BEFORE THE PUBLIC UTILITIES COMMISSION

OF THE STATE OF CALIFORNIA

Order Instituting Rulemaking Regarding Policies, Procedures and Rules for the California Solar Initiative, the Self-Generation Incentive Program And Other Distributed Generation Issues.	Rulemaking 12-11-005 (Filed November 8, 2012)

COMMENTS OF THE CALIFORNIA ENERGY STORAGE ALLIANCE ON ASSIGNED COMMISSIONER'S RULING REGARDING THE SAFETY CONSIDERATIONS FOR INTERCONNECTION OF ENERGY STORAGE SYSTEMS PAIRED WITH RENEWABLE GENERATORS ELIGIBLE FOR NET ENERGY METERING

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The California Energy Storage Alliance ("CESA")[1] hereby submits these comments on *Assigned Commissioner's Ruling Regarding the Safety Considerations for Interconnection of Energy Storage Systems Paired with Renewable Energy Generators Eligible for Net Energy Metering,* issued January 6, 2014 ("ACR").

[1] The California Energy Storage Alliance consists of 1 Energy Systems, A123 Energy Solutions, AES Energy Storage, Alton Energy, American Vanadium, AU Optronics, Beacon Power, Bosch Energy Storage Solutions, Bright Energy Storage, BrightSource Energy, CALMAC, ChargePoint, Chevron Energy Solutions, Christenson Electric Inc., Clean Energy Systems Inc., CODA Energy, Deeya Energy, DN Tanks, Duke Energy, Eagle Crest Energy, EaglePicher, East Penn Manufacturing Co., Ecoult, Energy Cache, EnerSys, EnerVault, EVGrid, FAFCO Thermal Storage Systems, FIAMM Group, FIAMM Energy Storage Solutions, Flextronics, Foresight Renewable Systems, GE Energy Storage, Green Charge Networks, Greensmith Energy Management Systems, Growing Energy Labs, Gridtential Energy, Halotechnics, Hecate Energy LLC, Hydrogenics, Ice Energy, Innovation Core SEI, Invenergy, K&L Gates LLP, KYOCERA Solar, LightSail Energy, LG Chem Ltd., NextEra Energy Resources, NRG Energy, OCI Company Ltd., OutBack Power Technologies, Panasonic, Paramount Energy West, Parker Hannifin, PDE Total Energy Solutions, Powertree Services, Primus Power, RedFlow Technologies, RES Americas, S&C Electric Co., Saft America, Samsung SDI, Sharp Labs of America, Silent Power, SolarCity, Sovereign Energy Storage LLC, Stem, Stoel Rives LLP, Sumitomo Corporation of America, TAS Energy, Tri-Technic, UniEnergy Technologies, Xtreme Power, and Wellhead Electric Co. 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

I. INTRODUCTION.

The Commission is appropriately concerned about safety of energy storage devices in two broad categories. The first category concerns the interaction of the energy storage device with the electric grid, both during times when the local distribution grid is operating normally and when the grid is experiencing an outage. The Commission has noted that these concerns appear well within the scope of the Commission's active Distribute Generation Interconnection proceeding, and its ongoing Rule 21 Working Group stakeholder process.

The second category concerns the interaction of the storage device within the home/business environment and includes issues such as adequate fire and grounding protections, proper installation, and clear labeling and accessible manual disconnects for emergency responders. These concerns are addressed through certification standards required pursuant to Rule 21. Most installations also fall under the jurisdiction of a local governmental authority overseeing home and building construction codes.

II. RESPONSES TO QUESTIONS POSED IN THE ACR.

A. Safety and Reliability Impacts to the Utility Distribution System.

1. Are there any safety or reliability concerns associated with the interaction of customer-side energy storage with the utility grid that are not currently being addressed through Rule 21?

CESA's Response:

The requirements in Rule 21 adequately address safety concerns regarding energy storage interacting with the grid. As outlined in the summary of Rule 21 safety protections provided by the Commission's staff, NRTL certification testing procedures rigorously address operational safety under a range of grid scenarios, including contingency situations. Section L further addresses technical specifications including, but not limited to, anti-islanding, voltage

limitations, and power factor testing. This should ensure safe interaction with the grid in a way that does not compromise grid stability.

2. If certified equipment is used, should any other protections be required that would prevent a customer from tampering with the equipment, potentially compromising the anti-islanding or other safety features installed on the device?

CESA's Response:

Energy storage systems should not be required to undergo any protections related to system modification or "tampering" that are not similarly applied to other resources under Rule 21. If any protections are put in place to address system modification, CESA strongly urges the Commission to avoid any burdensome system requirements, especially those that disadvantage energy storage relative to other resources.

It is also important to draw a distinction between the Commission's jurisdiction regarding interconnection versus fire safety and other related codes, as stated in the response to B.1 below. Customer-side safety is adequately addressed by existing national, state, and local electrical standards. The Commission should regulate only the interconnection of these systems to the grid in accordance with Rule 21 and not extend its involvement to the realm of existing local, state, and national electrical regulations.

B. Safety Impacts on the Customer Premises.

3. There appear to be three types of safety concerns related to the interaction of the energy storage device within the home/business environment: a) fire hazards, due to overheating or exposure to open flames, b) electric shock hazards to emergency responders, and c) containment of hazardous materials in the event of fire or other disasters. To what extent does Rule 21, and the equipment certifications required therein, address these safety concerns?

CESA's Response:

Rule 21 does not explicitly address these concerns. However, testing procedures in place pursuant to Section L of Rule 21, which subject interconnected resources to a number of power

flow and related situations, will address overloading or overheating of energy storage devices. This should address the first part of the fire hazards concern. The rest of the concerns (fire hazards due to exposure to open flames, electric shock hazards to emergency responders, and containment of hazardous materials) are addressed by local permitting authorities based on California Title 24 Building, Fire and Electrical Codes and other local regulatory codes.

Most jurisdictions have a process whereby the fire department is included in any permitting process for building permit approval that involves hazardous materials. The IBC and NFPA-70 have specific requirements for storage and handling of hazardous materials and specifically for battery energy storage systems. These codes also address proximity to other hazardous materials and combustible objects. It should be recognized that the Commission's concerns are very largely addressed at the local jurisdiction level, as well as in other state codes.

4. As part of the Rule 21 interconnection application process NEM applicants are required to provide evidence of the final electric inspection clearance from the governmental authority having jurisdiction over the generating facility. Does this provision typically involve every relevant regulatory and permitting authority that needs to be notified of the installation, such as local fire districts?

CESA's Response:

CESA does not have any comment on exactly which regulatory and permitting authorities need to be notified of the installation, provided that all relevant local and state level authorities are taken into account.

5. Are there different safety requirements currently in place for solar PV that are not required for energy storage and that could be easily modified for application to storage projects? Examples may include clear labeling and accessible manual disconnects for emergency responders.

CESA's Response:

Clear labeling is generally required pursuant to local fire regulations and national standards. For example, the National Electrical Code requires that there be a disconnect "kill"

switch directly on the front panel of a battery energy storage system. Any safety requirements that are in place for PV solar, those PV solar requirements should generally be easily modified for application to storage projects. This is especially true for requirements related to interconnection points such as those applicable to labeling accessible manual disconnects - which could potentially be improved for battery storage, for example by using clear signage labeling kill switches as "Battery Disable Switch").

6. Do existing rules and procedures address the use of used battery devices for energy storage? For example, if an electric vehicle battery is placed in service for stationary storage, will it be required to meet different UL certification standards?

CESA's Response:

In February 2013, UL adopted a standard (UL1973) for stationary battery storage applications, which applies to all customer-side storage applications as required by the National Electric Code, the California State Electric Code, and relevant local electric codes. This UL1973 standard would apply to any "Electrical Energy Storage System Enclosure" that is interconnected via a UL1741 inverter/converter. In this case, standards are based around stationary energy storage system enclosures, which should cover certification for all battery types (new as well as used).

Regarding fire safety standards, recycled batteries should be able to undergo the same safety testing, local fire code requirements, and labeling as would new batteries. Additionally, vehicle batteries generally fall under SAE standards, and not UL standards. As is mentioned in CESA's response to question B.3 above, such safety regulations are not the jurisdiction of the Commission, or pursuant to Rule 21 requirements in general.

7. If the existing rules and procedures do not adequately address the safety impacts of energy storage, what are the appropriate roles of the CPUC, utilities, local government agencies or other state agencies to develop and implement improved safety standards? How can the CPUC help improve the

coordination among the various agencies and permitting authorities involved to increase procedural efficiency?

CESA's Response:

There should simply be a clear allocation of responsibilities. CESA recommends that responsibilities for safety and permitting mirror those for behind-the-meter PV solar equipment as much as possible.

III. CONCLUSION.

CESA thanks the Commission for the opportunity to submit these comments on the ACR.

Respectfully submitted,

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