



CALIFORNIA SOLAR ENERGY INDUSTRIES ASSOCIATION

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May 28, 2007

Mr. Richard H. Karney
Mr. Josh Butzbaugh
ENERGY STAR Program
U.S. Department of Energy
Via email to: richard.karney@ee.doe.gov and jbutzbaugh@drintl.com

Re: ENERGY STAR Residential Water Heaters: Draft Criteria Analysis

Dear Mr. Karney and Mr. Butzbaugh,

Thank you for the opportunity to provide comments on the Draft Criteria Analysis for Energy Star Residential Water Heaters.

The California Solar Energy Industries Association (CALSEIA) was founded in 1977. CALSEIA represents solar electric and solar thermal manufacturers, distributors, contractors, designers, consultants, engineers and associated businesses who do business in California. CALSEIA supports the widespread adoption of solar thermal and solar electric systems. There are currently over 150 CALSEIA Member companies.

CALSEIA provides the following specific comments on the draft.

1. **Solar water heater shipments amount to an estimated 2,430 units per year.** In Hawaii alone in 2006, nearly 4,500 solar water heaters were installed. CALSEIA estimates there are about 8,500 solar water heaters installed annually in the U.S. (third paragraph, page 1)
2. **Fifty-gallon water heaters have Energy Factors that range from 0.58 to 0.67.** We suggest that this be restated as: Fifty-gallon water heaters have Energy Factors that range from 0.58 to 0.67 **when new**. Conventional water heater efficiencies deteriorate over time and it would be important for consumers to be aware that older water heaters are not as efficient as newer water heaters, particularly if regular maintenance does not occur. (in the last paragraph of Gas Water Heaters, page 2)
3. **The Department is intent on establishing a fuel neutral program that does not favor one energy source over another.** CALSEIA understands that the Department is a broad reference to the Department of Energy as a whole. However, it is CALSEIA's understanding that the Department is also interested in technologies that reduce the consumption of fossil fuels. In particular, the Energy Star program is designed to help protect the environment through

superior energy efficiency. CALSEIA suggests revising that sentence to indicate the Department's support for technologies that promote energy efficiency and reduce demand for fossil fuels. (in the first paragraph under Advanced Technologies, page 3)

4. **Whole-home tankless water heaters.** Depending upon the water demand at the home, some homes require multiple tankless water heaters to provide a sustained supply of hot water similar to a conventional water heater. It would be helpful if the factors for the whole-home gas tankless water heaters would also provide the BTU input rate used to calculate savings as there is a wide range of input rates available for these products. (under Whole-home tankless water heaters, page 3)
5. **Solar Water Heaters.** The proposed criteria indicate a minimum fifteen year warranty. The lengthiest warranty we are aware of is a 10-year manufacturer's warranty. (under Solar Water Heaters, page 6)
6. **Solar Water Heater Savings and Payback.** CAL SEIA agrees with the requirement for OG-300 certification, however we believe specifying a minimum Solar Fraction of 20% or 30% is a more workable mechanism for identifying Energy Star qualified products. (under Solar Water Heaters, page 6)
7. **Solar Water Heating Tax Credits.** CALSEIA recommends referencing the United States Internal Revenue Tax Code (26 §USC 25D) rather than stating that the qualified solar water heater must provide a 0.50 solar fraction because the U.S. Code does not specify a solar fraction. A revised statement would more accurately state something like, "A federal tax credit is currently available for residential taxpayers that provides up to \$2,000 or 30% of the installed cost (whichever is less) for a system that is certified by SRCC if at least half of the energy produced by the solar system for which the credit is being claimed is derived from the sun." CALSEIA also recommends adding a statement that many utilities also provide rebates and/or loans for solar water heating systems. (under Solar Water Heaters, page 6)
8. **Solar Water Heating Market Share.** Same comment as earlier that CALSEIA estimates annual residential solar water heating sales is on the order of approximately 8,500 residential units per year.

In addition, the analyses for the other technologies in terms of the potential energy savings is based on 10% market share but for solar water heaters it is done assuming 1 percent of the electric and 2 percent for natural gas. CALSEIA recommends revising that section to indicate savings based on a 10 percent market share and adding greenhouse gas emission reduction data.

9. **Solar Water Heating Issues/Concerns.** CALSEIA believes that most professional solar companies are currently using closed loop, drain-back, or thermosiphon system technologies in areas where freeze protection is of concern. This statement might be in reference to older technologies and installations.

The statement on high-first cost concerns is also true nationwide and similar to what was stated earlier about all of the newer water heating technologies.

10. **Solar water heating maintenance.** All water heaters require maintenance. In Hawaii, which has administered a rebate program for solar water heaters since 1996, substantial data on maintenance has been collected. According to the Hawaiian Electric Company, between 1996 and 2004, out of approximately 40,000 collectors, there have been 63 claims (0.16%), in 27,000 solar tanks there were 21 claims (0.08%), 27,000 pumps there were 38 claims (0.14%) and 25,000 controllers there were 36 claims (0.14%). Data on systems installed in other states is not available but it would be reasonable to assume that the reliability of solar water heaters in other states is comparable.

11. **Solar technician training.** The statement on overall lack of trained solar technicians and system maintenance needs revision. The need for training is a universally true statement without regard to any specific water heater technology. The same statement should be added to the other technologies or removed from the discussion on solar water heating. CALSEIA has been a leader in developing training programs in cooperation with the National Association of Certified Energy Practitioners. We agree that training is important but the implication that solar installations are more difficult than other water heating technologies seems inappropriate. (under Issues/Concerns on page 6)

CALSEIA appreciates the opportunity to provide information for the Energy Star Program. I have also attached copies of two recent reports on Solar Water Heating by the National Renewable Energy Lab and Environment California. These reports may have information helpful for your efforts. Please do not hesitate to contact me if you need additional information.

Best regards,



Sue Kateley
Executive Director

Enclosures