

**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 ADMINISTRATIVE LAW JUDGE'S RULING SEEKING COMMENT ON USE OF
ENERGY STORAGE BY CUSTOMERS ON VIRTUAL NET METERING TARIFFS**

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August 30, 2017

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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 *Administrative Law Judge’s Ruling Seeking Comment on Use of Energy Storage by Customers on Virtual Net Metering Tariffs*, issued by Administrative Law Judge Jessica T. Hecht on August 14, 2017 (“Ruling”).

¹ 8minutenergy Renewables, Able Grid Energy Solutions, Adara Power, Advanced Microgrid Solutions, AES Energy Storage, AltaGas Services, Amber Kinetics, American Honda Motor Company, Inc., 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>).

I. INTRODUCTION.

CESA appreciates the Ruling for seeking to facilitate the use of energy storage in conjunction with virtual net energy metering (“VNEM”) solar photovoltaic (“PV”) systems to 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. As California shifts toward time-of-use (“TOU”) rates and sees more pronounced ‘duck curve’ effects, these VNEM-paired energy storage systems are critical to providing the clean energy technologies to shift load toward times of greatest value to the customer and the grid. However, energy storage systems are not able to interconnect under the VNEM tariff, as detailed in the Ruling, because VNEM projects are not allowed to have any other load (*i.e.*, from a paired energy storage system) behind the generation meter other than the renewable generator. CESA views this as the major regulatory barrier to pairing energy storage systems with VNEM generators. Furthermore, the lack of incentive to install paired energy storage systems to VNEM generators may be economic and financial, as the eligible customers may not be on TOU rates with sufficiently high differentials and because residents of the multi-family and multi-tenant buildings who benefit from VNEM in many cases do not directly pay for the VNEM system, and thus multifamily housing owners may lack sufficient financial incentives to install energy storage system.

CESA, however, supports the Commission’s efforts to identify and overcome barriers to installing energy storage systems with VNEM generators. While CESA disagrees somewhat with the diagnosis for why these barriers exist, as noted in the next section of our comments, there is an opening to address some of the regulatory barriers to deploying and pairing these

energy storage systems. In particular, CESA supports Alternative #1 as proposed in the Ruling and does not support Alternative #2, which is detailed further below.

II. THE COMMISSION SHOULD ADDRESS THE FUNDAMENTAL ISSUE OF NOT ALLOWING FOR ANY OTHER LOAD BEHIND THE OUTPUT METER OF THE VNEM GENERATOR.

The Ruling views the barrier to installing energy storage systems with VNEM generators to be the implicit “no export” rule from D.14-05-033 and the implicit “no load” rule from D.08-10-036.² However, CESA disagrees with the interpretation of each of these decisions. The Ruling notes that D.14-05-033 imposed metering requirements on large Net Energy Metering (“NEM”) paired storage systems to prohibit the discharge of energy from the storage device at a level that exceeds onsite load, thereby implicitly preventing exports from the paired storage device, but language in the decision indicates that sizing and metering requirements were intended to ensure ‘NEM integrity’.³ To ensure that NEM credits for energy storage exports are only provided for energy stored from the NEM generator, D.14-05-033 imposed sizing limits for large NEM-paired storage systems in relation to the NEM generator’s maximum output capacity, rather than onsite load, and adopted the same metering requirements as the NEM Multiple Tariff (“NEM-MT”). As long as exports from the paired energy storage system can be determined to be from a NEM-eligible or VNEM-eligible generator, these exports seem to be allowed, according to the Commission’s decision, even at times the generator is not producing energy.

Furthermore, the Ruling notes that D.08-10-036 implies that VNEM generators or paired energy storage devices may not serve onsite loads for the purposes of baseline calculation and

² Ruling, p. 6.

³ D.14-05-033, pp. 2, 19-20.

netting of VNEM generation from aggregate customer consumption. However, considering these calculations are done over monthly billing periods and are trued up annually, CESA does not view the language in D.08-10-036 as precluding the serving of onsite load by VNEM generators or paired energy storage devices. Baseline issues are addressed with paired energy storage systems reducing the VNEM generators output in certain hours but increasing its output in other hours, which should be measured as the same output as a standalone VNEM generator given the sizing limitations for VNEM-paired storage systems and the net billing calculation being conducted over a monthly billing cycle. Additionally, when VNEM generators or paired energy storage devices serve onsite load, it would reduce the consumption from the grid at individual meters for common and tenant load. As a result, CESA believes that the language from D.08-10-036 is not intended to preclude the delivery of VNEM generation to onsite load but rather to ensure that a separate output meter is placed on the VNEM generator to make the baseline calculation for netting out generation from the aggregate customer consumption.

In CESA's view, the key regulatory barrier to pairing energy storage systems with VNEM generation is the inability to add any other load behind the same output meter for the VNEM generator. So long as NEM integrity is held such that the energy storage system can be demonstrated to be charged from the VNEM-eligible generator to receive VNEM credits, adding energy storage systems should not pose any challenges or barriers to calculating baselines. As a result, the Commission should issue a decision to allow for additional loads to be added behind the output meter of the VNEM generator, as long as metering options or some other solution is put in place to ensure NEM credits are only given to stored energy from the VNEM generator.

III. CESA SUPPORTS ALTERNATIVE #1 AS A MEANS TO ENSURE NEM INTEGRITY OF THE VNEM-PAIRED ENERGY STORAGE SYSTEM.

The Ruling includes a proposal to allow VNEM-paired storage systems to be placed behind the same output meter as long as a non-import relay is installed (Alternative #1). This would ensure NEM integrity by preventing the energy storage system from charging from the grid and only being able to charge from the VNEM-eligible generator. This would address concerns around issues of establishing a baseline for metered load. Provided the storage is charged only from the renewable resource, there should be no issues with allowing the combined system to export to the grid since all of the energy will be from the NEM-eligible generation.

While it is technically feasible to ‘flip’ a non-export relay to connect on the AC side of the inverter to prevent charging from the grid (*i.e.*, to function as a non-import relay), CESA recommends the Commission consider whether never allowing for grid charging is the desired long-term policy outcome. 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. Granted, it is inappropriate to receive VNEM credits for energy stored from the grid, so there may be alternative solutions to consider in the future on how the Commission can allow for VNEM credits to be provided when charging from the VNEM generator and how these credits can be foregone for energy charged from the grid. This will require further discussions on metering and billing solutions, but it is an important consideration for the Commission. Moreover, CESA recognizes that there are questions to be addressed in regards to what the utility would charge for charging the battery from grid for backup power. In the interim though, CESA supports Alternative #1 as a means to enable VNEM-paired storage systems.

IV. CESA DOES NOT SUPPORT ALTERNATIVE #2 AND THE COMMISSION SHOULD NOT ADOPT THIS PROPOSAL.

The Ruling includes a second proposal to allow VNEM-paired storage systems to directly serve the load of the benefitting customers by limiting its discharge up to the aggregate VNEM customer demand in that interval (Alternative #2). The Ruling proposes Alternative #2 to mirror its interpretation of D.14-05-033 as limiting the discharge from the paired storage device at a level that does not exceed onsite load. In addition to disagreeing with the interpretation of D.14-05-033, CESA believes that Alternative #2 would artificially limit the amount of energy that could be stored from the VNEM generator to be delivered at a later time – *i.e.*, it would limit the ability of the VNEM-paired storage system to shift storage capacity to times of peak grid and customer needs. Even as more energy from the VNEM generator could be stored, the paired energy storage system would be limited in how much energy it could export by the onsite load at any given interval, preventing additional/spare stored energy to be delivered because of this artificial discharge limit. As a result, the building customer would have more limited benefits.

More importantly, Alternative #2 does not seem to address the concerns raised in the Ruling. First, this proposal does not address NEM integrity concerns, as nothing in this proposal precludes the paired energy storage system from charging from the grid. Second, this proposal does not accurately measure the output baseline, as the limits on the energy storage device could lower the output baseline or the ability to charge from the grid could alternatively increase the output baseline by storing more energy than the VNEM generator could feasibly produce over a day. Thus, while CESA supports alternative approaches other than metering to the degree possible, CESA finds significant flaws in this proposal and recommends that the Commission not adopt this proposal.

V. **CONCLUSION.**

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

Respectfully submitted,



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Date: August 30, 2017