

**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)

**COMMENTS OF THE CALIFORNIA ENERGY STORAGE ALLIANCE
ON THE PROPOSED DECISION TO FACILITATE VIRTUAL NET ENERGY
METERING GENERATION PAIRED WITH A STORAGE SYSTEM**

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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 comments on *Proposed Decision to Facilitate Virtual Net Energy Metering Generation Paired with a Storage System* (“Proposed Decision”), issued by Acting Chief Administrative Law Judge Anne E. Simon on November 13, 2017.

I. INTRODUCTION.

The Proposed Decision adopts modifications to the investor-owned utilities’ (“IOU”) virtual net energy metering (“VNEM”) tariffs to facilitate pairing with energy storage systems.

¹ 8minutenergy Renewables, Able Grid Energy Solutions, Adara Power, Advanced Microgrid Solutions, AES Energy Storage, AltaGas Services, Amber Kinetics, American Honda Motor Company, Inc., Brenmiller Energy, Bright Energy Storage Technologies, BrightSource Energy, Brookfield, California Environmental Associates, 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., GAF, 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., Sempra Renewables, Sharp Electronics Corporation, SolarCity, Southwest Generation, Sovereign Energy, Stem, STOREME, Inc., Sunrun, Swell Energy, 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>).

Specifically, the Proposed Decision approves Alternative #1 from an August 14, 2017 Ruling, which requires a non-import relay to be installed to ensure net energy metering (“NEM”) integrity, but acknowledges that this solution needs to be enhanced to allow energy storage systems to consume a minimal amount of grid energy to power their control systems. The Proposed Decision also cites comments made by Southern California Edison Company (“SCE”) that proposed to set a threshold amount in any single billing interval beyond which NEM credits would be forfeited for that billing cycle, which the Commission staff is directed to address through a public workshop following the issuance of the Final Decision.

CESA strongly supports the Proposed Decision and believes that the adoption of Alternative #1 will ensure that the benefits of paired energy storage systems are accessible to customers, such as multi-family and multi-tenant buildings, that may not be able to take advantage of rooftop solar due to space limitations, building positioning and shading issues, or economic reasons. This development will also support the state’s shift toward the use of more time-of-use (“TOU”) and other dynamic rates, although CESA believes that the Commission must also separately address the issue of the lack of economic signals for VNEM customers to pair VNEM generators with energy storage systems. Importantly, CESA agrees with the Proposed Decision in rejecting Alternative #2, which other parties also found to be complex, administratively costly, and artificially limiting to what a paired energy storage could provide. While CESA is generally in favor of multiple pathways to interconnect under the VNEM tariff, Alternative #2 is not the most efficient or appropriate way to do so.

CESA is thus generally supportive of the Proposed Decision, but recommends in these comments that the Commission modify Alternative #1 to allow for non-physical import relay functions and/or data sharing provisions to also be allowed under the VNEM tariff to facilitate

energy storage systems to be paired with VNEM generators. CESA also offers comments on whether never allowing for charging from the grid by VNEM-paired energy storage systems is the desired long-term policy outcomes, as there are resilience and backup power benefits of allowing for this, so long as billing or other mechanisms are in place to protect NEM integrity.

II. ALTERNATIVE #1 SHOULD BE MODIFIED TO ALLOW FOR CONTROL FUNCTIONS EQUIVALENT TO A PHYSICAL NON-IMPORT RELAY.

CESA supports the Proposed Decision’s adoption of Alternative #1. However, as written, the Proposed Decision may limit pairing energy storage systems with VNEM generators only when *physical* non-import relays are installed to protect NEM integrity. However, given the high cost of such protection relays, few developers have used this configuration to interconnect under the NEM tariff. CESA recommends that Alternative #1 be modified to allow inverters and software controls to be sufficient for pairing energy storage systems with VNEM generators that provide the equivalent function as a non-import relay. Some manufacturers have designed relay functions internal to their devices that are easier to install and more economical. The California Solar Energy Industries Association (“CALSEIA”) filed a Petition for Modification (“PFM”) on September 1, 2017, which CESA supported, that proposes to use a voltage-controlled configuration to allow DC-coupled storage systems paired with NEM generators to ensure NEM integrity and interconnect under the NEM tariff.² A similar control function approach – using inverters in this case but in other non-physical ways as well – could apply here with energy storage systems paired with VNEM generators.

Additionally, some developers are developing configurations with current transformers (“CTs”) that capture granular second-by-second data that is able to ensure NEM integrity by

² *Petition of the California Solar Energy Industries Association for Modification of D.14-05-033 to Allow DC-Coupled Solar Plus Storage Systems*, filed on September 1, 2017. pp. 6-8.

verifying that all stored energy is indeed from the NEM-eligible generation. Energy storage developers who are willing to share this data with the IOUs to verify NEM integrity should also be given a pathway to interconnect under the VNEM tariff.

CESA thus recommends that the Commission modify Alternative #1 to allow not only a non-import relay but also non-import control functions and/or data sharing provisions.

III. NEVER ALLOWING GRID CHARGING FROM ENERGY STORAGE SYSTEMS PAIRED WITH VIRTUAL NET ENERGY METERING SYSTEMS MAY NOT BE THE DESIRED LONG-TERM POLICY OUTCOME.

In our comments to the Ruling, CESA recommended that the Commission consider whether never allowing for grid charging is the desired long-term policy outcome. CESA noted that there may be instances where grid charging is needed to provide emergency backup to the multi-family and multi-tenant buildings during significant grid outages, and/or to allow vendors to better guarantee their services and customer savings by having a backup ‘fuel source’ from the grid. In effect, by never allowing for grid charging, the paired energy storage system will only be used to shift the VNEM generation, when in fact this energy storage system could provide additional resilience and backup power benefits to communities and customers. CESA maintains that NEM integrity can be ensured by developing new billing or other mechanisms that allow VNEM credits to be forfeited for grid-charged stored energy. CESA thus recommends that the Commission direct action (*e.g.*, workshops, working groups) to explore ways in which these paired energy storage systems can be unlocked to provide multiple customer benefits and grid services by creating a more flexible framework in which these paired energy storage systems can enhance VNEM generators while providing other uses. Energy storage systems are uniquely flexible and limiting these systems to single uses represents potential lost opportunities to increase its utilization and provide additional benefits.

IV. CONCLUSION.

CESA appreciates the opportunity to submit these comments on the Proposed Decision and looks forward to working with the Commission and parties going forward in this proceeding.

Respectfully submitted,



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