November 26, 2007

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

Re: Energy Star Residential Water Heaters; Second Draft Criteria Analysis and Proposal

Dear Mr. Karney:

SEIA and SRCC are in receipt of the Department's October 26, 2007 "Second Draft Criteria Analysis and Proposal" document addressing the establishment of amended criteria for the inclusion of solar and other water heating technologies in the Energy Star (ES) program. After reviewing input from the June 5th Stakeholder Meeting and subsequent Meeting comments due on July 13, 2007, SEIA and SRCC did not file additional comments, as the Meeting led to no material change from our position as outlined in our first round comments filed on May 29 and our presentation at the Stakeholder Meeting. However, after reviewing the Second Draft Criteria document 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. SEIA currently has approximately 700 members.

The Solar Rating & Certification Corporation (SRCC) is a solar collector and system product certification body incorporated in 1980. SRCC has rated and certified nearly 200 individual solar collector models and more than 640 solar water heating systems to date. The 1st and 2cnd Draft Criteria (DC1 and DC2 respectively) include a requirement for SRCC solar water heating system certification. Eligibility for the Federal Investment Tax Credit for solar thermal systems established by EPAct 2005 is conditioned on SRCC certification.

After carefully reviewing the DC2 language, we respectfully offer the following comments:

1. **Favored Energy Source:** On page 2, the DC2 states "*DOE is intent on establishing a program that does not favor one energy source over another*." As per our prior comments on the DC1, we disagree with the contention that the Department should not take a position which favors renewable energy over other energy sources. Rather, we contend that DOE has consistently expressed a desire to increase the utilization of renewable energy, and in particular solar energy. A unit of energy generated from a renewable source has an intrinsic value which sets it apart from a unit of non-renewably generated energy (or a unit of energy saved). Quantifying the difference in value is subject to opinion, but we believe it incorrect to assert that there is no difference in value.

   SEIA and SRCC ask that the Department contemplate how it will move ahead with the development of Energy Star for photovoltaic technologies if no greater value is placed on

electricity generated by PV versus oil, coal or natural gas. Renewable electrons should be favored over non-renewable electrons, and renewable BTUs should also have a greater value than non-renewable BTUs.

We reiterate the point we made in the 1st round comments: 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 believe that the Department must differentiate between technologies that save energy and solar thermal technologies which produce energy. If a solar water heating system generates 30% or more of the energy required for domestic water heating, it should be eligible for ES.

2. **Market Share:** Again, we reiterate the point we made in the 1st round comments; the Department's analysis of the market share of conventional and advanced water heating appliances references a market penetration of 10% (5% in the case of gas condensing) and corresponding energy savings, while SWH is evaluated with a market share reference of 1% and 2%. This disparity should be corrected in order to accurately portray the potential of SWH. The DC2 includes the following:

	Modeled Market Share	Projected Savings
High performance storage type gas water heaters	10%	14.6 Million Therms
Whole home gas tankless water heaters	10%	36.7 Million Therms
Heat pump water heaters	10%	1.3 Billion kWhs
Gas condensing water heaters	5%	17.4 Million Therms
Solar augmenting electric storage type	2%	232 Million kWhs
Solar augmenting gas storage type	1%	6.4 Million Therms

If the modeling for SWH were based on a 10% market share, using DOE's savings calculations, the following would result:

Solar augmenting electric storage type[1]	10%	1.16 Billion kWhs
Solar augmenting gas storage type	10%	64 Million Therms

It should be noted that this is solar energy generated, as well as fossil fuel saved. 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. In 2006, the equivalent of over 495,000 solar thermal systems were installed in the 27 European Union countries and Switzerland, bringing the installed capacity there to the

[1] It should be noted that solar water heating systems can pre-heat water for any type of conventional water heater. Pairing SWHs with high-efficiency conventional water heaters yields significantly increased savings.

equivalent of more than 3.1 million SWH systems.[2] At the very least, SWH's market share potential should be evaluated on the same basis as the advanced conventional technologies. We are curious as to why there is apparent resistance to this course of action.

3. **Warranty:** SEIA and SRCC note that DOE has determined to reduce the requirement for a 15 year warranty for SWH systems to 10 years to reflect industry practice. However, we concur with the positions of other stakeholders who disagree with the adoption of a prescriptive warranty requirement.

   The standard US solar industry warranty usually covers manufacturer defects for up to 10 years for the solar collector(s). The standard European warranty for collectors is 5 years. We draw attention once again to existing Energy Star warranty 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.*"

   SEIA and SRCC suggest the following:

   > **Residential Water Heaters –** *Each company's water heating product warranty for residential high-performance water heaters carrying the Energy Star label must be equal in all material respects to the product warranty offered by the same company for comparable residential water heating products which are not Energy Star labeled. The exact terms of the warranty shall be determined by the manufacturer.*

4. **50% Solar Fraction:** On page 7 of the DC2 document, the following statement appears:

   > *"A federal tax credit is currently available that can offset 30% of the installed cost of a solar water heater with a Solar Fraction of 0.50 or greater."*

   This language suggests that the Department interprets the Federal Investment Tax Credit (ITC) language to require a 50% solar fraction in order to qualify for the credit.[3] As noted in

---

[2] http://www.estif.org/index.php?id=46&backPID=2&pS=1&tt_news=128 A SWH system is assumed to consist of 64 square feet of collector area, which is relatively large by average US standards.

[3] We note that in the DC2 footnotes 5, 7, and 17, DOE references a NRDC document entitled "Solar Water Heater Fact Sheet" dated October, 2004. We are unable to locate this document, and believe the Department should rely on

our earlier comments, SEIA's legal counsel has determined that this interpretation of the pertinent language in EPAct 2005 is not correct, and that the correct interpretation of the ITC language is that at least 50% of the energy produced by the equipment for which the tax credit is claimed (the "qualifying property") 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:

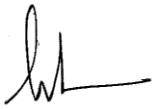
> *"At least half of the energy generated by the "qualifying property" must come from the sun. Homeowners may only claim spending on the solar water heating system property, not the entire water heating system of the household."*[4]

SEIA and SRCC agree with the DC2's proposed use of OG-300 certification, with a minimum Solar Fraction of 0.30 (30% reduction in conventional energy use) for ES qualification, rather than the proposed 50% Solar Fraction. 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.

SEIA and SRCC stand ready to work with the Department to resolve these issues, and are available to discuss these topics at any time. We look forward to the inclusion of SWHs in the Energy Star Program.

Sincerely,

Rhone Resch, President
Solar Energy Industries Association



Les Nelson, Executive Director
Solar Rating & Certification Corporation

cc: Mr. Josh Butzbaugh, D&R International

SRCC information rather than a "Fact Sheet" which is apparently unavailable for critique, and unknown to the solar industry.

[4] http://www.energystar.gov/index.cfm?c=products.pr_tax_credits#s4