American Council for an Energy-Efficient Economy
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Ms. Abigail Daken
ENERGY STAR Water Heater Program Manager
U.S. Environmental Protection Agency
1200 Pennsylvania Ave NW
Washington, DC 20460
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Dear Abigail:

This letter comprises the comments of the American Council for an Energy-Efficient Economy on the November 2011 *ENERGY STAR Product Specification for Residential Water Heaters Eligibility Criteria Version 2.0: Draft 2.* We thank the Environmental Protection Agency (EPA) for the opportunity to comment on this process.

Please note that these comments are subject to further review and we will follow up next week with additional comments.

Definitions. ACEEE agrees with the revision to the previous draft 2.0 specification that clarifies that the point-of-use (POU) category includes only water heaters up to 20 gallon capacity. Using a storage capacity descriptor instead of physical dimensions should prevent resistance electric storage water heaters that are not intended for POU usage from qualifying for ENERGY STAR® recognition.

Scope. ACEEE also supports the revision from the previous draft specification that clarifies that some water heaters are marketed and sold in both the residential and commercial markets, and that these products should still be eligible for ENERGY STAR recognition.

Add-On Heat Pump Water Heaters. ACEEE supports EPA's continued exploration into including add-on heat pump water heaters to the Residential Water Heater program. We agree with the decision to require a certified EF rating for qualifying products.

However, we are skeptical of the proposed energy factor multiplier (EFM) metric. The EF test procedure has significant flaws. Manufacturers have suggested that it is neither a precise, nor accurate rating for water heater efficiency. The difference in performance between a 0.90 EF and 0.95 EF water heater may be smaller than the ratings imply, and may also vary among products with the same EF rating. Even if we ignore these variances within the rating method, there is likely to be only about a 5% difference in energy efficiency within this range of EF performance. Climate and installation variations are likely to make a much larger impact on heat pump water heater performance in the field than whether it is attached to a 0.90 EF or 0.95 EF rated water heater. Thus, an EFM is unlikely to offer either reliable or meaningful information to consumers.

We are unsure of how manufacturers would certify the EFM metric. Would EPA step in as the regulatory body for certification or would DOE include this in a rulemaking process? Incorporating an additional metric is likely to complicate matters more than it clarifies them.

Point-Of-Use Water Heaters. ACEEE analysis has resulted in similar findings as those described in the Draft 2 specification. That is that there are options besides a POU water heater that can provide greater energy savings in many applications. However, there are few field studies of POU water heater performance. We look forward to further field studies of energy savings from POU water heaters that would justify inclusion of these products in the ENERGY STAR program for residential water heaters.

Gas Storage Water Heaters. ACEEE continues to encourage the EPA to include condensing gas storage water heaters in the Residential Water Heater program. Water heaters with thermal efficiencies of 90% and greater that are suited for, and marketed toward, residential applications – typically featuring a rated input of 100,000 Btu/hr and below and tank sizes of 100 gallons and below – can save significant amounts of energy above the non-condensing products that are currently included. We would like to see the market for residential gas water heaters start to move toward condensing models, and ENERGY STAR is a valuable program to help drive this transition.

Gas Tankless Water Heaters. In light of recent data showing that gas tankless water heaters with EF ratings of 0.82 and higher represent 96% of the gas tankless market,[1] we recommend that EPA increase the requirements for ENERGY STAR recognition to condensing level (0.90 EF). There are a number of products on the market that achieve condensing levels of efficiency. As previously stated, we would like to see the gas water heating market move toward condensing products, and increasing this requirement will mark a significant step in this process.

Thank you for your time and consideration, and for the opportunity to comment.

Sincerely,

Jacob Talbot
Analyst, Buildings Program

Harvey M. Sachs
Senior Fellow.

[1] http://www.ornl.gov/sci/ees/etsd/btric/pdfs/Water%20Heating%20Technologies%20Roadmap_Sep%2030%202011_FINAL.pdf