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Via Electronic Mail
executive.director@puc.nh.gov

Debra A. Howland, Executive Director
Public Utilities Commission of New Hampshire
21 South Fruit Street, Ste 10
Concord, NH 03301

RE: IR 20-166

Dear Ms. Howland,

The Energy Storage Association ("ESA") respectfully submits these comments in response to Public Utility Commission of New Hampshire's ("Commission") Order of Notice of investigation into compensation of energy storage projects ("ESPs") for avoided transmission and distribution costs. ESA thanks the Commission for its investigation into this important issue. Below, we offer general comments on the topic of the Commission's investigation and suggest a specific program design that may provide a useful model for the Commission. These comments are not a comprehensive response to every issue raised by the Commission's notice. Instead, they provide general information and recommend a model program design that may meet several of the goals of the investigation.

I. ABOUT THE ENERGY STORAGE ASSOCIATION

ESA is the national trade association dedicated to energy storage, working toward a more resilient, efficient, sustainable and affordable electricity grid – as is uniquely enabled by energy storage. With more than 200 members, ESA represents a diverse group of companies, including independent power producers, electric utilities, energy service companies, financiers, insurers, law firms, installers, manufacturers, component suppliers, and integrators involved in deploying energy storage systems around the globe. Further, our members work with all types of energy storage technologies and chemistries, including lithium-ion, advanced lead-acid, flow batteries, zinc-air, compressed air, liquid air, and pumped hydro among others. Several ESA member companies do business in New Hampshire, with more making plans for energy storage installations in the state.

II. BENEFITS OF ENERGY STORAGE PROJECTS

ESPs provide a number of important services to the electric grid. Fundamentally, energy storage provides the flexibility to deliver energy at the precise moment and location it is needed. This flexibility can deliver value at all levels of the electricity system: wholesale services such as resource adequacy, electricity supply, and capacity; distribution services including peak demand reduction, load shifting, and increased system capacity; and customer benefits including back-up power and bill management.

Relevant to this investigation, energy storage can serve as a cost-effective alternative for traditional distribution and transmission investment. Deployment of energy storage can avoid costs to ratepayers of excess grid capacity in the form of power plants and wires. Since energy storage can charge off-peak when system demand and electricity costs are lower, and then deliver that electricity during peak periods of demand to relieve grid stress, energy storage can save ratepayers money by reducing the amount of

spare power plant capacity needed to meet system peak demands while better utilizing generation resources available during off-peak periods.

In New Hampshire, one notable example of the potential for use of energy storage as a distribution asset is Eversource Energy's proposed Westmoreland Clean Innovation Project for a 1.7 megawatt (MW) / 7.1 MWh energy storage project that could avoid the construction of a $6 million, 10-mile distribution circuit and reduce peak demand. However, that proposal was not included in Eversource's most recent permanent distribution rate filing. Examples of energy storage as distribution and transmission assets include the following:

- Arizona Public Service purchased a 2 MW / 8 MWh battery-based energy storage system for less than half the cost of the traditional investment of a wires alternative in August 2017.
- New York's Con Edison is deferring a $1.2 billion substation upgrade through its non-wires alternative program, the Brooklyn-Queens Demand Management Program, by contracting for 52 MW of demand reductions and 17 MW of distributed resource investments, including energy storage.
- PSEG Long Island has made similar solicitations to reduce peak demand as a means of avoiding network upgrades and has deployed two storage systems with a total capacity of 10 MW/80 2MWh in South Fork in 2018 for this purpose as well.
- National Grid is deploying a 6 MW / 48 MWh (8-hour duration) energy storage system on the island of Nantucket that is expected to delay adding a third submarine transmission line by at least a decade.

FERC Order 841 directed regional transmission operators and independent system operators, including ISO New England, to update rules to accommodate participation of energy storage in wholesale markets. In doing so, FERC recognized that the unique attributes of energy storage made it difficult for existing rules to appropriately accommodate its participation in wholesale markets. Similarly, state policy at the distribution level should be updated to provide energy storage compensation for the value it adds to the distribution grid, as well as maximize opportunities for customers to benefit from ESPs through rate design. Without updated regulations, ESPs will not be able to earn compensation for the full spectrum of services they provide.

States and utilities across New England have begun developing programs to compensate energy storage. Among these programs are Massachusetts' Clean Peak Program[1], which creates a credit market for energy storage resources to meet peak demand; Green Mountain Power's Bring Your Own Device program in Vermont[2]; and inclusion of energy storage in demand response programs in several states including New Hampshire. These programs and their compensation values are listed in Table 1 below. However, the inclusion of energy storage in demand-side management programs does not completely account for the ability of energy storage to reduce peak demand, act as a supply resource, or provide back-up power. Therefore, ESA recommends that programs be developed specifically to compensate energy storage in addition to demand-side management programs.

[1] Massachusetts Clean Peak Energy Standard, available at https://www.mass.gov/clean-peak-energy-standard

[2] Green Mountain Power, Bring Your Own Device Program Details, available at https://greenmountainpower.com/bring-your-own-device/battery-systems/

Table 1. New England Energy Storage Compensation Programs (as of July 2020)

State	Utility	Payment Detail
Vermont	Green Mountain Power	$850/kW (up to 10 kW, 3-hour duration) $950/kW (up to 10 kW, 4-hour duration) Additional $100/kW (up to 10 kW) for systems in load constrained areas.
New Hampshire	Eversource Energy	BYOD: $225/kW (June 1 – September 30, 3-hour duration) Daily Dispatch: $200/kW-season: (June 1 – September 30, 3-hour duration) Targeted Dispatch: $50/kW-season (December 1-March 30)
Connecticut	Eversource Energy	BYOD: $225/kW (June 1 – September 30, 3-hour duration) BYOD: $50/kW (December 1 – March 31, 3-hour duration) Daily/Targeted Dispatch: Same as NH
Massachusetts	National Grid	BYOD: $225/kW (June 1 – September 30, 3-hour duration) BYOD: $50/kW (December 1 – March 31, 3-hour duration) Daily Dispatch: Same as NH and CT Targeted Dispatch: $25/kw-season (December-March)
Massachusetts	Eversource	Daily/Targeted Dispatch: Same as NH and CT
Rhode Island	National Grid	BYOD: $400/kW (June 1 – September 30, 3-hour duration)

III. RECOMMENDED MODEL PROGRAM

ESA suggests that an impactful peak demand reduction compensation program would address many of the issues raised in HB 715 and the Commission's Order of Notice. ESA and the Northeast Clean Energy Council ("NECEC") recently described such a program in comments to the Connecticut Public Utilities Regulatory Authority ("PURA"), which we include here by reference.[3] PURA recently issued a straw proposal for a 580 MW energy storage program which incorporates many of the recommendations from ESA and NECEC.[4] ESA encourages the Commission to consider a similar program, scaled appropriately to the size of New Hampshire's distribution system.

[3] Joint Comments of NECEC and ESA, Docket No. 17-12-03RE03, PURA Investigation into Distribution System Planning of the Electric Distribution Companies – Electric Storage, available at http://www.dpuc.state.ct.us/DOCKCURR.NSF/8e6fc37a54110e3e852576190052b64d/bb8bbb2e2ebd8d1b852585b60054d775?OpenDocument

[4] "Notice of issuance of straw electric storage program design and request for comments," Public Utilities Regulatory Authority, January 26, 2021, available at http://www.dpuc.state.ct.us/dockcurr.nsf/8e6fc37a54110e3e852576190052b64d/f8eea3048fcb4ace8525865400707a2c

The following design elements are particularly relevant to issues listed in the Commission's Order of Notice, particularly with respect to consideration of maximizing ratepayer benefits and encouraging utility and non-utility investments in energy storage:

- **Compensation provided on an average $/kW basis** to the asset, based on performance during designated call periods by the utility as described under contract terms. Compensation could be based on a forecasted value for peak capacity reduction, marginal cost of service, and transmission avoidance savings.
- **Long-term contracts** with compensation levels set for 10 years in order to facilitate financing and drive more private sector investment into New Hampshire ESP.
- **Availability on a first-come-first-served basis** until a MW threshold set as a portion of the summer peak demand or other performance threshold associated with the peak demand reduction goals of the program is met.

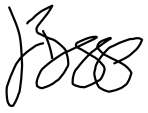
These programs share a framework with existing programs already in New Hampshire, specifically Liberty Utilities' BYOD energy storage program pilot and Eversource ConnectedSolutions Battery Storage Demand Response program. However, these existing programs currently face key limitations. Liberty Utilities' program is approved for a maximum of 200 residential batteries and does not leverage customer or third-party investment with utility-owned devices. The Eversource program is also limited to residential customers as a part of the utility's demand-side management plan. Expanding these programs to include all customer classes and front-of-the-meter systems, and scaling them beyond a pilot phase to achieve all cost-effective deployment of energy storage resources would yield significant benefits.

A comprehensive energy storage compensation program, such as that proposed in Connecticut by PURA, would build upon New Hampshire's current progress with demand response and BYOD programs. A scaled program fixed compensation for distribution and transmission benefits, would activate a significant market and catalyze investment from additional stakeholders.

IV. CONCLUSION

Energy storage has the potential to provide significant benefits to New Hampshire ratepayers. This timely investigation is an excellent opportunity to maximize the benefits of energy storage for New Hampshire. Thank you for your consideration of these comments.

Sincerely,



Julian Boggs
State Policy Director
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