



To: Rhode Island Public Utility Commission
From: Todd Olinsky-Paul, senior project director, Clean Energy Group (CEG)
Re: CEG comments on "Examination of the Value of and Need for energy Storage Resources in Rhode Island" report
Date: August 4, 2023

Clean Energy Group (CEG) appreciates this opportunity to comment on the Public Utility Commission's draft report, "Examination of the Value of and Need for energy Storage Resources in Rhode Island," produced in response to Senate Resolution 416.

Clean Energy Group, a national nonprofit organization, works at the forefront of clean energy innovation to enable a just energy transition to address the urgency of the climate crisis. CEG fills a critical resource gap by advancing new energy initiatives and serving as a trusted source of technical expertise and independent analysis in support of communities, nonprofit advocates, and government leaders working on the frontlines of climate change and the clean energy transition. CEG collaborates with partners across the private, public, and nonprofit sectors to accelerate the equitable deployment of clean energy technologies and the development of inclusive clean energy programs, policies, and finance tools.

Regarding the "Examination of the Value of and Need for energy Storage Resources in Rhode Island" report, CEG agrees with the comments of the Rhode Island Office of Energy Resources, as expressed in their letter of August 4, 2023.

CEG also agrees with some of the Commission's conclusions, in particular:

1. The need for a new energy storage retail service tariff
2. The need for a new energy storage interconnection tariff

Regarding energy storage interconnection, CEG recently published a report identifying several interconnection barriers that have frustrated energy storage market development across the nation. That report, "The Interconnection Bottleneck: Why Most Energy Storage Projects Never Get Built," is available online.¹ We hope it may be useful if the Commission moves forward to develop a new energy storage interconnection tariff.

In addition to the above, CEG would like to submit the following comments regarding the Commission's draft report.

1. **Building markets for new technologies takes time – so don't wait until the last minute!**
The Commission notes in its draft report that state RES rules require 100% renewable electricity by 2033, and that Act on Climate rules will likely require 100% renewable electricity by 2030. Yet, the Commission asserts that "energy storage is not likely needed to meet the RES or the Act on Climate before 2032." The Commission concludes, "Thus, while storage is not likely needed in

¹ The Interconnection Bottleneck report is available at <https://www.cleanegroup.org/publication/the-interconnection-bottleneck-why-most-energy-storage-projects-never-get-built/>

the near term to meet the RES and Act on Climate, it may not be long before storage is needed to cost-effectively meet the RES and Act on Climate. For this reason, the PUC believes it is advisable to consider reasonable tariffs and limited programs today that provide the State and the storage market with the necessary experience to prepare for significant growth in electricity demand and compliance obligations after 2030.”

As previously noted, CEG agrees with the Commission’s conclusion regarding the need for new tariffs that take into account the unique operational attributes of energy storage. However, updating tariffs will not in itself build robust energy storage markets in Rhode Island; and waiting until 2032 to begin to build an energy storage market will be far too late to contribute to 100% clean energy requirements that come due in 2030 and 2033.

Experience in other states has shown that building a dynamic, competitive and equitable energy storage market can take years. For example, Massachusetts launched its energy storage initiative in 2015 and published the landmark State of Charge² report in 2016. Since then, Massachusetts has implemented numerous new programs including the SMART solar incentive with energy storage adder, the ConnectedSolutions energy storage incentive, the Clean Peak Standard and the Community Clean Energy Resiliency Initiative and Advancing Commonwealth Energy Storage grant programs, with the goal of deploying 1 GW of energy storage in the state by 2025. After eight years of work, energy storage deployment in Massachusetts has grown from approximately 2 MW in 2015 to 200 MW today, and Massachusetts is now ranked among the top five states in the nation for energy storage deployment. However, it is still far short of its energy storage target and is unlikely to achieve 1 GW of installed capacity by 2025.

Recommendation: Rather than put off thinking about energy storage until 2032, the Commission should act now to begin designing energy storage programs to spur market development. To signal the state’s intentions, Rhode Island should also set an energy storage procurement target.

2. **Meeting state clean energy targets is an important goal, but it should not be the only goal.**

The Commission rightly points out that insofar as RES and AoC targets are concerned, there are more than sufficient RECs available, now and in the immediate future, to meet the state’s obligations. In other words, Rhode Island does not need to install more renewables and storage right now to meet RES and AoC targets, because it can simply continue to purchase RECs from neighboring states. Because RI has a relatively high ACP rate, it is willing to pay a relatively high price for RECs, and therefore anticipates no immediate shortfall in the REC supply.

However, the Commission also states that “as the penetration of intermittent resources increases in New England, energy storage may become necessary to balance the generation output of these facilities with customer demand for electricity.” This points to the fact that the value of energy storage is not merely in helping to achieve a set quantity of RECs. Energy storage plays numerous essential roles in transitioning to a clean energy economy, including balancing intermittent generation with demand in real time. Other valuable storage applications include

² <https://www.mass.gov/service-details/energy-storage-study>

enabling the retirement of the dirtiest and most expensive fossil fuel generators (such as peaker plants), providing ancillary grid services, and keeping the lights on when the electric grid goes down.

In fact, in Table 1 of its draft report, the Commission identifies 31 beneficial services that can be provided by energy storage, only a few of which may be needed to enable the state to meet its RES and AoC obligations. Some of these services generate monetary value in existing markets, while others do not. As the Commission notes in its draft report, “Rhode Island’s existing storage procurement mechanisms do procure some useful power system values from energy storage resources, as do wholesale market tariffs. However, the siloed nature of these programs may be leaving significant value on the table. For this reason, existing procurement mechanisms may not procure the maximum useful value from energy storage resources today or in the future. Thus, new solutions are likely needed to overcome the limitations of existing storage procurement mechanisms.”

As the Commission itself recognizes, energy storage offers numerous valuable services – but market failures currently limit the monetization of energy storage benefits, leaving tremendous value on the table. Focusing on identifying opportunities to correct or compensate for these market failures will help to build the storage market in Rhode Island while helping both ratepayers and investors to realize the full value of energy storage investments.

Recommendation: The Commission should act now to identify potential benefits of energy storage that are being “left on the table” by existing markets, work to update market rules, and create incentive programs to compensate for these market failures.

3. **Equity is important in energy storage policy**

As we have seen with other clean energy technologies, such as solar PV, corporations and wealthy first adopters will make early investments in new clean energy technologies and reap the rewards. Meanwhile, low-income and underserved communities who need the benefits of these technologies the most will be unable to gain access to them. The arc of energy storage adoption will surely follow this pattern, unless concrete steps are taken to provide equitable access.

Low-income and underserved communities need distributed energy storage for two primary reasons:

1. Resilience – low-income communities are hardest hit by electric grid outages associated with natural disasters such as floods, fires, winter storms and heat waves. These communities are typically less resilient to begin with and have fewer resources for recovery. When properly configured, BTM solar+storage systems can provide clean, dependable backup power to help homes and businesses ride through grid outages.
2. Cost savings – low-income communities spend a larger portion of their income on energy, and are hardest hit by rising energy costs. BTM solar+storage can help to reduce energy costs and increase energy independence.

When designing energy storage programs and policy, it is important to include equity provisions that will provide historically underserved communities with access. CEG recommends the following types of equity provisions:

- Carve-outs, such as a Justice40 commitment in distributed battery incentive programs (40% of awards go to projects benefiting underserved communities)
- Incentive adder or multiplier for income-eligible participants and commercial entities serving historically underserved communities
- Front-loaded incentive payments for income-eligible participants
- Low- or no-cost financing
- Pre-development technical assistance to determine technical and economic project feasibility and optimization
- Optional on-bill financing
- Community benefits requirements
- Incentives for owned and leased systems

Discussion of these equity recommendations follows.

Justice40 Commitment/Carve-out

When designing energy storage incentive programs or setting procurement targets, a carve-out is necessary to ensure that historically overburdened communities will have the opportunity to participate. Without a carve-out, there is a risk that distributed storage incentives will be fully subscribed by more advantaged customers before overburdened communities are able to access the program. With regard to the size of a carve-out for overburdened communities, the Commission should consider the Justice40³ standard as recommended by the federal government and adopted by Connecticut in their Energy Storage Solutions⁴ program, which includes not only a 40% carve-out for low-income and historically underserved communities, but also a 2X incentive multiplier for qualifying low-income participants.

Incentive adder or multiplier

A carve-out, while important, will not by itself be sufficient to overcome the additional cost and risk barriers associated with equity projects (for an example, the California Self Generation Incentive Program initially had a carve-out but no adders for low-income communities; there was no uptake until CA instituted equity adders, at which time the LMI budget was fully subscribed almost immediately). Therefore, we recommend that the Commission consider both a separate, reserved capacity block and an additional incentive adder for overburdened communities.

Front-loaded payments

An up-front incentive is important to help offset both higher costs and higher risks of financing for historically overburdened communities, because the initial cost barrier to an energy storage

³ <https://www.whitehouse.gov/environmentaljustice/justice40>

⁴ <https://portal.ct.gov/pura/electric/office-of-technical-and-regulatory-analysis/clean-energy-programs/energy-storage-solutions-program>

project can be difficult or impossible to overcome. While annual or seasonal incentive payments do add up over time, this type of payment structure requires a greater initial investment and the ability to wait a number of years to fully recoup costs. Additionally, financiers may view future payments as riskier, and therefore less bankable, than up-front payments (note also that the net present value of an incentive is greater when offered up-front than when paid out in a series of annual installments). Therefore, CEG recommends that fixed incentives/rebates be provided to equity projects up-front in full, and/or that a separate up-front equity incentive is provided, to reduce the initial cost barrier for these communities.

Financing

Several existing state energy storage incentive programs offer low- or no-cost financing for equity or income-qualifying customers. Examples include the Massachusetts ConnectedSolutions program, which is housed within the state's energy efficiency plan and includes access to interest-free HEAT loans, and the Connecticut Energy Storage Solutions program, which is co-administered by the Connecticut Green Bank, which provides low-cost financing. While it is true that many energy storage developers offer private financing programs to their customers, it can be helpful for the state to provide low- or no-cost loan options that do not require high credit scores to qualify.

Technical assistance

Clean Energy Group has regranted more than \$1 million in technical assistance fund grants for hundreds of equity solar+storage projects, with individual technical assistance grants averaging about \$8,000. These small grants allow an equity project to obtain pre-development technical-economic analysis, which is necessary to determine A) whether the project makes sense, and B) how to design the system to optimally provide benefits that are important to the customer. Several early energy storage and resilience grant programs launched shortly after Superstorm Sandy in the Northeast did not include provisions for pre-development technical assistance, or provided insufficient technical assistance, and, as a result, some of the grantee projects have not moved forward to construction. For example, a number of the Massachusetts Community Clean Energy Resiliency Initiative grantee projects have still not been completed nearly a decade after grants were announced. CEG therefore recommends that technical assistance funds be included in an energy storage incentive or grant program, especially for equity customers.

On-bill financing

This is an option that can be useful for some equity customers, and it should be considered in combination with other financing options.

Community benefit requirement

When awarding equity incentives or project grants, it is not enough for equity projects to be located in overburdened communities – they must provide real benefits to those communities. We therefore recommend that developers of equity energy storage projects be required to demonstrate how their project will benefit the host community, in order to qualify for equity project incentives. Note that such community benefits need not be monetary in nature, and in fact in some cases they cannot be (because monetary benefits may negatively impact other

benefits such as housing credits). Benefits such as increased energy independence, critical facility resilience, increased deployment of distributed solar PV, and the retirement of polluting fossil fuel generators can all be important non-monetary benefits to historically underserved communities.

Incentives for owned and leased systems

In some communities, there is a premium placed on ownership of clean energy resources. Energy independence can be an important benefit; also, owning clean energy resources such as solar PV and battery storage increases property values, whereas leasing such resources does not. Therefore, incentive program design should include provisions (such as low- or no-cost financing) that would help income-eligible customers to purchase and own battery storage.

On the other hand, it can be very helpful to some customers if leasing options are available. Solar leasing played a large role in scaling up solar PV, and we believe that battery leasing is likely playing the same role with distributed energy storage in markets where it is available.

To provide the broadest set of options and make battery storage accessible to the most customers, it makes sense to provide incentives for both owned and leased systems; to provide a range of financing options; and to encourage the participation of developers and aggregators, who will bring their own financing to the market and may play a significant role in enrolling customers.

Recommendation: The Commission should design programs and policy with equity provisions, to ensure that historically underserved communities that are most in need are able to take part in Rhode Island’s clean energy transformation.

Clean Energy Group respectfully submits these comments and recommendations in the hope that they will be of use to the Commission. We will be happy to discuss further or provide additional resources at the Commission’s convenience.

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