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May 17, 2017

VIA EMAIL: EDTariffUnit@cpuc.ca.gov

CPUC Energy Division
ED Tariff Unit
505 Van Ness Avenue
San Francisco, California 94102

Re: Response of the California Energy Storage Alliance to
Advice Letter 78 of Center for Sustainable Energy
Advice Letter 3837-G/5062-E Pacific Gas and Electric Company
Advice Letter 3596-E Southern California Edison Company
Advice Letter 5124 Southern California Gas Company

Dear Sir or Madam:

Pursuant to the provisions of General Order 96-B, the California Energy Storage Alliance ("CESA")[1] hereby submits this response to the above-referenced *Proposed Modifications to the Self-Generation Incentive Program to Implement a Field Inspection Sampling Protocol in*

[1] 8minutenergy Renewables, Adara Power, Advanced Microgrid Solutions, AES Energy Storage, AltaGas Services, Amber Kinetics, American Honda Motor Company, Inc., Bright Energy Storage Technologies, BrightSource Energy, Brookfield, Consolidated Edison Development, Inc., Customized Energy Solutions, Demand Energy, Doosan GridTech, Eagle Crest Energy Company, East Penn Manufacturing Company, Ecoult, EDF Renewable Energy, ElectrIQ Power, eMotorWerks, Inc., Energport, Energy Storage Systems Inc., Geli, Green Charge Networks, Greensmith Energy, Gridscape Solutions, Gridtential Energy, Inc., Hitachi Chemical Co., IE Softworks, Innovation Core SEI, Inc. (A Sumitomo Electric Company), Johnson Controls, LG Chem Power, Inc., Lockheed Martin Advanced Energy Storage LLC, LS Power Development, LLC, Magnum CAES, Mercedes-Benz Energy, National Grid, NEC Energy Solutions, Inc., NextEra Energy Resources, NEXTracker, NGK Insulators, Ltd., NICE America Research, NRG Energy, Inc., Ormat Technologies, OutBack Power Technologies, Parker Hannifin Corporation, Qnovo, Recurrent Energy, RES Americas Inc., Sharp Electronics Corporation, SolarCity, Southwest Generation, Sovereign Energy, Stem, STOREME, Inc., Sunrun, Swell Energy, UniEnergy Technologies, Viridity Energy, Wellhead Electric, and Younicos. The views expressed in these Comments are those of CESA, and do not necessarily reflect the views of all of the individual CESA member companies. (http://storagealliance.org).

accordance with D.16-06-055 and Revise the Energy Storage Inspection Protocol in accordance with Resolution E-4717, submitted on April 27, 2017 ("Joint Advice Letters").

I. BACKGROUND AND INTRODUCTION.

The Center for Sustainable Energy ("CSE"), Pacific Gas and Electric Company ("PG&E"), Southern California Edison Company ("SCE"), and Southern California Gas Company ("SoCalGas") – collectively referred to as the Program Administrators ("PAs") – submitted their Joint Advice Letters to implement a Field Inspection Sampling Protocol and revised Energy Storage Inspection Protocol. CESA generally supports the Field Inspection Sampling Protocol because it will reduce the administrative burden on the PAs, developers, system integrators, and host customers of the Self-Generation Incentive Program ("SGIP"), by allowing those developers who have a proven track record deploying projects that meet program requirements to be subject to a lower sampling rate. That said, CESA believes that a case could be made for reducing the sampling rate further to provide additional relief from the administrative burden given the potential high volume of projects to be funded through the program. Additionally, the Energy Storage Inspection Protocol should clarify that the discharge requirements in the protocol will not require a customer or system owner to violate interconnection agreements for non-exporting energy storage systems.

II. CESA'S RECOMMENDED MODIFICATIONS TO THE FIELD INSPECTION SAMPLING PROTOCOL.

A. Sampling Rate

The Joint Advice Letters propose to inspect the first three projects for a given developer and progressively move to a 1-in-5 and 1-in-10 sampling rate upon successful inspections in the Field Inspection Sampling Protocol. While CESA believes that the first two steps in the Field Inspection Sampling Protocol may be appropriate to establish a proven track record for following program rules and successfully developing projects in accordance with its application documentation, CESA recommends that the third step of the protocol be modified from a 1-in-10 sampling rate to a 1-in-100 sampling rate. This will further reduce the administrative costs to the PAs, developers, system integrators, as well as host customers.

For developers with a significant portfolio of projects, the 1-in-10 sampling rate still represents a significant burden to conduct field and factory tests on their projects. The effort involved in coordinating these field tests with customers, developers, and PAs is non-trivial, especially when one considers the total number of projects to be deployed under the program. For example, for small residential developers that reach their developer's cap in every step, there could be approximately 6,500 projects over the lifetime of the program from which to sample for field inspections; for large-scale developers, there could be up to 11,700 projects over the five

steps of the program.[2] CESA believes a 1-in-100 sampling rate would make the costs and time burden associated with the field inspections more manageable, particularly for higher-volume developers. Additionally, given the random sampling and consequences of not following program rules, any concerns of developers circumventing these inspections are further addressed.

Furthermore, the program is likely to support nearly 20,000 projects over the lifetime of the program. From the PAs' view, it will reduce administrative costs by implementing a 1-in-100 sampling rate as the third step of the protocol. The industry is also moving toward increased standardization, so it is reasonable to follow a 1-in-100 sampling rate after the first two steps of the protocol have established a track record for the developer.

B. Types of "Failures"

One of the examples in the Joint Advice Letters of a "failure" of a field inspection includes when the equipment or technology that is installed does not match the equipment or the technology identified in the ICF documentation. CESA recommends that this language be appended to clarify how any changes to the equipment or technology that *did not* have prior PA approval would qualify as a "failure";[3] conversely, this would mean that any changes to the equipment or technology that did have prior PA approval would not qualify as a "failure" during the field inspection.

III. CESA'S RECOMMENDED MODIFICATIONS TO THE ENERGY STORAGE INSPECTION PROTOCOL.

A. Discharge Testing Impacts on Interconnection Agreements

A number of customer-sited energy storage systems do not involve export to the grid and strictly serve load to provide a number of behind-the-meter applications, including demand charge management, time-of-use bill management, and solar self-consumption. The operational profile of these use cases are memorialized in interconnection agreements approved by the utilities, which ensures that there is no export from the energy storage systems onto the utility's distribution grid.

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[2] CESA conducted rough calculations that examined the developer's cap for each step of the SGIP program and assumed $0.10/Wh declines for each step. CESA assumed a 5-kW, two-hour battery storage system for the small residential storage category and a 20-kW, two-hour battery storage system for the large-scale storage category. With these assumptions, CESA estimated 6,500 and 11,755 projects, respectively, for the small residential and large-scale storage budget categories for a developer hitting its cap.

[3] *See, 2017 SGIP Handbook* Section 2.6.1 Modifications Pre-ICF, p. 21.

The proposed Energy Storage Inspection Protocol, however, does not adequately reflect how the discharge tests should be conducted in accordance with a project's interconnection agreement with the utility and, in the case of non-exporting systems, not require a customer to discharge their system such that it results in exports onto the grid. For non-exporting energy storage systems, the issue arises when there is insufficient onsite load to absorb the discharge of the energy storage system during the discharge test, causing the energy storage system to potentially violate the terms of their interconnection agreement with the utility.

For context, many energy storage systems are connected under non-export arrangements to simplify the interconnection process. These energy storage systems cannot be requested to discharge at their full rated output, they can only respond to supply the amount of on-site load switched on at any one time.

CESA recommends that the language in the Energy Storage Inspection Protocol be modified to indicate that the discharge tests will not require or result in an energy storage system to violate the terms of the customer's interconnection agreement. In the case of non-exporting energy storage systems, the discharge test should not require the storage system to be discharged at its full rated output but at a rate that can be absorbed by the available load at the time the discharge test is conducted.

Addressing this issue is especially important for residential and small commercial customers, who generally have lower onsite loads and may encounter this issue if the Energy Storage Inspection Protocol is not revised.

B. Field Inspections Should Consider the Customer's Load Profile

CESA supports the option being provided between a field test of the actual energy storage system output over the discharge duration specified on the application and the factory test accompanied by a 30-minute field test to provide insight into the onsite system's actual operation (not to calculate the incentive). The Option 2 in particular provides developers and system integrators the flexibility to not have to dedicate significant time of inspectors, developers, and host customers to witness a full discharge demonstration. Additionally, Option 2 mitigates the need to create artificial loads to demonstrate the intended operation of the energy storage system.

Importantly, the Commission and the PAs should also be cognizant of the customer load profile when conducting discharge demonstrations. If inspectors conduct their site visits during typical work hours during the late morning or mid-day, they should be aware that certain customers may have very little load during these periods of the day, thereby requiring the creation of sufficient artificial loads (*e.g.*, connecting thermal heaters as load) for non-exporting energy storage systems that serve onsite load. In other words, such non-exporting energy storage systems may not be able to conduct discharge demonstrations as required by the Energy Storage

Inspection Protocol without sufficient onsite load to displace. The protocol should consider alternative tests and processes by which to conduct discharge demonstrations in such situations with energy storage systems designed to meet evening loads. In sum, consistent with the intent of Option 2, the protocol should be designed to demonstrate the intended operation of the energy storage system, which may not be adequately captured with the proposed protocol and with inspections during typical work hours.

C. Physically Disconnecting from the Grid

The proposed Energy Storage Inspection Protocol includes a footnote on how physically disconnecting from the grid in order to demonstrate a discharge does not satisfy the discharge demonstration requirement. CESA believes that this language should be clarified to indicate that 'modifying the connection arrangement from its normal operating configuration is not allowed for the purposes of testing. In other words, the language should be clarified to say that the energy storage system should be tested as it would normally operate. Otherwise, without this change in the language, a number of energy storage systems where physically disconnecting from the grid (*e.g.*, via a circuit breaker) is a valid operational configuration would not be able to conduct a discharge demonstration in accordance with its planned operational profile. Energy storage systems, for example, providing demand response or other load-modifying services may operate in this way to initiate a discharge to its onsite load.

D. Consistent Interval Data Requirements

The Joint Advice Letters propose to require interval data of no less than one minute and no more than five minutes as information that must be submitted to the PAs prior to the field inspection. However, CESA finds this interval data requirement to be inconsistent with the metering and monitoring requirements as outlined in the *2017 SGIP Handbook*, which requires installed meter(s) to record data no less frequently than 15 minutes.[4] As a result, the Energy Storage Inspection Protocol proposes a more onerous requirement than required to be eligible for the program and more importantly, forces developers and system owners to install additional equipment to provide the required test data. The Energy Storage Inspection Protocol should therefore be revised to require data of no less than 15 minutes and align with the 2017 SGIP Handbook rules.

IV. CONCLUSION.

CESA respectfully requests that its recommended revisions be made to the Field Inspection Sampling Protocol and the Energy Storage Inspection Protocol. These changes will be important to ensure that energy storage developers, system integrators, and customers are not

[4] See 2017 SGIP Handbook Section 5.5.1 Meter Type, p. 49.

inadvertently required to violate the intended operations and terms of their interconnection agreement, ensure that the cost and administrative burden associated with the program are more reasonable, and consistently apply interval data requirements across the SGIP program.

Very truly yours,

Donald C. Liddell

DCL/md
Enclosures

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