Long Duration Energy Storage Study
Massachusetts Department of Energy Resources (DOER)
Massachusetts Clean Energy Center (MassCEC)

MMWEC is pleased to offer comments to Massachusetts Clean Energy Center (MassCEC) and the Department of Energy Resources (DOER) regarding the requirements for a study of long duration energy storage in the Commonwealth. Section 80 of H.5060 directs the department to conduct a study on how to optimize the cost effective deployment and utilization of both new and existing medium and duration long duration energy storage systems.

From a technology standpoint, we understand that medium and long duration energy storage has the capability of absorbing and injecting power to reduce peak demand, absorb excess renewables and supplant renewable energy during times of impacted generation. However, at this time we have yet to see the need for long duration energy storage. Renewable generation has yet to hit a threshold of significant excess that cannot already be shifted by short duration storage operating as part of the SMART Program, the Clean Peak Energy Standard, or the existing 1.8 GW of long duration pumped storage already within the Commonwealth. This, coupled with the uncertain nature of the grid and the interconnectedness of the New England states and Canadian provinces presents unanswered questions in analyzing when, if, and how long duration energy storage plays a role in the future

In the development of this study, we would provide the following comments, and questions. These questions should address both the data sets to be used in the analysis, and questions to be asked.

- What is the need for long duration storage under the 2050 Roadmap, and what are the expected requirements on a five-year basis consistent with Clean Energy and Climate Plan (CECP) sub-limits? This should be considered with the understanding that the CECP, at net zero emissions in 2050, still considered some thermal generation for reliability purposes.
- How are existing short duration storage programs (SMART & CPES) working to provide load shifting and renewable balancing on a daily basis? How does this affect the requirement of long duration storage, and does this lessen the need in the long term?
- How will long duration storage work within the existing ISO New England (ISO-NE) wholesale market framework and NERC/NPCC reliability rules to more cost effectively enable renewables? From a base level technology standpoint, storage might be able to enable renewables, but certain standards may or may not currently recognize the value this resource presents.
- What are the plans and outlooks for long duration energy storage in other New England states, and does this align with or overlap with competing procurements or programs in neighboring states/regions?
- What are the costs for long duration storage relative to alternatives (such as increased transmission and overbuilding renewables) and how does this align?

In asking these questions we would request that DOER and CEC utilize data on existing short duration storage programs in the Commonwealth to gauge the effectiveness of current storage programs.

Additionally, the study should take into consideration the current state of utilization of existing storage, particularly pumped storage hydro, and whether this could be used more effectively.

We would also request that CEC and DOER engage with ISO-NE as well as the New England States Committee on Electricity (NESCOE) and the Attorney General to understand where additional long duration storage might be useful, and how this could fit in with broader questions of long term transmission planning and renewable integration.

Finally, we would ask that the DOER and CEC weigh the benefits of cost effectiveness in determining the need as well as method for future long duration storage deployment. While we understand the need to drive towards the goals of decarbonization by 2050, as electrification of the transportation and home heating sectors is key to doing this, cost containment and reductions in electricity prices are paramount to achieving CECP reductions in other sectors.

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