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ELECTRONIC DELIVERY

California Energy Commission
Docket Office
Attn: Docket No. 07-SB-1
1516 Ninth Street, MS-4
Sacramento, CA 95814-5512

Re: Comments on Senate Bill 1 Eligibility Requirements Staff Report

Pacific Gas and Electric Company (PG&E) respectfully submits the following comments regarding the Senate Bill 1 Eligibility Requirements Staff Report.

Thank you for considering our comments. Please feel free to call me at the number above if you have any questions.

Sincerely,

Les Guliasi /pl

Attachment

PG&E Comments to the CEC SB1 Recommendations Contained in the CEC Staff Report "Eligibility Criteria and Conditions for Incentives for Solar Energy Systems – Senate Bill 1"

Introduction

Pacific Gas and Electric Company (PG&E) appreciates this opportunity to provide comments on the CEC Staff Report "Eligibility Criteria and Conditions for Incentives for Solar Energy Systems – Senate Bill 1" (Staff Report). PG&E recognizes the significant effort put forward by the CEC to ensure that the California Solar Initiative (CSI) Program is in compliance with SB 1. PG&E especially recognizes the effort the CEC has expended to ensure that energy efficiency is integrated into the CSI program, as was envisioned by the Legislature in SB 1.

In general, PG&E supports the overarching goals put forth by the CEC to ensure that the state Energy Action Plan (EAP) is supported and that the CSI solar installations are safe and of high quality. There are some features of the Staff Report, however, that PG&E believes the CEC should modify to prevent unintended consequences, possibly impeding the realization of the EAP's objectives. Specifically, PG&E suggests the CEC should incorporate lessons learned in the first year of the CSI Program, particularly the impact on program participation from abrupt changes or increased barriers to program participation. In these comments, PG&E describes particular hurdles that could be modified, and makes recommendations that will achieve the overarching goals of the CEC's approach without undue disruption for customers and other market participants.

Increasing CSI Program Requirements Has the Potential to Adversely Affect Program Participation.

At a workshop held August 22, 2007, the CEC received input from several factors in the solar market; including vendors, installers, and CSI program administrators. PG&E's own experience with launching the CSI program in 2007 has shown us that changes or new requirements to the program require sufficient market notification and training to ensure there is no market disruption. Our experiences, and those described by others at the August 22nd workshop, demonstrate that abruptly increasing requirements can have a negative effect on the participation levels and on customer satisfaction with CSI – especially for residential and small commercial customers.

Solar vendors and installers described their experiences with the increased requirements established for the CSI program, as compared to the requirements in prior years for customers installing solar generation through the Self Generation Incentive Program or the CEC's own Emerging Renewables Program (ERP).

PG&E and the entire solar community seek to work constructively with the CEC to refine the recommendations in the Staff Report. Together we can ensure the goals of SB 1 are met, including the state goal of installing 3,000 MW of solar generation in California, along with the energy efficiency and system performance expectations.

In the balance of these comments PG&E addresses Solar Energy System Components, Solar Energy Installation Standards and Energy Efficiency requirements, respectively.

Solar Energy System Components

Testing Requirements for Solar Modules

Currently, the CSI uses the modules listed under the old testing protocol, established by the CEC under the ERP. Approximately 900 modules are listed on the CEC website. PG&E is supportive of the concept of moving to the new testing protocol set forth in the Staff Report, however, there are currently only approximately 100 modules listed that satisfy the new testing protocol.

At the workshop, PG&E suggested the CEC might want to seek input from solar manufacturers as to the length of time it will take to perform the testing necessary to increase the number of modules that can be listed as available for customers seeking rebates under the CSI, if the new testing protocols were to become mandatory. In addition, the CEC should seek input as to whether there are additional issues raised by the new testing protocols. For example, there are a limited number of testing labs within the United States that can provide the certification required by the new protocols.

Limited test sites will mean a longer period of time before the number of certified modules can be increased significantly. As an interim measure, it has been suggested that the CEC could develop self-testing guidelines to increase the number of modules certified. These guidelines should include audit availability and protocols. One additional consideration can also smooth the transition to new testing protocols. Projects that have applied to the CSI prior to the effective date of the new testing protocol requirements should be "grandfathered" and therefore able to access the existing module certification list.

As the CEC develops the new testing requirement, it should address emerging PV technologies. Some new technologies do not strictly fall into the existing UL protocols and the CEC should include flexibility in its testing requirements to ensure these products are not excluded from CSI program consideration.

The new testing requirement should also address non-PV solar technologies. The CPUC and Program Administrators are currently developing protocols for these technologies. In order to ensure that non-PV solar technologies can be included in the CSI program, the CEC should incorporate the ongoing work of the CPUC and Program Administrators as it develops appropriate protocols to have these products certified.

Metering Requirements

PG&E appreciates that the CEC recommendations for metering are consistent with the current CSI program. In implementing SB 1 and the CSI program, the CPUC established rebates that depend on actual or expected system performance rather than installed capacity. This meant that performance of solar generation systems needed to be tracked more carefully. To help establish appropriate criteria for metering solar systems, the CPUC established a Metering Subcommittee, which has coordinated input from several parties. The CPUC relied on input from the Metering Subcommittee to establish the metering requirements for the current program. PG&E suggests that further findings or recommendations of the CSI Metering Subcommittee should be integrated into the CEC recommendations. The CEC can benefit from this valuable input on the outstanding metering issues that must still be decided such as the development of standards for non-revenue grade/ inverter-integrated metering, metering for solar thermal technologies and criteria for performance monitoring and reporting service and 3rd party Performance Based Incentive (PBI) data providers.

Solar Energy Installation Standards

The Staff Report recommends that the CSI program use the Expected Performance Based Incentive (EPBI), rather than the Expected Performance Based Buydown (EPBB) currently used to determine the rebate for all installations not using the PBI. The CEC further recommends that the CSI program use the shading methodology and inspection process developed by the CEC for the New Solar Homes Partnership (NSHP).

PG&E appreciates the proposed enhancements associated with the EPBI. In particular, as PG&E understands it, the EPBI will allow qualifying projects that exceed the reference performance to receive a rebate that is greater than the average $/watt amount for a given step. Furthermore, the EPBI would value solar output according to the time that it is generated.

However, PG&E is concerned that the introduction of a new rating system, whether an improvement relative to the current methodology or not, would introduce confusion and disruption among solar customers and vendors. While the EPBB is not a perfect tool, it was developed after significant effort by many market participants, and with a substantial amount of training on its use. Training – and refinements – continue. In addition, the residential and small commercial solar markets – where customers will be required to use whatever tool is adopted – now have eight months' experience with the tool. Introduction of a new tool, whether or not it is an improvement to the existing approach, should be carefully considered due to the necessary market notification and training. The CEC should only undertake to replace the EPBB with the EPBI if the EPBI is demonstrably superior in order to avoid the likely market disruption.

PG&E would like to propose a method that could help the CEC and CPUC determine which tool – EPBB or EPBI – should be adopted for the CSI program. PG&E recommends that a third party examine each tool and evaluate the merits and challenges of both. The third party should also examine any additional accuracy of the EPBI and weigh the benefits of any identified incremental accuracy along with the potential impacts to the industry. The third party could then make a recommendation about which tool or methodology would better serve the goals of the CEC and CPUC, including ease of web-based implementation, prior to implementing any change that could potentially cause a market disruption.

Finally, PG&E has received feedback that the current CSI Shading Subcommittee has provided a useful and valuable dialogue between the stakeholders, particularly in assessing market impacts for suggested methodologies. Just as with the Metering Subcommittee, PG&E recommends consideration of any recommendations from the Shading Subcommittee as criteria for CSI participation are implemented.

Energy Efficiency Requirements

PG&E commends the Staff Report for its significant commitment to strengthening the integration of the Energy Action Plan paradigm with CSI program requirements. PG&E is a strong proponent of energy efficiency and wholeheartedly supports the goals of the CEC Staff Report to ensure that the state's Energy Action Plan is incorporated to the extent feasible. PG&E wishes to ensure that the energy efficiency standards adopted are not done in a way that risks the success the broader goal of the CSI – establishing 3000 MW of customer solar generation in California. PG&E believes that implementation of the energy efficiency requirements, as they are now proposed in the Staff Report, could impede the success of the 3,000 MW goal and further, could have a negative impact on the state's ambitious energy efficiency goals.

The energy efficiency requirements as currently proposed are rigorous, particularly for the residential retrofit segment. While rigor is not, in-and-of-itself a problem, abrupt application of such high standards as a prerequisite to CSI program participation could lead to market disruption for the solar industry, particularly in the residential and small commercial market. At the workshop, the solar industry raised similar concerns about potential market impacts. That having been said, there is much to work with in the Staff Report, as follows:

Nonresidential Customers – New and Retrofit

PG&E supports the recommendations in the Staff Report for commercial buildings – especially if they apply only to medium and large commercial establishments. Such customers are economically more sophisticated than residential or small commercial customers, and can more readily adjust to the implementation of additional requirements as a part of their participation in the CSI program. PG&E's account representatives work actively with larger commercial/industrial customers to encourage them to pursue a variety of demand-side management measures, including solar and energy efficiency, in an integrated manner.

PG&E's nonresidential solar program is already in the fourth step, after only eight months of implementation, demonstrating a responsiveness of at least our medium and large commercial customers to increased program requirements, such as energy efficiency audits and the increased metering necessary to implement PBI-based rebates. However, PG&E suggests that before implementing the recommendations in the Staff Report for the nonresidential sector, consideration should be taken for facilities that do not fall within the normal expectations within which the Staff Report was designed. For example, a customer installing a solar system powering an agricultural pump should be able to participate in the CSI, but the Staff Report is silent as to the energy efficiency requirements such a customer should implement. Additionally the energy efficiency requirements for existing and new commercial buildings should be aligned with the energy efficiency program offered by the IOUs.

Residential New Construction

PG&E supports implementation of the new construction recommendations contained in the Staff Report. PG&E has recently aligned its existing Residential New Construction program with the New Solar Homes Partnership energy efficiency Tier1 and Tier 2 requirements for single family homes. Currently a Tier 2 energy efficiency level does not exist for multifamily housing but will have to be developed.

Residential Retrofit Market

This is the most challenging market segment. PG&E has specific concerns with a number of items recommended by the CEC in the Staff Report. These should be resolved before establishing energy efficiency requirements at the levels proposed by the Staff Report. Finally, as is described more fully in PG&E's recommendations below, a staged implementation of additional energy efficiency requirements for this market segment would help ensure broader market acceptance of these requirements. PG&E's concerns include:

- *Residential Benchmarking System*: Establishing a residential benchmarking system was not factored into the current energy efficiency portfolio, nor was it contemplated by the CPUC when establishing CSI program implementation budgets. In order to develop a residential benchmarking system, the CPUC would need to identify additional resources, the source of necessary funding, and whether design and development would more appropriately be done by the CPUC, by energy efficiency program administrators or by CSI program administrators (or a combination). Implementation of the energy efficiency requirements would also require that the CPUC build in the time necessary to develop the benchmark.

- *On-Site Energy Efficiency Audits*: Currently, PG&E and other energy efficiency program administrators do not offer residential on-site energy efficiency audits, since they are typically not cost-effective and don't add significantly more value, in the form of implementation of energy efficiency measures, than do phone, mail or on-line audits. Further current energy efficiency portfolios do not have the infrastructure (or budget) to support this activity. Because of their high cost, their role in energy efficiency portfolios has been reduced. While on-site audits or ratings for residential dwellings could be conducted by HERS Raters, there would likely be a cost to the customer for this service. This would increase the financial burden for customers seeking to install solar generation.

  Furthermore, it would take additional training to ensure there are adequate resources within the HERS industry doing business in California to address the demand by residential customers wishing to install solar generation each year. Prior to establishing the proposed energy efficiency requirements, the CPUC would need to build in the time to ensure sufficient solar HERS raters exist to meet anticipated customer demand.

- *Definition of Cost-Effective*: The Staff Report requires installation of "cost-effective" energy efficiency for all residential customers except those who are already in the top quartile of energy efficiency. It is not clear what the Staff Report meant by the term "cost-effective," whether from the perspective of an individual customer, or from a societal perspective. PG&E presumes the former. In any case, the term "cost effective" would need to be defined in a manner so as to not represent a financial impediment to customers considering solar.

  Energy efficiency requirements, with their additional costs (even though they would likely be supported by IOU rebate programs), could have the unintended consequence of moving customers away from a decision to install solar generation. The increased cost for implementing the required energy efficiency measures would need to be evaluated in comparison to the overall cost of the solar system, to ensure that customers' costs are not significantly increased (as one of the CSI goals is to decrease the cost of solar systems).

In PG&E's CSI program, while residential applications comprise of 91% of the amount of applications, the MW contribution is 21%. Customer participation in the energy efficiency programs demonstrates a similar pattern. To introduce the energy efficiency requirements for residential customers that are called for in the Staff Report could prove to be expensive, but achieve only small incremental MW savings.

Free Ridership

Many parties at the workshop raised the important issue of free ridership as it pertains to implementation of energy efficiency requirements in the CSI program. Unless specific steps are taken to address this important issue, it could have an adverse effect on both the goals of the CSI and the energy efficiency programs. Certainly customers installing solar generators who must implement energy efficiency measures in order to receive a CSI rebate should be able to participate in any energy efficiency programs for which they otherwise qualify. If they are viewed as free riders for the energy efficiency program, this will dilute the cost effectiveness of those programs.

PG&E recommends that, as was done in the case of the Governor's Green Building Initiative, the CPUC should ensure that any energy efficiency measures installed as a requirement of the CSI program can be counted as part of the goals of the energy efficiency programs and should not be discounted as "free riders." Without such clear direction, a program implementer might have no easy way of knowing whether a prospective participant was a solar free-rider or not. If motivation could be determined, and the prospective participant was a possible solar free-rider, the program implementer should exclude the participant from participation. This may not be the state's desired policy. Accordingly, the CEC and CPUC should coordinate on this issue and clarify that prospective solar participants are not to be considered free-riders. This would remove any doubts as to the legitimacy of such customer's participation, and would remove an almost impossible program implementation difficulty.

Recommendations

In addition to the recommendations included in our comments above, PG&E provides the following comprehensive set of suggestions that the CEC and CPUC could implement. PG&E believes these recommendations can accomplish the goals identified by the legislature, the CEC and the CPUC without the unintended consequence of disrupting the market for customer solar generation in California.

The CEC and CPUC should stage the implementation of the SB 1 requirements:

- A lower bar before energy efficiency improvements are required, which can be raised over time – perhaps only those customers who are in the bottom 25th percentile need implement energy efficiency measures before participating in the CSI program.

- More modest energy efficiency requirements, which might be increased over time. A customer in the bottom 25th percentile could implement the most cost-effective measure identified by an energy audit, either on-line or on-site.

- Implement with large nonresidential first, then all nonresidential, then apply to residential last (and see below).

For larger, non-residential customers, PG&E also recommends an integrated demand side management approach led by the utilities for retrofit projects. The CEC could recommend that existing programs be used to encourage customers exploring solar generation to also consider (more cost-effective) energy efficiency measures to address their energy needs. For example, PG&E already implements an integrated demand side management approach for our larger customers. Following a required energy audit, PG&E could provide information to customers applying for solar rebates about the financial benefits of first accomplishing energy efficiency improvements as a way of improving the overall cost effectiveness of their contemplated activities. PG&E would give customers information about low and no-cost energy efficiency and conservation steps they could easily take, measures that could significantly reduce the customer's over all energy costs.

For residential and smaller commercial customers, before implementing energy efficiency requirements beyond the on-line energy audits required by the current CSI program for retrofit projects, PG&E suggests the CEC allow the market to operate for a few years. Market research could reveal whether energy audits, plus integrated demand side management, are effective. If adoption rates of energy efficiency and conservation measures by residential and small commercial customers are low, even after a few years of this integrated approach, it might be appropriate to take further action to bring the CSI in line with the Energy Action Plan. At this later time, the CEC and CPUC might want to consider ways in which participation in the CSI program could be more directly linked to the installation of energy efficiency measures. For example, the CEC and CPUC could reduce the CSI incentive for customers with energy ratings in a lower percentile, rather than requiring the implementation of energy efficiency measures. This leaves the customer free to either accept the reduced rebate, or install energy efficiency measures sufficient to bring them to the higher percentile.