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Canada

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July 13, 2007

Mr. Richard H. Karney  
US Department of Energy  
1000 Independence Avenue, SW  
Washington, DE 20585-0121

Dear Mr. Karney:

Comments on the ENERGY STAR Water Heaters Draft Criteria

On behalf of Natural Resources Canada (NRCan), we would like to thank you for the opportunity to comment on the proposed ENERGY STAR specification for water heaters. Following attendance at the meeting in Washington on June 5, 2007, and a review of the draft criteria analysis, we offer the following comments.

NRCan continues to support the US Department of Energy's efforts to develop an ENERGY STAR specification addressing residential water heating. Because water heating is the second biggest energy use in a Canadian household, the Office of Energy Efficiency at NRCan sees the development of a framework to establish meaningful higher efficiency levels for domestic water heating as a priority. NRCan's end-use vision with respect to domestic water heating is to see a dramatic shift in the availability of higher efficiency water heating technology, either through an increase in the market penetration of condensing technology, or through the increased availability and affordability of other water heating technology solutions.

At the June 5th meeting, representations were made to include storage tank water heaters in the ENERGY STAR specification, but at levels equal to or higher than 0.62 EF with the intention of raising the levels in the future towards higher energy factor levels. NRCan continues to support the initial ENERGY STAR proposal to not include standard storage water heaters on a short term basis, both electric and gas, in the specification.

Our view is that supporting the inclusion of 0.62EF storage tank water heaters in the ENERGY STAR specification could potentially diminish the credibility of the ENERGY STAR symbol and what it represents. It is unlikely that homeowners going from the regulated level of 0.59 EF to 0.62 EF would be able to discern a difference in their gas bill with water heaters. Small increases in efficiency would be better achieved with in store information and utility procurement programs as well as increasing the stringency of minimum energy performance standards through the regulatory process.

However, we would support the inclusion of higher EF levels beyond 0.65 in the medium or long term should the availability and affordability of standard non-condensing storage type products become more accessible at these higher levels.

Several meeting participants commented on the water heater test method which could yield varying test results. In our view, before considering the addition of a storage tank level in the ENERGY STAR specification, it does not make sense to specify a slightly higher efficiency level under ENERGY STAR that may fall within the variability of testing results.

At the meeting, the test methods for water heating equipment were discussed many times, both for storage and tankless units. Neither test method provides the reassurance that the results are accurate, and can be repeatable and comparable. In addition, there are other technical concerns such as the water draw schedule, which does not represent real water usage in a North American home, especially for tankless water heaters. NRCan is willing to work with other stakeholders to make improvements to the test methods. In our view, since the test methods are a crucial element of any labelling program, and are the single most important element that would ensure a fair representation of the performance of water heaters, decision on whether to review the water heater test method should be an important reason to delay the implementation of the ENERGY STAR specification. The schedule for the development and implementation of the specification deserves some further consideration.

We agree with the inclusion of gas condensing storage water heaters. Although no models exist at present below 75,000 btu/h (“residential”), the technology is known. Discussion at the meeting indicated that condensing storage water heaters at lower firing rates could be produced. We estimate that existing models have EF ratings of about 0.80, and suggest this is the appropriate efficiency level.

Whole house gas tankless water heaters should be included, given the growth in market share and significant efficiency difference as compared to conventional gas storage water heaters. NRCan has tested a number of tankless water heaters and agrees that EF 0.80 is the appropriate efficiency level.

As we previously commented, electric tankless water heaters should not be considered because of the added electrical load, reduced flow rates in comparison to gas water heaters and the requirement for a larger electricity service for most installations. Although there were contrary arguments made during the June 5<sup>th</sup> meeting, the rationale for including electric tankless units is not compelling. The potential for increased efficiency with tankless electric is relatively small compared to electric storage water heaters, while there would be a loss of opportunity for load shifting (and support for ENERGY STAR by many utilities).

With regard to heat pump water heaters, we would support further analysis and investigation for this technology. In Canada, however, sales are too low for immediate inclusion into the specification.

NRCan supports the inclusion of solar water heating as per our previous comments in the first round of comments.

In summary, NRCan believes that the new ENERGY STAR specification for water heating should reflect the original goals of the program – identify products where large gains in energy efficiency and pollution reduction can be cost-effectively realised; and can play an influential role to expand the market for these products.

Regards,

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