



January 31, 2024

Tom Ferguson  
Energy Storage Program Manager  
Department of Energy Resources

Dear Mr. Ferguson,

Thank you for the opportunity to submit comments on DOER's report, *Charging Forward: Energy Storage in a Net Zero Commonwealth*. New Leaf Energy is a leading developer of distributed and utility-scale solar, onshore wind, and energy storage working to accelerate the transition to a world powered by renewable energy. We are headquartered in Lowell, MA and recently opened a new office in Boston. Established as a standalone business in 2022, the company was formed out of Borrego's market-leading solar and energy storage development business. While we currently have an active development pipeline across the country, Massachusetts has been a core pillar of our business since the passage of the Green Communities Act in 2008.

New Leaf Energy sincerely appreciates that DOER sought stakeholder input throughout the study process and has clearly reflected that input in the findings of the report. We strongly support the findings of the Report that energy storage is an essential component of our decarbonizing electric system, but also that current policy and market structures have so far been insufficient to drive storage deployment beyond the SMART program. New Leaf Energy (and previously as Borrego) has actively participated in storage policy development for a number of years, and based on our understanding of the Commonwealth's goals with respect to storage, we began developing a portfolio of both distribution- and transmission-connected standalone storage. However, these projects have faced one hurdle after another, many of which are reflected in the Study and Report. We appreciate DOER's engagement in efforts to resolve interconnection challenges through the various working groups, and we are actively engaged with the Healey Administration's initiative to tackle siting and permitting challenges through the Commission on Clean Energy Infrastructure Siting and Permitting.

In parallel, we are grateful that DOER has stated its intention in this Report to review the Clean Peak program. This is necessary, as the Clean Peak program as currently established does not provide sufficient support to enable projects' financial viability. As New Leaf (and previously as Borrego) has commented since the original development of the Clean Peak program, the lack of a price floor or a longer-term contracting mechanism for Clean Peak Credits dramatically undercuts the extent to which the Clean Peak program can support storage deployment, since without one or both of these mechanisms the value of CPECs is substantially discounted by storage financing partners. We were happy to see this echoed in the Study:

*The state should also consider changes to reduce uncertainty in the potential revenue profile for projects, which makes it hard for projects to obtain investment and financing. Currently clean peak certificates have no floor price, and developers cannot lock in incentive levels for any period (e.g., through a contract with the state)...This introduces uncertainty to the revenue stream, causing project investors to require higher returns in exchange for accepting higher risk.<sup>1</sup>*

The recommendations included in the *Charging Forward* Report contain the building blocks to address this issue; we respectfully provide the following proposals for consideration.

### Transmission-connected Storage Procurement Proposal

We recommend different treatments for distribution- and transmission-connected standalone storage, given that there are important distinctions in both the challenges each resource type faces, as well as the benefits that each provides to a decarbonizing electric system. Competitive solicitations resulting in longer-term (10- to 20-year) contracts would be the most effective method for supporting the deployment of transmission-connected storage. Competitive procurements are appropriate given that a comparatively small number of transmission-connected facilities are needed to meet the commonwealth's need, and these resources are more capable of competing on price than smaller, distribution-connected resources.

A 10- to 20-year contract resulting from such a procurement could be successful in supporting large-scale storage deployment if it were structured as a contract for CPECs only, or if it provided an incentive structured as an index of a suite of expected wholesale market revenues and CPECs. The index storage credit mechanism is an innovative policy concept that recognizes that storage can provide a number of different services to the grid. The indexed credit structure relies on wholesale markets to send signals about which services are most valuable at any given time, but provides a moderate amount of revenue predictability so that energy storage resources are able to secure financing. The bulk of a storage facility's revenue is intended to come from wholesale market revenues under this structure, with only a comparatively small revenue gap to be filled by the index incentive.

In either case, we recognize that DOER likely needs expanded legislative authority to implement such a procurement, and we stand ready to advocate to the legislature that they grant that authority.

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<sup>1</sup> <https://www.mass.gov/doc/charging-forward-energy-storage-in-a-net-zero-commonwealth/download>, page 19.

## Distribution-connected Storage Program Proposal

While distribution-connected standalone storage is not as competitive on the wholesale market as larger, transmission-connected resources, it can provide additional value that is not compensated in the wholesale markets. One of the most important sources of additional value is that DG SAS can be utilized to effectively reduce peak load on the distribution system, which can provide substantial savings for ratepayers in the near term, while avoiding the need for expensive transmission investments and capacity buildout in the longer term.

As DOER is already aware, several Municipal Light Plants are currently operating standalone storage facilities as load reducers in order to realize savings in their regional transmission and capacity charges. New Leaf proposes that DOER consider restructuring the way distribution-connected standalone storage (DG SAS) participates in the Clean Peak program by creating a retail tariff program for DG SAS operated as load reducers. Under such a structure, participating resources would be limited to 5 MW AC or less, and would not participate in wholesale markets but rather buy and sell their power to the local utility. A tariff would be established under which projects receive a 10- to 20-year contract for energy, capacity, and Clean Peak credits. Compensation would have two components: a performance-based incentive based on a given resource's performance during monthly and annual system peak hours, and a new kWh tariff rate for charging and discharging according to Clean Peak and utility operating schedules, which would account for the value of energy and CPECs. National Grid has recently filed retail energy storage rates at the DPU after a collaborative process with the storage industry; these proposed rates could serve as a basis for the development of this tariff.

The performance-based component would be based on an estimate of RNS (transmission) and ICAP (capacity) rates assessed to each distribution company, and could be recalibrated every 4 years (such as on the same schedule as DOER currently has authority to re-evaluate Clean Peak Multipliers<sup>2</sup>). The RNS rate is set each year by New England's Transmission Owners and filed at FERC, and each utility's RNS charges equal the RNS rate multiplied by the load during each month's peak hour on the local transmission network. ICAP rates are also set each year by ISO-NE, but are based on load during the annual system-wide peak hour, which may or may not coincide with the monthly local transmission network peak hour. When DG SAS facilities operating as load reducers dispatch during the monthly and annual peak hours, they would have the effect of directly reducing the amount that the distribution company is charged by ISO-NE for RNS and ICAP. Setting an incentive level based on expected RNS and ICAP avoided costs presents relatively little risk to ratepayers as ISO-NE and third-party analysts regularly prepare forecasts of RNS and ICAP costs, and RNS rates in particular have a narrow band of uncertainty. DG SAS resources that participate in the tariff would earn this incentive by dispatching during these monthly and annual peak hours. Compensation would equal the incentive amount multiplied by the average MW that a given resource dispatched during those hours (as evidenced by meter data). Connecticut is in the process of developing a distribution-connected, front-of-the-meter storage program that structures incentives based on

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<sup>2</sup> 225 CMR 21.05(6)(h)

performance during peak hours. Storage resources in this program will not be operated as load reducers and instead will be expected to participate in wholesale markets, but the program design is structured to incentivize operations in a similar manner as our proposal above. Extensive cost-benefit analysis has shown that the proposed Connecticut program delivers net benefits to ratepayers.<sup>3</sup>

The second component of the compensation structure would be based on the framework already provided by Clean Peak, which provides a daily dispatch signal. Similar to how the SMART program provides a bundled kWh rate to project owners in return for the energy and RECs generated by a project, a tariff program for energy storage could establish fixed rates for charging and discharging according to Clean Peak and utility operating schedules, in return for energy and CPECs conveying to the utility counterparty. These charging/discharging rates could be established on the basis of an economic analysis such as the Connecticut example referenced above, or based on an initial competitive procurement, similar to how the initial SMART rates were established. Importantly, both the rates and the schedules should be evaluated on a periodic basis (such as every 4 years) and adjusted to meet the goals of the program. A given storage resource should have access to fixed rates for the life of its contract, but it may be reasonable to adjust the charging/discharging schedules for compensation, as long as they remain consistent with the operational schedules imposed on that project by the utility in whose territory it is interconnected.

Alternatively, instead of a tariff-based kWh rate at which projects would buy and sell power from/to the local utility, projects could pay/be paid based on the actual ISO-NE LMPs in their location at the time of their activity. This option could provide a more accurate real-time price signal for ESS operators than a tariff-based rate, but would also add revenue uncertainty for operators and may be more administratively burdensome for Program Administrators.

When considering an incentive for distribution-connected storage, there are several reasons this proposed load reducer program structure is advantageous. First, transmission costs are significant, and are predicted to grow substantially over time. Each megawatt of load that is served during peak hours by the dispatch of distribution-connected storage resources represents a significant cost savings to ratepayers. These savings can only be realized if storage projects are treated as load reducers (versus being an ISO-NE registered Generator), but the value of those savings is **more than double** the amount that the same battery could earn in the **wholesale energy and capacity markets combined** if it were not operated as a load reducer. Put another way, the avoided transmission cost value stream has an enormous impact on project economics but is only available to <5MW, distribution-connected storage registered as load reducers. MLPs are presently able to capture this value and pass it along to

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<sup>3</sup> Working group report:

[https://www.dpuc.state.ct.us/dockcurr.nsf/8e6fc37a54110e3e852576190052b64d/761a507593c51aca85258a940069376a/\\$FILE/DN%2022-08-05%20Order%209%20WG%20Report.pdf](https://www.dpuc.state.ct.us/dockcurr.nsf/8e6fc37a54110e3e852576190052b64d/761a507593c51aca85258a940069376a/$FILE/DN%2022-08-05%20Order%209%20WG%20Report.pdf)

Full record:

<https://www.dpuc.state.ct.us/dockcurr.nsf/8e6fc37a54110e3e852576190052b64d/761a507593c51aca85258a940069376a?OpenDocument>

their ratepayers due to their vertically-integrated nature. A new policy mechanism is required to expand this value proposition to Investor Owned Utility territory.

Third, in the long term, reducing peak loads is essential to minimizing the enormous burden of upgrading and expanding the distribution and transmission systems in order to enable electrification and the transition to renewable energy. Deploying storage that can function as load reducers has a huge added benefit to ratepayers by reducing the need for future transmission buildout, which would otherwise come at a huge cost. ISO-NE's draft 2050 transmission report estimates that the cost difference between a 51GW peak system in 2050 versus a 57GW peak system is \$7-10 billion, representing a 40-60% increase in cost to build out the transmission system to serve an additional 10% increase in peak load.<sup>4</sup> In addition to the cost of the transmission buildout required to serve a higher peak load, recent history has cast considerable doubt on the political feasibility of constructing substantial new transmission. Similarly, smoothing out demand and reducing peak loads reduces the overall amount of generating capacity that will be needed to meet growing demand from electrification of the building and transportation sectors. DOER is well aware of the enormous interconnection and siting challenges facing new renewable deployments at all scales; in parallel with working to address those challenges it is wise to seek opportunities to reduce the size of the challenge. It is well understood that our collective ability to meet our climate mandates depends upon deploying both renewable generation and energy efficiency/demand response. Front of meter standalone storage operating as load reducers can provide the peak shaving service that demand response provides, but at scale.

In order to implement a tariff-based storage incentive as described above, it is possible that DOER may need additional legislative authority. Attached as an appendix is a possible legislative solution for consideration, which borrows from the model provided by the SMART enabling legislation.<sup>5</sup>

### Energy Storage Deployment Targets

We agree with the Report's finding that the Commonwealth's 1000MWh storage target is in need of an update. The proposed target of 250MW of storage per 1 GW of renewable generation through 2030, if applied to the expected amount of renewable generation by 2030, is consistent with the magnitude of storage need we have identified in our own internal analysis. However, we echo other commenters in our sentiment that while it makes sense to benchmark storage proportionally against renewable generation, energy storage provides many benefits in addition to balancing intermittent renewables, and therefore storage deployment should not be held firmly to a certain renewable target. The pace of deployment in each market may have periods of delay and periods of rapid advancement that may not align; policymaking should anticipate this and retain some flexibility.

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<sup>4</sup>[https://www.iso-ne.com/static-assets/documents/100005/2023\\_11\\_01\\_pac\\_2050\\_transmission\\_study\\_draft.docx](https://www.iso-ne.com/static-assets/documents/100005/2023_11_01_pac_2050_transmission_study_draft.docx), page 52.

<sup>5</sup> <https://malegislature.gov/Laws/SessionLaws/Acts/2016/Chapter75>

### Repurposing ACP Receipts to Support Near-term Deployment

We regret that energy storage has been slow to deploy in Massachusetts, leading to the collection of \$50 million in alternative compliance payments; we therefore support DOER's proposal to use those ACP funds to reinvest in supporting storage deployment. We understand that DOER hopes to use these funds to support a number of policy priorities, but we were happy to see that standalone storage is included among the eligible categories. We do not have a detailed proposal at this time for how those funds should be utilized, but will highlight one of our projects to illustrate the challenge that these funds might be used to address. We have a distribution-connected project that has gotten lucky breaks on many of the challenges that our storage projects typically encounter: it meets the DEP noise guidance referenced below with no expensive mitigation; it is fully permitted; it requires minimal interconnection upgrades; and it may be ready to energize as soon as 2026. Yet in spite of all of these atypically favorable conditions, the project economics are still marginal at best, due to the uncertainty in the value of Clean Peak credits. While a discrete source of funds like the \$50 million in ACP collections seems to lend itself to more of a grant format, what this project needs is not a grant per se but simply a hedge against the uncertainty of Clean Peak credit values. This could take the form of a contract for Clean Peak credits for some amount of time. We look forward to working with DOER as a straw proposal is developed to find effective ways to use the ACP funds as a bridge to support near-term storage deployment while Clean Peak program reforms and/or DOER-led procurements are developed and implemented.

### Additional Measures to Support Storage Deployment

The Report mentions a number of additional measures that DOER is or is planning to take to support storage deployment that we would like to encourage and emphasize:

1. Model bylaws. Most municipalities in Massachusetts do not yet explicitly address energy storage in their local bylaws, which creates uncertainty for project developers and local residents alike. In addition, many municipalities have very limited planning staff capacity, and little technical expertise in emerging technologies such as energy storage. A model bylaw will provide crucial guidance, and we encourage DOER to promote its adoption through multiple avenues such as including it among the eligibility criteria for the Green Communities/Climate Leaders program.
2. Fire safety. One of the common questions that storage developers encounter from localities is around fire safety. In addition to genuine questions and concerns, we also encounter a significant amount of misinformation and disinformation. We encourage DOER to provide guidance on fire safety both for the general public and for professionals such as fire chiefs and local permitting officials. Ideally this guidance would be supported with a training program for officials and first responders, and materials that developers and local officials can easily utilize in public meetings.
3. DEP noise guidance. Current DEP noise policy limits noise from new development to an increase of 10 decibels over the minimum ambient levels. This policy is much more stringent than peer states, and poses significant barriers for energy storage in many

places throughout the commonwealth where nighttime noise levels are very low. In addition, this policy violates environmental justice principles by making it easier to permit noise-generating facilities in already-noisy areas, concentrating the impact in areas that may already be overburdened. DEP could solve both issues by adopting uniform decibel limits based on land use, such as those in use in Maine.<sup>6</sup>

4. Permitting. As noted above, New Leaf is actively participating in the Governor's Commission on Clean Energy Infrastructure Siting and Permitting and we are confident that that body will produce actionable recommendations that improve the permitting process for clean energy infrastructure including energy storage. In addition, we have encouraged the inclusion of an interim measure to enable energy storage to apply to the EFSB for a certificate as soon as legislatively possible, so that projects already encountering local permitting challenges do not remain in jurisdictional limbo for months or even years longer while the permitting reform package is implemented and operationalized.

Thank you for the opportunity to provide comments and ideas for consideration. New Leaf greatly appreciates the thoughtful analysis and incorporation of stakeholder feedback in the *Charging Forward* Study and Report. We look forward to continued dialogue as DOER further develops its storage policies in response to the findings of the Study. Please contact me at any time if New Leaf can be of any assistance in these efforts.

Sincerely,

A handwritten signature in black ink, appearing to read 'Jessica Robertson', is positioned above the printed name.

Jessica Robertson

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<sup>6</sup> <https://www.maine.gov/sos/cec/rules/06/chaps06.htm>

## APPENDIX

### *Potential enabling legislation for a tariff-based program for distribution-connected storage*

Chapter 25A is hereby amended by inserting after Section 17 a new section as follows:

Section 17A:

(a) The department of energy resources may develop a statewide energy storage incentive program to encourage the continued development of energy storage resources connected to the electric distribution system throughout the commonwealth. The department shall, after notice and the opportunity for public comment, promulgate rules and regulations implementing an energy storage incentive program which: (i) promotes the orderly transition to a stable and self-sustaining energy storage market at a reasonable cost to ratepayers; (ii) considers underlying system costs, including but not limited to storage costs, balance of system costs, installation costs and soft costs; (iii) takes into account any federal or state incentives; (iv) minimizes direct and indirect program costs and barriers; (v) considers environmental benefits, energy demand reduction, distribution system benefits and other avoided costs provided by energy storage resources; (vi) encourages energy storage resource deployment where it can provide benefits to the distribution system; (vii) ensures that the costs of the program are shared collectively among all ratepayers of the distribution companies; and (viii) promotes investor confidence through long-term incentive revenue certainty and market stability.

(c) Attributes, as defined by the department of energy resources, of the energy storage resources receiving incentives pursuant to this section shall be eligible for use by retail electric suppliers pursuant to their obligations pursuant to said section 17 of said chapter 25A.