



## COALITION FOR ENERGY EFFICIENT ELECTRIC TANKLESS WATER HEATERS

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U.S. Environmental Protection Agency  
Ariel Rios Building  
1200 Pennsylvania Avenue, N,W,  
Washington, DC 20460

### **RE: Comments on the Energy Star Water Heaters V2.0**

Dear Abigail:

Thank you for providing us the opportunity to comment on Version 2.0 of the Energy Star product specification for residential water heaters. The Coalition for Energy Efficient Electric Tankless Water Heaters (CEEETWH) believes electric tankless water heaters can provide a significant savings in both energy and water. To that end, we appreciate the U.S. Environmental Protection Agency's (EPA) continued willingness to work with our industry to fashion an appropriate product specification for point-of-use (POU) water heaters.

Prior to detailing our specific comments, we would like to confirm that these comments represent the views of the following member companies:

- American Heat
- The Bosch Group
- Ecosmart US, LLC
- Eemax, Inc.
- Hubbell Heaters

#### **1. Definition of POU Unit (Page 1, Line 43)**

The issue of the appropriate input power level for POU water heaters received attention both in the draft specification and in the public webinar held on August 23<sup>rd</sup>. As you are aware, the current NAECA statute only includes electric instantaneous water heaters (EIWH) with an input of 12kW or less. Over the past two years, EIWH manufacturers have engaged in discussions with groups such as the American Council for an Energy Efficient Economy (ACEEE), the Edison Electric Institute (EEI), the Air-Conditioning, Heating, and Refrigeration Institute (AHRI), EPA, and others regarding an appropriate change to the 12kW definition. Those discussions have resulted in an agreement reached with ACEEE and AHRI to support legislative

language to be contained in the package of national consensus agreements currently pending in the U.S. Senate that would change the input limit in NAECA to include EIWH with an input of 25kW or less. For your review, we have attached the letter from AHRI and ACEEE to the Senate Committee on Energy and Natural Resources as Appendix A to these comments.

While we would never attempt to predict the timing or success of a piece of Federal legislation, the package of national consensus agreements has received bipartisan support and appears likely to eventually be enacted into law. Given the pendency of that legislation, and the support for the EIWH provisions from manufacturers and the energy efficiency community, we strongly support including 25kW in the energy star product specification at this time.

Based on some of the comments made during the August 23<sup>rd</sup> webinar, we understand that some of the objections to the 25kW limit are based on liability concerns for manufacturers who might potentially advertise products as having a specific energy factor prior to an adequate test procedure being developed and approved by the U.S. Department of Energy (DOE). As you will see below, it is our suggestion that the energy star product specification contain a simple subparagraph that allows for the input-power limit to be updated as soon as the pending legislation is enacted. We feel that this represents a reasonable middle-ground that would allow consumers to take advantage of the benefits offered by EIWH without having to wait for another energy star production revision.

Suggested Language:

***“b. Point-of-use (POU) Unit: For the purpose of this specification, a Point-of-Use unit refers to a water heater that is designed for use near the fixture. The unit must have an input of less than or equal to 12kW with dimensions less than 36x25x24 inches (LxWxH).***

***i. Point-of-Use units with an input of less than or equal to 25kW will be included under this specification upon inclusion of such units in section 321(27)(B) of the Energy Policy and Conservation Act (42 U.S.C. 6291(27)(B)).”***

## **2. POU Electric Units: Low Flow Rate Requirement (Page 4, Line 135)**

The inclusion of a low flow rate requirement in the draft specification has no impact on energy or water savings. We understand that its inclusion here is likely a consumer performance issue, however, we would note that a similar requirement is not present in energy star specifications for gas tankless water heaters. Additionally, the inclusion of a low flow requirement raises real reliability and consumer protection issues. As EPA is aware, when a unit is turned on to heat water, that heat remains in the system momentarily even after the unit is turned off. In order to meet a requirement for activation at .3 gallons-per-minute (GPM) or less, the excess heat required by the unit can compromise the unit’s elements and reduce their lifespan. This heat can also potentially present a scalding hazard for consumers when the unit is subsequently used.

Our overall recommendation is that this requirement should be deleted from the POU electric unit specification. If EPA is insistent on including this requirement, we suggest the following alternative requirements which would alleviate our performance concerns:

***“Low Flow Rate Requirement –***

***(a) 0-5kW: Activation must occur at a flow rate of .3 GPM or less;***

***(b) 5kW and higher: Activation must occur at a flow rate of .5 GPM or less.”***

**3. POU Electric Units: Warranty Requirement (Page 4, Line 135)**

We do not object to the presence of a warranty requirement in the product specification as we recognize the importance of assuring consumers that manufacturers stand behind the quality and reliability of our products. However, unlike gas tankless water heaters whose units cost can exceed \$1,000 and solar water heaters whose unit costs can exceed \$6,000, EIWH units are far less expensive (for example, EIWH units from 0-25kW can range anywhere from \$200 to \$600) and placing such a lengthy warranty requirement onto manufacturers will be highly burdensome.

Another issue relating to the warranty provision is that EIWH units utilize heating chambers as opposed to the more complex heat exchangers commonly used in gas tankless devices. The provision should therefore be adjusted to accurately reflect this technology difference.

In recognition of these issues, and of the importance of maintaining a warranty requirement, we propose the following reasonable alternative:

***“Warranty – Warranty ≥ 5 years on heating chamber and 1 year on parts.”***

**4. POU Electric Units: Booster Requirement (Page 4, Line 135)**

Clearly, having the ability to utilize EIWH as a booster can be a plus in certain situations but it is our view that this is properly recognized as a consumer feature of choice at the time of purchase as opposed to a requirement for the Energy Star program. There are many highly efficient EIWH POU units that do not have the ability to be used as a booster but, used in an appropriate application, save energy and water for consumers. These units should not be eliminated from the Energy Star program simply because they do not have a dual use capacity as other EIWH units will be available to any consumers who wish to select that feature.

Another issue with the inclusion of a booster requirement is that it also encourages the sub-optimization of the units for which it might be used. The most efficient use of EIWH is to run cold water lines to the heater and to heat at the POU. By including a requirement that EIWH units have the capacity to act as a booster, and therefore encouraging the use of EIWH as a supplement to a central tank heater, this provision would actually reduce the energy efficiency of the system as the central heater would suffer stand-by heat losses.

In addition to energy efficiency considerations, validating whether a EIWH unit can be used as a booster is also challenging as there is no existing test procedure. Additionally, such a test procedure would have to be carefully constructed as input temperatures are such a large

contributing factor to the ability of a unit to act as a booster. For example, in the case of a solar water heater that can deliver water at up to 160 degrees fahrenheit, the reliability of the unit can be compromised unless there is proper down mixing.

We recommend this requirement be deleted and that EPA allow consumers to choose products based on their application needs.