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Mr. Richard Karney
U.S. Department of Energy
Energy Star Program
1000 Independence Avenue NW
Washington, DC 20585-0121

Re: Energy Star Residential Water Heaters: Second Draft Criteria,
October 26, 2007 (publication date)

These are the comments of Southern Company on the Energy Star™ Water Heater
Second Draft Criteria, issued October 26, 2007.

Southern Company (Southern) is the parent firm of four electric utilities in the southeastern United States: Alabama Power, Georgia Power, Gulf Power, and Mississippi Power. These electric utilities serve over 3.7 million customers, including 3.2 million residential and 479,000 commercial customers. Our 120,000 square mile service territory includes most of Georgia and Alabama, southeastern Mississippi, and the panhandle region of Florida.

Southern Company (Southern) is an active participant in the Energy Star™ program, and appreciates the opportunity to comment on the proposals. We believe that Energy Star™ is a very important part of the federal government's energy efficiency program.

**95% Efficient Electric Storage Water Heaters
Deserve Energy Star™ Certification**

Southern is disappointed that DOE has not considered our comments in support of high efficiency electric storage water heaters. A number of stakeholders expressed strong support for inclusion of 95% efficient electric storage water heaters at the June 5, 2007 stakeholder meeting, and EEI, Southern Company, and probably a number of other stakeholders expressed support for including 95% efficient electric storage water heaters in their written comments on the first round.

It is important to understand that while the percentage savings per water heater is relatively low for 95% electric storage water heaters, the very large number of units and the relatively low capital cost for choosing this option makes it a very important energy saving measure which should be included in the Energy Star™ program. All consumers

deserve an Energy Star™ water heater option for their home. The very small market share for heat pump water heaters limits their energy savings potential. In addition, the inherent limitations of heat pump water heaters make them unsuitable for installation in many homes. As mentioned in the earlier round of comments by Southern, 41% of the homes in our largest subsidiary company, Georgia Power, have water heater locations within conditioned space. Placing a heat pump water heater in one of these homes would be the same as installing an air conditioner which could not be turned off, resulting in uncomfortable conditions and uneven temperatures in summer and significant additional heating requirements in winter to overcome the additional heating requirements caused by the cold exhaust of the heat pump water heater.

While one of the Energy Star™ program goals is to “*provide meaningful differentiation*” between Energy Star™ products and minimum efficiency products, other program goals are to “*provide consumer choice*” and “*do not compromise functionality.*” Not including electric resistance storage water heaters will not provide all consumers with choices which do not compromise functionality. While the approximate 5% efficiency gain possible for electric resistance water heaters is lower than usual for Energy Star™ programs, the need to provide choices for all consumers which do not compromise functionality make 95% efficient storage water heaters an appropriate choice for the Energy Star™ program.

It should also be noted that the standby losses for electric storage water heaters could be significantly reduced as part of an energy reduction program, either from programming on the water heater itself or as part of an energy management program which actively controls the water heater during off-periods. This is very similar to the stand-by loss issues for consumer electronics. In many of those programs, standby losses are the most important criteria for Energy Star™ certification. In the case of television sets, it is possible for a plasma television which uses much more power than an LCD unit to be Energy Star™ certified if it has low standby losses. DOE should consider the potential for standby loss savings for electric storage water heaters in its analysis.

Whole-Home Tankless Water Heaters

In addition to our earlier comments, we are concerned that Energy Star™ has proposed classifying many whole home tankless water heaters as Energy Star™ compliant. While it is true that tankless water heaters rate very highly in efficiency based on the current DOE test procedure, this test procedure does not adequately measure the efficiency of usage under normal home water heater usage patterns, with many small hot water draws over the course of a day for uses such as hand-washing, cooking, and other typical uses.

Research sponsored by the California Energy Commission indicates that the actual efficiency of tankless water heaters is lower than when measured using the DOE test procedure. Energy Star™ should be concerned with reducing actual energy usage, even if this energy usage is imperfectly measured by current test procedures. In addition, if DOE were to change its test procedure for determining energy factor ratings, and this resulted in lower ratings for tankless water heaters, Energy Star™ would potentially need

to remove Energy Star certifications from large numbers of models which previously qualified. This would be damaging to the credibility of the entire Energy Star™ program, and should be avoided if possible.

An additional problem with tankless water heaters is more difficult to quantify – these products are universally marketed as “*providing endless hot water*” and actively promote increased consumption of hot water. Even many of their ads say that your energy use may not drop, since the customer is now taking longer showers. (*This may also be due to the previously mentioned test procedure issue, and in reality the homeowner may not be saving the energy estimated by the test procedure rating.*) It is worthy of further study to determine whether hot water usage increases with the installation of a tankless water heater system, resulting in increased energy use even if the efficiency rises.

It is Southern’s recommendation to not include any tankless water heaters in the Energy Star™ program until a new test procedure is developed which more accurately measures the efficiency of tankless water heaters.

Gas Storage Water Heaters and Heat Pump Water Heaters

The proposals for gas storage water heaters and heat pump water heaters are reasonable and cost-effective measures, and should encourage the development of more efficient equipment in these market segments. Heat pump water heaters are an outstanding water heating technology, but cost and operational issues make them unsuitable as the only electric water heater option in the Energy Star™ program.

Summary

Due to the limitations of heat pump water heaters, the proposed standards would be discriminatory towards electric water heaters in their current form. Southern strongly recommends that Energy Star™ include 95% efficient tanked electric water heaters in the Energy Star™ program.

Thank you for the opportunity to comment on these Energy Star™ proposals.

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