



October 31, 2017

Vermont Public Utility Commission
112 State Street Montpelier, VT 05620-2701

RE: Comments from Sunrun Inc. in Response to the Department of Public Service’s Request for Comment on the Energy Storage Draft Report

Sunrun, Inc. (“Sunrun”) respectfully submits the following comments in response to the Department of Public Service (“Department”) requesting comments on its Energy Storage Report draft report. Sunrun is a leader in residential solar, storage, and energy management with 134,000+ customers in 21 states and the District of Columbia. We pioneered the “solar-as-a-service” model 10 years ago and today are the largest dedicated residential solar, storage, and energy services company in the United States. Sunrun commends the Department for developing a comprehensive report and for taking the leadership to evaluate a broad range of programs and policies that together will encourage energy storage development in Vermont.

Sunrun offers the following comments for consideration in the Department’s final report.

Supporting a comprehensive set of policies that will encourage private investment in behind-the-meter (BTM) storage assets will ensure that Vermont is fully capturing the multitude of benefits for ratepayers and support resiliency and backup power to the grid.

Sunrun encourages the Department to support a suite of policies that will include private investment in BTM assets. In the draft report, there appears to be a preference for utility owned resources, with claims of it being the simplest and most straightforward pathway for energy storage. However, a majority of storage deployed is behind the meter of electric customers and independent power producers. Discouraging the deployment of BTM assets will undermine capturing the full potential benefits and capabilities that these assets can provide to Vermont’s grid and its ratepayers.

We are not convinced that utility ownership behind the meter is ever a good idea. As the Department is well aware, as electric markets currently exist, a regulated utility may have financial incentives and the means to raise the costs that its rivals face to provide services to BTM projects, among a number of other competitive advantages. For example, as the Federal Trade Commission recently noted in the New York REV proceeding, a regulated utility may have a bias against unaffiliated entities and as a result raise obstacles to gain approvals to

connect to the grid.¹ In short, there are almost always inherent conflicts of interest that arise when utilities, or utilities' affiliates, look to compete in open distributed resource markets.

Studies² show that customer-sited, behind-the-meter energy storage can actually provide the largest number of services to the electricity grid. BTM storage can provide customer services (backup power, increased PV self-consumption, time-of-use bill management, etc.), utility services (distribution deferral, transmission deferral, transmission congestion relief, resource adequacy), and even ISO services (energy arbitrage, spin and non-spin reserves, frequency regulation, voltage support, and black start).³

Furthermore, distributed energy storage offers customer bill management, load shift, and dispatchable capacity for utility demand management programs, as well as balancing services for the distribution grid. It also offers resiliency in grid outages, a unique benefit during extended outages or a natural disaster. When paired, solar+storage offers unlimited days of solar production and battery recharge for emergency power.

BTM assets managed through the aggregator platform are capable of responding to various signals that could optimize exports and provide grid services to the utility. In other states, including California and Hawaii, Sunrun's aggregation platform can systematically draw upon BTM assets at optimal times for the utility once a signal is sent. The infrastructure exists, and Sunrun encourages Vermont to develop a pathway for these distributed energy resources to also present a solution to the grid's changing needs.

One significant capability of BTM assets managed through an aggregator platform is load shifting and dispatchable capacity, which could reduce the cost of ISO peaking capacity expenses for Vermont customers and thus directly reduce costs for all ratepayers. Programs to reduce peaking demand do not need to be complicated or delayed waiting for the utility to be able to integrate with aggregators. Time of Use Net Energy Metering in California is empowering customers to make wise energy investments and decisions that align with the needs of the grid. Customer sited resources can be designed today to align with both the customer's needs and grid needs. The Department's draft report argues that coupling storage with renewables is somehow inferior and limits arbitrage opportunities. While it may be true the majority of storage coupled renewable generators will not charge from the grid, they are load shifting renewable generation into more valuable periods, which is more beneficial than load shifting grid power. Being coupled with renewable generation has the added benefit of reducing the cost of deploying storage, which will accelerate adoption in comparison to alternatives.

¹ See Federal Trade Commission New York REV Comments at p. 7, available at https://www.ftc.gov/system/files/documents/advocacy_documents/ftc-staff-reply-comment-state-new-york-public-service-commission-reforming-energy-vision-proceeding/112315nypsc.pdf.

² Fitzgerald, Garrett, James Mandel, Jesse Morris, and Hervé Touati. The Economics of Battery Energy Storage: How multi-use, customer-sited batteries deliver the most services and value to customers and the grid. Rocky Mountain Institute, September 2015. <<http://www.rmi.org/electricity_battery_value>>

³ Page 6, Ibid



Establishing interconnection standards for storage assets will encourage more widespread adoption by reducing soft costs and improving the overall customer experience.

Interconnection standards are an important consideration to ensure ease of technology adoption and control soft costs. Enabling streamlining for non-export generation sources is important, but what is equally or more important is that the interconnection process correctly analyzes the proposed generator to ensure accurate representations within the application review process, but also within the utility's circuit hosting capacity analysis. Failure to correctly model the generation system on the application's proposed use will lead to artificially constraining interconnection opportunities and will trigger upgrades when not needed.

In Conclusion

Sunrun commends the state of Vermont for taking significant steps to thoughtfully and efficiently integrate storage assets into the state's electric mix. While the state determines a storage deployment roadmap, Sunrun encourages the implementation of a suite of policies that will include private investment in BTM resources. BTM storage assets present varying sets of benefits and capabilities to the grid and customers, particularly with advanced aggregator platforms that are working in other states. Encouraging investment in these resources will ensure that the state is fully capturing the values that managed storage assets provide to the grid.

Sincerely,

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