

**Initial Comments of Green Charge Networks on the Straw Proposal for the Next Solar Incentive Program**

**To the Massachusetts Department of Energy Resources**

**October 28, 2016**

Green Charge Networks (“Green Charge”) thanks the Massachusetts Department of Energy Resources (DOER) for their efforts to increase the deployment of energy storage in Massachusetts, and for engaging a thorough stakeholder process in doing so. Through thoughtful collaboration and stakeholder processes, Green Charge representatives are closely working with the DOER and state agencies, other leading national storage entities, and leading solar entities to best design a program that helps the Commonwealth achieve its energy and environmental goals, reduces costs, and continues to create jobs in the distributed energy resource (DER) industry. Our comments below are specifically around the behind-the-meter commercial and industrial energy storage adder, currently proposed at \$0.03/kWh.

Founded in 2009, Green Charge is a national market leader in behind-the-meter energy storage. With over 55 MWhs of projects built or under construction globally—including in Massachusetts and New York in the northeast U.S.—Green Charge is at the forefront of a global energy storage movement, with 50% of our portfolio co-located with solar PV. Throughout seven years of energy storage operations, Green Charge has gained valuable technical and policy insights, having worked closely with numerous utilities and regulators in storage pilot programs, behind the meter storage program design processes, demonstration projects, and partnership arrangements. In April 2016 Green Charge was acquired by Engie (formerly GDF Suez) the largest global independent-power producer (IPP) and a major provider of retail electricity across Massachusetts through subsidiaries Engie Resources and Think Energy.

Green Charge commends the MA DOER for their national leadership in including energy storage in the SREC III program to spur the deployment of innovative grid-balancing and ratepayer-benefitting technologies. Our comments below are intended to provide suggested guidance on additional program parameters which we believe are essential to successful program adoption. These comments are based on supporting similar state efforts in California and New York, and on our experience contracting and deploying 50 MWh of energy storage systems.

**PRINCIPLES OF SUCCESSFUL PROGRAM DESIGN**

Energy storage systems deployed under successful program designs improve solar economics for end-use customers through solar firming and peak shaving, and will provide additional value-added services



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such as participation in ancillary service markets and reducing capacity obligations/tags (and therefore reducing peak demand). In short, well designed storage systems provide significant host customer and ratepayer benefits, introduce grid flexibility, and reduce system strain. To develop a program that enables these benefits, Green Charge believes that critical guiding principles for successful program include the following:

1. Incentive levels must be sufficient to spur deployment, while balancing the impact to ratepayer funds;
2. Incentive structures must provide sufficient bankability and stability to allow projects to be considered low-risk and therefore financeable on a broad scale;
3. Incentive designs must encourage market adoption while pushing for cost-reduction, revenue increases, and market innovation such that the market no longer requires support; and
4. Incentive designs must allow for flexibility in operations to encourage market innovation and to realize additional revenue streams, thus increasing revenues to reduce needed costs.

Our comments below are guided around these principles.

#### **COMMENTS SPECIFIC TO MA DOER PROPOSAL**

Green Charge has found the DOER's initial straw proposal for a \$0.03/kWh adder for energy storage systems to be of an appropriate magnitude. Our comments below provide additional adjustments, requirements, and recommendations that DOER may consider in refining this incentive level, structure, and design.

##### **I.) Incentive Level or Rate**

In our methodology for evaluating appropriate SREC III incentive levels for behind-the-meter storage, we sought to balance two sets of criteria. First, the incentive must provide sufficient cost recovery to enable storage developers to earn a sufficient return on investment (ROI) that attracts market participants. Second, the incentive must not be so high as to disincentive the need for asset utilization and value creation. In other words, the incentive should be set as the "bare minimum" required for systems to be deployed and to provide services. We based our primary analysis on a dollar per kWh of storage and then extrapolated out to values for solar system kWh. Based on an energy storage \$/kWh installed upfront incentive rate, Green Charge believes that the appropriate level is ~\$330/kWh based on a 2-hour energy storage system deployed in 2017. This analysis assumes that the storage system will generate approximately 2X this incentive value in revenue realized through various streams, thus, the proposed rate incentivizes asset performance and maximizes value to the customer and to the grid. We discuss different methodologies for paying out the incentive below.

##### **II.) Incentive Structure**

The current SREC III Straw Proposal suggests an adder for behind-the-meter storage based on solar system production kWhs. While we believe this structure is feasible where there are additional parameters and restrictions (such as sizing ratios, etc.), we believe a more straightforward and ideal

structure would base the payment on the kWh installed capacity of the storage system. For example, without additional requirements around sizing, a storage adder based on solar production incentivizes developers to undersize storage systems, where developers may add very small systems that fail to create additional value for their customer or the grid and yet still collect full payment. Additionally, any non-dynamic sizing floor will incentivize market participants to size to the bare minimum only, thus deploying sub-optimally sized systems. We thus believe that incentive payment must be tied in some way to energy storage system size. Accordingly, we propose the following two alternatives:

#### **a. Upfront Incentive Structure**

Under this structure, incentive payment would be based on storage system kWhs and released as an upfront payment. For tier 1 deployments in 2017, Green Charge recommends an up-front incentive value of ~\$330/kWh-installed, based on a 2-hour system capacity. For this scenario we additionally suggest a size floor and payment ceiling cap based on the ratio of the storage system kWhs to the solar system kWhs. We suggest a floor of ~20-25% of the solar system capacity and a payment cap at ~55-60% of the solar system capacity.

#### **b. Annual Incentive Structure**

This scenario builds on the initially-proposed fixed adder of ~\$0.03 per kWh of solar production for behind-the-meter commercial and industrial energy storage. However, we strongly suggest additional participation parameters to ensure that energy storage systems are correctly incentivized to maximize value generation. We suggest an incentive multiplier based on the ratio of the storage system kWh to the solar system kWh capacity. For example: we suggest that the value of 1 (\$0.03/kWh) = ~35% (approximately) and then move up and down incrementally. For example: multiplier 1.2 (\$0.035/ kWh) = ~40% and multiplier 0.08 (~\$0. 25/kWh) = ~30%. We again suggest a size floor of ~20-25%, with no incentive payment below that sizing, and a cap at ~55-60% with no additional payment beyond this size. Such an approach provides parameters around deployments, but allows market participants to develop their own sizing methodologies and approaches, and thus drive innovation in the market.

### **III.) Incentive Step Down**

We strongly agree with the SREC III Straw Proposal plans to step down incentive levels based on MW tiers. Green Charge proposes two alternatives to the proposed structure:

1. A step-down based on annual rates. This structure provides necessary certainty for developers to project the rate at which their project will be incented. The current sales cycle for energy storage systems (paired with solar or otherwise) is approximately six months. Accordingly, instead of potentially incorrectly projecting the rate based on MW deployed (of solar or of storage), developers are able to correctly predict the incentive based on deployment time period;

2. A step-down based on storage MW deployed, versus solar MW deployed. This provides two critical benefits versus the alternative. First, it provides a market price signal based on how quickly storage projects are being deployed--where quick deployments may indicate an overly-attractive incentive. Second, as opposed to tying to solar deployments, this approach also ensures that the incentive rate does not drop due to deployments of solar without storage.

Additionally, depending on how these tiers are structured we believe the storage incentive could follow a steeper cost step-down than solar as the technology is at an earlier learning-curve position. We believe a 10% annual rate reduction, or greater, is appropriate.

#### **IV.) Equipment Qualifications**

Green Charge proposes additional equipment standards--similar to those used in other incentive programs nationally--to maintain program integrity and to ensure consumer protection. These standards will send a signal that SREC is not intended as a pilot program, but rather to help scale mature technologies and facilitate market development. An example standard would be UL certification for the internal system component. We are happy to participate in further conversations regarding what exactly these standards should contain.

#### **CONCLUSION**

Green Charge appreciates the opportunity to submit these comments and to engage in the SREC III stakeholder process. We look forward to further conversations with the DOER and are available to provide support and industry expertise however helpful. Green Charge's leading support to this initiative can be reached at 408-205-8709 or at [dvickery@greencharge.net](mailto:dvickery@greencharge.net). We thank the DOER for their ongoing and forward leadership in this space.

Sincerely,

/s/ Daniel Vickery

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