

Appliance Standards Awareness Project
American Council for an Energy-Efficient Economy
Natural Resources Defense Council

April 30, 2014

Ms. Abigail Daken
United States Environmental Protection Agency
Office of Air and Radiation
1200 Pennsylvania Avenue NW
Washington, DC 20460

RE: ENERGY STAR Specification for Water Heaters, Version 3.0 Draft 1

Dear Ms. Daken:

On April 2, 2014, the U.S. Environmental Protection Agency (EPA) distributed the first draft of its ENERGY STAR version 3.0 specification for water heaters. This letter is written in response to the draft specification and is submitted on behalf of the Appliance Standards Awareness Project (ASAP), the American Council for an Energy-Efficient Economy (ACEEE) and the Natural Resources Defense Council (NRDC). We commend EPA for commencing the revision process at this time to assure ENERGY STAR's continued relevance and value in light of the 2015 changes to the federal efficiency standards. We understand the complexities of starting this process at a time when the federal test procedure and accompanying metric are still awaiting finalization and appreciate EPA's willingness to take on the important task of revising the specification despite these challenges.

Regarding expanding the scope of the specification, we agree with and support EPA's proposal to include water heaters with storage capacities between 2-20 gallons and light duty (commercial) water heaters used in residential applications. The remainder of our comments pertain to compressor cut-off temperature for heat pump water heaters and the proposed criteria for connected functionality.

Cold Climate Performance – Reliance solely on a compressor cut-off temperature reporting requirement for heat pump water heaters is insufficient to ensure satisfactory field performance

The energy saving benefits of a heat pump water heater (HPWH) are premised on the heat pump compressor acting as the primary water heating source. If the ambient temperature surrounding the water heater falls below a certain temperature, the compressor will cut-off and the HPWH will switch to a far more energy consumptive electric resistance mode. Because of this, the location of a HPWH within a house, and the geographic location of the house (e.g. northern U.S., southwestern U.S., etc), can directly impact efficiency. But despite this well recognized cause of variation in performance, the proposed specification fails to acknowledge and account for the likely performance differences between a HPWH installed in a basement in northern Minnesota and one installed in a garage in Florida. Until it does, HPWH performance and consumer experience can be expected to vary considerably, with some consumers having very poor outcomes.

We join the Northwest Energy Efficiency Alliance (NEEA) in urging EPA to include compressor cut-off requirements and testing in the ENERGY STAR specification in the same or similar manner to that used in NEEA's Northern Climate Water Heaters Specification. The current test procedure used for ENERGY STAR only requires testing in ambient temperatures between 65-70°F, which provides no indication as to how a unit will perform at 55°F, 50°F, 45°F or lower (temperatures often experienced in unconditioned basements in northern climates.) As has been done in other product categories, we urge EPA to expand on

the federal water heaters test procedure to include compressor cut-off temperature measurements and requirements. This will help ensure that the testing performance of ENERGY STAR qualified HPWHs is replicated in the field, regardless of where the HPWH is installed (either within the house or geographically).

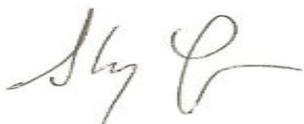
If EPA does not address this issue our concerns are three-fold. First, claims concerning the energy savings of HPWH may not be realized by consumers who are factoring in such savings to justify the purchase over other technologies. Second, as a result, the trust consumers and policy-makers place in the ENERGY STAR brand could be eroded. Third, as illustrated in NEEA's comments, the continued absence of compressor cut-off temperature in the ENERGY STAR HPWH performance metric has led program administrators to rely on other metrics, test procedures and efficiency levels (like the Northern Climate Specification) to identify and promote the most efficacious HPWHs. The effect of this is to dilute the power and influence of ENERGY STAR in the promotion of HPWH. To stop this migration away from ENERGY STAR and to protect and advance the ENERGY STAR brand, EPA should acknowledge the importance of compressor cut-off temperature by integrating it into the ENERGY STAR test procedure and specification.

Connected Product Criteria – While we appreciate attention to this issue, it is premature to include criteria for the connected functionality of water heaters in the ENERGY STAR specification, and note that they may actually be counterproductive at this time

We join NEEA and (judging by comments made on the April 16 webinar) many industry members in questioning the value and need for EPA to include criteria for connected functionality at this time. Given the possibility of future legislation or waivers concerning large grid-enabled electric resistance water heaters, we understand EPA's interest in beginning to provide a framework for connected water heaters in the ENERGY STAR specification. However, there appears to be no benefit in doing so at a time when so many uncertainties around connectivity exist, including: What is the purpose of connectivity (load shifting, ancillary services, data collection)? How much carbon (if any) at the system level is connected functionality expected to avoid? How much energy would be consumed just by having connected functionality enabled (standby energy)? What value does a "connected functionality" designation provide consumers at this time? Until we have a better sense of what effective connected functionality can and should look like for water heaters, we urge EPA to exclude it from the ENERGY STAR specification.

Thank you for considering these comments. We look forward to working with EPA on subsequent drafts of this specification.

Sincerely,



Anthony Fryer, Senior Analyst
Appliance Standards Awareness Project



Harvey Sachs, Ph.D., Senior Fellow
American Council for an Energy-Efficient Economy

A handwritten signature in black ink, appearing to read 'Robin Roy', with a long, sweeping tail extending to the right.

Robin Roy, Director, Building Energy Efficiency and Clean Energy Strategy
Natural Resources Defense Council