

American Council for an Energy-Efficient Economy  
Appliance Standards Awareness Project  
Natural Resources Defense Council

November 20, 2014

Ms. Brenda Edwards,  
U.S. Department of Energy,  
Building Technologies  
Program, Mailstop EE-5B,  
1000 Independence Avenue, SW.,  
Washington, DC 20585-0121.

**RE: EERE–2014–BT–STD–0045 Residential Solar Water Heaters Request for Information**

Dear Ms. Edwards:

This letter comprises the comments of the American Council for an Energy-Efficient Economy (ACEEE), the Appliance Standards Awareness Project (ASAP), and the Natural Resources Defense Council (NRDC) on the Request for Information (RFI) for solar thermal water heating systems where solar components are paired with electric and/or fossil fuel-fired water heaters, which are utilized as secondary heat sources.

We appreciate the opportunity to comment on this RFI. At this time, we recommend that DOE not consider a rule-making to adopt a test method, as OG-300 seems to meet the needs of this very small industry. Further, we do not recommend the development of federal minimum efficiency standards for these systems, unless DOE discovers that there are large numbers of otherwise non-standards-compliant water heaters being shipped for auxiliary service.

We open with general concerns and observations, and then move to specific **Issues** and related matters raised in the RFI.

### **General Issues**

After reviewing the Department's RFI and considering prior studies, such as ACEEE's review of solar assisted domestic hot water,<sup>1</sup> at this time we do not believe that the Department should develop a test method or a minimum efficiency standard for residential solar thermal water heating systems for the following reasons:

- There is already a widely accepted non-federal test method and rating program, with certification, for solar water heaters, built around OG-300 solar system ratings.<sup>2</sup> This program appears to adequately provide the basis for the ENERGY STAR specification.

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<sup>1</sup> <http://www.aceee.org/research-report/a112>

<sup>2</sup> <http://www.solar-rating.org>

- The extremely small sales volume of these products, estimated as a few tens of thousand units per year in the RFI, does not justify the effort and resources required to set a federal standard. We believe that most customers of these very expensive systems will look for reputable manufacturers and installers, and use either the ENERGY STAR brand or a high rating under the voluntary Solar Rating and Certification Corporation program to guide their purchasing decision.<sup>3</sup>

### Specific Issues

**Issues 2, 7.** Given the very small sales volume for solar thermal hot water systems, we would be surprised to find many products specifically designed as auxiliary heat sources for solar thermal water heating services. The only special features for a solar storage tank by itself that come to mind would be a double-wall water-to-water heat exchanger for indirect systems employing non-potable antifreeze in the primary loop.

**Issue 3.** In general, solar water heating systems are designed to provide hot water even during sustained periods without direct sunlight, periods much longer than the capacity of the tank would be expected to provide. For example, one typical product employs a 120 gal. electric resistance tank for storage, which is likely to supply only 2 – 3 days of hot water with conventional use patterns when there is no direct sunlight. Thus, we anticipate that a household choosing a solar thermal hot water system would elect a very large tank (maximum storage) *and* a back-up source capable of meeting expected daily demand for hot water.

As always, we appreciate the opportunity to comment on these matters.

Sincerely,



Harvey Sachs, Ph.D., Senior Fellow  
American Council for an Energy-Efficient Economy



Anthony Fryer, Senior Analyst  
Appliance Standards Awareness Project

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<sup>3</sup> <http://www.solar-rating.org/certification/system.html>

A handwritten signature in black ink, appearing to read 'Robin Roy', with a long, sweeping tail extending to the right.

Robin Roy, Director, Building Energy Efficiency and Clean Energy Strategy  
Natural Resources Defense Council