

May 29, 2007

Mr. Richard Karney
U.S. Department of Energy
1000 Independence Ave., SW
Washington, DC 20585

Re: Energy Star Residential Water Heaters Draft Criteria Analysis

Dear Mr. Karney:

SEIA and SRCC are in receipt of the Department's May 2, 2007 "Draft Criteria Analysis" document addressing the establishment of criteria for the inclusion of solar and other water heating technologies in the Energy Star (ES) program. We appreciate the opportunity to provide comments on this important topic.

The Solar Energy Industries Association (SEIA) is the national trade association of US solar energy manufacturers, dealers, distributors, contractors, installers, architects, consultants, and marketers.

The Solar Rating & Certification Corporation (SRCC) is a solar collector and system product certification body incorporated in 1980. SRCC has rated and certified approximately 150 solar collector models and more than 600 solar water heating systems to date. The Draft Criteria (DC) include a requirement for SRCC system certification.

In 1998 SEIA formally expressed an interest in the inclusion of solar water heating (SWH) in the ES Program, and since then has urged the DOE to take steps towards that end. Hence, we commend the Department for taking the initiative to propose guidelines for how water heating technologies can be incorporated into ES.

After carefully reviewing the DC, we offer the following comments:

1. **Favored Energy Source:** On page 3, the DC states "The Department is intent on establishing a fuel neutral program that does not favor one energy source over another." While we understand why this approach is taken when evaluating technologies which utilize different types of fossil or other non-renewable fuels, we believe that characterizing solar energy as a "fuel" is inaccurate. Fossil fuels are not renewable, nor is electricity generated from non-renewable resources.

The Department has invested heavily in the development of solar energy technologies for the express purpose of displacing non-renewable energy sources with renewable ones. SEIA maintains that the DOE has consistently taken the position that solar energy is a favored energy source. As stated on the Department's Solar Energy Technologies Program website:

”Solar energy technologies have great potential to benefit our nation. They can diversify our energy supply, reduce our dependence on imported fuels, improve the quality of the air we breathe, offset greenhouse gas emissions, and stimulate our economy by creating jobs in the manufacturing and installation of solar energy systems.”

SEIA and SRCC suggest that the Department has consistently indicated a desire to increase the use of solar energy, thereby offsetting and decreasing the use of non-renewable fuels. Solar water heating systems are fuel savers; if a system reduces water heater fuel consumption by water heating appliances by 20% or more, it should be eligible for ES.

2. **Market Share:** We note that, throughout the draft criteria document, the Department’s analysis of the market share of conventional water heating appliances references a market penetration of 10% and its corresponding energy savings, SWH is evaluated with a market share reference of 2% to 3%, despite the fact that some of the conventional high-efficiency products described in the DC are not yet available for sale, and in some cases have significant R&D requirements before they can exit the laboratory setting, if ever.

In contrast, SWH systems are used throughout the world, and have been in use in the U.S. since the late 1800s. Market penetration of SWH in Hawaii is over 25%; one in every 4 houses has a solar system. At the very least, SWH’s market share potential should be evaluated on the same basis as the advanced conventional technologies.

3. **Warranty:** It is unclear why the DC includes a requirement for a 15 year warranty for SWH systems when the warranty requirement for the other advanced technologies does not exceed 10 years, despite the fact that some advanced technologies are in development and have not yet been offered for sale anywhere. Conventional water heater warranties are based on expected life and decline rapidly as life expectancy nears.

The standard solar industry warranty is usually 5 years for the solar system and up to 10 years for the solar collector(s). This should apply to ES solar water heaters as well. 5 year solar system warranties exceed those of most appliances available for purchase today (unless an extended warranty is also purchased at time of sale). Further, where minimum warranty requirements for ES are mentioned at all, consider the current ES language for other products:

Roof Products – *“Each company’s roof product warranty for reflective roof products must be equal in all material respects to the product warranty offered by the same company for comparable non-reflective roof membrane products. A company that sells only reflective roof products must offer a warranty that is equal in all material respects to the standard industry warranty for comparable non-reflective roof products.”*

Furnaces – *“For purposes of this agreement, a manufacturer limited warranty is an assurance by the Partner that purchased system equipment and components are warranted by the manufacturer for a period of time. The period of time is typically expressed in numbers of years. The exact terms of the limited warranty shall be determined by the Partner.”*

Warrantee requirements for SWH should not be excessive as compared with other residential products.

4. **50% Solar Fraction:** On page 6 of the DC, the Department suggests that the Federal Investment Tax Credit (ITC) language makes a requirement for a 50% solar fraction. After review by counsel, we do not believe this to be the case. Rather, the ITC language states that at least 50% of the energy produced by the equipment for which the tax credit is claimed must be derived from solar energy. Given that SWH systems augment conventionally-fueled water heaters, the ITC applies to the solar energy portion of the water heating system only, which derives 100% of its energy from solar. Please note that this interpretation of the statute appears on the Energy Star website on the page “Federal Tax Credits for Energy Efficiency,” with language as follows:

“At least half of the energy generated by the “qualifying property” must come from the sun. Homeowners may only claim spending on the solar water heating system property, not the entire water heating system of the household.”

SEIA and SRCC agree with the DC’s proposed use of OG-300 certification, with a minimum Solar Fraction of 0.30 for ES qualification. If at least 30% displacement of fossil fuels is required, then roughly the top one third of all SRCC OG-300 certified systems would qualify for ES. However, we do not agree with the proposed use of the SRCC OG-300 Solar Energy Factor to determine the Solar Fraction of a solar water heater in all geographic areas of the U.S. The OG-300 Solar Energy Factor rates performance at one solar radiation condition (1,500 Btu/ft²-day) and environmental temperature (67.5 F)¹ only, and was developed merely to facilitate the comparison of various solar water heating systems operating within a common set of standard weather conditions. Accordingly, a Solar Fraction of 30% is a more appropriate determining factor.

SRCC uses a computer model to determine the annual performance of OG-300 systems in various U.S. locations.² The annual energy savings published by SRCC provides an estimate on how solar water heaters perform over an entire year at a specific location. A geographical consideration when determining the Solar Fraction may be appropriate. However the final adopted criteria should be as uncomplicated as possible in order to foster widespread utilization of ES solar water heaters.

SEIA and SRCC stand ready to work with the Department to resolve these issues, and plan to participate in the Stakeholder Meeting on June 5th. We are pleased to discuss these topics at any time, and look forward to the inclusion of SWHs in the Energy Star Program.

Sincerely,

¹ [Directory of SRCC Certified Solar Water Heating System Ratings: http://www.solar-rating.org/ratings/OG300DIRECTORIES/OG300DIRFULL_20070404.pdf](http://www.solar-rating.org/ratings/OG300DIRECTORIES/OG300DIRFULL_20070404.pdf)

² Annual Performance of OG-300 Certified Solar Water Heating Systems: [Annual Ratings Main Page](#)



Rhone Resch, President
Solar Energy Industries Association



Les Nelson, Executive Director
Solar Rating & Certification Corporation

cc: Mr. Josh Butzbaugh, D&R International