

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

Order Instituting Rulemaking Regarding  
Policies and Rules for California Solar  
Initiative, the Self-Generation Incentive  
Program and Other Distributed  
Generation Issues.

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Rulemaking 06-03-004  
(Filed March 2, 2006)

**COMMENTS ON STAFF PROPOSAL ON SINGLE FAMILY HOMES  
BY A WORLD INSTITUTE FOR A  
SUSTAINABLE HUMANITY**

SUSAN E. BROWN, Esq.  
A W.I.S.H.  
P.O. BOX 428  
Mill Valley, Ca. 94942  
415-259-6316  
Fax 415-381-8146

# **COMMENTS ON STAFF PROPOSAL ON SINGLE FAMILY HOMES BY A WORLD INSTITUTE FOR A SUSTAINABLE HUMANITY**

## **INTRODUCTION**

A World Institute for a Sustainable Humanity (A W.I.S.H.) is appreciative of the opportunity to provide comments on the Staff Proposal on Low-Income Incentive Program for Single-Family Homes under the California Solar Initiative (CSI). Initially, we offer some general observations before addressing the specific questions posed by the Commission in Appendix A to the April 17 proposal. First, it is important to note the grave lack of precedents nationally on any meaningful scale for low income solar installations, be they photovoltaic (PV) or domestic hot water.

A. W.I.S.H. further understands the significant challenges that the Commission faces in terms of definitions under Assembly Bill 2723. If it is correct from utility analyses that there are only 50,000 CARE-eligible low income households in all three investor utilities' territories that would meet the Pavley bill limits – and far fewer under AB 2723 alone--, then it is critical to amend the definition, as pending legislation seeks to do. We also stress that the low income portion of the Solar Initiative should serve the truly low income. Below we elaborate on other critical considerations, such as : loans versus grants or subsidies; payback period for life of the measures; whether solar devices should be installed before a house is fully weatherized under low income energy efficiency (LIEE); leveraging with other programs and dollars; bulk purchases of PV and solar water heaters, where permitted; use of community based organizations in program delivery; and time of use (TOU) rate issues.

If all of these issues are not carefully considered, there is the potential that the well-intended Solar Initiative for low income will not benefit low income ratepayers at all. In

fact, A W.I.S.H. believes there is a likelihood of causing individual low income customers harm, though we strongly support solar technologies overall.<sup>1</sup>

**I. A W. I. S. H. SETS FORTH GENERAL PRINCIPLES THAT SHOULD GUIDE THE SOLAR INITIATIVE FOR LOW INCOME CUSTOMERS**

In a recent meeting of stakeholders hosted by Pacific Gas & Electric (PG&E) on the Multi-Family Low Income portion of the Solar Initiative, A W.I.S.H. presented a set of principles that we believe should guide proposals, in general. Even though they were developed in the multi-family context, they are equally applicable here, as modified:

1. The low income Solar Initiative must truly serve and benefit low income Californians (nearly 28% of all electric customers according to estimates) and LIEE/CARE-eligible ratepayers (Pavley bill definitions are problematic).
2. Low income residents must be helped with energy affordability, not hurt, by any solar installations including TOU considerations which may adversely affect seniors at home, the unemployed, those with small children, the disabled, etc.
3. There should be seamless coordination between the Commission's LIEE program and the low income Solar Initiative, including ways to leverage measures and funds (i.e., solar water heaters not permitted under the CSI).
4. There need to be legally enforceable agreements or lien mechanisms with landlords/owners to protect and reclaim the public investment for the life of the measure; such agreements are common in the weatherization context.
5. Paybacks should be calculated over the life of the measure, not a narrow and predefined period.
6. All other feasible energy efficiency measures should be installed prior to a solar installation; it makes no sense to install expensive solar units without basic weatherization first.
7. There should be leveraging with other funding sources and entities – local, state, federal and private for maximum effectiveness --, particularly with CBOs and LIHEAP providers with contacts with low income communities including language minority, immigrant and other hard-to-reach groups.

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<sup>1</sup> Time of use issues are particularly troubling, and A W.I.S.H. trusts that the attempt underway to correct the unintended TOU consequences in the overarching Solar Initiative will also be incorporated into the low income CSI.

8. Along with leveraging other sources, installation of solar technologies through community based organizations should provide job skill development opportunities for low income individuals in “green” technologies as specified in Public Utilities Code Section 327(a)(3).
9. Solar water and other devices should be utilized since domestic hot water can account for 40% of a household’s energy use.
10. An RFP should issue for bulk provision of solar equipment to get the best volume discount.
11. The Solar Initiative should foster sustainability, energy efficiency, and greenhouse gas reduction.

## **II. OVERARCHING CONCERNS OF A W.I.S.H. WITH RESPECT TO THE SINGLE FAMILY SOLAR PROPOSAL**

Only ten percent of CSI moneys are earmarked for low income ratepayers, even though estimates by the preliminary KEMA report indicate that nearly 28% of all electric customers are LIEE eligible. Under the Pavley bill definitions, households with incomes up to \$126,000 would be eligible, according to the Staff Proposal at p. 2. It is imperative that the Solar Program for low income truly serve the LIEE eligible population. If necessary, A W.I.S.H. believes that the Commission should even delay the program if required to amend the Pavley income eligibility as several pending legislative bills seek to do.

It is also critical to understand the barriers and challenges that truly low income households face with anything but a 100% subsidy or grant program for solar installation. The assumption of attainable loans does not take into account poor credit histories, immigrant status including lack of documentation, literacy and language impediments, and institutional mistrust, among others. The stated program goal of decreasing electricity use and electricity bills without increasing monthly household expenses

virtually requires a grant program for low income. Shared savings programs with third party investors may also be possible.<sup>2</sup> Cash up front may not be wise since low income necessarily expend available cash for basic needs first. The Commission may also want to consider a statewide third party vendor that supplies equipment through a voucher system. The unintended consequences of a loan versus a grant approach are that few low income are in a position to participate or would want to, that they may not attain energy savings especially with the time of use considerations we discuss below, and, in the worst scenario, low income customers could end up losing their homes if they default on loans.

A basic tenet of the Solar Initiative for low income should be to install solar measures on homes that have maximized their energy efficiency potential, whether for space heating, water heating, or by first installing the most efficient lights and appliances, or will be weatherized by a date certain from the solar installation. It is critical, however, that weatherized mean all energy efficiency measures (heating/cooling, base-load, and water/energy combination) are installed. This warrants a LIEE program change that mandates the coordination and integration of LIEE gas and electric dollars with the United States Department of Energy Weatherization Assistance funds, the Low Income Home Energy Assistance Program (LIHEAP) funds and others on a level and scale not currently in practice in the State. The average cited of \$1500 a unit for weatherization pales compared to whole house weatherization in other states, such as Washington and Oregon, that invest \$5000 a household. As A W.I.S.H. discussed at length in Comments

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<sup>2</sup> Shared savings examples would be for energy service company (a solar retrofit company in this case) to front the money and install solar units using the roof tops of low income households. The amount of money generated by net metering would go to the energy service company. The low income household would keep the savings from a reduction in energy bills. Variations on this concept are possible.

filed in the low income energy efficiency proceeding (Rulemaking 07-01-042),<sup>3</sup> leveraged dollars not only maximize energy savings and reduction in greenhouse gases, but they are also cost-effective since ratepayer dollars subsidize only part of the weatherization expense.

There are also administrative barriers currently in place that need to be addressed and remedied before serious solar retrofits are applied. For example, the staff report in Appendix A alluded to a two year payback period of measures as a minimum time for cost effective weatherization. A W.I.S.H. strongly urges a payback period over the projected life of the measure.

The cost-test associated with solar, as well as energy efficiency, installations for low income should be a societal test given the realities of greenhouse gas emissions and the effect of carbon on society that is imposing, and will continue to impose, costs many orders of magnitude beyond what is spent for energy efficiency and renewable energy. A W.I.S.H. discussed some of those societal costs in Opening Comments on LIEE Program Goals and Objectives in R.07-01-042 at pp. 6 - 9.

Community based organizations that currently deliver comprehensive weatherization should be considered the primary work force to be trained to install solar technologies, as well as educate the recipient households on solar technology and maintenance. They are in the community for the long haul and can help solve after-installation maintenance issues and problems that will undoubtedly occur. As we stressed in Comments in R.07-01-042, however, the LIEE program should be coordinated with

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<sup>3</sup> A W.I.S.H. Opening Comments on LIEE Program Goals and Objectives at pp . 2, 9.

the Solar Initiative for some of the reasons discussed above, including job skill development in low income communities as the Public Utilities Code provides.<sup>4</sup>

An RFP for bulk provision of solar equipment is necessary to get the best volume discount. This RFP should be coordinated with the non-low income CSI program for low income to benefit from the scale of the larger program.

Domestic hot water can account for 40% of a household's energy use. Though it is estimated that only 6% of LIEE-eligible households have electric water heating, that number is still approximately 200,000 households in California! Additionally, solar water heating for natural gas water heaters reduces the amount of natural gas used for heating water and will reduce the occupant's bill, but also reserve more of the gas supply for other purposes. Again, leveraging with the LIEE, LIHEAP and other programs is imperative to maximize solar water heater installations.

The low income population will be disproportionately affected by time of use considerations, although we understand the desire to more effectively align consumption with costs. Generally speaking, a greater percentage of the population is unemployed, people on fixed incomes at home, disabled, or those home with children. They are far less likely to have appliances that allow for a delay in the time of use. Thus, the unintended consequences of time of use is that it could *increase* energy costs for low income. We understand that time of use issues also plague the non-low income Solar Initiative and trust that those issues will be addressed before-the-fact.

### **III. A W.I.S.H. RESPONDS TO SPECIFIC QUESTIONS POSED BY THE COMMISSION ON PROGRAM REQUIREMENTS, INCENTIVE STRUCTURE, ADMINISTRATION AND EVALUATION**

#### **A. Are there other incentive programs that can be used as a model?**

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<sup>4</sup> See Public Utilities Code Section 327(a)(3).

Due to the overall poor credit history or access of low income households to credit for reasons including immigrant status, lack of documentation, lack of income verification, literacy and language barriers, institutional mistrust, and lack of discretionary fund to work with, financial incentives in the context of partial subsidies for low income households to spur further investment on their part do not work effectively. Full subsidy programs, fronting money by a third party with shared savings coming from reduced energy bills, or other similar approaches are recommended by A W.I.S.H.

**B. Owner/occupant turnover on the house may result in a non-low income owner of the PV system. To what extent is this a problem and how should staff address this risk?**

A lien could be placed on the low income home for the value of the grant amount of the solar installation. At the time of sale, the amount must be paid back to the program administrator (i.e., the utility) for all paperwork for sale of the home to be completed.

**C. Does the proposed program adequately incorporate energy efficiency and other energy management strategies?**

A W.I.S.H. supports the unit being maximized for energy efficiency before solar is installed. This will require installing measures and using techniques not currently in practice throughout the LIEE program. It will also require using a broader societal cost test to allow the greatest number of measures to be installed for heating, cooling and baseline. While insulating and air sealing the home may not make a particular solar installation more efficient, it will improve the efficiency of the home and energy that can be produced for the grid. Clearly, this requires coordination with the LIEE program, including leveraging of weatherization dollars.

**D. The proposal requires an applicant to take LIEE service within one year of receiving a solar incentive if eligible. How can the program ensure this?**

LIEE should be installed first, or alternatively, use the past lists of LIEE recipients over the last five years, assuming installation of full measures, as a priority for service while the Commission buys time to get more homes weatherized and energy efficient.

**E. The proposal requires that the maximum system size be based on an annual load estimate that reflects the deployment of certain cost-effective energy efficiency measures. How should the annual load impact of these energy efficiency measures be estimated?**

A W.I.S.H. is still reviewing this issue.

**F. Given LIEE lead times, is it appropriate to require installation of LIEE measures within a year?**

No, LIEE should be done first, except as we specify above in D. There is no leverage if a \$15,000 solar investment is installed and a \$1500 energy efficiency investment ends up missing the timeline. See our rationale above about using past LIEE data bases as a starting point for solar.

**G. For non-LIEE eligible participants, are there additional approaches to incorporating energy efficiency and other energy management strategies?**

We do not support non-LIEE households being included in the low income CSI program. They should come under the broader Solar Initiative, and the Commission should look for creative financing for solar for those non-LIEE households that wish to participate but are still income-challenged.

**H. Is the proposed incentive structure the best option for the low income strategy?**

No, please see our comments above regarding eligible LIEE households and grants.

**I. Should there be incentives which fully subsidize the PV system for certain households and/or for systems of a certain size?**

Yes, for all LIEE participating households.

**J. Are the incentive levels too high for moderate income households?**

No, because due to a sense of urgency regarding greenhouse gas emissions, it is still a cheaper alternative in a societal cost context than the status quo.

**K. How should the proposed incentive levels of structure be altered, if at all, to reflect the requirement that households receiving incentives under this program go on TOU rates?**

Low income households do not have the option to respond to financial incentives if it requires them to come up with capital. They also can rarely respond to behavioral changes, as our comments on TOU note. Most are very captive in their homes and function accordingly.

**L. Are the proposed incentive levels sufficient to motivate participation by the targeted population?**

Not the LIEE eligible population for the reasons we have discussed above.

**M. How likely is it that eligible households could obtain loans to help pay for the PV system? Is it realistic to assume a 25-year term for relatively small loans?**

Please see our comments above regarding loans and LIEE eligible households. Also, please consider that many fixed-income LIEE households consist of seniors, that the LIEE population moves with greater frequency, and that they have virtually no discretionary income.

**N. Are there alternative ways to categorize these incentive levels?**

Please see our responses above on incentives.

**O. Are there other funding options we should consider?**

Local municipalities could float bonds and finance these measures, with the proper incentives, as long term financial investments and strategies to reduce pollution and provide dependable renewable power sources.

**P. What innovative means will further improve performance or reduce the costs of installation for these populations?**

Statewide installation costs could be minimized by bulk purchases of equipment, one statewide installer entity that uses both the LIEE and DOE/LIHEAP weatherization network and other sub-contactors to install, thereby building capacity and training.

**Q. Is the staff proposal regarding who should administer the program acceptable? Should just one manager run the program?**

We believe one manager should run the program, but that it should be coordinated with existing LIEE and DOE/LIHEAP networks for leveraging and efficiency. For example, if solar water heaters are not permitted under the low income CSI, then perhaps they could be installed with other dollars. Also, we recommend full weatherization first, as discussed above.

**R. Is this program apt to be successfully delivered within 12 months in the three IOU territories?**

No, milestones should be established to get a strong start within the 12 months, but an 18 month timeline is more realistic.

**S. If the definition of low income in AB 2723 is redefined to include CARE and LIEE participants, should the Commission consider program delivery through the existing CARE/LIEE structure?**

Yes. There would need to be a strong effort on capacity building, training and technical assistance. The CBOs could supplement their staff efforts by subcontracting with local private sector businesses when necessary. We envision a role for utilities and the existing CARE/LIEE delivery system that is able to leverage other dollars through the

network of community service providers. (See Public Utilities Sections 327(a)(1) & (2))

The flaw in the current system is that it may permit cream-skimming by some contractors to the extent that less than full measures are installed, and it may not maximize leveraging by those entities able to access other installation dollars, be they Community Development Block grants, USD, home rehabilitation dollars, etc. Again, the program should be carefully coordinated with LIEE and program dollars should create synergies.

**T. Is the program budget per IOU appropriate? If not, what evidence supports a more appropriate split?**

The split should be calculated, or recalculated, by looking at where LIEE eligible households reside and using that formula for low income Solar Initiative fund distribution.

**U. Are the proposed overhead costs for managing the program, marketing and outreach, and evaluation correct?**

Although everyone wants to see taxpayer and ratepayer dollars maximized on direct installations, one has to recognize the reality of administrative costs on start-up programs and new technologies. Creating an artificial and lower limit on administration may be counter-productive. Setting performance goals that get California where it wants to be with respect to solar installations should be the primary driver. Subcontractors should have discretion – with strong oversight throughout the process by a third party – to meet these performance goals.

**V. Are there additional models for administration that should be considered?**

A W.I.S.H. has not yet had time to review the utility administration proposal nor confer with other stakeholders, including State entities.

**W. What metrics or outcomes would indicate that the program is “successful”?**

The program would be successful if LIEE/CARE eligible households were participants in the program and the full budget for low income solar were expended within the allotted time frame.

**CONCLUSION**

For the reasons set forth above, A W.I.S.H. urges that its principles be incorporated into any decisions regarding the Solar Initiative for Low Income to ensure that single low income households are well-served and not subjected to unintended consequences that could harm instead of assist them. We also strongly support the Solar Initiative concept of providing more renewable energy sources to Californians, including generating energy for the grid, but believe that to benefit low income the CSI will have to be carefully implemented as we describe.

Dated: May 11, 2007

Respectfully submitted,

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Susan E. Brown  
A W.I.S.H.  
P.O. Box 428  
Mill Valley, Ca. 94942  
(415) 259-6316  
[sebesq@comcast.net](mailto:sebesq@comcast.net)

**CERTIFICATE OF SERVICE**

I, the undersigned, hereby declare: \_\_\_\_\_

I am a citizen of the United States of America over the age of eighteen years. My business address is P.O. Box 428, Mill Valley, Ca. 94942.

On May 11, 2007 I caused service by electronic mail and/or U.S. mail of the original attached:

**COMMENTS ON STAFF PROPOSAL ON SINGLE FAMILY HOMES**

**BY A W.I.S.H.**

Be made on the parties on the service list for Rulemaking 06-03-004, as it was found on the CPUC'S website on May 11, 2007.

I declare under penalty of perjury that the foregoing is true and correct.

Dated in Mill Valley, California, this 11<sup>th</sup> day of May 2007.

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Susan E. Brown  
A W.I.S.H.  
P.O. Box 428  
Mill Valley, Ca. 94942  
(415) 259-6316  
[sebesq@comcast.net](mailto:sebesq@comcast.net)