

**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)

**REPLY COMMENTS OF THE CALIFORNIA ENERGY STORAGE ALLIANCE
ON THE DECISION ADOPTING NET ENERGY METERING BILL CREDIT
ESTIMATION METHODOLOGY FOR GENERATING FACILITIES PAIRED
WITH SMALL STORAGE DEVICES**

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March 29, 2016

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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 *Decision Adopting Net Energy Metering Bill Credit Estimation Methodology for Generating Facilities Paired with Small Storage Devices*, issued by Commissioner Michael Picker on March 4, 2016 (“Proposed Decision”).

I. INTRODUCTION.

Along with many other parties, CESA supports the Proposed Decision’s adoption of a Net Energy Metering (“NEM”) billing credit estimation methodology that establishes a monthly maximum output limit for small energy storage devices paired with NEM-eligible generators.

¹ 1 Energy Systems Inc., Advanced Microgrid Solutions, AES Energy Storage, Aquion Energy, Brookfield, California Environmental Associates, Consolidated Edison Development, Inc., Cumulus Energy Storage, Customized Energy Solutions, Demand Energy, Dynapower Company, LLC, Eagle Crest Energy Company, East Penn Manufacturing Company, Ecoult, ELSYS Inc., Energy Storage Systems, Inc., Enphase Energy, EV Grid, GE Energy Storage, Gordon & Rees, Green Charge Networks, Greensmith Energy, Gridtential Energy, Inc., Hitachi Chemical Co., Ice Energy, IMERGY Power Systems, Innovation Core SEI, Inc. (A Sumitomo Electric Company), Invenergy LLC, K&L Gates, LG Chem Power, Inc., Lockheed Martin Advanced Energy Storage LLC, LS Power Development, LLC, Mitsubishi Corporation (Americas), NEC Energy Solutions, Inc., NextEra Energy Resources, NRG Solar LLC, OutBack Power Technologies, Panasonic, Parker Hannifin Corporation, Powertree Services Inc., Primus Power Corporation, Princeton Power Systems, Recurrent Energy, RES Americas Inc., Saft America Inc., Sharp Electronics Corporation, Skylar Capital Management, SolarCity, Sovereign Energy, Stem, SunEdison, SunPower, Toshiba International Corporation, Trimark Associates, Inc., 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>).

However, each of the investor-owned utilities (“IOUs”) raised concerns about “gaming” of the NEM program under Method 2. CESA therefore focuses on addressing these NEM gaming concerns, and also responds to the IOUs’ comments on energy storage sizing requirements and SolarCity’s request for greater transparency regarding Net Generation Output Meter (“NGOM”) costs and exemption from the regime established by D.14-05-033 for energy storage systems charging only from onsite generation.

II. GAMING OF THE NET ENERGY METERING PROGRAM SHOULD NOT BE A CONCERN GIVEN THE POLICIES CURRENTLY IN PLACE.

The Proposed Decision correctly notes that any NEM gaming concerns where the paired energy storage system charges from off-peak energy (rather than the NEM-eligible generator) to be discharged back to the grid during peak times are theoretical, and are unlikely to occur in practice because of the economics of current battery costs, small Time-of-Use (“TOU”) rate differentials, and roundtrip efficiency losses of 10-20%.² However, Pacific Gas and Electric Company (“PG&E”) argues that “since Method 2 allows exports up to the estimated PV generation with no subtraction for customer load, the customer would attempt to maximize their storage benefit by exporting up to the level of any PV generation that was consumed on-site.”³ PG&E also ran a model of one residential NEM customer charging an energy storage device in the middle of the night and exporting for NEM credit amounted to \$3,350 over ten years of mis-allocated NEM credits.⁴

CESA finds PG&E’s arguments and example analysis flawed. First, the \$3,350 value PG&E found does not account for the “costs” of charging the paired energy storage device from the grid.⁵ By reporting a gross number without netting out these costs, PG&E’s analysis dramatically overstates the actual financial incentive any customer would have to use energy storage in this way. Furthermore, there are several factors in place that limit any benefit that would be derived from NEM gaming. First, the Federal Investment Tax Credit (“ITC”) incentivizes solar-plus-storage customers to charge from the NEM-eligible generator in order to

² *Proposed Decision*, pp. 19-20.

³ *PG&E’s Comments*, p. 6.

⁴ *Ibid.*

⁵ *PG&E’s Comments*, p. 13.

capture the full 30% credit. The share of the full 30% credit is proportionally reduced as the share of the charging of the energy storage device from PV generator is also reduced – down to a 75% threshold at which point the ITC drops to zero.⁶ Second, with a \$10 minimum bill adopted for residential rate customers,⁷ NEM-eligible customers are limited in the value they can capture from charging from the grid during off-peak and discharging during on-peak. Combined, these two factors dramatically reduce any financial motivation customers would have to engage in NEM gaming.

San Diego Gas and Electric Company (“SDG&E”) adds that “as smaller systems are aggregated by third parties to participate in energy markets, the risk of gaming is compounded.”⁸ CESA does not understand how these aggregated solar-plus-storage systems risk NEM gaming considering forfeiture of the ITC if charging from the grid. In addition, the rules as they currently stand today do not allow for aggregation of heterogeneous distributed retail energy resources – *i.e.*, PV-plus-storage systems – from participating in the California Independent System Operator’s wholesale markets.⁹ While rules may change in the future, SDG&E’s concerns are not a problem today.

III. SOUTHERN CALIFORNIA EDISON INCORRECTLY INTERPRETS THE INTENT OF THE NET ENERGY METERING PROGRAM.

Southern California Edison Company (“SCE”) advocates for Method 1 because the NEM program was never intended to incentivize energy storage.¹⁰ Citing Public Utilities Code Section 2827(h)(2)(B), SCE argues that paired energy storage devices should not be able to time shift PV generation because “the NEM program provides a retail rate credit to customers whose generation exceeds onsite usage *at the time of generation* at the same retail rate that the customer would have been compensated if the customer had consumed that same kilowatt-hour.”¹¹ SCE’s

⁶ *IRS Notice 2013-29.*

⁷ *Decision on Residential Rate Reform for Pacific Gas and Electric Company, Southern California Edison Company, and San Diego Gas and Electric Company and Transition to Time-of-Use Rates*, D.15-07-001, issued July 3, 2015.

⁸ *SDG&E’s Comments*, p. 2.

⁹ *Expanding Metering and Telemetry Options Phase 2: Distributed Energy Resource Provider (DERP)*, draft final proposal issued on June 10, 2015, p. 21.

¹⁰ *SCE’s Comments*, p. 3.

¹¹ *SCE’s Comments*, p. 4.

argument is an overly narrow reading of the statute. NEM is intended to provide retail credits to customers for energy exports based on the value of that generation when it is provided to the grid. This provides a critical incentive under policies like TOU rates to use energy storage to dispatch this energy to times when it is most valuable. SCE's interpretation would undercut this incentive and thus the efficacy of TOU rates in achieving their intended goal. Practically, such an interpretation would virtually eliminate any reason to install energy storage paired with solar PV generation. Furthermore, contrary to SCE's suggestion that Method 1 allows customers to manage around TOU price signals,¹² NEM-eligible customers with PV-plus-storage systems would be in jeopardy of forfeiting NEM credits under hourly output limits, preventing these customers from shifting load and providing grid benefits during peak demand periods. So long as the solar (or other NEM-eligible) generated energy is stored immediately at the time of generation, it should be up to the NEM customer as to when they use or discharge that energy. This is fundamental to the value of storage for a variety of desirable applications.

IV. ENERGY STORAGE SIZING REQUIREMENTS LIMIT USE CASE APPLICATIONS, INCLUDING THE ABILITY TO TIME SHIFT LOAD.

SCE wishes to apply the same sizing requirements applied to large generating facilities in D.14-05-033 to small PV generating facilities to “better ensure that the energy storage device functions like an addition or enhancement to the NEM generator, rather than installed simply to game the NEM crediting rules.”¹³ However, SCE is discounting the impacts of “wear and tear” from cycling and roundtrip efficiency losses for energy storage systems, which can range up to 25% depending on the technology. As paired energy storage devices attempt to time shift loads according to TOU price signals and periods, these technical characteristics should be factored into the sizing requirement. Furthermore, there are a number of high-power applications, such as electric vehicle charging or load leveling, that are limited by the 150% sizing requirement. Finally, for the reasons stated above, NEM gaming concerns are a non-issue in practice and should not be a reason to impose a sizing requirement that limits NEM customer's ability to utilize energy storage for various beneficial applications and provide grid benefits.

¹² *SCE's Comments*, p. 5.

¹³ *SCE's Comments*, p. 6.

V. **THE COMMISSION SHOULD REQUIRE GREATER TRANSPARENCY REGARDING NGOM COSTS AND CONSIDER DEVELOPING A COST CAP.**

CESA agrees with SolarCity that given the high cost being assessed by the IOUs for deploying metering arrangements deemed complex that the Commission should both require the IOUs to provide more information regarding the basis for the costs being invoiced as well as consider the development of a cost cap for these activities.¹⁴ The variability in the data provided by SolarCity and the non-trivial nature of these costs raises important questions about the reasonableness of the charges being assessed that should be further investigated.

VI. **THE COMMISSION SHOULD EXEMPT ENERGY STORAGE SYSTEMS THAT ONLY CHARGE FROM ONSITE GENERATION FROM THE NEM-GAMING REGIME.**

CESA agrees with SolarCity's suggestion that paired energy storage systems that only charge from PV should be exempt from the regime established in D.14-05-033 and the Proposed Decision.¹⁵ CESA also supports SolarCity's suggestion that the Commission should direct the IOUs to work with stakeholders to identify the circumstances when such exemptions would apply. If it can be demonstrated that a system, either due to its configuration or inverter settings, will only charge from the PV system with which it is paired, the gaming issue is rendered moot.

VII. **CONCLUSION.**

CESA appreciates the opportunity to submit these reply comments and recommends the Commission immediately adopt Method 1 as set forth in the Proposed Decision.

Respectfully submitted,



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Date: March 29, 2016

¹⁴ *SolarCity's comments*, pp. 9-10.

¹⁵ *Ibid*, pp. 7-9.