



July 7, 2023

Ms. Abigail Daken
Environmental Protection Agency (EPA)
1200 Pennsylvania Ave. NW
Washington, DC 20460

Re: EPA Sunsetting the ENERGY STAR® Boilers Specification and Launching a New Specification for Heat Pump Hydronic Heating Appliances

Dear Ms. Daken:

On behalf of Bradford White Corporation (BWC), I would like to express our appreciation for the opportunity to comment on the ENERGY STAR proposal to sunset boiler specifications while launching a new specification for heat pump hydronic heating appliances (i.e., air-to-water source heat pumps). Please find our comments below.

General

BWC believes that the proposed sunset of the ENERGY STAR Residential Boiler Specification is premature and risks working against the program's goal of promoting the use of energy efficient home appliances throughout the United States. We are also concerned that launching a new Heat Pump Hydronic Heating Appliances Specification in its place communicates that these products are interchangeable with current, residential boilers when this is inaccurate in many cases. We instead urge ENERGY STAR to maintain the Residential Boiler Specification while delaying introduction of any specification related to air-to-water source heat pumps until such a time that a federal test procedure has been finalized for these products.

Products are Not Interchangeable

BWC discourages ENERGY STAR from utilizing the term "heat pump boilers" to reference air-to-water heat pumps. These products have pronounced differences relative to residential boilers that should prevent them from being implied as comparable products. Each product type is tested to two distinct test procedures (i.e., AHRI 550/590 for air-to-water source heat pumps and ASHRAE 103-2017 for residential boilers). These yield two separate efficiency ratings, and they are represented by two separate efficiency metrics (i.e., Coefficient of Performance (COP) for air-to-water source heat pumps and Annual Fuel Utilization Efficiency (AFUE) for residential boilers). The unique technologies utilized by both product types necessitate these different testing and rating methods. Additionally, the manner in how each product is applied differs as residential boilers are designed exclusively to provide a heating utility, whereas air-to-water heat pump products can be used to provide both space heating and cooling.

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Related to retrofit applications, BWC shares ENERGY STAR's concern that air-to-water heat pumps are not suitable to directly replace residential boilers in high temperature applications without the use of a backup heating source. This is especially true in buildings where the residential boiler provides combination heat for both space and domestic hot water where water moving through the boiler must be heated at high temperatures to satisfy this dual function.

BWC is also concerned about existing buildings in cold climates where the use of boilers is prevalent, and the efficiency and effectiveness of air-to-water heat pumps are significantly reduced. In these circumstances, an air-to-water heat pump may not be a realistic option for a homeowner, making it difficult for them to utilize any ENERGY STAR certified product for their space heating needs.

Furthermore, existing buildings that undergo fuel-switching to provide space and water heating may incur substantial additional upfront costs that can place significant burdens on homeowners. These include upgrading building electrical panels and/or subpanels; modifying plumbing in the home; and/or installing additional electrical wiring where the appliance is located.

Finally, many incentive programs throughout the country utilize ENERGY STAR product specifications to encourage homeowners to both purchase and install the nation's most efficient products for their homes. For this reason, we are deeply concerned about unintended consequences that may arise from eliminating the Residential Boiler Specification, and therefore any incentives attached to it. In the absence of such incentives, homeowners who are currently utilizing ENERGY STAR certified boilers may choose to replace these products at the end of their useful life with less energy efficient, less costly, boilers due to their inability to obtain incentives that help reduce the cost of higher efficiency products.

Connected Criteria Considerations

BWC is encouraged by comments made by ENERGY STAR during the June 21, 2023, webinar on this topic, which indicate the program would not consider this criterion in the initial phases of this action. Moving forward, we would urge the program to maintain this posture and dissuade the establishment of connected criteria for both residential boilers and air-to-water source heat pumps. Both appliance types are often operated on an on-demand basis that is based upon a thermostat setting that is external to the product itself.

Additionally, these products have little or no ability for thermal storage on their own. For thermal storage to be a benefit, a gas-fired boiler or air-to-water source heat pump would need to be coupled with a separate pressure vessel, such as a large water storage tank, or would need to heat space beyond the thermostat setting during certain times of day. To our knowledge, solutions involving large storage tanks only exist in industrial and commercial settings where very large amounts of heat are demanded in a very short time frame (e.g., a hotel during early morning hours). Attempting to implement the same technology in a residential setting, where space is far more limited, would not be practicable for most homes.

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Furthermore, for installations opting to increase the thermostatic setting at certain times of day, this approach only maximizes energy efficiency when a household's building envelope is appropriately insulated, sealed, and ventilated. Ensuring that this is so in these homes may come at a considerable additional expense to the homeowner.

BWC also notes that the marketplace for connected heating products is constantly evolving. As such, we believe that any efforts by ENERGY STAR to incentivize this type of technology should occur after the market for these types of products has been given reasonable time to mature.

Harmonization with Other Federal Government Actions

Despite the differences between residential boilers and air-to-water source heat pumps highlighted above, we understand that the United States Department of Energy (DOE) has determined that such heat pump products meet the definition of residential boilers in their Consumer Boiler Test Procedure Final Rule, published March 13, 2023. However, we also note that in the same Final Rule the Department determined not to establish separate test procedures for hydronic heat pump products at this time and will therefore not propose minimum efficiencies for these products in their upcoming Consumer Boiler Efficiency Standards Notice of Proposed Rulemaking.

As such, we believe it is appropriate for ENERGY STAR to avoid actions that establish air-to-water source heat pumps as the program's hydronic heating standard until at least after DOE has established a test procedure and minimum efficiency standard for these types of products. By doing so, ENERGY STAR will avoid creating confusion related to how the federal government, as a whole, views these products and will significantly reduce the testing burden for product manufacturers.

Furthermore, BWC is concerned that removing the ENERGY STAR Residential Boiler Specification also risks creating confusion for homeowners in light of Congress' passage of the Inflation Reduction Act (IRA). Among its many provisions, the IRA updates the Clean Energy and Efficiency Tax Credit, which is a federal individual tax credit that homeowners can claim when installing energy efficient products. The program lists qualified products as those that meet the highest energy efficiency tier, that isn't the advanced tier, as established by the Consortium for Energy Efficiency (CEE).

For residential boilers, CEE considers products that meet or exceed a 95% AFUE to be in their highest tier that is not their advanced tier. As such, these products are considered by Congress and the United States Department of Treasury (through reference in the IRA) to be energy efficient products.

Residential boilers that match these efficiencies are not uncommon to consumers or installers. In a recent contractor survey jointly conducted by the Plumbing Heating and Air Conditioning Contractors (PHCC) and the Air Conditioning, Heating, and Refrigeration Institute (AHRI), over 70% of contractors indicated that they have experience installing these types of products. Given this information, BWC believes it is more appropriate for ENERGY STAR to utilize this current action as an opportunity to amend, rather than eliminate, the Residential Boiler Specification to harmonize with the efficiency levels referenced in the IRA. Doing so would help to provide clarity

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to all stakeholders about the policy direction that the federal government is adopting as it pertains to these products.

Thank you for the opportunity to provide comments on this proposal. Please do not hesitate to contact us with any questions.

Respectfully Submitted,

Bradford White Corporation

Tom Gervais
Senior Director, Regulatory Affairs

Cc: R.B. Carnevale; E. Truskoski; D. Mohedano; R. Simons; L. Prader; B. Wolfer

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