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By E-Mail to Emma.Rodvien@puc.ri.gov

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Subject: Comments on Energy Storage Report in Docket 5000

Ms. Rodvien:

RENEW Northeast, Inc. (“RENEW”)¹ submits these comments in response to the Public Utilities Commission (“Commission” or “PUC”) request for comments on its report, *Examination of the Value of and Need for Energy Storage Resources in Rhode Island*, submitted to the Rhode Island Senate in Response to Senate Resolution 416 (“the Report”). Thank you for the opportunity to participate in your working group over the winter and offer these comments today.

RENEW is a non-profit association uniting environmental advocates and the renewable energy industry whose mission involves coordinating the ideas and resources of its members with the goal of increasing environmentally sustainable energy generation in the Northeast from the region’s abundant, indigenous renewable resources. RENEW members own and/or are developing large-scale renewable energy projects, energy storage resources and high-voltage transmission facilities across the Northeast. They are supported by members providing engineering, procurement, and construction services in the development of these projects and members that supply them with multi-megawatt class wind turbines. Its members are developing stand-alone transmission-interconnected energy storage systems and energy storage systems virtually or physically paired with renewable energy resources.

I. Summary

Energy storage can cost-effectively provide new capacity to the grid and complement renewable energy resources by absorbing their excess low-cost energy and storing it for later use. The purpose of the Report, as established by the Senate Resolution, is to study the costs and benefits of energy storage resources in Rhode Island today, identify any barriers and market

¹ The comments expressed herein represent the views of RENEW and not necessarily those of any particular member of RENEW. They were prepared with the assistance of Louisa Lund, Marc D. Montalvo, and Chris Jylkka of Daymark Energy Advisors, Inc.

inefficiencies facing energy storage, and explain whether new tariffs or programs for energy storage resources are necessary to achieve the state's goals related to reducing the cost of the electric power and facilitating the transition to carbon-free electricity.

Although the general focus of the Report is on providing recommendations for actions within the direct authority of the PUC, these comments also address some issues that may be more relevant to the Rhode Island legislature as it may have an interest in developing programs that could contribute to lowering electric power system costs, meeting Rhode Island's carbon reduction goals, and enhancing reliability.

RENEW makes these general observations about the Report:

- While it recognizes the “significant value potential” of energy storage and offers constructive recommendations on dedicated tariffs for storage, its qualitative cost-benefit analysis is not sufficient to support any conclusions about whether more storage in Rhode Island would benefit consumers in the near-term, as well as the longer term. Many factors are omitted.
- Its analysis of Rhode Island's ability to meet its Renewable Energy Standard and Act on Climate requirements without storage overlooks ways in which storage supports the transition to carbon-free electricity and reduces the cost of the electric power system by enabling low cost, no fuel, renewable resources.
- Beyond implementing the recommendations related to dedicated storage tariffs, additional opportunities exist to consider a more unified storage support mechanism and/or an outreach that facilitates potential efficiencies of bulk storage development of medium term and longer-term storage.

II. Comments

A. **The Report Offers Constructive Recommendations for Dedicated Storage Tariffs.**

The Report's recommendations related to a dedicated retail tariff and interconnection tariff are positive steps towards creating a market environment that more accurately represents how the cost of storage on the grid is different from other resources. Storage interacts differently with the grid than load or other generation resources. For example, a dedicated storage tariff should consider how to recognize storage's benefits in easing demand peaks by discharging during peak demand and charging during off-peak periods. Distribution system charges assigned to storage should reflect storage's actual use of the system.

Work on these dedicated storage tariffs should begin as soon as possible. Experience in Massachusetts and Connecticut suggests that storage tariff development can take years. Coupled with long interconnection timelines, this might mean that, even if work begins immediately, the

appropriate conditions for meaningful deployment of storage on the state's distribution system may not be in place until late in the decade.

B. The Report Falls Short of Meeting the Senate Resolution's Directives.

1. Some Elements of the Report's Analysis Are Incomplete.

The Report recognizes storage "can create potentially significant value," but raises concerns that the value "may not exceed the cost of storage," and that alternatives may be lower in cost. The Report does not provide any quantification behind this assessment, so it is impossible to fully assess this claim. However, there are several gaps in the analysis that we were able to identify based on what was presented, which we discuss below.

Additional benefits that fit within the Benefit Cost Framework:

- The Report provides no mention of ramping benefits (hourly and sub-hourly) in the Table 1 analysis. These would be appropriate for consideration in relation to energy market price effects (Group 1) and benefits related to system operation (Group 3) as storage's ramping capabilities give system operators better tools for matching load, and fast-responding storage units could play a role in reducing the cost of needed reserves.
- The Report provides mention of health benefits of avoided emissions other than CO₂. To the extent that storage resources can be used to reduce the use of high-emitting plants during peak periods, they can play a significant role in reducing particulate emissions and their associated negative health effects. This would be appropriate for consideration in the category of "Conservation and community benefits."
- Storage's contribution to meeting system capacity requirements is recognized among the Group 2 benefits. In thinking about the importance of this benefit, RENEW recommends the Report consider the ISO New England ("ISO-NE") ongoing capacity accreditation work in its Resource Capacity Accreditation ("RCA") project², which ISO-NE is aiming to implement in time for the 2028/29 Capability Year. This structure may better recognize the capacity benefits of storage, increase the locational importance of storage, and provide price discovery on the value of different storage durations.
- Black start is mentioned under Group 5 concerning benefits related to the Size and Volatility of the market." RENEW suggests black start benefits should fall

² ISO-NE, *Resource Capacity Accreditation in the Forward Capacity Market* (June 7-8, 2023), https://www.iso-ne.com/static-assets/documents/2022/06/a02_mc_2022_06_7-8_resource_capacity_accreditation_in_the_forward_capacity_market.pptx#:~:text=Accredited%20capacity%20%E2%80%93%20measures%20a%20resource's,combination%20of%20ICAP%20and%20heuristic

under resilience/reliability, recognizing that pairing storage with fossil fuel generating resources can enhance system black start capabilities.

- Due to Rhode Island’s development density and siting challenges, available space for clean resource development may be at a premium. An additional benefit of storage is its small footprint relative to other resource classes, as well as its ability to pair with renewable generation to maximize the ability of wind and solar to provide renewable energy when it is most needed. This may already be included under conservation and community benefits.

The scenarios discussion is a helpful way of presenting some of the different situations in which storage can contribute to the power system. RENEW suggests the following additional factors be considered:

- Scenario 2 focuses on how storage can lower the risk of curtailment. However, the potential importance of this service does not seem to be fully recognized by the Report, which cites a 2021 onshore wind curtailment figures to suggest that the benefits of avoiding curtailment are “relatively small.”³ The figure relied upon here, referencing onshore wind at a single point in time, is not a good indicator of likely future trends as new renewables are added to the system. The Report does go on to recognize that “clean energy curtailment will become more frequent and last longer in the future as more clean energy resources are added to the system.” For clarity, it may be helpful to reference some specific forecast—for example the Analysis Group *Pathways* study prepared for ISO-NE that projects onshore wind curtailment to rise to almost 20% by 2027.⁴
- There is no consideration of long-duration storage and its potential capabilities under the various scenarios. For example, the “Cold snap analysis” only contemplates 2.5-hour storage, and the Report notes that this falls far short of the “multiple consecutive days” a cold snap can persist. Consideration of how long-term storage could provide value in this scenario would lead to a more complete picture.⁵

2. The Report’s Finding of Storage Being “Not Needed” Prior to 2030 to Allow Rhode Island to Reach Its Climate Goals Reflects Ignores the Senate Resolution’s Directive that the Report Examine Reducing Power System Costs and Facilitating the Clean Energy Transition.

The Report defines the Senate’s question as whether Rhode Island will have access to enough RECs to meet its renewable energy requirements. It concludes the state will have ample Rhode-Island eligible Renewable Energy Certificate (“RECs”) available to meet its compliance

³ Report at 12.

⁴ Schatzki, Todd. *Pathways Study: Evaluation of Pathways to a Future Grid* 26 (April 26, 2022), <https://www.iso-ne.com/static-assets/documents/2022/04/ag-pathways-april-final.pdf>

⁵ Report at 16.

obligations, specifically because Rhode Island obligated entities are willing to pay a higher price than those in any other New England state.⁶ Rather than asserting that storage is not needed until at least 2030 because Rhode Island can out-pay other states for RECs, RENEW recommends the Report consider how storage can lower the cost of the state complying with these renewable energy mandates.

Specifically, storage can help lower the cost of RECs by minimizing curtailment and increasing the demand for renewable energy. Storage can help smooth energy prices over the day so that renewables are less likely to face negative or zero prices. Over the long term, storage can improve the economic outlook through better price stabilization which increased the likelihood of financing for renewables. By improving the economics of renewable energy, storage can potentially allow Rhode Island to meet its renewable energy targets sooner and at lower REC prices and overall cost.

While RENEW acknowledges these kinds of cost and portfolio benefits are hard to quantify in terms of a single state, other states in ISO-NE, notably Massachusetts and Connecticut, have taken significant steps to support storage, so any benefits flowing outward from Rhode Island programs would likely be more than matched by benefits flowing inward to Rhode Island from programs in neighboring states.

Finally, even without challenging the Report's suggestion that significant additional storage may not be needed until 2030, it will be important to act soon even to meet that target. Energy storage projects can take five to seven years to complete the ISO-NE interconnection process. Similarly, for larger-scale distribution-interconnected storage, electric distribution utility interconnection timelines can stretch over multiple years. If grid-connected storage and/or larger-scale distribution-connected storage projects are going to be needed in 2030, programs may need to start now to be available in the targeted timeframe.

3. The Discussion of Rhode Island's Storage Programs Reveals Some Potential Opportunities Beyond the Suggested Tariff Reform.

RENEW agrees that the storage tariffs recommended in the Report represent an important starting point for realizing the benefits of storage in Rhode Island and is an action within the purview of the PUC. Additional steps could be taken by Rhode Island policymakers that could result in additional benefits to the state's electricity consumers.

- The potential benefits provided by storage to Rhode Island consumers in the areas of support for efficient, cost-effective decarbonization; reduction of other forms of pollution; and other system reliability benefits, will not all be compensated, even with revised distribution tariffs. To encourage optimal deployment of storage, Rhode Island policymakers may wish to consider additional incentive programs. There may be benefits to Rhode Island in looking at other programs such as Massachusetts' Clean Peak Standard and the SMART program, to expedite future program creation.

⁶ *Id.* at 38.

- Rhode Island policymakers may also want to consider whether there are potential benefits in additional support for bulk storage development. Currently, distribution-level storage is the major focus of existing programs. As a result, economies of scale in storage likely are not being captured.

C. Recommendations

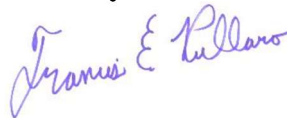
RENEW Northeast makes the following recommendations based on the Report and the need for further storage analysis:

- Rhode Island should swiftly implement the Report's recommendations on developing tariffs that reflect unique characteristics of storage.
- Future work should include in any qualitative or quantitative analysis a consideration of some of the additional storage benefits identified above and how the availability of storage effects renewable generator revenue streams and thus the potential availability of renewable energy.
- Rhode Island programs should be expanded potentially using existing Massachusetts programs as models, to capture fully the benefits offered by storage that are not otherwise recognized in the energy markets. Rhode Island policymakers may also want to consider programs to capture wholesale storage benefits.
- To gain efficiency and speed with future programs, Rhode Island should study, evaluate, and take best practices from the adjacent state's programs before developing their own.

III. Conclusion

Thank you, again, for the opportunity to offer these comments.

Sincerely,



Francis Pullaro
Executive Director