are made to the state storage permitting requirements. That said, given Vermont's statutory and regulatory renewable energy and climate crisis requirements and goals, the pace of energy technology innovation including storage and Vermonters' embrace of renewable energy opportunities, VELCO believes the use of storage will dramatically increase. Such an outcome should be embraced in our view. That is because VELCO further believes this can and should be incredibly positive for system reliability and overall electric grid cost effectiveness. Thus it is from the perspective of safety, grid reliability and cost effectiveness with which we view these recommendations.


Specific Comments

1. **Rulemaking Path** – In general, and mindful that we are simply not as directly affected as others, we support the Department's preferred approach to revise Vermont Public Utility Commission (PUC) Rules 5.100 and 5.500 to incorporate energy storage. In this context we would look for the upcoming workshops to be held as part of the open interconnection rulemaking proceeding (19-0856-RULE) as the forum for discussion and implementation.
2. **Storage Definition** – The report defines storage as "*a device or system that captures energy produced at one time, stores that energy for a period of time, and delivers that energy as electricity for use at a future time.*" While not critical, we would suggest that this should read instead as "*a device or system that captures **electrical** energy produced at one time...*" Our reasoning is that if it's not specified as electrical energy, it could refer to really any form of generation that stores chemical energy in fuel.

3. **Inverter Safety Performance Requirement** – VELCO believes any inverters installed on storage devices should be compliant with IEEE Standard 1547 and meet all established codes by Underwriters Laboratories and responsible state and local fire protection bodies.
4. **Regulation Threshold** – We support the PUC having jurisdictional oversight of storage. We support the Department’s attempt to strike an appropriate balance between necessary, beneficial oversight and needlessly burdensome process. In striking that balance, we would support not hindering the exciting ongoing work on storage by distribution utilities including by Washington Electric Cooperative with Packetized Energy to aggregate water heaters and by Green Mountain Power with Dynamic Organics to utilize commercial/industrial customer assets as storage. In general, we see the applicability of Department review or approval with those resources that have the capability and/or the likelihood of exporting power to the grid. For example, the connection of an electric vehicle (EV) with vehicle-to-grid capability, while likely beneficial to Vermont in the end, should not be connected without study (presumably, done for more than one resource at a time) by the host utility. Similarly, a virtual storage system that has bidirectional control of the flow of energy for any type of device should also be studied by the utility. In this case, requiring the installing party to obtain approval from the Department/PUC may give the distribution utility the time and authority it needs to review and approve or reject individual devices or aggregations.
5. **Reporting Information** – VELCO also supports some level of distribution utility documentation of the storage facility characteristics to include the following:
 - a. Size, storage capacity (Kwhr), manufacturer and model and whether it is internet connected.
 - b. Identification of controlling entity(ies), e.g. utility or aggregator, and means by which such control is effected.
 - c. Measurement of charging and discharging, which would require installation of a separate storage device meter.

In concert with our distribution utility customer/owners, VELCO will seek to stay constructively and creatively engaged in the development of revised storage rules. Thank you for the opportunity to comment and please just reach out to me at (802) 770-6166 and/or Kjohnson@velco.com should you have any comments or questions.

Sincerely,



Kerrick L. Johnson

Vice President for Strategic Innovation