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June 22, 2023

Ms. Abigail Daken
Manager, ENERGY STAR HVAC Program
United States Environmental Protection Agency
Washington, DC 20460
(Sent via email to HVAC@energystar.gov)

Re: AHRI-HRAI Comments to ENERGY STAR® Residential Furnaces and Central Air Conditioners Sunset Proposal

Dear Ms. Daken,

The Air-Conditioning, Heating, and Refrigeration Institute (AHRI) and the Heating, Refrigeration and Air Conditioning Institute of Canada (HRAI) (collectively, the “Joint Commenters”), are submitting these comments in response to the United States Environmental Protection Agency (EPA) ENERGY STAR® proposal to sunset the certification pathway for residential furnaces and central air conditioners (CACs), issued on May 18, 2023.

The Joint Commenters are opposed to EPA’s proposal to sunset the ENERGY STAR Version 4.1 Specification for Furnaces and to remove CACs from the ENERGY STAR Version 6.1 Specification for CAC and Heat Pump (HP) Equipment. ENERGY STAR labeled residential furnaces and CACs will continue to meet principles outlined in the ENERGY STAR’s Strategic Vision and Guiding Principles.¹ The Guiding Principles acknowledge that, “it is typically possible to achieve the necessary balance among principles by selecting efficiency levels reflective of the top 25 percent of models available on the market when the specification goes into effect.”

Manufacturers have just completed what is likely the most significant federal energy conservation standard update since the founding of the DOE appliance standards program. This change coincided with a complete overhaul of the ENERGY STAR program with v6.1 for CAC/HP. Every residential central air conditioner and heat pump required testing to a new test procedure.² Every manufacturer reviewed and reorganized equipment portfolios to conform to the new test procedure.

¹ ENERGY STAR® Products Program Strategic Vision and Guiding Principles, May 2012,
https://www.energystar.gov/ia/partners/prod_development/downloads/ENERGY_STAR_Strategic_Vision_and_Guiding_Principles.pdf?0a0a-3f14

² 10 CFR part 430 Subpart B, Appendix M1

While the Joint Commenters appreciate EPA for recognizing the investment that ENERGY STAR brand owner and utility partners have made in certifying and promoting products in these categories, that sentiment would be better expressed by a proposal rooted in data and market analysis. But EPA has not provided data to support the proposed sunset of residential furnaces and removal of CACs by the proposed effective date of December 30, 2024.³ For instance, in Canada, sales for natural gas and propane gas furnaces accounted for a portion of the largest share of energy savings associated with ENERGY STAR products sold in 2021.⁴ EPA's proposal does not include an opportunity for stakeholder engagement nor analysis of the market impact.

The Joint Commenter's primary concerns with these proposals include:

- The removal of products reduces product choice and is not technology neutral, which disadvantages consumers.
- This proposal assumes cold climate heat pumps are broadly available and commercialized, which is not yet true.
- The removal of ENERGY STAR gas furnaces will depress high-efficiency dual-fuel HP adoption.
- This proposal ignores markets where the grid has not transitioned or is not ready for all electric equipment.
- The removal of CAC ignores incentives for markets that do not require space heating.

AHRI and HRAI Support Technology Neutral Proposals

EPA should not be picking market winners and losers on the basis of fuel source. A technology neutral strategy is consistent with promoting the responsible use of all energy sources, while recognizing the importance that energy efficiency and fuel diversity play in meeting future energy demands. Fuel flexibility provides states and localities the opportunity to benefit from a wide range of energy efficient products that lowers energy usage and customers utility bills while ensuring consumers have choices in selecting the product that works best for their space heating needs.

Cold Climate Heat Pumps (CCHP) are Emerging Technologies

Heat pump technology has improved over the past several years to operate with greater capacity and efficiency at freezing outdoor temperatures (below 32°F).⁵ Several organizations have been working to develop definitions and testing methodologies for these products. However, to date, there is no consensus on either definition or testing methodology. Even DOE's CCHP challenge methodology does not include methodology to test non-ducted, multi-split, and hybrid/dual fuel products. Efforts involving

³ This proposal would take effect on December 30, 2024, and no new certifications would be accepted after December 30, 2023.

⁴ ENERGY STAR® Canada Annual Report 2021, 2023, [https://natural-resources.canada.ca/sites/nrcan/files/oeef/pdf/energystar/english/ESTAR%202021%20Annual%20Report\(1\).pdf](https://natural-resources.canada.ca/sites/nrcan/files/oeef/pdf/energystar/english/ESTAR%202021%20Annual%20Report(1).pdf)

⁵ DOE CCHP Presentation. September 19, 2022. https://unece.org/sites/default/files/2022-09/Ashley_Armstrong_EERE%E2%80%8B.pdf

all stakeholders will be necessary to overcome the shortcomings of previous efforts. The AHRI Standards Technical Committee has been holding regular in person meetings to further these efforts for the test procedure. AHRI is committed to this endeavor as there should be a uniform federal definition and test method for products specifically engineered to provide comfort heating at low ambient conditions.

EPA Should Support the Continuation of the Furnace Specification to Support the Adoption of High-efficiency Dual-fuel HPs and for Grid Resilience

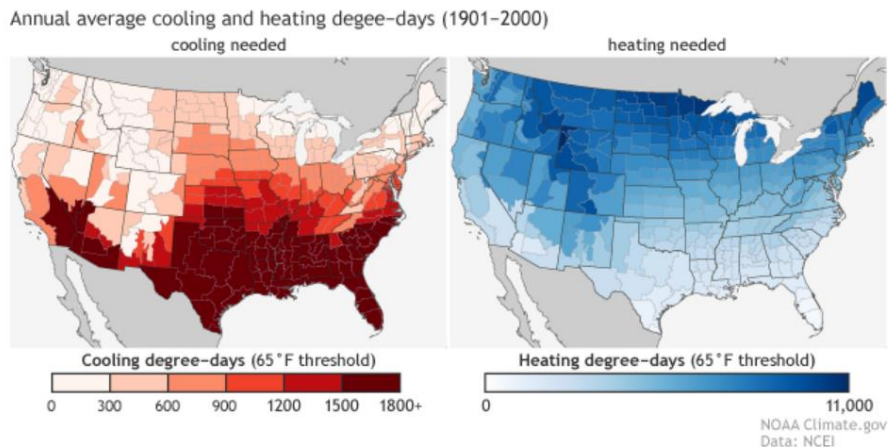
It should be acknowledged that not all U.S. consumers would benefit from higher-tech CCHPs. CCHPs are not the only technology that would be well suited for heating homes in colder climates. Dual-fuel, or hybrid heat pumps, also offer a lower-carbon heating solution that may prove similar or greater benefits. Electrification with fuel backup provides resiliency to the energy grid, particularly in locations where the grid is designed to accommodate summer peaking loads. Moving the thermal load from gas to electric will result in a significant increase in electric peak in winter.⁶ Load increases on the grid may limit energy reliability and availability in certain jurisdictions. A blackout during a winter peak event could be catastrophic for a community.

It is unlikely that most consumers with a furnace and AC will switch to an all-electric HP system. Without a furnace incentive, consumers are likely to take one of two actions. Option one is for consumers to choose a minimum efficient furnace and AC because the price of qualifying an Energy Star heat pump is too high. Option two is for consumers to install a qualifying HP with a minimum efficiency gas furnace. In either case, a consumer likely will not consider a higher efficiency furnace without the benefit of the ENERGY STAR incentives. AHRI supports retaining EPA's residential furnace specification to encourage adoption of dual-fuel, or hybrid, heat pumps.

Elimination of the CAC Specification will Harm Consumers in Cooling-only Climates

Figure 1, below, shows the average annual cooling and heating degree-days (CDD and HDD, respectively) in the U.S. There are clearly populations, particularly in south Florida, south Texas, southern California, and US territories, which have a significant number of CDD and very few, if any, HDD. Consumers in these cooling-dominated markets deserve to continue to have access to ENERGY STAR product labeling program for CACs.

⁶ Dichter, N., & Aboud, A. (2020). Analysis of Greenhouse Gas Emissions from Residential Heating Technologies in the USA. U.C. Davis Western Cooling Efficiency Center. <https://wcec.ucdavis.edu/wp-content/uploads/GHG-Emissions-from-Residential-Heating-Technologies-091520.pdf>.



Average annual cooling (left) and heating (right) degree-days in the contiguous United States from 1901-2000. For the U.S. analysis, a *degree-day* is equivalent to one day with an average temperature that is one degree above or below 65° F. Maps by NOAA Climate.gov, based on NCEI data provided by Jake Crouch.

Figure 1 Average Annual Heating and Cooling Degree Days Compiled by NOAA, Using National Centers for Environmental Information (NCEI) Data. Available, here: <https://www.climate.gov/news-features/blogs/beyond-data/when-average-temperature-misses-mark>

Conclusion

The Joint Commenters support ENERGY STAR programs predicated on meeting reasonable performance requirements that consumers can afford. EPA should conduct the necessary analysis to understand the current and estimated market penetration for CAC and residential furnaces before proposing such drastic measures. A collaborative and informed stakeholder process is critical to ENERGY STAR's success.

We recommend EPA continue a program grounded in ENERGY STAR's Guiding Principles, and to **not** sunset the certification pathway for residential furnaces and CACs.

We appreciate the opportunity to provide these comments. If you have any questions regarding this submission, please do not hesitate to contact Laura Petrillo-Groh, lpetrillo-groh@ahrinet.org.

Sincerely,

Stephen Chartrand

Laura Petrillo-Groh

HRAI
Regulatory Affairs

AHRI
Senior Director, Regulatory Affairs