

January 18, 2022

Governor's Energy Office

Via Web site: <https://forms.office.com/r/XLhevzxP5E>

RE: *Maine Energy Storage Market Assessment*

Acadia Center respectfully submits comments on the *Maine Energy Storage Market Assessment (Assessment)*, as outlined by *Energy + Environmental Economics (E3)* at the *Maine Governor's Energy Office (GEO)* meeting on January 10, 2022. We understand that the *Assessment* will release in March 2022 and look forward to working on energy storage initiatives to implement the recommendations in the final *Assessment*.

[Acadia Center](#) is a non-profit, research and advocacy organization incorporated in Maine and committed to advancing the clean energy future by offering real-world solutions to the climate crisis. Acadia Center tackles complex problems, identifies clear recommendations for reforms, and advocates to create significant change that supports a low-carbon economy across the Northeast which can then be a model for application elsewhere. Acadia Center identifies regional, state, and local improvements that will dramatically reduce carbon pollution and improve quality of life throughout the Northeastern United States.

Acadia Center appreciates the GEO, in partnership with E3, launch of the *Assessment* process to examine commercially viable energy storage technologies; policy and regulatory options that may influence development of storage; costs and benefits for ratepayers; and the potential implications for the achievement of the State storage goals. Acadia Center looks forward to working with GEO and other State entities to ensure the *Assessment* is a robust plan to advance energy storage. To that end, we recommend that the *Assessment* evaluate and include a suite of strategies to:

- Reduce emissions from the buildings, power, and transportation sectors via a variety of energy storage strategies and technologies
- Promote both grid resilience and grid decarbonization
- Support both chemical and mechanical energy storage technologies (e.g., batteries + thermal + stored hydro + other)
- Capture the full value of energy storage benefits, including economic, operational efficiency, and societal benefits
- Ensure fair and equal access for storage to the grid and reduce market and grid barriers that limit the ability for energy storage systems to interconnect
- Modernize transmission and distribution utility rate designs
- Ensure that the incentives and benefits of grid-scale and onsite storage reach all Mainers, especially underserved and overburdened populations in low-income and rural communities, and not just areas to which LMI/EJ populations do not have access.

The *Assessment* should include a thorough evaluation of potential supportive policies that Maine can implement towards its storage procurement target, including:

- *Incentives, like rebates, grants or tax credits.* Some states have state tax credits for customer-sited storage; incentives for solar paired with storage, varied by system size and duration; exemptions from property taxes; and carve-outs for LMI populations. Incentives can provide a bridge to scalable deployment for storage and decline as storage values become more readily monetized.
- Performance incentives
- Demand response
- Dynamic and time-varying rate design
- Programs like Massachusetts' clean peak standard and Connecticut's recently passed storage policy.

Regarding the questions asked during the January 10 meeting, on Slide 20, please provide additional information on why the grey boxes cannot be quantified as value streams, particularly congestion relief, black start, and voltage support?

Acadia Center supports energy storage initiatives that accelerate reduced peak demand, decrease greenhouse gas emissions, better integrate renewable energy, and optimize performance of the electricity grid. The demand for a cleaner and more dynamic grid necessitates new energy storage projects and better energy storage solutions. Flexible demand that can make use of intermittent renewable energy resources – to literally make products while the sun is shining – will be necessary as our grid transitions to higher concentrations of such resources. Energy storage can enable this transition, as well as reduce costs in the near term. Energy storage can help meet electricity demand during peak times, such as hot summer days when air conditioners are cranked up or at night when homeowners turn on their lights and plug in their electronics. Storage can also arbitrage pricing of energy and allow greater grid flexibility to use cheaper electricity produced during off-peak times. Clearly, there is significant potential for cost-effective deployment of energy storage and projects to further demonstrate the value of various technologies and deployment models.

Energy storage will be increasingly important as electric vehicles (EVs) become more widespread, as they too may increase electricity demand at peak times when people plug in their cars for overnight charge. The *Assessment* should thoroughly investigate opportunities to modernize electricity rate design through time-of-use, or other time-differentiated, rates that send appropriate price signals and incentives to consumers to reduce demand during peak periods and develop and implement a pilot program to test and evaluate time-of-use rates in conjunction with energy storage. Storage combined with both grid-scale and onsite renewables will help alleviate the strain on the grid, and EVs can be used as back-up storage to transfer energy back into the grid.

The case for energy storage is evolving quickly in various markets in which innovations will be commercialized, procured, and used. For example, a reliable future electricity generation and T&D system will depend on advances in the innovation sector, such as assimilating energy storage systems as solutions to the intermittency of wind and solar. Existing and emerging technologies like on-site batteries and power control systems, cost trends, and the rise of a robust EV and charging infrastructure market will also shape how Maine developers, utilities, and customers build and operate energy systems with microgrids, smart grids, storage, and other innovations. At the same time, electric utilities must continuously improve reliability of the grid and implement pilot programs with new innovations.

Advancements in battery storage will assist in promoting the efficacy of Maine's offshore wind energy generation. Capability to store energy onsite to compensate for low wind conditions will reduce the consumption of fossil fuels

and ease the challenges of operating the New England grid on renewable energy generation. These benefits are significant in accommodating more wind generation on the grid. Please include additional information in the Assessment on how energy storage can complement the benefits of offshore win.

States throughout the Northeast are rapidly enacting or implementing a variety of policies, programs, and incentives to promote energy storage development focused on fighting climate change and promoting cleaner electricity. Massachusetts and New York are particularly active in advancing energy storage initiatives. With increased uncertainty and volatility of the grid, and extreme weather like nor'easters, ice storms, and blizzards, the need for appropriate public policy and procurement targets will continue to spur storage advancement in Maine as well. As costs fall and projects succeed, small pilots are transitioning into widespread adoption activities.

From increased reliability and flexibility to efficient usage and reduced congestion, storage assets – whether grid- or customer-facing – offer significant value to distribution companies and other entities engaged in grid operation and management. And, with extreme weather resiliency accruing more importance with each successive storm, energy storage provides the unique value of avoiding and mitigating prolonged power outages, especially for hospitals, emergency personnel facilities, and other critical infrastructure. As such, storage can be the key to unlocking the potential for microgrid deployment by municipalities and other large entities seeking all-important “island-able” capability.

Respectfully Submitted,

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