

**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 10-05-004
(Filed May 6, 2010)

**COMMENTS OF THE CALIFORNIA ENERGY STORAGE ALLIANCE
ON ADMINISTRATIVE LAW JUDGE'S RULING REQUESTING COMMENTS
ON REVISED STAFF PROPOSAL REGARDING MODIFICATIONS
TO THE SELF GENERATION INCENTIVE PROGRAM**

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The California Energy Storage Alliance (“CESA”)¹ hereby submits these comments on *Administrative Law Judge’s Ruling Requesting Comments on Revised Staff Proposal Regarding the Self Generation Incentive Program*, filed on April 21, 2011 (the “ALJ’s Ruling”).

I. INTRODUCTION.

CESA is stunned and deeply disappointed by the Self Generation Incentive Program (SGIP) Staff Proposal, Part II referred to as Attachment “A” in the ALJ’s Ruling (“Staff Proposal II”). Respectfully noting the ALJ’s admonition to limit comments to only the issues in Staff Proposal II, CESA reserves the right to comment at the appropriate time on the cost-effectiveness report prepared by Itron Inc. (“Itron Report”) that is admitted as Exhibit “1” and incorporated by reference as part of the ALJ’s Ruling.² CESA expected Staff Proposal II to

¹ The California Energy Storage Alliance consists of A123 Systems, Altairnano, Applied Intellectual Capital/East Penn Manufacturing Co., Inc., Beacon Power Corporation, CALMAC, Chevron Energy Solutions, Debenham Energy, Deeya Energy, Enersys, EnerVault, Exide Technologies, Fluidic Energy, General Compression, Greensmith Energy Management Systems, HDR, Inc., Ice Energy, International Battery, Inc., LightSail Energy, Inc., MEMC/SunEdison, Powergetics, Primus Power, Prudent Energy, RedFlow, RES Americas, Saft America, Inc., Samsung SDI, SANYO, Seo, Sharp Labs of America, Silent Power, Sumitomo Electric, Suntech, SunPower, Sunverge, SustainX, Xtreme Power, 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://www.storagealliance.org>.

² Itron Inc. report entitled *Cost-Effectiveness of Distributed Generation Technologies*, dated February 9, 2011, (“Itron Report”). Although Staff Proposal II states that the Itron Report was posted on the Commission’s website and notice was sent to the Service List for this proceeding (p. 2) the record does not reflect when the Itron Report was posted, and there is no record in this docket of any notice having been provided to the Service List, specifically including CESA.

recommend including standalone energy storage and energy storage integrated with PV as eligible technologies in the SGIP, and objects strongly to use of the Itron Report as any indication of how the Commission should approach evaluation of energy storage in any context. Staff Report II reflects a profound misunderstanding of the intent of the legislature in enacting SB 412, and the nature of energy storage.

The notion that transformative technologies, like energy storage in all of its forms and integrated with PV, should be excluded from the SGIP, and only appropriately considered in the context of the Commission's Demand Response proceeding (R.07-01-041)³, or its Energy Storage Rulemaking that has recently been opened to implement AB 1954 (Skinner), and on the Commission's own motion (R.10-12-007)⁴, is plainly absurd. To add insult to injury and suggest a 75% reduction in the level of incentives available for energy storage in the SGIP today based solely on the Itron Report is simply inexplicable. To the extent possible, CESA heeds the ALJ's guidance and comments on the other specific policy issues are addressed in the order in which they appear in Staff Proposal II.

II. THE STAFF PROPOSAL FALLS FAR SHORT OF ITS INTENDED PURPOSE AND IS AT ODDS WITH THE INTENT OF SB 412 AND THE RECORD IN THIS PROCEEDING.

The most glaring flaws that undermine the credibility of the Staff Proposal as it relates to energy storage are as follows:

- a. Excludes standalone energy storage.
- b. Excludes energy storage integrated with PV.
- c. Reduces incentive levels to \$0.50/Watt.⁵

³ Permanent Load Shifting ("PLS") is the subject of modest utility program proposals in the 2012-2014 Demand Response Program and Budget Applications filed by the utilities A.11-03-011, *et al.*

⁴ The Prehearing Conference was held on April 21, 2011, and a Scoping Memorandum has yet to be issued.

⁵ This figure is 25% of the (\$2.00/Watt) that the Commission itself determined was required for energy storage in its analysis performed as part of D.08-11-044, issued November 21, 2008, in which the Commission determined that advanced energy storage technology integrated with eligible SGIP technologies should be eligible to participate in the SGIP

- d. Fails to understand that “energy storage” represents a wide range of technology classes and applications – energy storage is not “a technology.”⁶

SB 412 (Kehoe) was introduced by Senator Kehoe and coauthored by Assembly Member Skinner and then-Assembly Member Blakeslee. Prior to coauthoring SB 412, Senator Blakeslee had introduced AB 1536⁷, a bill that would have explicitly required the Commission to include energy storage as an eligible asset class in the SGIP - including energy storage used in standalone applications and energy storage used in conjunction with distributed PV. It was with this understanding that AB 1536 (Blakeslee) was combined with SB 412 to include distributed energy “resources” instead of distributed energy “generation” prior to its amendment in the Senate and enactment to amend Section 379.6 of the California Public Utilities Code.

III. RELEGATING STANDALONE AND PV INTEGRATED ENERGY STORAGE TO CONSIDERATION IN THE DEMAND RESPONSE OR STORAGE PROCEEDINGS WOULD BE A GRAVE SET BACK FOR DEVELOPMENT OF THE GRID STORAGE INDUSTRY.

The Commission’s Demand Response Rulemaking (R. 07-01-041) has already considered PLS, and has ordered the utilities to include it in their portfolios of demand response programs for the period 2012-2014.⁸ The unfortunate outcome of the Commission’s efforts to encourage Permanent Load Shifting (“PLS”) thus far is that there really isn’t much of a PLS program to consider. It is certainly not an appropriate place to consider incentives for standalone energy storage and energy storage integrated with renewables, because proposals submitted by the utilities in their recent applications recommend very limited funding, and their program recommendations are vastly different across the utilities, making PLS programs very unlikely to be attractive incentives for energy storage project development.⁹

⁶ Evaluation of cost effectiveness needs to be performed at the technology class level (*e.g.* fuel cells, wind, CHP, and in the case of storage; this would include batteries, mechanical storage, and thermal storage) Performing a cost effectiveness evaluation on *one* type of storage technology within *one* storage technology class is not representative of the asset class overall. Had staff made this same basic error in logic for distributed generation, it would have simply analyzed the cost-effectiveness of electric-only fuel cells and thus determined that all distributed generation are not cost -effective.

⁷ AB 1536 was supported with amendments endorsing inclusion of standalone energy storage in the SGIP by the Commission’s approval of its Legislative Subcommittee’s Staff Memorandum, dated May 27, 2009.

⁸ See footnote number 3, *infra*.

⁹

The Order Instituting Rulemaking for the Commission’s energy storage rulemaking proceeding does not propose to produce incentives or other commercialization market mechanisms, if any, for a long time. It is precisely *because* of the energy storage rulemaking that deployment of energy storage should be accelerated by the SGIP – so that California can establish valuable system performance data and market application understanding about energy storage to make the procurement requirements being considered in the energy storage rulemaking most meaningful. Such data will enable procurement standards ultimately adopted in the energy storage rulemaking to have faster, more informed impact in California’s electric power system with greater stakeholder participation and understanding.

Further, the grid storage industry, particularly the many new start-up companies funded and headquartered here in California, cannot wait for any new or different incentives. The SGIP is critically needed to establish “beachhead” energy storage projects, establish and train for local installation and system integration capabilities, and begin demonstrating system performance so that lenders, project developers, and investors will step forward in the future to enable further market development. The grid storage industry is at a tipping point, many current jobs and potential future California jobs are at stake, and the SGIP will most certainly be the deciding factor.

IV. THE GROSSLY INADEQUATE COST-EFFECTIVENESS ANALYSIS ITRON PERFORMED FOR ENERGY STORAGE SHOULD BE DISREGARDED BY THE COMMISSION.

The Itron Report’s analysis of energy storage is inherently flawed and useless for its intended purpose as it relates to energy storage technologies for several fundamental reasons.

First – it incorrectly assumes that Li-ion technology, one specific type of electrochemical battery storage technology is representative of all energy storage technologies. As stated above, “energy storage” represents a broad range of technology classes (*e.g.* thermal, electrochemical, mechanical and gravitation storage), and within each of these classes, there are many different technology types – for example, there are many different types of batteries (*e.g.* flow, Li-ion, lead acid). To have any value at all the Itron Report would need to evaluate cost-effectiveness of energy storage at the technology class level, comparable to its approach taken with distributed generation technology classes (*e.g.* microturbines, CHP, fuel cells, wind) It would have been equally as egregious to assume that the economics of a single type of “electric fuel cell” or “wind

turbine” was representative of all distributed generation as an asset class, and then - based solely on the cost effectiveness of only electric fuel cells - to conclude that *all* distributed generation technologies are not cost-effective.

Second - it arbitrarily assumes that Li-ion is a good match for an application that requires a four hour duration for load shifting purposes. Li-ion is certainly technically *capable* of providing this service, but it is not the most economic selection for a four-hour peak shifting application. Li-ion is a technology that is widely used for high power applications that require rapid response and a small volumetric footprint, such as mobile electronics, electric vehicles or frequency regulation. Further, not all Li-ion batteries are created equal. There are ranges of chemistries and solutions that make sense for different applications. Any true cost-effectiveness study must consider this fact, and match right solutions to the right applications in order to demonstrate cost-effectiveness. Generally speaking, however, Li-ion is not the most cost-effective solution for long duration, multi-hour peak shifting, nor are Li-ion’s relatively small volumetric advantages particularly needed for grid storage applications.

Third, CESA is completely perplexed as to why the Itron Report arbitrarily selected Li-ion for its analysis, as the Itron Report itself states that “advanced lead acid, Zn/Br flow batteries and emerging Zn/air and Fe/Cr were generally found to have potential for low capital expenditure and the smallest gaps to support the energy storage business case (we assume for peak load reduction applications) for battery technologies.” (p. A-88). Had Itron performed cost-effectiveness analysis for any of these other candidate energy storage technology types, it would have arrived at far different (and positive) conclusions for the applications in question.

Any future cost-effectiveness analysis to be relied on by the Commission needs to not only consider various energy storage technology classes (thermal, electrochemical, mechanical etc.), but also more fully disclose and publicly vet the basis of the assumptions used in the analysis, including, but certainly not limited to:

- Capital cost
- Cost of electricity used to charge the system
- Total cost of ownership (including preventive and ongoing maintenance assumptions)
- Time horizon of the analysis (*e.g.* 20 or 25 years)
- Ownership model (and thus impacts of depreciation to cash flows)

V. INCENTIVES FOR ENERGY STORAGE MUST BE AT LEAST \$0.50/ WATT-HOUR OF CAPACITY TO BE MEANINGFUL (STAFF PROPOSAL II, SECTION 3.1).

Under current SGIP rules, energy storage incentives are \$2.00/Watt with a required minimum four hour continuous discharge duration. Since energy storage became eligible to participate in the program (when integrated with eligible SGIP technologies) a number of projects are in the process of being developedbut not an abundance.¹⁰ This should be seen as powerful evidence that the \$2.00/Watt incentive was appropriately set since there has been movement in the market, but not a “run” on the SGIP funding due to conditional funding reservation letters issued to energy storage projects.

Staff Proposal II appears to be silent on the minimum hours duration requirement. Current SGIP rules require that an energy storage system must be able to discharge its rated capacity for four hours to be eligible for a \$2.00/Watt incentive. In earlier comments filed in this proceeding, CESA has recommended that this minimum requirement be reduced to two hours in general, and even less on a case-by-case basis. The duration of discharge is highly dependent on a site host’s load shape, as influenced by on-site energy use and any on-site distributed generation. The “peakier” the load shape, the shorter the duration required to capture demand charges. For example, it is common for PV applications for only two hours to be required to adequately flatten that energy storage customer’s peak demand. If Staff Proposal II is intended to imply an incentive of \$0.50/Whr then that would be closer to the mark. However an incentive of \$0.50/Watt for applications with discharge durations of two hours or more is totally unworkable.

VI. THE COMMISSION SHOULD EXCLUDE DIRECTED BIOGAS AS AN ELIGIBLE TECHNOLOGY. (STAFF PROPOSAL II, SECTION 2.4.3)

Directed biogas should be ineligible for the SGIP because it will be extremely difficult to audit or confirm directed biogas usage from out-of-state providers. CESA supports on-site renewable biogas as an eligible fuel source for the program, consistent with original program rules that have been in place since 2001.¹¹ On-site biogas will be far easier to audit and ensure

¹⁰ This conclusion is based on currently available data published by the SGIP Program Administrators, and is presumed substantially accurate for purposes of these comments

¹¹ In other words, prior to D.09-09-048, issued September 24, 2009.

compliance - further, if investments are made to enable on-site biogas capture, it is likely that it will be the source of biogas that will be used for the life of the eligible distributed generation equipment.

VII. INCENTIVES FOR ALL ELIGIBLE TECHNOLOGIES SHOULD BE PERFORMANCE BASED. (STAFF PROPOSAL II, SECTION 3)

To ensure maximum ratepayer accountability, CESA's view is that SGIP incentives for distributed generation be based on actual kWh delivered over a fixed period of time, for example, five years (similar to the CSI program). For energy storage, the performance based incentive should include a portion paid out as a capacity/availability incentive and a portion paid out based on actual kWh delivered or "shifted" on-peak (shifting is required for thermal storage). Staff Proposal II is unclear what the time requirement is in the case of energy storage. Energy storage incentive amounts are described in the same fashion as generation, in kW, but an energy storage system needs an energy duration standard as part of its capacity determination. Currently this duration requirement is four hours and at \$2.00/Watt, the incentive equates to \$0.50/Whr (before the in-state company bonus of 20%). CESA has recommended reducing this requirement to two hours, and less on a case-by-case basis for projects where a shorter duration of energy storage is adequate to reduce peak demand. CESA encourages staff to revisit CESA's comments filed in this proceeding on December 10, 2009 for detailed recommendations on how to structure performance based incentives for energy storage. Distributed generation technologies should be paid per actual kWh delivered.

VIII. THE COMMISSION SHOULD CAP SGIP PARTICIPATION AT \$25 MILLION. (STAFF PROPOSAL II, SECTION 3.2)

The recommendation in Staff Proposal II to limit the availability of the SGIP's annual budget on a statewide basis to 50% for a single technology supplier and or installation contractor in a single year is *far* too high. CESA's view is that any form of percentage-based cap will be too difficult to administer and strongly recommends that the Commission simply adopt a fixed dollar figure, such as \$25 million per technology supplier or installation contractor. This would, of course, also have to include air tight safeguards against gaming the rules or outright fraud using sharp angles of affiliate, subsidiary, and partnership legal forms.

IX. THE COMMISSION SHOULD REJECT ANY BLANKET RESTRICTION ON INCENTIVES TO A PERCENTAGE OF TOTAL ELIGIBLE UP-FRONT PROJECT COSTS. (STAFF PROPOSAL II, SECTION 3.2)

Staff Proposal II assumes, without any evidence, that many SGIP-eligible technologies are eligible for a 30% investment tax credit under current federal income tax rules. This is simply not the case with energy storage. First, there are no tax credits of any kind for standalone energy storage. There *may* be tax credits available for energy storage integrated with eligible renewables, however, there is ambiguity in the federal tax code as to whether or not energy storage integrated with an eligible renewable technologies (*e.g.* wind or solar) would also qualify for the federal investment tax credit. Under the use cases envisioned for the SGIP, in most cases the energy storage system would be primarily “charged” from baseload power drawn from the grid and synergistically “discharged” with the on-site renewable generation resource (*i.e.* the energy storage system would be “discharged” on-peak when the on-site distributed generation equipment was not generating power). This would be the most efficient use of the energy storage system, the on-site renewable generation equipment and the grid itself. This use case may not meet federal project integration requirements sufficient for the energy storage system to also be eligible for the investment tax credit, as the U.S. Treasury may require the energy storage system to be primarily charged directly from the energy storage system. In any event, there is no valid reason to impose a percentage-of-project cost requirement.

X. CONCLUSION.

CESA thanks the Commission for this opportunity to comment on the ALJ’s Ruling and looks forward to working with the Commission and stakeholders going forward.

Respectfully submitted,



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May 2, 2011

CERTIFICATE OF SERVICE

I hereby certify that I have this day served a copy of *Comments of the California Energy Storage Alliance on Administrative Law Judge's Ruling Requesting Comments on Revised Staff Proposal Regarding Modifications to the Self Generation Incentive Program* on all parties of record in proceeding *R.10-05-004* by serving an electronic copy on their email addresses of record and by mailing a properly addressed copy by first-class mail with postage prepaid to each party for whom an email address is not available.

Executed on May 2, 2011, at Woodland Hills, California.



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