BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA

Order Instituting Rulemaking to Develop a Successor to Existing Net Energy Metering Tariffs Pursuant to Public Utilities Code Section 2827.1, and to Address Other Issues Related to Net Energy Metering.	Rulemaking 14-07-002 (Filed July 10, 2014)

REPLY COMMENTS OF THE CALIFORNIA ENERGY STORAGE ALLIANCE ON THE ADMINISTRATIVE LAW JUDGE'S RULING SEEKING PROPOSALS AND COMMENTS ON IMPLEMENTATION OF ASSEMBLY BILL 693

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In accordance with Rules of Practice and Procedure of the California Public Utilities Commission ("Commission"), the California Energy Storage Alliance ("CESA")[1] hereby submits these reply comments on the *Administrative Law Judge's Ruling Seeking Proposals and Comments on Implementation of Assembly Bill 693*, issued on July 8, 2016 ("Ruling").

I. INTRODUCTION.

CESA stated in its opening comments that energy storage systems paired with solar photovoltaic ("PV") systems are clearly eligible for the Assembly Bill ("AB") 693 Multifamily

[1] 1 Energy Systems Inc., Adara Power, Advanced Microgrid Solutions, AES Energy Storage, Amber Kinetics, Aquion Energy, Bright Energy Storage Technologies, Brookfield, California Environmental Associates, Consolidated Edison Development, Inc., Cumulus Energy Storage, Customized Energy Solutions, Demand Energy, Eagle Crest Energy Company, East Penn Manufacturing Company, Ecoult, Electric Motor Werks, Inc., ElectrIQ Power, ELSYS Inc., Enphase Energy, GE Energy Storage, Geli, Gordon & Rees, Green Charge Networks, Greensmith Energy, Gridscape Solutions, Gridtential Energy, Inc., Hitachi Chemical Co., Ice Energy, Innovation Core SEI, Inc. (A Sumitomo Electric Company), Invenergy LLC, Johnson Controls, K&L Gates, LG Chem Power, Inc., Lockheed Martin Advanced Energy Storage LLC, LS Power Development, LLC, Mercedes-Benz Research & Development North America, Nature & PeopleFirst, NEC Energy Solutions, Inc., NextEra Energy Resources, NGK Insulators, Ltd., NRG Energy LLC, OutBack Power Technologies, Parker Hannifin Corporation, Powertree Services Inc., Qnovo, Recurrent Energy, RES Americas Inc., Saft America Inc., Samsung SDI, Sharp Electronics Corporation, Skylar Capital Management, SolarCity, Sovereign Energy, Stem, SunPower Corporation, Sunrun, Swell Energy, Trina Energy Storage, Tri-Technic, UniEnergy Technologies, Wellhead Electric, Younicos. The views expressed in these Reply Comments are those of CESA, and do not necessarily reflect the views of all of the individual CESA member companies. (http://storagealliance.org).

Affordable Housing Solar Roofs Program ("AB 693 Program") in accordance with statutory definitions, state regulatory decisions, and federal/state policies, which multiple parties supported.[2] In these reply comments, CESA again affirms the eligibility of energy storage systems paired with solar PV systems and addresses concerns raised by parties on the their inclusion in the AB 693 Program. In addition, CESA focuses attention on the detailed proposal of the Nonprofit Solar Coalition.

II. ENERGY STORAGE SYSTEMS MEET THE STATUTORY DEFINITION OF A 'SOLAR ENERGY SYSTEM' AND ARE THEREFORE ELIGIBLE FOR THE AB 693 PROGRAM.

Several parties suggested that energy storage systems paired with solar PV systems do not qualify for the AB 693 Program.[3] SDG&E and TURN, for example, stated that Public Resources Code Sections §25872 and §2870(a)(4) do not address solar paired with storage and that these statutory definitions state that the AB 693 Program should be focused on solar PV installations alone.[4] ORA's Comments, however, explain how energy storage systems *would* qualify under Public Resources Code Section §25872, which states that a "…'solar energy system' means a solar energy photovoltaic device that *meets or exceeds* the eligibility criteria [emphasis added]." By including the "… meet or exceed the eligibility criteria..." language in the statutory definition for a 'solar energy system,' CESA agrees with ORA that the definition of a solar energy system can certainly include an energy storage system that is paired with it as an

[2] California Solar Energy Industries Association ("CalSEIA") Comments at p. 15; Custom Power Solar ("CPS") Comments at p. 11; Greenlining Institute Comments at p. 4; Interstate Renewable Energy Council ("IREC") Comments at p. 5; Nonprofit Solar Coalition Comments at pp. 76-77; and Office of Ratepayer Advocates ("ORA") Comments at p. 8.

[3] Everyday Energy Comments at p. 19; Pacific Gas & Electric Company ("PG&E") Comments at p. 20; San Diego Gas & Electric Company ("SDG&E") Comments at p. 19; Southern California Edison Company ("SCE") Comments at p. 10; and The Utility Reform Network ("TURN") Comments at p. 12.

[4] SDG&E Comments at p. 19 and TURN Comments at p. 13.

'addition or enhancement,' as established by the California Energy Commission's *Renewable Portfolio Standard Eligibility Handbook*.[5] ORA further notes that "storage devices are natural extensions of solar PV arrays,"[6] and supports the extensive legal review conducted by the Nonprofit Solar Coalition demonstrating that energy storage systems meet the statutory definition of a 'solar energy system.'[7] These conclusions should inform the proceeding's record and justify inclusion of energy storage systems paired with solar PV systems as eligible for AB 693 Program funds.

While the existing statutory definition is thus more than clear enough to deem paired energy storage systems as eligible for the AB 693 Program, CESA further requests that the Commission explicitly include language in its final decision on how paired energy storage systems qualify as an 'addition or enhancement' to a solar energy system to ensure unquestioned interpretation of the statutory definition among stakeholders. CESA agrees with CSE and GRID Alternatives, which requested a similar clarification for energy storage to qualify for incentives under the AB 693 Program.[8] As a result of the lack of explicit statutory language, some parties, such as PG&E,[9] attempted to interpret the 'intent' of AB 693. Therefore, CESA requests explicitly language on the eligibility of paired energy storage systems, along with details on the operating parameters (*e.g.*, share of charging from the paired renewable generator) needed to comply with the statutory definition. In doing so, undue controversy over the design and implementation of the AB 693 Program will be avoided. More importantly, this clarification will set a clear path for low-income multifamily tenants to enjoy the additional economic,

[5] ORA Comments at p. 9.
[6] ORA Comments at p. 9.
[7] Nonprofit Solar Coalition comments at pp. 76-78 and in Appendix G.
[8] CSE Comments at p. 10 and GRID Alternatives Comments at p. 10.
[9] PG&E Comments at pp. 20-21.

environmental, and grid resilience benefits of energy storage systems paired with solar PV systems.

III. THE SELF-GENERATION INCENTIVE PROGRAM IS NOT A DEDICATED SUPPORT MECHANISM FOR ENERGY STORAGE DEPLOYMENT IN MULTIFAMILY AFFORDABLE HOUSING PROPERTIES.

Everyday Energy, PG&E, and SCE said in opening Comments that energy storage systems are already eligible for incentives from the Self-Generation Incentive Program ("SGIP") and should therefore not be eligible for AB 693 Program incentives.[10] However, as CESA stated in its opening Comments,[11] the SGIP incentives are competitive and do not guarantee that funds will be delivered to multifamily affordable housing properties, with a disproportionate share of funding going to commercial and industrial customers. The SGIP is also only guaranteed through 2019, creating a long-term gap in financial support for multifamily affordable housing properties to enjoy the many benefits of energy storage systems, as their capital costs decline and low-income tenants are put under time-of-use ("TOU") rates. Therefore, CESA advocates that a dedicated support mechanism for solar-plus-storage systems is needed for multifamily affordable housing properties, which face unique challenges in terms of financing risk, system configuration, and allocation of shared bill savings between building owners and tenants.

Given these challenges and for the reasons highlighted above, CESA believes that the proposal by Custom Power Solar ("CPS") to dedicate a portion of SGIP funds to offset the costs of energy storage systems for multifamily affordable housing properties (albeit at higher incentive levels),[12] while well-intended, is not a prudent policy to support the deployment of

[10] Everyday Energy Comments at p. 19; SCE Comments at p. 10; and PG&E Comments at p. 21.
[11] CESA Comments at pp. 9-10.
[12] CPS Comments at p. 11.

energy storage systems for multifamily affordable housing properties. CESA believes that adoption of the proposal would cause administrative complexities and conflicting policy objectives of the AB 693 Program and SGIP for these energy storage systems.

At the same time, CESA agrees with ORA that the SGIP serves as a useful model for structuring incentives that are responsive to the market.[13] While the SGIP administration and incentive structure is a viable and replicable model, CESA believes that the incentive levels in the SGIP may not accurately reflect the costs of deploying energy storage systems specifically to multifamily affordable housing properties.

IV. ENERGY STORAGE SYSTEMS PAIRED WITH SOLAR PHOTOVOLTAIC SYSTEMS ARE COMMERCIALLY VIABLE TODAY AND CAN DELIVER SIGNIFICANT BENEFITS TO MULTIFAMILY AFFORDABLE HOUSING PROPERTIES.

Some parties shortchanged the capabilities of energy storage systems and used their misconceptions of energy storage to justify its exclusion in the AB 693 Program. Everyday Energy states in its opening comments that energy storage devices have "very limited capabilities" and are "still in its infancy."[14] CESA believes that Everyday Energy misrepresents the capabilities and operating environment of energy storage systems in the field today. For example, given the incentives of the Federal Investment Tax Credit ("ITC") to charge at least 75% from its paired renewable generator, energy storage devices are not installed for the sole "purpose of storing excess capacity to *deliver off grid power* to eliminate demand charges [emphasis added]."

[13] ORA Comments at p. 10.

[14] Everyday Energy Comments at p. 19.

Everyday Energy also opines that residential tenants of affordable housing units do not incur demand charges as an economic justification for not including energy storage systems in the AB 693 Program.[15] While it is true that there are currently no residential tenant utility rate structures that include demand charges or TOU rates, demand charges are presently incurred on common loads of multifamily affordable housing properties.[16] With the appropriate shared savings mechanism, demand charge savings resulting from energy storage systems paired with solar PV systems can certainly be shared between building owners and tenants. The lack of demand charges on residential tenants should not preclude the AB 693 Program participation of energy storage systems, which can deliver real and significant economic benefits to low-income tenants – the major goal of this program. The same principle applies to Everyday Energy's view that energy storage systems "cannot work with virtual net metering."[17] Again, a benefits allocation mechanism could be established within the virtual net metering scheme to enable energy storage paired with solar PV system applications.

For its part, TURN states that the inclusion of paired energy storage systems in the AB 693 Program would only serve to add "unnecessary complexity" to program administration. Specifically, TURN cites ambiguity as to what entity would be responsible for controlling and dispatching the storage device.[18] CESA believes that this is not an insurmountable issue to the degree that energy storage systems should be excluded from the AB 693 Program. Third parties should be able to sufficiently control and dispatch these energy storage systems for customer end-uses according to Power Purchase Agreement ("PPA"), leasing, or some other contract.

[15] *Ibid*.

[16] *See* PG&E Utility Rate Tariff Schedule A-10-S, SCE Utility Rate Tariff Schedules TOU-GS-2-B and TOU-GS-2-B, and SDG&E Utility Rate Tariff Schedule AL-TOU.

[17] Everyday Energy Comments at p. 19.

[18] TURN Comments at p. 13.

Familiarizing low-income customers with the array of tools and options for managing electricity costs is a key ancillary benefit of the AB 693 Program authorization and over-simplification concerns may weaken these ancillary, but important, benefits.

V. THE ANALYSIS BY THE NONPROFIT SOLAR COALITION BUILDS A COMPELLING CASE FOR ENERGY STORAGE INCENTIVES IN THE AB 693 PROGRAM AND SHOULD INFORM THE RECORD IN THIS PROCEEDING.

Multiple parties agreed that some incentive structure should be established that encourages the deployment of energy storage systems paired with solar PV systems, but few parties provided specifics into what this structure would look like. As CESA sees it, this stems from the need for more analysis in this proceeding to understand the various challenges with deploying energy storage systems to multifamily affordable housing properties. Fortunately, the Nonprofit Solar Coalition submitted extensive case study analysis of a sample of nine multifamily affordable housing properties in its opening comments, which serves as an important preliminary analysis of the benefits and potential incentive structure for energy storage systems in the AB 693 Program.[19] CESA commends the work done by the Nonprofit Solar Coalition and believes that it warrants further examination and deliberation in this proceeding to firmly establish a viable incentive structure.

Notably, the Nonprofit Solar Coalition showed that "the 300 MW goal can be reached, or be surpassed, under [their] proposed incentive structure and that investments in both energy efficiency and storage to solar PV could be included with the installation of solar PV as part of the integrated energy strategy described in this proposal, and reach the 300 MW target."[20] There was a concern shared by CESA, the California Solar Energy Industries Association

[19] Nonprofit Solar Coalition comments at pp. 80-84.

[20] Nonprofit Solar Coalition comments at p. 59.

("CalSEIA"),[21] and TURN[22] that inclusion of energy storage incentives in the AB 693 Program would not leave enough funding for the program to reach its 300-MW solar PV capacity goal. This preliminary study addresses some of CESA's concerns in this regard.

In its modeling, the Nonprofit Solar Coalition assumed its proposed highest solar PV incentive level as well as an energy storage incentive level of $0.50/Wh – *i.e.*, modeled after the SGIP incentive levels. With these assumptions, the Nonprofit Solar Coalition showed that cumulative solar PV deployment under the AB 693 Program would reach 317 MW for pairing 100% of solar PV systems with energy storage systems, and 354 MW for pairing 50% of solar PV systems with energy storage systems. These exaggerated pairing levels were intended to show that there is sufficient funding for *both* solar PV incentives and energy storage incentives in the AB 693 Program, while reaching the program's 300-MW capacity goal. Granted, the overall funding level of the AB 693 Program will depend on proceeds from cap-and-trade allowances, CESA believes the 300-MW capacity goal will likely be scaled accordingly and therefore should not affect whether there is sufficient funding for both solar PV and energy storage incentives in the program.

In light of this new analysis, CESA believes that the Commission has sufficient evidence to immediately determine in this proceeding the immediate inclusion of energy storage systems in the AB 693 Program, rather than waiting to debate its inclusion when the program is set to be reviewed in 2019, as some parties have suggested.[23] Further analysis may still need to be conducted to determine the appropriate incentive level for deploying energy storage systems to multifamily affordable housing properties, considering SGIP incentive levels were determined

[21] CalSEIA Comments at p. 15.
[22] TURN Comments at p. 13.
[23] Multifamily Affordable Solar Homes Coalition ("MASH Coalition") Comments at pp. 14-15.

by market uptake rates for systems deployed to commercial and industrial customers. As CESA has previously stated, there are unique and different challenges faced by multifamily affordable housing properties.

VI. CONCLUSION.

CESA appreciates the opportunity to submit these reply comments on the Ruling and looks forward to working with the Commission and parties in establishing a sustainable AB 693 Program that maximizes the clear societal benefits for multifamily affordable housing tenants and property owners.

Respectfully submitted,

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