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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 BLOOM ENERGY, INC. TO THE
ASSIGNED COMMISSIONER'S RULING ISSUING AN ENERGY
DIVISION PROPOSAL ON SENATE BILL 861 MODIFICATIONS
TO THE SELF-GENERATION INCENTIVE PROGRAM**

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PROGRAM**

Pursuant to the *Assigned Commissioner's Ruling Issuing an Energy Division Proposal on Senate Bill 861 Modifications to the Self-Generation Incentive Program*, Bloom Energy, Inc. (Bloom) respectfully submits these Reply Comments on the Staff Proposal (Proposal).

INTRODUCTION

Bloom Energy appreciates the opportunity to reply to the comments of stakeholders regarding the Energy Division Staff Proposal. Instead of replying to each proposal to create new funding buckets, or changing caps and payment structures to benefit one technology or vendor over another, we limit our response to providing additional input supporting the view that any program changes should be grounded in the most up to date and accurate information possible.

As noted in the December release of the Cost Effectiveness Report, the Market Transformation Report was to be released in late December. Bloom asks that the Commission release this report promptly so that it can be vetted by stakeholders and potentially considered in the ongoing discussion.

COMMENTS

1) All technologies that can demonstrate they meet eligibility requirements should be allowed to participate in SGIP

Bloom remains firm in the assertion that if a technology is currently able to demonstrate compliance with the eligibility requirements of SGIP then that technology should be allowed to participate in the program. While some parties filed comments encouraging the Commission to

make all-electric fuel cells ineligible, the basis for those positions are unfounded and often self-serving. Multiple parties agree with the premise that future performance of technology should not be assumed from past data.¹ SCG/SDG&E also point out that “[u]sing past performance to evaluate future requirements is a disservice to technology developers and the ability of the program to create market transformation.”² Bloom agrees that not accounting for the potential of improvement over time is counter to the realities of technology development and the progress SGIP is encouraging.

Specifically addressing all-electric fuel cell performance with respect to the greenhouse gas (GHG) reduction criterion, PG&E states (emphasis added):

“The Staff Proposal concludes that natural gas-consuming pure electric fuel cells fail the new program standard (350kgCO₂/MWh) by a small margin based on the Minimum Operating Efficiency Worksheet (MOEW) submitted for each fuel cell project. **This should be revisited to determine the technology eligibility.** A GHG emissions rate of 351kgCO₂/MWh, listed in almost all electric fuel cell applications, was submitted to meet the previous GHG standard of 379kgCO₂/MWh. This emissions rate of 351kgCO₂/MWh (as listed in the MOEW) has been accepted as a proxy number for basic program eligibility for electric fuel cells and it is their ASME PTC 50 test that confirmed their eligibility and payments under Performance Based Incentives. The past MOEW performance should not be used to reflect the actual emissions of a specific project per se. PG&E recommends that since the Commission has established a new GHG emissions factor for SGIP, the PAs and their 3rd party technical consultants should reevaluate the GHG performance of fuel cell applications with updated information from applicants. **It is reasonable to request updated documents from participants considering that the program has changed.**”³

Bloom strongly supports this proposal and will comply with the need for updated test results to establish a record of performance in compliance with the new GHG requirements. The CPUC requires ASME PTC-50 testing as ASME is the best resource for setting standards and

¹ PG&E Opening Comments, Page 7-8; SDG&E/SCG Opening Comments, Page 4; NFCRC Opening Comments, Page 8

² SDG&E/SCG Opening Comments, Page 4

³ PG&E Opening Comments, Page 11

designing testing protocols.⁴ Bloom agrees with the use of internationally recognized and verified testing protocols performed by third party testing agents and encourages the use of similar tests for other technologies.

SGIP is intended to be a technology neutral program. Therefore, the program rules should allow for information updates across the board to ensure that the most accurate parameters are being considered for all technologies in an objective, data driven manner. The Commission should resist being influenced by the groupthink attempting to exclude all electric fuel cells from the program without sufficient cause.

2) Reduction of criteria air pollutants should be given equal weight with all other program goals

Bloom agrees with the assessments of Sierra Club and NRDC that “[d]ifferentiation of program goals does not appear to be consistent with SGIP statute.”⁵ For example, criteria air pollutants represent important environmental and health concerns for Californians and contribution to their reduction is a statutory eligibility criterion for participation in SGIP, but the Staff Proposal places a lower importance on air pollutants than on other goals.⁶ PG&E also points out that the Staff Proposal illustrates that electric only fuel cells perform very well in this area, which has been a program goal since the program began, and notes that there is no apparent reason to weight this “vetted and established metric” below any others.⁷ Bloom agrees. The reduction of criteria air pollutants should stand on equal footing with all other program goals.

3) Greenhouse gas emissions should be carefully evaluated across ALL technologies

The decision revising the greenhouse gas emission factor to determine SGIP eligibility⁸ was arrived at after a thorough process at the CPUC. Bloom participated in the process and

⁴ <https://www.asme.org/about-asme/standards>

ASME standards are accepted for use in more than 100 countries around the world. ASME is the leading international developer of codes and standards associated with the art, science, and practice of mechanical engineering. Starting with the first issuance of its legendary Boiler & Pressure Vessel Code in 1914, ASME's codes and standards have grown to nearly 600 offerings currently in print. These offerings cover a breadth of topics, including pressure technology, nuclear plants, elevators / escalators, construction, engineering design, standardization, and performance testing.

⁵ Sierra Club/NRDC Opening Comments, Page 3

⁶ Public Utilities Code 379.6(e)(4)

⁷ PG&E Opening Comments, Page 10

⁸ Decision 15-11-027

supports the use of the new GHG eligibility standards. These standards should be applied rigorously and objectively across all technology classes to ensure SGIP's maximum contribution to the state's climate goals.

Some parties have suggested a review and update of MOEWs to ensure technologies comply with the new GHG standards⁹, a suggestion which Bloom supports as discussed in Section 1 above. In their joint comments, SDG&E/SCG "disagree with Staff's assumption that all storage projects are inherently better at reducing GHG than self-generation simply because they *can* facilitate the integration of renewables" and suggest that to ensure compliant levels of GHG reduction that "all AES systems which do not solely charge from a renewable source should be required to demonstrate their GHG reductions before incentives can be awarded similar to the requirement for on-site fossil generation."¹⁰ Consistent with all calls for an objective, data driven approach towards GHG reduction compliance, Bloom agrees with this proposal to ensure that the intent of the GHG eligibility criterion is met in the actual performance of installed systems. Further, this information will build a record to help inform regulations around the operating requirements for all emerging technologies. Validating the realization of actual GHG reductions should be an important consideration and carefully monitored for all technologies participating in SGIP.

4) The Societal Total Resource Cost test should not be used to determine eligibility

Referring to the Societal Resource Cost (STRC) test, CSE states "[w]hile this test is very insightful, as with any model, many assumptions are built into it that have drastic impacts on the results."¹¹ Itron publicly proclaimed in a webinar on January 14, 2016 that they welcome information that will help inform more accurate model assumptions. This is indicative of the fact that the overall Cost Effectiveness model can benefit from further review and that the inputs are not presented as a final picture of the latest technology. Bloom ran the model for natural gas all-electric fuel cells with updated values for two parameters: a first-year efficiency of 60% LHV, (consistent with the beginning of life eligibility requirement and up from 54%, which as stated in Bloom's Opening Comments is neither accurate for current technology nor compliant with the new GHG rules) and an annual degradation factor of 1% (from 5%, also not accurate or

⁹ PG&E Opening Comments, Page 11; CSE Opening Comments, Page 5

¹⁰ SDG&E/SCG Opening Comments, Page 2

¹¹ CSE Opening Comments, Page 4

compliant with the new GHG rules). *By changing just these two parameters the 2020 STRC value for natural gas all-electric fuel cells increased from 0.62 to 0.77*, supporting CSE’s assertion that assumptions have drastic impacts on the results. A 2020 STRC of 0.77 is the value achieved by 5 MW energy storage technology which staff proposes should remain in the program “due to uncertainty and its closeness to the 0.8 threshold.”¹² Further, this adjustment to the natural gas all-electric fuel cell inputs does not include any modifications to update the natural gas prices which contribute directly to fueling cost, the largest component of the costs for natural gas all-electric fuel cells in the STRC test.¹³ The 2020 STRC value for natural gas all-electric fuel cells should further increase with the input of current gas prices which, as discussed in Bloom’s Opening Comments, are significantly lower than the model’s cited sources.¹⁴ Given the illustrated impact of correcting just two inaccurate inputs for one technology class, Bloom continues to assert that the cost effectiveness model contains too many uncertainties and inaccuracies, and conclusions drawn from model results should not be used as the basis for decisions until such time that the model is updated and verified.

5) DBG and OSBG should both continue to be included in SGIP

Bloom disagrees with CSE’s recommendation to exclude directed biogas (DBG) technologies from SGIP on the grounds that they may participate in the cap and trade market.¹⁵ First, participation in the cap and trade market is limited to utility scale and upstream resources, not to customer-sided installations¹⁶. As Bloom has previously noted, the Commission risks disparate treatment of customers and utilities at a time when every customer should be encouraged and afforded the opportunity to play a part in the cleaning of the grid.¹⁷ Second, the DBG market in California is still relatively young, and more volume will help to drive prices down. To date, SGIP has provided incentives to help the installation of 31.6 MW of directed biogas projects in California, representing 9.6% of SGIP’s total rebated capacity¹⁸ and GHG emissions reductions greater than 60,000 metric tons of CO₂eq¹⁹. As the Staff Proposal points

¹² Staff Proposal, Page 14 – 15

¹³ Itron 2015 Self-Generation Incentive Program Cost Effectiveness Study, Figure 6-16

¹⁴ Bloom Opening Comments, Page 13 – 14

¹⁵ CSE Opening Comments, Page 6

¹⁶ Large energy users may participate in the cap and trade market, but they are the exception.

¹⁷ R. 10-05-004, Bloom Reply comments filed August 15, 2011

¹⁸ Itron 2013 Self-Generation Impact Evaluation, Table A-5

¹⁹ Itron 2013 Self-Generation Impact Evaluation, Figure 7-2

out, “California has placed a very high priority on renewable fuels.”²⁰ In light of this and the potential for continued positive environmental impacts, it is critical for all sources of project volume, including SGIP projects, to help spur development of this important renewable resource.

6) Dual participation in SGIP and Demand Response should continue for all technologies and be limited to distinct load

In contrast to ORA’s suggestion to treat fossil-powered generation differently²¹, the issue of dual participation in SGIP and demand response (DR) programs should be given consideration from a *technology neutral* point of view. SGIP technologies should be included in DR because they provide a reduction in emissions over the grid (as must be true based on the SGIP eligibility criteria) and therefore a net benefit.

Additionally, we concur with STEM²² that the Commission should limit the discussion of eligibility of SGIP technologies within DR programs to this proceeding. This docket is most appropriate to determine how best and to what extent SGIP projects should be able to participate in DR programs. Further, SGIP has a long history of ensuring the appropriate uses of technologies – and has clearly limited such uses, such as back up. The Commission should work to ensure that participants follow program rules and adhere to the overall tenets of the program – and clearly it is within this docket that such can be achieved. By relying upon durable and well understood rules established to date in SGIP the Commission can delineate the proper interplay of the program and DR going forward.

7) Energy efficiency audit rules should apply across all technologies in the same way

Bloom believes that weakening the energy efficiency audit and implementation requirements within SGIP is counter to the loading order of preferred energy resources. Energy efficiency rules should continue as they have been applied and remain consistent across all technologies.

²⁰ Staff Proposal, Page 19

²¹ ORA Opening Comments, Page 7

²² STEM Opening Comments, Page 9

8) The Commission should work to ensure technologies a glide path off of incentives

As Bloom discussed in Opening Comments, if SGIP is successful in bringing technologies to market to achieve the goals of the program it is necessary to have a glide path post-SGIP to ensure these technologies can participate in the market. CSE acknowledges this same sentiment in stating “In order to promote market transformation for generation technologies, CSE suggests discussing in the aforementioned public workshops how generation technologies seen as achieving market transformation should have an “off-ramp” out of the SGIP.”²³ CSE further states “Certain technologies may require a higher incentive to encourage market adoption, while others may benefit more from regulatory or tariff changes, such as decreasing departing load fees.”²⁴ While Bloom agrees with CSE’s overall sentiment, these matters require deeper investigation and should not be a burden to SGIP. Rather, the CPUC needs to acknowledge that removing technologies from a market transformation program without looking ahead to what policies are in place to allow them to compete could waste the SGIP investment that has been made.

CONCLUSION

Bloom appreciates the opportunity to submit these reply comments and looks forward to continued work with the CPUC and stakeholders on furthering the success of SGIP.

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Respectfully submitted,

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²³ CSE Opening Comments, Page 13

²⁴ CSE Opening Comments, Page 3