



November 11, 2021

Via Electronic Mail: WaterHeaters@energystar.gov

Ms. Abigail Daken
U.S. Environmental Protection Agency
Washington, D.C. 20406

Re: ENERGY STAR® Residential Water Heaters Specification Version 5.0 Draft

Dear Ms. Daken:

On behalf of the representative signatories from the Advanced Water Heating Initiative (AWHI), we appreciate the opportunity to submit comments to the U. S. Environmental Protection Agency (EPA) on the first draft of Version 5.0 of the ENERGY STAR® Residential Water Heaters Specification released on October 5, 2021. The Advanced Water Heating Initiative (AWHI) is a collaborative, market transformation effort of over 50 organizations working to catalyze a rapid transition to high-efficiency, grid-connected Heat Pump Water Heaters (HPWH).

AWHI believes a robust HPWH market will play a vital role in achieving the administration's greenhouse gas reduction targets as well as support the growing number of policies calling for decarbonization. AWHI believes the push for electrification of all appliances is also necessary to achieve the administration's GHG reduction targets. The new ENERGY STAR specification will help consumers to understand the significant difference that now exists between HPWH and gas combustion water heaters, in terms of both efficiency and GHG emissions. Overall, AWHI supports the goals of ENERGY STAR® program and the proposed criteria of Version 5.0 of the Domestic Water Heating Specification with the following recommendations:

1) AWHI recommends the UEF values for instantaneous heaters be aligned with those of storage heaters.

As the focus of the industry expands from simply saving energy to addressing greenhouse gas emissions of the built environment, we endorse the increased performance criteria for gas fired water heaters. This new criterion should help support the residential market actors, including builders, to promote and deploy the highest efficiency water heaters with the lowest greenhouse gas emissions. That said, we recommend the UEF values for instantaneous heaters should be aligned with those of storage heaters to avoid the impression that a tankless heater with the ENERGY STAR® label is on par in terms of efficiency and emissions with HPWH.

2) AWHI recommends the reporting of a compressor cut-off temperature limit.

Table 1: Criteria for Certified Electric Water Heaters (Page 3 of 18), should also provide for reporting of the upper temperature limit for compressor cut-off. Installations in garages and attics may experience conditions that are too hot for compressor operation. Reporting this information should be mandatory to help plan the selection and installation of the water heater in climates that experience extreme heat and cold.

3) AWHI strongly recommends for connected product criteria to be a mandatory requirement for all electric heaters.

The inclusion of connectivity criteria is welcome and will be critical in enabling the operation of water heaters best suited for decarbonizing the electric grid. The ability of water heaters to serve as a thermal storage device to avoid peak load while maintain customer demand for service, based on utility or third-party aggregator signals makes them a valuable grid citizen in this regard. AWHI members, including the Sacramento Municipal Utility District and Pacific Gas and Electric Company, have already established customer programs that provide this service. Therefore, we strongly recommend that the 4) Connected Product Criteria (starting line 155 page 5 of 18) become a mandatory requirement (not optional) for all electric water heaters. Connectivity hardware and protocols are developed enough to consider making it a requirement for ENERGY STAR® certification and become a part of requirements along with other criteria listed in Table 1: Criteria for Certified Electric Water Heaters.

We also recommend that the standard connectivity protocol should reference CTA 2045-b instead of CTA 2045-a, due to advanced levels of load up and shed functionality which are critical in harnessing the benefits of grid connectivity.

4) AWHI recommends the recognition of end-of-life impacts of the refrigerants.

While HPWHs will reduce energy use and emissions for the life of their operation, the ENERGY STAR® specification should begin to recognize the end-of-life impacts of the refrigerants used in the heat-pump system. This is being addressed through the Air-Conditioning, Heating, and Refrigeration Institute (AHRI) with HVAC systems and should become part of the conversation with HPWHs to reduce the negative climate impact of improperly disposed units in the future. We recommend an optional criterion which sets the Global Warming Potential (GWP) value of refrigerants in HPWHs to less than 750.

Thank you for the opportunity to provide feedback on the new specification. Please contact Smita Gupta, Director Building Innovation, New Buildings Institute, at smita@newbuildings.org with any questions about these comments.

Sincerely,

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