

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460



OFFICE OF
AIR AND RADIATION

July 11, 2007

Richard Karney
ENERGY STAR Product Program Manager
U.S. Department of Energy
1000 Independence Avenue, SW, EE-2J
Washington, DC 20585-0121

Dear Rich,

On behalf of the Environmental Protection Agency (EPA), I would like to submit post-stakeholder meeting comments on the Department of Energy's (DOE) draft criteria analysis for labeling residential water heaters under the ENERGY STAR Program. While we continue to believe that ENERGY STAR is not an appropriate tool for advancing the market for emerging water heater technologies under current market conditions, we noted that a number of stakeholders felt there were significant energy savings to be gained from more efficient conventional technologies. After attending the July 13 meeting, reviewing stakeholder comments and performing our own analysis, we feel that the best option is to develop an ENERGY STAR label for the most efficient conventional technologies, electric-resistance and/or traditional gas storage, while exploring other options for promoting emerging water heating technologies. We would be happy to work with you to advance these objectives.

In the proposed specification, DOE decided not to include electric-resistance and gas storage water heaters, which account for roughly 97% of all residential water heaters in the United States. The reasoning for doing so was based upon two findings:

1. Given the current range of Energy Factors (EF) available in the marketplace, ENERGY STAR could only achieve energy savings of 4.8% above the Federal standard for electric-resistance storage water heaters and 7.3% above the Federal standard for gas storage water heaters.
2. Water heating technology for these traditional storage models is nearly maximized given current and potential energy savings.

While the above statements may be true, water heating is the third largest energy end use in homes, and thus, these savings add up to significant amounts when translated into kWh and dollars. For example, a 0.94 EF electric-resistance storage water heater saves nearly 201 kWh/year and \$251 in its lifetime over a 0.904 EF water heater.

Electric-Resistance Storage Water Heater	Federal Standard	High-Performing
Energy Factor	.904	.94
Annual Savings (kWh/yr)	n/a	201
Lifetime Savings (\$)	n/a	\$251
National Savings at 25% penetration (GWh/yr)	n/a	241.2
National Savings at 50% penetration (GWh/yr)	n/a	482.4

The following is a breakdown of the number of available models for electric-resistance storage water heaters for all capacities. 12.2% of all available models currently in the marketplace would meet ENERGY STAR levels if the specification were set at 0.94 EF.

Energy Factor	# of Models available for all Capacities	% Share of Market
.90	56	7.6%
.91	101	13.8%
.92	182	24.8%
.93	214	29.2%
.94	40	5.4%
.95	50	6.8%

For gas storage water heaters, the most widely available efficient unit is at the 0.62 level. However, there are gas storage water heaters currently available with EF's in the 0.64 to 0.67 range. In fact, there are approximately 11 CEE members that currently offer rebates for gas storage water heaters at or above the 0.62 EF level and one CEE member who currently rebates at the 0.64 EF level.

Gas Storage Water Heaters	Federal Standard	High-Performing
Energy Factor	0.58	0.62
Annual Savings (therms/yr)	n/a	19
Lifetime Savings (\$)	n/a	\$234
National Savings at 25% penetration (therms/yr)	n/a	22,325,000
National Savings at 50% penetration (therms/yr)	n/a	44,650,000

The following is a breakdown of the number of available models for gas storage water heaters for all capacities. 29.2% of all available models currently in the marketplace would meet ENERGY STAR levels if the specification were set at 0.62 EF.

Energy Factor	# of Models available for all Capacities	% Share of Market
.58	289	18%
.59	386	24%
.60	121	7.5%
.61	154	9.6%
.62	254	15.8%
.63	93	5.8%
.64	49	3.1%
.65	73	4.5%

As indicated by the data presented above, electric resistance and gas storage water heaters offer a range of efficiencies consistent with the ENERGY STAR Program. Further analysis would need to be performed by DOE to ensure that the performance levels proposed are consistent with the full set of ENERGY STAR guiding principles which include: 1) products are widely available at a broad range of energy performance levels; 2) purchasers will recover their investment in increased efficiency in a reasonable time period, keeping in mind that the bulk of products carrying the ENERGY STAR label have a pay back period of less than 2-3 years and many have no incremental first cost; and 3) product performance can be maintained or enhanced with increased energy efficiency. While the first principle seems fairly well established, a more rigorous examination of cost and performance issues at different efficiency levels would be necessary.

In addition, while we recognize that a separate specification for electric versus gas technologies is justified given constraints on household fuel choices, we encourage the Department to study the potential for fuel switching and give the outcome of the study careful consideration.

In summary, for the reasons stated in our comments on May 25, 2007, EPA does not support DOE's current draft criteria analysis for labeling residential water heaters. It is worth noting that several stakeholders also pointed out that this approach would be a marked departure from the ENERGY STAR Program's traditional approach. However, EPA agrees with other stakeholders that it is worthwhile to explore the labeling of more efficient conventional technologies. EPA looks forward to working with DOE in exploring this approach and providing any necessary support.

Sincerely,

A handwritten signature in black ink that reads "Ann Bailey". The signature is written in a cursive, flowing style.

Ann Bailey, Chief
ENERGY STAR Labeling Branch