

**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.

R.14-07-002
Filed July 10, 2014

**COMMENTS OF THE CALIFORNIA ENERGY STORAGE ALLIANCE
ON 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**

Donald C. Liddell
DOUGLASS & LIDDELL
2928 2nd Avenue
San Diego, California 92103
Telephone: (619) 993-9096
Facsimile: (619) 296-4662
Email: liddell@energyattorney.com

Counsel for the
CALIFORNIA ENERGY STORAGE ALLIANCE

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The California Energy Storage Alliance (“CESA”)¹ hereby submits these comments pursuant to the Rules of Practice and Procedure of the California Public Utilities Commission (“Commission”), and the *Order Instituting Rulemaking To Develop A Successor To Existing Net*

¹ 1 Energy Systems Inc. | A123 Energy Systems | AES Energy Storage | Alton Energy | American Vanadium | Aquion Energy | ARES North America | Beacon Power, LLC | Bosch Energy Storage Solutions Company LLC | Bright Energy Storage Technologies | Brookfield | CALMAC | Chargepoint | Clean Energy Systems | Coda Energy | Consolidated Edison Development, Inc. | Customized Energy Solutions | Demand Energy | DN Tanks | Duke Energy | Eagle Crest Energy Company | EaglePicher Technologies, LLC | East Penn Manufacturing Company | Ecoult | EDF Renewable Energy | Enersys | EnerVault Corporation | EV Grid | FAFCO Thermal Storage Systems | FIAMM Energy Storage Solutions | Flextronics | Foresight Renewable Solutions | GE Energy Storage | Green Charge Networks | Greensmith Energy | Gridscape Solutions | Gridtential Energy, Inc. | Halotechnics | Hitachi Chemical Co. | Hydrogenics | Ice Energy | Imergy Power Systems | ImMODO Energy Services Corporation | Sumitomo Electric Group | Invenergy LLC | K&L Gates | KYOCERA Solar, Inc. | LG Chem | LightSail Energy | LS Power Development, LLC | Mitsubishi International Corporation | NextEra Energy Resources | NRG Solar LLC | OCI Company | OutBack Power Technologies | Panasonic | Parker Hannifin Corporation | PDE Total Energy Solutions | Powertree Services Inc. | Primus Power Corporation | Recurrent Energy | Renewable Energy Systems Americas Inc. | Rosendin Electric | S&C Electric Company | Saft America Inc. | SEEO | Sharp Electronics Corporation | SolarCity | Sovereign Energy Storage LLC | STEM | Stoel Rives | SunPower | TAS Energy | Tri-Technic | UniEnergy Technologies, LLC | Wellhead Electric. The views expressed in this Prehearing Conference Statement are those of CESA, and do not necessarily reflect the views of all of the individual CESA member companies. See, <http://storagealliance.org>.

Energy Metering Tariffs Pursuant To Public Utilities Code Section 2827.1, And To Address Other Issues Related To Net Energy Metering, filed on July 10, 2014 (“OIR”).

I. INTRODUCTION.

CESA appreciates the opportunity to provide comments on the OIR and other issues related to net energy metering (“NEM”). CESA sees this rulemaking proceeding as an opportunity to both clarify and improve upon the existing NEM program, and provide a platform on which to develop a successor tariff that reflects the lessons learned to date. CESA believes that addressing the issues identified in these comments will help relieve important uncertainties in program administration and facilitate greater overall adoption of grid-tied energy storage and distributed renewable energy.

II. CONCERNS WITH THE EXISTING NEM PROGRAM.

A. The Multi-Tariff Methodology Used to Determine NEM Credits for Energy Storage Paired with NEM-eligible Generation Projects Should be Refined.

Under D.14-05-033, the Commission determined that for NEM-eligible energy storage projects (e.g. energy storage meeting the California Energy Commission’s requirements as an addition or enhancement to a NEM-eligible generator), NEM crediting would be done based on either a to-be-developed estimation methodology, or pursuant to the approach established in the NEM-MT provisions of the utilities’ respective NEM tariffs. Under NEM-MT, the NEM credits accrued in any time interval are the lesser of the energy exported by the customer-generator to the grid, or the energy generated by the renewable generating facility, as measured by a Net Generation Output Meter (“NGOM”).

The intention of the NEM-MT provision is to preclude NEM gaming, specifically to ensure that any NEM credits attributed to a customer generator reflect the output from the

renewable generator and no other source. While the basic approach is reasonable, the use of a relatively short time interval over which the “lesser of” methodology described above is applied, limits the ability/incentive for a customer to, for example, store energy generated by an onsite solar generator during the day and export that energy to the grid at night when their system is no longer producing but when that energy may be more valuable to the grid. Under the “lesser of” methodology, energy exported to the grid at night would not receive any NEM credits to the extent the solar system is not producing energy. The formula would resolve to zero.

Given that this very use case would specifically address one of the primary concerns raised by the California Independent System Operator and the utilities with regard to solar energy, namely that it produces and exports energy during times when it may not be most valuable to the system, this seems an unfortunate, if unintended consequence. This could be easily addressed by simply increasing the interval over which the lesser-of methodology applies to 24 hours rather than the current 15-minute or hourly interval used by the utilities. With a 24-hour interval, customers would have the ability to time shift exports from their solar energy system to the grid whenever that energy is most value and receive NEM credits that are valued accordingly. The NEM credits received would never exceed the amount of generation of the renewable facility, and thus would continue to safeguard the integrity of the NEM Program.

B. Equipment Sizing Limitations Should is Re-visited.

The Commission should abandon all sizing limitations for generation and energy storage equipment that meet the essential parameters of the NEM program. Roof space or the physical footprint available for NEM-eligible renewable generators may be currently limited for a variety of reasons today; however, customers should have the option to expand generation or add energy storage over time. A customer’s peak load may grow and this should not limit the expansion of on-site, NEM.

Further, some of the most desired uses for storage paired with NEM are to level local load and reduce demand. In these uses the power rating of the energy storage equipment needs to be much higher than the peak NEM generation capability. For example: (a) In a load leveling application coupled with NEM only 15 to 30 minutes of energy are required but the power level may be 10-20 times the onsite generators peak power, or (b) in an application with on-site solar generation and electric vehicle (“EV”) charging the solar power need only be approximately one fifth the energy of the EV being charged in a residential application but the energy of the energy storage needs to match the daily energy production.

C. Utilities Should Allow Customers to Pay for Metering Costs on a Monthly Basis.

The commission should direct utilities to allow customers to spread the cost of utility-owned metering solution (such as net generation output meters), over time with a flexible, monthly payment plan in lieu of an upfront charge

D. The Discharge Capacity Limitation for NEM-Eligible Generation Paired with Storage Systems Sized at Less Than 10 Kilowatts Should be Re-Visited.

In D.14-05-033, the Commission directed that for NEM-eligible generation paired with energy storage systems larger than 10 kilowatts (kW), the discharge capacity of the storage system may not exceed the NEM-eligible generator’s maximum capacity. CESA has consistently advocated that the Commission should modify this storage discharge limit to the annual peak load of the customer’s site.

III. COMMENTS ON THE APPROACH TO THE NEM SUCCESSOR TARIFF.

A. All Benefits of Energy Storage-paired NEM Generating Facilities Should be Fully Taken Into Account by Modeling Tools.

CESA is gratified to note that a “Public Tool” has been recently introduced in a workshop as part of this proceeding to, in part, calculate the benefits of energy storage paired

with a NEM-eligible system. The Commission should assure that the Public Tool appropriately reflects the full range of market benefits enabled by energy storage as well as the variety of use cases. Appendix A to these comments includes a set of use cases that should be considered for energy storage paired with NEM-eligible generation.

The Public Tool is a deterministic model, whereby inputs directly influence outputs. During the workshop, it was made clear that probability distributions or sensitivity/ Monte Carlo functionality will be unavailable in the Public Tool. Given the model's relatively rigid framework, CESA is concerned about use of the best currently available assumptions of the trajectory of energy storage costs over time and urges the Commission to use the latest available information when running scenarios to inform policy. Energy storage-related assumptions should be transparent and subject to examination by all stakeholders; especially given that the Public Tool will also inform rate design and other proceedings at the Commission.

B. Guiding Principles to Evaluate Tariff and Contracting Options Should Explicitly Include Energy Storage.

The guiding principles used to assist the development and evaluation of tariff and contracting options should include clear language regarding how energy storage can enable the goals of the NEM program; specifically, sustainable growth of customer-sited renewable generation. The Commission should call out and highlight the fact that current and potential forecast value streams enabled by customer-sited NEM-Eligible generation paired with energy storage – encouraged by the recent extension of the Self Generation Incentive Program and emerging participation in wholesale electricity markets, for example – will further enhance the value proposition of storage-paired NEM generating systems.

IV. CONCLUSION.

CESA appreciates this opportunity to comment on the OIR, and looks forward to working with the Commission and stakeholders in this proceeding.

Respectfully submitted,



Donald C. Liddell
DOUGLASS & LIDDELL

Counsel for the
CALIFORNIA ENERGY STORAGE ALLIANCE

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Appendix A. Possible Use Case Scenarios for Storage paired with NEM-Eligible Generating Facilities

Many combinations of services and system categories are possible with NEM-Eligible Generators. Each combination of options should be considered if possible.

System Category	Potential Storage Services							
	Bill Management - peak demand management	Bill Management – Energy Shifting	Demand Side DR	Supply Side DR	CAISO Market Participation	PLS – Electric	PLS - Thermal	Reliability
Commercial – Single Location	✓	✓	✓	✓	✓	✓	✓	✓
Commercial - Aggregated	✓	✓	✓	✓	✓	✓	✓	✓
Residential – Single Location	✓	✓	✓	✓				✓
Residential - Aggregated	✓	✓	✓	✓	✓			✓
C&I Virtual Net Metering	✓	✓	✓	✓	✓	✓	✓	✓
Multi-Family Residential	✓	✓	✓	✓	✓			✓