

BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA



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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)

**PACIFIC GAS AND ELECTRIC COMPANY'S (U 39 E)
REPLY COMMENTS ON STAFF PROPOSAL REGARDING
MODIFICATIONS TO THE SELF-GENERATION
INCENTIVE PROGRAM**

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I. INTRODUCTION

Pacific Gas and Electric Company (PG&E) makes this filing in compliance with the *Administrative Law Judge's Ruling Requesting Comments on Staff Proposal Regarding Modifications to the Self-Generation Incentive Program* issued on September 30, 2010. PG&E appreciates the additional time provided by Administrative Law Judge Maryam Ebke to allow for a more thorough review of the opening comments on the Energy Division's comprehensive proposal implementing Senate Bill (SB) 412 (Staff Proposal). PG&E offers reply comments on several items:

- PG&E's proposal to adopt green house gas (GHG) reductions as the only SGIP eligibility screen is supported by the concerns expressed by numerous parties regarding the cost effectiveness and financial need screens.
- PG&E supports expanding Self Generation Incentive Program (SGIP) eligibility to include generators participating in Feed-in Tariff (FIT) programs as long as SGIP incentives are calculated based only on that portion of the generation serving onsite load.
- PG&E does not agree with the parties that advocate for an increase in the proposed avoided GHG emissions value since PG&E believes a value close to 0.349 Tonnes/ MWh is needed to help ensure that emissions reductions actually occur.
- PG&E continues to support SGIP funding of measurement and evaluation and appropriate metering for projects.

- PG&E supports a hybrid incentive structure that includes performance based incentives with a 50% up front payment.

II. DISCUSSION

A. The Key SGIP Eligibility Screen is the Requirement that GHG Emissions be Reduced; the Other Two Proposed Screens Should be Eliminated.

PG&E strongly supports establishing eligibility for the SGIP based solely on a technology's or project's ability to reduce GHG emissions. The proposed GHG screen effectively accomplishes this goal. As many parties noted in their comments, this is a requirement of the statute amending the SGIP, SB 412,^{1/} whereas neither the cost effectiveness nor financial need screens included in the Staff Proposal are statutory requirements. PG&E appreciates Staff's additional desires to maximize market transformation of distributed generation and reduce free-riders. However, it is not clear that the cost effectiveness and financial need screens accomplish these objectives. As most parties stated, either directly or indirectly, both of these screens would be complex, difficult to apply equitably among technologies, and would lead to contentious debates about the inputs and assumptions used in deriving the results.^{2/} For example, PG&E notes the Staff Proposal would eliminate Organic Rankine Cycle (OCR) technology from SGIP because it was determined to have a rate of return

^{1/} Tecogen, page 10; The Utility Reform Network (TURN), page 2; Fuel Cell Energy (FCE), page 3; California Center for Sustainable Energy (CCSE), page 4; California Clean DG Coalition (CCDC), page 7.

^{2/} See, for example, California Large Energy Consumers Association (CLECA), pages 3-4 (taking issue with input data); Heat is Power, page 3 (taking issue with cost assumptions for waste heat recovery); TAS and /Waste Heat Solutions (TAS/WHS), page 2 (pointing out other market barriers), pages 2-7 (taking issue with input data), pages 8-9 (taking issue with analysis assumptions); Tecogen, pages 2-3 (suggesting using size as a differentiator for analysis) and pages 3-7 (taking issue with assumptions); Bloom Energy (Bloom), pages 1-2 (suggesting a company-by-company approach) and pages 5-10 (taking issue with financial inputs); TURN, pages 3-4 (taking issue with analytic inputs); FCE, pages 9-10 (pointing out the difficulty of obtaining cost information); Guardian Industries (Guardian), pages 4-6 (taking issue with cost assumptions); Capstone Turbine Corporation (Capstone), pages 8-9 (taking issue with input assumptions) and pages 9-10 (demonstrating superior performance of their systems); Etagen, page 2 (suggesting analysis by product, not technology) and page 4 (suggesting the IRR criteria vary by technology or industry); Alphabet Energy (Alphabet), pages 2-3 (stating the 15% IRR does not reflect industry decision-making), pages 5-6 (suggesting program modifications to ease entry for new technologies), and pages 8-9 (suggesting separate treatment for bottom cycling CHP); and CCDC, page 8 (stating that the Staff Proposal is more complex than it needs to be), pages 12-13 (arguing with assumptions and inputs), and pages 14-16 (arguing that the 15% IRR does not reflect industry decision making).

greater than 15%, even though, as three parties pointed out, not a single OCR has been installed in an industrial application.^{3/} Additionally, these parties all commented the “high” return was based on incorrect cost assumptions that led to the exclusion of this technology.

PG&E believes it is critical to focus on the GHG emissions screen as the only criteria for determining program eligibility. Technologies with no GHG emissions (wind; waste heat recovery with no supplemental firing; in-conduit hydro) should all be deemed to meet the GHG emissions screen and thus eligible for program incentives. Similarly, technologies producing emissions, but which are fueled by renewable resources where the alternative is flaring (such as generators using the output of biogas digesters) should be eligible for the SGIP. In these instances, GHG emissions are reduced relative to the alternative. Also, the Staff Proposal clearly addresses the qualifications for Combined Heat and Power (CHP) technologies, and PG&E generally supports its analysis. (See further comments below in Section D. on GHG emissions criteria.)

B. Otherwise Eligible Generators Sized Beyond Onsite Load Should be Permitted to Receive SGIP Incentives for that Portion of the Generator Serving Onsite Load.

Parties commenting on the Staff Proposal’s recommendation to limit the amount of self generated electricity a system may export to the grid to 25% came down on both sides of the issue, some arguing it was too restrictive,^{4/} with others taking a position that this cap should be lower.^{5/} PG&E agrees with the Staff Proposal that the SGIP is designed to support systems that serve on-site load. However, PG&E continues to support SGIP eligibility for generation that also exports to the grid, *so long as the SGIP incentive is limited to only that portion of the generation serving the at-site load.* For example, a CHP unit sized to match the customer’s

^{3/} Heat is Power, page 2; TAS/WHS, page 2; Guardian, page 3. Additionally, these parties all commented that the “high” return was based on incorrect cost assumptions.

^{4/} Sustainable Conservation, pages 3-4; FCE, pages 21-22. See also Bloom, page 24, requesting that the 25% be an annual total.

^{5/} Southern California Edison (SCE), page 13, TURN, pages 6-7.

thermal load will operate efficiently, thereby maximizing the system's GHG emissions reductions. So long as the SGIP incentive is calculated based only on the generation serving at-site electric load, PG&E has no objection to providing the incentive for that portion of the generation and then compensating the customer for excess generation through other applicable tariffs. For example, such a customer could be permitted to take advantage of the proposed AB 1613 Feed-In Tariff (FIT) once it is approved. Capping SGIP incentives on generation serving on-site load instead of establishing a set limit on exports is consistent with the over all goal of SGIP and will help accommodate optimal operation.

Similarly, a renewable generator taking advantage of the AB 1969 FIT (now and as expanded by SB 32) could also be eligible to receive SGIP funds for the portion of generation that serves at-site load. This would help accommodate renewable generators such as dairy biogas digesters that are sized to their source of fuel, instead of simply to their onsite load. Finally, for customers participating in the RES-BCT program, PG&E believes that only the at-site load should be eligible for SGIP funding, regardless of the exported generation. PG&E does not agree with SCE's suggestion that no exports should be allowed compensation,^{6/} nor does it support the suggestion by CCSE that SGIP funding apply to all generation for a customer on RES-BCT.^{7/}

C. WEM's Energy Efficiency Discussion is Largely Irrelevant and WEM Appears to Misunderstand the Program.

Women's Energy Matters (WEM) devotes most of its opening comments to a discussion of energy efficiency in long term procurement planning. While PG&E agrees with the many parties that support continuing the policy of requiring an energy efficiency audit as a prerequisite

^{6/} SCE, page 13.

^{7/} CCSE, pages 14-15.

to SGIP program participation,^{8/} the bulk of WEM's arguments on this issue are irrelevant to this proceeding.

WEM also suggests that Community Choice Aggregator (CCA) customers not be required to contribute to SGIP funding. This appears to be a misunderstanding by WEM of the program funding and eligibility. From its inception, SGIP has been funded through distribution rates and all customers funding the program are eligible to participate.^{9/} All CCA and Direct Access customers (and publicly owned utility (POU) customers who are also PG&E or SDG&E gas customers) pay for the SGIP program and are eligible to participate in the program. It is inappropriate for WEM (who acknowledges it does not represent CCAs)^{10/} to propose that CCA customers not pay and thus be excluded from SGIP program participation.

D. Using an Avoided Emissions Value Close to 0.349 Tonnes/MWh is Consistent with State Policy and Ensures GHG Emissions Reductions.

Comments that a consistent state policy on avoided GHG emissions mandates the use of 0.437 tonnes/MWh are not correct and are counter to the principle of ensuring GHG emissions reductions. Several parties disagreed with the Staff Proposal's grid GHG emissions rate of 0.349 tonnes CO₂/MWh (tCO₂/MWh), generally asserting that the appropriate grid GHG emissions rate should be the value used in the California Air Resources Board (CARB) Scoping Plan appendix,^{11/} of 0.437 tCO₂/MWh,^{12/} or that the rate should align with standards in other programs.^{13/} Support for using 0.437 tonnes/MWh should be disregarded because 1) this

^{8/} San Diego Gas & Electric/Southern California Gas Company, page 5; FCE, page 23; CLECA, page 2 (but not if audited in last three years); CCSE, page 15; and Alphabet, page 11-12 (but bottom cycling exempt).

^{9/} It is interesting to note that when PV generation was included in the SGIP program, several SMUD customers (who were contributing as PG&E gas customers) installed solar using SGIP incentives. In addition, CCSF (also a PG&E gas customer at some sites) installed PV using SGIP funding.

^{10/} Women's Energy Matters (WEM), page 2.

^{11/} The Scoping Plan is a roadmap to reach AB 32 goals and is neither a result of CARB rulemaking nor a promulgation of official state policy.

^{12/} Bloom, page 3, Capstone page 4, UTC Power, SDG&E page 2.

^{13/} Tecogen, page 2.

emissions rate will not ensure GHG emissions reductions, 2) the California Public Utilities Commission and the California Energy Commission (CEC) have adopted a lower avoided emission heat rate in other proceedings, and 3) evidence parties offer to support 0.437 tonnes/MWh is inaccurate.

SB 412 states ^{that} “[e]ligibility for incentives under the [SGIP] shall be limited to distributed energy resources that. . . . will achieve reductions of greenhouse gas emissions pursuant to the California Global Warming Solutions Act of 2006.” As will be shown, using a value of 0.437 tCO₂/MWh will not ensure GHG emissions reductions and could actually increase emissions.

Several parties commented that the grid emissions rate for generation offset by SGIP systems should not be reduced by 20% to account for renewables that are presently part of the California grid mix.^{14/} PG&E agrees that from a *short-term* perspective, it may be reasonable to assume that gas-fired generators are the generation resources that would be modulated in response to on-site generation, and existing Renewable Portfolio Standard (RPS)-eligible generation will produce as it would without the on-site (SGIP) generation. However, SGIP is not a short term program, so a longer-term perspective on grid emissions offset by SGIP generation is appropriate. The SGIP is designed to support installation of long term (20+ year equipment life) generation by customers. In fact, if the Commission adopts the proposed hybrid PBI incentive, the customers will not receive their full rebate unless their generator performs for at least 5 years.

To the extent SGIP systems reduce future long-term energy consumption, load serving entities need to procure less energy for that period. To satisfy RPS requirements, a fraction of future long-term energy purchases must be from renewable sources. Accordingly, the amount of energy that is not purchased over the long term as a result of the electrical output of SGIP-funded

^{14/} Bloom, for example, argues that “. . .the gas-fired generator will be the marginal generator regardless of the quantity of non-dispatchable renewables, and thus the ARB’s 0.437 tonnes CO₂/MWh emissions factor is the correct Avoided Emissions factor even with a 20% RPS.”

projects necessarily includes renewables that would be purchased to satisfy RPS requirements. Thus, as the Staff Proposal correctly finds, the appropriate avoided emissions rate should include renewable energy that would have been purchased to meet RPS requirements.

California Clean DG Coalition (CCDC) agrees with Staff that the avoided emissions rate should include renewables, but mistakenly states that 0.437 tonnes/MWh includes some renewable generation.^{15/} This is not true; the CARB states that the emissions factor is based on “in-state natural gas electricity generation.”^{16/}

Bloom incorrectly asserts that the 0.437 tCO₂/MWh value is “deeply embedded in related areas of California energy policy.”^{17/} In fact, a variety of emissions factors are used throughout California energy policy. For example, the E3 GHG model that Bloom cites uses 0.395 tonnes/MWh for 2008 and 0.381 tonnes/MWh for 2012.^{18/} In the AB 1613 proceeding, the CPUC adopted an avoided emissions rate for CHP of 0.367tCO₂/MWh.^{19/} Additionally, the CEC adopted a 62% efficiency standard for AB 1613 eligible CHP facilities. Embedded in this standard is an assumption of avoided emissions of roughly 358 tCO₂/MWh.^{20/} The numbers used by the CPUC and CEC in these other proceedings are the result of a more sophisticated analysis than that used by the ARB in its roadmap to achieve the AB 32 target.

While state agencies have used various emissions rates to calculate avoided emissions, the emissions rate Staff proposes will ensure that SGIP engenders GHG emissions reductions.

^{15/} CCDC, page 10.

^{16/} CARB, Scoping Plan, Appendix 2, pages 1-21, http://www.arb.ca.gov/cc/scopingplan/document/appendices_volume2.pdf.

^{17/} Bloom, page 3.

^{18/} Bloom cites an old, Beta version of the E3 calculator. The new version is available at http://www.ethree.com/documents/GHG%20update/GHG%20Calculator%20version%203c_Oct2010.zip, (Tab: ‘UserCase’, Row 66, Column B).

^{19/} See D. 09-12-042, page 37, which found that the resource avoided by an eligible CHP is a CCGT with a heat rate of 6,924 Btu/kWh. PG&E has protested aspects of the decision, but did not dispute the avoided GHG emissions value.

^{20/} 0.358 tCO₂/MWh assumes a Power to Heat ratio of 1 and a boiler efficiency of 80%.

An emissions rate of 0.437 tonnes/MWh is higher than the avoided emissions rate and will move the state in the wrong direction.

E. SGIP Measurement and Evaluation Activities Should Continue.

PG&E strongly supports continuing SGIP measurement and evaluation (M&E) activities, funded by SGIP funds. Although PG&E recognizes the desire of many commenting parties to focus SGIP funding on incentive payments,^{21/} M&E findings have proven invaluable for informing SGIP-related decisions – including the Staff Proposal – and they will continue to do so in the future. M&E evaluations will be even more important as new technologies, program rules, and incentive structures are evaluated. While PG&E agrees that expenditures on M&E should be scaled in accordance with the limited SGIP budget, M&E activities funded by the SGIP administrative budget should continue.

F. Metering Requirements Should Yield Data That is Useful for M&E Purposes.

PG&E recognizes – as do many other parties^{22/} -- that the metering requirements in the Staff Proposal introduce additional financial burdens to potential SGIP projects. However, PG&E also strongly believes metering is a necessary component of the SGIP, as it enables the collection of data that can be used in M&E studies to validate the overall effectiveness of the SGIP – and in particular, the value of using customer dollars to fund the program.

Some parties have proposed that if a given technology is installed with metering and monitoring capabilities, then these projects should be relieved of the requirement to install additional metering at the expense of the vendor or user.^{23/} PG&E supports this as long as the installed monitoring and metering equipment can and does produce data of sufficient quality (frequency, accuracy, etc.) to meet M&E requirements.

^{21/} Bloom, page 22.

^{22/} Bloom, page 22-23, Tecogen page 13, San Diego Gas & Electric (SDG&E), page 4.

^{23/} Bloom, page 23.

PG&E also agrees with other parties that metering requirements should potentially depend on project size.^{24/} However, PG&E stresses that the metering requirements for all projects should yield data that is useful for program M&E purposes.

As indicated in Opening Comments,^{25/} PG&E looks forward to participating in the public workshop to establish the details of SGIP metering and data reporting requirements.

G. Energy Efficiency Audits Should Be Required of All Projects.

Several parties recommend modifying the Staff Proposal to eliminate the requirement that a project must complete an energy efficiency audit to be eligible for the SGIP incentive.^{26/} PG&E strongly disagrees and supports the proposed requirement of energy efficiency audits, as it aligns with California's loading order.

H. Maximum System Sizing.

PG&E disagrees with parties' comments supporting the removal of the 5MW size cap^{27/} for SGIP projects. Based on past SGIP participation, there are few projects that apply for more than the incentive caps, so there does not appear to be a need to change the status quo.

I. Hybrid PBI Incentive Mechanism.

While PG&E recognizes the desire of many parties urging a full "up-front" incentive payment,^{28/} PG&E agrees with several other parties^{29/} that a performance-based incentive – with a significant portion of incentive dollars tied to the performance-based part of the incentive – is the optimal approach for ensuring effective use of customers funds. However, PG&E would

^{24/} Capstone, page 11, CCSE, page 13, Tecogen, page 13-15.

^{25/} PG&E, page 12.

^{26/} Bloom, page 24, Tecogen, page 12.

^{27/} Debenham Energy, p.4, California Large Energy Consumers Association (CLECA), page 4, CCSE, page 7.

^{28/} Bloom, page 16, Alphabet, page 13, Fuel Cell Energy, page 13, CLECA, page 6, Capstone, page 10, CCSE, page 10, Sustainable Conservation, page 3, Tecogen, page 10, SDG&E page 4.

^{29/} Division of Ratepayer Advocates (DRA), page 3, SCE, page 10, TURN, page 4-6.

support increasing the initial incentive payment from 25% as recommended in the Staff Proposal to 50%, as suggested in Tecogen’s comments.^{30/}

For the sake of program simplicity, PG&E recommends against proposals (1) allowing for “banking” of generation as a means of obtaining the performance-based component of the incentive,^{31/} (2) providing extra performance-based incentives for “over performing” systems, or (3) paying an up-front incentive and then taking it back if the system underperforms.^{32/} SGIP should be an incentive to customers, not a punitive program in which the program administrators are required to invest customer dollars chasing down money that may have been spent, thereby creating a financial hardship for customers, as well as spending additional administrative dollars to administer the same incentive for a second time.

J. A Warranty Safeguards Customer’s Technology Investments.

PG&E disagrees with the suggestion to waive the warranty requirement for emerging technologies.^{33/} A solid warranty is needed to protect a customer’s investment, as well as the ratepayers’ investment in SGIP. PG&E supports the current guidelines, which require a minimum 5 year warranty for all technologies. This is especially important for emerging technologies so that customers are secure in knowing that if they choose a new technology, their project will be covered for a specific period of time.

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^{30/} Tecogen, p. 10.

^{31/} Tecogen, page 11, UTC Power page 7.

^{32/} Foundation Wind, page 8; Alphabet, page 13.

^{33/} Alphabet, page 12.

III. CONCLUSION

PG&E appreciates the opportunity to provide these reply comments to the Commission.

Respectfully submitted,

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December 10, 2010

CERTIFICATE OF SERVICE BY ELECTRONIC MAIL

I, the undersigned, state that I am a citizen of the United States and am employed in the City and County of San Francisco; that I am over the age of eighteen (18) years and not a party to the within cause; and that my business address is 77 Beale Street, San Francisco, California 94105.

On December 10, 2010, I served a true copy of:

**PACIFIC GAS AND ELECTRIC COMPANY'S (U 39 E)
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MODIFICATIONS TO THE SELF-GENERATION
INCENTIVE PROGRAM**

- [XX] By Electronic Mail – serving the enclosed via e-mail transmission to each of the parties listed on the official service list for R.10-05-004 and with an e-mail address.
- [XX] By U.S. Mail – by placing the enclosed for collection and mailing, in the course of ordinary business practice, with other correspondence of Pacific Gas and Electric Company, enclosed in a sealed envelope, with postage fully prepaid, addressed to those parties listed on the official service list for R.10-05-004 without an e-mail address.

I certify and declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct.

Executed on this 10th day of December, 2010, at San Francisco, California.

/s/
PATRICIA A. KOKASON