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May 24, 2001

TO: ALL SUNEARTH CALIFORNIA CUSTOMERS

RE: SOLAR RATING AND CERTIFICATION CORPORATION (SRCC) STANDARD
OG-300 SYSTEM REQUIREMENTS FOR CEC REBATE ELIGIBILITY

The California Energy Commission (CEC) rebate for solar domestic water heating systems does not come gift wrapped. Eligible systems and equipment must conform to stringent Solar Rating and Certification Corporation (SRCC) Standard OG-300 design, installation, labeling and warranty requirements. The CEC Solar Energy Program Element Guidebook, Solar Energy and Distributed Generation Grant Program, issued in May 2001, spells out additional license, permit, warranty and application requirements. Please read this information very carefully. The documents may be seen at:

www.consumerenergycenter.org/solaranddg/documents.html

SRCC Standard OG-300 integrates the results of collector (OG-100) and system tests and evaluations against minimum standards of system durability, reliability, safety and operation; as well as factors affecting total system design, installation, maintenance and service. At this time the SRCC does not certify commercial systems. Standard OG-300 applies only to residential solar domestic water heating. The SRCC OG-300 certification requirements may be viewed at www.solar-rating.org

SRCC Standard OG-300 essentially creates **a system specification**. Systems must be designed, installed, maintained and warranted in accordance with schematic drawings, manuals and procedures developed by the “Supplier”, or manufacturer. There are additional mandatory requirements for component and system labels. In short, there is much here that may be new to California contractors that have only installed freeze recirculation systems in the past.

SunEarth has posted the requirements for our OG-300 certified systems at www.sunearthinc.com. Currently we have three systems that are appropriate for installation under the CEC rebate program. These include the Solaray closed-loop glycol system and the CopperHeart ICS and SunSiphon thermosiphon systems. The Solar Energy Factor (SEF), installation requirements and warranty statement for each system are posted on the web site. The SunSaver, our open-loop OG-300 certified system, is only approved for installation in tropical and semi-tropical climates and may not be installed in California.

Please review our manuals, labeling requirements, and freeze protection methodology **VERY CAREFULLY**. Each system must be installed per SunEarth’s written instructions. Failure to follow the procedures and methods outlined in the manuals can result in disqualification for CEC rebates, void SunEarth’s warranty coverage for specific

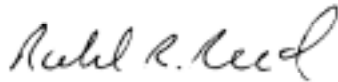
components or lead to immediate decertification as an approved SunEarth OG-300 system provider.

SRCC Standard OG-300 is intended to bring manufacturers, distributors and contractors together to improve the design and installation of solar water heating systems. As long as the basic requirements of the certification are not compromised, SunEarth will entertain reasonable design and/or material changes submitted by contractors. Requests must be **in writing**, sensible and include detailed drawings if applicable. Please submit requests to SunEarth Inc, Attention OG-300 Value Engineering. Accepted changes will be posted on the web site.

If this process appears intimidating, I understand your trepidation. The first time I took a look at Standard OG-300 requirements in the early 1990's I was overwhelmed. Since then I've grown to appreciate most, if not all, of the provisions. Please note that nothing requires you to participate in the CEC rebate program or conform to OG-300 standards. If you wish to install outside of the CEC program that is fine with us. SunEarth's warranty coverage, however, specifically excludes freeze damage for any reason.

Please carefully review the attached comprehensive White Paper that covers most of the novel CEC program requirements. If you have specific questions regarding either SRCC Standard OG-300 or any SunEarth product or system please do not hesitate to contact Josh Plaisted, Leslie Plett, or myself.

Sincerely,
SunEarth Inc.

A handwritten signature in cursive script that reads "Rick Reed".

Rick Reed
President

RR:sf

What SB1345 Means for Solar Retailers & Contractors

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Introduction

As most California solar contractors now know, the California Energy Commission (CEC) has established a \$750 state rebate for the installation of SDHW systems (Solar Domestic Hot Water) pursuant to the passage of Senate Bill 1345. You may, however, be unaware of the standards, rules and administrative requirements that must be met in order to qualify for the grant money. The purpose of this white paper is to run through these requirements step by step and to familiarize you with SunEarth's qualifying products and systems.

Qualifications For SB1345 Grant Program

The SB1345 grant is unlike past state and federal tax credit programs. Tax credits historically have been based on a simple percentage of the system cost. The CEC grant, however, is a flat rate rebate of \$750 that is awarded only if the following stipulations are met:

- Systems must be certified under Solar Rating & Certification Corporation (SRCC) Standard OG-300 and carry an SEF (Solar Energy Factor) greater than 1.4 for units with supplemental electric backup water heaters and greater than 0.8 for units with supplemental gas backup.
- Systems must carry a full 3-year warranty that includes all parts and labor.
- Building permits must be pulled for each installation.
- Systems must be installed after January 1, 2001.
- The contractor must hold either a C-46 or C-53 license.

What Is The SRCC OG-300 Certificate?

Although most of you are familiar with SRCC Standard OG-100, which is a collector rating protocol, you may not be familiar with OG-300. SRCC OG-300 rates, evaluates and certifies complete residential solar water heating systems. OG-300 includes protocols for rating active pumped systems, ICS units and packaged thermosiphon systems. In addition to the OG-100 collector rating, OG-300 will test the R-value of the solar storage tank as well as the effectiveness of any heat exchanger in the system. With the performance values of all the individual components in hand, the SRCC runs computer simulations (similar to F-chart) to predict the output of the complete solar system. This thermal output is expressed in terms of the Solar Energy Factor (SEF). The SEF provides a rating similar to the energy factors developed for conventional gas and electric water heaters.

Typical electric water heaters have energy factors (EF) of 0.90, which means that 90% of the energy you put into it ends up as hot water. The CEC grant program requires that a

solar system placed on such a typical water heater achieve an equivalent energy factor of 1.40 which means the solar system has effectively upped the efficiency of your water heater by 50% (140%-90%). This equivalent energy factor of 1.40 is defined as the SEF.

Since typical gas water heaters suffer high flue losses, their energy factors hover around 0.60. This means that for every 100 BTU's that you burn in the unit, only 60 BTU's go into hot water at the taps. When solar is placed on such a typical gas water heater, the CEC program requires that the systems have an effective energy factor or SEF of 0.80.

Because the SEF is dependent on many items such as the collector (s) model, efficiency and area, the R-value of the tank insulation and heat exchanger effectiveness, each OG-300 certificate pertains to a particular selection of these components. Often a single OG-300 certificate will contain a specific storage tank, controller, and pumping package and display a variety of SEF's for different collector models. An example of this is shown below in figure 1 for a PV pumped option of our closed-loop SolaRay system. Although you cannot read the table at the top, it displays the SEF's for all of our 4' x 10' model collectors (Empire, Imperial, SunWise) in both painted and chrome absorbers.

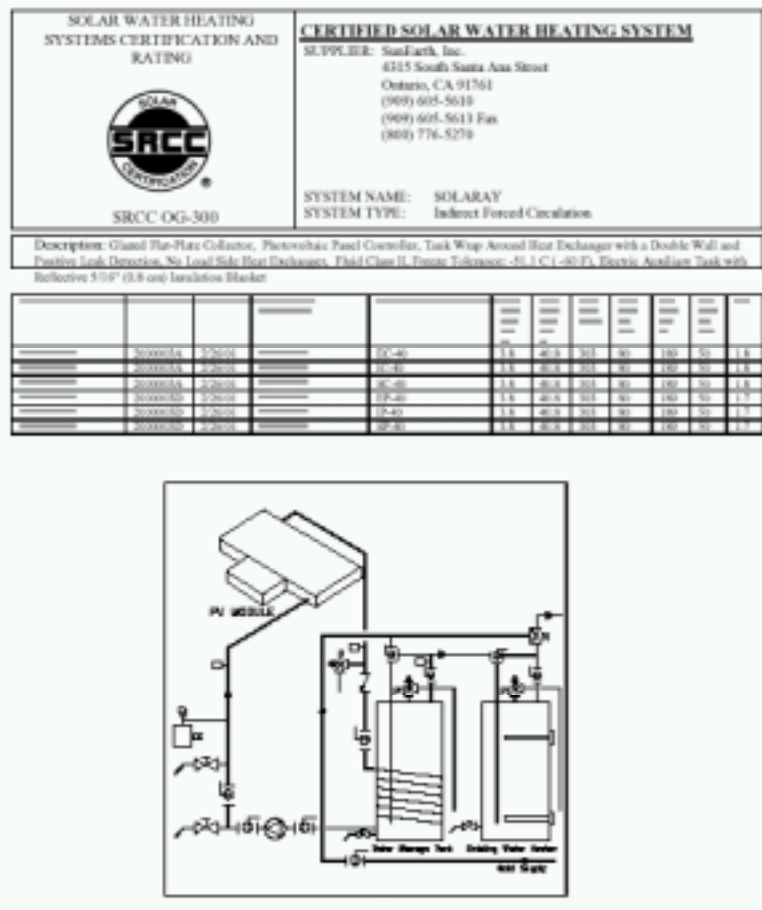


Figure 1. SRCC certificate for 2-tank version of SolaRay system with PV pumping option.

Since each OG-300 certificate prescribes the specific type of components used to arrive at the calculated SEF, the system you install must contain these exact components. For instance, if the certificate is based on a Ruud/Rheem solar tank with an integral double-walled heat exchanger, you may NOT substitute another heat exchange tank in it's place! Similarly, if the certificate calls out for a SunEarth model EP-40 collector, you may NOT use a 4' x 10' Radco painted collector (quite obvious, but we had to say it)! However, there are some allowable substitutions such as the use of a Taco 006 pump in place of a Grundfos UP15-42F, or a Delta-T control in place of a Goldline GL-30-LCO. Please check each SunEarth manual for allowable substitutions of components or contact us directly to see if the substitution you desire is allowable.

What Types of SunEarth Systems Are SRCC OG-300 Rated?

SunEarth currently holds more SRCC OG-300 ratings than anyone else in the world! For passive systems both the CopperHeart and SunSiphon systems are rated with either gas or electric supplemental water heaters. Our Solaray closed-loop glycol systems is available with either AC or PV pumping options and also rated with both supplemental gas or electric backup. Below you will find a full listing of all SunEarth's OG-300 certificates under each system type. Please note that some system permutations do not meet the CEC program requirements of an electric SEF of 1.4 or gas SEF of 0.8. The systems that do not meet the SB1345 requirements are highlighted in red. Although the complete list is shown below, a continuously updated list with plumbing diagrams is available on the web at www.sunearthinc.com.

SunSiphon - Thermosiphon

| SYSTEM | SEF | COLLECTOR(S) | TANK(S) | BACK-UP |
|---------------------|------------|--------------------------------------|-----------------------|-----------------|
| EPGX116-64-2 | 1.9 | 2 - EP-32, OR IP-32, OR SP-32 | EDWARDS LX-440 | ELECTRIC |
| EPGX116-80-2 | 2.1 | 2 - EP-40, OR IP-40, OR SP-30 | EDWARDS LX-440 | ELECTRIC |
| EPGX48-21-2 | 1.2 | 1 - EP-21 OR SP-21 | EDWARDS LX-180 | ELECTRIC |
| EPGX48-24-2 | 1.3 | 1 - EP-24, OR IP-24, OR SP-24 | EDWARDS LX-180 | ELECTRIC |
| EPGX48-32-2 | 1.4 | 1 - EP-32, OR IP-32, OR SP-32 | EDWARDS LX-180 | ELECTRIC |
| EPGX80-116-63-2 | 1.8 | 3 - EP-21 OR SP-21 | EDWARDS LX-305 | ELECTRIC |
| EPGX80-40-2 | 1.5 | 1 - EP-40, OR IP-40, OR SP-40 | EDWARDS LX-305 | ELECTRIC |
| EPGX80-42-2 | 1.5 | 2 - EP-21 OR SP-21 | EDWARDS LX-305 | ELECTRIC |
| EPGX80-48-2 | 1.6 | 2 - EP-24, OR IP-24, OR SP-24 | EDWARDS LX-305 | ELECTRIC |
| EPGX80-63-2 | 1.8 | 3 - EP-21 OR SP-21 | EDWARDS LX-305 | ELECTRIC |
| EPGX80-64-2 | 1.8 | 2 - EP-32, OR IP-32, OR SP-32 | EDWARDS LX-305 | ELECTRIC |
| EPGX116-63-2G | 1.0 | 3 - EP-21 OR SP-21 | EDWARDS LX-440 | GAS |
| EPGX116-64-2G | 1.0 | 2 - EP-32, OR IP-32, OR SP-32 | EDWARDS LX-440 | GAS |
| EPGX116-80-2G | 1.1 | 2 - EP-40, OR IP-40, OR SP-30 | EDWARDS LX-440 | GAS |
| EPGX48-21-2G | 0.7 | 1 - EP-21 OR SP-21 | EDWARDS LX-180 | GAS |
| EPGX48-24-2G | 0.8 | 1 - EP-24, OR IP-24, OR SP-24 | EDWARDS LX-180 | GAS |
| EPGX48-32-2G | 0.8 | 1 - EP-32, OR IP-32, OR SP-32 | EDWARDS LX-180 | GAS |
| EPGX80-40-2G | 0.9 | 1 - EP-40, OR IP-40, OR SP-40 | EDWARDS LX-305 | GAS |
| EPGX80-42-2G | 0.9 | 2 - EP-21 OR SP-21 | EDWARDS LX-305 | GAS |

| | | | | |
|--------------|-----|-------------------------------|----------------|-----|
| EPGX80-48-2G | 0.9 | 2 - EP-24, OR IP-24, OR SP-24 | EDWARDS LX-305 | GAS |
| EPGX80-63-2G | 1.0 | 3 - EP-21 OR SP-21 | EDWARDS LX-305 | GAS |
| EPGX80-64-2G | 1.0 | 2 - EP-32, OR IP-32, OR SP-32 | EDWARDS LX-305 | GAS |

SolaRay – Active Closed-Loop

| SYSTEM | SEF | COLLECTOR(S) | TANK(S) | BACK-UP |
|---------------|-----|-------------------------------|-------------|----------|
| TE32C-80-1 | 1.8 | 1 - EC-32, OR IC-32, OR SC-32 | RSPE-80HE-1 | ELECTRIC |
| TE32C-80-2 | 1.6 | 1 - EC-32, OR IC-32, OR SC-32 | RSPE-80HE-1 | ELECTRIC |
| TE32P-80-1 | 1.7 | 1 - EP-32, OR IP-32, OR SP-32 | RSPE-80HE-1 | ELECTRIC |
| TE32P-80-2 | 1.5 | 1 - EP-32, OR IP-32, OR SP-32 | RSPE-80HE-1 | ELECTRIC |
| TE40C-80-1 | 2.1 | 1 - EC-40, OR IC-40, OR SC-40 | RSPE-80HE-1 | ELECTRIC |
| TE40C-80-2 | 1.8 | 1 - EC-40, OR IC-40, OR SC-40 | RSPE-80HE-1 | ELECTRIC |
| TE40P-80-1 | 2.0 | 1 - EP-40, OR IP-40, OR SP-40 | RSPE-80HE-1 | ELECTRIC |
| TE40P-80-2 | 1.8 | 1 - EP-40, OR IP-40, OR SP-40 | RSPE-80HE-1 | ELECTRIC |
| TE48C-80-1 | 2.5 | 2 - EP-24, OR IP-24, OR SP-24 | RSPE-80HE-1 | ELECTRIC |
| TE48P-80-1 | 2.3 | 2 - EP-24, OR IP-24, OR SP-24 | RSPE-80HE-1 | ELECTRIC |
| TE64C-80-1 | 3.9 | 2 - EC-32, OR IC-32, OR SC-32 | RSPE-80HE-1 | ELECTRIC |
| TE64C-80-2 | 3.0 | 2 - EC-32, OR IC-32, OR SC-32 | RSPE-80HE-1 | ELECTRIC |
| TE64P-80-1 | 3.3 | 2 - EP-32, OR IP-32, OR SP-32 | RSPE-80HE-1 | ELECTRIC |
| TE64P-80-2 | 2.6 | 2 - EP-32, OR IP-32, OR SP-32 | RSPE-80HE-1 | ELECTRIC |
| TE80C-80-1 | 8.1 | 2 - EC-40, OR IC-40, OR SC-30 | RSPE-80HE-1 | ELECTRIC |
| TE80C-80-2 | 4.4 | 2 - EC-40, OR IC-40, OR SC-30 | RSPE-80HE-1 | ELECTRIC |
| TE80P-80-1 | 5.3 | 2 - EP-40, OR IP-40, OR SP-30 | RSPE-80HE-1 | ELECTRIC |
| TE80P-80-2 | 3.6 | 2 - EP-40, OR IP-40, OR SP-30 | RSPE-80HE-1 | ELECTRIC |
| TE80P-80-2 | 3.6 | 2 - EP-40, OR IP-40, OR SP-30 | RSPE-80HE-1 | ELECTRIC |
| TE40C-80-2-PV | 1.8 | 1 - EC-40, OR IC-40, OR SC-40 | RSPE-80HE-1 | ELECTRIC |
| TE40C-80-PV | 2.0 | 1 - EC-40, OR IC-40, OR SC-40 | RSPE-80HE-1 | ELECTRIC |
| TE40P-80-2-PV | 1.7 | 1 - EP-40, OR IP-40, OR SP-40 | RSPE-80HE-1 | ELECTRIC |
| TE40P-80-PV | 1.9 | 1 - EP-40, OR IP-40, OR SP-40 | RSPE-80HE-1 | ELECTRIC |
| TE48C-80-2-PV | 2.0 | 2 - EP-24, OR IP-24, OR SP-24 | RSPE-80HE-1 | ELECTRIC |
| TE48C-80-2-PV | 2.1 | 2 - EP-24, OR IP-24, OR SP-24 | RSPE-80HE-1 | ELECTRIC |
| TE48C-80-PV | 2.3 | 2 - EP-24, OR IP-24, OR SP-24 | RSPE-80HE-1 | ELECTRIC |
| TE48P-80-2-PV | 1.9 | 2 - EP-24, OR IP-24, OR SP-24 | RSPE-80HE-1 | ELECTRIC |
| TE48P-80-2-PV | 2.0 | 2 - EP-24, OR IP-24, OR SP-24 | RSPE-80HE-1 | ELECTRIC |
| TE48P-80-PV | 2.2 | 2 - EP-24, OR IP-24, OR SP-24 | RSPE-80HE-1 | ELECTRIC |
| TE60P-80-PV | 2.9 | 3 - EP-20, OR SP-20 | RSPE-80HE-1 | ELECTRIC |
| TE64C-80-2-PV | 2.6 | 2 - EC-32, OR IC-32, OR SC-32 | RSPE-80HE-1 | ELECTRIC |
| TE64C-80-PV | 3.3 | 2 - EC-32, OR IC-32, OR SC-32 | RSPE-80HE-1 | ELECTRIC |
| TE64P-80-2-PV | 2.4 | 2 - EP-32, OR IP-32, OR SP-32 | RSPE-80HE-1 | ELECTRIC |
| TE80C-80-2-PV | 3.5 | 2 - EC-40, OR IC-40, OR SC-30 | RSPE-80HE-1 | ELECTRIC |
| TE80C-80-PV | 5.0 | 2 - EC-40, OR IC-40, OR SC-30 | RSPE-80HE-1 | ELECTRIC |
| TE80P-80-2-PV | 3.0 | 2 - EP-40, OR IP-40, OR SP-30 | RSPE-80HE-1 | ELECTRIC |
| TE80P-80-PV | 3.9 | 2 - EP-40, OR IP-40, OR SP-30 | RSPE-80HE-1 | ELECTRIC |
| TE40C-80-2G | 1.0 | 1 - EC-40, OR IC-40, OR SC-40 | RSPE-80HE-1 | GAS |
| TE40P-80-2G | 1.0 | 1 - EP-40, OR IP-40, OR SP-40 | RSPE-80HE-1 | GAS |
| TE48C-80-2G | 1.1 | 2 - EP-24, OR IP-24, OR SP-24 | RSPE-80HE-1 | GAS |

| | | | | |
|----------------|-----|-------------------------------|-------------|-----|
| TE48C-80-2G | 1.1 | 2 - EP-24, OR IP-24, OR SP-24 | RSPE-80HE-1 | GAS |
| TE48P-80-2G | 1.1 | 2 - EP-24, OR IP-24, OR SP-24 | RSPE-80HE-1 | GAS |
| TE64C-80-2G | 1.4 | 2 - EC-32, OR IC-32, OR SC-32 | RSPE-80HE-1 | GAS |
| TE64C-80-2G | 1.3 | 2 - EC-32, OR IC-32, OR SC-32 | RSPE-80HE-1 | GAS |
| TE64P-80-2G | 1.3 | 2 - EP-32, OR IP-32, OR SP-32 | RSPE-80HE-1 | GAS |
| TE40C-80-2G-PV | 1.0 | 1 - EC-40, OR IC-40, OR SC-40 | RSPE-80HE-1 | GAS |
| TE40P-80-2G-PV | 1.0 | 1 - EP-40, OR IP-40, OR SP-40 | RSPE-80HE-1 | GAS |
| TE48P-80-2G-PV | 1.0 | 2 - EP-24, OR IP-24, OR SP-24 | RSPE-80HE-1 | GAS |
| TE64P-80-2G-PV | 1.2 | 2 - EP-32, OR IP-32, OR SP-32 | RSPE-80HE-1 | GAS |

Copperheart - ICS

| SYSTEM | SEF | COLLECTOR(S) | TANK(S) | BACK-UP |
|---------------|------------|----------------|-------------|-----------------|
| CP-20 | 1.2 | 1 CP-20 | NONE | ELECTRIC |
| CP-30 | 1.4 | 1 CP-30 | NONE | ELECTRIC |
| CP-40 | 1.5 | 1 CP-40 | NONE | ELECTRIC |
| CP-60P | 1.7 | 2 - CP-30 | NONE | ELECTRIC |
| CP-80P | 1.9 | 2 - CP-40 | NONE | ELECTRIC |
| CP-20G | 0.7 | 1 CP-20 | NONE | GAS |
| CP-30G | 0.8 | 1 CP-30 | NONE | GAS |
| CP-40G | 0.9 | 1 CP-40 | NONE | GAS |
| CP-60PG | 1.0 | 2 - CP-30 | NONE | GAS |
| CP-80PG | 1.1 | 2 - CP-40 | NONE | GAS |

SRCC OG-300 Is Much More Than A Pile of Parts!

Indeed OG-300 is a specification in more ways than one. When you read our system manuals for the CopperHeart, SunSiphon, or SolaRay you'll find phrases like:

'Solar loop piping shall be type M copper tubing or greater'

'Tank plumbing must allow for isolation of the water from cold city supply'

'All exposed pipe insulation must be coated with 2 layers of paint'

If you think these statements sound like specifications for a bid, you are correct. Our manuals are system level specifications detailing how the system must be installed to be OG-300 compliant. OG-300 requires, for example, that the solar loop be able to withstand stagnation, which is why we specify copper tubing and expressly prohibit PVC or other forms of plastic. OG-300 requires that the solar tank in the system have the ability to be isolated from city water pressure for repair, which is why we include that in our manual. OG-300 requires UV protection of all exposed piping insulation, which is why our manual tells you to paint it.

In fact, detailed design manuals are part of the OG-300 certification process per se and must be submitted to the SRCC design review team to ensure that they include all the

OG-300 guidelines and requirements. Therefore, if you install any SunEarth SRCC OG-300 system according to our installation manual you are guaranteed that it is OG-300 compliant. If you wish to perform the installation in a manner other than described in the manual it may be OG-300 compliant, but you **MUST** submit the alternative arrangement to SunEarth for review and approval. Both the SRCC and the CEC reserve the right to inspect systems to guarantee that they have in fact been installed to OG-300 guidelines. If field discrepancies are found it is within the CEC's purview to require the contractor to bring the system into compliance.

Labeling & Manual Requirements

OG-300 further requires the inclusion of the operating manual on the installed system. This requirement can be satisfied by placing the appropriate SunEarth manual in a plastic sleeve and attaching it to the solar or backup auxiliary tank. Additionally, all valves in the system must be labeled with their function described so that if manual intervention is required, the homeowner or maintenance personnel know which valves are which. Both the SunEarth manuals and label sheets are available in Adobe Acrobat format on our website at www.sunearthinc.com. SunEarth can also provide professionally printed copies to you at marginal charge.

What About Freeze-Recirculation Systems?

Freeze-recirculation is technically allowed under OG-300 guidelines so long as the system is equipped with a secondary method of freeze protection (manual draining is one acceptable form of freeze protection) such as a dole valve. Neither SunEarth nor any other OG-300 certificate holder has applied for an open-loop certification for use in the continental United States. This stems in part from our need for generic systems that can be deployed throughout large regions of the United States. It must be noted that it can and has frozen everywhere within the continental US. Because SunEarth's collector warranty specifically excludes freeze damage **for any reason** we do not promote the use of freeze recirculation as a freeze protection strategy.

SunEarth suggests that there are better and more reliable system designs than open-loop freeze recirculation systems. These include our CopperHeart ICS unit and SunSiphon packaged thermosiphon system. Passive features such as thermal mass and/or propylene glycol protect these systems without the need for mechanical intervention or electric power. These systems can provide reliable freeze protection when installed in mild climates in accordance with manuals and instructions.

Warranty Considerations

The CEC grant program requires that any participating system be covered by a full 3-year warranty for all parts and service labor. In short, if the system fails during the first three years it's the contractor's responsibility to make the repairs at no charge to the customer.. SunEarth flat plate collectors and the CopperHeart ICS unit carry a 10-year limited warranty and the SunSiphon storage tank carries a 7-year limited warranty. We

encourage all of our customers to read our product warranty statements for the exact terms and conditions of our warranty coverage. SunEarth's product warranty statements can be found at www.sunearthinc.com or by calling us at 909-605-5610 for copies. We also recommend that you carefully examine the warranties of the important ancillary components you provide as part of the complete operating system.

The CEC program requirements for warranty coverage can be found at:

www.consumerenergycenter.org/solaranddg/documents.html

Building Permit

Every grant application must be submitted with a building permit for the system. Although the law says you must pull a permit regardless of the grant program, this requirement may add an additional step for contractors doing retrofit systems. The building permit is one way that the CEC validates that the system actually has been installed, conforms to the description in the application and that it meets applicable plumbing and building codes.

For active systems such as the SolaRay, the weight of the panels is so low (under 4 psf), that structural load calculations are usually not necessary. For passive system such as the CopperHeart and SunSiphon that have 40 or more gallons of water on the roof, loads on the roof members may trigger an analysis by a registered P.E. before the permit can be issued.

SunEarth has developed exhaustive studies of structural calculations for all models of the CopperHeart and SunSiphon for various rafter types, spacing, and roof coverings. The results of these studies are included in 2 P.E. stamped binders containing acceptable load-span tables for each type of system. For each rafter type and spacing, the tables define the allowable free span of the rafters from peak to load bearing wall that the system may be installed on. Additionally, the tables provide methods for increasing these spans if necessary by doubling up the rafters or using kickers to load bearing walls.

The SunSiphon load calculation binder is available for \$150 plus postage and the CopperHeart is available for \$75. Each binder is guaranteed to make the proper impression on your local building code officials.

Effective Dates

Although the grant program was approved in May, 2001, it is retroactive to January 1, 2001. If you have any systems that went in after that date that meet the program criteria we highly suggest that you submit them. Also, the current round of funding will end on June 29th so right after you read this we urge you to sign up as many systems as you can as fast as you can! Although we anticipate this deadline to be moved forward (the program was supposed to be rolled out months ago), things are uncertain in Sacramento these days. Better to be safe than sorry. The next round of funding has already been

approved for the coming fiscal year (starting after June 29th) so the program appears to be secure for at least one more year. Although funding only exists for approximately 600 systems, we hope that the industry will fully subscribe the grant program and show the state what the thermal industry can accomplish given a little money. If ever there was a time to petition the state for incentives, this is that time. The CEC will look for success in the current grant program before considering enlarging its scope. For these reasons we encourage all active solar water heating contractors to submit your qualifying systems as quickly as possible.

Filling Out The Application

Although the form for submitting systems is quite simple, there are some vague areas that we wish to clarify here. The most common form you will be filling out is 1345-A, which is the application for single units and is shown below.

| CEC- 1345 - A - SE Payment Application Form Solar Energy and Distributed Generation Grant Program | |
|--|---|
| <p>For detailed instructions on completing this form, please see the Solar Energy Program Element Guidebook and Overall Program Guidebook, which can be obtained from Web site at www.energy.ca.gov/renewables/sb1345 or by calling the California Energy Commission's Call Center at 1-800-555-7794.</p> | <p>Completed forms can be faxed to: (916) 653-9662 or mailed to: Solar Energy and Distributed Generation Grant Program California Energy Commission 1516 9th Street, MS-2 Sacramento, CA 95814-5512</p> |
| <p>Payee Designation:</p> <p>Funding award payment should be sent to:</p> <p style="text-align: center;"><input type="checkbox"/> Retailer <input type="checkbox"/> Purchaser</p> <p>1. Retailer</p> <p>Payee ID: Name: Address: Business () Fax: () Email: Contractor License Class and # _____</p> <p>2. Installer (if different from retailer)</p> <p>Name: Contractor License Class and # _____ Business: ()</p> <p>3. Purchaser</p> <p>Payee ID: Name: Mail Address: Physical Address of System (if different) Phone: () Fax: () Email: Utility/Service Provider _____ <input type="checkbox"/> Multi-Unit System No. of Units Served _____ If Multi-Unit, attach list of residents and addresses served.</p> | <p>4. Solar Water Heating System</p> <p><input type="checkbox"/> Domestic Water Heating <input type="checkbox"/> Swimming Pool Water Heating</p> <p>Manufacturer _____ System Name _____ Model # _____ No. of Systems _____</p> <p><input type="checkbox"/> SRCC Rating _____ <input type="checkbox"/> FSEC Rating _____</p> <p><input type="checkbox"/> Other National Certification Agency Rating Name _____</p> <p>5. Battery Backup for Photovoltaic System</p> <p>Type _____ Manufacturer _____ Model # _____ No. of Batteries _____</p> <p><input type="checkbox"/> UL approved <input type="checkbox"/> Other Certified Testing Agency Approved Name _____</p> <p>6. System Cost</p> <p>Cost of System: [Total Purchase] \$ _____ Eligible Costs: [Invoice/Itemized] _____ Eligible System Cost: \$ _____</p> <p>Funding Award Payment: \$ _____</p> <p>7. Other Program Funding</p> <p>Have you previously applied for funding or received rebates from this or other Commission programs, such as the Emerging Renewables Buydown Program? <input type="checkbox"/> Yes <input type="checkbox"/> No If yes, provide description.</p> |
| <p>Important: Attach a copy of the final purchase invoice, proof of warranty, a copy of the most recent monthly electricity statement, and a Std. 204 for payee designated (if needed). Applications will not be processed without the required attachments.</p> <p>Declaration: The undersigned declares under penalty of perjury that 1) the information provided in this form is true and correct to the best of their knowledge, 2) the above described system has been installed, is operating and is intended to offset part or all of the purchaser's water heating or electrical needs at the site of installation, 3) the site of installation is connected to the electrical transmission grid and located within California, and 4) the purchaser has received a copy of this completed form.</p> | |
| <p style="text-align: center;">Retailer</p> <p>Print Name _____ Signature _____ Date _____</p> | <p style="text-align: center;">Purchaser</p> <p>Print Name _____ Signature _____ Date _____</p> |

Figure 2. Form 1345-A

Of interest to our discussion here is block 4 of the application (upper right hand side) that asks for information pertaining to the type of SDHW system. Figure 3 shows how this block might be filled out for one of our SolaRay systems.

- The manufacturer is the party that holds the SRCC OG-300 certificate, or SunEarth Inc.
- System name is the trade name of the system such as: SolaRay, SunSiphon, or CopperHeart.
- Model number refers to the manufacturers model number. These are provided in the tables in this paper, online at our website or in our product manuals.
- The SRCC rating refers to the system SEF (Solar Energy Factor) provided by the SRCC for the model number. Make sure you use the proper SEF for either gas or electric systems as referenced by the model number (the letter G in the model number typically refers to gas backup)

4. Solar Water Heating System

Domestic Water Heating Swimming Pool Water Heating

Manufacturer SunEarth Inc

System Name SolaRay PV

Model # TE48P-80-2G-PV No. of Systems 1

SRCC Rating 1.0 FSEC Rating _____

Other National Certification Agency Rating
Name _____

Figure 3. Sample application for 2-panel SolaRay PV pump system with gas backup.

There are many more steps to completing the form such as the attachment of warranty statement, building permit, utility bill, invoice, and possibly a vendor data form. For a full description of the additional documentation that must be submitted with the application download the program guidebook and any necessary forms from the CEC at:

www.consumerenergycenter.org/solaranddg/documents.html

In Summary

We realize that at this point you may be overwhelmed with the CEC requirements. The process, however, is fairly logical and not that burdensome once you get through your first couple of submittals. Many of you may already install OG-300 compliant or very similar systems. Although a 3-year warranty does increase a contractor's product liability, your exposure remains limited. SunEarth's components and systems have design lives far in excess of the warranty period. An extended warranty, moreover, is a

very good selling point. Finally, SunEarth has lowered the hurdle on building permits by providing load calculation packages that cover nearly every conceivable installation.

We encourage each of you to participate the CEC solar water heating rebate program. We further hope that this white paper aids you in that endeavor. Please feel free to contact SunEarth Inc. directly if you have any questions, comments or concerns.