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Clearway Energy Comments Regarding DOER Long Duration Energy Storage Study
Pursuant to Section 80 of H.5060 (2022) – An Act Driving Clean Energy and Offshore Wind

INTRODUCTION

Clearway is a leading developer, owner, and operator of utility-scale onshore wind, solar, and energy storage assets across 26 states, with significant project development interests in Massachusetts. Our experience bringing over 7 GW of clean energy projects into operation through more than \$11.8 billion in financings means Clearway is well versed in financing underwriting requirements and risk appetites within the tax equity and broader financing community. Clearway's experience in the energy storage sector includes deployment of 45 MW (140 MWh) of distributed storage paired with solar projects in Massachusetts, 75 MW (300 MWh) of utility-scale storage in Hawaii, and four utility-scale storage projects under construction in California totaling 613 MW (2,542 MWh). As a long-term owner-operator of clean energy projects, Clearway approaches project development and state-led procurements with careful consideration of long-term technical and financial performance.

Deploying multiple gigawatts of mid- and long-duration energy storage resources by 2030 would strengthen Massachusetts' grid and represent meaningful progress toward a more flexible and resilient energy system. For that vision to become reality, DOER must create a solicitation structure that attracts and selects energy storage projects that *will actually be built*. We offer our comments through that lens – ensuring a solicitation results in financeable revenue contracts in the near term so that Massachusetts can be confident in meeting its energy storage and broader climate goals.

COMMENTS

Release an Actionable Study and Move Forward in Earnest with Solicitation Creation

In order to signal to developers that Massachusetts is serious about deploying mid- and long- duration battery energy storage systems (BESS), Clearway urges DOER to i) release a study that is actionable with specific commercial solicitation guidelines, and ii) move

forward with structuring and initiating such a solicitation in earnest.

Specifically, Clearway recommends DOER release numerical targets for new energy storage resources that clearly delineate the deployment goals and timeframe for both mid-duration and long-duration storage resources. DOER should then outline the timing, cadence, and contract structure for solicitations. As mid-duration storage is more widely available in the market today, it would be prudent to emphasize mid-duration storage deployment in an initial solicitation in the near term, while providing a line-of-sight to greater volumes of long-duration storage deployment toward the end of the decade. Providing the industry with clear line-of-sight to commercialization facilitates more thoughtful and advanced BESS development. Most well-capitalized, experienced developers will be hesitant to significantly invest in project development until there is such a path to commercialization. DOER should use the authority granted to it in H.5060 to require solicitations and procurements in accordance with study recommendations to encourage efficient development of BESS projects.

Leverage Full Tolling Agreements to Ensure Projects Are Built

To ensure that a Massachusetts energy storage solicitation succeeds in not just the selection of development-stage energy storage projects but rather in the actual deployment of financeable operating energy storage projects, Clearway encourages DOER to consider **procurement design elements that create a guaranteed revenue stream** for project owner-operators. Energy storage is in its early years of deployment; long-term financing partners (e.g., tax equity)¹ are still getting accustomed to underwriting the operational life of this asset class. Particularly in the early years of state support for storage deployment, the goal should be certainty of deployment through simple, transparent, tried-and-true contracting mechanisms. Contracts with a guaranteed revenue stream — particularly full toll agreements — are most efficiently financed and therefore accelerate the deployment of this relatively nascent energy storage asset class. **Clearway strongly recommends DOER 1) include full tolls as a preferred contract structure under its solicitation, and 2) consider financeability in its evaluation of bids.**

For example, California's Resource Adequacy (RA) program enables long-term, bilateral, fixed-price contracts between load-serving entities and storage project owner-operators. Specific contract types are not prescribed; however, transacting on full tolls is highly efficient. Clearway is currently developing and constructing utility-scale standalone storage projects in California and has executed full tolling agreements as well as RA-only contracts. Through full tolling agreements, load-serving entities pay a fixed monthly charge for all RA (capacity), energy, and ancillary services benefits of a project, so long as such projects reasonably perform as expected, and benefit from all storage revenues in exchange for a

¹ Tax credit transferability will bring new players into the tax equity space; however, this transformation will take place over time – on the order of years, not months.

fixed monthly charge to the project owner. The load-serving entity dispatches the battery into the market to best serve the needs of the grid within defined operational limitations set by the project owner. The negotiated tolling rate approximates the total value of the project to the grid over the operational life of the system. The simplicity of a long-term, bilateral, fixed-price contract structure – both full tolling arrangements as well as RA-only contracts – has helped California lead the nation in scaling energy storage deployment.

A procurement utilizing tolling arrangements is especially prudent in light of the rapid evolution underway in wholesale markets for energy, capacity, and ancillary services. The analysis DOER commissioned from E3 demonstrates that mid- and long-duration storage resources will provide significant value – in fact the majority of their value – through capacity and reliability services particularly in the longer term, but the ISO-NE markets are not currently reflecting that value. As E3 illustrates in slide 17 of Stakeholder Session 2, current ISO-NE revenue streams are not adequate to support deployment of mid-duration batteries today or in 2030. Wholesale market design, market products, and market pricing are all likely to change substantially over the coming decade as regulators seek to adjust to a rapidly changing resource mix.

Given the relative nascency of storage deployment nationwide and the ongoing evolution of wholesale market design, programs that ascribe guaranteed revenue to projects for their contribution to system reliability will be most successful in mitigating post-contract award attrition, attracting capital and achieving permanent financing, and ensuring reliable operations over the life of the projects. In the early years of wind and solar deployment, contracting mechanisms were relatively straightforward, which attracted capital and allowed for large-scale investment in the development and construction of these assets. Massachusetts' SMART program successfully drove significant distributed-interconnected battery storage deployment, attracting developers and their financial partners with the relative simplicity of the program's design (in terms of storage operational requirements, revenue methodology). Clearway is proud to have been a part of that effort; we invested in and deployed 45 MW of storage paired with solar, including the state's largest solar + storage single portfolio, totaling 56 MW PV (24 MW storage).

Clearway encourages DOER to take an approach to storage deployment focused on simplicity and financeability in the near-term. In time, alternative contracting structures that introduce revenue risk (such as partial tolls, indexed storage credit, etc.) may be appropriate to consider as more parties develop a better understanding of this asset class, allowing for more efficient and less risky financing. As with solar and wind, we expect to see entities experiment with more complex contract structures over time and look forward to being part of that market evolution.

In summary, we encourage DOER to develop actionable recommendations within its study report and move forward with them in earnest, focused on utilizing contracting structures that have objectively led to the actual deployment of financeable operating energy storage projects in other markets.

Clearway appreciates the opportunity to offer these comments and looks forward to working with DOER and MassCEC staff to shape and execute a successful energy storage program. Please do not hesitate to contact me with additional questions.

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