November 26, 2007

Richard Karney and Josh Butzbaugh
ENERGY STAR Products
U.S. Department of Energy

Delivered Via Email: richard.karney@ee.doe.gov and jbutzbaugh@drintl.com

Dear Mr. Karney and Mr. Butzbaugh:

Thank you for the opportunity to provide comments with regard to the development of an Energy Star designation for select water heaters. We applaud this long overdue effort. Today, we will not only comment of the technical merits of the procedure, but also request that the Energy Star Team work diligently in both language and evaluation procedures to assure that all technologies are represented fairly.

The following are comments submitted on behalf of the Florida Solar Energy Research & Education Foundation (FlaSEREF) and the Florida Solar Energy Industries Association (FlaSEIA). FlaSEREF and FlaSEIA also are in complete agreement with the most recently filed SEIA and SRCC comments on favored energy source, market share, warranty and solar fraction issues and therefore have not reiterated our position on those issues here, addressing instead issues not covered in those comments.

FlaSEREF is the education and information arm of the Florida Solar Energy Industries Association, dedicated to increasing the use of solar technologies throughout the state of Florida. **FlaSEIA** is a nonprofit professional association of companies involved in Florida's solar energy industry. Members include manufacturers, distributors, contractors, retailers and consultants who provide solar water heating, pool heating and solar electric systems.

After carefully reviewing the Energy Star residential water heaters second draft criteria language, we respectfully offer the following comments:

SOLAR WATER HEATER DEFINITION

1. Currently solar water heaters are defined in this document as "designed to serve as preheaters," whereas, heat pump water heaters which also rely on backup resistance elements, are not defined this way. We believe that the following definition will remove the perception of bias. Though a condensed version, the following is taken from the Energy Star fact sheet titled "Improve Energy Efficiency with Solar Water Heating."

   Solar water heaters harness energy from the sun to generate hot water. Systems can either be "active" or "passive." In an active system, when sunlight heats water in a collector, sensors and a controller activate a pump to circulate a fluid

(water or an antifreeze solution in climates prone to freeze). This fluid is drawn from the colder bottom portion of the storage tank and moved up to the collector for solar heating, then circulated back to the top of the storage tank. A passive system combines the solar collector and storage in one unit separate from the conventional gas or electric water heater storage tank. Passive system design requires no pump or control for operation. When hot water is used in the home, water from the passive solar storage tank is drawn into the conventional gas or electric water heater storage tank, avoiding the need for electric or gas-fired heat to turn on.[1]

TABLES 1 AND 2

1. The information for an "average" solar water heating system's solar energy factor (SEF) is incorrect - with a wide variation between this document citation and the DOE's own program information. Through repeated attempts to retrieve the cited document, a Natural Resources Defense Council 2004 fact sheet, we've found that the cited source is no longer available. So, please refer to the following verifiable information below from DOE and the Solar Rating and Certification Corporation (SRCC).

   The solar energy factor is defined as the energy delivered by the system divided by the electrical or gas energy put into the system. The higher the number, the more energy efficient. Solar energy factors range from 1.0 to 11. Systems with solar energy factors of ***2 or 3 are the most common****.*[2]

   Though the DOE EERE Program information quoted above gives a much higher SEF than the cited NRDC document, it would probably be best to refer to tested solar energy factors available from SRCC - a nationally recognized certification organization.

   SRCC administers a certification, rating and labeling program for solar collectors and a similar program for solar water heating systems and solar pool heating systems. SRCC's certification program operating guidelines, test methods and minimum standards, and rating methodologies require the performance of nationally accepted equipment tests on solar equipment by independent laboratories which are accredited by SRCC. Test results and product data are evaluated by SRCC to determine the product's compliance with the minimum standards for certification and to calculate the performance ratings. SRCC has rated more than 600 solar water heating systems. Solar Energy Factors for solar systems with electric backup (pg. 23) and for solar systems with gas backup (pg. 39) can be found in the attached document.[3]

2. A 2007 DOE report to Congress cites 3,400 kWh as the average annual savings for a typical residential water heating system. In Florida (even with a higher ground water temperature and therefore less Δ T), we've found the average annual savings to be ~ 2800 kWh's year. Please use information from DOE citation below for substantiated savings and payback calculation procedures regarding solar water heaters.

   A typical residential SWH saves an average of 3,400 kWh of site electricity annually and a typical residential solar water heater saves an average of 16.5 thousand cubic feet of gas annually. [4]

3. We consider it an unfair comparison to use an "installed cost" price range for one technology only (gas), while all other technology comparisons are a fixed price. The range is misleading and affects not only cost perceptions but payback perceptions as well. For consumer ease, we believe that a single fixed cost estimate would work best for every technology. If this is impractical, then a range should be used for all, and an average price used to generate payback and other analyses. This should remove any perceived bias.

Respectfully Submitted,

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[1] "Improve Energy Efficiency with Solar Water Heating." Fact Sheet: United States Environmental Protection Agency/Energy Star Program. September 2001.

[2] "A Consumer's Guide to Energy Efficiency and Renewable Energy: Solar Water Heating Energy Efficiency." US DOE's Energy Efficiency and Renewable Energy Program. http://www.eere.energy.gov/consumer/your_home/water_heating/index.cfm/mytopic=12900. 2007.

[3] "Summary of SRCC Certified Solar Collector and Water Heating System Ratings." SRCC. November 2007.

[4] "Solar Water Heating: Potential Energy Savings, Market Impediments and Strategies for Wider Deployment." Report to Congress: Appendix B. Solar Energy Technologies Program/US DOE's Energy Efficiency and Renewable Energy Program. April 2007.