

**BEFORE THE PUBLIC UTILITIES COMMISSION  
OF THE STATE OF CALIFORNIA**

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Order Instituting Rulemaking Regarding Policies,  
Procedures and Incentives for Distributed Generation  
and Distributed Energy Resources

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Rulemaking 04-03-017  
(Filed March 16, 2004)

**COMMENTS OF THE CALIFORNIA SOLAR ENERGY INDUSTRIES ASSOCIATION  
ON THE DRAFT DECISION ADOPTING POLICIES AND FUNDING FOR THE  
CALIFORNIA SOLAR INITIATIVE**

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## **BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA**

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### **COMMENTS OF THE CALIFORNIA SOLAR ENERGY INDUSTRIES ASSOCIATION ON THE DRAFT DECISION ADOPTING POLICIES AND FUNDING FOR THE CALIFORNIA SOLAR INITIATIVE**

#### **I. INTRODUCTION**

The California Solar Energy Industries Association (CAL SEIA)<sup>1</sup> applauds the Commission's quick action in regards to taking the formative steps necessary for the development and implementation of the California Solar Initiative (CSI). CAL SEIA plans to actively participate in the effort to construct a workable, long-term program which will encourage Californians to purchase, own and operate solar energy systems in ever increasing numbers. Pursuant to Rule 77.2 of the Commission's Rules of Practice and Procedure, CAL SEIA respectfully submits the following comments on the Draft Decision Adopting Policies and Funding for the California Solar Initiative ("Draft Decision") mailed to parties on December 13, 2005.

#### **II. SUMMARY**

CAL SEIA agrees with the Commission's restatement of the objectives of the existing Emerging Renewables Program (ERP) and the Self-Generation Incentive Program (SGIP); that is, "to add clean energy to peak demand resources, to reduce risk by diversifying the state's energy

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<sup>1</sup> The California Solar Energy Industries Association (CAL SEIA) is a 501 (c) (6) not-for-profit solar industry trade association which has represented companies and individuals involved in the solar energy industry in California since its inception in 1977. CAL SEIA's member companies include 70 licensed contractors and 24 manufacturers, as well as distributors, architects, engineers, consultants, and utilities specializing in the design, sale and installation of solar energy products and services in California.

portfolio, and to reduce the demand for transmission and distribution system additions.”<sup>2</sup> To these goals, CAL SEIA would add: “to augment increasingly constrained and costly supplies of natural gas through the utilization of solar thermal systems which displace the consumption of natural gas or electricity.” CAL SEIA commends the Commission’s inclusion of solar thermal in the CSI. We believe that the recognition of solar thermal technologies for water heating purposes is long overdue, particularly given the ubiquitous utilization of solar thermal throughout the world, with the conspicuous exception of the US.

CAL SEIA also supports these programs’ transformational structure, spurring increased cost-effectiveness and reducing reliance on incentives as the deployment of solar technologies increases over time. As we will discuss further, the timing and trigger mechanisms of incentive reductions deserve closer scrutiny in order to assure that a sustained, orderly and increasing deployment is achieved. Further, CAL SEIA agrees with the Commission’s recognition that the program may require modification from time to time, and is strongly supportive of the development and inclusion of modification mechanisms which can be implemented on relatively short notice based on real time market conditions and changes; obviating the need for timeliness in regards to updated program administrative data, and full transparency in terms of access to that data by program stakeholders.

### **III. THE PROPOSED DECISION SETS THE STAGE FOR A SUCCESSFUL PROGRAM**

CAL SEIA is largely in agreement with the proposed provisions of the CSI. Given that details of the Initiative elements are being formulated on a nearly real-time basis, we offer the following comments now as identification of critical topics which deserve additional discussion in the context of the proposed public meetings and workshops.

### **IV. COMMERCIAL AND EXISTING RESIDENTIAL BUILDINGS (CERB) PROGRAM**

#### **A. 2006: Transition Year**

CAL SEIA agrees with the provisions outlined in the Draft Decision (DD) to

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<sup>2</sup> DD at Pg. 4

transition the ERP and the SGIP into the CSI. We note, however, that a full year will pass before the “pilot” solar water heating program (SWHP) will take effect. We believe this period can and should be shortened to six or nine months. As the CSI Program details become better known during 2006, the effect of this later start date for the SWHP will manifest as a delay in making a purchase decision for a SWH system until 2007, with significant negative impacts on the market in 2006. We urge the Commission to consider an earlier start date for the SWHP if the administrative framework can be put in place to accommodate it.<sup>3</sup>

## B. Oversight

CAL SEIA supports the proposed bifurcation of the Oversight and Administrative functions. We believe this will engender improved communications and lead to timely adjustments to the program structure, should conditions indicate the need for such.

As the sole entity representing the solar contracting community, and indirectly our customers as well, we draw attention to the fact that these stakeholder groups have not for the most part had the same degree of influence over solar program direction as solar manufacturers have had in recent years. Specifically, in many cases the contracting community has lacked the necessary resources required to participate in high level meetings with state agencies, relying instead on occasional hearings to address issues. A successful going-forward program necessitates a communication structure with the oversight agency which allows for equal access for all program stakeholders. It is a reality that some elements of the CSI will be of great concern to contractors and their customers, yet may not be considered with the same degree of importance as other stakeholder groups. CAL SEIA’s contractor members are unique stakeholders; they are in direct contact with system purchasers, product manufacturers and program administrators on a daily basis. Unless this reality is considered, a skewed picture of program progress (and issue areas) may result. Nevertheless, it is important to note that CAL SEIA

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<sup>3</sup> CAL SEIA notes that the administrative framework, including policies, procedures and paperwork, for the former SB 1345 SWH grant program exists today at the CEC.

maintains close ties with other solar industry stakeholders, and works collaboratively to arrive at a united position on topics of mutual interest whenever possible.

**C. Administration**

1. CAL SEIA members have identified several issue areas regarding the timely receipt and processing of reservations. We believe this topic should be specifically addressed in the upcoming workshop proceedings.
2. Payment of invoices for system installations with correct paperwork is now reaching 90 days, with some variation between Program administrators. Given the monetary resources allocated for Program administration, a Program payables benchmark of 30 days should be established.
3. CAL SEIA agrees that one key function of the administrative activities should include real time posting of pertinent information in a readily accessible venue such as the internet. Information including remaining funds, recent decisions on rebate changes, system pricing, etc. is critical for stakeholders who need this type of quality information to make day to day operating decisions for their customers and companies.
4. CAL SEIA has a concern about certain market segments overshadowing others by the possibility of one sector absorbing rebate funds at a faster rate than others. CAL SEIA strongly believes in promoting parity among all sectors of the solar market (residential, commercial, etc.), and it urges the CPUC to take measures to safeguard against a potential for inequitable utilization of available funds by any one market segment by establishing a fair and reasonable basis for the allocation of funds. CAL SEIA encourages the CPUC to remain flexible and nimble in its ability to make adjustments and shift allocation of funds from one sector to another based on experience

from the program over time, should the need arise.

#### **D. Qualifying Technologies**

##### **1. System Size**

CAL SEIA believes that the maximum qualifying system size formula of “no more than 200% greater than existing load” is outdated and counterproductive. Instead, we advocate for an estimate of total annual kWh production which would be provided by the system provider to the system purchaser and included in the rebate reservation application. This estimate may be used to compare with measured kWh consumption, thereby maximizing the benefit of the incentive by alerting the purchaser to a realistic expectation of solar system performance as compared with their electricity consumption.

A provision should be made for system purchasers who plan to legitimately add load during or after the procurement of a system; an electric car purchase or a building expansion are good examples. The reservation application should include a rationale for systems sized to accommodate future load increases. This topic is self-policing under current net metering law; there is no advantage for a system user to become a net generator of electricity over a year’s time. PU Code 2827 allows for the taking of any such over-production by the serving electric service provider without compensation. Nevertheless, laws may change in the future. The over-arching Program objective should be to match the load, either current or future, and no more.

##### **2. Concentrating Solar Thermal Electric Technologies**

CAL SEIA is puzzled by the language in the DD on this topic. There is a huge potential market for concentrating solar thermal (and possibly high-temperature flat plate) technologies which produce heat for air conditioning (cooling) purposes utilizing absorption or other air conditioning technologies. There is an even more significant market for commercial and industrial

process water heating, including large scale multi-family residential water heating, and concentrating solar thermal as well as flat plate technologies are widely utilized in those applications, as noted in the DD, albeit mostly in other countries today.

In terms of electricity generation, however, we are aware of few opportunities for relatively small concentrating solar thermal electric generation systems, which can include troughs, dish stirling and concentrating PV technologies. Our understanding is that while small arrays of dish stirling or concentrating PV units are technically feasible, the most cost effective systems of these types are in the multi-megawatt range, usually exceeding 50 MW in total generating capacity; far larger than the 1 MW cap set forth in the DD. If, however, any existing technical or financial barriers to the utilization of site-based solar thermal electric generating technologies are addressed, CAL SEIA could support their inclusion in a state-based program.

In this proceeding however, we question whether the topic at hand is high temperature solar thermal technologies for heating purposes, which we strongly support, or high temperature solar thermal technologies for electricity generation. This area should be clarified.

### 3. **Solar Water Heating**

CAL SEIA commends the Commission for recognizing the value of solar water heating technologies, a recognition that exists seemingly everywhere else in the world except the US. The DD notes that it is a “natural fit”<sup>4</sup> for natural gas ratepayer funds to be used for solar thermal technologies which directly reduce the consumption of natural gas. CAL SEIA concurs, and notes that significant sums of natural gas ratepayer funds have been used in recent years to fund electricity generating projects. We believe this is a “two

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<sup>4</sup> At Appendix A, pg. 9

way street,” and that solar thermal should be viewed as the best way, after traditional energy efficiency measures, to preserve supplies of natural gas for the generation of electricity.

As a consequence, we are concerned about the language in the DD which indicates that CSI incentives for solar thermal water heating and associated cooling would be available “on a limited basis initially”<sup>5</sup> and in SDG&E’s service area only. The confinement of the program to a single geographic area would result in its availability to some Californians but not others, despite the fact that natural gas ratepayers throughout the state pay Public Purpose Surcharges. We can think of no reason why the geographic location of the proposed administrator would or should limit the program to that same area, unless there is some desire for “containment” of what CAL SEIA believes can and will be a popular statewide program.

We note that the DD refers to the 1980’s era CPUC-administered solar water heating program as an example of why incentives for solar water heating served then mainly to “increase the cost of the technology rather than to motivate sales.”<sup>6</sup> CAL SEIA maintains that this was a direct result of the incentive program structure, and not a failing of the technology. Properly installed, and in the case of those system types which require it, properly maintained solar water heaters have service life expectancies of at least 30 years. While the earlier CPUC solar water heating program structure did in fact lead to some increase in system costs, we note that a parallel effect occurred in the ERP in recent years, leading to a reduction in incentive levels, not an elimination of the program. It is an unfortunate fact that today, without incentives, solar systems of all types have limited niche markets, if at all.

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<sup>5</sup> At Appendix A, pg. 8

<sup>6</sup> At Appendix A, pg. 9

The DD indicates a preference for rebates based on a “system performance index for thermal output.” While CAL SEIA understands the reasoning for this preference, an alternative incentive structure based on a flat rebate amount for “passive” (non-pumped) systems, and a slightly higher incentive for higher performing “active” systems could contribute to a goal of a self-policing program, at least as far as system price and minimum performance levels are concerned. Other states are trending towards such a flat rebate structure with minimum performance standards as they develop solar water heating programs. We note that the SB 1345 SWHP administered by the CEC in the early 1990’s was based on a flat rebate, and we are not aware of any issues resulting from that program. CAL SEIA will provide additional information on this topic in the coming months, and urges that a workshop component be devoted to SWHP development.

In the workshop process going forward, CAL SEIA will provide ample evidence that properly structured incentive programs for solar water heating elsewhere are yielding impressive results in terms of energy generation and monetary savings. CAL SEIA strongly believes that a properly crafted solar water heating program can be very successful with minimal incentives, but that modest incentives are a necessity in order to build a market.

#### **4. SDREO as SWHP Administrator**

CAL SEIA supports the San Diego Regional Energy Office as the administrator of the “pilot” SWHP. In the course of administering the SGIP, SDREO received high marks from CAL SEIA’s member companies. We plan to work closely with Commission staff and SDREO in the coming months to help craft a successful program.

### **V. INCENTIVE LEVELS**

CAL SEIA supports the incentive levels set forth in the DD for new 2006 projects.<sup>7</sup>

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<sup>7</sup> At Appendix A, Section 4.6 Incentive Levels, pg. 14

We note that on December 15, 2005 the Commission determined to set the incentive level for projects already on the SGIP waiting list to \$3.00/Watt from the previously proposed \$2.80/Watt. CAL SEIA supports this change for wait list projects.

We draw attention to the proposed incentive level reduction trigger mechanisms. CAL SEIA is concerned that the proposed triggers insufficiently take into consideration numerous marketplace factors which play a significant role in system prices, and ultimately consumer motivation to purchase. We believe that, particularly given the duration of the proposed program, a much more dynamic evaluation model should be developed for the purpose of determining appropriate incentive reduction timing, which should take into consideration a number of factors beyond the passage of time and the amount of Megawatts funded. These factors should include, but may not be limited to:

- a. Labor costs
- b. Module prices
- c. Inverter prices
- d. Product availability
- e. Transportation costs
- f. Installing contractor's program administration costs
- g. Tax credits or other monetary incentives
- h. Utility rates

In addition, CAL SEIA believes that the Program Administrator(s) should provide as much advance notice of incentive level reductions as possible, preferably 3 months or more. Significant marketplace disruptions occur when a last minute scramble occurs preceding an incentive reduction. Adequate notice will enable program participants and administrators to adequately plan for deadlines. We urge that a determination regarding the trigger for a reduction be made well in advance of the set date, and that the Program Administrator err on the side of maintaining incentive levels rather than reducing them, given the extraordinary difficulties associated with re-starting a languishing program resulting from pre-mature incentive reductions.

If, as hoped, a trigger mechanism allowing for a 3 month advance notice is adopted by the Program Administrator, there should exist some means of delaying an announced reduction based on unanticipated events. A delay in a previously announced reduction

would result in little if any disruption. A “built-in” means for maintaining levels rather than reducing them on schedule should be developed.

In the short term, CAL SEIA notes that PV system pricing in California is largely driven by world PV commodity-type pricing influences. On the other hand, the vision of the CSI is to engender a world class solar energy market in California. In the early years of the Program, prices may not reduce in a predictable manner. We note that a cumulative doubling of volume over time has lead to a historical 20% system price reduction trend, which is applicable to the worldwide market – not to any region’s share alone. Nevertheless, California’s market is the largest in the United States.

## **VI. TREATMENT OF FEDERAL TAX INCENTIVES**

CAL SEIA draws the Commission’s attention to the issue of low-cost financing, in that the use of such may affect the borrower’s ability to access the Federal Investment Tax Credit. In addition, we believe that the Commission and CEC staff should include in the proposed workshop topic list a discussion of how other state, federal, or financial market monetary considerations should influence the Program design.

## **VII. ENERGY EFFICIENCY**

CAL SEIA supports in principle the attention to energy efficiency which is set forth in the DD, however we have significant concerns about tying the accessibility of solar system rebates to any other industry’s ability to perform. Energy efficiency improvements are an important part of any decision to utilize solar energy technologies, and the Commission correctly notes that by incorporating feasible energy efficiency measures, the added solar energy system can be optimized for cost-effectiveness. The “waterfall” approach is applicable in this regard; least cost measures should be implemented first, transitioning to higher cost measures as the goal of zero dependence on conventional energy sources is approached. The “Zero Energy Homes” concept embodies this principle: first, all feasible energy efficiency; next, solar water heating; finally, PV to make up the difference. In this way, the energy consumption of a structure is optimized. Nevertheless, CAL SEIA remains focused on the goal of installing 3,000 MW of solar energy capacity, and the goal of the CSI should be the same.

In regards to the means by which energy efficiency is made a part of the CSI, CAL SEIA submits several points for consideration:

1. Requiring existing residential customers to have an energy audit conducted on their homes would not necessarily result in the implementation of any recommended energy efficiency measures, and could reduce interest in a solar energy system investment by creating a well-meant hurdle. We suggest a phase-in approach to this proposal, which could include a demonstration that a discussion about feasible energy efficiency measures had taken place with the prospective purchaser.
2. Benchmarking and auditing of commercial buildings' energy usage is very complex. In particular, separating out which energy goes for what application can be quite difficult. The cost of performing such an audit should be considered as it relates to the willingness of a prospective system purchaser to make an investment.
3. The infrastructure necessary for widespread requirements for energy efficiency inspections may not exist. Reportedly, solar programs in other states have experienced significant issues as a result of requiring an energy efficiency audit associated with the acceptance of a rebate reservation. An alternative mechanism for ensuring energy efficiency could include a checklist approach which would identify areas where improvement is feasible. In addition, the concept of an increased rebate, perhaps an additional 10% above and beyond the solar system rebate, resulting from the actual implementation of feasible energy efficiency measures could be explored.
4. The existing California Title 24 Building Energy Efficiency regulations have established standards regarding both residential and commercial building design. Requiring any additional demonstration of energy efficiency beyond that required by existing new construction regulations and enforced in the

construction permitting process may be contentious, and will be duplicative.

## **VIII. PAY FOR PRODUCTION**

While CAL SEIA appreciates the value of a Pay for Production, or Performance Based Incentive (PBI), and recognizes that future incentives structures may well include such a Program component, it is not clear to CAL SEIA how widespread, if at all, the issue of under-performing systems may be. We urge the Commission to provide current information which can help substantiate and quantify this issue. The difficulty in the re-design of the Program to move from a capacity-based to a performance based incentive should not be underestimated, particularly given the lack of customer uptake on the existing PBI Program element. We submit the following for consideration:

1. CAL SEIA believes that a Pay for Production mechanism should apply to larger systems only, and should be carefully considered in the Workshop proceedings.
2. Requiring an estimated system performance document in terms of kWhs produced per year, in addition to a system output meter, may be adequate.
3. The cost of accounting for solar system production and sending compensatory monthly, quarterly or yearly checks based on reported production could be significant from an administrative perspective.
4. An alternative mechanism utilizing customer reporting of system production information should be considered if a decision is made to move towards a PBI structure.
5. A “hybrid” approach to PBI warrants consideration, given that many prospective purchasers may be less motivated by a modest income stream over time, as opposed to an up-front cash rebate. CAL SEIA notes that if a system performs well in its first year of operation, it is likely that it was

installed properly and that all of its components are functioning correctly.

A PBI structure which combines a significant up-front rebate with later compensation based on system performance may accomplish the key objectives of a PBI while retaining most of the value of an up-front rebate.

## **IX. EDUCATION AND OUTREACH**

CAL SEIA supports the DD's proposed elements regarding Education and Outreach. We draw the Commission's attention to the topic of training for solar energy workers and those interested in entering the workforce. CAL SEIA believes that a training component of outreach is essential to attract the additional skilled workers who will be needed to make the CSI a success over the long term. CAL SEIA will participate in the workshop process and bring several suggestions to the table.

## **X. RESIDENTIAL NEW CONSTRUCTION COMPONENT**

CAL SEIA supports the Commission's New Construction component, however we are concerned that as proposed individual homebuilders who construct less than 50 homes per year may not be able to participate. In addition, many individuals contract to have their own homes built for them. CAL SEIA believes that a program provision should be developed to accommodate these prospective solar system owners.

## **XI. RESERVATION FEES**

CAL SEIA asks that an analysis of reservations be undertaken which would help quantify the magnitude of reservations in the ERP and the SGIP which do not follow through to actual system installations. We believe a definition of the extent of the problem, if it in fact exists, is required before CAL SEIA takes any position on this issue.

## **XII. CONCLUSION**

CAL SEIA once again commends the Commission for identifying and addressing many of the key issues and topics required for the development and implementation of a

successful California Solar Initiative. We hope that our comments herein can help serve as a partial basis for the public meeting and workshop process going forward.

Respectfully submitted,

/s/ Les Nelson

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Dated: January 3, 2006

**CERTIFICATE OF SERVICE**

I, Les Nelson, am over the age of 18 years and employed in the City of Rancho Santa Margarita in the County of Orange. My business address is 30012 Aventura, Ste. A, Rancho Santa Margarita, CA 92688.

I hereby certify that I have this day served a copy of

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on all known parties to R.04-03-017 via email with document attached, pursuant to the electronic protocols adopted for R.04-03-017.

Executed on January 3, 2006, at Rancho Santa Margarita, California.

/s/ Les Nelson  
Les Nelson