

January 31, 2024

Cypress Creek Renewables' comments on "Charging Forward: Energy Storage in a Net Zero Commonwealth – A report of the Department of Energy Resources"

About Cypress Creek Renewables

Cypress Creek Renewables (CCR) is a leading renewable developer and independent power producer. CCR develops, finances, owns, and operates utility-scale and distributed solar and energy storage projects across the United States with a mission to power a sustainable future, one project at a time. Since its inception, Cypress Creek has developed 12 GW of solar projects. Today, it owns 2 GW of solar and has a 23 GW solar and storage pipeline. Cypress Creek has been active in Massachusetts since 2017, having developed 7 small scale solar projects, and currently has a development pipeline of over 1.6 GW (over 6.4GWh) of battery storage assets. Cypress Creek's leading O&M services business, Cypress Creek Solutions, operates and maintains 4 GW of solar projects for customers across 24 states, including Massachusetts. For more information about Cypress Creek, please visit ccrenew.com.

Background

On January 4, 2024, the Massachusetts Clean Energy Center (CEC) and the Department of Energy Resources (DOER) released "Charging Forward: Energy Storage in a Net Zero Commonwealth" as required by Section 80 of Chapter 179 of the Acts of 2022 (the "2022 Climate Act"). The report provides policy recommendations for energy storage based on a study prepared for DOER and MassCEC by E3.

CCR appreciates the efforts of DOER and MassCEC in reviewing the role energy storage will play in the Commonwealth. Please see below for CCR's reactions to and comments on the report and its' recommendations.

Feedback on the Report

- CCR agrees with the report's assessment that battery storage will play a vital role in Massachusetts's energy mix, given the state's ambitious climate goals.
- CCR also agrees that the role of storage will evolve as renewable penetration increases in the system. Initially, energy storage will provide peak shaving and energy shifting capabilities. Given this, the report found that there was a need for mid-duration (4+-hr) storage by the early 2030s, with demand for longer-duration storage coming further down the road. However, as renewable penetration and electric sector load growth both increase through 2050, the report found that the resulting reliability gaps increase in duration. These reliability gaps will require greater incentivization of medium-duration energy storage (MDES) and long-duration energy storage (LDES) technologies. We agree with this assessment.
- However, while DOER's report included positive findings and statements regarding the role of energy storage in the Commonwealth, the policy recommendations in the report fall short in scale, scope, and timing. As a project developer ready to develop utility-scale storage projects in the Commonwealth, the recommendations in this report do not provide a clear path to market.
- The report articulates a storage target tied to renewables deployed in the state. Specifically, the report recommends the following storage targets: (1) By 2030, 250 MW of energy storage in Massachusetts for every 1 GW of deployed renewables; and (2) By 2035, 200 MW of energy storage in Massachusetts for every 1 GW of deployed renewables, inclusive of at least 1 GW of MDES or LDES.
 - CCR is unaware of any other state that ties storage targets to renewable deployment. Connecting storage targets to renewable deployment creates significant uncertainty in the market, which will lead to project cancellations or delays. Clearer development signals are needed for storage developers to have confidence in the market. Tying storage goals to renewable development creates an untenable situation for storage

developers putting capital at risk with uncertainty around timing and size of future storage procurement.

- In comparison, neighboring states have announced significantly clearer and stronger targets:
 - New York has announced a target of 6 GW by 2030,
 - Connecticut has announced a goal of 1 GW by 2030, and
 - Maine has announced a target of 400 MW by 2030.
- As of December 2023, about 10 GW of storage capacity awaits interconnection studies in Massachusetts alone. Given the size of the queue, a goal of 250 MW that is further tied to development of other renewable resources does not send a promising signal to the market. CCR believes developers will pull out of the market because of the lack of a clear signal.
- We support DOER's recognition of the value in procuring MDES and LDES technologies; however, the report and the recommendations seem misaligned on urgency. Given that the project development cycle is approximately 7 years, development signals need to be sent today in order for storage projects to come online by 2030, or shortly thereafter. CCR previously noted this in comments submitted during the stakeholder process.¹
- CCR believes that the \$50 million in funding to support storage and associated programs is a step in the right direction and we applaud the commitment by the state. Unfortunately, given the scope and scale of the four target areas, \$50 million is unlikely to have a material impact on the deployment of utility-scale storage. It is also unclear if this \$50 million in funding is recurring, or one-time.

¹ The average development timeline from site origination to in-service is 6-7 years in Massachusetts. In areas of high demand, where energy storage resources are most valuable to the system, the development timeline will exceed 8+ years due to the serial study process currently employed by ISO-NE.

- The report noted that DOER will review the Clean Peak Standard (CPS) Program in 2024. In its review, DOER may include further investigation into the efficacy and structure of a CPEC procurement.
 - CCR is interested in understanding the reforms being proposed to the program and would like to collaborate on this effort. The CPEC program, as structured today, does not provide financeable signals for developing utility-scale storage projects. A different contract structure could provide more revenue certainty to storage projects. For example, NYSERDA uses an Indexed REC structure where developers bid a "Strike" price. Alternatively, a 15-20-year tolling contract is also a viable method that would provide the necessary revenue certainty to projects.
- Overall, CCR believes that a stronger storage target and near-term procurement of MDES is warranted, as discussed below.

Recommendations

- CCR continues to recommend to DOER that a firm storage mandate and procurement schedule are needed to have confidence in the market and continue the development of utility-scale battery storage technology in the state.
- As previously noted in CCR's comments in the stakeholder process, CCR employed The Brattle Group to study the types, amounts, and timing of storage that will be needed on the system. CCR's hope was that the Brattle study would be complimentary to the work being done by DOER, MassCEC, and E3, and we believe that it is. Many of the findings in the Brattle study are consistent E3's findings, such as:
 - There is a need for mid-duration (4+-hr) storage by the early 2030s, with demand for longer-duration storage coming further into the future.

- The demand for storage will increase significantly in the 2030s and 2040s with renewable energy additions, increasing demand and fossil fuel generation retirements.
- Winter reliability is a primary driver of the need for multi-day energy storage and/or clean firm resources in the late 2030s and 2040s.
- The Brattle study²² commissioned by CCR shows that 4 GW of mid-duration (4+ hr) storage is needed through 2032 in ISO- New England. As Massachusetts has the largest share of the load in New England, most of this storage is expected to be deployed within the state. The E3 study includes a similar sentiment. The E3 study indicates a strong need for short to mid-duration storage to be deployed in the New England Grid in 2030. In addition, E3 goes on to recommend state action to motivate deployment of storage not currently being built. They specifically note the need for incentives aimed at large scale storage resources. Given the positive statements and findings regarding storage in *Charging Forward*, and combined with the comprehensive analysis in the Brattle study, CCR recommends that DOER adopt a storage target that includes 4 GW of mid-duration energy storage systems (4+ hour as defined in HB 5060) by 2032. We recommend that DOER seek industry and stakeholder comments on the structure of an energy storage procurement no later than June 30, 2024 and then facilitate a series of procurements for mid-duration energy storage systems as follows:
 - No later than December 31, 2024 – 1 GW
 - No later than December 31, 2025 – 1 GW
 - No later than December 31, 2026 – 1 GW
 - No later than December 31, 2027 – 1 GW

²² Please see Attachment A for a full copy of the final Brattle report

This consistent procurement schedule will provide a predictable and reliable path to market for mid-duration storage projects and ensure the Commonwealth is able to reap the benefits of storage as identified in the Charging Forward study.

- Finally, in HB 5060, the legislature found, “If the study finds it beneficial to the commonwealth, the department of energy resources shall require solicitations and procurements in accordance with the study recommendations...”. CCR believes the E3 study, when combined with the Brattle study attached hereto, supports the procurement schedule listed above.

Conclusion

CCR appreciates the work of DOER and MassCEC in reviewing the role that utility-scale storage will play in Massachusetts. Given our shared recognition of the importance of energy storage to meeting the Commonwealth’s energy and climate goals, we look forward to continuing this dialogue in the future.

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

Justin Biltz
Director, State Affairs
Cypress Creek Renewables