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**Testimony of RENEW Northeast in Support of
LD 1850 - An Act Relating to Energy Storage and the State's Energy Goals**

Chairs Lawrence and Zeigler, and Members of the Joint Standing Committee on Energy, Utilities and Technology, I am Francis Pullaro the Executive Director of RENEW Northeast, Inc (RENEW) ¹ RENEW submits this testimony in support of LD 1850 with its goal of deploying new energy storage resources in Maine

Energy Storage Is Essential for Meeting Maine's Climate Goals and Power System Reliability Needs

LD 1850 will establish a robust energy storage requirement to match the magnitude needed to achieve the state's decarbonization requirements by setting a goal of at least 300 megawatts of energy storage by 2025 and of at least 400 megawatts by 2030. This requirement would foster development of new energy storage systems that can lower emissions according to goals set by Maine's Climate Action Plan and reduce costs and pollution by displacing from fossil-fueled generation units running during peak hours.

Adding energy storage to the power grid at key locations can help reduce costs related to transmission congestion and curtailment of existing renewable energy resources. Such congestion, if not addressed according to ISO New England (ISO) studies, will significantly reduce the value of energy produced by the Northern Maine resources procured in the recently completed solicitation and by existing clean energy resources in Maine as well as lead to curtailed energy production from these resources. This, in turn, could lessen the greenhouse gas reduction benefits desired from this procurement, and potentially the economic viability of uncontracted renewable resources in Maine ²

Additionally, recent winter cold spells have shown that a large portion of the region's winter peak energy needs are typically fulfilled by old generating units fueled by coal and oil ³ By accelerating the switch

¹ The comments expressed herein represent the views of RENEW and not necessarily those of any particular member of RENEW. 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. RENEW seeks to promote policies that will increase energy diversity, promote economic development, and achieve policy goals including those found in the Renewable Portfolio Standard (RPS).

² See e.g., ISO New England, 2016/2017 Maine Resource Integration Study 43-45 (March 12, 2018), https://smd.iso-ne.com/operations-services/cen/cluster-studies/final_maine_resource_integration_study_report.pdf (Critical Energy Infrastructure Information access required), and ISO New England, 2019 Economic Study: Economic Impacts of Increases in Operating Limits of the Orrington-South Interface (October 30, 2020), <https://www.iso-ne.com/static-assets/documents/2020/10/2019-renew-es-report-final.docx>

³ RENEW Northeast, *Benefits of Wind Energy for Winter* 5-7 (February 1, 2023), <https://renewne.org/wp-content/uploads/2023/02/Wind-in-Winter-RENEW-FINAL-2023-02-01.pdf>

from fossil fuels to energy storage at peak times, Maine can reduce emissions, improve the environment, and attract new investment and jobs to the state at the same time. Energy storage can complement renewable energy resources by absorbing their low-cost energy during times of surplus and store it for use during peak periods. Storage can improve public health outcomes by replacing both baseload fossil fuel power plants and dirty peaking power plants.⁴ Peakers are relatively inefficient and used infrequently during times of high electricity demand, and emissions from peakers directly harm local air quality.⁵ In addition, peakers are most often sited in disadvantaged communities and used on days when air quality is already poor.⁶ But energy storage resources, when charged with much cleaner energy sources, can provide the same grid services as a peaker plant without the associated emissions.

Competition in the Procurement of Energy Storage Will Provide Cost Savings for Consumers

RENEW members are developing large-sized energy storage systems which are one of the least-cost forms of generation to meet electricity demand at peak times.⁷ Solicitations should force developers to compete, so consumers obtain the best solutions at the lowest price. For this reason, RENEW opposes allowing electric distribution company (EDC) ownership of energy storage systems. States like New York have determined energy storage resources are provided more cost-effectively by private developers on a competitive basis rather than by EDCs through guaranteed rate-of-return regulation. Maine should follow suit and require that any EDC ownership demonstrate that alternatives from competitive developers are, in the words of the New York Public Service Commission, “clearly inadequate or more costly than a traditional utility infrastructure alternative.”⁸ New York concluded that “competitive ownership of energy storage assets is a core principle and the existing limitations on utility ownership of energy storage should be maintained if possible.”⁹ A competitively developed project that is willing to cap the total cost exposure to consumers will ultimately be more beneficial to customers than a project that retains the ability to seek recovery of all costs, including any overruns, without limitation.

Several Models Exist for Long-Term Contracting of Energy Storage Resources

Long-term contracts for energy storage resources will provide those large-scale resources with opportunities in Maine to receive the long-term commitments that are needed for project financing. Section 3 of the bill directs the Governor’s Energy Office (GEO) to evaluate designs for a program to procure energy storage systems. The GEO investigation should consider the form of contracting best suited to specific energy storage technologies. Storage deployment has advanced in recent years through the increase in utility procurement of energy storage projects and products. The variety of offtake revenue contracts for energy storage projects has

⁴ Collingsworth, Jessica, Steve Clemmer, Paula Garcia, James Gignac, J C Kibbey, Sandra Sattler, and Youngsun Baek. 2018. Soot to Solar. Illinois’ Clean Energy Transition. Cambridge, MA: Union of Concerned Scientists. <http://www.ucsusa.org/resources/soot-to-solar-0>

⁵ Milford, Lew, Seth Mullendore, Todd Olinsky-Paul, and Robert Sanders. 2018. Jump-Start: How Activists and Foundations Can Champion Battery Storage to Recharge the Clean Energy Transition. Montpelier, VT: Clean Energy Group. <http://www.cleangroup.org/ceg-resources/resource/jump-start-battery-storage>

⁶ Mullendore, Seth, *Energy Storage for Public Health: A Smarter Way to Deploy Resources*, Clean Energy Group (Blog) (August 22, 2016), <http://www.cleangroup.org/energy-storage-public-health-smarter-way-deploy-resources>

⁷ Lazard, *LCOE, (Levelized Cost Of Storage Analysis 8.0)* 15-23 (April, 2023), <https://www.lazard.com/media/ruwg1jol/lazards-lcoeplus-april-2023.pdf>

⁸ New York Public Service Commission Case 14-M-0101, *Proceeding on Motion of the Commission in Regard to Reforming the Energy Vision*, Order Adopting Regulatory Policy Framework and Implementation Plan 70 (February 26, 2015)

⁹ New York Public Service Commission Case 18-E-0130, *Energy Storage Deployment Program*, Order Directing Modifications to Energy Storage Solicitations 10 (April 16, 2021)

expanded rapidly and typically involve an agreement as contemplated under LD 1850. For large or transmission-level resources, arrangements have taken the form of energy storage tolling agreements, capacity sales agreements, hybrid agreements, and indexed agreements.

- The *energy storage tolling agreement*, like a standard tolling contract for a traditional plant, gives the EDC capacity, energy and other products like ancillary services. The seller develops, owns, operates and maintains the storage project while the EDC off-taker typically controls when to charge and discharge the resource, pays for charging energy from the grid to the resource, and acts as scheduling coordinator or market participant for the resource in the wholesale markets. The project owner receives a fixed payment from the EDC. Tolling agreements are used by many utilities in vertically integrated markets that own generation.
- Under a *capacity sales agreement*, the capacity and capacity attributes of the energy storage project are sold to the EDC. The owner-operator owns the facility's other products like energy and ancillary services, and keeps full authority over charging and discharging. Capacity sales agreements are a popular contract used by California utilities to achieve resource adequacy requirements.
- A *hybrid agreement*, which is also known as partial tolling agreement, strikes a middle ground between a full tolling agreement and a market project by granting the EDC operational control during the most valuable days of the year for achieving public policy goals, while allowing the project to operate on a merchant basis in the wholesale markets on all other days. For example, it could provide the EDC's the right to dispatch the energy storage resource during a limited number of peak hours during a season or at other predetermined periods to meet objectives under the Act. It could provide a balance between benefits and risks for ratepayer, though it must be structured to provide enough revenue certainty to the project in order to attract lower-cost capital. While the EDCs are sharing the cost of the energy storage facility, the third-party owner assumes the market risks when the EDCs do not have dispatch rights.
- *Indexed energy storage agreements* provide payments to energy storage systems to bridge the gap between wholesale market revenues and the project's revenue requirement. Under this type of contract, the counterparty, such as an EDC, makes a monthly payment to the resource equal to the bid price minus a reference price. That reference price is based on an approximation of revenues that the energy storage system could have earned in the wholesale markets.

Conclusion

RENEW appreciates the opportunity to offer these comments in support of this bill. Using competitive solicitations to add a significant amount of large-sized energy storage systems to the grid can provide significant cost, reliability, and environmental benefits to the people of Maine. RENEW would be pleased to work with the Committee to continue to find ways to lower the cost of renewable energy, decrease the region's dependence on fossil fuels and ensure a significant role for renewable energy resources that will boost Maine's economy.