

February 2, 2024

Submitted via email: DOER.SMART@mass.gov

Ms. Samantha Meserve
Director of the Renewable and Alternative Energy Division
Massachusetts Department of Energy Resources
100 Cambridge Street, 9th Floor
Boston, MA, 02114

Dear Ms. Meserve,

Fermata Energy and Sunrun appreciate the opportunity to provide stakeholder feedback in response to the Massachusetts Department of Energy Resources' (DOER) review of the Solar Massachusetts Renewable Target (SMART) program.

The current SMART program offers an energy storage adder for solar projects paired with energy storage. Vehicle-to-grid (V2G) technology is emerging as a commercial offering as part of the increasing availability of bidirectional EVs and bidirectional, grid-support charging stations.

EVs with V2G capability, when paired with bidirectional grid-support EV charging equipment, can provide the same functions as stationary storage systems. As such, to level the playing field, the SMART program should include an incentive for solar customers to purchase bidirectional grid-support chargers to allow their EV to provide grid-tied storage services. This technology will allow EV owners to charge their cars with solar power and send that solar-generated electricity back to buildings or the grid, like the way in which a stationary storage system operates.

Below we comment in response to the current SMART Energy Storage Adder guidelines in support of including bidirectional chargers as eligible technology.

225 CMR 20.02: Definitions defines Energy Storage System as follows:

“A commercially available technology that is capable of absorbing energy, storing it for a period of time and thereafter dispatching the energy.”

Comment: V2G grid-support systems meet this definition and thus should be incentivized to meet the intent to enhance the value of solar deployments in the Commonwealth.

Additionally, 225 CMR 20.06(1)(g) specifies the following special provisions for Solar Tariff Generation Units co-located with Energy Storage Systems that are seeking qualification for an energy storage adder:

a. Minimum and Maximum Nominal Rated Power. The nominal rated power capacity of the Energy Storage System paired with the Solar Tariff Generation Unit must be at least 25 percent and shall be incentivized for no more than 100 percent of the rated capacity, as measured in direct current, of the Solar Tariff Generation Unit.

Comment: The anticipated commercial offering of single-phase bidirectional DC grid-support chargers will have a charge and discharge rate of 20 kW or less.¹ This rated power capacity will likely always be at least 25 percent of the rated power capacity of the Solar Tariff Generation Unit.

b. Minimum and Maximum Nominal Useful Energy. The nominal useful energy capacity of the Energy Storage System paired with the Solar Tariff Generation Unit must be at least two hours and shall be incentivized for no more than six hours.

Comment: A typical EV will contain an energy storage capacity of 60 kWh or more. At a discharge rate of, typically, 11.5 kW, and not discharging below 20% state of charge, this would be equal to a 4.2 hours of discharge capability at full rated power. Thus, most bidirectional grid-support charging systems will meet the two-hour minimum requirement.

c. Minimum Efficiency Requirement. The Energy Storage System paired with the Solar Tariff Generation Unit must have at least a 65% round trip efficiency in normal operation.

Comment: Bidirectional grid-support EV charging stations far exceed this minimum round trip efficiency requirement.

d. Data Provision Requirements. The Owner of the Energy Storage System must provide historical 15-minute interval performance data to the Solar Program Administrator for the first year of operation and upon request for the first five years of operation.

Comment: Bidirectional grid-support EV charging stations have metering and cloud-based data storage capabilities that far exceed the Data Provision Requirements.

e. Operational Requirements. The Energy Storage System must discharge at least 52 complete cycle equivalents per year and must remain functional and operational in order for the Solar Tariff Generation Unit to continue to be eligible for the energy storage adder. If the Energy Storage System is decommissioned or non-functional for more than 15% of a rolling year, the Department may disqualify the Solar Tariff Generation Unit from continuing to receive the energy storage adder.

¹ See the WallBox Quasar 2 available at https://wallbox.com/en_us/quasar2-dc-charger and the dcbel r16 available at <https://www.dcbel.energy/r16/>.

Comment: V2G grid-support projects are capable of meeting this operational requirement.

How is co-located defined?

To be deemed co-located, the Solar Tariff Generation Unit and the Energy Storage System must share a common point of coupling. If a Generation Unit Owner has a separate ISA for the Energy Storage System the Owner must also provide that ISA with their Statement of Qualification Application.

Comment: Residential V2G grid-support bidirectional charging systems typically will be behind the single utility revenue meter and point of common coupling (PCC) to the Area electric power system (EPS). This is particularly the case where the backup power capabilities of the bidirectional EV and bidirectional EVSE system are used to support the residence during a power outage.

Facilities must meet all of the above requirements in order to qualify for the SMART program energy storage adder.

Comment: There is no significant barrier to grid-support V2G projects to meet these eligibility requirements provided that the V2G system is fully grid-tied and receives approval to interconnect to the local utility distribution system.

Again, Fermata Energy and Sunrun appreciate the opportunity to provide these comments to the DOER to update the SMART program to qualify bidirectional chargers as eligible for the Energy Storage Adder. We look forward to working with the DOER to implement this recommendation.

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