

May 29, 2007

Richard Karney  
ENERGY STAR Product Manager  
US Department of Energy  
Forrestal Building  
1000 Independence Avenue SW, EE2J  
Washington, DC 20585

Dear Mr. Karney,

Southern California Gas Company and San Diego Gas and Electric Company appreciate the opportunity to provide comments on the proposal to label high performance water heaters with the ENERGY STAR label. We applaud the efforts of DOE to expand the availability of high performance water heating technologies in the residential and new construction market sectors.

For over 15 years the Energy Star label has been an important reference consumers rely upon when purchasing, appliances, electronics, heating and cooling equipment and lighting products and in selecting new homes. The label identifies products that are reliable, widely available and save energy. We strongly encourage the DOE to maintain the high standards of performance for any new products that are receive the Energy Star label.

We suggest that DOE develop specific performance and reliability criteria that will be used to assess specific water heating technologies before qualifying each for the Energy Star label. Your assessment should include cost effectiveness for the consumer including simple payback, performance, reliability and longevity. As an example, heat pump water heaters are proprietary and only made by a small set of manufacturers. Solar water heating is not yet cost effective and there are significant maintenance requirements that if ignored will dramatically affect the performance of the solar unit.

Many of the Utilities implement programs around Energy Star products. As Utilities explore new program options, Energy Star is considered a key brand to build customer acceptance and loyalty around. The Energy Star Home Performance program is one such example that appears to be means of encouraging multiple Energy Star products to be installed by customers. However, as urgently as Utilities want to see and Energy Star program for water heaters, there will need to be considerable attention paid to education on water heater performance. Perhaps beyond information normally needed in the introduction of Energy Star products, customers should easily understand the application of technology options and how each may fit a household situation, how equipment replacement and its specific energy savings for the customer and the purchase/install costs and the relationships to real dollar benefits/payback.

### **Retrofit Water Heater Replacements**

Most people in the retrofit water heater market make emergency replacements. A key point here is that for many people, this in not a budgeted replacement. Increasing the cost of the emergency replacement with an advanced technology water heater will require greater cost/benefit education for consumers.

## **Tax Credits**

We caution DOE not to rely on tax credits as a significant means of achieving cost effectiveness for water heaters given that tax credits may not be consistently available state by state or from the federal government.

## **Distribution/Service Pressure Issues and Proper Pipe Sizing**

Not all Utilities are able to provide sufficient service line pressure required for tankless water heaters. This is especially true in New York City and in some areas of the Midwest. Proper service line sizing is critical to the performance of certain high performance water heating technologies, especially tankless water heaters. In certain instances, service line piping will need to be increased for retrofit applications.

## **Minimum Draw Requirements and Customer Satisfaction**

Consumers will need to be educated on the performance characteristics of tankless water heaters. Confused customers will likely contact their local utility with performance issues related to minimum water draws from these units.

## **Warranty Periods**

Product warranties must be in effect for at least the economic life of the unit during the payback period or the life expectancy of the unit, whichever is longer. As the DOE moves forward to develop criteria for the development of an Energy Star label for water heaters there are several additional factors that need to be taken into consideration beyond technology design and the engineered energy efficiencies of any one product. Environmental and behavioral habits can and will influence the success or failure of even the most advanced technology. In the case of water heaters, installation and maintenance best practices will need to be developed and reinforced.

## **The True Economics of Water Heating Purchase Decisions**

Having the true energy usage figures based on Source Energy, is critical to analyzing how much energy is currently being used by water heating appliances, and what can be saved. DOE should have the ability to take a "Fuel Neutral" approach to calculating candidate technologies.

## **Gas Storage Water Heaters-Replacement and New Construction**

We recommend labeling for both the replacement and new construction markets. For the replacement market, storage natural gas water heater would be appropriate to qualify for Energy Star at an energy factor of 0.62. For the new construction market, most builders now install storage natural water heater with an energy factor of 0.62. We therefore recommend a 0.63 or 0.64 for new construction.

## **Whole Home Tankless Water Heaters**

We recommend that the Energy Star rating for tankless water heaters be postponed until more information on their performance, impact on water use, reliability, installation requirements are available. There are studies currently being conducted on these water heaters in California and by the CEE. Once these studies are completed, DOE can then propose the Energy Star rating for this category of water heaters.

## **Heat Pump Water Heaters**

The current market share of heat pump water heaters is very small according to the DOE. There are only a few manufacturers of these appliances and they do not manufacture in significant quantities. We agree with CEE that a requirement of performance and

reliability demonstrations be required prior to enabling these appliances to be included in the Energy Star program. We also recommend that a threshold production level be required as well.

### **Solar Water Heaters**

Solar water heating is still very expensive and often has a simple payback greater than 20 years. Furthermore, solar water heating consists of solar collectors, pumps, storage tank and auxiliary gas or electric water heater. Unless manufacturers produce a complete “system”, it will be difficult to rate these systems from an Energy Star perspective. In addition, a solar water heating system can be installed with varying orientation, angle of incidence and solar fractions, making it difficult to predict annual energy savings. Consumers may be disappointed if an Energy Star rated “system” is not installed optimally and the expected savings are not realized. Therefore we believe a rating of solar water heating system may be inappropriate. In addition, ‘freeze protection’ is required even in Los Angeles, CA. There are very few, if any, locations in the US where freeze protection would not be needed. Even Miami, Florida experiences freezing temperatures which can ruin a solar system after one instance. As with all these NEW appliances, some means of assessing their true energy savings over the life of the appliance needs to be developed and implemented, and the cost included in any cost effectiveness analysis.

### **Gas Condensing Water Heaters**

With regard to natural gas condensing water heaters, you state in the section “Market Share” (p.7 of 12) that no such product exists. We direct you to A.O.Smith/American who has introduced the “VERTEX” which qualifies in that category. We would support a level of EF greater than or equal to 0.8 for this category of water heater as they may in fact emerge from other OEM’s as well. It will be important to inform consumers about the unique installation requirements for tankless and condensing water heaters. The need for both a plumber and an electrician to install these units will not only increase the cost, but the complexity and time for an emergency water heater replacement.

### **Advanced Non Condensing Storage Water Heaters**

The advanced non-condensing water heater does not exist in the marketplace yet. The California Super Efficient Gas Water Heater Appliance Initiative (SEGWHAI) examined the development of a “mid range” efficiency water heater and had discussions with the manufacturers. The initiative has since been taken up by the Consortium for Energy Efficiency (CEE) and formulated into a national effort to move manufacturers to develop an advanced non-condensing storage water heater. Although some manufacturers have indicated that they may have such a product in development, it is not certain that a product will be in the market in the near future. Therefore it is inadvisable for the DOE to pursue an Energy Star rating when the product is not yet in the market.

### **Advance Storage Water Heaters Capacity Based Energy Factor Criteria**

We agree with the DOE that Energy Star label for storage type water heaters be independent of storage tank capacity. This simplifies the ratings and will help consumers in their decision making process. Most residential water heaters come in 30-gallon, 40-gallon and 50-gallon sizes and these volumes have a small impact on their Energy Factors. Therefore a single Energy Factor requirement for the Energy Star rating is appropriate.

We appreciate the opportunity to comment on the proposed labeling standard.  
We look forward to the process of developing meaningful standards for energy star water heaters beginning with the DOE hearing scheduled for June 5, 2007.

Sincerely,

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Southern California Gas Company  
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