

To: Kate Tohme, Department of Public Utilities

From: Massachusetts Electric Company and Nantucket Electric Company, each d/b/a National Grid

Re: Issues with Metering of Standalone AC Coupled Solar + Energy Storage Systems (“ESS”) within the SMART Program and Proposed Exceptions

Date: August 9, 2019

Issue 1 – Location of Customer-Owned Monitoring Equipment, Relative to the Generation Meter and the ESS meter

In National Grid’s service territory, customers are typically required to install a Utility Service Meter, a Utility PV Generation Meter, and a Utility Storage Meter, outside of any project fencing, between the distribution system and any customer-owned equipment, as shown in attached diagram in Appendix A. This general requirement is intended to ensure the safety of utility personnel, both during the installation and while performing future maintenance of the meter and all other Company-owned equipment. Plus, it provides utility personnel with easy access to Company-owned equipment and an easy means of disconnecting all energy sources in the case of emergency or planned work. It also allows the Company easy access to Company-owned equipment, as opposed to creating access issues if such equipment is installed within a customer’s fenced area, and ensures a safe means of proving that all electrical sources are disconnected and grounded prior to Company metering personnel conducting any necessary maintenance.

However, in order to operate ESS system, some customers are requesting to install additional monitoring equipment between the Company-owned meters and the distribution system.

To accommodate such customers, the Company is considering options to allow installation of customer-owned monitoring equipment between the distribution system and the Utility PV Generation Meter and the Utility Storage Meter, as long as special operating and access conditions are included within the project’s Interconnection Service Agreement. With such conditions in place and the Company’s ability to enforce those conditions, these optional metering locations and monitoring equipment placement exceptions will still enable the Company to access its equipment safely.

Issue 2 – Location of Company-Owned Meters on Pad-Mounted and Pole-Mounted Meters

As mentioned above, the Company typically locates Company-owned meters outside of any project fencing, for the reasons mentioned above: easy access, and an easy means of disconnecting all energy sources.

However, some customers are requesting that the Company allow Company-owned metering to be installed either on customer- or Company-owned equipment, inside the project fence. Customers making this request have cited not wanting additional pole-mounted primary metering outside of a project’s fence due to space and cost constraints, as well as local ordinances, as reasons.

To accommodate such customers, the Company is considering options to allow installation of Company-owned meters on either customer-owned equipment, or new Company-owned equipment, as long as special operating conditions are included within the project's Interconnection Service Agreement. With such conditions in place and the Company's ability to enforce those conditions, the Company will still be able to access its equipment safely when granting such exceptions.

Issue 3 – Metering at Secondary Voltages

For metering of SMART facilities, customers are typically required to install metering on the high voltage side of the service transformer for two main reasons: (1) to ensure accurate measurement of energy after all customer equipment losses; and (2) to facilitate the aggregation of project output. The Company installs or requires customers to install standard metering equipment, as required by Company's Electric Service Bulletins, but some SMART customers have requested to be metered on the low side of the service transformer on site. One issue is that solar inverters have a variety of non-standard voltage outputs. The Company cannot meter customer output at non-standard voltages. In addition, customers are required to aggregate solar generation at a single point for the purpose of metering. Finally, transformer losses need to be taken into account.

However, the Company is considering options to allow the installation of meters on secondary voltage levels, on a case-by-case basis, as long as the following criteria are met: (1) the project has no more than one solar generation meter and no more than one storage generation meter; and (2) the secondary voltage at the project's location is considered a standard service voltage, as defined by Company's Electric Service Bulletins. In addition, any special operating conditions to allow this must be included within the project's Interconnection Service Agreement.

Appendix A

