



VIA ELECTRONIC MAIL (HVAC@energystar.gov)

July 7, 2023

Ann Bailey, Director
ENERGY STAR Labeling Branch
US Environmental Protection Agency
1200 Pennsylvania Ave., NW
Washington, DC 20460

Re: Proposal to Phase-out ENERGY STAR Label for Residential Natural Gas Boilers

Dear Director Bailey:

New Jersey Natural Gas Company (“NJNG”) has reviewed the Environmental Protection Agency’s (“EPA”) June 5, 2023, proposal to eliminate efficient residential natural gas boilers from the ENERGY STAR program. NJNG is strongly opposed to this proposal and believes if it were to be implemented, it would have significant adverse effects for customers and contractors, and lead to detrimental emissions impacts.

NJNG has been actively promoting the ENERGY STAR label to our customers for decades. We currently run programs that include rebates and/or on-bill repayment programs to encourage customers to pursue ENERGY STAR labeled appliances, equipment, and even comprehensive upgrades through Home Performance with ENERGY STAR. In the last two years alone, we have provided customer incentives for more than 31,000 ENERGY STAR products. We recognize that customers interested in the best equipment are trained to look for the label and contractors who want to provide superior advice and service promote it as well. Many customers still prefer natural gas as the primary source for heating their home, especially in markets where it is the most cost-effective option. Eliminating an ENERGY STAR option for natural gas heating equipment may cause many of these customers to gravitate toward standard efficiency, which we can all agree is the not the best option for customers and climate goals.

NJNG fundamentally disagrees with sunseting natural gas boilers from ENERGY STAR status, as we believe it is critical to maintain those product offerings which have been

vetted by the market as cost-effective and energy efficient. Furthermore, Air to Water Heat Pumps (“ATWHP”) should be recognized as separate product category, rather than replacement of gas boilers. There are such significant differences in technology that it is not appropriate to even consider referring to ATWHP units as Heat Pump Boilers.

NJNG appreciates the open timeline provided by the EPA for consideration, as there are unknown assumptions about distribution system flexibility and costs to retrofit that need further development and industry stakeholder engagement. The effort to collect additional information through the Discussion Guide is a crucial step to ensure that relevant information is collected from contractors, manufacturers, utilities, and trade organizations and considered prior to making any changes.

NJNG has provided responses to the questions posited by the EPA in Attachment A where we have relevant experience, and defer to the expertise of OEMs (Original Equipment Manufacturers) for questions to which we do not respond.

Flawed Assumptions about Impacts and Market Reaction

While there is no question that the IRA incentives will make electric heat pumps more attractive than they are today, there are many regions of the country where an electric heat pump is still not the best option for customers from an economic perspective. The variation in prices for electricity and natural gas, the annual heating load, and the expected performance of either a new natural gas boiler or an electric heat pump, are critical considerations for estimating the annual cost to run the system for heating load. In many of the Northern climate markets, as well as our own market in New Jersey, natural gas is still the lowest cost option for home heating based upon the differential in fuel prices and the heat pump performance in the field. And recent studies have shown that actual heat pump performance does not match manufacturer claims for performance.

Further, it may not be the best option from an emission perspective either. Advocates for the electrification of heating often paint it as a fossil-free heating source. However, unless the customer is covering their heating load with renewable energy, it is likely that the energy being used to power that equipment is primarily generated by fossil fuels. Given the fact that many customers prefer natural gas heating, and, in some regions, it costs more to install and operate an electric heat pump, it is unrealistic to assume that in the absence of ENERGY STAR labeled natural gas boilers, customers will automatically gravitate toward electrification.

For current homeowners who use natural gas boilers for heat, there is not a retrofit option for boilers without a complete redesign and change out of the distribution system. Boiler outputs that are designed for 160°F to 180°F output temperatures are not suitable for 120°F to 140°F output temperatures. Any hybrid scenario utilizing an Air to Water Heat Pump and a water boiler would need further field testing and proper engineering design to accommodate

appropriate distribution and efficient heat generation. At today's costs, a hybrid hydronic system would not be cost effective.

Further, it is highly unlikely that local HVAC contractors will be interested in promoting a product that will result in increased operating costs to their customers. In the absence of an ENERGY STAR labeled natural gas boiler, there is a greater likelihood that contractors may shift to promoting less efficient natural gas equipment since it may be more difficult to convey the value of the better equipment. Based on our annual interactions with thousands of customers and contractors each year, we know many customers still consider installing equipment that meets the minimum efficiency levels because of the low upfront cost. The absence of an ENERGY STAR option that a contractor can easily promote as a better option, especially when combined with our energy efficiency program incentives, may leave more customers choosing the standard efficiency path.

EPA Should Abandon the Proposal

For the reasons captured within this letter, NJNG requests that EPA determine that the proposal to sunset the ENERGY STAR label for natural gas boilers as proposed in the notice is not in the best interest of customers and contractors, as well as public policy at this time. We strongly advocate for ENERGY STAR to allow the label to continue to be offered and promoted for energy efficient natural gas boilers.

Respectfully submitted,



Anne-Marie Peracchio
Managing Director Marketing and Energy Efficiency

Enclosure:
Attachment A

Attachment A

Question 1: *Is the name “ENERGY STAR Heat Pump Boilers” for the new specification preferable to “ENERGY STAR Air-to-Water Heat Pumps”? Is there another name that would better align with customer expectations of the product?*

NJNG strongly feels that any reference made for Air to Water Heat Pumps to be associated with boilers is misleading to consumers. The resulting outlet temperature for these products is vastly different— 120°F to 140°F, and as such an Air to Water Heat Pump is not a suitable replacement for a boiler with outlet temperatures of 160°F to 180°F. In addition to replacing a boiler with an Air to Water Heat Pump, the distribution system and emitters would also need to be resized and replaced.

Question 2: *Are there broadly accepted industry definitions of air-to-water heat pumps or heat pump boilers?*

NJNG believes the classification of product(s) is the distinction—an air to water heat pump transfers heat from outside air to water, while a boiler is a closed vessel where water is heated.

Question 3: *Is there any need to distinguish boilers that are used with hydronic coils in a forced air distribution system from those used with hydronic distribution? Are the same products used in both situations?*

NJNG asserts that not only do the systems need to be defined, but also the distinction between the generation of heat versus the distribution of heat needs to be made. For example, products that produce heat as well as the distribution system:

- A hot water boiler system with heating radiators.
- A hot water boiler with forced air distribution.
- An air to water heat pump system with in-floor radiant distribution.
- An air to water heat pump with forced air distribution.

Question 4: *EPA believes that products that can serve as domestic water heaters or as air to water heat pumps for space heating could simply be tested and rated for each use. Is there any need for a definitional distinction between heat pump water heaters and air to water heat pumps for space heating? If so, what would the distinction be?*

If used for both heating and water heating, EPA should consider the development of a combination test procedure that would incorporate total system efficiency in producing both heat and domestic hot water.

Question 5: *EPA is interested in additional information about dual fuel boilers particularly market, cost, and performance information.*

NJNG is a founding member of the North American Gas Heat Pump Collaborative (“NAGHP”). The NAGHP currently has 17 member utilities and energy efficiency program administrators who collectively [represent more than 33%](#) of all US and Canadian households using natural gas. The NAGHP has been actively advocating on behalf of efficient products that have been tested, vetted, and proven in the marketplace. This [2022 Resource report](#) from the NAGHP provides further insight on the technology and the potential contributions it can make toward decarbonization.

Products that contain dual fuel are under development and expected to reach the consumer market within 3-4 years. Whereas gas-powered heat pump products that are extremely efficient when considering the full fuel cycle are available now. Gas heat pumps can be the most economical and lowest GHG products in several parts of the country. Typical installations for gas heat pumps and operational costs over the effective useful life of the product can be more cost-effective than electric counterparts. EPA has shown a clear bias by not considering source emissions and full cycle customer cost of products currently available to customers.

Question 6: *As the evaporators are likely to be located outdoors, what range of outside air conditions are most representative to determine overall performance?*

Due to variations in ground water temperature and air temperature, a Seasonal Performance Factor (SPF) should be used. In addition, NJNG also believes the COP (coefficient of performance) should be included in assessment, per climate region. The development of testing procedures of such equipment should be comparable to products already in the market today. For example, air conditioning test conditions include 95°F for outdoor dry bulb, 80°F for indoor dry bulb, and 67°F for indoor wet bulb.¹

Question 7: *At very low outside temperatures, the compressors for ATWHPs and dual fuel HPs may no longer provide useful efficient heat. We assume ATWHPs will include backup heating for this circumstance. Ideally, the test method would capture this behavior and incorporate it into an estimate of annual energy use. What is the best way to include backup heat in the test method? What other testing considerations should be evaluated for performance in cold climates?*

The test method should include consideration for maintaining capacity at the highest efficiency from the source level. Due to the diminished capacity at lower temperatures, test

¹ AHRI, “[Standard 210/240: 2023 \(2020\) Standard for Performance Rating of Unitary Air-Conditioning & Air-Source Heat Pump Equipment](#)”

methodologies should always maintain the heating load of entire home, despite range of use cases impacting temperature variability. Manufacturer specifications should be included in testing assumptions, again to satisfy temperature variability.

Question 12: *If units are sized for design conditions, what does that mean for their part-load heating performance? What have users' experiences been in the field?*

Given the extremely low volume of installations or user experiences with these types of devices, it would be prudent to seek out potential independent evaluations that have been performed as part of Evaluation, Measurement and Verification (EM&V) activities from energy efficiency programs that have offered incentives for this type of equipment. It's critical to have independent evaluation on actual customer installations, not manufacturer claims. Additionally, comprehensive field testing should be performed before any decisions are reached by EPA.

Question 13: *This test defines performance with 110F leaving water temperature. This will not provide sufficient heat when used in legacy heat exchangers, typically designed for 160- 180F water. Do manufacturers recommend using these products in retrofit situations? If so, is there anything special they recommend making sure residents have enough heat?*

Please see answer to Question #1. Furthermore, NJNG defers to the Original Equipment Manufacturers ("OEM") regarding their experiences with retrofit use cases.

Question 14: *Many hydronically-heated homes are located in cold climates in the US. Is there a need for separate criteria for cold climate ATWHPs?*

NJNG is currently unaware of this category of products (ATWHPs) for cold climates and defer to expertise of OEMs.

Question 16: *What is the cost of air-to-water heat pump systems? Does this provide the same service (e.g., covers full heating load, provides cooling, etc.) as competing systems? What are the design and installation costs for these systems in new construction and in a replacement scenario?*

Comprehensive contractor and builder surveys should be conducted to determine cost. NJNG also believes it is prudent to consider market variability and regional climates when evaluating installation costs and system design.