R.08-03-008

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 08-03-008 (Filed March 13, 2008)

Petition for Modification of Decision 06-01-024 by California Center for Sustainable Energy and California Solar Energy Industries Association Regarding the Solar Water Heating Pilot Program

California Center for Sustainable Energy

California Solar Energy Industries Association

April 3, 2008

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I. INTRODUCTION

In accordance with Rule 16.4 of the California Public Utilities Commission (CPUC) Rules of Practice and Procedure, the California Center for Sustainable Energy (CCSE), formerly known as the San Diego Regional Energy Office (SDREO), and the California Solar Energy Industries Association (CALSEIA) (together, "the Joint Parties") respectfully submit this Petition to Modify Decision (D.) 06-01-024. Requested modifications include the expansion of Solar Water Heating (SWH) Pilot Program (Pilot Program) coverage to include ratepayers of all three investor-owned utilities (IOUs) that participate in the California Solar Initiative (CSI), an extension of the Pilot Program's duration for six (6) additional months, and other program changes detailed herein.

The Joint Parties respectfully request leave under Rule 16.4(d) to file this Petition for Modification more than one year following the effective date of D.06-01-024, which was January 12, 2006. This Petition for Modification could not have been presented within one year of the effective date of D.06-01-024 because the Pilot Program did not officially commence until July 2, 2007. Additionally, the issues giving rise to this Petition for Modification have presented themselves during the initial nine (9) months of the Pilot Program's operation. The Joint Parties believe that initial experience with the Pilot Program has provided important lessons for determining changes that could

be made to assure its success, especially considering that Assembly Bill (AB) 1470 (2007) has placed a renewed emphasis on the Pilot Program.

The Joint Parties request an expedited comment period of ten (10) days from the date of filing of this Petition for Modification, rather than the customary thirty (30) days, for the filing of responses to this Petition for Modification. Given the short term of the Pilot Program and its expected application closing date of December 31, 2008, we would like to see these modifications implemented as soon as practicable and believe an expedited response period would be advantageous.

II. RATIONALE FOR MODIFICATION OF DECISION 06-01-024

The Pilot Program was originally designed to help the CPUC better understand the market dynamics, technical performance and cost-effectiveness of SWH technologies with a view towards potentially including SWH within the CSI. The adoption by the California Legislature of AB 1470 has placed a renewed emphasis on the Pilot Program, in that the legislation directs the CPUC to assess these results and then make a determination on the design and implementation of a ten-year, $250 million statewide SWH incentive program. The Pilot Program will thus play an important role in informing the CPUC's decision-making regarding future support for SWH.

The current design of the Pilot Program limits participation to electric ratepayers of San Diego Gas & Electric (SDG&E). It is now clear, however, that there are questions that cannot be answered from experience in the San Diego region alone. For example: Is San Diego representative of the state? And are there stronger markets, more experienced contractors, and/or a greater propensity for uptake from customers in other parts of the state? Answering these questions is important in approaching a statewide initiative. Further, some SWH contractors in other parts of the state express concerns that lack of broad uniformity in program offerings in the state inhibits the SWH marketplace. Through this Petition for Modification, the Joint Parties seek to modify D.06-01-024 to open participation to ratepayers of the other two electric IOUs that participate in the CSI, namely Pacific Gas and Electric Company (PG&E) and Southern California Edison (SCE). We also request that the Pilot be extended for six additional months, primarily to avoid gaps in program availability during the Commission's development of the statewide program under AB 1470. Finally, we include in this Petition for

Modification a number of program modifications that will simplify or otherwise improve the program in light of lessons learned through preliminary evaluation.

In the Ruling that approved the Pilot Program, the Commission did in fact contemplate statewide coverage, initially opting against it. However, the Commission kept the door open to future expansion, pending its review of program evaluation results.[1] The program changes described in this Petition for Modification, if granted, will allow more comprehensive learning from a larger and more diverse participant base. Given what we now know from the first nine months of Pilot Program operation, we have a valuable opportunity to make adjustments in the program that will, within the existing evaluation and experimental design, allow a more robust understanding of the SWH market in our state.

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[1] Rulemaking 06-03-004, *Assigned Commissioner's and Administrative Law Judge's Ruling Approving Solar Water Heating Pilot Program*, February 15, 2007, page 13.

III. SUMMARY OF PROPOSED CHANGES TO PILOT PROGRAM

A. The Joint Parties respectfully request that coverage of the Pilot Program be expanded to include PG&E and SCE service territories.

B. The Pilot Program should be extended for six (6) months, allowing incentive reservations to be submitted through June 30, 2009.

C. An increased incentive should be provided for residential systems as of July 1, 2008; we propose the creation of a simplified, two-tier incentive structure for residential systems meeting basic guidelines.

D. Inspection of 100% of the SWH systems installed under the Pilot Program should be continued in order to assure quality and consistency from participating contractors.

E. The Joint Parties respectfully request to shift up to $375,000 of commercial incentive funds to the residential incentive budget to allow for the proposed higher residential incentives.

F. The Joint Parties respectfully request $315,985 in additional funds for CCSE to continue management and implementation of a statewide Pilot Program, to cover additional administrative support for the six-month extension of the program and incremental costs associated with the increased coverage area.

G. In order to ensure appropriately allocated funding for the expanded Pilot Program, the Joint Parties suggest that a co-funding agreement be put in place between SDG&E, PG&E and SCE to enable SDG&E to recover the portions of the Pilot Program corresponding to program activities in the other IOU service territories.

IV. BACKGROUND OF THE SWH PILOT PROGRAM

Prior to the launch of the Pilot Program, CCSE received a strong message from the local SWH industry that the SWH market was poised to take off, and that with the addition of incentives, the market would grow much faster than in the past, when demand was stagnant and very few non-pool-heating SWH systems were being installed in the region. In response to these sentiments, a participation goal was set at 750 residential SWH systems in SDG&E service territory.

The Pilot now stands at the halfway point of the eighteen-month program timeline, and participation is below the interim residential goal of 350 SWH systems and the final residential goal of 750 SWH systems. Specifically, through March 2008, the Pilot Program has received 75 applications, with 25 projects having been completed and paid or pending payment. There has not yet been a spike in participation in the program; instead there is a steady flow of around a dozen applications per month. These participation numbers are in spite of CCSE having trained over 200 interested professionals and having qualified 23 different SWH contractors to participate in the Pilot Program.

Over the course of the first nine months of the Pilot Program, CCSE focused its implementation work on delivering, marketing and refining the program. It developed a performance-based incentive structure that assesses SWH systems based on design characteristics and a Solar Rating and Certification Corporation (SRCC) rating of components and pays higher incentives to systems that achieve a higher performance rating. A simple incentive calculation is used to determine the actual incentive that a given system will receive. The Pilot Program has system design requirements, which include adequate freeze protection and that all small systems be SRCC OG300 rated. CCSE also conducts regular installer trainings, and inspects 100% of participating systems. CCSE holds regular meetings of its Technical Advisory Board, which is composed of nationally recognized experts in SWH from the National Renewable Energy Laboratory (NREL), SRCC, industry representatives, installation contractors and other members of the SWH community. The Technical Advisory Board regularly discusses the Pilot Program's requirements; all Program standards have met its approval. CCSE is also working with a Measurement and Evaluation (M&E) contractor, Itron, to characterize the market for SWH, assess the effectiveness of the Pilot Program, and determine the cost-effectiveness of incentives.

The design of the Pilot Program incorporated wide and repeated stakeholder input. CCSE conducted a public workshop on SWH in March 2006 to solicit stakeholder input and comments. In addition, focus groups with actual and potential customers, as well as installers, were held in San Diego during April 2006.

From the start, it has been extremely clear that quality assurance must be a central concern of the Pilot Program. At the same time, CCSE conducted its own engineering and administration evaluation and interacted extensively with industry, the Department of Energy (DOE), NREL and other interested parties to ensure the Pilot Program's approach and implementation details were reasonable, necessary, effective and streamlined.

V. PILOT PROGRAM EVOLUTION AND LESSONS

During the course of Pilot Program implementation, a number of findings have emerged, affecting both SWH contractors and consumers. These have been addressed, and changes have been made to the program where necessary to adjust to market conditions and streamline the process. In addition to its administrative role, CCSE has taken an increasingly proactive role in facilitating the marketplace where it has shown inherent weakness.

First, freeze protection is an important issue that does not have a consensus view across all SWH industry stakeholders. However, the predominant view from SWH industry experts comprising the Pilot Program's Technical Advisory Board and the CALSEIA SWH Committee is that recirculation freeze protection should not be allowed in any but the mildest parts of the state; therefore, the Pilot Program restricts these systems to the San Diego region's coastal Climate Zone 7.

Second, local SWH contractors have requested program modifications to enhance the benefits they receive from participation, for example: a higher incentive, fewer program requirements and less paperwork. In response to these requests, requirements have been adjusted, removed, and/or clarified; we present a few examples here. The anti-scald valve requirement has been removed when it is not required by local building code. The incentive calculation benchmark has been adjusted to reflect actual market conditions. Insurance requirements have been reduced to allow for very small SWH contractors to participate in the Pilot Program without increasing their overhead. The program

database pre-populates the already simple program forms to reduce paperwork burden. The Solar Orientation Factor (SOF) has been adjusted to provide the maximum incentive to a broader range of systems. The requirement for all new equipment has been revised to exempt copper piping from previously installed SWH systems. The requirement of Professional Engineer review of commercial systems has been reduced to allow review by a qualified engineer due to the dearth of Professional Engineers with SWH knowledge. The process exists for having this dialogue among Pilot Program stakeholders and making appropriate, responsible changes to the program.

Third, implementation of the SRCC OG300 certification has presented challenges. While SRCC is the premier SWH testing and rating agency in this hemisphere, it is still not completely embedded in the marketplace in actual practice. CCSE has worked closely with the participating contractors to ensure that they understand the implications of SRCC certifications and are installing complete certified systems. SRCC is increasingly recognized by local permitting bureaus, but this process is ongoing, reflecting the continuing maturation of the SWH marketplace.

Finally, the SWH market in the San Diego region has not been vibrant for over twenty years. Many qualified SWH contractors have based their businesses on installing solar pool heating systems. These contractors have not been involved with state incentive programs. SWH companies tend to be relatively small, without dedicated sales and marketing staff. These characteristics make it difficult for otherwise qualified contractors to ramp up for a short-term program. In this context, the Pilot Program presents administrative costs and requirements with which the contractors are unfamiliar and may perceive as a burden; while consumers are unfamiliar with the technologies and are concerned about system reliability. Therefore, the Pilot Program has highlighted the need for training of contractors and salespeople, as well as the provision of sound, accessible information to market participants in the region.

The lessons described above are exactly the sort of learning that the Pilot Program was meant to uncover. Clearly the marketplace for SWH in San Diego needs intervention at a number of points along the supply chain in order to grow organically and thrive. The explicit mission of the Pilot Program has been and is to identify, characterize and rank the barriers to SWH market development, so that a statewide program can be designed to attack and resolve them. Success of the Pilot Program

is not measured by the number of applications, but rather by the quality of information garnered from its efforts. Statewide expansion of the Pilot Program will provide more comprehensive data for the development of the larger, longer-term program.

VI. EXPLANATION OF PROPOSED CHANGES TO PILOT PROGRAM

As a result of the lessons learned during the initial half of the Pilot Program, discussed above, the Joint Parties propose the following changes to the program, as summarized in Section III:

A. The Joint Parties respectfully request that coverage of the Pilot Program be expanded to include PG&E and SCE service territories.

The Joint Parties propose the modification of D.06-01-024 to expand eligibility for the Pilot Program from solely the ratepayers of SDG&E to the ratepayers of each of the three IOUs that participate in the CSI, that is, to include ratepayers of PG&E and SCE. SWH contractors in other IOU territories have requested access to the Pilot Program incentive funds and have proposed that with this access, they will have the ability to increase SWH system sales. Additionally, expanding the geographic coverage of the Pilot Program will provide valuable information on regional differences, contractor sophistication and consumer trends across the state, all of which is relevant for consideration of the statewide SWH initiative contemplated under AB 1470.

B. The Pilot Program should be extended for six (6) months, allowing incentive reservations through June 30, 2009.

The Joint Parties propose that the Pilot Program be extended for an additional six (6) months from its expected application closing date of December 31, 2008, allowing incentive reservations through June 2009. An extended program timeline will avoid market disruption in two ways. First, it will allow adequate time for new entrants in PG&E and SCE territories to understand and participate in the Pilot Program, as well as become familiar with its requirements and expectations. Second, it will permit the CPUC process for development of the statewide program, contemplated under AB 1470, to proceed in parallel with the final months of the Pilot Program, enabling a smooth transition to the new statewide program.

C. An increased incentive should be provided for residential systems as of July 1, 2008; we propose the creation of a simplified, two-tier incentive system for residential systems meeting basic guidelines.

The Joint Parties propose that an increased incentive be provided for residential systems as of July 1, 2008. With this increased incentive, the Joint Parties propose the creation of a simplified, two-tier incentive system with flat-rate incentives for residential systems meeting basic guidelines.

CCSE cost-effectiveness analysis shows that post-incentive and post-tax credit simple payback times for gas-displacing SWH units are generally over 15 years. The current average incentive paid by the Pilot Program to residential systems is $1,237. The statewide program contemplated under AB 1470 was designed to accommodate an initial incentive level of $1,800 as well as some consideration of system performance. In order to facilitate a seamless transition to a statewide program, the Joint Parties propose an increase in the incentive amount offered under the Pilot Program to match the incentive level that might be offered under the statewide program. A higher incentive level will address SWH contractors' contention that increased costs of participating in the Pilot Program cut into the actual discount amount passed on to the consumer. A flat-rate incentive, provided the residential system meets basic requirements and dependent upon a threshold SRCC rating, simplifies the process while meeting the criteria outlined in AB 1470. The simplicity of a two-tier system with flat-rate incentives also provides greater clarity for both SWH contractors and consumers alike, and reduces the administrative costs for the contractor.

The Joint Parties propose the creation of a two-tier flat-rate incentive structure as follows:

1. All residential SWH systems meeting the following requirements can utilize an incentive "Fast Track":

   a) Complete SRCC OG300 certified system;

   b) No shading of collector(s) between 10:00 a.m. and 3:00 p.m. year-round;

   c) Collector(s) orientation is between 135° and 225° (i.e., 45° either side of true South) and collector(s) tilt is between 10° and 50°.

2. "Fast Track" incentive falls into two tiers with flat rates:

   a) $1,200 – SRCC OG300 estimated system savings below 120 therms or 2500 kWh per year based on the project site's climate zone; OR

   b) $1,800 – SRCC OG300 estimated system savings above 120 therms or 2500 kWh per year based on the project site's climate zone.

3. Residential SWH systems not meeting the "Fast Track" requirements can apply under the current Prescriptive method.

4. The first "Fast Track" requirement is consistent for all projects regardless of incentive calculation method.

The Joint Parties propose no changes to the current incentive calculation for commercial SWH projects, which is based on SRCC OG100 ratings, solar orientation factor and system type.

D. Inspection of 100% of the SWH systems installed under the Pilot Program should be continued in order to assure quality and consistency from participating contractors.

The Joint Parties propose that inspection of 100% of the systems installed under the Pilot Program be continued. Inspections represent a budget increase for expanding the Pilot Program statewide. However, proper installation, compliance with SRCC certification, and verification of stated Solar Orientation Factor (SOF), are fundamental. We consider inspections under the Pilot to be both a quality assurance measure, and an important route for providing systematic feedback to the contractors, a key step in developing the marketplace. In a statewide program, the frequency of

inspections could likely decrease substantially; contractor sanctions could provide additional quality control to complement lower frequency of inspections, as in the mainstream CSI PV program.

E. The Joint Parties respectfully request to shift up to $375,000 of commercial incentive funds to the residential incentive budget to allow for the proposed higher residential incentives.

The Joint Parties respectfully request to transfer up to $375,000 of Pilot Program funds set aside for commercial incentives to the residential incentive budget. Given the relatively long development timeline for commercial SWH projects many potential commercial SWH projects will prefer to wait for the statewide SWH program contemplated under AB 1470. Furthermore, commercial participation in the Pilot Program in the San Diego region has been limited thus far, with only $40,000 of $600,000 of commercial incentive funds currently committed. A transfer of $375,000 of commercial incentive funds to the residential incentive budget would allow for an additional approximately 640 residential installations at the maximum incentive level of $1,800. The remaining commercial incentive funds totaling nearly $190,000 would still provide for over 60 commercial installations based on the current average commercial incentive of $3,000.

F. The Joint Parties respectfully request $315,985 in additional funds for CCSE to continue management and implementation of a statewide Pilot Program, to cover additional administrative support for the six-month extension of the program and incremental costs associated with the increased coverage area.

The Joint Parties propose that CCSE manage the Pilot Program implementation through to its conclusion while the elements of a statewide program contemplated under AB 1470 are being determined by the CPUC. This is the most efficient strategy for the Pilot Program, as all necessary infrastructure and expertise has already been assembled for this program and is scalable to other regions of the state. Understanding the program evolution and condition of the marketplace is critical to the successful expansion of the Pilot Program. CCSE will plan for the transition and handoff to any new administrative structure determined by the CPUC for the statewide program.

In order to manage Pilot Program implementation statewide, CCSE respectfully requests $315,985 in additional funds to expand the Pilot Program to include ratepayers of PG&E and SCE. Additional funds are required for supplementary administrative support for the six (6) month extension of a statewide Pilot Program, increased geographic coverage, additional inspection costs, additional industry training sessions, expanded scope of the evaluation reports, and expanded scope for data collection. The total requested funds are outlined in the table below.

Administration		**Cost**
	Labor	$202,340
	Additional Trainings	$12,160
	Travel	$9,000
	Admin Subtotal	$223,500
Inspections		
	Mileage	$4,000
	Labor	$60,000
	Inspection Subtotal	$64,000
Marketing		
	Labor	$5,485
	Material Costs	$1,500
	Marketing Subtotal	$6,985
EM&V		
	Metering	$18,000
	Reporting	$3,500
	EM&V Subtotal	$21,500
	TOTAL	$315,985

The additional funds requested will be utilized to address the following specific needs due to the proposed expansion of the Pilot Program statewide:

1. <u>SWH Trainings</u>

   CCSE will provide seven (7) one-day trainings for SWH contractors and self-installers. Five (5) of these trainings will be held within PG&E service territory, and two (2) will be held within SCE service territory. At least one employee from the SWH company must attend in order for the company to become eligible to participate in the Pilot Program. CCSE will offer additional SWH contractor and

self-installer trainings via web-enabled services. In addition, the Joint Parties will identify and train program-authorized local inspectors throughout the state.

2. Inspections of SWH Systems under the Pilot Program

100% of SWH systems will be inspected under the expanded Pilot Program to maintain quality control across the state. Inspecting 100% of installations under the expanded statewide Pilot Program will provide education on the standards and expectations of the program and assist the transition into the state program contemplated under AB 1470.

The Joint Parties will identify and train local SWH inspectors in PG&E and SCE service territories. Inspections will be budgeted at a fixed cost per inspection. The majority of the inspection mileage costs for an expanded Pilot Program will be covered by the initial mileage budget for the SWH Pilot Program, which currently stands at over $27,000.

3. Expanded Customer Service

CCSE is presently staffed to handle the additional interest in the expanded statewide Pilot Program and perform due diligence on all program applications coming from additional participating SWH contractors. Continuing to utilize the existing knowledge base through the implementation period of the Pilot Program simply makes sense.

4. Revisions to Pilot Program Forms and Handbook

Pilot Program forms will be revised and streamlined to reflect the change in incentive calculation options. Additionally, the Pilot Program handbook will be revised to reflect the changes in the Pilot Program and to appropriately address the expanded coverage areas.

5. Marketing of the Pilot Program

CCSE has already developed marketing collateral for the Pilot Program in the San Diego region. This marketing collateral will be revised to be applicable to other areas of the state. The Joint Parties will work proactively with PG&E, SCE, and other stakeholder partners to market the statewide Pilot Program efficiently within their spheres of influence. The Pilot Program expansion offers an opportunity for partnerships for targeted marketing.

6. Expanded Evaluation and Metering

The evaluation of the Pilot Program will cover the expanded territories in order to provide a thorough assessment of the Pilot Program. The market assessment, baseline analysis, cost assessment, participant and non-participant assessment, energy and demand impact analysis, market assessment report, and the final evaluation report will all need to include information from the expanded coverage areas.

Metering of SWH systems will include twenty (20) systems located outside of the San Diego region. Data will be collected manually once a month by a meter reader. Systems will be selected in the Sacramento and Bay Areas to allow for minimal travel time and expenses for manual meter reads. This approach is most cost-effective and recognizes the relative homogeneity of the technologies likely to be installed statewide, while still providing some coverage of non-San Diego systems.

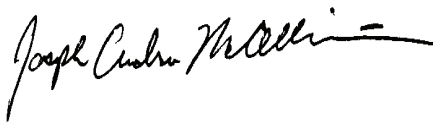
G. In order to ensure appropriately allocated funding for the expanded Pilot Program, the Joint Parties suggest that a co-funding agreement be put in place between SDG&E, PG&E and SCE to enable SDG&E to recover the portions of the Pilot Program corresponding to program activities in the other IOU service territories.

The *Assigned Commissioner's and Administrative Law Judge's Ruling Approving Solar Water Heating Pilot Program* clarifies that Pilot Program funds derive "from CSI program funds collected by SDG&E".[2] In order to fund the expanded Pilot Program appropriately, each IOU will need to provide funds proportional to its participation in the program. The Joint Parties propose that SDG&E maintain the contractual agreement with CCSE for Pilot Program administration, and that a co-funding agreement be put in place between SDG&E, PG&E and SCE. This agreement would begin on July 1, 2008 and run through the completion of Pilot Program activities. The most straightforward allocation would be to mirror the existing CSI regional allocations from the roll-out date forward; another option could be to allocate costs based on participation rates or relative incentive payments.

VII. CONCLUSION

The Joint Parties respectfully petition that Decision (D.) 06-01-024 be modified to expand the Pilot Program to ratepayers of the three IOUs that participate in the CSI, and that related changes proposed herein be made to the Pilot Program. Additionally, the Joint Parties request an expedited response period of ten (10) days.

Respectfully Submitted,



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[2] Rulemaking 06-03-004, *Assigned Commissioner's and Administrative Law Judge's Ruling Approving Solar Water Heating Pilot Program*, February 15, 2007, page 12.

CERTIFICATE OF SERVICE

I hereby certify that I have this day served a copy of this *Petition for Modification of Decision 06-01-024 by California Center for Sustainable Energy and California Solar Energy Industries Association Regarding the Solar Water Heating Pilot Program* on all known parties of record in this proceeding by delivering a copy via email to the current service list.

Executed on April 3, 2008, in San Diego, CA.

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