

**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 ENERGY DIVISION STAFF PROPOSAL TO MODIFY THE  
SELF-GENERATION INCENTIVE PROGRAM**

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The California Energy Storage Alliance (“CESA”)<sup>1</sup> hereby submits these reply comments pursuant to the Rules of Practice and Procedure of the California Public Utilities Commission (“Commission”) regarding the *Assigned Commissioner’s Ruling (1) Issuing an Energy Division Proposal on Senate Bill 861 Modifications to the Self-Generation Incentive Program(2) Entering the Proposal Into the Record*, issued November 23, 2015 (“Ruling”).

**I. INTRODUCTION**

On January 7, 2016, numerous parties submitted comments regarding the Energy Division Proposal attached to the Ruling (“Proposal”). CESA’s reply comments seek to promote

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<sup>1</sup> 1 Energy Systems Inc., Abengoa, Advanced Microgrid Solutions, AES Energy Storage, Aquion Energy, ARES North America, Brookfield, Chargepoint, Clean Energy Systems, CODA Energy, Consolidated Edison Development, Inc., Cumulus Energy Storage, Customized Energy Solutions, Demand Energy, Duke Energy, Dynapower Company, LLC, Eagle Crest Energy Company, East Penn Manufacturing Company, Ecoult, ELSYS Inc., Energy Storage Systems, Inc., Enersys, EnerVault Corporation, Enphase ENERGY, EV Grid, Flextronics, GE Energy Storage, 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., LightSail Energy, Lockheed Martin Advanced Energy Storage LLC, LS Power Development, LLC, Manatt, Phelps & Phillips, LLP, Mitsubishi Corporation (Americas), Mobile Solar, 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, Renewable Energy Systems Americas Inc., Rosendin Electric, S&C Electric Company, Saft America Inc., Sharp Electronics Corporation, Skylar Capital Management, SolarCity, Sony Corporation of America, Sovereign Energy, STEM, SunEdison, SunPower, Toshiba International Corporation, Trimark Associates, Inc., Tri-Technic, Wellhead Electric. 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>).

reasonable forward-looking rules for the SGIP and to maintain the Commission's focus on using the SGIP to best support technologies that not only fit with the program's statutory clean-energy goals but also to responsibly direct and administer funds to achieve useful benefits to ratepayers and the state. To best achieve this, the Commission should issue a final decision that adopts most of the recommendations of the Proposal, allocating 75% of the incentive budget to energy storage, affirming the proposed new lists of eligible technologies, and adopting the modest adjustments recommended by CESA which seek to improve the fluidity of the program.

## **II. CESA'S REPLY COMMENTS ON THE STAFF PROPOSAL**

### **A. Comments Opposing the 75% Budget Allocation to the Energy Storage Category Fail to Demonstrate That the Proposal's Logic is Unreasonable.**

Numerous parties offered varying views on the allocation of funds. CESA refers to the Proposal's recommendation as the '75/25 split', in which 75% of funds are allocated to the energy storage bucket, and 25% of funds are allocated to the self-generation technologies bucket. A prevailing theme across commenters is general support for establishing separate budget allocations for self-generation and energy storage categories.<sup>2</sup> Despite this general view, some parties recommend alternate funding levels for the different categories, or recommend different ways of evaluating various technologies to support higher levels of funding for certain technology categories than what is suggested in the Proposal. However, no parties suggesting alternative funding allocations across the proposed technology categories demonstrated that the staff's recommendation or logic underlying that recommendation is unreasonable, or how the budget allocation for energy storage proposed by staff conflicts with program design principles and budget criteria.<sup>3</sup>

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<sup>2</sup> CalSEIA, SolarCity, CSE, Greencharge Networks, and Stem.

<sup>3</sup> Proposal, pgs. 10-15, 20, and 23.

In its comments, PG&E supports the design principles but seeks a different budget allocation. PG&E does not clarify how the logic applied in the Proposal is flawed. PG&E instead recommends allocations that it proposed in Q2 of 2015 which was before the staff Proposal shared its principles, before the new Greenhouse Gas Emission Factor was adopted, and before the recent Cost-Effectiveness and other SGIP-related reports were available. In reviewing PG&E's comments, CESA could not readily identify how PG&E's approach better fits with the Proposal's principles. PG&E bases its views on findings that its allocations better uphold the *status quo* and moderate changes in funding between funding categories. PG&E's desire to moderate changes to the program differs from that of other Program Administrators ("PAs"), and the conservative allocations recommended will limit the value available to ratepayers insofar as PG&E's approach fits more poorly with the assessments, logic, and new eligibility ideas of the Proposal. As shown in the Proposal, the removal of any technology group, however, will *de facto* change the percentage allocation of funds. This appears particularly true where PG&E's historical allocations were strongly influenced by high program use by pure-electric fuel cells. PG&E's historical values differ starkly from the values used in the Proposal, wherein the statewide allocation of funds was reviewed, including how the statistical share of funds flowing to a technology category changes when pure-electric fuel cells are removed. Thus PG&E's basis for evaluating changes from past patterns is less compelling and applicable for the statewide program design than the staff proposals. Stepping back, a key goal of using historical data is to logically assess trends and other factors in concluding a budget allocation. Unlike PG&E's more narrow focus on its service territory using data unadjusted for technology eligibility, the Proposal correctly uses statewide data for the development of its proposed state-wide rules.

Comments of SoCal Gas and San Diego Gas and Electric recommend 100% of funding for the SoCal Gas program go toward self-generation technologies, and up to 50% of funding in the areas of other PAs. SCG-SDG&E comment that past data on the flow of SGIP funds merely indicates where incentives were too high. SCG-SDG&E finally states that SCG's SGIP program should fund only energy storage SGIP projects installed in concert with generation technologies. SCG-SDG&E, however, provide no basis for how their ideas better fit with the program and budgetary design principles. Staff's approach of evaluating trajectories of needed funds reflects changes in technology eligibility, and it is reasonable to assume that some generation technologies will access more SGIP funding if other technologies are no longer eligible. The Proposal adjusts incentive levels based on a rationale suggested by another PA, and the proposal also retains the authority for PAs to, where appropriate and after a market response is evaluated, consider reallocating funds.

Bloom expresses concern that 75% of the allocation will go to the energy storage to technology category. Bloom's concerns imply that energy storage is a single technology. This statement is false. Instead, a wide variety of energy storage companies using a broad range of technologies seek to compete for energy storage incentives through the SGIP. Examples include flow batteries, lithium ion batteries, advanced lead-acid batteries, and thermal storage systems, to name a few. As competition occurs, the market may yield winners, potentially highlighting that select technologies are more cost competitive than others. This should be viewed as a good thing.

Other points raised by Bloom are equally spurious and lack merit. Bloom does not provide ideas of how the 75% budget allocation conflicts with the principles staff relied upon in developing the recommended reforms, but instead asserts that the 2011 SGIP reauthorization is

sacrosanct and should be honored, regardless of the more applicable SB 861 legislation. Bloom expresses a view Based on this logic. Bloom sees little basis for making some of the proposed changes to the SGIP, likely the removal of pure-electric fuel-cells and the 75/25 split. Finally Bloom suggests that, because the Commission directed energy storage procurement in the Storage Rulemaking, the role of energy storage in meeting the SGIP principles can be overlooked. These views overlook the entire review and purpose of the program restructuring directed by SB 861, and provide no compelling basis for deviating from the logic and approach expressed in the staff proposal. Their arguments opposing the proposed allocation of incentive funding to storage should be disregarded.

**B. Dirtier Self-Generation Technologies won't fit in the Future Grid Mix and Should be Removed From the Program.**

Some parties objected to the proposal's application of principles, Societal Total Resource Cost (STRC) test findings, and reasoned logic in determining program eligibility. CCDC identified this practice as 'picking winners'.<sup>4</sup> Fuel-Cell energy expresses concerns that the record misrepresents fuel-cells.<sup>5</sup> Bloom suggests a 'glide path' for technologies being removed from SGIP.<sup>6</sup>

CESA finds all these points lack merit. ORA's assessment found staff consideration to constitute a reasonable assessment, and CESA agrees.<sup>7</sup> Many technologies competing in the program over the past decade or so are well known with detailed data and experience in SGIP. A robust record has been used to assess the greenhouse gas emissions trajectories for SGIP technologies. Real-world data on pure-electric fuel-cells has been collected and evaluated.

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<sup>4</sup> CCDC, pg. 8.

<sup>5</sup> FCE, pg. 8.

<sup>6</sup> Bloom, pgs. 3-4.

<sup>7</sup> ORA, pg. 4.

Eligibility determinations in the staff proposal result from a blend of principles and metrics, and staff further softens the influence of some metrics, notably and reasonably relying on a .8 benefit-to-cost ratio result in assessing whether technologies can be deemed to be sufficiently cost effective to merit continued support, to account for uncertainty in modeling assumptions. Given the sunk costs and new directives for SGIP, no legitimate basis exists for Bloom's 'glide path' idea. If and when technologies fail to meet program goals, they should be removed. For pure-electric fuel cells, the changes in emissions factor and other discussions in overhauling SGIP provided reasonable indications that program rules, eligibility, and incentives would change. Historical step-downs in incentives signal to all participants the future need to operate without SGIP funding. Sunk cost considerations are also a widely known economic fallacy – the commission can only focus on the effects of future spending, where the emphasis is on the best technology categories based on the principles, tests, and goals of SGIP. The pursuit of a glide path would expand the harm. Further, SGIP does not guarantee market transformation. The market transformation principle is soft and should only apply to technologies that meet the other criteria, e.g. reducing greenhouse gas emissions.

There is also something particularly galling about Bloom's suggestion that electric fuel cells are being treated unfairly under the staff proposal insofar as they are not being provided a sufficient glide path off of incentives given their historical participation and draw on the program. To be clear, as a category, electric fuel cells, dominated by a single developer, Bloom, have subscribed almost \$400 million dollars in incentive funding from the SGIP program since 2007.<sup>8</sup> This is before considering the share of the 2016 funding that electric fuel cells can be reasonably expected to consume (provided they are still eligible to receive incentives despite the

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<sup>8</sup> Based on data compiled by CSE – see <http://energycenter.org/programs/self-generation-incentive-program/program-statistics>



fact that staff believes they do not meet the GHG emission standard established in D.15-11-027). The suggestion that the state has failed to provide adequate support for this technology is frankly preposterous.

CESA also notes that Bloom's comments may selectively direct forward versus backward looking reviews of pure-electric fuel cells. At one point, Bloom disputes the use of actual performance data on pure electric fuel cells, but at another time, Bloom points to past performance of pure-electric fuel cells in lower RPS conditions to note potentially beneficial aspects of pure-electric fuel cells, which could be another way of noting that fuel cells historically were eligible and participated in the SGIP. These points are not compelling in disputing the Itron report's findings on the particulates and emissions outputs from pure-electric fuel cells.<sup>9</sup>

Since part of the eligibility decisions in the proposal link to the STRC, CESA also recommends the Commission dismiss PG&E's recommendation to use a TRC test in place of a STRC test.<sup>10</sup> Such a recommendation would delay matters and is inappropriate because the language of SB 861 clearly indicates that many of the goals the legislature hopes to achieve with SGIP are societal in nature. These include the focus on greenhouse gas emission reductions, reduction in criteria pollutant emissions, environmental interests.<sup>11</sup> This supports utilizing the STRC for purposes of assessing cost-effectiveness. CESA further notes that the already completed STRC findings are already softened to account for inaccuracy. The Commission should not redo the Itron report and should focus on finalizing SGIP rules.

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<sup>9</sup> Bloom, pgs. 4-5..

<sup>10</sup> PG&E, pg. 5.

<sup>11</sup> See, Section 379.6(e)

**C. Slightly Lower Incentive Could Help More Projects be Funded, But the Step-Downs Between Steps Should Stay at Historical Levels.**

CESA supports the shift to an incentive uptake-based step-down structure as contemplated in the staff proposal. As SCE and ORA note, such a change will minimize uncertainty and reduce the starts and stops that have historically plagued the program.<sup>12</sup> Upon further review of parties' comments, CESA believes several valid points should be considered to reduce the risks of an excessively rapid depletion of SGIP funds in the energy storage category. CESA does not agree, however, that a workshop is needed.

Based on ideas expressed by CSE, CESA recommends the incentive steps in the energy storage category be lowered slightly but that program rules retain the historical incentive decline between steps. Further, CESA supports limiting the applicability of SGIP to a maximum project size of 3 MWs as suggested by Bloom, Greencharge Networks, and others.<sup>13</sup> These changes, in aggregate, will provide more certainty for the storage market and developers, limit any disruptive effects of step-downs, and ensure a multitude of projects are funded. More projects likely mean more opportunities for the market to gain experience with storage deployments, thus moving the industry along the learning curve. The 3 MW limit provides sufficient support and flexibility to allow larger projects to be pursued while not resulting in single projects consuming an excessive share of overall funding available. As noted, few parties have historically pursued larger projects, but allowing flexibility in project size could provide meaningful support to larger energy users, e.g. universities. CESA believes CSE's recommendations go too far in limiting project size and would unduly limit the types of projects that can participate in this program.

CESA additionally recommends that the initial step's incentive level for energy storage be set at \$1.00/kW. CESA believes a \$1.20/kW would be a reasonable starting point for

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<sup>12</sup> SCE pg. 2; ORA pg. 5.

<sup>13</sup> Bloom, pg. 25; Greencharge, pg. 4.

incentives but a \$1.00/kW initial incentive level may more effectively balance the need for providing a sufficient initial energy storage incentive with the strong preference for establishing a program that supports a significant number of projects. Additionally, as Commercial Energy and Bosch note, too large of step-downs may not fit with market realities, leading to market shocks.<sup>14</sup> To support a more stable market, the Commission should continue to reduce the incentives by 10% when going from one step to a subsequent step. CESA wishes to underscore that our support of a \$1.00/kW initial incentive level is contingent on the incentive decline between steps to be no more than 10%. In sum, stability is a key to the pricing needs of the market at this point. Finally, if the Commission adopts a lower incentive for 2-hour duration, the 4-hour duration and the 6-hour duration incentive should be reevaluated to ensure there is consistency among the various types of incentives in the energy storage category.

CESA finds the staff's proposal for incentive levels to be clearer and simpler than that of SCG-SDG&E and the PG&E REMAT recommendations. The Proposal builds on ideas from CSE<sup>15</sup> to stack benefits to determine incentive levels, but to have a declining structure so that incentives adjust to fit market conditions. Staff evaluated the REMAT option proposed by PG&E and found it to be more complicated than the proposed approach yet with similar price-discovery effects, i.e. the price can drop over time based on the market's response. Particularly for behind the meter projects, CESA does not believe the REMAT mechanism is appropriate or reasonable. SCG-SDG&E seeks to tie incentives to a STRC-adjusted level. Such an approach is complicated and widely differing incentive levels even for energy storage systems of different size as well as a lack of continuity with the pricing schemes used in the past. CESA supports the staff proposal's approach for determining incentives. It is simple and has been proven an

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<sup>14</sup> Commercial Energy pgs. 6-7; Bosch, pg. 8.

<sup>15</sup> Proposal, footnote 50.

effective mechanism in allowing behind the meter technologies to scale, as profoundly demonstrated by the CSI program.

**D. Separating the Rules and Program Details for the Self-Generation Technologies May Allow for More Effectively Tailored Rules in the Energy Storage Budget.**

CSE suggests the Commission may wish to develop separate and distinct rules for the self-generation category of SGIP participants than for the energy storage category, potentially including differing approaches to the basis for rebate declines.<sup>16</sup> While CESA views this change as a lower priority, such a change could make sense if energy storage technologies are separated from self-generation technologies, so that differing rules don't result in an uneven playing field. CESA recommends the Commission finalize its SGIP designs for the energy storage allocation so that the market is not unduly disrupted by excessive delays.

**E. Several Parties' Make Factually Incorrect or Highly Speculative Comments Regarding Energy Storage.**

As the Commission seeks to finalize its SGIP program rules, it should operate on factually correct, reasonable, and substantiated information. This approach naturally screens out comments which may represent parties' interests but are not just and reasonable points for Commission views on rules.

CESA notes that PG&E fails to show how its mandatory TOU idea would negate the value of longer-duration storage. In its comments, PG&E "recommends reconsidering and ultimately abandoning the 2, 4 and 6-hour tiered incentive for longer duration energy storage, in favor of setting time windows for required energy storage discharge to reflect the projected evening system peak, with consideration for how TOU periods may change to reflect grid

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<sup>16</sup> CSE, pgs. 8-9.

needs.”<sup>17</sup> The PG&E point presumes that TOU periods could be shorter in duration than the longer-duration energy storage window. Since TOU rates for many applications will likely vary seasonally, be re-determined in subsequent rate-cases, and remain undetermined in several cases, PG&E’s point is somewhat speculative.

Bloom’s recommendation for daily-cycling capability for SGIP-eligible energy storage systems also lacks merit, even though many energy storage technologies can cycle frequently.<sup>18</sup> A somewhat related SCG-SDG&E recommendation to half the energy storage incentive based on the new dispatch requirements is equally unsubstantiated.<sup>19</sup> The Proposal correctly notes how weekend conditions differ from weekday, and how superfluous cycling may in rare cases be counterproductive. Electric utilities in the state should readily understand the variable nature of grid conditions, prices, fleet portfolios, *etc.* All of these variables can lead to circumstances where the cycling of energy storage has somewhat different effects. The staff proposal for 260 days sufficiently directs energy storage resources to operate in a manner that is consistent with the operational dispatch one would reasonably anticipate given the principal use cases that energy storage systems are currently addressing.

Comments from SoCal Gas and SDG&E regarding the need to charge energy storage from on-site generation should be rejected. Consistent with the Commission’s calculation on Greenhouse Gas Emissions Factors and eligibility, stand-alone resources are eligible in part due to their role in reducing grid greenhouse gas emissions. The Commission found that the charging and discharging regimes of energy storage from the grid, rather than from on-site self-generation technologies, is sufficient for program eligibility. SCG-SDG&E’s comments thus conflict with an existing Commission determination based on a detailed record. SCG-SDG&E’s

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<sup>17</sup> PG&E, pg. 22.

<sup>18</sup> Bloom, pg. 24.

<sup>19</sup> SCG-SDG&E, pg. 12.

comment regarding the role of Power to Gas (“P2G”) conversions as energy storage should also be rejected.<sup>20</sup> P2G has not been considered for eligibility and is out of scope at this time.

Finally, PG&E comments that energy storage SGIP projects in excess of the PG&E recommendation for funding allocation should apply to its energy storage procurement requirements directed by the Energy Storage Rulemaking. PG&E offers no basis for this point nor for its proposed bargain to allow higher energy storage allocations if they count for procurement in other programs. The idea is misplaced, unsupported, and should be discarded.

#### **F. CESA Agrees With Several Parties on Key Points to Augment the Proposal Around the Edges.**

Some recommendations for small changes stand out to CESA as smart, modest, and largely supported. The Commission should adopt these changes. Greencharge Networks, PG&E and Stem recommend some version of a lottery function on any ‘opening days’ and or for new steps of the program.<sup>21</sup> This change will support more fair and general program participation, eliminating the ‘time-stamping stampede’ problem.

Greencharge Networks, SolarCity, CSE, and others suggest small changes to prevent queue-clogging or high project attrition, CESA supports these proposals as well.<sup>22</sup> On this topic, CESA seeks to clarify its statement in comments regarding the timing of submittals of Application fees. CESA inadvertently stated that these fees should be due within two weeks of project submittal. CESA meant to recommend that project deposits should be due within two weeks of the submittal of the project application to the SGIP PAs. For application fees, CESA supports the *status quo* rule to require application fees on the same day as project proposal are submitted.

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<sup>20</sup> SCG-SDG&E Comments, pg. 8.

<sup>21</sup> Greencharge, pg. 5-6, Stem pg. 3, PG&E, pg. 3.

<sup>22</sup> Greencharge, pg. 5-6, SolarCity pg. 17, CSE pg. 7.

While CESA supports quick action on key program reforms now, the Commission may wish to tune the program once the new rules are implemented. To this end, other miscellaneous ideas for change will be better considered after backbone budgetary, eligibility, and incentive structure rules are implemented. For example, JuiceBox Energy<sup>23</sup> notes alternative limitations for incentives, CSE suggests a water-use principle as well as PBI nuances which could be considered at a later time.

### **III. CONCLUSION.**

CESA thanks the Commission for the opportunity to submit these reply comments.

Respectfully submitted,



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<sup>23</sup> Juicebox Energy, pg. 4.