

Via Electronic Filing

Ms. Aida Camacho-Welch
Secretary
New Jersey Board of Public Utilities
44 South Clinton Avenue
3rd Floor, Suite 314
CN 350
Trenton, New Jersey 08625

Re: Energy Storage Analysis

Dear Ms. Camacho-Welch,

The enclosed comments are submitted on behalf of Vote Solar, Environment New Jersey, and Solar United Neighbors of New Jersey (SUN NJ). We appreciate the opportunity to weigh in on this important conversation and hope you will consider our recommendations below in response to the questions posed by BPU in the Energy Storage Analysis Notice.

Sincerely,
Pari Kasotia
Mid-Atlantic Director
Vote Solar
202-670-6852
pari@votesolar.org

I. Introduction

Vote Solar, Environment New Jersey, and Solar United Neighbors of New Jersey (SUN NJ) appreciate the Board of Public Utilities (BPU) providing us with this opportunity to submit comments on the topic of energy storage.

II. Energy storage and equity

Our comments below primarily touch on the topic of clean energy access and equity issues. We recognize that a path towards 100% clean energy future is not possible without energy storage solutions that address the intermittency issues associated with wind and solar technologies. Moreover, by implementing a smart electric energy storage plan, we have the opportunity to not only create a clean future but do so in a way that drives equity and resiliency.

Energy storage coupled with solar PV can help build community resilience, an aspect of our energy system that has not received the attention it deserves. We borrow the definition of a resilient energy systems or resilient power described by Clean Energy Group as following:

“Resilient power, defined as clean, on-site, distributed generation that runs 24 x 7, 365 days a year and can be islanded (isolated from the grid to provide uninterrupted power to the host facility in the event of a grid outage.... First, it is cleaner, employing renewables, energy storage, and high-efficiency, low-emissions technologies such as combined heat and power (CHP) and fuel cells. Second, it runs year-round, providing daily benefits to the host facility, whereas diesel generators sit idle 99 percent of the time. Third, because it is designed for daily use, resilient power is more reliable than diesel backup generators, which have a high incidence of failure, in part because they are seldom used. Fourth, resilient power does not rely on deliveries of liquid fuel, which may be difficult or impossible during a disaster. And fifth, in some places, resilient power technologies can produce income for their owner/operators by allowing them to bid into electric services markets such as the frequency regulation and demand response markets, as well as reducing electricity costs through peak shifting and reduction of electricity demand charges for the host facility.”¹

While New Jersey did offer an Energy Resilience Bank at one point, our understanding is that this program is currently not active. Similarly, whereas the Renewable Electric Storage Incentive Program offers incentives for electric energy storage systems integrated with Class 1 renewable energy projects installed behind-the-meter at non-residential customer sites, to our knowledge no project to date have come online to serve low-income, environmental justice, or predominantly communities of color.

Moreover, as we learn from the lessons offered from Superstorm Sandy’s recovery, we underscore the recommendations offered by environmental justice (EJ) partners in New Jersey to

¹ “Resilient Power, What States Should Do: A Guide to Resilient Power Programs and Policy”, Clean Energy Group, June 2015

build resilient communities through solar and storage. Based on the current global trajectory, major storms are increasing in frequency, duration, and severity. As data shows, low-income and EJ communities are most likely to be last in receiving recovery aid and in recovering from a disaster.² Keeping this in mind, New Jersey's underserved communities are most in need of clean, resilient systems to ensure their safety and wellbeing during and in the aftermath of these events. Our low-income and EJ partners in New Jersey's most vulnerable communities have identified resiliency as a priority, and we are pleased to support our goals in these comments.

III. Responses to select questions

Please see below our responses to select questions posed by BPU.

Question 1: How might the implementation of renewable electric energy storage systems benefit ratepayers by providing emergency back-up power for essential services, offsetting peak loads, providing frequency regulation and stabilizing the electric distribution system;

Energy storage systems when combined with solar can help provide emergency back-up power during disasters as well as a host of other benefits such as reduced peak loads, energy cost savings, reduced demand charges, and other ancillary services.

Emergency back-up power

The benefit of emergency back-up power is more profound for low-income and EJ communities. Unlike wealthier households who may be able to relocate temporarily after a disaster that disrupts power, low-income households may not have the ability to do so. Solar when combined with storage can provide long-duration backup power that can support housing and other critical facilities and allow first responders to serve residents.³

States such as Massachusetts through its Community Clean Energy Resiliency Initiative demonstrate how solar plus storage micogrids can provide resilient power services to critical community facilities such as police stations, hospitals, public shelters, and water treatment facilities.⁴

Energy Cost Savings

² Kelly, Cathleen and Ross, Tracey, "One Storm Shy of Despair: A Climate-Smart Plan for the Administration to Help Low-Income Communities," Center for American Progress, 2014, www.americanprogress.org/issues/green/reports/2014/07/17/93981/one-storm-shy-of-despair.

³ Todd Olinsky-Paul, "Solar+Storage for Low- and Moderate-Income Communities A Guide for States and Municipalities", <https://www.cesa.org/assets/2017-Files/Solar-Storage-for-LMI-Communities.pdf>

⁴ Massachusetts Office of Energy and Environmental Affairs, "Community Clean Energy Resiliency Initiative," www.mass.gov/eea/energy-utilities-clean-tech/renewable-energy/resiliency/resiliency-initiative.html (accessed Feb. 2017).

Studies show that low-income households spend up to 7% of their income on energy costs whereas non low-income households spend 3% of their income on energy costs.⁵ Given the high disparity between the low-income and non-low-income households, ensuring energy cost savings for low-income and EJ communities should be a public policy imperative.

Solar PV can help provide energy cost savings to LI households by stabilizing and often bringing down electricity bills. Solar PV coupled with energy storage can be even more beneficial, because energy storage can be deployed to reduce demand charges for commercial electric ratepayers.⁶ In most cases, multifamily affordable housing facilities fall into this customer class. Deploying solar and storage for multifamily affordable buildings can offset a large portion of energy costs. The savings can be used to reinvest in a building, or to invest in more affordable housing.

New Jersey has seen the effects of reducing demand during peak times. Solar plus storage deployment can have a similar effect as demand response, resulting in less peak demand, lower peak prices, lower need for expensive peaker plants, less need for more transmission, and overall cost savings for all ratepayers.

New Revenue Streams

We also support that owners of solar plus storage projects are fairly compensated for the value these systems add to the grid. NJ should prioritize solar plus storage not only to provide resilient power solutions for underserved communities, but also to open the doors for new revenue streams. For example, solar plus storage systems can participate in the electricity market to provide demand response, frequency regulation, spinning reserves, etc. These are revenue streams that can be the most beneficial for underserved communities and the customers being served by these systems. States such as Vermont through Green Mountain Power⁷ and New Hampshire have enabled “bring your own device” tariffs that compensate customers for sharing their stored energy with the utility which is reflected as credits on the utility bills. Through this arrangement, utilities can aggregate many of these storage systems and use them to reduce demand.⁸ Additionally, storage systems can generate revenue streams by providing ancillary services such as frequency regulation, voltage support, spinning reserves, etc.

⁵ Dreihobl, Ariel and Ross, Lauren, “Lifting the High Energy Burden in America’s Largest Cities: How Energy Efficiency Can Improve Low Income and Underserved Communities”, April 2016, https://energyefficiencyforall.org/sites/default/files/Lifting%20the%20High%20Energy%20Burden_0.pdf

⁶ Todd Olinsky-Paul, “Solar+Storage for Low- and Moderate-Income Communities A Guide for States and Municipalities”, <https://www.cesa.org/assets/2017-Files/Solar-Storage-for-LMI-Communities.pdf>

⁷ <https://greenmountainpower.com/bring-your-own-device/>

⁸ Todd Olinsky-Paul, “Solar+Storage for Low- and Moderate-Income Communities A Guide for States and Municipalities”, <https://www.cesa.org/assets/2017-Files/Solar-Storage-for-LMI-Communities.pdf>

Question 4. What might be the benefits and costs to ratepayers, local governments, and electric public utilities associated with the development and implementation of additional energy storage technologies;

Energy storage technologies provide numerous benefits to the grid as well as help support the expansion of clean energy sources. As noted above, grid benefits range from reduced peak loads, energy cost savings, reduced demand charges, and other ancillary services as well as the associated revenue streams that are created when more storage is deployed as well as savings for taxpayers as storage negates the need to build new peaker plants and transmission infrastructure.

Additionally, we would also like to underscore that storage, when combined with solar and other clean technologies, enables resilient communities especially when these systems are placed on critical facilities such as police stations, fire stations, hospitals, communications centers etc. These critical facilities can not only fulfil their mission leading to quick recovery during a disaster but also shelter and provide support for families, avoiding expensive evacuations.

Moreover, storage on multi-family housing can greatly aid in ensuring the residents of these buildings, especially those that are more vulnerable such as elderly and low-income, continue to receive basic services such as power, functioning elevators etc. during disasters.

While we recognize that new storage deployment will have a cost impact on ratepayers, the cost of inaction on climate change is far greater. Through numerous reports such as the National Climate Assessment and the Intergovernmental Panel on Climate Change, the scientific community has warned us about the increase in frequency of climate related events that will cost millions of dollars in economic damage and recovery. As natural disasters increase, vulnerable communities will become even more vulnerable. Shoring them up with resilient solar plus storage solutions will help to ensure community safety during and after events, and can help to speed up recovery. We owe it to underserved communities to invest in this type of clean and affordable solution. The cost of not doing so would be less safe, more vulnerable, and worse off communities which will have tremendous impacts on the well-being of the state of New Jersey.

5. What might be the optimal amount of energy storage to be added in New Jersey over the next five years in order to provide the maximum benefit to ratepayers;

We appreciate the 2000 MW by 2030 goal that is created under the Clean Energy Act but a goal without clear pathways to ensure all New Jerseyans benefit is a missed opportunity. We recommend that 20% of all storage deployed by 2030 serve low-income, environmental justice, and communities of color which translates to 200 MW of storage by 2025 and 400 MW by 2030.

About us:

Vote Solar is a non-profit, non-partisan grassroots organization with members throughout the U.S. including in New Jersey. Since 2002, we've worked in the Mid-Atlantic and across the country to remove market barriers and implement policies needed to bring solar into the mainstream and make sure it is affordable, accessible and actively serving everyone. We work primarily at the state level and carry best practices and lessons learned from all across the

country into our work. Our staff include experts with experience working for regulatory authorities, electric utilities, solar industry and environmental non-profits.

Environment New Jersey is a citizen-based environmental advocacy project of the non-profit Environment America. Environment New Jersey researches the challenges confronting our environment and educate the public about what's at stake. Through research reports, news conferences, interviews with reporters, op-ed pieces, letters to the editor and more, we raise awareness of environmental issues and promote sensible solutions.

Solar United Neighbors of New Jersey (SUN NJ) envisions a clean, equitable energy system that directs control and benefits back to local communities, with solar on every roof and money in every pocket. SUN NJ is a community of people building a new energy system. They help people go solar, join together, and fight for their energy rights. Partner organizations range from nonprofits to municipal governments, universities to community organizations, and individual "super volunteers" to houses of worship.