SMUD
SACRAMENTO MUNICIPAL UTILITY DISTRICT
The Power To Do More.

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October 12, 2007

California Energy Commission
Dockets Office
Re: Docket No. 07-SB-1
1516 Ninth Street, MS-4
Sacramento, CA 95814-55112

SUBJECT: Comments on CEC's *Guidelines for California's Solar Electric Incentive Programs Pursuant to Senate Bill 1* (CEC-300-2007-012-D, September 2007)

The Sacramento Municipal Utility District is pleased to submit the attached comments on the CEC's draft guidelines.

These comments are consistent with earlier comments, submitted August 22, on the eligibility requirements staff report. They add specificity to our earlier response by suggesting alternative approaches to some of the requirements.

SMUD again commends the staff on their efforts and appreciates the flexibility they have demonstrated in modifying the current draft in response to comments by SMUD and others.

Submitted by,

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SMUD Response to the CEC's *Draft Guidelines for California's Solar Electric Incentive Programs Pursuant to Senate Bill 1* (CEC-300-2007-012-D, September 2007).

As SMUD stated in its previous comments, solar incentive providers should ensure that customers understand and are in a position to take advantage of cost-effective energy efficiency opportunities when deciding whether to invest in a photovoltaic system. The customer and utility ratepayers are best-served when energy efficiency and PV opportunities are bundled and given equal consideration in the customer's choice of investments.

However, SMUD also believes that California's solar incentive programs should be guided by the following principles:

1. The success of the California Solar Initiative—the second largest solar incentive program in the world—depends ultimately on whether thousands of private citizens decide to invest in this remarkable but expensive technology. For markets to work properly, those customers need the same degree of choice over how to invest as they have for any other consumer product.

2. Consumer research confirms that managing one's energy bill is a leading motivator for most customers interested in acquiring solar generation. Thus motivated, these customers can be trusted to create a personal "loading order" that will enable them to achieve their cost-control objectives for the least amount of investment. The utility, as solar incentive provider, has a responsibility to ensure that every customer prepared to invest in solar is aware of the entire menu of options for reducing energy consumption and understands the comparative costs and returns of each of these options. Armed with the necessary information and analysis, the customer should then be free to develop the slate of investments that satisfies their own values.

3. Reducing energy consumption may or may not be the customer's only, or most important, reason for purchasing a PV system. Other reasons include

    - support for non-fossil, renewable energy for its environmental attributes and contribution to national energy independence;
    - desire to become self-generators in order to use as much energy as they please without having to pay high utility bills; and
    - desire to be more self-reliant and less dependent on the grid.

Whatever their motivation, all solar investors add clean generation to the local air basin, lighten the load on the transmission grid, and may help attenuate the growth of peak load. Such customers deserve ratepayer support even if they choose not to accompany solar with energy efficiency measures—so long as customers know what their choices are.

Based on these principles, SMUD offers the following comments on the CEC draft guidelines:

Chapter 3: Solar Energy System Component Standards

SMUD supports all CEC guidelines and requirements regarding energy system component standards, and SMUD serves on the CEC's metering subcommittee.

Chapter 4: Solar Energy System Design and Installation Standards

SMUD supports all CEC guidelines and requirements regarding system design and installation standards, with the understanding that SMUD is permitted to continue its established programs according

to the rules and requirements we currently use until January 2009. Specifically, SMUD intends not to require a PBI for all systems larger than 50 kW until January 2009. In 2008, SMUD plans to offer an EPBI for all PV systems until we gather further experience with how the market performs.

Although SMUD currently has a PV performance estimation tool, SMUD does not anticipate any problems adopting the methodology recommended by the CEC.

Chapter 5: Energy Efficiency

SMUD supports the CEC guidelines and requirements regarding new and existing residential buildings.

SMUD proposes changes to the following requirements for new and existing commercial buildings:

NEW BUILDINGS

CEC Requirement: To be eligible for solar incentives, new commercial buildings must reduce combined space heating, space cooling, lighting, and water heating at least 15% below Title 24. (p. 19, ¶ 1)

Issue: Few buildings constructed in SMUD territory have met this requirement. Buildings conforming to SMUD's Savings by Design Program, similar to the program offered by IOUs, typically are only 10-12% better than Title 24.

SMUD Recommendation: To be eligible for solar incentives, new commercial buildings must reduce their combined space heating, space cooling, lighting, and water heating energy to the minimum level required by the statewide Savings by Design Program (currently 10% below Title 24). Utilities would not be required to offer the Savings by Design Program in order to assist customers in meeting this requirement.

CEC Requirement: For newly constructed commercial buildings with energy systems installed later as tenant improvements, tenant will agree to install lighting, HVAC, and water heating equipment at efficiency levels necessary to meet tier level (15% or 30% that was committed to by the owner. (p. 19, ¶ 7)

Issue: Requiring tenants to take on added cost could reduce the building's appeal in the rental market. The building owner will thus be less likely to consider incorporating solar features into the building shell, thus missing an opportunity to reduce peak demand.

Under one scenario, a building owner might intend to allocate all or some of the solar output to the tenant, and if energy efficiency requirements are to be imposed on the tenant, it is reasonable to assume that the tenant should receive the net metering benefit of the solar installation. However, this is not easy to accomplish or financially viable for the developer. It is physically implausible to install a solar system and route portions of the PV production to a multi-metered facility. Two unlikely approaches exist to pass the net metering benefits to the tenants. A PV installation would need an inverter at each meter, which would drive up the installation cost prohibitively. Alternatively, the building owner would have to bear the burden of all the electric charges of the tenants. He then would lease space with triple net lease agreements where the electric charges are built into the monthly rents. This is not the current practice or favorable position for the building owner, nor does it promote energy efficiency behavior with the tenants. Tenants interested in solar will generally be large anchor tenants who will bear the responsibility of the shell and interior improvements.

Under a second scenario, a developer would make a solar investment to offset only his own energy consumption—the common area or "house" loads. These are the developer's or building owner's operational costs, and the developer would not make a solar investment in order to pass the net metering benefit to the tenants. But when a building developer is installing PV to offset only his own costs, why should energy efficiency requirements then be imposed on the tenant?

SMUD Recommendation: PV installations installed under a shell permit will not be oversized to generate more than the common or facility house loads. PV installations connected to a single tenant meter will not be oversized to generate more than the tenant load. The energy efficiency required under the shell permit or tenant improvement permit shall match the minimum standard currently accepted in the Savings by Design Program System Approach.

EXISTING BUILDINGS

CEC Requirement: Retrocommissioning shall be required for existing commercial buildings that are larger than 50,000 square feet and/or that have a benchmarking rating of less than 75. (p. 21, ¶ 4) Equipment repairs and adjustments and cost-effective energy efficiency measures identified in the building retrocommissioning assessment shall be implemented up to those measures required to move the building's benchmarking rating up to 75. (p. 22, ¶ 4)

Issue: SMUD has a long history of support for retrocommissioning and offers a program that covers 80% of the initial assessment. However, as a prerequisite for purchasing a solar system SMUD has the following concerns:

- Its costs and results are unpredictable, especially for older or more complex buildings.
- It may pose an unacceptable hassle factor, depending on the complexity of the building's energy using equipment and the building operator's reaction to having their energy management techniques scrutinized.
- Requiring the building owner to implement recommendations from a third-party inspector adds financial risks to what may already be perceived as a risky investment.
- Another solar model that has become very interesting and has strong SMUD support is when a company installs a large solar farm to offset their companywide load. One such model consists of a company with hundreds of buildings on their property housing a variety of occupancies. The question arises, which buildings should be commissioned? Another instance is where the company has a building with a square mile of roof housing a warehouse with a very small load. District wide their load on our system is huge but their actual PV application area on their other facilities is minimal. Would it not seem plausible that the PV installed on the warehouse be used to offset their District wide load? SMUD is aware that the State of California Department of General Services is researching this model in their own facilities. SMUD believes that the rules should be flexible enough to allow for creative solar installations.
- The decision making process to purchase solar can be a long and arduous process. The decision making process begins with an internal solar champion. That person or committee can fall anywhere in the company chain of command or organizational structure. This process, whether it is a top down order or bottom up desire, can take months because the process spans over multiple business functions within the organization. The final decision ultimately requires executive approval. As written, the CEC Guidelines requires the company to execute a Commitment Agreement to install efficiency measures by a specified date. Therefore, prior to making the final decision to purchase solar, a company must first perform a retrocommissioning assessment, evaluate what measures are necessary to obtain a benchmark rating of 75, obtain estimates from contractors as to the cost of the required improvements, evaluate internally the cost, benefit and hassle factor to implement the measures, and ultimately budget for the implementation all prior to

honestly being able to sign a commitment and establish a completion date before they can make the solar decision. These efforts double the already complex and time consuming endeavor to obtain a solar decision. If in fact both PV and EE elements are accepted, and the incentive happens to be at the same step, the solar administrator will need to track the customer's progress with EE improvements. Due to the climate of company ownership, or employee, or executive churns, this imposed utility obligation can become sensitive for us to become an enforcer or policeman to force something that may have completely changed in the company loading order or budget changes. The combined EE and PV decision process could take upwards of 3 to 4 months at a minimum. It is very plausible that the incentive amount in the beginning of the process be in a reduced step when the utility can make the formal financial commitment. This creates a very high risk for SMUD customers to invest time into the PV decision process with incentives being a moving target.

- With regard to program administration, imposing retrocommissioning on the process of delivering solar incentives greatly complicates our budget, staffing, and workflows. Municipal utilities having but a single administrator for their solar incentive programs could be especially burdened by this requirement.

  SMUD Recommendation: Solar incentive program providers must deliver an in-person presentation to decision-makers at companies applying for solar incentives. The presentation will include a description of the benefits of retrocommissioning and energy efficiency improvements, and it will explain the utility's retrocommissioning and energy efficiency incentive programs. Building owners will certify that they have received and understood the presentation, and such certification will be submitted with the solar incentive rebate application. SMUD supports the audit and benchmarking elements of the Guidelines.

Chapter 6: Reporting Requirements

SMUD supports the CEC reporting requirements with the exception of item 6, which would require utilities to provide (1) a costs and benefits evaluation of existing solar electric systems as a part of the utility's electrical system, and from projected solar electric systems anticipated during the term of the program, and (2) impacts on the distribution, transmission, and supply of electricity. (p. 25-26, item #6)

This is a very cumbersome task to complete annually, and it requires staff time from a variety of departments. SMUD is interested in analyzing the benefits that distributed generation may provide to our electric infrastructure, but our experience has been that evaluating this subject adequately is a project of greater scope than can be accomplished in a brief annual report. Meeting this requirement would be especially difficult in the June 2008 report required in the CEC Guidelines.

SMUD Recommendation: Omit this requirement.

Conclusion

In summary, SMUD believes that the CEC requirements should, at this formative stage in the development of the California solar market, focus solely on giving customers the tools needed to make intelligent investment decisions. Continuous improvement in the design and delivery of utility-based solar incentive programs must be based on better understanding of the market, especially how consumers perceive the PV value proposition. SMUD has no doubt that the solar equation will be made more attractive by bundling PV with energy efficiency. But SMUD also believes that market choice is a better engine for this development than government requirements.