HOMETEC

American Hometec, Inc.

Save & Enjoy Hot Water Whenever You Want It!

February 7, 2008

Mr. Richard H. Karney, P.E.
Manager, Energy Star Program
U.S. Department of Energy
1000 Independence Avenue SW
Washington DC 20585

Dear Mr. Richard Karney,

Thank you for allowing the late submission of this comment for Water Heater Criteria Development, the Second Draft Criteria Analysis and Proposal, under Energy Star program.

American Hometec, Inc. is a developer, manufacturer and marketer of tankless water heaters. American Hometec supports Energy Star program for water heaters, and agrees that "Energy Star can assist in the deployment of advanced water heating technologies to the residential market". Energy Star has played an important role in guiding consumers on energy efficient products available in the market. The following consists of comments from American Hometec relating to the Second Draft Criteria Analysis and Proposal for water heaters.

1. Proposed Size of 3 GPM for Tankless Water Heaters in the Criteria:

Different sizes have different applications. Energy Star is not only used in residential purchases but also in commercial purchases. Most of the tankless sold for light commercial applications are point-of-use units. And, in residential application, point-of-use units are also used for remote sinks. A 3 GPM tankless would provide 180 gallons of hot water during one hour time and continuously if needed. Anyone would agree that that is a lot of hot water. An artificially imposed size requirement for Energy Star program will discourage the use of point-of-use units and encourage unnecessary upgrades to larger units, thus encourage waste of energy, material, and other resources.

2. Electric Whole House Tankless

- *The concern of transformer capacity and load management.* First, if electric whole house tankless caused transformer capacity and/or load management problems in any community, it would be a business development issue for the utility companies. Nowhere in its

documentation has energy Star program stated utility companies' ability to handle a new technology as part of its criteria. Second, utility companies are working on load management and better distribution solutions, not just for water heaters. It would be unthinkable if anyone had suggested avoiding the applications of air conditioners and staying with fans because of higher energy demands by air conditioners. Not to suggest that tankless has the same effect as air conditioners on utility companies. After all, tankless reduces, not increases, energy consumption in the end. Last, the concern is based on speculation with no evidence or data to support them. There are no field test findings that any of the electric whole house tankless available in the market has caused problems of transformer capacity or load issue in any community.

- *Market Share.* Sales of tankless by units are estimated about 50%-50% between gas and electric tankless just as in the case of storage water heaters. The growth rate of tankless in the recent years has been over 30%. Excluding electric tankless is ignoring half of the tankless market.

3. Energy Savings

When calculating percentage of energy savings, EF is used. However, EF does not patterns of usage. A storage tank and a tankless with same EF would have different energy efficiency in actual use because their pattern of usage is different. A more accurate measurement, such as SEER in the case of air conditioners, should be used instead of EF when considering energy efficiency of water heaters in actual usage. This may be why electric tankless only have 9.5% savings when calculated based on EF in the Second Draft Criteria Analysis and Proposal. However, DOE's previous data from field testing suggests the following savings from using a tankless compared to a tank system[1]

- a saving of 27 to 50% when a tankless is installed next to the point-of-use.
- a saving of 24%–34% for homes that use 41 gallons or less of hot water daily
- 8%–14% more energy efficient for homes that use a lot of hot water—around 86 gallons per day (note: an average home consumption is estimated at around 62 gallons)

[1] EERE Consumer's Guide: Demand (Tankless or Instantaneous) Water Heaters.

4. Water Consumption

There is concern that tankless will encourage more hot water usage. If that is the case, then American consumers must not have had enough hot water and needed more to enjoy a better shower or better washing. However, isn't that what American industries thrive to do -- bring innovation and new products that offers American consumers more comfort and a better life?
This is not to suggest that waste in water usage is encouraged. To the contrary, if tankless is installed at point-of-uses instead of basements as in most cases of a tank installation, up to 20% of water could be saved by eliminating running hot water through a long pipe.

5. Storage Water heaters

Regardless there may be a time limit imposed for the transitional storage water heaters, the proposed criteria lowered Energy Star standards to bend Energy Star program criteria in an effort to include gas storage water heaters. This will cause market confusion on energy Star qualified products and devalue the Energy Star brand. However, there is a value for the transitional period to help manufacturers eventually develop qualified Energy Star gas storage water heaters. A new label approach may be more appropriate, as similarly suggested by ACEEE for more risky categories. A new label such as "Energy Star Prep" or whatever will also allow the inclusion of electric storage water heaters. Under the current proposed criteria, the market can be very confused trying to understand why the Energy Star program includes a gas storage water heater at an EF of .65 but not an electric storage at an EF of .90. If a product category has reached design limits before Energy Star program looks at it, it should not be penalized and excluded. Energy Star should capture the products that are already in the top tier of energy efficiency if it were to capture the products in the same applications but at lower efficiency level.

American Hometec suggests that

1. *All sizes or capacities be included, regardless of tank or tankless.* The consumers will decide what sizes are best suited for their application. The market should provide the needed consumer education on sizing. Energy Star should ensure any size of water heaters included in the program meet certain levels of energy efficiency.

2. *Electric tankless be included with an EF of .99 for point-of-use units (12kw or under) and .95 for whole house units.* There is no reason that the

category with the highest efficiency achieved in water heating is not included in this water heater program. As most retailers offer more than one type of water heater, it will be hard to explain to consumers, who see these water heaters side by side, why water heaters of lower efficiency are included in Energy Star while water heaters with the highest efficiency are not. Besides, tankless could achieve up to 50% of energy savings in actual uses (see above).

3. *Point-of-use installation be required for all sizes of tankless*, which allows an achievement of not only up to 50% energy savings but also water conservation.

4. *A new label be used for categories that do not currently meet Energy Star criteria but are beneficial to be included*. A new label under Energy Star umbrella be used and allow the inclusion of both gas and electric storage water heaters so that the reaching a high efficiency before inclusion in Energy Star is not punished.

American Hometec made above suggestions to be constructive and to promote fair and clear Energy Star criteria for the American consumers. American Hometec looks forward to working with Energy Star program and the industry on Energy Star criteria development for water heaters. American Hometec respectively requests Energy Star program considers above comments and suggestions.

Sincerely,

Shannon (Shimin) Luo
President
American Hometec, Inc.
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