

A. O. SMITH
WATER PRODUCTS
COMPANY

500 Tennessee Waltz Parkway
Ashland City, TN 37015

Ajita Rajendra
President

July 13, 2007

Mr. Rich Karney, DOE

Dear Mr. Karney:

We were very pleased to have participated in the Energy Star for water heaters Stakeholder's Meeting on June 5th. We believe that the meeting was successful in raising many of the important issues and in gaining consensus on a number of them. We are responding to your invitation for additional written input based on the outcome of the Stakeholder's Meeting.

First of all, A. O. Smith believes that it is very important to develop an Energy Star program for water heaters. We believe it will be a valuable tool to assist in raising consumer awareness that energy and money can be saved through the use of high efficiency water heaters and may be the stimulus to change the current consumer buying tendency of purchasing the lowest price water heater regardless of performance.

We are pleased that there was general agreement at the Stakeholder's Meeting that minimum warranty and minimum capacity requirements for water heaters are inappropriate Energy Star criteria. Certainly, we would provide a warranty on any product we would offer for sale but as expressed at the meeting, we believe the terms of that warranty should be determined by the market forces. In addition, the consumer should be free to choose the water heater size which they believe is appropriate for their application, and should then have a choice between Energy Star units and non-Energy Star units.

We agree with the consensus opinion that conventional gas and electric storage water heaters should not be excluded from the Energy Star program. We are in agreement with the performance levels suggested in the meeting: EF at least 0.65 for gas storage water heaters and EF at least 0.95 for electric storage water heaters.

Most individuals at the meeting supported the idea of including EPACT water heaters in the Energy Star program. This is just the recognition that the only condensing water heaters in homes today are EPACT heaters. Exclusion of these heaters would undermine the credibility of the Energy Star program. In our opinion,

EPACT water heaters with inputs less than 200,000 BTU/hr. should be included in the Energy Star program.

We continue to have reservations about the proposed inclusion of most gas tankless water heaters into the water heater Energy Star program. The actual energy efficiency performance of these units in real residential applications is very much in question. Recent studies by the Davis Energy Group and by GTI have shown that tankless water heaters do not perform as efficiently as expected when subjected to actual residential use profiles. As a response, the California Energy Commission is considering requiring an 8.8% degradation of tankless water heater energy factors in the next version of their Title 24 regulations. Furthermore, these studies have documented that tankless water heaters consume more water (by design and by customer behavior). Their high installed cost and long payback periods represent a questionable value proposition for the average consumer. Finally, the environmental impact of their higher NOx burners over the next 5 years has not been fully evaluated. Consequently, A. O. Smith believes that only the highest performing tankless water heaters should be included in the Energy Star program. We suggest that a minimum EF of 0.84 would be appropriate for gas tankless water heaters.

We would also like to respond to your invitation to comment on the DOE Energy Factor test. We believe that the current DOE Energy Factor test is deficient in a number of ways and is neither a strict test of the hardware nor a good test of a typical application; as such it does a very poor job of characterizing both the hardware and the application. The test conditions dictated in the EF test do not represent actual use conditions in residential applications. In addition, the current EF testing protocol is so complicated that it gives an unacceptably large variation in results. Reasonable levels of both precision and accuracy are almost impossible to achieve.

A. O. Smith believes it is time for DOE to update their water heater testing protocol. As a manufacturer, we would suggest a series of simple tests on the water heater itself...thermal efficiency, standby loss, water usage, etc. These tests represent the basic water heater performance parameters and are simple, reliable and reproducible. In order to assist the consumer in making an informed buying decision, computer models need to be developed which would transform these basic performance parameters into projected annual use costs. These computer models need to be based on realistic residential use data which are not widely available and they need to accurately accommodate the various potential water heating technologies (HPWH, tankless, etc). We believe that a good place to start is to obtain reliable, representative residential use data and to begin to define the appropriate basic water heater performance parameters.

Thank you for the opportunity to participate in this process. We look forward to further interactions as the next round of Energy Star criteria is developed.

Sincerely,

A handwritten signature in black ink, appearing to read "Ajita Rajendra". The signature is written in a cursive style with a horizontal line underneath the name.

Ajita Rajendra